Draft Basic Assessment Report

for

SK & AM LE ROUX LANDGOED (EDMS) BPK

REF:

Prepared by:

Bucandi Environmental Solutions

Project Manager: Dr Hélen Prinsloo (D. Tech)
(*Pr.Sci.Nat.*) Reg. No. 400108/11 (SACNASP)
EAPASA 2022/5586

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Table of contents

1. INTRODUCTION AND BACKGROUND

1.1 Background

SK & AM Le Roux Landgoed (Edms) Bpk is proposing the construction of 8 environmentally controlled poultry houses with the capacity to hold up to 30 000 birds per house on the Portion 10 of the farm Kafferskraal 218 IP situated in Dr Kenneth Kaunda District Municipality within JB Marks Local Municipality. The proposed project triggers a Basic Assessment for certain listed activities under Listing 1 of NEMA (National Environmental Management Act, 1998). Bucandi Environmental Solutions (Bucandi) was requested by SK & AM Le Roux Landgoed (Edms) Bpk to conduct a Basic Assessment as part of the application for environmental authorisation.

1.2 Details of the project proponent

Company name: SK & AM Le Roux Landgoed (Edms) Bpk

Reg. No: 1972/013272/07

Physical address: Portion 10 of the farm Kafferskraal 218 IP

Postal address: P O Box 1066, Ventersdorp

Contact person: Mr. Johan Kooij

Telephone number: 083 298 1311

Email address: ska01@truenw.co.za

1.3 Details of Environmental Assessment Practitioner (EAP)

Company name: Bucandi Environmental Solutions

Reg. No: 2009/087537/23

Physical address: Plot 44
Harpington
Potchefstroom
2520

Postal address: P. O. Box 317
Viljoenskroon
9520

Project coordinator: Dr Hélen Prinsloo

Telephone number: 076 682 4369

Email address: helen@bucandi.co.za

Qualification: D. Tech (Conservation Management)

Experience: 18 years

Affiliation: SACNASP *Pri.Sci. Nat* 400108/11
EAPASA: 2022/5586

Assistant: Marika Smook

Telephone number: 076 422 3484

Email address: info@bucandi.co.za

Please see Appendix G for a copy of the Curriculum Vitae for the EAP.

1.4 Details of specialists

No specialists have been used for this project at this time.

2. LOCATION OF PROPOSED ACTIVITY

The study area is located 29.25 km northeast of Ventersdorp, 21.70 km northwest of Coligny in the JB Marks Local Municipality, Dr Kenneth Kaunda District Municipality, Northwest Province (Appendix A). More specifically it is located on the Portion 10 of the farm Kafferskraal 218 IP, at 26°24'12.36"S; 26°31'14.23"E (Appendix A). The N14 between Coligny and Ventersdorp runs within 9.14 km of the site with a farm road providing access to the site. See Appendix A for the locality map and layout plans.

21-digit Surveyor General code	T0IP00000000021800010
Physical address and farm name	Portion 10 of the farm Kafferskraal 218 IP
GPS coordinates	26°24'12.36"S; 26°31'14.23"E

3. SCOPE OF ACTIVITY

3.1 Listed activities triggered

The proposed activity triggers the following Listed Activities in terms of **Listing Notice 1 of Government Notice No. R327** published in Government Gazette No. 40772 of **7 April 2017** under the National Environmental Management Act, Act 107 of 1998:

Listing 1:
(ACTIVITY NO. 5) The development and related operation of facilities or infrastructure for the concentration of (ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days and (iv) more than 25 000 chicks younger than 20 days per facility situated outside an urban area.
(ACTIVITY NO. 28 Residential, mixed, retail, commercial, industrial or institutional development where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development (ii)

will occur outside an urban area, where the total land to be developed is bigger than 1 hectare.

3.2 Description of activity

The activity will entail the construction 8 environmentally controlled chicken layer houses (90 m x 10 m each). Each house will have the capacity for 30 000 birds. The entire proposed development will be able to house up to 240 000 birds. The total footprint of the development will be 59 532.51 m^2 (5.95 ha).
The project will entail the following:

- The utilisation of 5.95 ha of agricultural land that is classified as Terrestrial Ecological Support Area (tESA) 2.
- Earthworks on 5.95 ha to prepare for 8 environmentally controlled poultry houses.
- Construction of 8 environmentally controlled poultry houses (90 m x 10 m) with capacity for 30 000 birds per house, totalling 240 000 birds.
- A silo and water tank will be erected next to each house.
- Powerlines will be connected to each house from inverters fed from solar panels on the roof of the houses.
- Pipelines will be connected to each house from an existing borehole.

The site will be fenced off with a 2.4 m electric fence.

3.3 Relevant legislation

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act, Act No. 107 of 1998.	Northwest Department of Economic Development, Environment, Conservation, and Tourism	1998
Listing 1 of regulation 327 promulgated under Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998) in Government Gazette 40772. Listed activity 5(ii), (iv)		1998
National Water Act, Act No. 36 of 1998.	Department of Water Affairs	1998
Conservation of Agricultural Resources Act, Act No. 43 of 1983	Northwest Department of Economic Development, Environment, Conservation, and	1983

	Tourism	
Air Quality Act, Act No. 39 of 2004. Reg. 983 published on 22 November 2013 in GN 37054	Ngaka Modiri Molema District Municipality	2004 2013
Heritage Act, Act No 25 of 1999.	South African Heritage Resources Act	1999
Meat Safety Act, Act 40 of 2000	Department of Agriculture, Forestry and Fisheries	2000
National Environmental Management: Waste Act, Act No. 59 of 2008 Listed Activities Reg. 921 published on 29 November 2013 in GN 37083	Department of Economic Development, Environment, Conservation and Tourism	2008
Occupational Health and Safety Act, Act 85 of 1993 Noise regulation, 2003	Department of Labour Department of Health and Safety	1993 2003
Environmental regulations for workplaces, 1987	Department of Labour	1987
Facility regulations,1990	Department of Labour	1990
General Health and Safety Regulations, 1986	Department of Labour	1986
Electrical Installation Regulations, 2009.	Department of Labour	2009
Electrical Machinery Regulations, 1988.	Department of Labour	1988
Construction Regulations, 2014	Department of Labour	2014

4. NEED AND DESIRABILITY OF THE PROJECT

4.1 Need for operation of the facility

The facility will provide increased food availability; in particular poultry products. Poultry is highly desirable as a food item across all income groups in South Africa. Internationally production of poultry has increased significantly over the past few years in line with increased consumer demands for production of poultry and expectations are that consumer

demand will continue to increase. Due to overcrowding of present facilities, lack of additional facilities and therefore the potential for increased biological risk, suppliers have embarked on a process of establishing new facilities in order to overcome these problems and ensure the long-term sustainability and viability of the industry. The socio-economic value of the project will indirectly have a positive impact on the immediate area as well as cater for the increasing demand for poultry in the Northwest Province and nationally. At least 10 temporary employment opportunities will be created during the development and construction phase. At least 14 additional people will be permanently employed during the operational phase of the activity. Contractors are employed during the construction phase and additional employment opportunities are therefore created.

