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FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED KROON'S HATCHERY

To be situated on Portion 322 of the Farm
Hartebeestfontein 445 JQ

December 2019

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Declaration	I, Lizelle Gregory, as authorised representative of Bokamoso Landscape Architects and Environmental Consultants CC hereby confirm my independence in terms of Section 13.(1)(a) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) 2014 EIA Regulations as amended.
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EXECUTIVE SUMMARY

Kroon Familie Trust appointed Bokamoso Landscape Architects and Environmental Consultants CC to conduct an Environmental Impact Assessment process for the establishment of a hatchery to be known as **Kroon's Hatchery** on one of three properties situated within Ward 33 of the Madibeng Local Municipality, Bojanala Platinum District Municipality, North West Province.

A Comparative Assessment was conducted for the three site alternatives considered and Site Alternative 2 situated on Portion 322 of the Farm Hartebeestfontein 445 JQ, 12.9ha in extent, was selected as the preferred site. This site has low ecological sensitivity and the shape of this property presents more placement options for the hatchery building and leaves space for expansion in the future. This site is easily accessible via the R551 and is located in an isolated geographical location to facilitate hygiene and disease control.

The hatchery facility to be constructed over five phases, will eventually cover a surface area of 4 100m² capable of hatching approximately 600 000 chicks per week at full production. The facility will comprise of egg receiving, egg storage, incubation, hatching, chick handling and hatchery debris treatment, storage and removal.

It is estimated that approximately 9.5 tonnes of solid waste will be generated per week which includes, office waste and biological waste in the form of infertile eggs, mortalities and egg shells. Biological waste will go through a macerator situated inside the facility before being transferred into steel drums situated outside the facility, via a screw conveyor. Dryden Rendering will then collect the biological waste for further processing.

The waste calculation for the 1st phase of the hatchery development confirmed that it will not be necessary to apply for a waste license at The National Department of Environmental Affairs (DEA) for the processing of the biological waste by means of a macerator.

The treatment of hazardous waste (biological waste) exceeding 500kg per day from Phase 2 (300 000 chicks per week) onwards will however trigger a Waste Management Licence Application in terms of the National Environmental

Management: Waste Act, 2008 (Act No. 59 of 2008, as amended) and the applicant will supply the competent authority with the required waste license for record keeping purposes before commencing with the operation of Phase 2.

Ancillary activities associated with the hatchery facility will include the upgrading of an existing access road which falls within a registered 9.44m wide servitude (when required), construction of an on-site sewage package plant and waste water pond, irrigation with wastewater and groundwater abstraction.

Hatchery wash water containing soap, detergent and fluff as well as sewage will be diverted into the on-site package plant. Treated effluent from the on-site package plant amounting to approximately 8 250m³ per annum will be discharged into a treated waste water storage pond purpose of irrigation/ for the purpose of possible re-use in the following phases of the hatchery facility development.

Approximately 60% (eastern part) of Portion 322 is classified as Critical Biodiversity Area 2 (CBA2) and the remaining 40% (western part) is classified as Ecological Support Area 2 (ESA2) due to occurring within the 5km buffer of a Protected Area in the form of the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment and due to the site occurring within an Important Bird Area and within a Freshwater Ecosystem Protected Area (FEPA) Catchment. The occurrence of Protected Areas within 5km from the study area triggers certain additional 2014 NEMA EIA Regulations listed activities.

The North West Biodiversity Sector Plan (NW BSP) of 2015 denotes the non-perennial tributary of the Crocodile River flowing from east to west (past the northern boundary of the proposed development site) as an Instream Wetland classified as an Ecological Support Area 1 (ESA1).

Although no wetlands were identified on site during the Wetland Assessment conducted, the Wetland Specialist recommended that a **100m buffer** be applied around the non-perennial watercourse. The reason for the 100m buffer can be contributed to the fact that the study area is located outside of the urban development boundary and that there is still some connectivity upstream and downstream of the watercourse.

Should the proposed hatchery development on Portion 322 be approved, a General Authorisation (GA) in terms of Section 21 (c) and (i) water uses will need to be

applied for with the Department of Human Settlements, Water and Sanitation (DHSWS), former Department of Water and Sanitation (DWS) due to the site boundary falling within a "Regulated Area".

