Fourie's Poultry Farms (Pty) Ltd

Draft Basic Assessment Report

Locality: Potchefstroom

Departmental Ref No: NWP/EIA/110/2012

SHANGONI
Management Services (Pty) Ltd

DRAFT BASIC ASSESSMENT REPORT

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Locality: Potchefstroom

Departmental Ref No: NWP/EIA/110/2012

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PROJECT DETAILS

North-West Department of Economic Development, Environment, Conservation and Tourism

Reference No.: NWP/EIA/110/2012

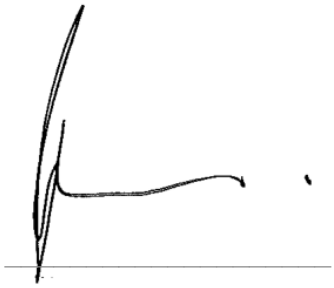
Project Title: Expansion of the Roodekraal free-range chicken farm

Project Number: FOU-ROO-12-10-22

Compiled by: Patricia van der Walt

Date: 12 September 2013

Technical Reviewer: Brian Hayes



RB Hayes (Pr.Eng.)

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DEFINITIONS

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

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

A 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 any human act.

Land use

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 Prevention

Any activity that reduces or eliminates pollutants prior to recycling, treatment, control or disposal.

Public Participation Process

A process of involving the public in order to identify needs, address concerns, to contribute to more informed decision making relating to a proposed 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

All of the plant life growing in and characterising a specific area or region; the combination of different plant communities found there.

Waste

Waste is unwanted or undesired material left over after the completion of a process. "Waste" is a human concept: in natural processes there is no waste, only inert end products.

ABBREVIATIONS

BID	-	Background Information Document
BAR	-	Basic Assessment Report
CRR	-	Comments and Responses Report
DWA	-	Department of Water Affairs
EAP	-	Environmental Assessment Practitioner
EIA	-	Environmental Impact Assessment
EIR	-	Environmental Impact Report
EMF	-	Environmental Management Framework
EMP	-	Environmental Management Programme
GN	-	Government Notice
I&AP	-	Interested and Affected Party
NEMA	-	National Environmental Management Act, Act 107 of 1998, as amended
NW DEDECT	-	North West Department of Economic Development, Environment, Conservation and Tourism
R	-	Regulation

EXECUTIVE SUMMARY

Fourie's Poultry Farms (Pty) Ltd. forms part of the poultry industry in the Potchefstroom area. The company owns a number of chicken farms that supply chicken to their two abattoirs. The Roodekraal free-range chicken farm supplies chickens at a live-weight of approximately 1.85kg to the abattoirs. Fourie's Poultry wishes to expand the Roodekraal free-range farm to meet an increasing demand for chicken in South Africa. The proposed expansion entails the construction of an additional free-range chicken house cluster on the farm and thus trigger the following listed activities (Refer to Table 1 for the description of the listed activities) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA):

- No. 33306, R.544 of 18 June 2010, Listing Notice 1, Activity 22;
- No. 33306, R.544 of 18 June 2010, Listing Notice 1, Activity 32;
- No. 33306, R.546 of 18 June 2010, Listing Notice 3, Activity 4;
- No. 33306, R.546 of 18 June 2010, Listing Notice 3, Activity 12; and
- No. 33306, R.546 of 18 June 2010, Listing Notice 3, Activity 13.

A Basic Environmental Impact Assessment, further known as Basic Assessment, is required to obtain authorisation for all activities listed in Government Notice R544 Listing Notice 1 (Environmental Impact Assessment regulations of 10 December 2010) of NEMA.

The Basic Assessment process will aim to achieve the following:

- To provide a detailed assessment of the environment affected by the listed activity;
- 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.

The purpose of this document is to supply the North West Department of Economic Development, Environment, Conservation and Tourism with the requested information pertaining to NEMA, as amended, and Regulation 22 of the Environmental Impact Assessment regulations, 2010.

Contained in this document is a brief overview of the activity and site specific information for the proposed expansion project (location, topography, surrounds, vegetation, etc.). The latter part of the document contains an environmental management framework (including a reflection of applicable legislation), the public participation process followed, the need and desirability of the project, identified alternatives, a quantitative risk assessment, an impact statement, conclusion and recommendations.

Document layout

Section one – Introduction

The purpose of this section is to provide a brief overview of the current operation, proposed activity and locality, applicable infrastructure and a description of the listed activities triggered in terms of NEMA.

Section two – Nature and extent of the environment affected by the activity

The status of the environment in which the farm is situated is discussed in section 2. The environmental areas, geology, climate, topography, soil, land use & land capability, fauna & flora, surface water, groundwater, archaeological & cultural sites, visual aspects, air quality and socio-economic aspects are described in this section.

Section three – Legislation and guidelines applicable

All environmental legislation and guidelines applicable to the proposed project are listed in this section.

Section four – Public participation process

Section 4 provides information pertaining to the consultation process that was followed during this Basic Assessment process.

Section five – Need and desirability for the activity

This section describes the need and desirability of this project from the perspective of the developer, the local community and the district municipal area.

Section six – Identified alternatives

Section six considers alternatives to provide a framework for sound decision-making based on the principles of sustainable development.

Section seven – Environmental Impact Assessment

In section seven, all activities related to the proposed expansion of the free-range farm that could have an environmental impact, are identified. The environmental risk of each impact was determined based on a combination of parameters, such as extent and duration. The feasibility of the project is then determined based on the outcome of the risk assessment, together with the recommendations made by specialists and the EAP.

1. INTRODUCTION

Shangoni Management Services (Pty) Ltd. was appointed, as an independent environmental practitioner, to assist the applicant, Fourie's Poultry (Pty) Ltd, in complying with the 2010 EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended.

An application to undertake a Basic Assessment process was submitted to the identified competent authority, the North West Department of Economic Development, Environment, Conservation and Tourism. The Department subsequently registered the project and the formal Basic Assessment process was thereby initiated.

All the findings from the Basic Assessment process are included in this report. Also included in the report is an Environmental Management Programme (EMP) that addresses appropriate mitigation steps for the different phases of the project.

1.1 Applicant

Name of Applicant	Fourie's Poultry Farms (Pty) Ltd
Contact Person	Deon Fourie
Postal Address	Private Bag X1275, Potchefstroom, 2520
Telephone No.	018 293 0202
Cell phone No.	082 554 5203
Fax No.	018 297 3573
Farm name and portion on which the activities take place	Portion 2 (remaining extent) of the farm Roodekraal 454 I.Q.
Co-ordinates of operation	26°50'56.62''S; 27°10'51.03''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**	**Responsibility**
Mr. H.L. de Villiers	Bsc. (Hons) (PU for CHE) MSc.(UP)	EIA Project Leader and Co-ordinator
Ms. Lizette Crous	Post Graduate Certificate Environmental Management (University of London)	EAP
Ms. Patricia van der Walt	B.Sc. (Hons) (Applied Science in Environmental Technology)	Jnr. EAP

Detailed CV's for the project team are appended (Appendix G).

1.3 Current situation

The Fourie's Poultry Roodekraal free-range farm has three existing free-range chicken clusters (Refer to Figure 1). Each cluster has ten free-range houses that can accommodate 150 000 chickens per production cycle (15 000 chickens per house).

There is no municipal supply of water to the farm. Groundwater is abstracted from a number of boreholes on the property and stored in JoJo tanks at each cluster. From the JoJo tanks the water is fed into the houses using an automated stainless steel drinking system.

Chicken feed is stored in 15 ton feed silos next to each chicken houses. The feed is fed into the houses by a spiral auger and falls into feeding pans.

The interaction between chickens and their micro-environment is a significant problem in poultry production. A change in micro-environment affects the chicken's growth rate, feeding efficiency, body weight and mortality rate. Changes in a facilities' micro-environment can be caused by factors such as seasonal changes, poor lighting and inadequate stocking density. A well-defined micro-environment should therefore be maintained for optimum production.

Each house is therefore built to specifications that ensure optimal health and therefore optimal growth of the chickens. The frame of each house consists of a steel beam structure, specially designed and pre-fabricated off-site. During construction, the steel frames are assembled on the prepared concrete

floor, walled and roofed (tin roof). The walls and ceilings of each house are cladded internally with insulation material.

The system uses suspended drinker lines with special nipple attachments that allow for efficient distribution of clean drinking water to the chickens. The height of the drinker lines and feeding pans are adjusted as the chickens grow. The nipple attachments on the drinker lines each act as a non-return valve, preventing unnecessary spillage of water within the houses. This also assists in keeping the bedding within the houses dry.

Coal-fired exothermic hot water generators are used to heat the free-range houses. Insulation and other design aspects of these houses ensure that heat is captured and retained for longer periods.

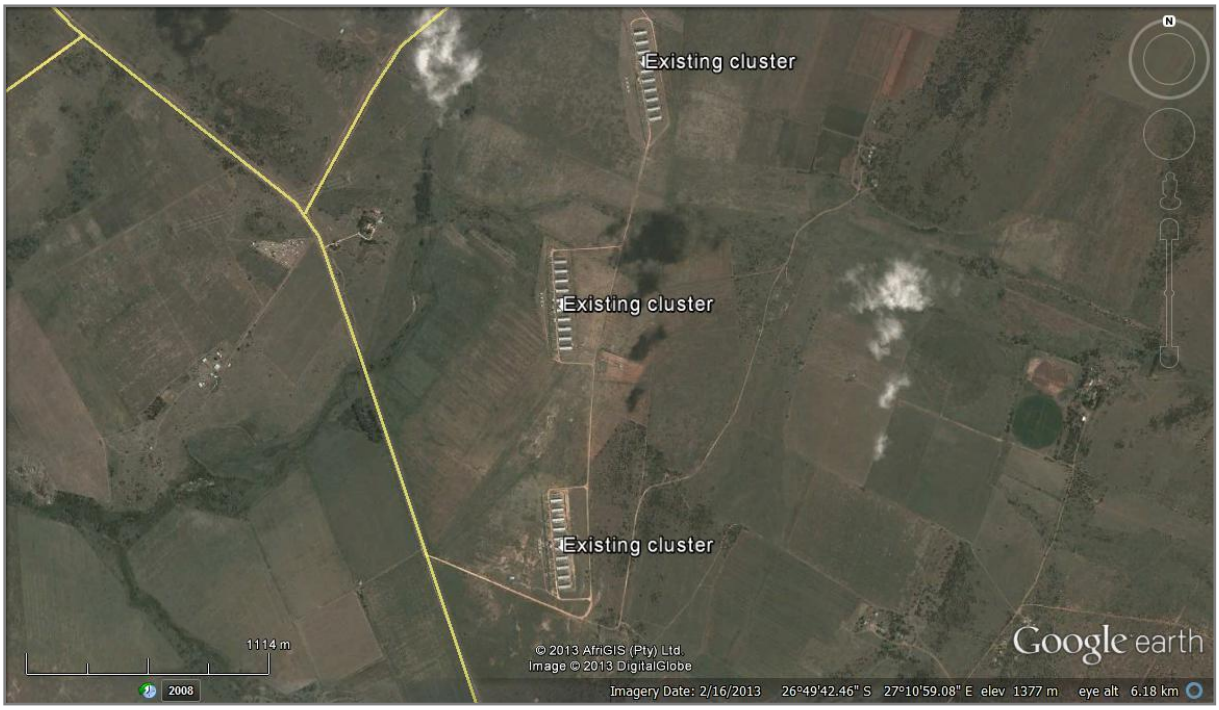


Figure 1: The three existing free-range clusters

1.3.1 Current operating activities

Each production cycle is 54 days long, including five days for cleaning and disinfection of the houses. There are 6.7 production cycles per year. When the free-range chickens are approximately 1.85kg in weight, they are caught and transported to the Fourie's Poultry abattoirs in Potchefstroom for slaughtering.

Litter (manure and bedding mixture)

Sunflower shells are used as bedding material in the houses. The bedding material is manually turned to ensure that it remains dry. Each house produces approximately 15 tons of litter (mixture of manure and bedding material) per production cycle. After each cycle, the litter is gathered and collected with

brooms and shovels into bags that are loaded onto trucks for removal off site. The litter is then removed by a feedlot operator.

Mortalities

Much care is given to the overall well-being of the chickens throughout each production cycle, however, there will always be a percentage of the chickens that will not survive (mortalities) due to the limitations and challenges of each production cycle. The mortality rate is estimated to be between 3 and 8%. Mortalities are removed from the houses and placed in a separate, locked mortality room outside the bio-security boundary of each cluster. The mortalities are collected on a daily basis and taken to the Fourie's Poultry rendering facility, situated outside of Potchefstroom.

Domestic waste and wastewater

Twelve employees currently work at the farm. Domestic waste generated on the premises is removed by the applicant on a regular basis to the Phelophepa landfill site, managed by the Tlokwe City Council.

Water Use

As there is no municipal water, the farm is dependent on two boreholes for the provision of clean water for domestic use and farming activities. Water is mainly used at the houses for drinking water and to wash the houses. Abstracted groundwater is stored in five 5 000 litre JoJo tanks at each cluster. Shift soap and GPC 8 sanitiser (both biodegradable) are used to clean and disinfect each house. Wash water is channelled away from the houses into the surrounding environment.

Domestic wastewater (sewage) generated on site, is disposed of into French drains.

Electricity

Eskom electricity is the main power supplier. A backup diesel generator is also available at each cluster in the event of a power failure. The houses are directed from East to West so that they can be exposed to as much sunlight, thereby minimising electricity usage for heating in the winter months.

1.4 Proposed Activity

Fourie's Poultry would like to expand their Roodekraal free-range chicken farm to meet an increasing demand for chicken in South Africa. The proposed expansion entails the construction of an additional free-range chicken house cluster (Refer to Figure 2 for proposed site). This cluster will consist of ten houses, each with a capacity to house 15 000 chickens per production cycle. The total development footprint of the new cluster will be approximately 5.5ha. This will include the houses, office and residential buildings for workers, internal road infrastructure, open spaces between the houses and a bio-security buffer zone surrounding all buildings.

The new cluster will be built to the same specifications and operated in the same way as the existing clusters. It will add 150 000 chickens to the current production capacity of the farm.

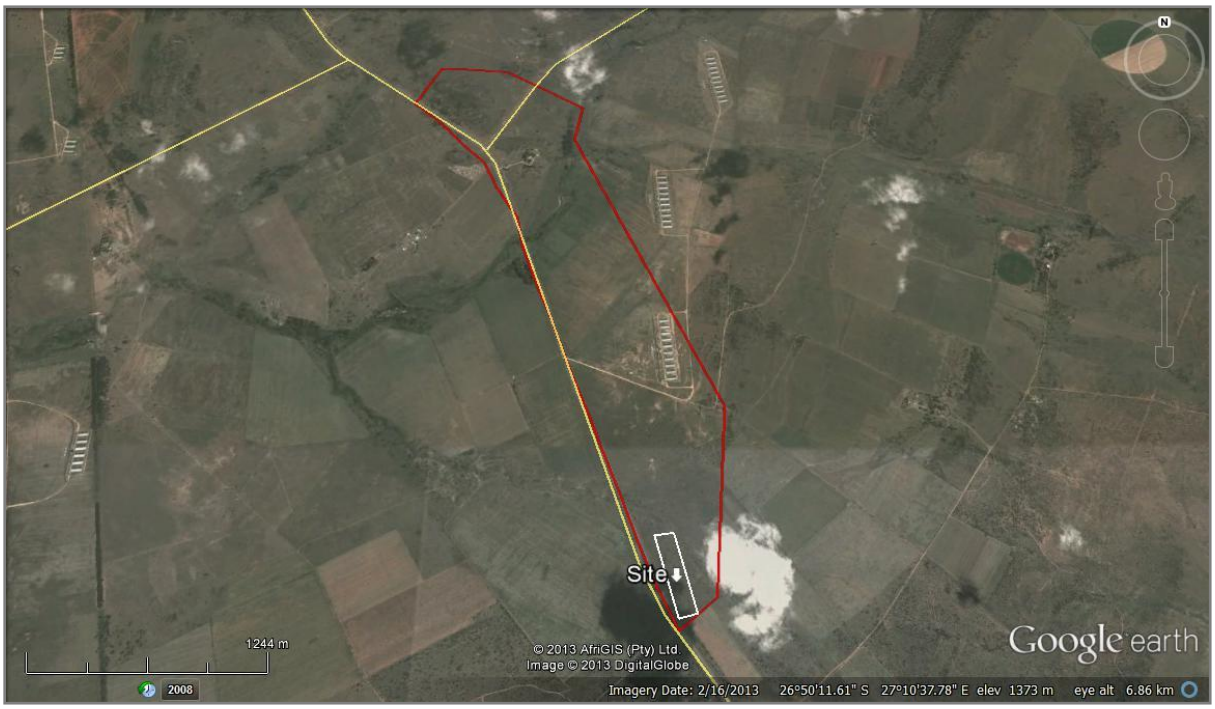


Figure 2: Aerial layout of the proposed site (Google Earth).

1.5 Environmental Authorisation Requirements

In accordance with the regulations published in GN R. 543, R. 544 and R. 546 of 18 June 2010, in terms of section 24D of the National Environment Management Act, 1998 (Act No. 107 of 1998), as amended, the applicant is required to carry out a Basic Assessment for the following activities (Refer to Table 1):

Table 1: Listed activities being applied for (NEMA)

Listed Activity	Description as per the Listing Notice	Reason for triggering the listed activity
Listing notice 1, R. 544 of 18 June 2010, Activity No. 22	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.	A new access road will be built to gain access to the farm.
Listing notice 1, R. 544 of 18 June 2010, Activity No. 32(ii)	The expansion of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by: (ii) more than 5 000 poultry per facility situated outside an urban area	An existing free-range chicken farm (situated outside of an urban area) will be expanded through the construction of an additional cluster of chicken houses. The cluster will consist of ten (10) free-range chicken houses. Each will accommodate 15 000 chickens per production cycle. The new cluster will therefore house 150 000 chickens per production cycle.
Listing notice 3, R. 546 of 18 June 2010, Activity No. 4	The construction of a road wider than 4 metres with a reserve less than 13,5 metres. **(c) In North West :** i. Outside urban areas, in: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an International Convention; (ee) Critical biodiversity areas (Terrestrial Type 1 and 2 and Aquatic Type 1) as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 kilometres from national parks or world	A new access road will be built to gain access to the farm. The road will fall within the North West Aquatic Critical Biodiversity Area 2, the North West Terrestrial Critical Biodiversity Area 2 and the North West Ecological Support Area 2. The site is approximately 8km from the Vredefort Dome.

	heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from a biosphere reserve.	
Listing notice 3, R. 546 of 18 June 2010, Activity No. 12	The clearance of an area of 300 square meters or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. **(a)** Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; **(b)** Within critical biodiversity areas identified in bioregional plans; **(c)** Within the littoral active zone or 100 meters inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.	An area of approximately 5.5ha (55 000m^2) will be cleared to construct the chicken houses and associated infrastructure. The site falls within the North West Aquatic Critical Biodiversity Area 2, the North West Terrestrial Critical Biodiversity Area 2 and the North West Ecological Support Area 2.
Listing notice 3, R. 546 of 18 June 2010, Activity No. 13	The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this list. (2) the undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No. 544 of 2010. **(a)** Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority. **(b)** National Protected Area Expansion Strategy Focus	An area of approximately 5.5ha (55 000m^2) will be cleared to construct the chicken houses and associated infrastructure. The site falls within the North West Aquatic Critical Biodiversity Area 2, the North West Terrestrial Critical Biodiversity Area 2 and the North West Ecological Support Area 2. The site is approximately 8km from the Vredefort Dome.

	areas. **(e) In North West:** i. Outside urban areas, in: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an International Convention; (ee) Critical biodiversity areas (Type 1 only) and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 kilometers from national parks or world heritage sites or 5 kilometers from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve.	

1.6 Proposed Locality

The proposed site is on Portion 2 (remaining extent) of the farm Roodekraal 454 IQ, approximately 16.7km to the south-east of Potchefstroom. The farm is 248.6113ha in size and lies within the Tlokwe City Council (local municipality) of the Dr. Kenneth Kaunda District Municipality. The GPS coordinates for the proposed site are: 26°50'56.62''S; 27°10'51.03''E. Refer to figure 3 and Figure 4 for a site photograph and the locality map, respectively.

Table 2: Direction and distance to the nearest towns.

Closest town	Approximate distance from site	Direction from town
Potchefstroom (CBD)	16.7km	South-east
Vredefort (CBD)	25km	North-west
Parys (CBD)	27.8km	West of north-west

Figure 3: Example of a free-range chicken farm cluster. The feed silos are also shown next to each house.

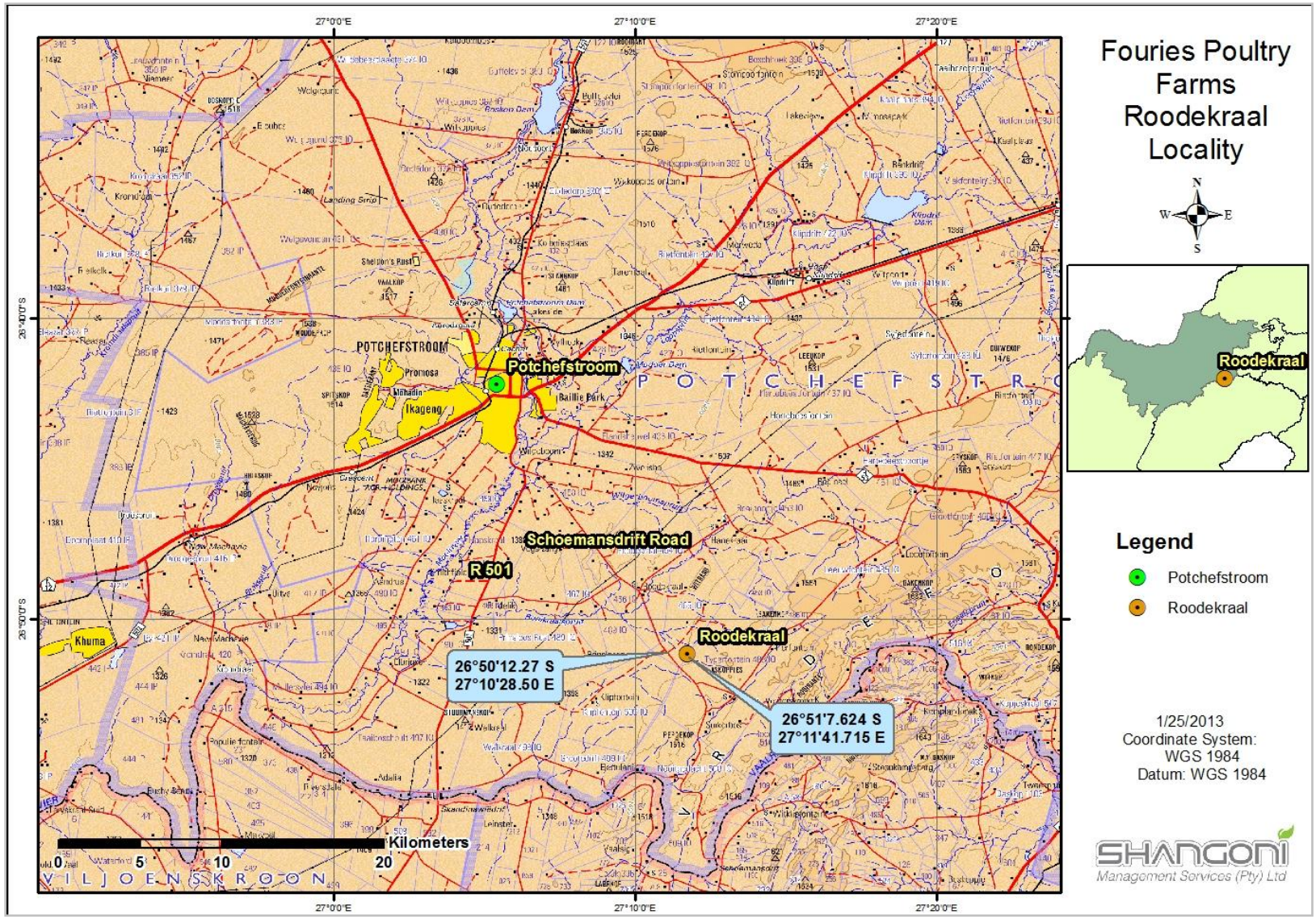


Figure 4: Site locality map.