4.2 Preferred location

The proposed site is located on 5.95 ha of agricultural land that is classified as Terrestrial Ecological Support Area 2. The N4 between Coligny and Ventersdorp runs within 9.14 km from the site with a farm road providing access to the site. A borehole is located within 200 m of the site. Solar panels will be placed on the roof of the houses to provide electricity. The slope on the site is 1:22 meaning that the site is flat (see complete site description in Section 5.1).

5. PROJECT ALTERNATIVES

5.1 Property or location alternatives

See Appendix B for site photographs and Appendix C for the site plans.

Site alternative 1 (preferred site)
The proposed site is located on 5.95 ha of agricultural land that is classified as Terrestrial Ecological Support Area 2. The N4 between Coligny and Ventersdorp runs within 9.14 km from the site with a farm road providing access to the site. A borehole is located within 200 m of the site. Solar panels will be placed on the roof of the houses to provide electricity. The slope on the site is 1:22 meaning that the site is flat.

5.2 Activity alternatives

Preferred activity
Eight environmentally controlled, closed chicken poultry houses (approximately 90 m X 10 m) will be constructed with a capacity for 30 000 birds per house. Each house will have a Heatco oven controlling the temperature inside the house. A water tank and a silo for food will be constructed next to each house with underground pipelines connecting the water tanks with the existing boreholes. A 2.4m electric fence with an entry gate (with biosecurity control measures) will be constructed around the site. A biosecurity house will be erected containing an office as well as a bathroom and showers. Electricity lines will be connected to the water tanks and all the houses from inverters fed from solar panels on the roofs of the houses.

Activity alternative

The site lay-out will be exactly as for A1, but the chicken houses will be open and not environmentally controlled. The differences between closed houses (A1) and

open houses (A2) are as follows:

	A1 – Environmentally controlled	A2 – Open
Isolation value (R)	12	1.5
Heat capacity	1 100kW	1 500kW
Chickens/m^2	14	13
Energy saving	20%	0%

5.3 Design or layout alternatives

Apart from the site alternatives, no design or layout alternatives are being considered.

5.4 Technology alternatives

No technology alternatives were considered for the proposed project.

5.5 Operational alternatives

No operational alternatives were considered for the proposed project.

5.6 The "no-go" activity alternative

The "no-go" alternative will entail continuation of crop cultivation and cattle grazing.

6. PUBLIC PARTICIPATION PROCESS

Please see Appendix D1 for a copy of the newspaper notice that was placed in "Die Beeld" on 25 October 2024.
Please see Appendix D2 for a photo of the notices placed at the site.
Please see Appendix D3 for the notifications that were sent to all the neighbours as well as the Local and District Municipalities and Department of Water and Sanitation on 25 October 2024
Please see Appendix D4 for the Comments and Responses Report.
A copy of the draft BAR will be sent to all I&APs.

7. ENVIRONMENTAL ATTRIBUTES

7.1 Geographical attributes

7.1.1 Gradient of the site

The proposed site is located between 1 400 mamsl and 1 415 mamsl sloping towards the south (gradient = 1:22).

7.1.2 Soils

The property is located on landtype Bc33. Soils for this landtype include the following:

Rock – 12.8%

Soil type	% Occurrence	% Clay in A horizon	% Clay in B horizon
Shorrocks Hu36, Msinga Hu26	27.8	10 - 25	15 - 35
Mispah Ms10, Klipfontein Ms11	25.7	10 - 25	
Williamson Gs16, Trevanian Gs17, Platt Gs14	9.4	10 - 25	
Blinkklip Cv36, Summerhill Cv37	4.6	15 - 25	20 - 38
Lindley Va41, Valsrivier Va40	4.4	15 - 25	30 - 50
Leslie Gc36	3.5	10 - 25	15 - 35
Chinyika Wo21, Rensburg Rg20, Killarney Ka20	2.6	35 - 60	
Nyoka Sw41, Malakata Sw40	1.8	15 - 25	30 - 50
Rietvlei We12, Devon We22, Sibasa We13	1.8	10 - 25	25 - 45
Bezuidenhout Av37	1.4	20 - 35	35 - 40
Graythorne Mw21, Gelykvlakte Ar20	1.0	35 - 65	8 - 14

The landtype is dominated by soils with low clay content in the A horizon. Soils with a high clay content (above 40%) in the A horizon (typically associated with proximity to water bodies and / or a shallow water table) occur only at very low percentages.

7.1.3 Geology

Geology for this landtype consist predominantly of Ventersdorp lava with Ventersdorp quartzite, grit and tuff occurring in places.

7.2 Biological attributes

7.2.1 Groundcover and vegetation

The farm (289.25 ha) consists historically of Vaal-Vet Sandy Grassland, and Endangered vegetation type and ecosystem. The proposed development site (60 021.57 m^2 / 6 ha) is located on an area that has been entirely transformed for the cultivation of crops. It was actively ploughed and planted until 2017 and is currently used for grazing and the cultivation of planted pasture.

The vegetation type that historically occurred is Vaal-Vet Sandy Grassland. This vegetation forms part of the Dry Highveld Grassland Bioregion in the Grassland Biome. It covers an area of 22 743.16 km^2 mainly in the North-West and Free State Provinces, south of Lichtenburg and Ventersdorp, stretching southwards to Klerksdorp, Leeudoringstad, Bothaville and to the Brandfort area north of Bloemfontein. It occurs at an altitude of 1 220 – 1 560 mamsl, most often 1 260 – 1 360 mamsl. It is rated Endangered with 36.8% remaining and a conservation target of 24%. It is currently hardly protected with only 0.3% statutorily conserved in the Bloemhof Dam, Schoonspruit, Sandveld, Faan Meintjies, Wolwespruit and Soetdoring Nature Reserves. About 63% has been transformed for cultivation (ploughed for commercial crops) and the rest remains under strong grazing pressure from cattle and

sheep. Erosion is very low in 85.3% of the vegetation type and low in 11% of the vegetation type.

The proposed development will not have an impact on this vegetation type as the land has been completely transformed for crop cultivation.

7.2.2 Biodiversity classification

The farm contains 159.95 ha of Terrestrial Critical Biodiversity Area 1 (tCBA 1) and 129.30 ha of Terrestrial Ecological Support Area 2 (tESA 2). It also contains 30.19 ha of Aquatic Ecological Support Area 1 (aESA 1), overlapping with tCBA 1), and 10.25 ha of Aquatic Ecological Support Area 2 (aESA 2), overlapping with tESA 2.

The proposed site will have an impact on 60 021.57 m^2 / 6 ha of tESA 2.

7.2.3 Sensitive areas

The proposed site is 433 m northwest, at its nearest point, to an unnamed non-perennial stream.

The proposed development will not have an impact on any sensitive areas.