No municipal water or sewage connections are available for the facility, because the proposed facility will be located in a rural area. The hatchery will thus be dependent on an environmentally friendly on-site sewer treatment facility (to be developed in modules) for the capturing and treatment of the effluent to be generated by the facility. Groundwater will be abstracted from boreholes on the property in order to cater in the potable water and process water requirements of the facility.

According to the project geo-hydrologist the study area has high ground water potential and the existing borehole on the property has sufficient yields to provide in the water needs for the 1st phase of the development without exploiting the water resources in the area. Geophysical studies have been conducted and additional production and monitoring boreholes are being drilled in allocated positions in order to procure boreholes with maximum yields and that are not connected to the same aquifer, for phases 2 – 5 of the hatchery project. The applicant is in the process of applying for the required Section 21 water-use license (Section 21 (a), (b), (c), (e), (i) and (g) at the DHSWS. The applicant is however reluctant to spend any additional fees on application processes without the necessary EIA and Town Planning authorisations in place.

The utilisation of on-site services at such agricultural facilities is nothing out of the ordinary. Most farms with chicken broilers, feedlots, crops and other agricultural activities are dependent on ground water and on-site effluent treatment facilities and DHSWS regard water provision to farms, which contribute to the food supply in this country as a priority.

In terms of the Revision of General Authorisation (GA) for the Taking and Storing of Water only 45m³ of ground water may be abstracted per hectare per annum from quaternary catchment A21J, which equates to 580m³ per annum for Portion 322. The first phase of the hatchery will need approximately 6m³ of water per day and this amounts to approximately 2 200m³ of water per annum.

If the GA provision of 580m³ per annum is subtracted from the 2 200m³ of water that is required, it will be necessary to compile and submit a Section 21 WULA for the abstraction of an additional volume of 1 620m³ under a license for the 1st phase. According to the geo-hydrologist the yield of the existing borehole on the study area is more than sufficient to cater in the water needs of the 1st phase of the development without depleting the water resources in the area.

A 24-hour yield test has been carried out in order to confirm availability of water for all five phases of the hatchery development. Borehole water quality tests were also carried out to ascertain whether the borehole water quality meets hatchery standards or whether water treatment will be required. A full Geohydrological Assessment has been conducted as part of the Water Use Licence Application.

As per the water quality tests carried out by an accredited laboratory, all of the general water quality parameters comply with the SANS 241-1: 2015 drinking water quality standards. In terms of anions, all parameters comply with SANS excluding nitrate (N) and nitrate as (NO₃). In terms of the hatchery water quality, pH, the sum of chloride and sulphate and iron are within the guideline limits.

In contrast, the total hardness (560 mg CaCO₃/ℓ) exceeds the recommended maximum concentration range of 35 to 107mg mg CaCO₃/ℓ for typical hatchery water quality. It is therefore recommended that water softeners be added to reduce the water hardness. The magnesium concentration (96.8mg/ℓ) exceeds the recommended maximum concentration of 50 mg/ℓ and requires specific treatment.

From a cultural heritage perspective, the proposed development site will have no impact on archaeological or historical sites, features or material. Mitigation measures have been included in this updated Basic Assessment Report (BAR) and the Environmental Management Programme Report (EMPr) as per South African Heritage Resources Association (SAHRAs) comments.

Considering the location of the proposed hatchery site in an agricultural area and within the buffer of a Protected Area, the owner will have to maintain fire breaks during the operational phase of the hatchery.

An existing gravel road, which falls within an existing servitude, leading off the R511 may have to be widened in the future in order to provide site access and to cater for the delivery of eggs and collection of chicks from site. The traffic impact

statement supplied for the development did not regard it as necessary to upgrade any roads for purpose of accommodating the hatchery, because the traffic volumes generated by the facility is very low. It was also confirmed that the existing access to the facility from the main road (R551) is regarded as sufficient and that it will not be necessary to submit any specific access applications to The South African National Roads Agency Limited (SANRAL). We however decided to rather include the listed activity associated with the upgrading of a road for purpose of possible future upgrading/ widenings of the gravel access road. The mitigation measures as proposed for the development, especially with regards to storm water management will thus also apply to any future road upgrades and to the on-going maintenance of the dirt road.