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 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 Biophysical aspects affected

2.1.1 Regional climate

Rainfall

The site lies within a warm-temperate region with summer rainfall. The area receives a mean annual rainfall of more than 593mm per annum (Mucina and Rutherford, 2006). The minimum and maximum long-term temperature range for the site is given in the figure below.

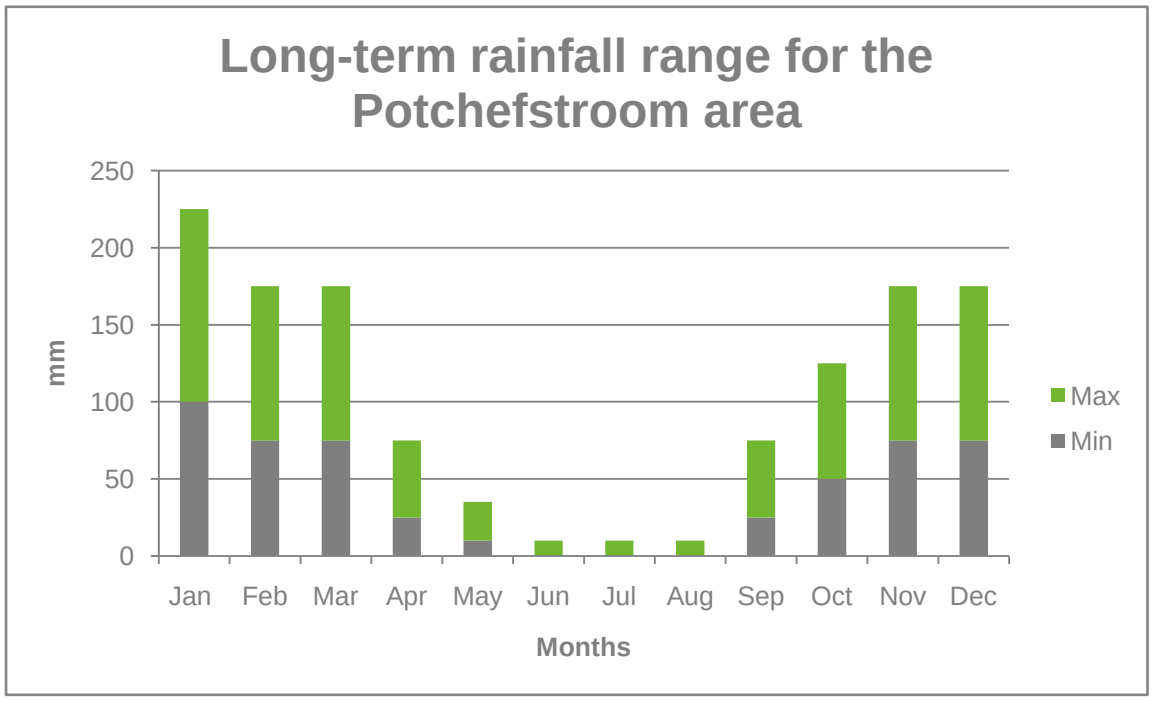


Figure 5: Long-term rainfall range for the area (AGIS Comprehensive Atlas, 2007)

Temperature

Summer temperatures in the area are high and severe frost is frequently experienced during winter months (Mucina and Rutherford, 2006). The minimum and maximum temperature range for the site is given in the figure below.

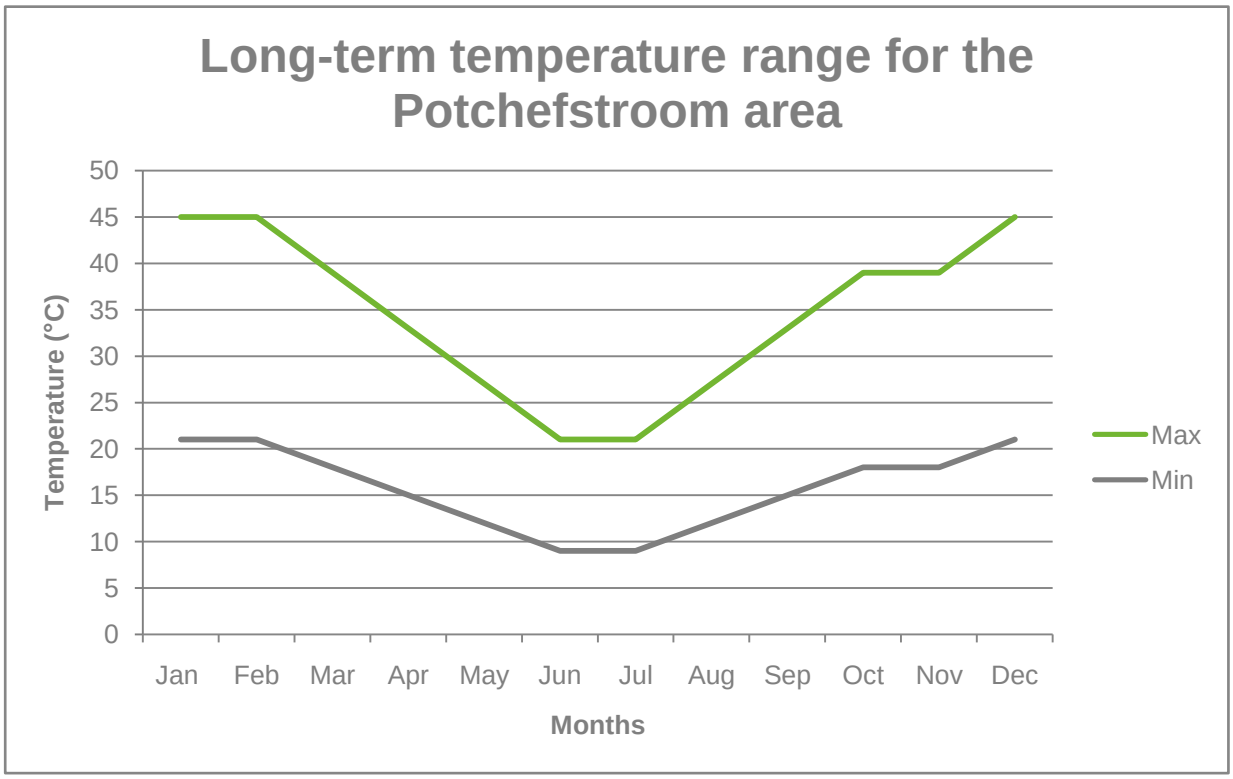


Figure 6: Long-term temperature range for the area (AGIS Comprehensive Atlas, 2007)

Wind

The site is approximately 16.7km from Potchefstroom. Wind data from the Potchefstroom weather station has therefore been used for this application. The wind roses are given in the figures below (www.windfinder.com).

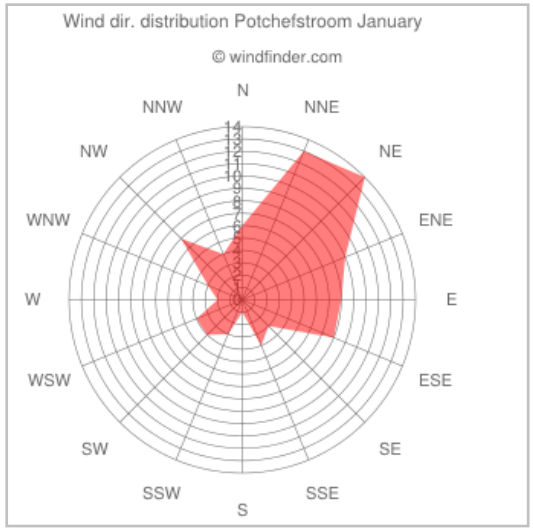


Figure 7: Wind Rose – January

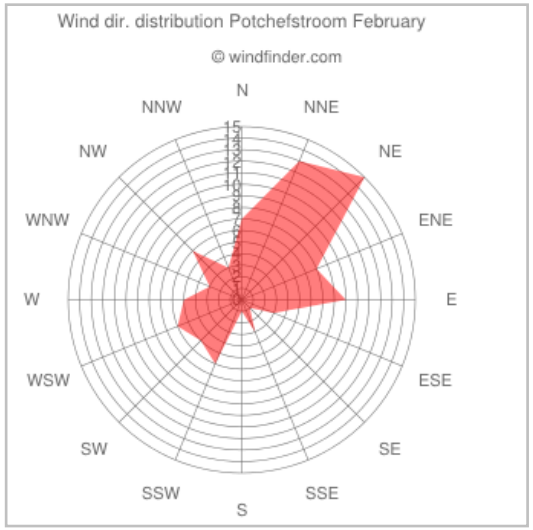


Figure 8: Wind Rose – February

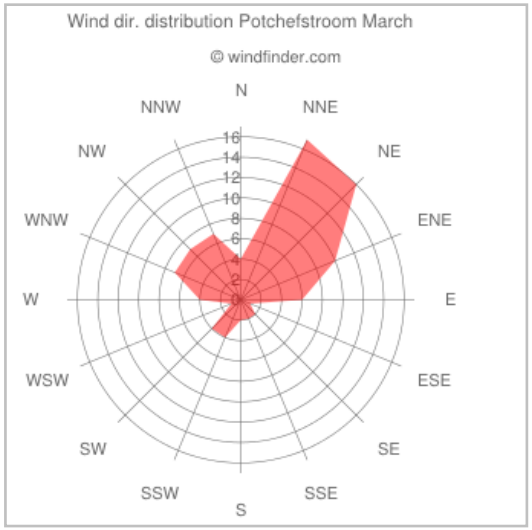


Figure 9: Wind Rose – March

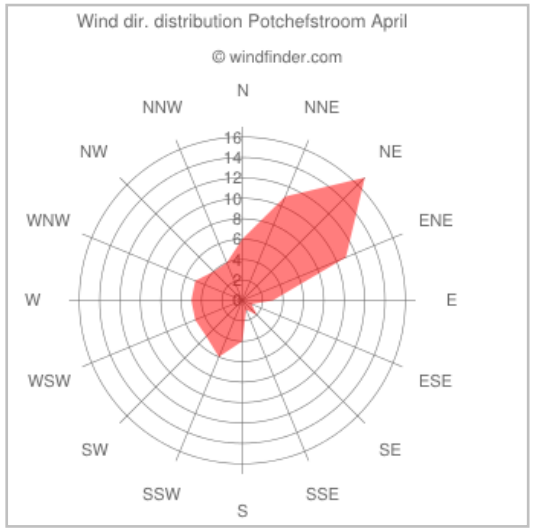


Figure 10: Wind Rose – April

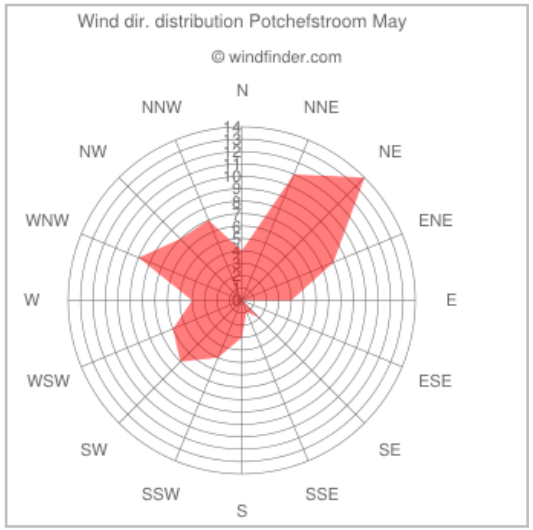


Figure 11: Wind Rose – May

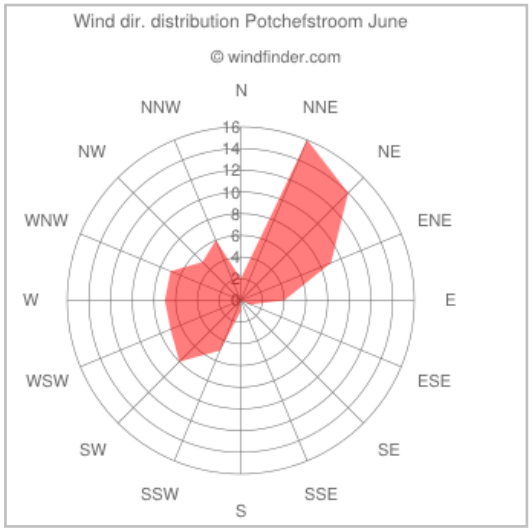


Figure 12: Wind Rose – June

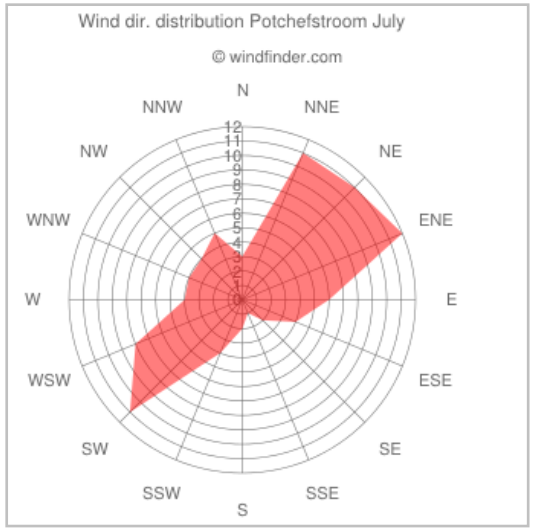


Figure 13: Wind Rose – July

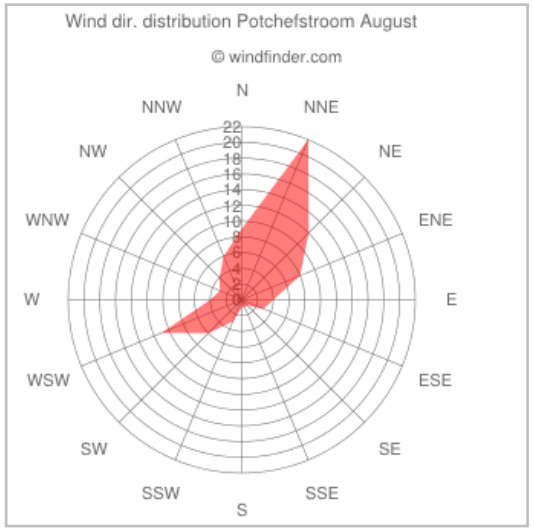


Figure 14: Wind Rose – August

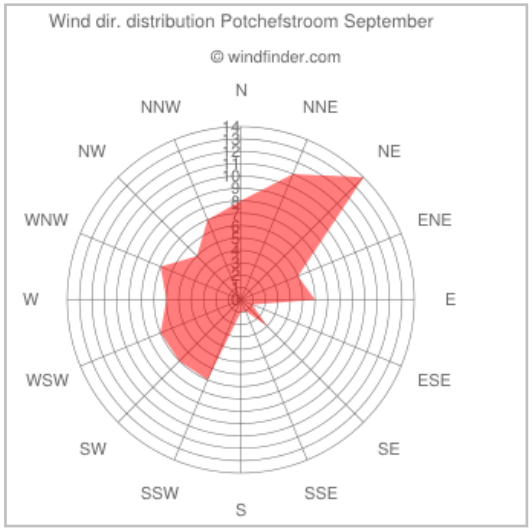


Figure 15: Wind Rose – September

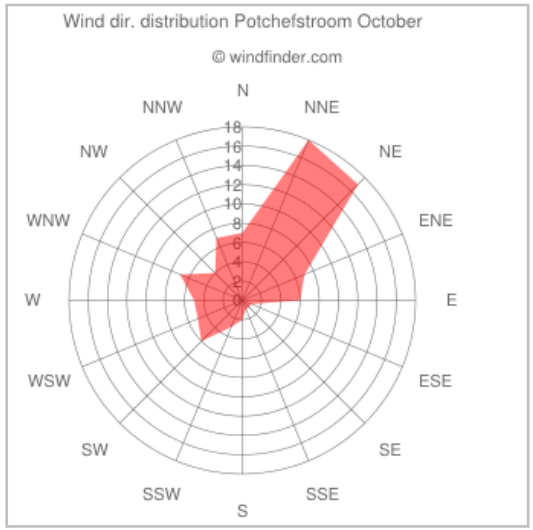


Figure 16: Wind Rose – October

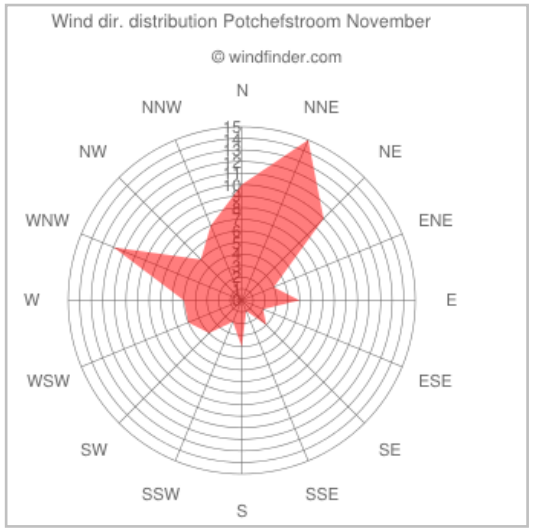


Figure 17: Wind Rose – November

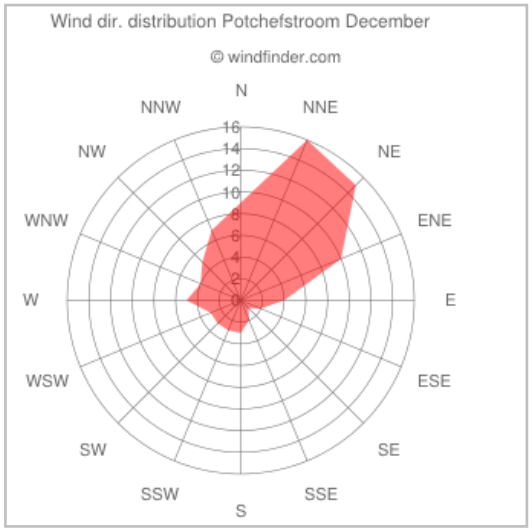


Figure 18: Wind Rose – December

2.1.2 Geology

The site is mainly underlain by vaalian and carbonate rocks of the Malmani Subgroup (Chuniespoort group), with a small area to the south that is underlain by vaalian and siliciclastic rocks (Refer to Figure 19).

2.1.3 Topography

The area consists of slightly undulating plains with rocky chert ridges that dissect the landscape. The elevation of the site is between 1 320 and 1 400 metres above mean sea level (Refer to Figure 20). The slope of the site is up to 5% (AGIS, 2007).

The proposed free-range chicken cluster will be approximately 10km east from the R501 and approximately 12km south from the R53. The proposed cluster will therefore not be visible from the R501 and R53. A dirt road runs along the western side of the site however the incident of viewers on this road will be very low.

2.1.4 Soils

Soil properties important in environmental management include the soil textural class, soil mineralogy, bulk density, porosity and organic carbon content. The property is dominated by undifferentiated structureless soils. Structureless soils are loose and sandy and usually comprise high-potential agricultural land (Refer to Figure 21).

Table 3: Site specific conditions obtained from the Agricultural Geo-Referenced Information System.

Parameter	Area	Condition
Soil type	Larger northern part	Red, yellow and/or greyish soils with a high base status.
	Southern tip	Soils with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils.
Soil susceptibility to water erosion	Larger northern part	Land with low to moderate susceptibility to water erosion. Generally gently to moderately sloping land.
	Southern tip	Land with low susceptibility to water erosion. Generally level to gently sloping.

Soil susceptibility to wind erosion	Larger northern part	Sandy loams dominant
	Southern tip	Loamy sands sub-dominant
Soils with special management requirements (shifting sands, soils with textural contrast, soils with poor or impeded drainage, swelling clays and non- saline soils)	Entire site	Scarce or absent

2.1.5 Land Use and Land Capability

The property is currently used for free-range chicken production. Present on the site is a farm house and one of the three existing Fouries Poultry Roodekraal free-range chicken house clusters together with the associated road infrastructure.

The remainder of the property including the site to be developed consists of cultivated land, unimproved grassland, thicket and bushland, as described by the Tlokwe City Council Spatial Development Framework (SDF) (Refer to Figure 22). The land use (rearing of free-range chickens) is considered to be in compliance with the SDF.

2.1.6 Fauna and Flora

The site is situated in the Highveld Grassland Biome at the intersection of the Rand Highveld Grassland and Carletonville Dolomite Grassland vegetation types (Mucina & Rutherford 2006) (Refer to Figure 23).

According to the South African National Biodiversity Institute Biodiversity GIS, 2007, the proposed site lies within the North West Aquatic Critical Biodiversity Area 2, the North West Terrestrial Critical Biodiversity Area 2 and the North West Ecological Support Area 2 and is approximately 8km from the Vredefort Dome.

As a result of the above, to determine the impact of the proposed development on the fauna and flora of the proposed site, an ecological fauna and flora habitat survey was conducted by Mr. R.F. Terblanche of Anthene Ecological CC. The habitat survey comprised of the following components:

- Two visits to the site to record the fauna and flora present at the site;
- The conservation importance of the site was evaluated based on the presence or absence of threatened plant and animal species; and
- Incorporation of all available information into a report. This includes the identification of potential ecological impacts of the proposed development and possible mitigation measures that can be applied.

The table below outlines the main habitat and landscape characteristics of the site abstracted from the ecological habitat survey report. The full report can be viewed under Appendix D.