7.3 Physical attributes

7.3.1 Waste generation

Activity alternative 1 (Preferred alternative)

Construction Phase

An estimated 8 m^3 of solid waste will be produced per month during the Construction Phase. Waste is expected to be limited to packaging materials (shrink wrap, cardboard) and litter generated by the construction staff. It will also contain leftover building materials such as cement or concrete, and PVC panelling. All the leftover building materials will be removed by the building contractor. Waste will be recycled as far as possible. Non-recyclable waste will be sorted into different types and disposed of at the Ventersdorp Landfill.

Construction phase solid waste will be disposed of at the nearest licensed waste disposal site. Waste considered unsuitable for municipal waste disposal sites will be disposed of at a suitably licensed hazardous waste disposal facility (e.g., WasteTech).

Operational Phase

An estimated 224 m^3 of solid waste will be produced per month during the Operational Phase. Solid waste will be disposed of at the nearest licensed waste disposal. Waste considered unsuitable for municipal waste disposal sites will be disposed of at a suitably licensed hazardous waste disposal facility (e.g., WasteTech). Any general waste such as litter generated by staff will be disposed of at Ventersdorp Landfill.

Manure Removal

Approximately 144 tons of poultry manure will be produced monthly. After completion of each 3 2day cycle manure is removed and used on the agricultural fields on the farm.

- **Number of houses** = 8
- **Birds per house** = 30 000
- **Total birds** = 30 000 × 8 = 240 000
- **Manure production per bird** = **0.02 kg/day** (broilers)
- **Total daily manure production**:
  240 000 × 0.02 = 4 800 kg/day = 4.8 tons
  Monthly manure production: 4.8 × 30 = 144 tons/month

The poultry facility will produce approximately **144 tons of manure per month** assuming **0.02 kg of manure per bird per day**.

Disposal of Mortalities

Approximately 7 200 dead chickens will be produced monthly, an average of +/-3% mortality rate from a well-managed farm with optimal biosecurity, nutrition, and ventilation. The mortalities are removed on a daily basis and collected by a contractor (Letsatsi) to be used as food for crocodile and predators (See Appendix F5).

Activity alternative 2

Construction Phase

An estimated 8 m^3 of solid waste will be produced per month during the Construction Phase. Waste is expected to be limited to packaging materials (shrink wrap, cardboard) and litter generated by the construction staff. It will also contain leftover building materials such as cement or concrete, and PVC panelling. All the leftover building materials will be removed by the building contractor. Waste will be recycled as far as possible. Non-recyclable waste will be sorted into different types and disposed of at the Ventersdorp Landfill.

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No-go alternative
No solid waste will be produced.

7.3.2 Liquid effluent

Activity alternative 1 (Preferred alternative)

After the completion of each cycle, the chickens and all manure are removed. After removal, all surfaces are sprayed with foam-based detergent that is left to evaporate. Upon completion of this process, the floors of the houses are washed with water only that will be allowed to soak into the soil surrounding the facility.

Activity alternative 2

After the completion of each cycle, the chickens and all manure are removed. After removal, all surfaces are sprayed with foam-based detergent that is left to evaporate. Upon completion of this process, the floors of the houses are washed with water only that will be allowed to soak into the soil surrounding the facility.

No-go alternative
No liquid effluent will be produced.

7.3.3 Atmospheric emissions

Activity alternative 1 (Preferred alternative)
Since the houses will be closed and environmentally controlled, the amounts of dust, ammonia and odours released into the atmosphere will be minimal.

Activity alternative 2
If this activity alternative is chosen, open houses will be used and relatively high amounts of dust, ammonia and odours will be released into the atmosphere, being of some discomfort to neighbours.

No-go alternative
No atmospheric emissions will be produced.

7.3.4 Noise

Activity alternative 1 (Preferred alternative)

The fans used inside the chicken houses will generate low levels of noise. Noise levels (at existing chicken layer houses) were measured directly outside the boiler room and 100m away from the fans. In both cases the levels read 58db. Low levels of noise will be produced by the chickens in the houses as well.

Activity alternative 2
Low levels of noise will be produced by the chickens in the houses.

No-go alternative
Low levels of noise will be produced during cultivation of the fields.

7.3.5 Water use

Activity alternative 1 (Preferred alternative)
Site 2
The activity will use approximately 3 369.7 m^3 of water per month. This will be sourced from groundwater through an existing borehole (See Appendix F-7 for proof of legal water use).

Activity alternative 2
The activity will use approximately 3 369.7 m^3 of water per month. This will be sourced from groundwater through an existing borehole (See Appendix F7 for proof of legal water use).

No-go alternative
The activity will not use water.

7.3.6 Energy efficiency

Activity alternative 1 (Preferred alternative)
Because of a higher isolation (R) value (12 for semi - environmentally controlled poultry houses 1.5 for open houses) the use of fans for cooling in summer are much lower in closed houses than in open houses. During winter, closed houses also retain heat much longer and need substantially less heating than open houses. Energy efficient fans are also used. All the houses are fitted with a day light switch in order for outside lights only to be on when absolutely necessary. All lights inside the house make use of energy saving light bulbs.

Activity alternative 2
Open houses have a much lower isolation (R) value (12 for semi - closed houses versus 1.5 for open houses), but canvas “walls” are opened or closed to regulated the temperature inside the houses to a degree. During winter, open houses have a poor heat retention rate and more energy is needed for heating. All the houses are fitted with a day light switch in order for outside lights only to be on when absolutely necessary. All lights inside the house make use of energy saving light bulbs.

No-go alternative
The activity will not use electricity.

7.3.7 Alternative energy sources

The facility will rely on solar energy. Solar panels will be placed on the roofs of the poultry houses.

7.4 Human environment

7.4.1 Heritage and cultural attributes

There are no artefacts of cultural or heritage importance at the site. If any artefacts are discovered construction will seize and a Heritage Specialist will be contacted.

7.4.2 Socio-economic attributes

The JB Marks Local Municipality is a Category B municipality situated within the Dr Kenneth Kaunda District in the North West Province. It is the largest municipality of three in the district, making up almost half its geographical area. It was established by the amalgamation of the Ventersdorp and Tlokwe City Council Local Municipalities in August 2016. The N12 route that connects Johannesburg and Cape Town via the city of Kimberley runs through the municipality. The main railway route from Gauteng to the Northern and Western Cape also runs through one of the municipality's main cities, Potchefstroom. The city is 145km south-east of OR Tambo International Airport but has its own airfield, which can accommodate bigger aircraft and was formerly a military air base.
Gold mining is the dominant economic activity in the district, with Potchefstroom and Ventersdorp being the only exceptions. While Ventersdorp to the north-west of Potchefstroom focuses on agricultural activity, Potchefstroom's economic activity is driven by services and manufacturing. A big role-player in the provision of services in Potchefstroom is the world-class North-West University, which has its main campus in Potchefstroom. Potchefstroom's industrial zone has many companies, focusing mainly on the industries of steel, food and chemicals, with big entities such as King Korn, Kynoch, Naschem and the Soya Protein Process (SPP) company. Within the city centre, the infrastructure of Potchefstroom supports roughly 600 businesses.