The minimum standards pertaining to Health and Safety, for Chick Hatcheries as set out in the South African Poultry Association Abridged Code of Practice: Chick hatchery, must be conformed to.

Considering the nature of the proposed development and control measures required to prevent the transmission of diseases, it is foreseen that the hatchery might have to register in terms of the Fertilizers, Farm Feeds, Agricultural Remedies, Stock Remedies Act.

In terms of the Madibeng Local Municipality Draft Waste Management By-Law 2019, the Municipal waste management officer must be informed of the intention to generate general waste, 60 days prior to commencement with the generation of waste.

The proposed hatchery development site incorporates an existing dwelling unit, which is supplied with electricity. The electricity is supplied from an existing 25kVA transformer located at the entrance to Portion 322. Eskom confirmed that they will be able to upgrade the transformer to a 500kVA transformer immediately after the transfer of the property to Kroon Chickens.

In terms of land use, a Rezoning Application is required in order to give effect to the proposed Hatchery and it is confirmed that the land-use application has been submitted to the Madibeng Local Authority for consideration and approval. It was also confirmed by the appointed Town and Regional Planners that the site as selected, is regarded as the preferred locality alternative for the hatchery. It was

also confirmed that the proposed hatchery is in line with the local authority planning for the area and that it will be compatible with the surrounding land-uses.

As EAP for the project we feel comfortable that we investigated and addressed all the relevant bio-physical, social, economic and institutional aspects associated with the project and that there are no "Fatal Flaws" that could prevent the project from happening.

It was confirmed in this BAR that the facility will be dependent on "on-site services" such as an on-site sewage plant and boreholes for water supply, but the project engineers and geo-hydrologist confirmed that the ground water potential in the area is high and that an on-site sanitation system can be successfully implemented in phases on the study area. "On-site services" is a common phenomenon at farms where agricultural activities are exercised and the applicant also indicated that they are willing to connect the facility to municipal services networks once services becomes available.

The facility will eventually consist of 5 phases and the services will also be implemented and developed in phases. The geo-hydrologist confirmed that the yields in the existing boreholes on the property is more than sufficient to cater in the water needs for the 1st phase of the development, without exploiting the boreholes/ground water resources linked to the boreholes. The Section 21 WULA for the development has already been compiled and will be submitted to DHSWS within the next two months.

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1. INTRODUCTION

Kroon Familie Trust appointed Bokamoso Landscape Architects and Environmental Consultants CC to conduct an Environmental Impact Assessment process for the establishment of a hatchery to be known as **Kroon's Hatchery** on one of three pre-selected properties situated within the area of jurisdiction of the Madibeng Local Municipality, Bojanala Platinum District Municipality, North West Province.

The applicant is a well-known chicken farmer and urgently requires a new hatchery in close proximity of their current chicken broiler's and abattoir. Even though the hatchery needs to be in close proximity of the current facility for logistical purposes, it cannot be located on the same property than the broilers and abattoir based on **The South African Poultry Association Code of Practice: Chick Hatchery**. In terms of the Code of Practice a hatchery facility should be established in an isolated geographical location far away from other poultry and livestock due to facility hygiene and disease control.

Note Regarding Report format

This application for environmental authorisation was initially completed on the North West Department of Economic Development, Environment, Conservation and Tourism (NWDEDECT) Template for a Basic Assessment Report, December 2014. NWDEDECT officials however advised during June 2019 that the Basic Assessment Report should not be completed on the former NWDEDECT Template, but must conform to Appendix 1 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998, as amended) 2014 Environmental Impact Assessment (EIA) Regulations, as amended April 2017.

1.1 Project description

The proposed **Kroon's Hatchery** facility to be constructed over five phases, will eventually cover a surface area of 4 100m², capable of hatching approximately 600 000 chicks per week.