Table 4: Main habitat and landscape characteristics of the site (Terblanche, 2013)

Habitat Feature	Description
Topography	The site proposed for the developments lies on gentle slopes or flats in an area that is slightly undulating.
Rockiness	No rocky ridges are present at the site proposed for development.
Presence of wetlands	A small non-perennial watercourse is present at the site near the footprint proposed for the development.
Vegetation	Site is characterised by well developed grass layer with indigenous tree species such as *Acacia karroo* (sweet thorn), *Searsia pyroides* (taaibos), *Ziziphus mucronata* (buffalo-thorn) and *Searsia lancea* (karee) that are also well represented. A conspicuous presence of the shrub *Asparagus laricinus* (katbos) at the site is characteristic of these encroachment where this plant species is frequent. The dwarf shrub *Ziziphus zeyheriana* (dwarf buffalo-thorn) is present in more open areas among the grass. Grass layer consists of indigenous grass present species such as *Cymbopogon caesius, Themeda triandra, Hyparrhenia hirta, Elionurus muticus, Eragrostis chloromelas, Aristida congesta* and *Cynodon dactylon*. Herbaceous plant species include species such as *Hilliardiella oligocephala, Helichrysum nudifolium, Helichrysum rugulosum* and *Conyza podocephala*. The climber *Clematis brachiata* (traveller's joy) is also common at places at the site.
Signs of disturbances	Vegetation at the site is in fair condition.
Connectivity of natural vegetation at the site and between the site and surrounding areas	The site allocated for the proposed development is not part of a corridor of particular conservation importance

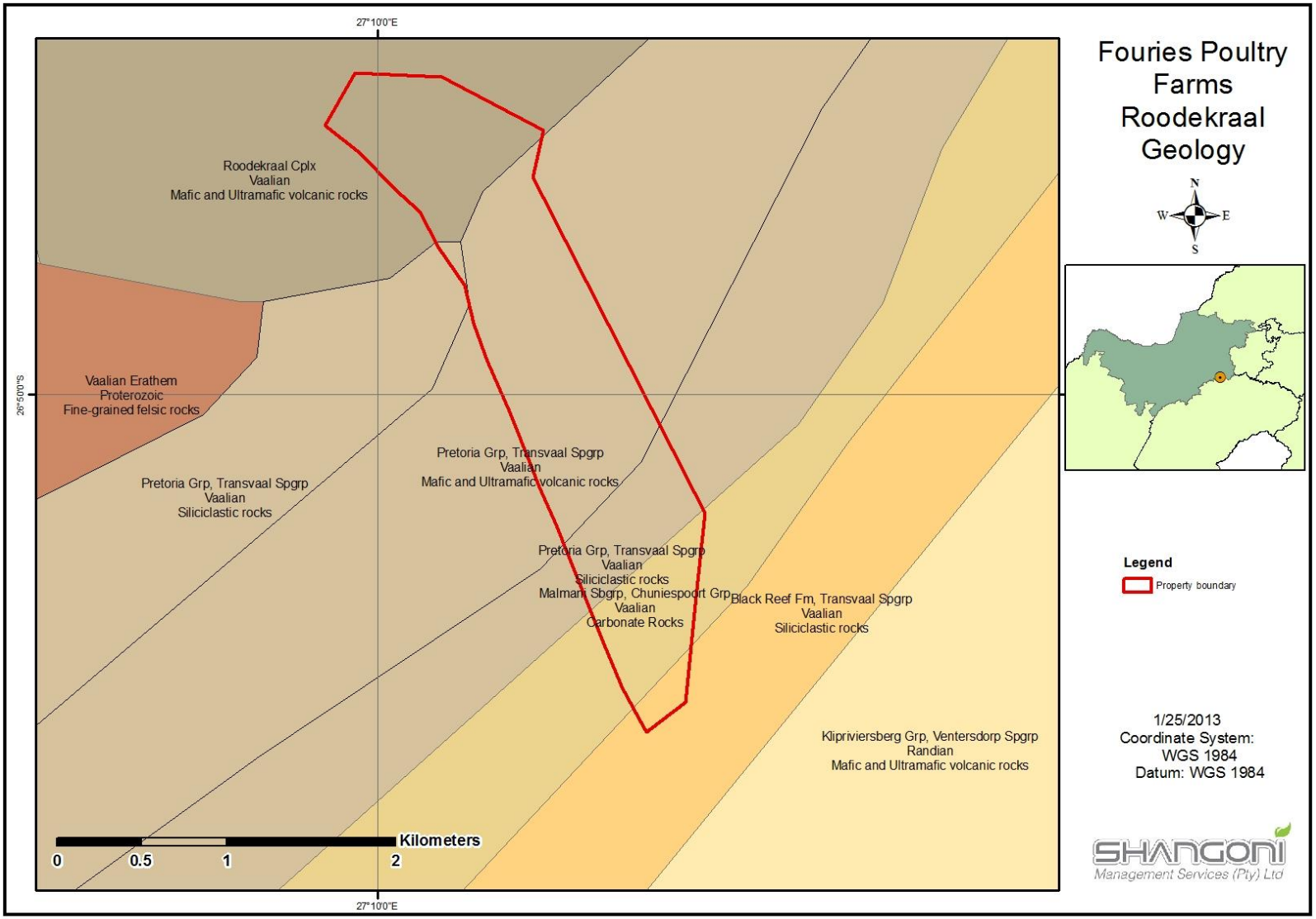


Figure 19: Geology of the site..

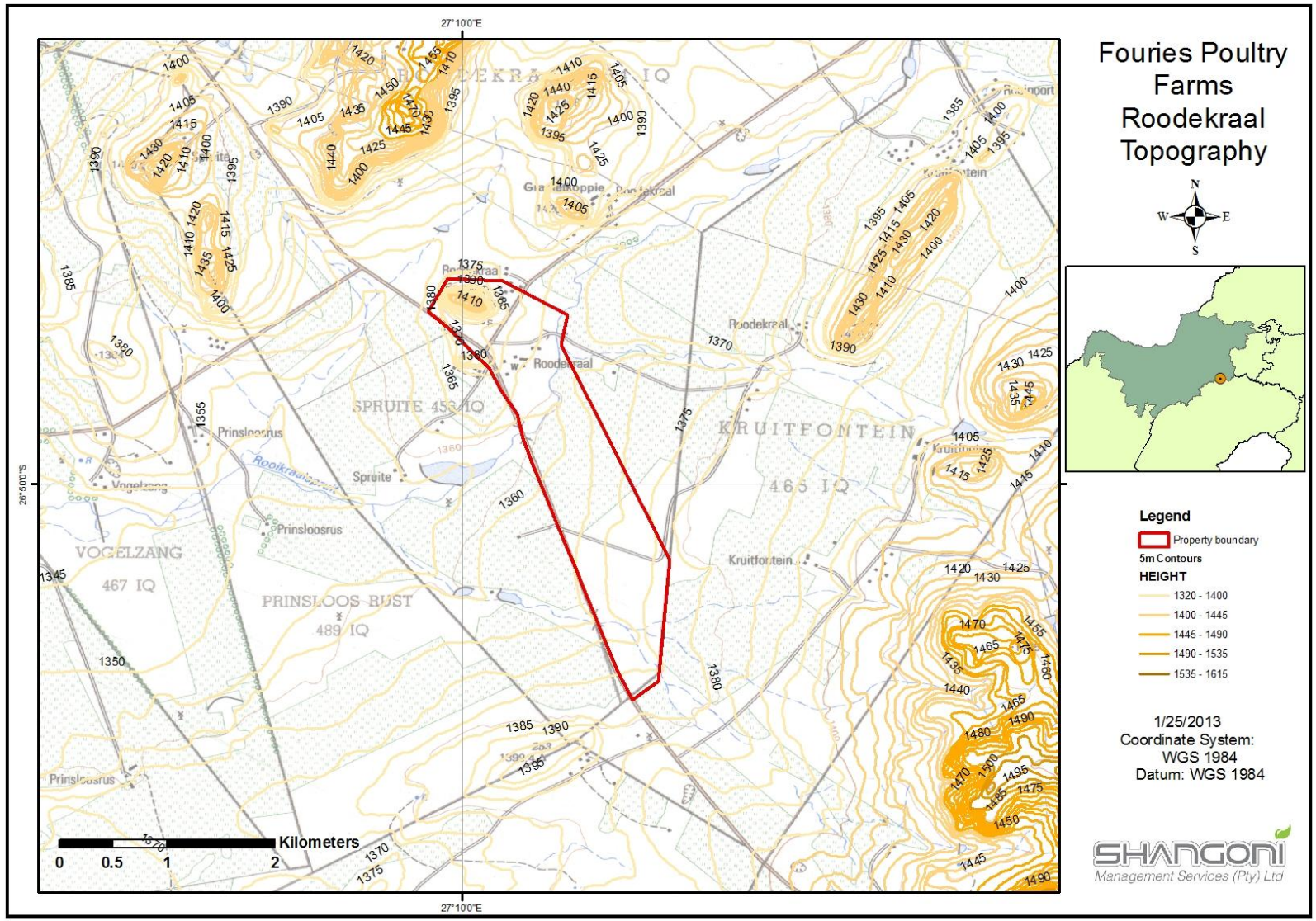


Figure 20: Topography of the site.

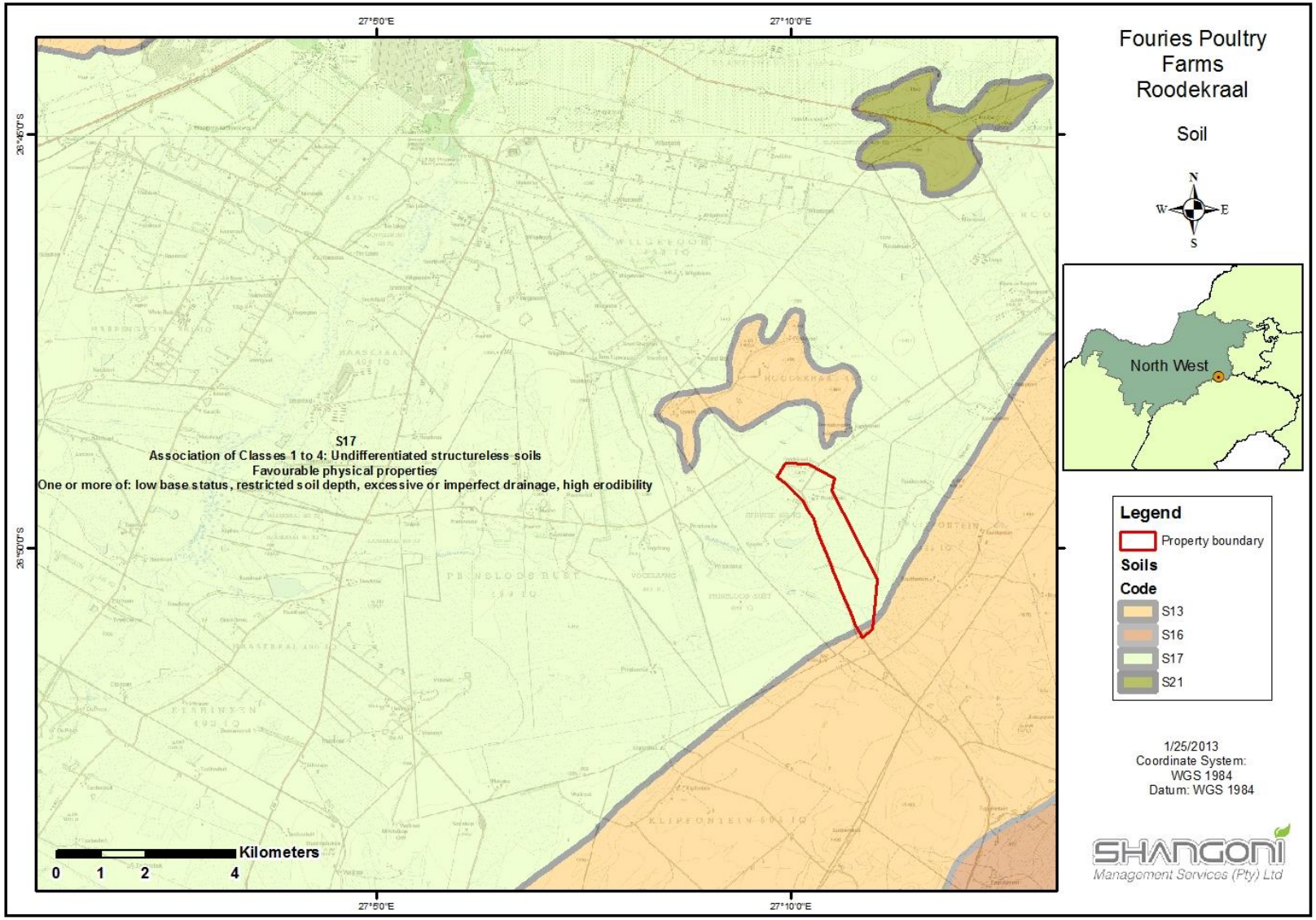


Figure 21: Soils present at the site

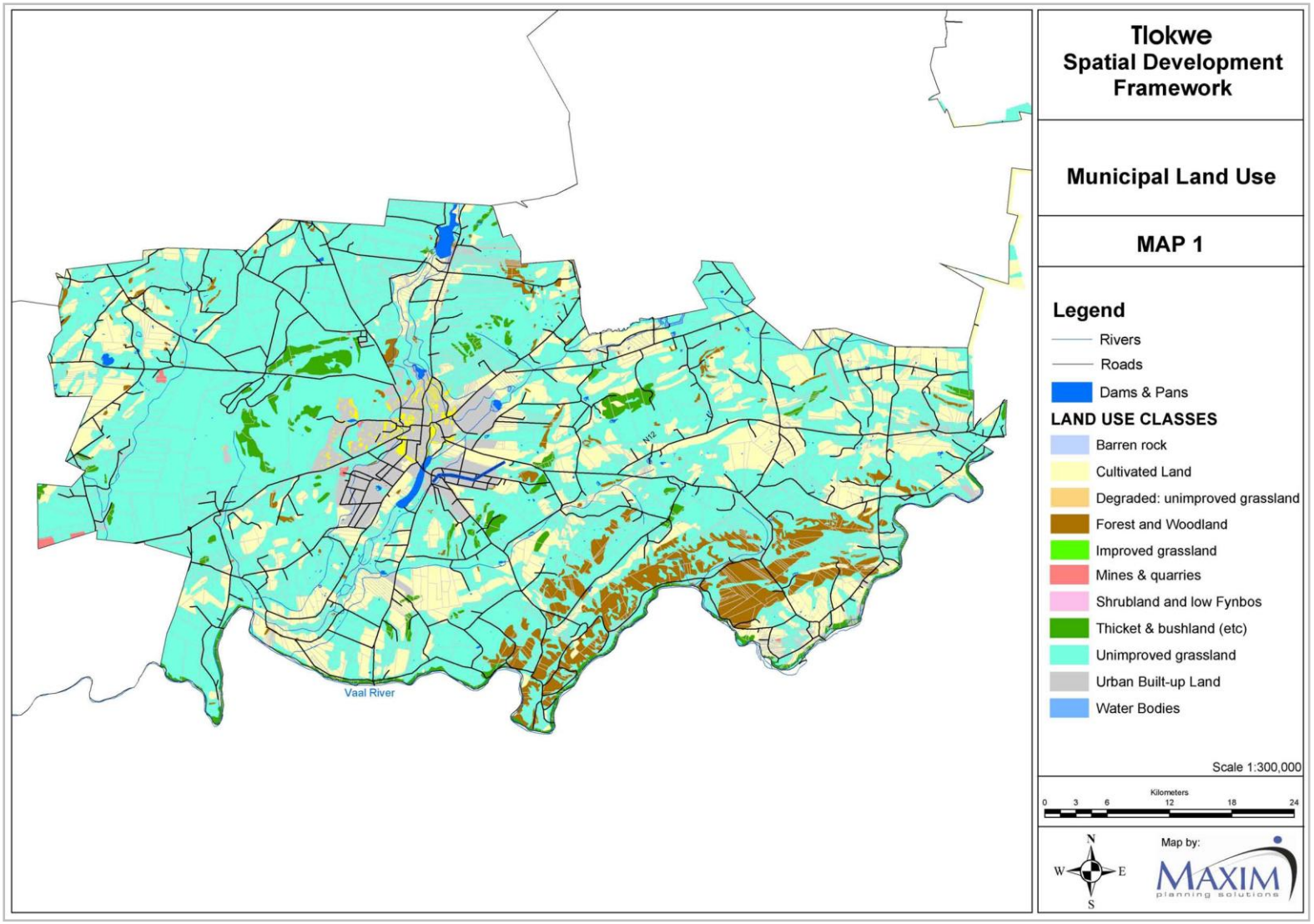


Figure 22: SDF for Tlokwe Local Municipality

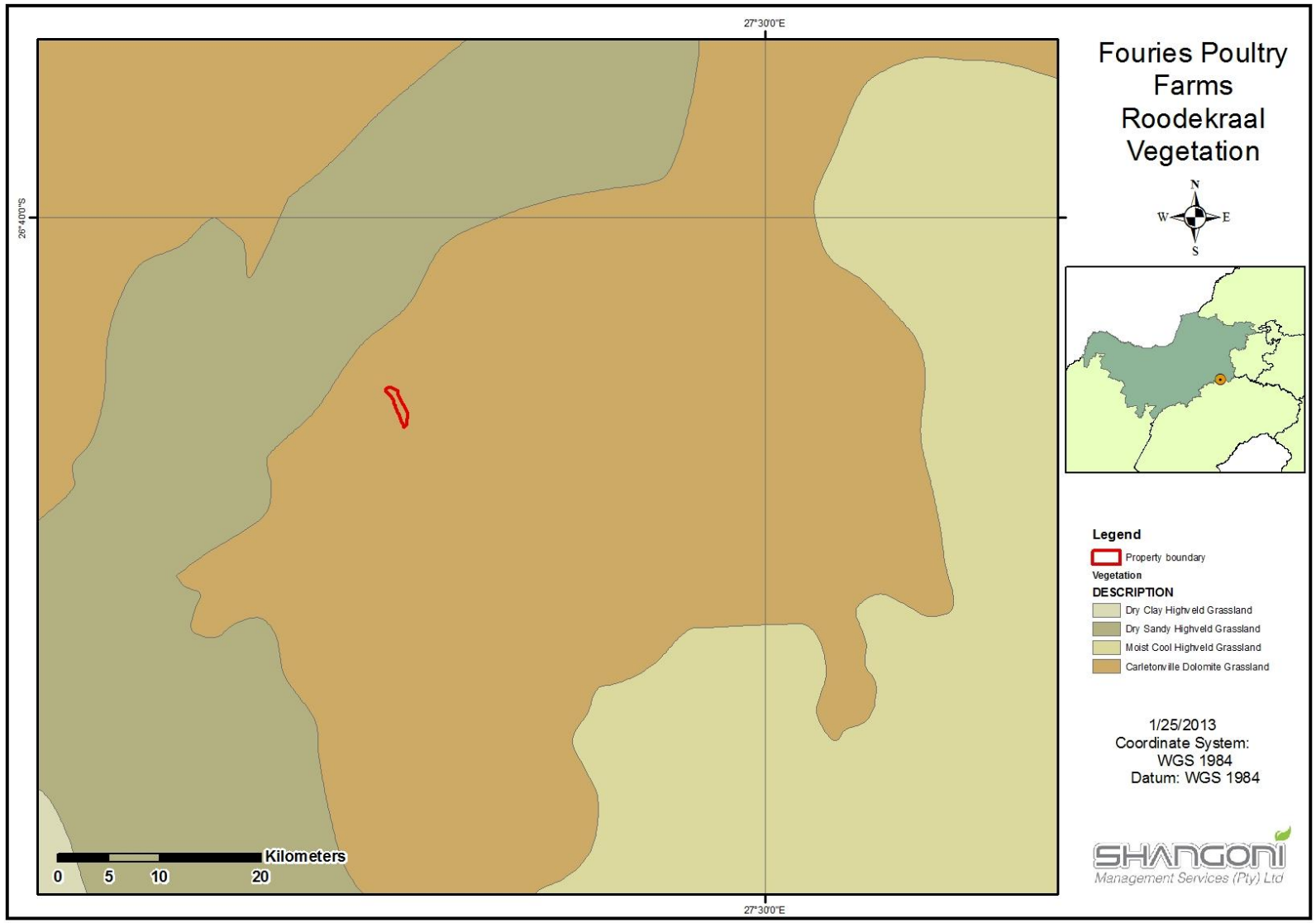


Figure 23: Vegetation at the site.

2.1.7 Water

Surface Water

The proposed site lies within the Vaal River catchment, in the upper reaches of the Vaal River (Upper Vaal Water Management Area or WMA). The catchment covers an area of 192 000km^2 and the mean annual runoff for this area of the Vaal River catchment is approximately 1 100 million m^3/annum. (PDNA et al., 2004).

A tributary of the Mooi River flows past the western side of the Roodekraal farm. This tributary joins the Mooi River to the Rooikraalspruit, that runs through the Roodekraal farm. A channelled valley bottom wetland can be found to the western side of the Roodekraal farm (Refer to Figure 24 and Figure 25).

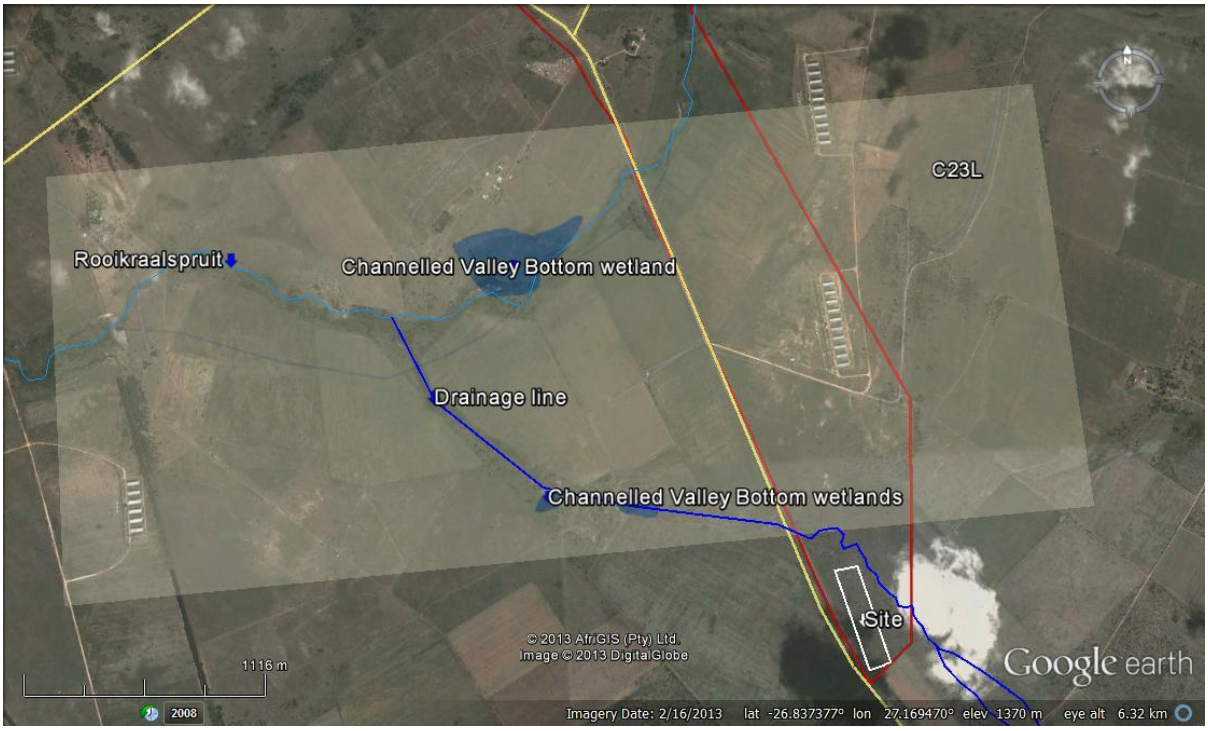


Figure 24: Aerial layout of surface water bodies (Google Earth).