Area: 6 398 km²

Cities/Towns: Potchefstroom, Ventersdorp

Main Economic Sectors: Community services, agriculture, mining, manufacturing, electricity, construction, trade, transport, finance

Demographic information:

	2022	**2016**	**2011**
Population	212 670	243 527	219 463
Age Structure			
Population under 15	25.4%	28.2%	27.4%
Population 15 to 64	68.0%	66.9%	66.8%
Population over 65	6.5%	4.9%	5.8%
Dependency Ratio			
Per 100 (15-64)	47.0	49.5	49.7
Sex Ratio			
Males per 100 females	93.3	101.5	99.1
Population Growth			
Per annum	-0.31%	2.36%	n/a
Labour Market			

	2022	2016	2011
Unemployment rate (official)	n/a	n/a	n/a
Youth unemployment rate (official) 15-34	n/a	n/a	n/a
Education (aged 20 +)			
No schooling	6.3%	8.9%	9.4%
Matric	n/a	30.7%	26.6%
Higher education	11.0%	12.6%	11.6%
Household Dynamics			
Households	66 719	80 572	67 098
Average household size	3.2	3.0	3.3
Female headed households	n/a	37.1%	37.1%
Formal dwellings	84.4%	82.0%	78.5%
Housing owned	n/a	52.6%	52.7%
Household Services			
Flush toilet connected to sewerage	80.2%	75.9%	75.4%
Weekly refuse removal	57.7%	46.2%	48.9%
Piped water inside dwelling	34.9%	16.8%	19.0%
Electricity for lighting	89.8%	87.5%	87.4%

The proposed development will contribute to social and economic uplifted through the addition of capital value and income generation to the region, as well as job creation. The table below summarises the expected relevant contributions.

Aspect	Activity alternative 1 (preferred activity)	Activity alternative 2	No-go alternative
Capital value	R 75 000 000.00	R 75 000 000.00	R 0
Annual income generation	R 16 000 000.00	R 16 000 000.00	R 0
Employment opportunities during construction	40	40	0
Value of employment opportunities during construction	R 200 000.00 per month	R 200 000.00 per month	R 0
Percentage to previously disadvantaged	95%	95%	0
Permanent employment opportunities	30	30	0

Value of permanent employment for 10 years	R 30 000 000.00	R 30 000 000.00	R 0
Percentage to disadvantaged	95%	95%	0

8. POTENTIAL IMPACTS

The impact assessment in this section considered the following activities and the impact of each of the activities:
Activity 1: The utilisation of 5.95 ha of agricultural land
Activity 2: Earthworks on 5.95 ha to prepare for 8 environmentally controlled poultry houses
Activity 3: Construction of the poultry facility.
Activity 4: Operation of the poultry facility.

8.1 Full description of impacts and risks identified

Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts and the degree to which these impacts can be mitigated

8.1.1 Activity alternative 1 – Construction of eight environmentally controlled poultry houses (preferred activity)

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
1-3	Air pollution on a local level.	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
1-3	Contamination of soils, surface water and groundwater due to leakages from vehicles	1	1	2	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Machinery must be properly maintained at all times. Servicing

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
	entering and exiting the site.								of machinery must take place only in specific demarcated and protected areas. Measures must be taken for the proper disposal of oils, grease, oil filters, rags, etc.
3,4	Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management.	3	3	3	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Proper ablution facilities must be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers must be made aware of the risk of soil water contamination. Domestic waste must be disposed of in appropriate containers, and removed to the Ventersdorp Landfill
4	Pollution of soil, surface water and groundwater due to ineffective manure disposal.	3	3	3	2	3	Medium	Negative	To the risk of soil, surface water mitigates, and groundwater pollution from ineffective manure disposal, the following measures will be implemented: **1. Manure Quantification & Management Plan** Each broiler is expected to produce

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									0.6 kg of manure over the first 30 days. A high-density poultry house with 40,000 birds will generate approximately 24 tonnes of manure per cycle. A manure management plan will be implemented to ensure safe collection, storage, and disposal in compliance with South African environmental regulations. **2. Proper Storage & Containment Measures** Runoff control systems, including berms and drainage channels, will be installed to prevent nutrient-laden water from reaching nearby watercourses. **3. Sustainable Manure Reuse & Disposal** Manure will be composted and used as organic fertiliser in line with Good Agricultural Practices (GAP). Buffer zones of at least 20 metres will be maintained from rivers, wetlands, and boreholes to protect

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									water quality. Manure disposal will comply with the National Environmental Management: Waste Act (NEM: WA) and relevant municipal by-laws. **4. Pollution Prevention & Monitoring** No manure application will take place before heavy rainfall to prevent surface runoff into water bodies. **5. Responsible Cleaning & Wastewater Management** The high-pressure spraying process will be optimised to reduce excessive water use and minimise effluent. **Reversibility of the Impact** With proper manure management, runoff control, and adherence to best practices, pollution risks are preventable and reversible. If contamination does occur, remediation measures, such as soil rehabilitation, water treatment, and adjusted

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									manure handling, can mitigate long-term impacts.
4	Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.	3	3	3	2	3	Medium	Negative	To prevent pollution of soil, surface water, and groundwater due to ineffective disposal of mortalities, the following mitigation measures will be implemented in compliance with South African environmental and biosecurity regulations. **1. Mortality Quantification & Disposal Planning** The operation consists of 8 poultry houses, each housing 30,000 birds, totalling 240,000 birds per cycle. Expected mortality rates of 3% translate to approximately 7,200 mortalities per cycle. A mortality management plan will be implemented to ensure safe, biosecurity, and legally compliant disposal. **2. Approved Disposal Methods** *Collection by Licensed Contractors for Use in Animal Feed (Preferred Method)*

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									Mortalities will be collected daily by a registered, licensed contractor that complies with the Animal Diseases Act (Act 35 of 1984) and municipal by-laws. Collection vehicles will be sealed, leak-proof, and disinfected to prevent fluid leakage and contamination of soil or water sources. **Storage protocols:** Mortalities will be stored in covered, sealed containers to prevent access by scavengers and reduce odour emissions. Storage areas will be impermeable and sloped to prevent fluid accumulation. Contractors will provide proof of disposal compliance and maintain records for auditing purposes. **Prohibited Disposal Methods** On-site burial is not permitted due to groundwater contamination risks. Mortalities will not be dumped in open areas or watercourses, as

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									this is illegal and poses biosecurity risks. **3.Biosecurity & Pollution Prevention Measures** Mortalities will be removed from poultry houses promptly (at least daily) to prevent decomposition and contamination. All storage and transfer points will be leachate-controlled to prevent nutrient leaching into soil and groundwater. Transport vehicles will follow designated routes to avoid contamination of sensitive areas. The contractor's compliance with disposal regulations will be audited periodically. **4. Groundwater & Surface Water Monitoring** Stormwater control measures, such as berms and drainage systems, will be implemented to prevent runoff. **5. Reversibility of the Impact** If improper disposal leads to contamination, the impact can be