A "Hatchery" is a facility where poultry eggs are hatched under artificial conditions. The eggs usually hatch within 21 days and an egg incubator is required to assist with the controlling of temperature, humidity and egg turning. Chicks are dispatched from the hatchery site as soon as possible after hatching to ensure that they receive food and water within 48 hours. **Refer to Section 1.3.1 for a description of the hatchery facility structures and associated infrastructure.**

It must be emphasized that a hatchery is very different from a broiler as the facility is enclosed and live chicks are dispatched from the site within 48 hours. The potential nuisance impacts of a hatchery thus differ significantly from that of a broiler farm. Biosecurity is of utmost importance to ensure healthy chicks.

1.2 Location of the activity

For establishment of the proposed **Kroon's Hatchery**, the applicant decided to also consider locality alternatives and to go through a formal site selection process in order to identify the site that is most suitable for the proposed hatchery from a social, economic, institutional and bio-physical point of view. **Refer to Appendix G7: Comparative Site Assessment for the proposed hatchery for Kroon Familie Trust.**

1.2.1 Physical address

The proposed **Kroon's Hatchery** site will be situated on Portion 322 of the Farm Hartebeestfontein 445 JQ (previously known as Portion 124 and 125) (Alternative 2 – Preferred Alternative), 12.9ha in extent situated in Ward 33 of the Madibeng Local Municipality. The site selection exercise identified this site as the site most suitable for the proposed hatchery from an ecological, social, economic and bio-physical

point of view. The applicant originally identified five potential sites and the search for a suitable site was eventually narrowed down to only three sites.

The other two site alternatives investigated were; Portion 107 of the Farm Hartebeestfontein 445 JQ (Alternative 1) 9.5ha in extent, and Portion 33 and 168 of the Farm Hartebeestfontein 445 JQ (Alternative 3) 7.3ha in extent.