Groundwater

The Roodekraal free-range chicken farm falls within the C23L quaternary drainage region (Refer to Figure 25). Within this region 75m^3 of groundwater may be abstracted per hectare of a property (DWAF, 2004). As the farm is 248.6113ha in size, 18 645.8475m^3 of groundwater may be abstracted on the farm per annum.

Water Authority

The relevant Water Authority is the Upper Vaal regional office, situated in Pretoria.

2.1.8 Air Quality

Emissions

Emissions generated on a free-range chicken farm include:

- Ammonia emissions from chicken manure;
- Carbon dioxide, Carbon monoxide, Sulphur dioxide, Nitrous oxides and Particulate matter emissions from coal fired exothermic hot water generators;
- Particulate emissions from coal and ash storage bunkers;
- Particulate matter (Dust) from trucks driving to and from clusters; and
- Vehicles exhaust emissions.

The Fourie's Poultry Roodekraal free-range farm has three existing free-range chicken clusters, located near the proposed site.

Noise

Noise at and around the proposed site is generated by farming activities, limited vehicle movement, free-range chicken raising activities and some residential activities.

2.1.9 Sites of archaeological and cultural interest

A Phase 1 Heritage Impact Assessment (HIA) was conducted by Anton Pelser of A Pelser Archaeological Consulting. The aim of the study was to locate and/or identify any sites, features or objects of cultural heritage (archaeological and historical) significance at the proposed site and surrounding area (Refer to Section 7: Environmental Impact Assessment Table 18 for the results of the HIA).

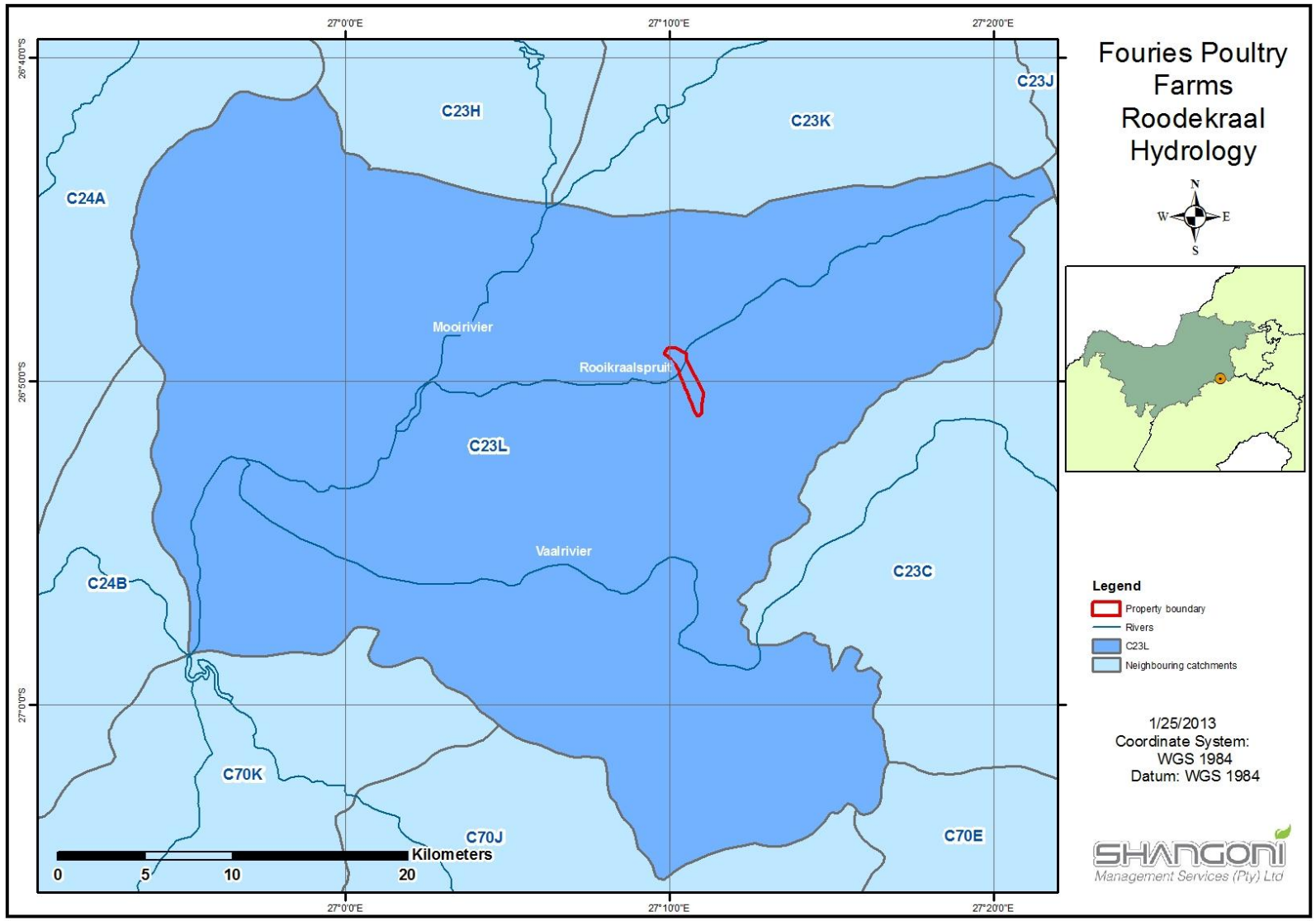


Figure 25: Hydrology of the site.

2.2 Socio-economic aspects

The site is located within the Tlokwe City Council in the Dr. Kenneth Kaunda District Municipality.

2.2.1 Demography

According to the 2011 census, 162 762 people formed part of the 52 537 households in the Tlokwe City Council. The average household size is 3.1 people per household. There are 96.6 men for every 100 women in the municipality and the table below shows the age structure of the municipality.

Table 5: Tlokwe City Council Council age structure - Census 2011 (Statistics South Africa, 2011).

Age Group	Percentage (%)
Under 15 years of age	25.2
15 to 64 years of age	69.1
Over 65 years of age	5.7
Total population	**100**

2.2.2 Major economic activities

Economic activity in the Tlokwe City Council is driven by the manufacturing, services, business sectors and agriculture. The North-West University plays a large role in the provision of services (www.localgovernment.co.za/locals/view/194/tlokwe-local-municipality). The area is also known for diamond mining and the production of maize, sorghum and sunflower (Tlokwe City Council, 2012).

2.2.3 Unemployment and employment

The 2011 census found that the official unemployment rate was 21.6% and the youth unemployment rate (15 to 34 years of age) was 29.5%. The dependency ratio is 44.7 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, 2004 (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), as amended

3.6 Land and Soil Management

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

3.7 Heritage resources

- National Heritage Resources Act, 1999 (Act No. 25 of 1999), 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) as amended. 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 process concerning the planning, construction and operational phases of the proposed expansion of the Fourie's Poultry Roodekraal free-range farm. The community and public have been identified as I&APs and have been given an opportunity to participate in this process. Their comments, whether positive or negative, will influence the decision of the authorities and the developer'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 proposed development;
- 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 proposed expansion project for the duration of the project. 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), as amended, and the vision of Fourie's Poultry.

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), Act No. 107 of 1998, as amended, 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 proposed expansion of the Roodekraal free-range farm:

- 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 Potchefstroom Herald newspaper, informing the public of the process;
- Placement of 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 represent 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&AP

Stakeholders are all the relevant authorities and land owners that may possibly be affected by this project. (Refer to Table 6 for stakeholders identified)

Shangoni sent registered letters or emails to the Departments and Organs of State containing a background information document (BID), map showing the location of the site and a stakeholder registration form. Figure 27 provides an example of the letters sent out to Departments, Organs of State and potential I&APs. Figures 28 and 29 provide proof that notification letters were sent to Departments and Organs of State. Proof of emails sent is attached under Appendix E.

Table 7 provides a list of I&APs that registered and were added to the database of I&APs during the PPP.

Table 6: Stakeholders identified during the PPP.

Contact Person	Department/ Organisation	Postal Address	Contact Details
Mr. Pieter Labuschagne	Tlokwe City Council	PO Box 113 Potchefstroom 2520	Tel: 018 299 5253 Fax: 018 299 5555 Email: pieterl@tlokwe.gov.za
Faith Lephale	Dr. Kenneth Kaunda District Municipality	Private Bag X5017 Klerksdorp 2570	Tel: 018 473 8000 Fax: 018 473 2523
Vutomi Ndlovu	Dr. Kenneth Kaunda District Municipality	Private Bag X5017 Klerksdorp 2570	Tel: 018 473 8041/16 Email: ndlovuv@kaundadistrict.gov.za
HOD: Dr Kgabi Mogajan	North West Department of Agriculture and Rural Development	Private Bag X2039 Mmabatho 2735	Tel: 018 389 5111
HOD: Mr. Makgothi Thobakgale	North West Department of Public Works, Roads and Transport	Private Bag X2080 Mmabatho 2735	Tel: 018 388 1435
HOD: Mr. Seth Ramagaga	North West Department of Local Government and Traditional Affairs	Private Bag X2099 Mmabatho 2735	Tel: 018 388 2893
Human Settlements HOD: Mr. MP Motlogelwa Public Safety HOD: Mr. Baily Mahlakoleng	North West Department of Human Settlement, Public Safety and Liaison	Private Bag X 2145 Mmabatho 2735	Tel: 018 39 10412/0406 Tel: 018 381 9100

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
Ms Florah Mamabolo	Department of Water Affairs – Upper Vaal WMA	Private Bag X313 Pretoria 0001	Tel: (012) 392-1361 Fax: (012) 336 8664 Email: MamaboloF@dwa.gov.za
Mr. Douw Prinsloo	Adjacent Land Owner	PO Box 403 Potchefstroom 2520	
Mr. Louis Linde	Adjacent Land Owner	PO Box 355 Potchefstroom 2520	Email: 21248214@nwu.ac.za
Nikky Pienaar	Adjacent Land Owner	PO Box 404 Potchefstroom 2520	Email: npienaar@adelpragfriesianstud.com
G.P. Schoeman	Dome Conservancy	PO Box 20720 Noordbrug 2522	Tel: 018 291 1649 Fax: 086 618 4809
Adv de Waal Nigrini	Noordwes Grondeienaarsvereniging		Email: dknigrini@mweb.co.za
Mr. Johan Beytell	Vrystaat Grondeienaarsvereniging	PO Box 442 Klerksdorp 2570	Email: fh@gds.co.za
Ishmael Maputle, Deputy Director	Vredefort Dome		Email: mohaumaputle@gmail.com
Motlatsi Maleka	National Department of Tourism		Tel: 012 310 3893 Email: mmaleka@tourism.gov.za

Rinah Jonga	National Department of Tourism		Tel: 051 448 7249 Email: rjonga@tourism.gov.za
Manager: Tourism & Marketing Ms. Magda Cilliers	Department Economic Development, Tlokwe City Council	PO Box 113 Potchefstroom 2520	Tel: 018 299 5371 Fax: 018 297 0351 Email: magdac@tlokwe.gov.za
Mr. Francois de Villiers	Dome Adventures	PO Box 5179 Kockpark 2532	Tel: 018 291 1055 Cell: 072 185 4900 Email: info@domeadventures.co.za
Gladys Tladi / Nametso Gabanakgosi	North West Parks and Tourism Dr Kenneth Kaunda Tourism Information & Development Centre	PO Box 912 Potchefstroom 2520	

Table 7: Registered I&APs.

Interested and Affected Party	Department/ Organisation	Postal Address	Contact Details
Ntombi Rikhotso	Thlokwe City Council – Environmental Management	PO Box 113 Potchefstroom 2520	Tel: 018 299 5254 Fax: 018 299 5258 Cell: 073 334 1840 Email: ntombir@tlokwe.gov.za
Dr. P.J. Mokaila	North West Department of Agriculture and Rural Development	Private Bag X2039 Mmabatho 2735	Tel: 018 389 5723 Fax: 018 392 4377 Cell: 082 528 3440 Email: pmokaila@nwpg.gov.za
Bogadi Mogoerane	Department of Human Settlements, Public Safety and Liaison	Private Bag X19 Mmabatho 2735	Tel: 018 381 9108/52 Fax: 018 381 5671 Email: bmogoerane@nwpg.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

SHANGONI
Management Services (Pty) Ltd

Shangoni Management Services Pty (Ltd)
Reg: [illegible] VAT: [illegible]

Tel: (27(0)12 807 7036 Fax: (27(0)12 807 1014
E-mail info@shangoni.co.za www.shangoni.co.za
Block C8, Block@Nature, 472 Botterklapper Street, The Willows 0081
PO Box 74726, Lynnwood Ridge, 0040

7 March 2013

EIA Ref: NWP/EIA/110/2012; SMS Ref: FOU-ROO-12-10-22

Department of Water Affairs – Upper Vaal WMA
Private Bag X313
Pretoria
0001

Attention: Ms Florah Mamabolo

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: EXPANSION OF THE ROODEKRAAL FREE-RANGE CHICKEN FARM

Fouries Poultry Farms (Pty) Ltd. (Trading name: Chubby Chick Enterprises) has initiated a Basic Assessment Process to obtain Environmental Authorisation from the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT) for the proposed expansion of their Roodekraal free-range chicken farm on Portion 2 of the farm Roodekraal 454 IQ.

The proposed expansion of the free-range chicken farm will require environmental authorisation subject to a Basic Assessment Process as required by Sections 21 to 25 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 Basic Assessment Process.

Attached please find a background information document, map of the site and a stakeholder registration form in respect of the application. Should you wish to register as an I&AP and/or inform us of any other I&APs and/or organisation and/or organ of state who should be notified, please contact Lizette Crous before the expiry date on **16 April 2013.**

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.

Regards,

Lizette Crous
Environmental Assessment Practitioner

Directors: RE Hayes, J Nel, JA van Rooy, CJ Engelbrecht, HL de Villiers

Figure 26: Example of the notification letters sent

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 (PTY) LTD. PO BOX 74726 Lynnwood Ridge 0040

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	Dr Kenneth Kaunda District Municipality Private Bag X5017 Klerksdorp 2570 Nthabiseng NkhoLu					REGISTERED LETTER RD 769 320 799 ZA
2	NWG Dept of Local Gov and Traditional Affairs Private Bag X2077 Mmabatho 2735 HOD: Mr Sam Ramsgaga					REGISTERED LETTER RD 769 320 048 ZA
3	NW Dept of Public Works, Roads and Transport Private Bag X2080 Mmabatho 2735 HOD: Mr Jonathan Tlhoaele					REGISTERED LETTER RD 769 320 085 ZA
4	Unistar Grondeienaarsvereniging PO Box 445 Klerksdorp 2570 Mr Tommy Boysen					REGISTERED LETTER RD 745 320 051 ZA
5	Dome Conservancy PO Box 20430 Noordbrug 2522 GP Scholtz					REGISTERED LETTER RD 769 320 082 ZA
6	PO Box 404 Potchefstroom 2520 Nicky Pienaar					REGISTERED LETTER RD 630 031 313 ZA
7	Tlokwe City Council PO Box 113 Potchefstroom Mr Peter Labuschagne					REGISTERED LETTER RD 769 320 079 ZA
8	Dome Adventures PO Box 5779 Rockpark 2532 Mr Francois de Villiers					REGISTERED LETTER RD 769 320 721 ZA
9	NW Parks and Tourism – Dr Kenneth Kaunda Tourism Information & Development Centre PO Box 4112 Potchefstroom 2520 Nomalese Fesamotsi					REGISTERED LETTER RD 769 320 285 ZA
10	Tlokwe City Council Department Environmental Management PO Box 113 Potchefstroom 2520 Ms Magda Cilliers					REGISTERED LETTER RD 769 320 754 ZA
	Total / Totaal	R	R	R	R	

Number of letters posted
Getal briewe gepos: 10

Signature of client
Handtekening van kliënt: [signature]

Signature of accepting officer
Handtekening van aanneembeampte

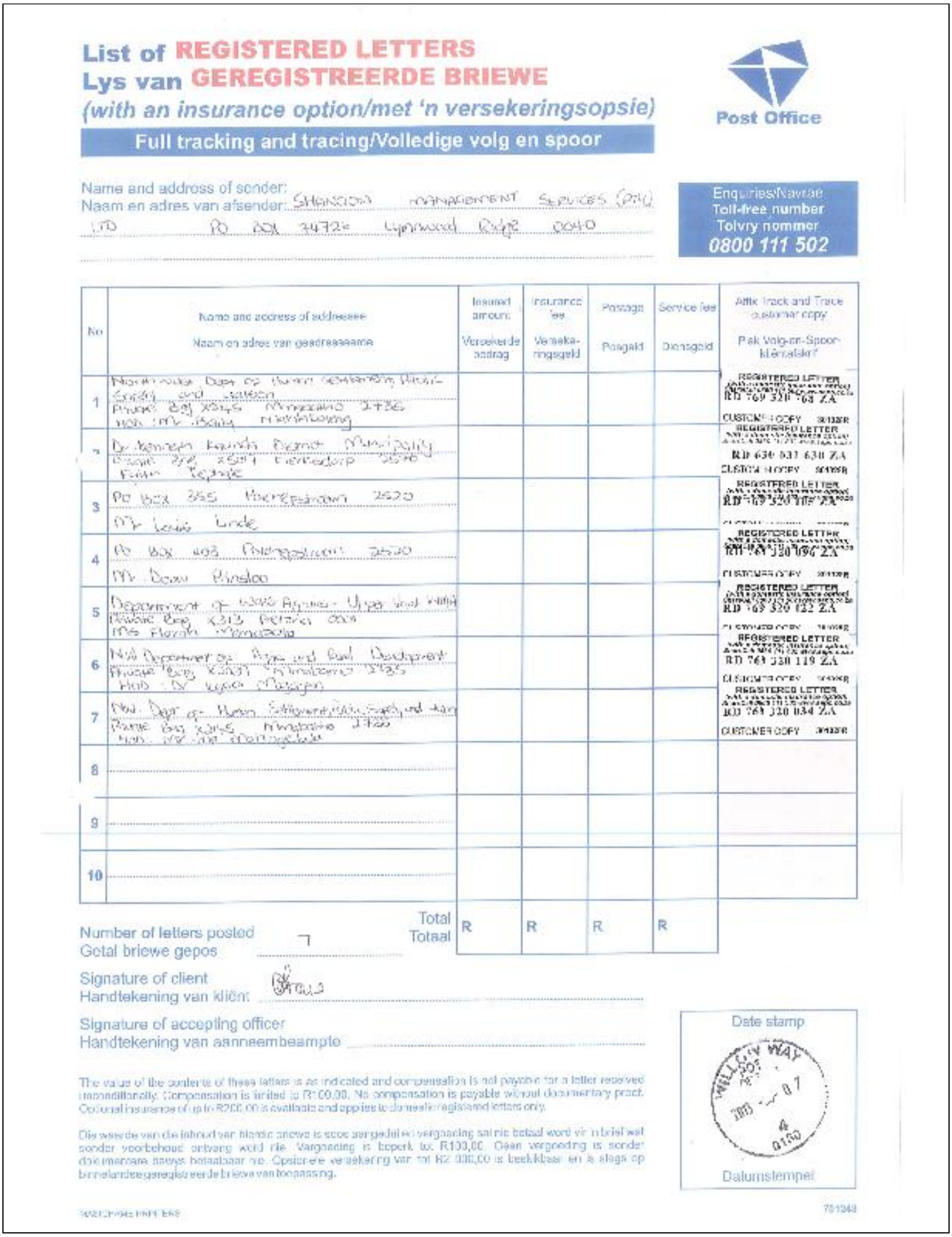
Date stamp / Datumstempel: Wallacy Way 2013 -07- 04

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 R2000,00 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.

MASHAHANE PRINTERS 751248

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

Name and address of sender:
Naam en adres van afsender: SHANGONI MANAGEMENT SERVICES (PTY) LTD PO BOX 74726 Lynnwood Ridge 0040

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 / Verseke-ringsgeld	Postage / Posgeld	Service fee / Diensgeld	Affix Track and Trace customer copy / Plak Volg-en-Spoor-klantstrokie
1	North West Dept of Human Settlements, Public Safety and Liaison Private Bag X2145 Mmabatho 2735 Hon. Mr Bailey [illegible]					REGISTERED LETTER RD 769 320 163 ZA CUSTOMER COPY
2	Dr Kenneth Kaunda District Municipality Private Bag X5017 Klerksdorp 2570 Faith Tlhapi					REGISTERED LETTER RD 630 631 630 ZA CUSTOMER COPY
3	PO Box 355 Potchefstroom 2520 Mr Louis Linde					REGISTERED LETTER RD 769 320 105 ZA
4	PO Box 403 Potchefstroom 2520 Mr Dawn Prinsloo					REGISTERED LETTER RD 769 320 096 ZA CUSTOMER COPY
5	Department of Water Affairs - Upper Vaal WMA Private Bag X313 Pretoria 0001 Ms Florah Mamabolo					REGISTERED LETTER RD 769 320 122 ZA CUSTOMER COPY
6	NW Department of Agric and Rural Development Private Bag X2039 Mmabatho 2735 Hon. Dr [illegible]					REGISTERED LETTER RD 769 320 119 ZA CUSTOMER COPY
7	NW Dept of Human Settlements, Public Safety and Liaison Private Bag X2145 Mmabatho 2735 Hon. [illegible]					REGISTERED LETTER RD 769 320 034 ZA CUSTOMER COPY
8						
9						
10						
	Total / Totaal	R	R	R	R	

Number of letters posted
Getal briewe gepos 7

Signature of client
Handtekening van kliënt

Signature of accepting officer
Handtekening van aanneembeampte

Date stamp
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 R2 000,00 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 8: Comments received.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN
Bogadi Mogoerane	20 March 2013	**APPLICATION FOR ENVIRONMENTAL AUTHORISATION: EXPANSION OF SUNVALLEY BROILER FACILITIES AND ROODEKRAAL FREE RANGE CHICKEN FARM** The attached documents were erroneously forwarded to our Department. Please be advised that our Department is responsible for Road Traffic Management, Road Safety, SAPS and Crime Prevention. Please forward them to the correct department.
Mr. Phillip Hine	22 March 2013	**EXPANSION OF THE ROODEKRAAL FREE-RANGE CHICKEN FARM** Thank you for your indication that development is planned to take place in this area. In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required. The quickest process to follow for the archaeological component is to contract a specialist (see www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place. The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also

		make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites. ***If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority to indicate that there is no necessity for any further assessment.*** An assessment of palaeontological resources will not be required for this particular project. Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed. Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

4.5.4 EAP's responses to comments received

Table 9: EAP's responses.