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									partially reversible through: Removal and treatment of contaminated soil. Strengthening contractor compliance enforcement. Enhanced water filtration and treatment if groundwater is affected. Proper adoption of best practices ensures that the risk remains low and manageable.
1-4	Soil compaction and loss of fertility.	1	1	2	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Appropriate measures must be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes must be rehabilitated concurrent with construction.
2-4	Increased fire risk	1	1	2	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Cooking and heating fires

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment must be available, as prescribed by the relevant safety standards and legislation.
1-4	Disturbance of fauna	3	3	3	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Only small animals occur in this area e.g. small rodents and reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed.
1-3	Disturbance of flora	1	5	5	1	5	High	Negative	Clearance of vegetation should be kept at a minimum and restricted to the proposed site boundary. Disturbed areas beyond the footprint of the proposed development must be rehabilitated as quickly as possible. The spread of alien vegetation should be mitigated by the following actions: - Soil stockpiles should not be translocated from areas with alien plants into the site and within the site. - Alien plants on stockpiles must be

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									controlled to avoid the development of a soil seed bank of alien plants within the stock-piled soil. - Any alien plants must be immediately controlled. Alien Invasive plants can be eradicated by the implementation of a monitoring and eradication plan. - An on-going monitoring programme should be implemented to detect and quantify any aliens that may become established and provide information for the management of aliens.
1-3	Safety on the construction site	4	5	5	3	3	High	Negative	This impact is not reversible, but can be completely avoided by the following measures: Access to the construction site to be controlled at all times.
1-4	Degradation of aesthetics	3	5	3	2	4	High	Negative	This impact is not reversible, but can be mitigated and minimised. If needed, an additional line of trees will be planted to minimise visual impact.
1-4	The construction and operation of the poultry facility will	4	4	3	1	5	High	Positive	No mitigation suggested.

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
	provide employment opportunities to the local communities.								

8.1.2 Activity alternative 2 – Construction of open poultry houses

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
1-3	Air pollution on a local level.	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
1-3	Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the site.	1	1	2	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Machinery must be properly maintained at all times. Servicing of machinery must take place only in specific demarcated and protected areas. Measures must be taken for the proper disposal of oils, grease, oil filters, rags, etc.

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
3,4	Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management.	3	3	3	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Proper ablution facilities must be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers must be made aware of the risk of soil water contamination. Domestic waste must be disposed of in appropriate containers, and removed to the Ventersdorp Landfill
4	Pollution of soil, surface water and groundwater due to ineffective manure disposal.	3	3	3	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: The manure is removed after each cycle and used by the landowner on agricultural fields.

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
4	Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.	3	3	3	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: The mortalities are removed on a daily basis and collected by a contractor (Letsatsi) to be used as food for crocodile and predators.
1-4	Soil compaction and loss of fertility.	1	1	2	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Appropriate measures must be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes must be rehabilitated concurrent with construction.
2-4	Increased fire risk	1	1	2	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment must be available, as prescribed by

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									the relevant safety standards and legislation.
1-4	Disturbance of fauna	3	3	3	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Only small animals occur in this area e.g. small rodents and reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed.
1-3	Disturbance of flora	1	5	5	1	5	High	Negative	Clearance of vegetation should be kept at a minimum and restricted to the proposed site boundary. Disturbed areas beyond the footprint of the proposed development must be rehabilitated as quickly as possible. The spread of alien vegetation should be mitigated by the following actions: - Soil stockpiles should not be translocated from areas with alien plants into the site and within the site. - Alien plants on stockpiles must be controlled to avoid the development of a soil seed bank of alien plants within the stock-piled soil. - Any alien plants must be

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									immediately controlled. Alien Invasive plants can be eradicated by the implementation of a monitoring and eradication plan. - An on-going monitoring programme should be implemented to detect and quantify any aliens that may become established and provide information for the management of aliens.
1-3	Safety on the construction site	4	5	5	3	3	High	Negative	This impact is not reversible, but can be completely avoided by the following measures: Access to the construction site to be controlled at all times.
1-3	Degradation of aesthetics	3	5	3	2	4	High	Negative	This impact is not reversible, but can be mitigated and minimised. If needed, an additional line of trees will be planted to minimise visual impact.
1-3	The construction and operation of the poultry facility will provide employment opportunities to the local communities.	3	4	3	1	5	High	Positive	No mitigation suggested.

8.1.3 “No-go” alternative – Cattle grazing and crop cultivation

Activity 1: Continuation of cultivation and cattle grazing

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
1	Air pollution on a local level.	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
1	Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the site.	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Machinery must be properly maintained at all times. Servicing of machinery must take place only in specific demarcated and protected areas. Measures must be taken for the proper disposal of oils, grease, oil filters, rags, etc.
N/A	Pollution of soil, surface water and groundwater due to ineffective								

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
	management of sewage and general waste management.								
N/A	Pollution of soil, surface water and groundwater due to ineffective manure disposal.								
N/A	Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.								
1	Soil compaction and loss of fertility.	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Appropriate measures must be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes must be rehabilitated concurrent with construction.
1	Increased fire risk	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the

*Activity	Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
									following measures: Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment must be available, as prescribed by the relevant safety standards and legislation.
1	Safety on the construction site	2	1	2	1	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Access to the construction site to be controlled at all times.
N/A	Degradation of aesthetics								

8.2 Methodology of determining impacts

- Various site visits were conducted by the EAP and information was gathered regarding the nature of the process and the baseline environment.
- The significance of identified impacts was determined as follows:

- **Extent**

The extent of the impact refers to the spatial dimension to which an impact will be felt (i.e. site, study area, local, regional, or national scale). The criteria for rating the impact extent are described in more detail in Table 1**.**

Table 1: Extent of Impact

Extent					
Rating	1	2	3	4	5
Description	On site or the impact will be restricted to its immediate area	Study area Or the impact will be restricted to the site or route	Local Or the impact will affect an area up to 5 km from the site and route	Regional/Provincial Or the impact will be felt on a Local, district municipal or Provincial level	National/International Or the maximum extent of any impact

- **Duration**

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment. The criteria for rating the duration of the impact are described in more detail in Table 2.

Table 2: Duration of Impact

Duration					
Rating	1	2	3	4	5
Description	Temporary Or the impact will occur very sporadically or less than 1 year from commencement of activity	Short-term Or the impact will continue to occur for a period between 1 to 5 years from commencement of activity	Medium term Or the impact will continue to occur for a period between 5 to 10 years from commencement of activity	Long term Or the impact will continue to occur for a period longer than 10 years from commencement of activity	Permanent Or the impact will be continued until the conclusion of activity

- **Severity**

A description must be given as to whether an impact is destructive, or benign. It determines whether the intensity of the impact on the natural environment or society is permanently, significantly changes its functionality, or slightly alters it. The mitigation potential must be determined for each impact. If limited information or expertise exists, estimates based on experience will be made. The criteria for rating the severity of the impact are described in more detail in Table 3.