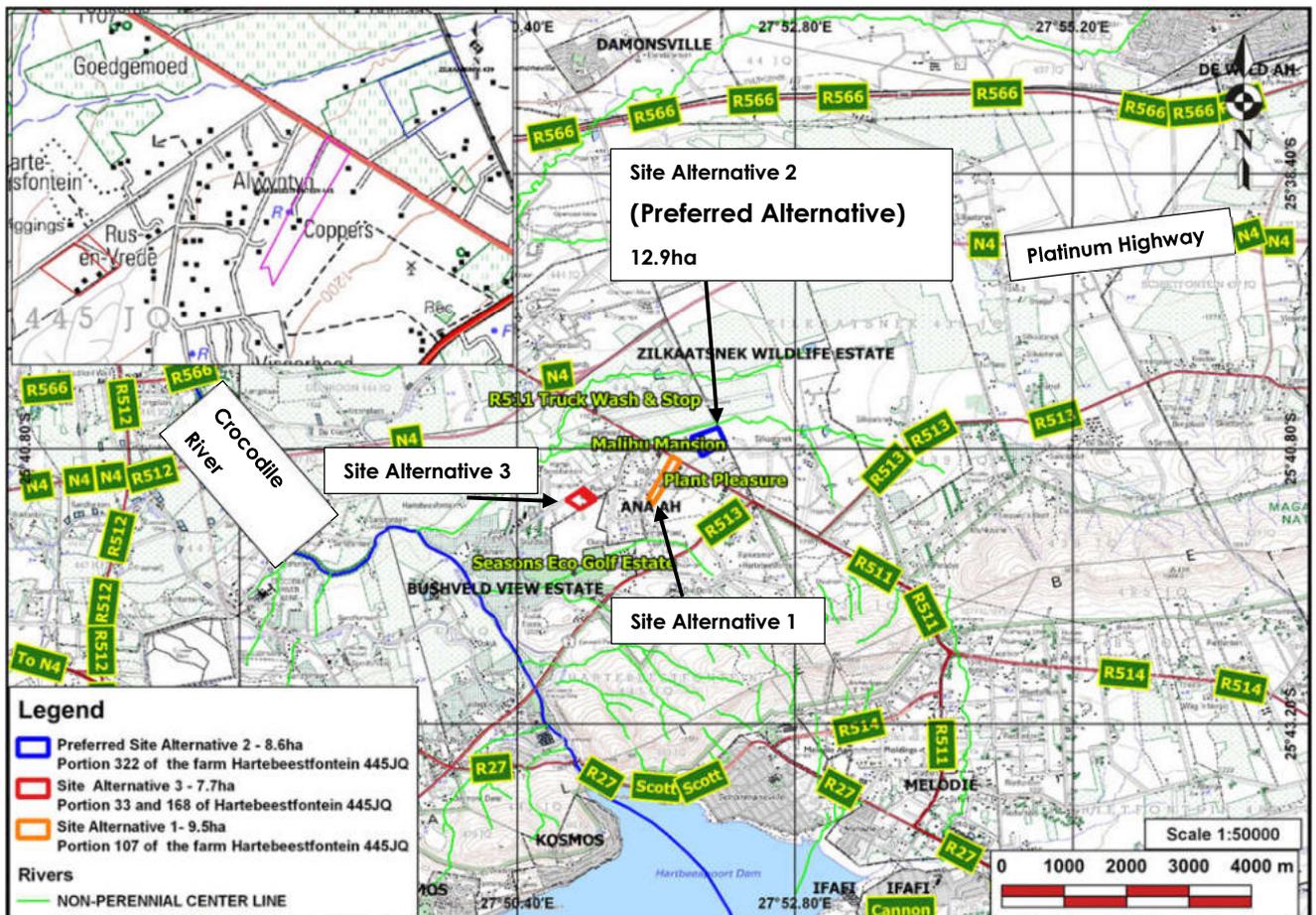


Figure 1: Locality Map Denoting Three Alternative Site Locations

Refer to Appendix A for an enlargement of the Locality Map.

Alternative 1:

Portion 107 is situated along the R511 (the R511 runs along the north-eastern boundary of the site) and enjoys access from this road approximately 2km from the N4 Bakwena Freeway/R511 interchange. The Femsus Pub and Grill is located immediately adjacent

to the Portion 107 (to the south-east) and a concrete brick factory (Horizon Bricks) is located to the east of the site, across the R511. Another conference, accommodation, restaurant facility, namely Sola Gratia is located approximately 240m to the north-west of Portion 107 and it also enjoys access from the R511 along its northern boundary. The Hartebeestpoort Dam is situated approximately 5,3km to the south of the study site. The Town of Brits is located approximately 6.8km to the north-west of the study site and the R511 is the main road to Brits from the Hartebeestpoort Dam Area.

Alternative 2 (Preferred Alternative):

Portion 322 is situated approximately 280m to the east of Portion 107 and the R511. Portion 107 borders onto the R511 (to the north-east) and Portion 233 is separated from R 511 by the concrete brick factory known as Horizon Bricks. Access to Portion 322 is gained from the R511 via a 260m dirt road, which runs along the southern boundary of Horizon Bricks. The northern boundary of the proposed site is affected by a non-perennial watercourse and associated 1:100-year flood line. Agricultural activities to the north and east of the study site include large portions of cultivated lands and aerial photographs confirm that such lands are irrigated (i.e. the pivot points to the east). The N4 Bakwena Freeway/R511 interchange is located approximately 2.7km to the west of the study site.

The Hartebeestpoort Dam is situated approximately 5.5km to the south of the study site. The Town of Brits is located approximately 7km to the north-west of the study site and The R511 is the main road to Brits from the Hartebeestpoort Dam.

Alternative 3:

Portions 33 and 168 are situated approximately 4.8km to the north of the Hartebeestpoort Dam and approximately 1.2km to the south west of the R511. A residential estate namely Bushveld View Estate is located to the immediate south of the study site and the Multi Plant Seedling Nursery is located to the north-west of the study site. Some dumping activities were identified to the immediate north of the study site. The site enjoys access from a tarred road which connects with the R511 at a T-Junction approximately 1.1km to the north-east of the site. The tarred road also

provides access to the Multi Plant Nursery and various trucks utilise the tarred road to collect and deliver stock and other associated goods.