RAISED BY	DATE	RESPONSE
Bogadi Mogoerane	20 March 2013	**ACKNOWLEDGEMENT OF RECEIPT: COMMENTS ON THE APPLICATION FOR ENVIRONMENTAL AUTHORISATION: EXPANSION OF THE ROODEKRAAL FREE-RANGE CHICKEN FARM** Dear Bogadi, Your letter dated 20 January 2013 and received by us on the 20th of March 2013 refers: We hereby acknowledge receipt of

		your letter and comments contained therein. The Notification of Application for Environmental Authorisation documents were sent to the North West Department of Human Settlement, Public Safety and Liaison, Public Safety and Liaison Branch, so that the Department could register as an Interested and Affected Party should the Department feel that it has an interest in the proposed project. Your comments will be included in the Basic Assessment Reports for the above mentioned project. We thank you for your inputs.
Mr. Phillip Hine	22 March 2013	I hereby acknowledge receipt of SAHRA's comments on the proposed Expansion of the Roodekraal free-range chicken farm project (EIA Ref Nr: NWP/EIA/110/2012). The comments will be included and addressed in the Basic Assessment Reports for this project.

4.5.5 Comments and Responses Report

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

Table 10: Comments and responses report.

RAISED BY	DATE	ISSUE / COMMENT / CONCERN	RESPONSE
Bogadi Mogoerane	20 March 2013	**APPLICATION FOR ENVIRONMENTAL AUTHORISATION: EXPANSION OF SUNVALLEY BROILER FACILITIES AND ROODEKRAAL FREE RANGE CHICKEN FARM** The attached documents were erroneously forwarded to our Department. Please be advised that our Department is	**ACKNOWLEDGEMENT OF RECEIPT: COMMENTS ON THE APPLICATION FOR ENVIRONMENTAL AUTHORISATION: EXPANSION OF THE ROODEKRAAL FREE-RANGE CHICKEN FARM** Dear Bogadi,

		responsible for Road Traffic Management, Road Safety, SAPS and Crime Prevention. Please forward them to the correct department.	Your letter dated 20 January 2013 and received by us on the 20th of March 2013 refers: We hereby acknowledge receipt of your letter and comments contained therein. The Notification of Application for Environmental Authorisation documents were sent to the North West Department of Human Settlement, Public Safety and Liaison, Public Safety and Liaison Branch, so that the Department could register as an Interested and Affected Party should the Department feel that it has an interest in the proposed project. Your comments will be included in the Basic Assessment Reports for the above mentioned project. We thank you for your inputs.
Mr. Phillip Hine	22 March 2013	**EXPANSION OF THE ROODEKRAAL FREE-RANGE CHICKEN FARM** Thank you for your indication that development is planned to take place in this area. In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed	I hereby acknowledge receipt of SAHRA's comments on the proposed Expansion of the Roodekraal free-range chicken farm project (EIA Ref Nr: NWP/EIA/110/2012). The comments will be included and addressed in the Basic Assessment Reports for this project.

		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 to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required. The quickest process to follow for the archaeological component is to contract a specialist (see www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place. The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites. ***If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority to indicate that there is no***	

		necessity for any further assessment. An assessment of palaeontological resources will not be required for this particular project. Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed. Should you have any further queries, please contact the designated official using the case number quoted above in the case header.	

4.5.6 Registering Stakeholders

All key stakeholders were registered and will receive this draft Basic Assessment Report for comment.

4.5.7 Press Notices

In accordance with the National Environmental Management Act (NEMA) 1998, (Act No. 107 of 1998), as amended, a notice was placed in the Potchefstroom Herald newspaper on the 1st of March 2013. The press notice is shown below (Refer to Figure 30).

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

4.5.8 Placement of Public Notices

Notices (A2) were placed on the perimeter fence of the site as well as at the access road to the site (Refer to Figure 31 and Figure 32). Wording for the site notices is given in Figure 33.

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 the Draft Basic Assessment Report

This draft Basic Assessment Report will be sent to all Departments and Organs of State as well as all registered I&APs in order to obtain their comments. The report will also be submitted to the North-West Department of Economic Development, Environment, Conservation and Tourism for review.

4.5.11 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.

34 Potchefstroom Herald 1 Maart 2013

Kennisgewings — Herald — Legals

Carletonville Herald
Tel: (018) 788-6693, Fax: (018) 787-5655

Potchefstroom Herald
Tel: (018) 293-0750, Fax: (018) 293-0759

KENNISGEWINGS • NOTICES

LIQUIDATION – AND DISTRIBUTION ACCOUNT IN DECEASED ESTATE LYING FOR INSPECTION

In the estate of late WILLIAM CLIFFORD CURLE-WIS (Identity number 560103 5025 089) RESIDING AT 2 UMTATA STREET CARLETONVILLE, who passed away on 10 July 2011 (estate number 4054/2012). The First and Final Liquidation – and Distribution Account in the Estate will be open for Inspection for a period of 21 days of the office of the Master of the High Court, PRETORIA, and magistrate district, CARLETONVILLE, as from 01/03/2013. NAME AND ADRESS OF AGENT: SCHEEPERS & AUCAMP ATTORNEYS, PO BOX 1061, Potchefstroom, 2520

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KENNISGEWINGS • NOTICES

LIKWIDASIE – EN DISTRIBUSIEREKENING IN BESTORWE BOEDEL WATTER INSAE LÊ.

In die boedel VAN WYLE WILLIAM CLIFFORD CURLEWIS (Identiteitsnommer 560103 5025 08 9) woonagtig was te 2 UMTATA STRAAT, CARLETONVILLE, wat oorlede is op 10 JULIE 2011 (boedelnommer 4054/2012.). Die eerste en finale Likwidasie en Distribusierekening in die bogenoemde boedel sal ten kantore van die Meester van die Hooggeregshof, PRETORIA, en die Landros . CARLETONVILLE, ter insae lê vir 'n tydperk van 21dae vanaf 01/03/2013. NAAM & ADRES VAN AGENT:
SCHEEPERS & AUCAMP PROKUREURS
Posbus 1061, Potchefstroom, 2520

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KENNISGEWINGS • NOTICES

SHANGONI Management Services (Pty) Ltd

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION

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) has been lodged with the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT). The activity requires an application subject to a Basic Assessment Process as required by Sections 21 to 25 of Government Notice R. 543 of the EIA Regulations.

Ref. Number: NWP/EIA/110/2012

Applicant: Fouries Poultry Farms (Pty) Ltd. Trading name: Chubby Chick Enterprises

Project Name: Expansion of the Roodekraal free-range chicken farm

Project Location: Portion 2 of the farm Roodekraal 454 IQ. The project site is located approximately 16.6km to the south-east of Potchefstroom.

Project Description: The proposed expansion project will entail the following:

- An existing free-range chicken farm (situated outside of an urban area) will be expanded through the construction of an additional cluster of chicken houses.
- The cluster will consist of ten (10) free-range chicken houses. Each house will accommodate 15 000 chickens per production cycle. The new cluster will therefore house 150 000 chickens per production cycle.
- The development footprint of the new cluster will be approximately 5.5ha.
- An existing access road to the proposed site will be expanded and upgraded.

Activities applied for:

- EIA Regulations Listing Notice 1 of 2010 (R544), Activity No. 32(ii)
- EIA Regulations Listing Notice 1 of 2010 (R544), Activity No. 47(ii)
- EIA Regulations Listing Notice 3 of 2010 (R546), Activity No. 12
- EIA Regulations Listing Notice 3 of 2010 (R546), Activity No. 13
- EIA Regulations Listing Notice 3 of 2010 (R546), Activity No. 19

Invitation to participate: Should you wish to be included in the register of Interested and Affected Parties, please submit your name, contact information, and interest in the matter in writing to the below address not later than 15 April 2013.

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, 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 Documents.

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KENNISGEWINGS • NOTICES

IN DIE DISTRIK VAN POTCHEFSTROOM GEHOU TE POTCHEFSTROOM

SAAK NO.: 4933/2011

In die saak tussen:
DRS BOSMAN RABIE & VENNOTE EISER
EN
J·D ACKERMAN VERWEERDER

EKSEKUSIE VERKOPING

Ter voldoening van 'n Vonnis van die Landdroshof te Potchefstroom en die daaropvolgende beslagleggingsbevel gedateer 16 November 2012 word die goedere hierin uiteengesit per geregtelike veiling verkoop te die kantore van die Balju van die Laerhof Potchefstroom, op 13 Maart 2013 om 11:00 vir kontant sonder reserwe aan die hoogste bieër, naamlik:

1 X SUZUKI DINLI 50CC MOTORFIETS
1 X MOTORFIETS SLEEPWA CA864618

(GET) P M SCHUTTE
AWIE WRIGHT PROKUREURS
DU PLOOYSTRAAT 69
POTCHEFSTROOM
POSBUS 1200
POTCHEFSTROOM
2520
TEL: (018) 297-5575/6
VERW: CS/AB/P.3563

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KENNISGEWINGS • NOTICES

SHANGONI Management Services (Pty) Ltd

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION

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) has been lodged with the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT). The activity requires an application subject to a Basic Assessment Process as required by Sections 21 to 25 of Government Notice R. 543 of the EIA Regulations.

Ref. Number: NWP/EIA/109/2012

Applicant: Fouries Poultry Farms (Pty) Ltd. Trading name: Chubby Chick Enterprises

Project Name: Expansion of the Sun Valley broiler facilities

Project Location: Portion 31 (remaining extent) of the farm Welgegund 375 IQ. The project site is located approximately 17.2km to the north-west of Potchefstroom.

Project Description: The proposed expansion project will entail the following:

- An existing broiler chicken farm (situated outside of an urban area) will be expanded through the construction of an additional broiler house cluster.
- The cluster will consist of eight (8) broiler chicken houses. Each house will accommodate 30 000 chickens per production cycle. The new cluster will therefore house 240 000 chickens per production cycle.
- The development footprint of the new cluster will be approximately 6ha.
- An existing access road to the proposed site will be expanded and upgraded.

Activities applied for:

- EIA Regulations Listing Notice 1 of 2010 (R544), Activity No. 32(ii)
- EIA Regulations Listing Notice 1 of 2010 (R544), Activity No. 47(ii)
- EIA Regulations Listing Notice 3 of 2010 (R546), Activity No. 12
- EIA Regulations Listing Notice 3 of 2010 (R546), Activity No. 13
- EIA Regulations Listing Notice 3 of 2010 (R546), Activity No. 19

Invitation to participate: Should you wish to be included in the register of Interested and Affected Parties, please submit your name, contact information, and interest in the matter in writing to the below address not later than 15 April 2013.

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, 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 Documents.

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KENNISGEWINGS • NOTICES

REGSKENNISGEWINGS

Hiermee wil ons graag al ons lesers inlig dat alle Regskennisgewings voortaan in die regsafdeling gepubliseer sal word.

LEGAL NOTICES

Herewith we would like to inform our readers that all legal notices will be published in the legals department.

Tlokwe City Council • Stadsraad • Lekgotlatoropo

TLOKWE CITY COUNCIL, POTCHEFSTROOM
DEPARTMENT: COMMUNITY SERVICES

TENDER 6/2013: SUPPLY AND DELIVERY OF TWENTY (20) 4M³ SKIP CONTAINERS TO TLOKWE CITY COUNCIL, POTCHEFSTROOM.

Tenders are hereby invited in terms of Section 83 of Local Government: Municipal Systems Act 2000, (Act 32 of 2000) for the supply and delivery of a tractor to Tlokwe City Council.

CLOSING TIME AND DATE: 12H00, FRIDAY 15 March 2013

Only tenders from registered service providers will be accepted.

20 Points for functionality will apply for this tender.

The 20 points for functionality will be evaluated as follows:

Functionality table:

Number of years of providing similar service	Points allocated
Up to 5 years	5 Points
Between 5 and 10 years	10 Points
Between 10 and 15 years	15 Points
Between 15 and 20 years	20 Points

Proven track record of the number of years of supplying similar skips must be submitted.

Tenderers must obtain a minimum of 50% (10 points) of the functionality points for their financial proposal to be considered.

Sealed tenders, duly endorsed with, "Tender 6/2013:" "SUPPLY AND DELIVERY OF TWENTY (20) 4 M3 SKIP CONTAINERS TO TLOKWE CITY COUNCIL, POTCHEFSTROOM" must be placed in the tender box in room 315, Third Floor, Municipal Buildings, Dan Tloome Complex, corner of Sol Plaatjie Avenue and Wolmarans Street, Potchefstroom or addressed to PO Box 113, Potchefstroom, 2520.Tenders will be received until 12h00, 15 March 2013 and will be opened in public in the Committee Room, Municipal Offices, Dan Tloome Complex corner of Sol Plaatjie Avenue and Wolmarans Street, Potchefstroom.

Telegraphic or electronic tenders will not be accepted.

To ensure that your tender is not exposed to invalidation, documents are to be completed in accordance with the conditions and tender rules contained in the tender documents obtainable from the Assistant Manager: Environmental Management, Department Community Services, Sol Plaatjie Avenue, Potchefstroom, upon payment of a non refundable deposit of R200 document fee payable to the "City Treasurer" Tlokwe City Council and paid in at the Rates Hall, Dan Tloome Complex, Wolmarans Street, Potchefstroom.

The Council is not compelled to accept the lowest or any tender. The successful tenderer will be required to enter into a formal contract regarding any part of the tender with Council.

Tenderers must supply the necessary information in order to comply with the requirements of Section 83 of the Local Government: Municipal Systems Act 2000, (Act 32 of 2000) and subject to the conditions of the Preferential Procurement Policy Framework Act 2000, (Act 5 of 2000) as well as the Regulations promulgated in terms of Section 5 of the Act.

The Municipal Supply Chain Management Regulations published in Government Gazette, 27636, dated 30 May 2005 Tlokwe City Council supply chain management by-laws will also be applicable

BG MOUMAKWE
Notice 12/2013
ACTING MUNICIPAL MANAGER

Figure 29: Newspaper advertisement.

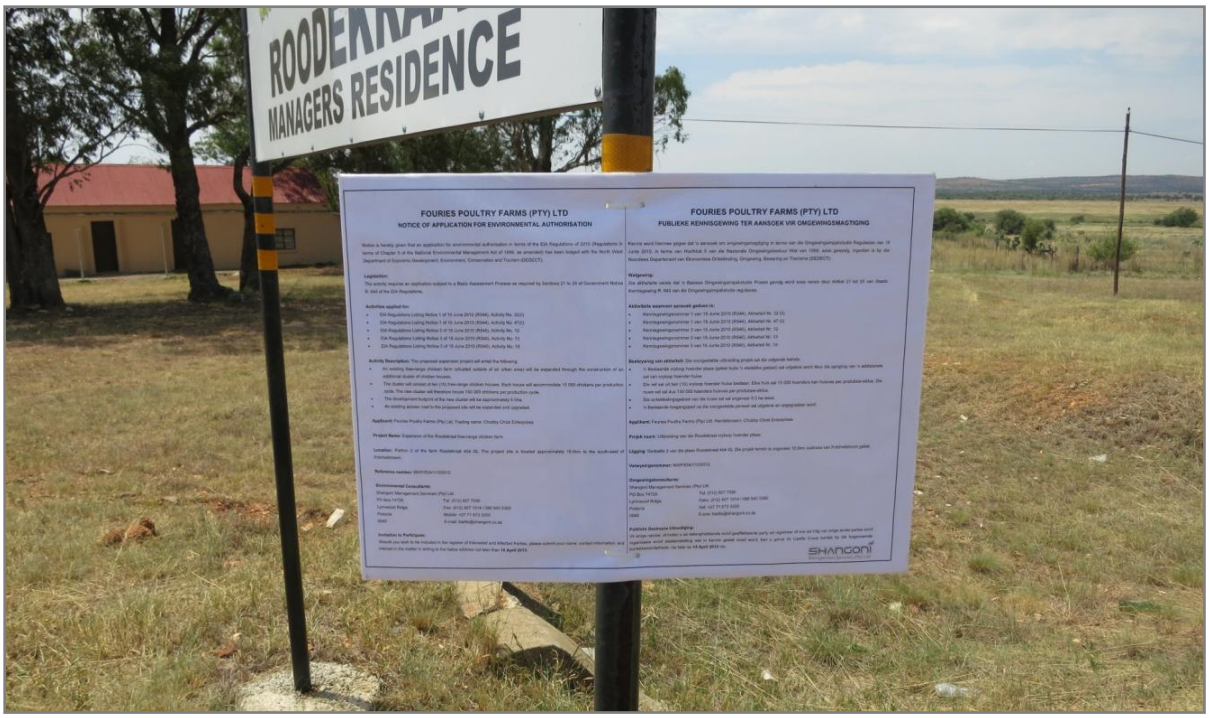

Figure 30: Notice 1

Figure 31: Notice 2

FOURIES POULTRY FARMS (PTY) LTD

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION

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) has been lodged with the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT).

Legislation:
The activity requires an application subject to a Basic Assessment Process as required by Sections 21 to 25 of Government Notice R. 543 of the EIA Regulations.

Activities applied for:

- EIA Regulations Listing Notice 1 of 18 June 2010 (R544), Activity No. 32(ii)
- EIA Regulations Listing Notice 1 of 18 June 2010 (R544), Activity No. 47(ii)
- EIA Regulations Listing Notice 3 of 18 June 2010 (R546), Activity No. 12
- EIA Regulations Listing Notice 3 of 18 June 2010 (R546), Activity No. 13
- EIA Regulations Listing Notice 3 of 18 June 2010 (R546), Activity No. 19

Activity Description: The proposed expansion project will entail the following:

- An existing free-range chicken farm (situated outside of an urban area) will be expanded through the construction of an additional cluster of chicken houses.
- The cluster will consist of ten (10) free-range chicken houses. Each house will accommodate 15 000 chickens per production cycle. The new cluster will therefore house 150 000 chickens per production cycle.
- The development footprint of the new cluster will be approximately 5.5ha.
- An existing access road to the proposed site will be expanded and upgraded.

Applicant: Fouries Poultry Farms (Pty) Ltd. Trading name: Chubby Chick Enterprises

Project Name: Expansion of the Roodekraal free-range chicken farm

Location: Portion 2 of the farm Roodekraal 454 IQ. The project site is located approximately 16.6km to the south-east of Potchefstroom.

Reference number: NWP/EIA/110/2012

Environmental Consultants:
Shangoni Management Services (Pty) Ltd
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Invitation to Participate:
Should you wish to be included in the register of Interested and Affected Parties, please submit your name, contact information, and interest in the matter in writing to the below address not later than **15 April 2013**.

FOURIES POULTRY FARMS (PTY) LTD

PUBLIEKE KENNISGEWING TER AANSOEK VIR OMGEWINGSMAGTIGING

Kennis word hiermee gegee dat 'n aansoek om omgewingsmagtiging in terme van die Omgewingsimpakstudie Regulasies van 18 Junie 2010, in terme van Hoofstuk 5 van die Nasionale Omgewingsbestuur Wet van 1998, soos gewysig, ingedien is by die Noordwes Departement van Ekonomiese Ontwikkeling, Omgewing, Bewaring en Toerisme (DEDECT).

Wetgewing:
Die aktiwiteite vereis dat 'n Basiese Omgewingsimpakstudie Proses gevolg word soos vereis deur Artikel 21 tot 25 van Staats Kennisgewing R. 543 van die Omgewingsimpakstudie regulasies.

Aktiwiteite waarvoor aansoek gedoen is:

- Kennisgewingsnommer 1 van 18 Junie 2010 (R544), Aktiwiteit Nr. 32 (ii)
- Kennisgewingsnommer 1 van 18 Junie 2010 (R544), Aktiwiteit Nr. 47 (ii)
- Kennisgewingsnommer 3 van 18 Junie 2010 (R546), Aktiwiteit Nr. 12
- Kennisgewingsnommer 3 van 18 Junie 2010 (R546), Aktiwiteit Nr. 13
- Kennisgewingsnommer 3 van 18 Junie 2010 (R546), Aktiwiteit Nr. 19

Beskrywing van aktiwiteit: Die voorgestelde uitbreiding projek sal die volgende behels:

- 'n Bestaande vryloop hoender plaas (geleë buite 'n stedelike gebied) sal uitgebrei word deur die oprigting van 'n addisionele sel van vryloop hoender huise.
- Die sel sal uit tien (10) vryloop hoender huise bestaan. Elke huis sal 15 000 hoenders kan huisves per produksie-siklus. Die nuwe sel sal dus 150 000 hoenders huisves per produksie-siklus.
- Die ontwikkelingsgebied van die nuwe sel sal ongeveer 5.5 ha wees.
- 'n Bestaande toegangspad na die voorgestelde perseel sal uitgebrei en opgegradeer word.

Applikant: Fouries Poultry Farms (Pty) Ltd. Handelsnaam: Chubby Chick Enterprises

Projek naam: Uitbreiding van die Roodekraal vryloop hoender plaas.

Ligging: Gedeelte 2 van die plaas Roodekraal 454 IQ. Die projek terrein is ongeveer 16.6km suid-oos van Potchefstroom geleë.

Verwysingsnommer: NWP/EIA/110/2012

Omgewingskonsultante:
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Publieke Deelmane Uitnodiging:
Vir enige 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 bogenoemde kontakbesonderhede, nie later as **15 April 2013** nie.