Table 3: Severity of Impact

Severity					
Rating	1	2	3	4	5
Description	Temporary impact easily reversible. Insignificant change or deterioration or disturbance Or improvement of natural and social environments	Short-term impact. Low cost to mitigate Small Moderate change or deterioration or disturbance Or improvement of natural and social environments	Medium term impact, which require substantial cost to mitigate. Potential to mitigate and potential to reverse impact Significant change or deterioration or disturbance Or improvement of natural and social environments	Long term impact High cost to mitigate Possible to mitigate Very significant change or deterioration or disturbance Or improvement of natural and social environments	Permanent impact Prohibitive cost to mitigate Little or no mechanism to mitigate Irreversible Disastrous change or deterioration or disturbance or improvement of natural and social environments

- **Degree of certainty**

As with all studies it is not possible to be 100% certain of all facts and for this reason a standard “Degree of certainty” scale is used as discussed in Table 4.

Table 4: Degree of Certainty of Impact Occurrence

Degree of Certainty					
Rating	1	2	3	4	5
Description	Definite Or more than 90% sure of the fact or the likelihood of the impact occurring	Probable Or between 70% and 90% sure of the fact or the likelihood of the impact occurring	Possible Or between 40% and 70% sure of the fact or the likelihood of the impact occurring	Unsure Or less than 40% sure of the fact or the likelihood of the impact occurring.	Unknown or the consultant or specialist believes an assessment is not possible even with additional research.

- **Probability**

The criteria used for rating the likelihood of impact occurrence are described in more detail in Table 5.

Table 5: Probability of Impact Occurrence

Probability					
Rating	1	2	3	4	5
Description	Impossible Or the impact will not occur	Improbable Or the possibility of the impact occurring is very low	Probable Or there is a possibility that the impact will occur, provision must be provided	Highly probable Or it is most likely that the impact will occur at some stage, provision must be provided	Definite Or the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures to contain the impact

- **Significance**

Evaluating the significance of environmental impacts is a critical component of impact analysis. The matrix uses the consequence and the probability of the different activities and associated impacts to determine the significance of the impacts. Consequence is determined by the sum total of criteria like extent, duration and severity, degree of certainty of impact as well as compliance to applicable legislation. Values of 1-5 are assigned to each of the different criteria to determine the overall consequence, which is divided by 3 to give a criterion rating.

The overall consequence and probability rating are multiplied to give a Draft significance rating. The values as shown in the following table are then used to rank the significance. It must be said however that in the end, a subjective judging of an impact can still be done, but the reasons for doing so must be qualified. The matrix used to determine the significance of each of the identified impact in this study is shown in Table 6.

Table 6: Impact Significance Matrix

Impact Significance Matrix					
Rating	Very Low	Low	Medium	High	Very High
	1-4	5-10	11-15	16-20	21-25+
Description	There is little or no impact at all	Impact is of a low order and therefore likely to have little real effect In the case of adverse impacts: mitigation and or remedial activity is either easily achieved or little will be required, or both In the case of beneficial impacts, alternative means for	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur In the case of adverse impacts: mitigation and or remedial activity are both feasible and fairly easily possible	Impact is of substantial order within the bounds of impacts which could occur In the case of adverse impacts: mitigation and or remedial activity are feasible but difficult, expensive, time- consuming or some combination In the case of	Of the highest order possible within the bounds of impacts which could occur In the case of adverse impacts: there is no possible mitigation and or remedial activity which could offset the impact In the case of beneficial impacts,

		achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.	In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.	beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.	there is no real alternative to achieving this benefit.

Table 7: How to Apply the Rating Scale

Consequence
Impact Significance = (Extent + Duration + Severity + Degree of Certainty)/3] X Probability

8.3 Summary of positive and negative impacts

Specific impact or risk	Preferred activity (Activity alternative 1)	Activity alternative 2	"No-go" alternative
Air pollution on a local level.	Negative	Negative	No impact
Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the site.	Negative	Negative	Negative
Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management.	Negative	Negative	Negative
Pollution of soil, surface water and groundwater due to ineffective manure disposal.	Negative	Negative	No impact
Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.	Negative	Negative	No impact
Soil compaction and loss of fertility.	Negative	Negative	No impact
Increased fire risk	Negative	Negative	No impact
Disturbance of fauna	Negative	Negative	No impact
Disturbance of flora	Negative	Negative	No impact
Safety on the construction site	Negative	Negative	No impact
Degradation of aesthetics	Negative	Negative	Negative
The construction and operation of the poultry facility will provide employment opportunities to the local communities.	Positive	Positive	No impact

8.4 Mitigation measures

Specific impact or risk	Mitigation measures
Air pollution on a local level.	Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the site.	Machinery must be properly maintained at all times. Servicing of machinery must take place only in specific demarcated and protected areas. Measures must be taken for the proper disposal of oils, grease, oil filters, rags, etc.
Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management.	Proper ablution facilities must be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers must be made aware of the risk of soil water contamination. Domestic waste must be disposed of in appropriate containers, and removed to the Ventersdorp Landfill.
Pollution of soil, surface water and groundwater due to ineffective manure disposal.	Each cycle will generate approximately 24 tonnes of manure per poultry house. A formal manure management plan will ensure compliant collection, storage, and disposal. Manure will be sold or provided to farmers for use as organic fertiliser, with application rates aligned to soil nutrient analysis to prevent over-fertilisation and leaching. Buffer zones of at least 20m will be maintained from rivers, wetlands, and boreholes. Manure application will be avoided before heavy rainfall to prevent runoff into water bodies. Groundwater monitoring will be conducted to detect potential contamination. Wash water will be directed to settlement ponds or filtration systems to remove solids. Manure disposal will comply with the National Environmental Management: Waste Act (NEM: WA) and relevant municipal by-laws to prevent soil and water pollution.
Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.	Mortalities will be collected daily by a registered contractor for use in animal feed, ensuring compliance with the Animal Diseases Act and municipal by-laws. Collection vehicles will be sealed, leak-proof, and disinfected to prevent contamination. Mortalities will be stored in sealed, covered containers on impermeable surfaces to prevent leachate infiltration, odours, and scavenger access. Contractors will provide proof of disposal compliance, and periodic audits will be conducted to ensure legal and environmental standards are met.
Soil compaction and loss of fertility.	Appropriate measures must be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms,

	ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes must be rehabilitated concurrent with construction.
Increased fire risk	Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment must be available, as prescribed by the relevant safety standards and legislation.
Disturbance of fauna	Only small animals occur in this area e.g. small rodents and reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed.
Disturbance of flora	Clearance of vegetation should be kept at a minimum and restricted to the proposed site boundary.
Safety on the construction site	Access to the construction site to be controlled at all times.
Degradation of aesthetics	If needed, an additional line of trees will be planted to minimise visual impact.
The construction and operation of the poultry facility will provide employment opportunities to the local communities.	No mitigation suggested.

8.5 Motivation for alternative selection

The proposed activity alternative was selected as it will have minimal impact on the environment after mitigation measures have been implemented.

8.6 Impact of activity on preferred location

The table below provides a description of the significance of each identified activity on the preferred site location throughout the life of the proposed project.

Specific risk or activity	Significance before mitigation	Significance after mitigation
Air pollution on a local level.	Low	Low
Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the site.	Low	Low
Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management.	Medium	Low
Pollution of soil, surface water and groundwater due to ineffective manure disposal.	Medium	Low
Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.	Medium	Low
Soil compaction and loss of fertility.	Low	Low
Increased fire risk	Low	Low

Disturbance of fauna	Medium	Low
Disturbance of flora	High	Low
Safety on the construction site	High	Low
Degradation of aesthetics	High	Low
The construction and operation of the poultry facility will provide employment opportunities to the local communities.	High	High

8.7 Description and assessment of each impact

1. **Impact:** Air pollution on a local level. Possibly caused by Activities 1-3.
This is not a cumulative impact.
Nature, significance and consequences:
Noise, dust and emissions due to excavation, stockpiling and transport of building material and removal of rubble may cause air pollution.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Study area	Short-term	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

2. **Impact:** Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the site. Possibly caused by Activities 1-3.
This is not a cumulative impact
Nature, significance and consequences:
Contamination of surface and ground water can be caused by operation and servicing of light earthmoving and transport machinery, particularly oil spills and leakage.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Site specific	Temporary	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

3. **Impact:** Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management. Possibly caused by Activities 3 and 4.
This is not a cumulative impact
Nature, significance and consequences:
Uncontrolled sewage and domestic waste disposal by workers may cause surface and ground water pollution as well as unpleasant odours and possible health risks.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Local	Medium term	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

4. **Impact:** Pollution of soil, surface water and groundwater due to ineffective manure disposal. Possibly caused by Activity 4.
This is not a cumulative impact
Nature, significance and consequences:
The chicken manure is an impact of only low adverse significance since it is a natural product of farming practice. As a resource it exerts a positive impact.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Local	Medium term	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

5. **Impact:** Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities. Possibly caused by Activity 4.
This is not a cumulative impact
Nature, significance and consequences:
Disposal of chicken carcasses pose serious health, and soil and water pollution risks.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Local	Medium term	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

6. **Impact:** Soil compaction and loss of fertility. Possibly caused by Activities 1-4.
This is not a cumulative impact
Nature, significance and consequences:
Soil compaction, loss of fertility and increased erosion from unprotected slopes associated with trenches and foundations, as a result of excavation and earthmoving. This will be aggravated in the event of heavy rain.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Site specific	Temporary	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

7. **Impact:** Increased fire risk. Possibly caused by Activities 2-4.
This is not a cumulative impact
Nature, significance and consequences:
Uncontrolled cooking fires could cause veld fires. This would harm fauna and flora and pose a safety risk, particularly concerning vehicles and the adjacent land users.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Site specific	Temporary	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

8. **Impact:** Disturbance of fauna. Possibly caused by Activities 1-4.
This is not a cumulative impact
Nature, significance and consequences:
Temporary disturbance of fauna, becoming permanent as operational phase commences. This impact is unavoidable, but of low significance since there are no endangered species present.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Local	Medium term	Probable	Not reversible	No	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

9 **Impact:** Disturbance of flora. Possibly caused by Activities 1-3.
This is not a cumulative impact
Nature, significance and consequences:
Indigenous vegetation will be cleared within the proposed site boundary. This impact is unavoidable, but of low significance since there are no endangered species present.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Site	Long term	Definite	Not reversible	No	This impact is not reversible, but can be kept to a minimum by implementing mitigation measures.

10. **Impact:** Removal of indigenous vegetation. Possibly caused by Activity 1.
This is not a cumulative impact
Nature, significance and consequences:
Indigenous vegetation will be cleared within the proposed site boundary. This impact is unavoidable, but of low significance since there are no endangered species present.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Site	Long term	Definite	Not reversible	No	This impact is not reversible, but can be kept to a minimum by implementing mitigation measures.

11. **Impact:** Safety on the construction site. Possibly caused by Activities 1-3.
This is not a cumulative impact
Nature, significance and consequences:
Injuries to residents and construction workers can be cause as a result of construction activities.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Regional	Permanent	Probable	Not reversible	Yes	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

12. **Impact:** Degradation of aesthetics. Possibly caused by Activities 1-4.
This is not a cumulative impact
Nature, significance and consequences:
Visual impacts may occur during the construction and operational phase as a result of vehicle exhausts, dust, bare unprotected areas, the possibility of littering and the presence of poultry houses.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Local	Permanent	Probable	Not reversible	Yes	This impact is not reversible, but can be completely avoided by implementing mitigation measures.

13. **Impact:** Economic benefit to the local communities. Possibly caused by Activities 1-4. This is not a cumulative impact

Nature, significance and consequences:

The construction and operation of the poultry facility will provide employment opportunities to the local communities.

Extent	Duration	Probability	Reversibility	Irreplaceable loss	Degree of avoidance, management or mitigation
Regional	Long term	Probable	Not reversible	No	No avoidance or mitigation required.

8.8 Summary of specialist reports

No specialist studies have been conducted for the proposed project.

9. ENVIRONMENTAL IMPACT STATEMENT

9.1 Key findings of the environmental impact assessment

It is important that all the mitigation measures identified in Section 8 and the EMPr are implemented in order to prevent environmental impacts. If the mitigation measures are implemented and monitored, the impact of the proposed activity on the environment will be minimal. See Appendix A for a layout plan containing all the proposed activities and indicating any areas that has to be avoided.

9.2 Summary of the positive and negative impacts

Specific impact or risk	Preferred activity (Activity alternative 1)	Activity alternative 2	"No-go" alternative
Air pollution on a local level.	Negative	Negative	No impact
Contamination of soils, surface water and groundwater due to leakages from vehicles entering and exiting the	Negative	Negative	Negative

site.			
Pollution of soil, surface water and groundwater due to ineffective management of sewage and general waste management.	Negative	Negative	No impact
Pollution of soil, surface water and groundwater due to ineffective manure disposal.	Negative	Negative	No impact
Pollution of soil, surface water and groundwater due to ineffective disposal of mortalities.	Negative	Negative	No impact
Soil compaction and loss of fertility.	Negative	Negative	No impact
Increased fire risk	Negative	Negative	No impact
Disturbance of fauna	Negative	Negative	No impact
Disturbance of flora	Negative	Negative	No impact
Safety on the construction site	Negative	Negative	No impact
Degradation of aesthetics	Negative	Negative	Negative
The construction and operation of the poultry facility will provide employment opportunities to the local communities.	Positive	Positive	No impact

10. IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES

10.1 Ecological environment

- Avoid any unnecessary or careless destruction of natural vegetation.
- Protect plant species of conservation importance by:
    - Preventing unnecessary disturbance or destruction of their habitats.
    - Planning developments in ways that avoid jeopardizing individual specimens or large populations of Red Data or protected species.
- Eradicate declared weeds and invasive plant species in the study area. Develop and enforce a management plan with a follow-up strategy to prevent the spread or establishment of new invasive populations.