SHANGONI Management Services (Pty) Ltd

Figure 32: Wording of the site notice

5. NEED AND DESIRABILITY FOR THE ACTIVITY

While the concept of need and desirability relates to the type of development being proposed, the concept can be explained in terms of the general meaning of its two components: where need refers to time and desirability refers to place, i.e. is this the right time and is it the right place for the type of land-use or activity that is being proposed? Need and desirability can be equated to wise use of the land, in other words, what is the most sustainable use of the land (DEA&DP, 2010)?
A need and desirability for this project is evident from the following perspectives:

5.1 Developer

Current demand for chicken in South Africa is not being met. Fourie's Poultry plans to expand their Roodekraal free-range chicken farm to meet current and future demands. The expansion will allow Fourie's Poultry to earn more money through the sale of more chickens.
The proposed project will entail the construction of an additional free-range chicken house cluster. This cluster will consist of ten houses. The ten houses will be identical to those at the existing free-range clusters. The technology, design and process of the project were determined by the applicant to be the most economically, socially and environmentally sustainable option for this specific venture.
The Roodekraal free-range chicken farm lies within an area designated as cultivated land, unimproved grassland, thicket and bushland according to the Spatial Development Framework (Figure 22). The land use (rearing of free-range chickens) is therefore considered to be in compliance with the SDF.

5.2 Local Community

The proposed project will create five permanent employment opportunities during the operational phase of the project. The creation of jobs will have a positive impact on the local community.

5.3 District and Provincial Benefit

A considerable amount of contract work is associated with the construction and operation of a free-range facility, thereby creating secondary employment in the broader local economy. Contract work can include:

- Construction companies;
- Delivery of chicks to the farm;
- Free-range house bedding;
- Chicken feed companies; and
- Manure and mortality collection.

The proposed expansion will also increase the food security of South Africa.

6. IDENTIFIED ALTERNATIVES

The following definition of "alternatives" is given in the EIA Regulations of 18 June 2010: *"alternatives", in relation to the proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to-*

a) the property on which or location where it is proposed to undertake the activity;
b) the type of activity to be undertaken;
c) the design or layout of the activity;
d) the technology to be used in the activity;
e) the operational aspects of the activity; and
f) the option of not implementing the activity".

Typically, alternative assessments are conducted to assist in comparing various projects or attributes of projects that will occur. The most critical comparison is evaluating any proposed project against the No-Go option. The alternatives assessment then considers alternatives to project site selection for the proposed development; alternatives to layout of the development; and alternatives to construction methodologies and/or materials used for the development.

The alternatives assessment was conducted using a simple cost-benefit analysis of each proposed alternative, through assessing various environmental attributes. These attributes can include physical (geology and soils, surface water quality and quantity, groundwater quality and quantity); biophysical (flora and fauna, sensitive environments); and social (site of archaeological or cultural importance, land use issues, social health and welfare).

The impact of the each alternative was then evaluated in terms of whether it has a positive impact, negative impact, or no impact. In this instance, the impact is not evaluated in terms of significance but rather whether or not it will arise. Positive impacts are assigned a value of 1; no impact a value of 0; and a negative impact a value of -1.

By adding all of the attribute scores for each alternative, a suitability score is derived that indicates the preferred alternative. A total positive score indicates the project benefits outweigh the potential negative impacts, while a total negative score indicates the project environmental costs outweigh the potential benefits. Essentially, the highest scoring alternative is then carried forward for full impact evaluation.

6.1 No-Go Option

The potential impact of the preferred project option on environmental and socio-economic attributes – identified during the assessment phase – is evaluated against the potential impact of the no-go option on the same attributes. The summary of this assessment is provided in the table below.

Table 11: Development vs. No-Go Option.

Attribute	Development Option	No-go Option 2
Physical environment		
Air Pollution	-1	-1
Noise Pollution	-1	-1
Water Quality	-1	-1
Water Quantity	-1	-1
Visual Aesthetics	0	0
Biophysical environment		
Fauna and Flora	-1	0
Sensitive Environments	0	0
Social environment		
Traffic	-1	-1
Impact on property values	1	0
Safety and security	0	0
National and regional economy	1	0
Infrastructure development	1	0
Total	**-3**	**-5**

The no-go alternative means that the free-range chicken farm will not be expanded and will not benefit from a higher overall production rate and stimulation of the local and regional economy. Food security of the country will also not be strengthened. The negative impacts indicated for the no-go alternative are as a result of the existing free-range farm activities occurring on the property.

The negative environmental impacts expected from the proposed development can be mitigated to acceptable limits. The positive social impacts outweigh the negative environmental impacts and the consideration of the "no-go" option can be justifiably dismissed as a sustainable alternative.

6.2 Alternatives

6.2.1 Activity Alternatives

The proposed activity is the raising of free-range chickens, by Fourie's Poultry, for provision to their abattoirs and for eventual sale to the public or supermarkets. An alternative would be to supply

contracts to independent chicken farmers who would then sell the fully grown free-range chickens to Fourie's Poultry for slaughtering. This would be a viable option, but it makes more financial sense for Fourie's Poultry to raise their own chickens, as a percentage of the profits would need to be paid to the independent farmer should he/she raise the chickens on behalf of Fourie's Poultry. Raising their own chickens also allows Fourie's Poultry to have complete control over the farming methods used. It will provide assurance that certain standards are met, such as the standards required by the supermarket chains to which they supply chicken.

6.2.2 Location Alternatives

The following location alternatives have been identified and considered:

- A new, undeveloped property.
- Alternative location 1, 2 and 3, on Portion 2 (remaining extent) of the farm Roodekraal 454 IQ.

New, undeveloped property

It would not be financially feasible for Fourie's Poultry to purchase a new property as they would then need to develop an entirely new site from scratch. As they already own a farm (the farm Roodekraal) where they are raising free-range chickens, certain infrastructures, such as dirt roads, are already present and existing arrangements, such as the removal of litter and mortalities, are in place. Adding another free-range cluster at this farm would therefore make logistical and financial sense and the purchasing of a new property is therefore eliminated as a viable alternative.

Alternative location 1

Alternative location one is not a viable option as the landscape forms a hill and roads and power lines run through the area (Refer to Figure 34).

Alternative location 2

Alternative location two is not a viable option as the area is located within 800m of one of the existing clusters, thus creating a high bio-security risk. This high risk stems from the increased likelihood that poultry diseases may spread between the clusters on the farm, should chickens at one cluster become infected. The potential to impact on a watercourse exists as the Rooikraalspruit runs through this area (Refer to Figure 34).

Alternative location 3

Alternative location two is not a viable option as the area is located within 800m of one of the existing clusters, thus creating a high bio-security risk. This high risk stems from the increased likelihood that poultry diseases may spread between the clusters on the farm, should chickens at one cluster become infected. The potential to impact on a watercourse exists as a drainage line also passes through the area (Refer to Figure 34).

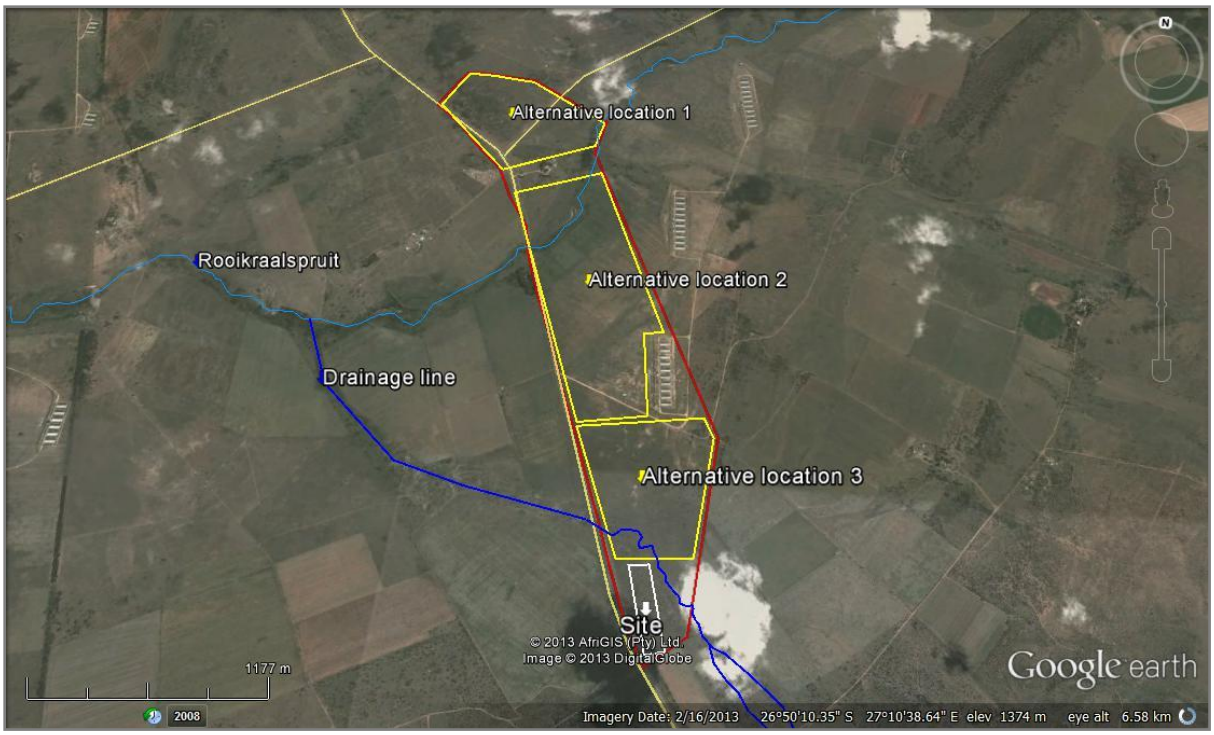

Figure 33: Aerial layout of Alternative Site locations (Google Earth).

6.2.3 Site Alternatives

Only one site on Portion 2 (remaining extent) of the farm Roodekraal 454 IQ was identified as a viable option for the development of the proposed free-range chicken cluster. This site was chosen on the bases that it is in close proximity to an existing dirt road, located more than 800m away from the existing free-range chicken clusters and does not run though a drainage line.

6.2.4 Input Alternatives

No input alternatives could be considered as chicks are the main input into the free-range raising "system".

6.2.5 Design Alternatives

No design alternatives have been considered as the design of the current free-range clusters will be replicated at the proposed, fourth cluster. The designs have been proven over a number of years to be optimal for the raising of free-range chickens.

6.2.6 Scheduling Alternatives

The variability of rainfall as well as the high intensity events will affect the construction phase of the project. It could hinder construction activities with potential soaking of cement mixtures or foundation concrete during the early phases of the construction process. Construction should preferably be

planned for the winter months to avoid construction delays that might have a negative socio-economic impact on the development.

It is recommended that construction take place during the drier months to avoid any complications in wet weather. No detailed information regarding the proposed timeframe for the project is available, but it is assumed that construction will start after the Environmental Authorisation has been received, should the authorisation be a positive one.

7. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

7.1 Introduction and approach followed

The proposed expansion of the Roodekraal free-range chicken farm can have a variety of impacts. These can occur over 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 proposed development 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 degree of 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 fulfill the environmental authorities' requirements, the requirements of the EIA Regulations (2010) and the objectives of the environmental best practice, so as to ensure transparency and to enable an informed decision regarding the proposed project.

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

Different impacts are associated with the different phases of the proposed activity. The significance will be determined by both the extent and duration of the impact. The environmental risk of any aspect is determined by a combination of parameters associated with the impact. Each parameter connects the physical characteristics of an impact to a quantifiable value to rate the environmental risk. A description of the parameters used in this impact assessment is given in the table below.

Table 12: 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)
Environmental Risk Refer to the table 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 13: 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.

See the tables below for a summary of impacts, their associative mitigating actions and the significance of the pre- and post- mitigation of each of the identified activities, for both site alternatives. The tables also provide an environmental risk assessment of pre- and post- mitigation of identified activities. The tables are for the design-, construction-, operational-, rehabilitation- and decommissioning- phases of the proposed project.

7.2 Planning and Design Phase

Table 14: Environmental risk assessment: Design and planning

Activity: Design and planning of the free-range chicken cluster.	
Aspect: Inadequate planning that results in threats to the health of free-range chickens due to for example, pests or inadequate ventilation.	
Nature of Environmental Impact: Chicken mortalities.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To ensure that each free-range chicken house is constructed in a manner that will promote optimal health and therefore optimal growth of free-range chickens	
Proposed Mitigation	
• A bio-security buffer should be present between the proposed free-range chicken cluster and other free-range chicken clusters in the area (on the farm). This buffer should be at least 800m. • Prevailing wind directions must be taken into consideration to promote natural ventilation of the free-range chicken houses. • To ensure that houses receive as much incoming solar radiation during cold winter months, the houses should be placed in such a way that the movement of the sun is parallel to the long sides of the free-range chicken houses. This will minimise the amount of energy required to heat the free-range chicken houses during cold months. • Concrete floors must be used to allow effective washing and disinfection at the end of each production cycle. • Effective insulation must be installed in each free-range chicken house to promote cost-effective temperature control. The insulation must be able to withstand washing by high-pressure hoses. • The free-range chicken houses should be designed to provide adequate ventilation during the entire production cycle. An air exchange rate of 3.6 to 4m^3 per kilogram live mass per hour should be sufficient. This exchange rate should also be adequate to keep ammonia build up within the free-range chicken houses below 20ppm. • Cooling should be achieved by using fans to draw cool air through the house. Fans from one free-range chicken house should not blow directly into the fans of adjacent houses. A backup source of electricity must be present to prevent heat stress and likely death of the chickens during a power failure. • Energy saving lights, such as LEDs (light-emitting diodes) should be considered. • In the case of groundwater, it should be ensured that an adequate supply of groundwater is available to service the proposed free-range chicken cluster. This supply must be sustainable. • The groundwater must also be analysed to ensure that it is of adequate quality for consumption by chickens. The following guideline document can be consulted: Department of Water Affairs and Forestry, 1996: South African Water Quality Guidelines (2nd Edition). Volume 5: Agricultural Water Use: Livestock Watering. • A constant water supply must be provided to the free-range chicken houses. This includes the erection of water storage tanks and automated water dispensing systems. Use suspended drinker lines with special nipple attachments. These systems prevent water spillage, resulting in less wet litter. The height of the drinking lines will be adjusted as the chickens grow older.	

• Each free-range chicken house must be equipped with a designated bulk silo for storage of feed. The silos must be rat and mouse proof. • Feed silos, water tanks and conveying equipment must be cleaned and maintained to prevent accumulation and development of mold and pathogens. • All openings, such as fans, must be closed with a mesh to prevent the entry of rodents and birds that may carry diseases. • Fly traps must be installed in and around the free-range chicken houses. The traps must be serviced on a monthly basis. • A programme for litter beetles as well as all other flying and crawling insects must be put in place. • Foot baths containing disinfectant should be placed at the entrance to each free-range chicken house. This prevents the entry of infected material into the houses. • An enclosed, lockable storage facility for mortalities must be erected away from the free-range chicken houses. • A perimeter fence should be erected to keep out larger predators, such as jackals, and also to prevent theft of chickens. The fence should have one access point where people entering the premises can change into clean clothing (overalls and gum boots) and where the tires, mudguards and undercarriage of vehicles entering the site can be sprayed with disinfectants. • The residence of the farm manager should be in close proximity to the free-range chicken cluster to ensure that the free-range chickens are continuously monitored. • Warning alarms should be installed for inadequate ventilation and power failure. The alarms must operate independent of the main power supply.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	1
Environmental Risk = Significance of Impact X Probability	**6**

Table 15: Environmental risk assessment: Stormwater management

Activity: Stormwater.	
Aspect: Poor design of stormwater control system.	
Nature of Environmental Impact: Soil and surface water pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To ensure that an effective stormwater control system is put in place.	
Proposed Mitigation	
• The inflow of clean stormwater into "dirty" areas, and its subsequent contamination, must be prevented. • Surface run-off must be managed to ensure the prevention of soil erosion. • Ponding of surface water and the creation of gully erosion must be prevented. • Wash water trenches that leave the free-range chicken houses should not be directed into any water courses (drainage lines, rivers or wetlands).	

After Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

7.3 Construction Phase

Table 16: Environmental risk assessment: Environmental Awareness and Training

Activity: Construction activities required to expand the free-range chicken farm.	
Aspect: Lack of environmental knowledge among employees.	
Nature of Environmental Impact: Harm to the environment due to employees or contractors being unaware of how their activities may impact the environment or due to unauthorised access to the site.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	18
Objective of Mitigation Measures	
To prevent harm to the environment through the actions of uneducated employees or contractors.	
Proposed Mitigation	
• The contractor is to ensure that all employees, including sub-contractors and their employees, attend onsite Environmental Awareness/Training prior to commencing work on site. • Follow-up Environmental Awareness/Training may be required from time to time as new subcontractors or crews commence work or for specific activities that may potentially impact the environment. • The contractor is to maintain accurate records of any training undertaken. • The ECO shall monitor the contractor's compliance with the requirement to provide sufficient environmental awareness training to all site staff. • Training is to cover all aspects of the EMP and procedures to be followed. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • No animal species may be disturbed, hunted, killed or trapped.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 17: Environmental risk assessment: Site clearance

Activity: Clearance of the site.
Aspect: Removal of indigenous vegetation beyond the project footprint.
Nature of Environmental Impact: Loss of indigenous grassland and habitats for indigenous fauna species.

Note the ecological fauna and flora habitat survey presented the following findings:

- A moderate diversity of indigenous plant species and animal species appears to be present at the proposed site.
- None of the threatened, near-threatened or other plant species of particular conservation concern appear to be present at the site.
- Since the proposed site falls outside reserves, threatened species such as the black rhinoceros (*Diceros bicornis*) and the African wild dog (*Lycaon pictus*) are obviously not present.
- No smaller mammals of particular high conservation significance are likely to be found on the site.
- No threat to any threatened bird species or any bird species of particular conservation importance are foreseen.
- There appears to be no threat to any reptile species of particular high conservation importance if the site is developed.
- There appears to be no threat to any amphibian species of particular high conservation importance if the site is developed.
- There appears to be no threat to any threatened butterfly species if the site is developed.
- There appears to be no threat to any of the fruit chafer beetles of particular high conservation priority if the site were developed.
- Scorpion species (Scorpiones: Ischnuridae) that are of known high conservation priority in the North West Province were not found at the site and the habitat does not appear to be optimal.
- No loss of particularly sensitive habitat of particular conservation importance is anticipated if the site is developed.
- No loss of corridors or connectivity of ecosystems is anticipated if the site is developed.

Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**

Objective of Mitigation Measures

To prevent the removal of vegetation outside the project footprint during site clearance.

Proposed Mitigation

- Before any construction takes place the proposed area for the expansion will be pegged out. All construction activities will be limited to within these areas in order to reduce the footprint of the proposed activity and avoid impact on adjacent natural vegetation and animal life.
- Construction areas should be fenced off or barricaded prior to and during construction.
- Site clearing is to be limited to only the area necessary for carrying out the specified work.
- The contractor is to draw up a plan for submission to the ECO and the free-range chicken facility manager indicating the locations of construction infrastructure including the site-camp, paint or cement cleaning pits, toilets, stores and site office.
- The site boundary is to be clearly demarcated and screened from the commencement of works. The erection of the final boundary fence or wall is preferable.
- All demarcation is to be regularly maintained.
- No unauthorised entry, stockpiling, dumping or storage of equipment outside the site boundary is permitted.
- All construction activities, labour and materials are to be restricted within the site boundary.
- Removal of vegetation is to be avoided until such time as soil stripping is required.

• Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping or as a brush pack for erosion prevention. • Once the construction activities have been completed, the remaining disturbed area must be top-soiled, sloped and re-vegetated as soon as possible using suitable grass species. • Compacted soil should be ripped to ensure effective re-vegetation. • Soil stabilising measures could include rotovating in straw bales (at a rate of 1 bale/20m²), applying mulching or brush packing or creating windbreaks using brush or bales.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Table 18: Environmental risk assessment: Site clearance: Heritage

Activity: Clearance of the site.	
Aspect: Disturbance of artifacts or sites of cultural heritage (archaeological and historical) significance.	
Nature of Environmental Impact: A Phase 1 Heritage Impact Assessment found that the area where the proposed free range chicken cluster will be situated is flat and has been disturbed in the recent past through agricultural activities and if any significant sites did exist here in the past it would have been disturbed or destroyed to a large degree. No Stone Age or Historical sites, features or objects were found. A few pieces of undecorated pottery, dating to the Late Iron Age, were found, but these finds are insignificant from an archaeological heritage point of view as they are out of context and not related to any stone walled features. Based on the findings from the HIA it was determined that from a Heritage point of view the development could be allowed to continue. However it should always be kept in mind that the subterranean presence of archaeological and/or historical sites, features or artefacts (such as unknown and unmarked burials) are always a distinct possibility. If during any development activities, any sites, features and objects of a cultural heritage (archaeological or historical) nature, are exposed, an expert should be contacted to investigate and all development halted until the situation has been resolved.	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	1
Environmental Risk = Significance of Impact X Probability	**6**
Objective of Mitigation Measures	
To protect artifacts or sites of cultural heritage (archaeological and historical) significance.	
Proposed Mitigation	
• If any sites, features or objects are found during site clearance, all activities must cease and a heritage expert must be contacted to investigate the site. • No sites, features or objects may be disturbed (e.g. picked up) by employees.	
After Mitigation	

Extent of the Impact	1
Duration of the Impact	3
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

Table 19: Environmental risk assessment: Topsoil stockpiling

Activity: Stockpiling of topsoil and cleared vegetation.	
Aspect: Topsoil being exposed to the elements.	
Nature of Environmental Impact: Degradation and erosion of a valuable resource (topsoil).	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**
Objective of Mitigation Measures	
To reduce the duration and extent of exposure of topsoil to preserve it as a resource and protect it from erosion.	
Proposed Mitigation	
• Topsoil (top 150mm) is to be stockpiled in discrete areas and retained for future landscaping efforts. • Any sub-soil or rocks removed should also be stockpiled separately and be used during the rehabilitation. • The contractor is to ensure that all reasonable measures are taken to limit erosion during the construction phase. Erosion protection measures include sand bags, cut-off drains and/or berms. • Cleared indigenous vegetation should be used as a brush pack on topsoil stockpiles for erosion prevention. • If sterilisation of the topsoil has occurred during stockpiling, inorganic fertilisers will be used to supplement the soils before seeding of the area takes place.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

Table 20: Environmental risk assessment: Fire risk

Activity: Hot work activities, smoking and cooking.	
Aspect: Runaway veldt fires.	
Nature of Environmental Impact: Loss of indigenous grassland and habitats for indigenous fauna species.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1

Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To prevent the occurrence and spreading of a veldt fire.	
Proposed Mitigation	

Equipment

- Basic fire-fighting equipment is to be placed at strategic locations on site and must be readily available (e.g. at the site office, flammable material store and watchman's container).
- Equipment is to be maintained in good working order to the satisfaction of local fire authorities.
- All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).

Signage

- Safety signage including "No Smoking", "No Naked Lights" and "Danger", and product identification signs, are to be clearly displayed on fuel storage facilities and tanks.
- Emergency numbers are to be clearly displayed.

Training

- An emergency procedure, taking into consideration all potential emergencies, such as a fire outbreak, hazardous chemical spill, etc. should be compiled.
- The contractor is to ensure that all employees, including sub-contractors and their employees, are trained on the emergency procedure.
- Follow-up emergency training may be required from time to time as new subcontractors or crews commence work.
- The contractor is to maintain accurate records of any emergency training undertaken.
- The ECO shall monitor the contractor's compliance with the requirement to provide sufficient emergency training to all site staff.

Activities

- All construction workers shall be transported to and from site on a daily basis.
- Workers shall remain on the site at all times during the work day and no one will be allowed to leave site by foot, not even during break times.
- Cooking during lunch is to be restricted to bottled gas facilities in designated areas approved by the ECO. This facility is to be supervised and strictly controlled.
- A dedicated braai facility may be permitted in an area approved by the ECO, if it is in close proximity to firefighting equipment. At no time is a braai fire to be left unattended.
- Smoking is prohibited near places where any readily combustible or flammable materials are present. Notices are to be prominently displayed prohibiting smoking in such areas.
- Welding, flame cutting and other hot work is only to be undertaken in places where the necessary safety precautions are in place (i.e. not near potential sources of combustion and with a fire extinguisher immediately accessible).
- If applicable, night watchmen are to be provided with adequate cooking and heating facilities (no open fires), a suitable method of disposing of wastewater and access to communication equipment.
- No open fires are permitted.

Flammable materials

- Flammable materials storage must comply with standard fire safety regulations.
- All flammable materials are to be stored in a suitable, lockable storage area.

• Combustible materials may not accumulate on the construction site. • Access to fuel and chemical stores should be strictly controlled. • Stockpiles of vegetation are only to be located in areas approved by the facility manager and may not exceed 2m in height. Methods of stacking must take cognisance of the possible creation of a fire hazard. • Burning of stockpiled vegetation is not permitted.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 21: Environmental risk assessment: Cement and concrete

Activity: The handling, storage, mixing and disposal of cement and concrete.	
Aspect: Concrete and cement spillage.	
Nature of Environmental Impact: Soil and surface water pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the pollution of soil and surface water as a result of spillage-, improper handling-, storage-, mixing- or disposal- of cement and concrete.	
Proposed Mitigation	
• Dry cement must be removed from the soil surface to prevent an impermeable layer forming on top of the soil. The cement must be disposed of together with any building rubble. • Ready-mix trucks are not permitted to clean chutes on site. Cleaning into foundations or a dedicated cleaning pit is permitted. • Bricklayers and plasterers are to minimise any cement spill or runoff in their work area and are to ensure that the work area is cleaned of all cement spillage at the end of each workday. • Both used and unused cement bags are to be stored in weatherproof containers so as not to be affected by rain or runoff. • Contaminated soil resulting from concrete or cement spills, including residue produced by the washing of cavities, are to be removed immediately after the spillage has occurred and placed on the appropriate rubble stockpile. • Runoff from the washing out of wall cavities is to be contained against the building by excavations of berms around the foundations. All reasonable measures must be taken to prevent the dirty water from contaminating a watercourse.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 22: Environmental risk assessment: Generation of wash water

Activity: The cleaning of equipment and construction areas.	
Aspect: Generation and runoff of contaminated wash water.	
Nature of Environmental Impact: Potential soil and surface water pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the pollution of soil and surface water bodies through contaminated wash water. An example of this would be water that is contaminated with cement or concrete.	
Proposed Mitigation	
• No washing of vehicles is permitted on site. • A dedicated temporary cleaning area is to be identified to facilitate washing of all cement and painting equipment. • The cleaning area could be a plastic lined cleaning pit or dedicated plastic or metal drums, located as close as possible to a water point. • No wastewater/wash water may be disposed of on site, onto the soil or into any water body. • Runoff from the washing activities is to be contained against the building by excavations of berms around the foundations.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 23: Environmental risk assessment: Vehicle and equipment maintenance.

Activity: Vehicle and equipment maintenance and fueling.	
Aspect: Leaking and/or spilling of fuels, greases and oils.	
Nature of Environmental Impact: Hydrocarbon pollution of soil, surface -and groundwater.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	**21**
Objective of Mitigation Measures	
To prevent hydrocarbon pollution of soils, surface- and ground- water through the spilling of fuel, grease or oil or leaking equipment and vehicles.	
Proposed Mitigation	
• Equipment and vehicles are to be repaired immediately upon developing leaks. • Drip trays shall be supplied for all repair work undertaken on machinery on site.	

• Drip trays are to be utilised during greasing and re-fuelling of machinery and to contain incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks and drums or containers for contaminated water. • Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site. • If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. • All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids. • Inspect vehicles on entering the facility to ensure vehicles are in sound condition to reduce the risk of oil or diesel spillages.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**

Table 24: Environmental risk assessment: General/domestic and hazardous waste

Activity: Handling, storage and disposal of general/domestic and hazardous waste.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Soil, surface- and groundwater pollution. Nuisance caused by odours and unsightly appearance of waste onsite.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**
Objective of Mitigation Measures	
To prevent soil, surface- and groundwater pollution and nuisance due to poor waste management.	
Proposed Mitigation	
• Installation of sufficient waste bins, skips or bulk containers where necessary. • All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. • Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. • Waste material may only be temporarily stored at areas demarcated for such storage practices. • General waste shall be stored in a manner that prevents the harbouring of pests. • General waste materials should always be stored or disposed of separately from hazardous waste material (e.g. oil, diesel). • General and hazardous waste can be deposited into appropriately demarcated bins at the construction activities. Bins are then emptied into appropriately demarcated skips or bulk containers at the end of each day or more often if required. • Skips or bulk containers should be removed to a nearby landfill site on a weekly basis or more	

often if required.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 25: Environmental risk assessment: Dust

Activity: Excavation activities, loading and offloading activities and vehicles travelling to and from the site.	
Aspect: Dust generation.	
Nature of Environmental Impact: Degradation of ambient air quality.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To minimise the impact of excavation activities, loading and offloading activities and vehicles travelling to and from the site on the ambient air quality.	
Proposed Mitigation	
• A dustcart needs to be onsite to water down dusty road. • 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 tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Table 26: Environmental risk assessment: Utilisation of groundwater

Activity: Utilisation of groundwater.	
Aspect: Water leaking from JoJo tanks, pipes, taps etc.	
Nature of Environmental Impact: Wastage or depletion of a valuable resource (groundwater).	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**

Objective of Mitigation Measures	
Prevent the wastage or depletion of a valuable resource (groundwater).	
Proposed Mitigation	
• Regular inspection and maintenance of all boreholes, JoJo tanks, toilets, water pipes and taps. • Leaking JoJo tanks, taps, toilets and pipes are to be repaired immediately. • Running water taps and pipes may not be left unattended. • Each time you flush the toilets approximately 20 litres of water is used, therefore use the toilets accordingly. • All pipe, hose and tap connections are to be fitted with correct and appropriate plumbing fittings.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

Table 27: Environmental risk assessment: Ablution facilities

Activity: Installation and use of ablution facilities.	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Soil, surface- and groundwater pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
Prevent soil, surface- and groundwater pollution from unsanitary conditions onsite.	
Proposed Mitigation	
• Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. • The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point. • Ablating anywhere other than in the toilets shall not be allowed. • The ablution facilities are to be secured to avoid them from blowing or falling over. • The contractor shall ensure that any chemicals and/or waste from the ablution facilities are not spilled on the ground at any time. • Ablution facilities are to be serviced weekly or more frequently if required. • The contractor is to ensure that no spillage occurs and that the contents are removed from site on a regular basis.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 28: Environmental risk assessment: Hazardous chemical substances.

Activity: Storage and handling of hazardous chemical substances including fuel, greases and oils.	
Aspect: Poor management and spills of hazardous chemical substances including fuel, greases and oils.	
Nature of Environmental Impact: Soil, surface water and groundwater pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	21
Objective of Mitigation Measures	
To prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical substances including fuel, greases and oils used onsite.	
Proposed Mitigation	
• Identify all hazardous chemical substances used onsite including fuel, greases and oils. • Obtain the material safety data sheet of each of hazardous chemical substance. • Ensure that the material safety data sheets have sufficient information to enable the user to take the necessary measures to protect his/her health and safety and that of the environment. • Material Safety Data Sheets for all hazardous chemical substances must be readily available on site. • Keep a stock inventory register of all chemicals in the store. • Powders must be stored above liquids. • Proper storage of chemicals in a lockable, well ventilated building. • Ensure adequate access control for the storage area. • Storage areas for hazardous chemicals are to comply with standard fire safety regulations. • Safety signage including "No Smoking", "No Naked Lights" and "Danger", and product identification signs, are to be clearly displayed in areas housing chemicals. • Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. • Chemicals are to be properly labeled and handled in a safety conscious manner. • All personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). • Ensure that diesel/ fuel tanks are in a bunded area with capacity of holding 110% of the total storage volume. • The removal of only the daily-required amount of chemicals to be used from the shed. • If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. • Use of drip trays during filling of machinery or equipment. Drip trays should be emptied into secondary containers on a regular basis. • Ensure that any spilled chemical cannot exit the designated storage area by constructing a berm or bump at the exit, or store chemicals in a spill tray. • Immediately clean all spillage of fuels, lubricants and other petroleum based products. • The contaminated material must be disposed of in accordance with the waste management procedure. • No hazardous chemical must be discarded in the sewage or storm water system. • Train staff on the use of chemicals in accordance with the risks as described in the material data	

sheets. • Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Table 29: Environmental risk assessment: Noise

Activity: Construction workers, vehicles, machinery and general noisy construction activities.	
Aspect: Generation of noise.	
Nature of Environmental Impact: Disturbance and nuisance to neighbors.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**
Objective of Mitigation Measures	
Minimise the noise generation during the construction phase.	
Proposed Mitigation	
• The site workers and contractors will 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 and equipment. • All equipment and machinery should be fitted with adequate silencers. • Working hours should be restricted to daylight hours. • 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. • If work is to be undertaken outside of normal work hours permission must be obtained from the ECO and the free-range chicken facility manager. • No noisy work is to be conducted over the weekends or on public holidays.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

7.4 Operational Phase

Table 30: Environmental risk assessment: Environmental Awareness and Training

Activity: Operational activities at the free-range chicken facilities.
Aspect: Lack of environmental knowledge among employees.
Nature of Environmental Impact: Harm to the environment due to employees being unaware of how

their activities may impact the environment or due to unauthorised access to the site.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To prevent harm to the environment through the actions of uneducated employees.	
Proposed Mitigation	
• All employees are required to attend onsite Environmental Awareness/Training prior to commencing work on site. • Follow-up Environmental Awareness/Training may be required from time to time as new employees commence work or for specific activities that may potentially impact the environment. • The facility manager is to maintain accurate records of any training undertaken. • The ECO shall monitor the facility managers' compliance with the requirement to provide sufficient environmental awareness training to all site staff. • Training is to cover all aspects of the EMP and procedures to be followed.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 31: Environmental risk assessment: Dust

Activity: Increased traffic frequency.	
Aspect: Dust generation.	
Nature of Environmental Impact: Degradation of ambient air quality.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To minimise the impact of dust generated by the increased traffic frequency on the ambient air quality.	
Proposed Mitigation	
• A dustcart needs to be onsite to water down dusty road. • 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 tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions. • If the soil is compacted, open areas should be ripped, fertilised and re-vegetated as soon as possible using suitable grass species.	
After Mitigation	
Extent of the Impact	2

Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

Table 32: Environmental risk assessment: Exothermic hot water generators and coal storage areas

Activity: Coal used in the exothermic hot water generators.	
Aspect: Generation of emissions from the exothermic hot water generators (such as carbon dioxide, carbon monoxide, sulphur dioxide and nitrous oxides) and coal storage bunkers (fine coal dust or particulate matter).	
Nature of Environmental Impact: Degradation of ambient air quality (air pollution).	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To minimise the impact of emissions on the ambient air quality.	
Proposed Mitigation	
• Use high-grade coal where possible as lower grade coal may result in higher sulphur emissions. • Regular maintenance of the exothermic hot water generators. Optimal combustion will allow for 'cleaner' stack emissions. • Ensure adequate storage of coal to minimise dispersion of fine coal dust, i.e. a covered storage area. • The 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.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	2
Environmental Risk = Significance of Impact X Probability	**6**

Table 33: Environmental risk assessment: Noise

Activity: Increased vehicle frequency and general operational activities.
Aspect: Generation of noise.
Nature of Environmental Impact: Disturbance and nuisance to neighbors. According to Jorgensen & Johnson (1981), the noise levels generated by general construction activities on a building site can reach levels of approximately 70 dB, caused by for instance heavy machinery. Sound is inversely proportional to the distance from the source and can get absorbed by buildings and vegetation barriers. Noise intensities (dB) will be at their highest on site and will decrease as you move away from their sources. The noise decline curve below gives an indication of how noise generated at the site will decrease with distance. This gives an indication of the distance that the sound would have travelled upon reaching a

level of 60 dB, prescribed by the SABS as being the acceptable limit for environmental noise. At a distance of 27 metres from the construction site, the generated noise would have decreased to a level of 60 dB and at a distance of 45 metres it would have decreased to approximately 55dB. Noise travelling further than 45 metres will have a low impact on neighbouring farms and residential areas.

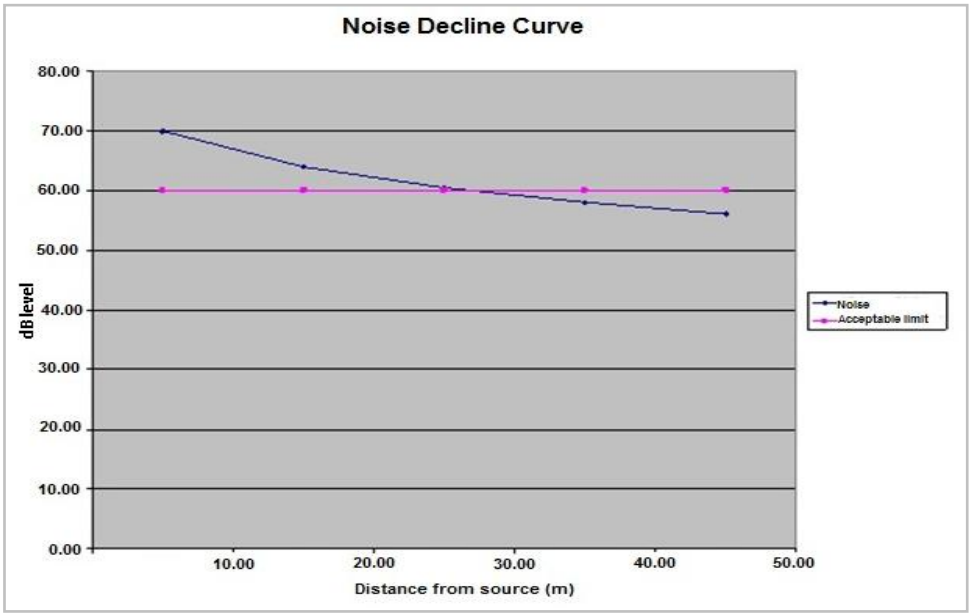

Figure 34: Noise decline curve

As shown in the figure below, the distance from Site to sensitive noise receptors (residences and other free-range cluster) is more than 45 metres in all cases.

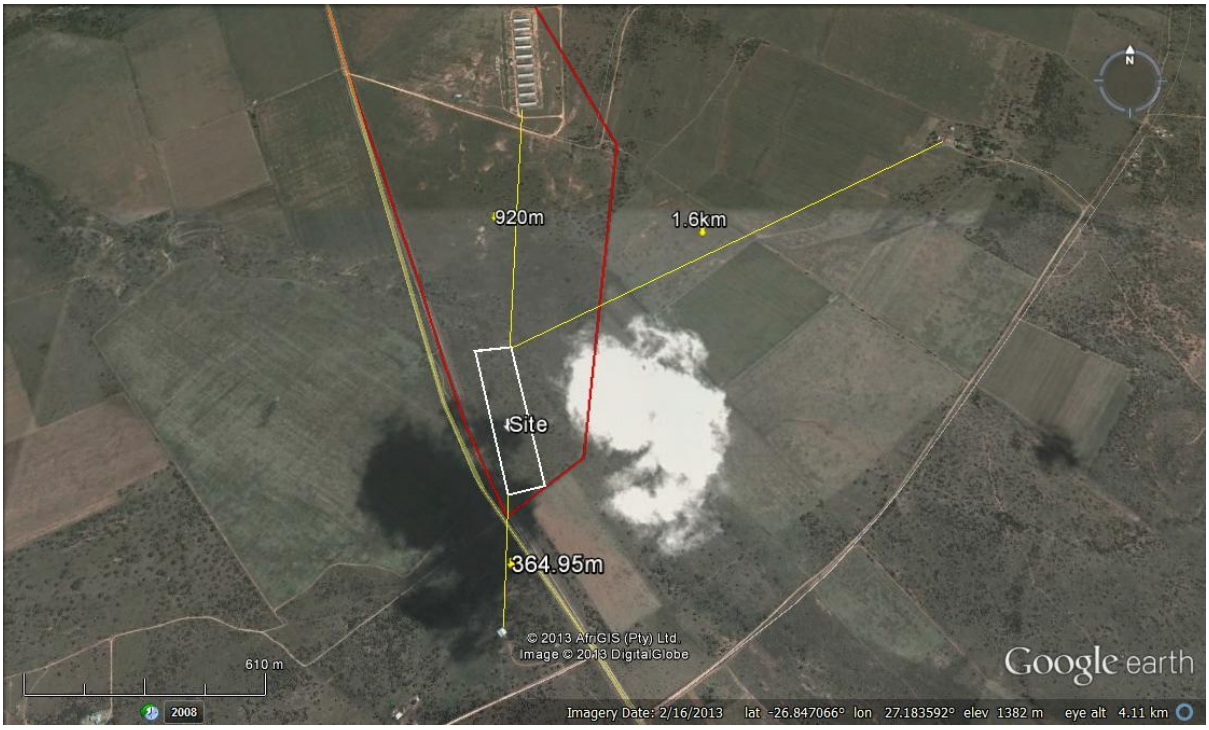

Figure 35: Distance from Site 1 to sensitive receptors.

Before Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1

Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	3
Environmental Risk = Significance of Impact X Probability	**9**
Objective of Mitigation Measures	
To maintain a dB reading of less than 50dB at the site boundary.	
Proposed Mitigation	
• The site workers and contractors will 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. • 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. • If work is to be undertaken outside of normal work hours permission must be obtained from the ECO and the free-range chicken facility manager. • No noisy work is to be conducted over the weekends or on public holidays.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 34: Environmental risk assessment: Handling and storage of coal.

Activity: Handling and storage of coal.	
Aspect: Poor management and spillage of coal.	
Nature of Environmental Impact: Soil, surface- and groundwater- pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To ensure the proper handling and storage of coal.	
Proposed Mitigation	
• Store coal in bunkers. • Construct a bump/berm at the bunker entrance to prevent rain water from entering the bunker and becoming contaminated. • Construct a roof to prevent rain water from being contaminated by the coal. • Prevent coal spillages during loading and remove any coal spillages from the soil and return to the coal bunker.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 35: Environmental risk assessment: General or domestic and hazardous waste

Activity: Handling, storage and disposal of general or domestic and hazardous waste.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Soil, surface- and groundwater pollution. Nuisance caused by odours and unsightly appearance of waste onsite.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**
Objective of Mitigation Measures	
To prevent soil, surface- and groundwater pollution and nuisance as a result of poor waste management.	
Proposed Mitigation	
• Develop a waste management plan. • Take note that hazardous waste includes litter, mortalities, ash, empty hazardous chemical substance containers, soil and material (e.g. cloths) contaminated by hazardous chemical substances, etc. • The waste management plan should consider the type of waste, description, source, storage, disposal method, disposal facility and responsible person. • The implementation of the waste management plan should ensure: ➢ Installation of sufficient waste bins, skips or bulk containers, where necessary. ➢ All containers (bins, skips or bulk containers) shall be kept in a clean and hygienic manner. ➢ Containers (bins, skips or bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. ➢ Waste material may only be temporarily stored at areas demarcated for such storage. ➢ General waste shall be stored in a manner that prevents the harbouring of pests. ➢ General and hazardous waste should always be stored and disposed of separately. ➢ General and hazardous waste should be disposed of in appropriately demarcated bins. Bins are then emptied into appropriately demarcated skips or bulk containers once a day or more often, if required. ➢ Skips or bulk containers should be removed to a nearby landfill site on a weekly basis or more often, if required. ➢ Safe disposal certificates should be requested from general and hazardous landfill sites with every waste disposal. ➢ These safe disposal certificates should be kept on file to illustrate compliance with the cradle to grave principle. ➢ The ECO shall monitor the compliance with the cradle to grave principle. • No incineration of any kind of waste will be permitted onsite.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 36: Environmental risk assessment: Handling, storage and disposal of ash.

Activity: The burning of coal to heat free-range chicken houses.	
Aspect: Generation of ash.	
Nature of Environmental Impact: Ash consists mainly of inert materials, such as alumina and silica. Small quantities of sulphur are also present. If stored in huge quantities, this can react with water and cause acid drainage.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	21
Objective of Mitigation Measures	
To prevent soil, surface- and groundwater pollution and nuisance as a result of poor waste management.	
Proposed Mitigation	
Note: The management of ash should be included in the waste management plan. • Ash must be stored on a concrete area or in suitable container prior to removal. • Further research and consulting is required to determine which technology, design and process would be the most economically, socially and environmentally sustainable option for the handling, storage and disposal of ash. • Should ash be disposed of off-site, a safe disposal certificate must be obtained. Ash is deemed to be hazardous waste.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	1
Environmental Risk = Significance of Impact X Probability	7

Table 37: Environmental risk assessment: Chicken mortalities

Activity: Storage and disposal of chicken mortalities.	
Aspect: Poor waste (chicken mortality) management.	
Nature of Environmental Impact: Soil, surface- and groundwater pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	21
Objective of Mitigation Measures	
To minimise the impact of hazardous mortality waste on human health, avian health, soil-, surface-, groundwater pollution and the nuisance caused by odours.	
Proposed Mitigation	
Note: The management of chicken mortalities should be included in the waste management plan.	

Temporary storage of mortalities • The temporary storage area for mortalities must be a covered area that has access control, preventing the unlawful removal of mortalities. The current practise of storing mortalities in the mortality rooms (enclosed and roofed buildings) is acceptable. • In the event of temporary storage, mortalities must be stored in sealed bins prior to disposal. **Disposal of mortalities** • Mortalities must be disposed of as soon as possible. • Mortalities are currently taken to the Fourie's Poultry rendering plant on a daily basis. Rendering is seen as an acceptable way of sterilising the poultry waste (mortalities). **Disposal of mass mortalities** In the event of a disease outbreak: • Notify the state vet. • The state vet must visit the site. • The state vet will place the property, or the specific chicken site or house that is infected, under quarantine. • Depending on the disease and severity, the chickens can be slaughtered on site or transported to an abattoir with a Red Cross permit. • Alternatively, mortalities can be covered with lime and buried.