- Implement temporary water control measures where needed to minimize erosion and promote favourable conditions for vegetation establishment during and after rehabilitation or landscaping.
- If protected or declining species are identified within the approved development site, obtain permission for their removal from the Permitting Office of DEDECT. Develop and implement in situ and/or ex situ conservation strategies in consultation with DEDECT conservation authorities. Where feasible, translocate these species to degraded or untransformed areas within the study area that offer suitable habitat, ensuring no ecological harm to the host environment. An ecologist should assess each species and potential translocation site. Alternatively, rescue and donate the protected or declining species to conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.
- Avoid development in areas identified as having high ecological sensitivity.
- In accordance with the Alien Invasive Species (AIS) regulations, ensure the effective control or eradication of all declared alien weeds.

10.2 Landforms and soils

- Use drip trays when refuelling or servicing construction vehicles and equipment. Always keep a spill "sock" in the tray, replacing it as necessary. Position drip trays under stationary vehicles and ensure that hazardous waste (such as fuel and oils) is disposed of at the nearest approved oil refinery or fuel recycling facility.
- Whenever possible, utilise existing road infrastructure as outlined in the land use map.
- Avoid unnecessary vegetation clearance. Minimise disturbance outside the designated construction area, and rehabilitate affected areas as soon as possible.
- Conduct regular clean-up programs in and around the site to prevent littering and maintain proper housekeeping practices.

10.3 Surface water

- Implement regular clean-up programs at the site and surrounding areas to prevent littering and maintain proper housekeeping.
- Provide drip pans or PVC linings to contain oil and fuel spills. Ensure spill kits are readily available on-site and in each vehicle.
- Utilise existing roads and tracks wherever possible.
- Obtain approval from the ECO and landowner before creating any new tracks. Plan new routes to avoid steep slopes and sensitive environments, such as watercourses.
- Estimate the increase in stormwater runoff due to construction activities and assess the drainage system accordingly to prevent downstream impacts on water resources, including scouring, sedimentation, erosion, and undercutting.
- Use water efficiently, and regularly inspect pipes to detect and prevent leaks.
- Regularly inspect water tanks to ensure no leaks are present.
- Refer to Appendix F1 for specific recommendations on stormwater management.

10.4 Groundwater

- Use drip trays when refuelling or servicing construction vehicles and equipment. Keep a spill "sock" in the drip tray at all times, replacing it as needed. Place drip trays under stationary vehicles, and ensure that hazardous waste (e.g., fuel, oils) is properly disposed of at the nearest approved oil refinery or fuel recycling facility.

10.5 Aesthetic environment

- Avoid unnecessary vegetation clearance, and minimise disturbance outside the designated construction area. Rehabilitate these areas as soon as possible.
- Rehabilitation and soil management should follow the guidelines outlined in the EMPr.
- Implement regular clean-up programs at and around the site to prevent litter and maintain good housekeeping practices.
- Coordinate site access with the landowner, ensuring that only authorised personnel are permitted on site.
- Position and manage the construction site in an ecologically responsible manner to minimise potential negative impacts on the surrounding environment.
- Ensure personnel adhere to a 20 km/h speed limit within the site boundaries to reduce dust generation.
- Limit disturbances to the pre-defined footprint, avoiding vehicle turning, parking, access, or other activities (e.g., vegetation clearance, soil compaction, or excavation) outside these areas.
- Repair, replace, or provide compensation for any damage to public or private property, including roads, stormwater systems, fences, gates, buildings, utilities, and movable properties, in agreement with the affected parties.
- Arrange a discussion with surrounding access route users regarding the maintenance of the access road.
- Maintain complaints register to record any concerns from landowners, occupants, or other Interested and Affected Parties, along with responses to these complaints.
- Submit the complaints register to DEDECT annually and upon request.
- Remove alien invasive plants from all disturbed and subsequently rehabilitated areas.

10.6 Noise

- Ensure that vehicles and construction equipment are regularly serviced to minimize excessive noise.
- Conduct construction activities only between 08:00 and 17:00, Monday to Friday.
- Ensure personnel comply with a 20 km/h speed limit within the site boundaries to help reduce noise levels.
- Contractors must adhere to provincial noise regulations. Construction machinery should be equipped with noise mufflers and properly maintained.

10.7 Air quality

- Ensure personnel adhere to the 20 km/h speed limit within the site boundaries to minimize dust generation.

- Implement dust suppression measures by regularly spraying water on areas prone to dust.

10.8 Health, safety and security hazards

- The site must be clearly demarcated, and the proposed access routes must be approved by the ECO and landowner before construction begins.
- Open fires are only allowed in designated cooking areas.
- Site supervisors must ensure that staff remains within the demarcated construction areas and access routes at all times.
- Smoking is prohibited near fuel dispensing areas and only permitted in designated “safe” zones.
- Ensure adequate firefighting equipment is always available on-site, with at least one person trained in its use.
- Laborers and contract workers should always be accompanied by a responsible supervisor.
- Enforce strict access control to prevent unauthorized entry onto the property.
- All construction vehicles must be equipped with standard reverse alarms.
- Workers must wear Personal Protective Equipment (PPE) to ensure their safety during construction activities.
- Workers are not allowed to have visitors on the property.
- Alcohol, recreational drugs, weapons, snares, or other dangerous objects are prohibited on-site, and workers must not enter the construction area under the influence of alcohol or drugs.
- Limit disturbance to the agreed-upon footprint; no vehicle turning, parking, access, or other forms of disturbance (e.g., vegetation clearance, soil compaction, or excavation) should occur outside these areas.
- The contractor must ensure that a list of emergency contact numbers and persons is kept up to date and displayed at relevant locations on-site.
- Maintain complaints register to log concerns from landowners, occupants, and other Interested and Affected Parties, along with responses. Provide the complaints register to DEDECT annually and upon request.

11. ASPECTS FOR INCLUSION IN AUTHORISATION

11.1 Reasoned opinion

The Draft site plans (Appendix C) were developed with consideration of all public concerns, specialist reports, and impact assessments. If these plans are followed, and proper management, mitigation, and monitoring of rehabilitation are implemented, the impact can be maintained at a relatively low level. It is recommended that the activity be authorized.

11.2 Conditions that must be included in the authorisation

Implement the mitigation and management measures outlined in Sections 9 and 11.
Rehabilitation and soil management must adhere to the guidelines provided in the EMPr.
Conduct environmental audits every two months during the Construction Phase and every six months during the Operational Phase.
Carry out rehabilitation monitoring in accordance with the EMPr.
Continue rehabilitation efforts throughout the operational phase.

12. APPENDICES

Appendix A: Maps
Appendix B: Site photographs
Appendix C: Site plans
Appendix D: Public participation
Appendix E: EMPr
Appendix F1: Stormwater management
Appendix F2: Odour management
Appendix F3: Waste management plan
Appendix F4: Biosecurity plan
Appendix F5: Contractor agreement
Appendix F6: Screening tool report
Appendix G: CV of EAP

13. UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports ☒
b) the inclusion of comments and inputs from stakeholders and I&APs; ☒
c) the inclusion of inputs and recommendations from the specialist reports where relevant; ☒and
d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein. ☒

Signature
Environmental Assessment Practitioner
Bucandi Environmental Solutions

Signed at Potchefstroom on this 17th day of February 2025.