After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	1
Environmental Risk = Significance of Impact X Probability	**6**

Table 38: Environmental risk assessment: Litter (manure and bedding)

Activity: Handling, storage and disposal of chicken litter.
Aspect: Poor waste (litter) management.
Nature of Environmental Impact: Manure refers to the combination of faeces and urine (uric acid) excreted by poultry. Ammonia is produced as a by-product of the microbial decomposition of the organic nitrogen compounds in manure. Nitrogen occurs as both unabsorbed nutrients in animal faeces and as either urea (mammals) or uric acid (poultry) in urine. The formation of ammonia in faeces is slower, but will continue with the microbial breakdown of manure under both aerobic and anaerobic conditions. The potential for ammonia emissions exists wherever manure is present and ammonia will be emitted from confinement buildings, open lots, stockpiles, anaerobic lagoons and land application from both wet and dry handling systems. Emissions will depend on how much of the ammonia-nitrogen in solution reacts to form ammonia versus ionised ammonium (NH_4^+), which is non-volatile. The volatilisation of ammonia from any manure management operation can be highly variable depending on the following: • total ammonia concentration; • temperature: high temperatures favour higher concentrations of ammonia and thus greater ammonia emissions; • pH: high pH favours higher concentrations of ammonia and thus greater ammonia emissions; and storage time.

Before Mitigation	
Extent of the Impact	2

Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
Maintaining good litter conditions is important in minimising and preventing atmospheric ammonia emissions and the social impact (nuisance) of odours from the litter.	
Proposed Mitigation	
Note: The management of chicken litter should be included in the waste management plan. • Maintain good litter conditions by keeping the litter dry throughout the production cycle. • Litter should be collected and bagged immediately after a production cycle and prior to removal. • The free-range chicken houses must be dry cleaned efficiently to remove as much litter as possible and to reduce the amount of wash water used. • The removal of manure will occur after every cycle to prevent accumulation on site, keeping the nutrient rich manure from polluting surface and groundwater bodies, avoiding offensive smells and ensuring the hygiene and health of the new flock. • Litter will be preserved in a dry area, covered by sheeting or within a shed to protect it from rain and leaching. This is to prevent the formation of noxious odours and ammonia. • Litter is currently removed from site by a feedlot contractor.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 39: Environmental risk assessment: Washing of free-range chicken houses.

Activity: Washing of free-range chicken houses.	
Aspect: Run off of contaminated water.	
Nature of Environmental Impact: Pollution, siltation and erosion of surface water bodies.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To control the runoff of wash water created when the free-range chicken houses are cleaned.	
Proposed Mitigation	
• Free-range chicken houses are cleaned after each cycle. • After litter is bagged and stored, high-pressure hoses should be used in the washing of the houses, to minimise the amount of water used. • Wash and sanitise free-range chicken houses with biodegradable soaps and disinfectants. • Use biodegradable soaps and disinfectants in the footbath and showers. • Use biodegradable soaps and disinfectants for washing of vehicles. • Currently, wash water runs out of the free-range chicken houses into the surrounding	

environment. This will no longer be permitted and an alternative method of disposal of wash water is required. • Further research and consulting will be required to determine which technology, design and process would be the most economically, socially and environmentally sustainable option for the disposal of wash water from washing of the free-range chicken houses. • Recommendation: Channelling wash water into on-site evaporation ponds.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	2
Environmental Risk = Significance of Impact X Probability	**6**

Table 40: Environmental risk assessment: Storm water control.

Activity: Rain.	
Aspect: 'Clean' rainwater running into 'dirty' areas.	
Nature of Environmental Impact: Soil and surface water pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To prevent the contamination of 'clean' rain water by 'dirty' areas through control of storm water runoff.	
Proposed Mitigation	
• Clean storm water runoff from the surrounding environment must be channelled away from 'dirty' areas. These 'dirty' areas include the coal storage area, chemicals storage areas and all waste storage areas. • Clean storm water should be diverted and kept in the environment surrounding the site. • Storm water measures should be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion. • Where necessary place culverts underneath road foundations.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 41: Environmental risk assessment: Chemical substances.

Activity: Storage and handling of chemical substances including fuel, greases, vaccines, detergents etc.
Aspect: Poor management and spills of chemical substances.
Nature of Environmental Impact: Soil, surface water and groundwater pollution.
Before Mitigation

Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	21

Objective of Mitigation Measures

To prevent and minimise soil and water pollution as a result of poor management and accidental spills of chemical substances (fuel, greases, oils, vaccines, detergents etc.).

Proposed Mitigation

- Identify all chemical substances used onsite including fuel, greases, vaccines, detergents etc.
- Obtain the material safety data sheet of each of these chemical substances.
- Ensure that the material safety data sheets have sufficient information to enable the user to take the necessary measures to protect his/her health and safety and that of the environment.
- Material Safety Data Sheets for all hazardous chemical substances must be readily available on site.
- Develop and implement a dangerous goods management plan based on the material safety data sheets of all identified chemical substances and the 1995 Hazardous Chemical Substances Regulations in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- Keep a stock inventory register of all chemicals in the store.
- Powders must be stored above liquids.
- Proper storage of chemicals in a lockable, well ventilated building.
- Ensure adequate access control for the storage area.
- Storage areas for hazardous chemicals are to comply with standard fire safety regulations.
- Safety signage including "No Smoking", "No Naked Lights" and "Danger", and product identification signs, are to be clearly displayed in areas housing chemicals.
- Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water.
- Chemicals are to be properly labelled and handled in a safety conscious manner.
- All personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE).
- Ensure that diesel or fuel tanks are in a bunded area with capacity of holding 110% of the total storage volume.
- The removal of only the daily-required amount of chemicals to be used from the shed.
- If refuelling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel.
- Use of drip trays during filling of machinery or equipment. Drip trays should be emptied into secondary containers on a regular basis.
- Ensure that any spilled chemical cannot exit the designated storage area by constructing a berm or bump at the exit, or store chemicals in a spill tray.
- Immediately clean all spillage of fuels, lubricants and other petroleum based products.
- The contaminated material must be disposed of in accordance with the waste management procedure.
- No hazardous chemical must be discarded in the sewage or storm water system.
- Train staff on the use of chemicals in accordance with the risks as described in the material data sheets.
- Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.

After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Table 42: Environmental risk assessment: Equipment and vehicle maintenance.

Activity: Vehicle and equipment maintenance and fuelling.	
Aspect: Leakage and/or spillage of fuels, greases and oils.	
Nature of Environmental Impact: Hydrocarbon pollution of soil, surface - and groundwater.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	**21**
Objective of Mitigation Measures	
To prevent hydrocarbon pollution of soil, surface- and groundwater through spillage of fuel, grease or oil and leaking equipment and vehicles.	
Proposed Mitigation	
• Inspection and maintenance of equipment, generators and vehicles owned by Fourie's Poultry shall take place on a regular basis. • Security shall inspect vehicles (such as those that belong to Fourie's Poultry) on entering the facility to ensure vehicles are in sound condition. This will reduce the risk of oil or diesel spillages. • Equipment, generators and vehicles are to be repaired immediately upon developing leaks. • Generators must be stored on a concrete floor in a bunded area. • Drip trays shall be supplied for all repair work undertaken on machinery on site. • Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to contain incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. • Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site. • If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. • All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2

Environmental Risk = Significance of Impact X Probability	**10**

Table 43: Environmental risk assessment: Sanitation

Activity: Installation and use of ablution facilities.	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Potential surface- and/or groundwater contamination.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
Prevent soil, surface- and groundwater pollution from unsanitary conditions onsite.	
Proposed Mitigation	
• Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. • The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point. • Ablution facilities shall be inspected and maintained to prevent or minimise blockage and leakages. • Ablution facilities are to be serviced weekly or more frequently if required. • Toilets should have properly closing doors and be supplied with toilet paper. • Awareness of the importance of proper hygiene should be created among employees. • Ablating anywhere other than in the toilets shall not be allowed. • A septic tank system should be considered instead of French drains.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 44: Environmental risk assessment: Outbreak of disease or infection of chickens

Activity: Rearing of free-range chickens.	
Aspect: Outbreak of poultry diseases.	
Nature of Environmental Impact: Infection and possible death of chickens, other avian species and humans.	
Before Mitigation	
Extent of the Impact	3
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**8**
Probability	3
Environmental Risk = Significance of Impact X Probability	**24**
Objective of Mitigation Measures	
To prevent the outbreak of a poultry disease among chickens, other avian species and humans.	
Proposed Mitigation	

• All chickens should originate from a closed bio-security compartment. • All chicks should originate from disease free sources. • Chicks from another farm should not be mixed with chickens in the flock. • Access control to and from the premises and access to the premises should only be by prior arrangement. • Installation of footbaths with disinfectant at all the entrances to each of the free-range chicken facilities. • Installation of showers for all staff working on site. • Use a sound vaccination program. • Never permit contaminated equipment from other poultry farms in the buildings. • Keep wild birds, rodents and predators away from the free-range chicken houses. • Installation of rodent bait traps and flytraps. • Clean and sanitise free-range chicken houses after each cycle with biodegradable soaps and disinfectants. • Monitoring and auditing of processes by a contracted veterinarian or State Vet. • Obtain a reliable diagnosis before starting treatment for a certain disease. • Seek advice of a trained poultry diagnostician when it is apparent that a disease is present in the flock. • When submitting a sample to a diagnostic laboratory, submit a sample of the problem flock. The sample should include two or more sick birds and freshly dead birds, if any. Take care to preserve dead specimens by cooling and preventing decomposition. It is not recommended to freeze dead birds as this may cause cell rupture and make diagnosis more difficult. • Proper handling, storage and disposal of litter and mortalities, in demarcated areas, away from foot traffic or vehicles entering and leaving the premises.

After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	1
Environmental Risk = Significance of Impact X Probability	**6**

Table 45: Environmental risk assessment: Resource (Electricity) use during operation

Activity: Usage of electricity.	
Aspect: Inefficient and redundant use of electricity.	
Nature of Environmental Impact: Wastage or depletion of valuable resources, such as coal used to generate electricity.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the inefficient and redundant use of valuable resources.	
Proposed Mitigation	
General • Ensure that all employees have been informed on the importance of natural resources (proper environmental training and awareness).	

• Inspect operations regularly to determine areas of improvement with regards to resource consumption. • Monitoring of resource consumption. • Identify areas where resource consumption can be minimised. • Set targets to try minimise resource consumption. • Identify technologies and practices that may reduce resource consumption. • Implementation of technologies and practices that can reduce resource consumption. • Save electricity by turning off lights and computers when leaving the office. • Halogen light bulbs convert approximately 80% of the energy used into heat rather than light. Replace spent light bulbs with energy saving CFLs (compact fluorescent lights) or newer and more efficient LEDs (light-emitting diodes).

After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 46: Environmental risk assessment: Resource (water) use during operation.

Activity: As there is no municipal water, the farm is dependent on two boreholes for the provision of clean water for domestic use and farming activities. Water is mainly used at the free-range chicken houses for the rearing of chickens and to wash the houses.
Aspect: Inefficient and redundant use of water.
Nature of Environmental Impact: Each chicken uses approximately 4.9 litres of water per production cycle. Currently approximately 4924.5m^3 of water is used by the one existing cluster located on the Roodekraal free-range chicken farm per annum for poultry drinking water (Calculated as: 1 clusters x 10 houses x 15 000 chickens/house/cycle x 6.7 cycles/annum x 4.9liters/chicken x 1m^3/1 000liters). Should the proposed cluster be constructed, an additional 4924.5m^3 of water will be used, resulting in a combined 9 849m^3 being used on Portion 2 of the Roodekraal free-range chicken farm. Approximately 1 500 litres of water is used to wash one free-range chicken house. This is approximately 100.5m^3 of water per annum to clean the existing free-range chickencluster, located on Portion 2 of the Roodekraal farm (Calculated as: 1 clusters x 10 houses x 6.7 cycles/annum x 1 500liters/house x 1m^3/1 000liters). Should the proposed cluster be constructed, 201m^3 of wash water will therefore be used per annum between the two onsite free-range chicken house clusters. The total water usage on Portion 2 of the Roodekraal free-range chicken farm, should the proposed cluster be approved and constructed, would be approximately 10 050m^3 per annum. This is less than the 18 645.8475m^3 of groundwater that may be abstracted on this property. At each cluster abstracted groundwater is stored in five 5 000 litre JoJo tanks. If the proposed expansion was to take place Portion 2 of the Roodekraal free-range chicken farm will have a water storage capacity of 50 000 liters (50m^3). Wastage and excessive use of groundwater may lead to depletion of the valuable resource.

Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**

Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the inefficient and redundant use of valuable resources.	
Proposed Mitigation	
General • Ensure that all employees have been informed on the importance of natural resources (proper environmental training and awareness). • Regular site inspection by supervisors. • Inspect operations regularly to determine areas of improvement with regards to resource consumption. • Regular maintenance and inspection of equipment such as hose pipes, to prevent leaks. • Monitoring of resource consumption. • Identify areas where resource consumption can be minimised. • Set targets to try minimise resource consumption. • Identify technologies and practices that may reduce resource consumption. • Implementation of technologies and practices that can reduce resource consumption. • Use high pressure hoses to clean the free-range chicken houses. • Regular inspection and maintenance of all boreholes, JoJo tanks, toilets, water pipes and taps. • Leaking JoJo tanks, taps, toilets and pipes must immediately be repaired. • Running water taps and pipes may not be left unattended. • Each time you flush the toilets approximately 20 litres of water is used, therefore use the toilets accordingly. • All pipe, hose and tap connections are to be fitted with correct and appropriate plumbing fittings. **Water Use Licensing:** • No Water Use License is not required for the abstraction of groundwater. • As more than 10m^3 of groundwater will be abstracted on any given day, a registration of this water use is required. • The current and anticipated future storage capacities do not require a registration or license because less than 10 000m^3 of water will be stored on the property (DWAF, 2004).	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 47: Environmental risk assessment: Alien invasive vegetation

Activity: Growth of vegetation.	
Aspect: Infestation of alien invasive vegetation.	
Nature of Environmental Impact: Loss of indigenous habitat and excessive water usage.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**

Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To control alien invasive plant species.	
Proposed Mitigation	
• Ensure all alien invasive plants are identified on the site. • Ensure an eradication plan for the removal of the alien invasive vegetation is developed. • Ensure all alien invasive vegetation is removed from the site in accordance with the eradication plan. • Alien invasive vegetation will be eradicated and controlled by manual removal, chemical application and/or biological control. The regulations in terms of the Conservation of Agricultural Resource Act, 1983 apply.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

7.5 Post-Construction- and Concurrent Rehabilitation Phase

Table 48: Environmental risk assessment: Construction site decommissioning

Activity: Decommissioning of construction site.	
Aspect: Removal of structures and infrastructure (such as demarcation fencing, signage, equipment, etc.).	
Nature of Environmental Impact: Environmental degradation as a result of inapt removal of structures and infrastructure.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**
Objective of Mitigation Measures	
To ensure decommissioning of the construction area occurs with minimal environmental harm.	
Proposed Mitigation	
• The construction area must be rehabilitated as soon as construction ceases. • Remove all construction equipment, storage containers, signage, fencing etc. from site. No unauthorised entry, stockpiling, dumping or storage of equipment outside the site boundary is permitted. • Take care to avoid leaks and spills during removal of all temporary fuel- and hazardous chemical- stores. • Take care to avoid leaks and spills during the removal of all temporary waste storage facilities. • Take care to avoid leaks and spills during the removal of all temporary sanitary infrastructures. • Access roads used during the construction phase should be returned to a condition no worse than before the construction phase. • All building rubble and remaining rock should be disposed of at a certified waste disposal site.	
After Mitigation	

Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 49: Environmental risk assessment: Shaping

Activity: Shaping.	
Aspect: Unauthorised backfilling, poor sloping and deposition of subsoil above topsoil during backfilling.	
Nature of Environmental Impact: Damage to infrastructure (boreholes), degradation of topography and general appearance and loss of a valuable resource (topsoil).	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To prevent the degradation of the natural topography and general appearance and to prevent the loss of topsoil.	
Proposed Mitigation	
• Backfilling of rock and inert building rubble may only occur subject to approval by the ECO. • No excavated material or stockpiles shall be left on site and all material remaining after backfilling shall be removed or smoothed over to blend in with the surrounding landscape. • Backfilled areas shall be monitored and depressions filled after the backfill settles. • New slopes should mimic the natural slopes and topography. • When backfilling, first deposit subsoil, followed by topsoil and compact for the best results.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 50: Environmental risk assessment: Topsoil replacement

Activity: Replacement of topsoil.	
Aspect: Poor topsoil replacement and topsoil exposed to the elements.	
Nature of Environmental Impact: Loss of a valuable resource (topsoil).	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Objective of Mitigation Measures	
To prevent loss of topsoil.	
Proposed Mitigation	
• Replace topsoil concurrent with construction, whenever possible. • Cordon off areas under rehabilitation using danger tape. If necessary, these areas should be fenced off to prevent vehicular, pedestrian and livestock access. • Aim to replace stockpiled topsoil to its original depth. • Topsoil should be returned to the same area from where it was stripped. • If there is not enough topsoil available from a particular soil zone, topsoil of a similar quality may be used to replace it. The suitability of substitute topsoil will be determined by a soil analysis and approved by the ECO. • Sample soil to a depth of 200mm in all areas allocated for reintroduction of indigenous vegetation. Have samples analysed to determine the type of fertiliser and rate at which it should be applied. • Compacted soil should be ripped to ensure effective re-vegetation. • Work necessary additives, as indicated by the soil analysis, into the soil.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

Table 51: Environmental risk assessment: Vegetation establishment

Activity: Establishment of vegetation.	
Aspect: No topsoil available, on site, for rehabilitation.	
Nature of Environmental Impact: Poor vegetation establishment, resulting in exposure of topsoil to the elements and as a result degradation and erosion of a valuable resource (topsoil).	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To prevent the loss of a valuable resource (topsoil) and ensure establishment of indigenous vegetation where necessary.	
Proposed Mitigation	
• Re-vegetation by indigenous vegetation. • If areas show no specified vegetation growth within three months, areas shall receive additional topsoil, ripped to a depth of 100mm and re-planted. • Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention. • Soil stabilising measures could include rotovating in straw bales (at a rate of 1 bale/20m^2), applying mulching or brush packing, or creating windbreaks using brush or bales.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	2

Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	1
Environmental Risk = Significance of Impact X Probability	**5**

7.6 Closure Phase

The viability of the expansion of the free-range chicken farm is based on the increased demand for chicken in South Africa. This is driven by an ever increasing population. It is therefore highly unlikely that the facility will be decommissioned and closed in the foreseeable future. However, if closure is considered, an extensive closure and rehabilitation plan will be drafted and sent to the Department prior to the event.

7.7 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.

As the proposed free-range chicken cluster will be situated close to the three existing clusters, the following cumulative impacts will arise:

- The proposed free-range chicken cluster will add to the noise and dust generated by the other three clusters;
- The proposed free-range chicken cluster will add to the amount of groundwater that is currently used on the farm;
- The proposed free-range chicken cluster will increase the number of vehicles that currently travel to and from the farm; and
- The proposed free-range chicken cluster will increase the amount of atmospheric pollution due to the burning of coal in the exothermic hot water generators and ammonia emissions.

7.8 Assumptions, gaps in knowledge and uncertainties

The following assumptions were made during the basic assessment:

- The free-range chicken cluster will be constructed as planned and designed by the engineers;
- The free-range chicken cluster will be operated in a responsible manner; and
- All mitigation measures proposed in the draft EMP (Appendix F) will be implemented by the applicant to ensure that the environmental impacts are kept to a minimum.

8. ENVIRONMENTAL IMPACT STATEMENT

8.1 Summary of key findings

To meet the ever increasing demand for chicken in South Africa, the client is proposing to expand their Roodekraal free-range chicken farm through the addition of a fourth house cluster (ten free-range chicken houses). Only one site was identified as a viable option for the development of the proposed free-range chicken cluster.

Environmental impacts will occur as a result of the construction and operational phase of the project. While the environmental impacts can be mitigated to a degree, the impacts will still add to the existing impacts of the three current free-range chicken clusters present on the farm.

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

The table below compares the main positive and negative implications of the proposed free-range chicken cluster at the site to those of the no-go option (current situation).

Table 52: Comparison of the positive and negative implications of the proposed activity and alternative option

	Proposed site	No-go option (current situation)
Positive impacts	• Creation of additional employment opportunities during the construction and operational phases of the project. • Stimulation of the local and regional economy. • Continual management of alien invasive vegetation. • Sustainable utilisation of land towards increased food security in South Africa.	• No disturbance of the vegetation on site.
Negative impacts	• Possible soil-, surface water- and/or groundwater- contamination. • Possible generation of dust and noise.	• No creation of additional employment opportunities during the construction and operational phases of the project. • No local and regional economic benefits. • No increase in the food security of South Africa.

The additional free-range chicken cluster will have a positive impact in terms of finances for the applicant and will also result in job creation and the stimulation of the local and regional economy. The rearing of free range chickens at the proposed free-range chicken cluster will also assist in creating a more sustainable food supply for people in South Africa. The positive social impacts will outweigh the negative environmental impacts, assuming that proposed mitigation measures are implemented. The No-Go option would entail no further development of the site (i.e. the continued operation of the three existing free-range chicken clusters).

9. CONCLUSION AND RECOMMENDATION

As indicated in the section 6.2.2, the construction of the free-range chicken cluster at the proposed site is favourable. Assuming that the free-range chicken cluster will be constructed at the proposed site, the project can be expected to have the following overall impacts:

- Design and planning phase: **Medium significance** that can be reduced to **Low significance** though the implementation of mitigation measures;
- Construction phase: **Low – High significance** that can be reduced to **Low – Medium significance** though the implementation of simple and effective mitigation measures;
- Operational phase: **Low – High significance** that can be reduced to **Low significance** though the implementation of simple and effective mitigation measures; and
- Post-Construction and Concurrent Rehabilitation phase: **Low – Medium significance** that can be reduced to **Low significance** though the implementation of simple and effective mitigation measures.

The negative environmental impacts can be mitigated to a certain degree and the positive social and economic impacts outweigh the potential negative environmental impacts.

Based on the outcomes of the risk assessments conducted as part of the basic assessment, coupled with the recommendations made by the EAP and specialists, the following recommendations are made:

1) **The project should be approved and allowed to proceed on the proposed site.**
2) **The mitigation measures proposed above that have also been incorporated into the EMP in more detail, must be implemented during all phases of the project.**
3) **A communications pathway must be established that would allow the designated ECO to accept and deal with stakeholder complaints.**
4) **Mitigation measures proposed above should be incorporated as far as possible into the operational plan for the development.**
5) **Strict monitoring and enforcement of requirements of the EMP must be undertaken to ensure that contractors and operators adhere to these requirements.**