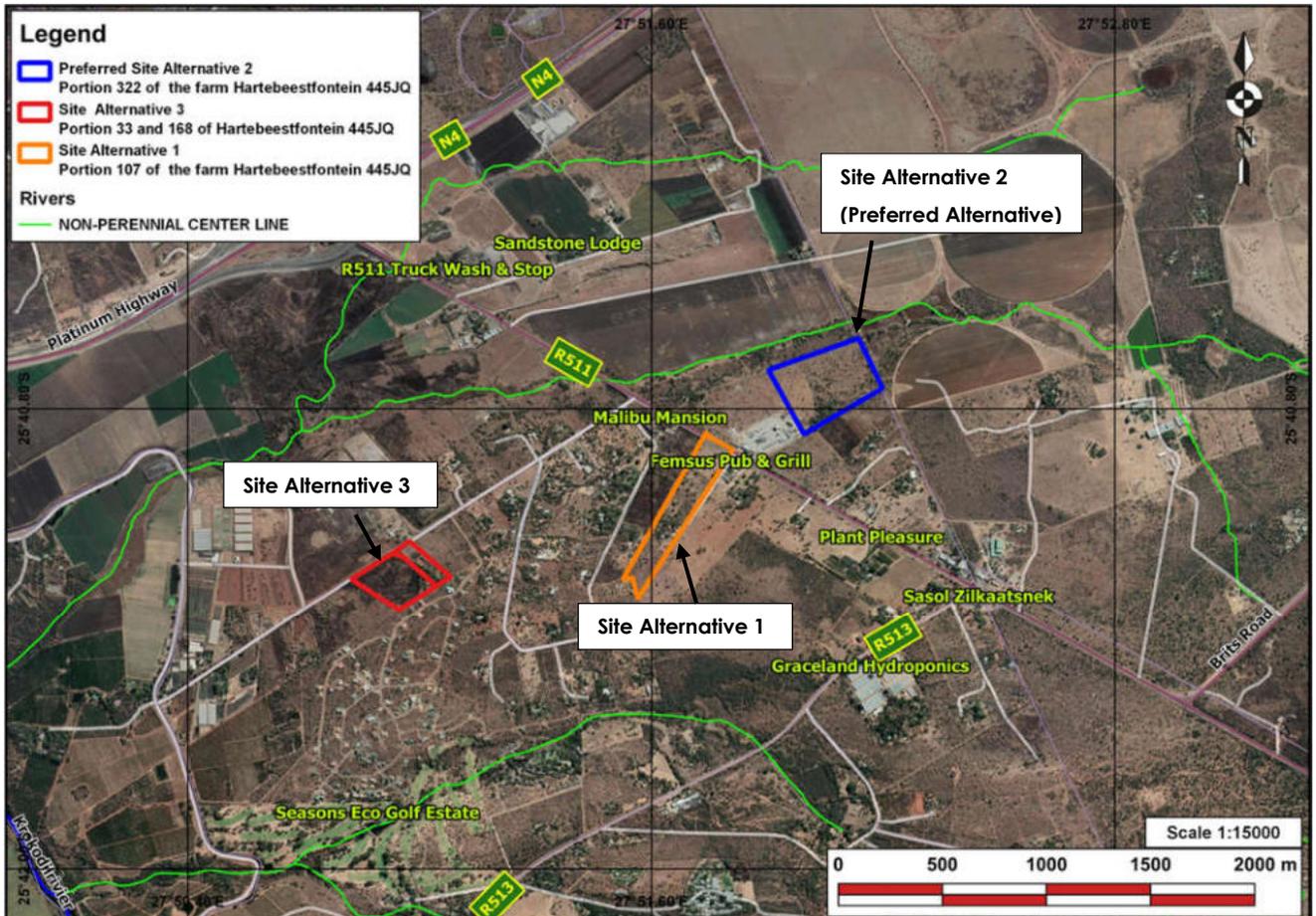


Figure 2: Aerial Map Denoting Three Alternative Site Locations

Refer to Appendix B2 for enlarged sensitivity maps.

1.2.2 Surveyor General Code

The 21-digit Surveyor General Code per site alternative is displayed below.

Alternative 1:

Portion 107 of the Farm Hartebeestfontein 445 JQ was identified as site Alternative 2.

T	O	J	Q	0	0	0	0	0	0	0	0	0	0	4	5	0	0	1	0	7
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Alternative 2 (Preferred Alternative):

Portion 322 of the Farm Hartebeestfontein 445 JQ (previously known as Portion 124 and 125) was identified as preferred site alternative (Alternative 1). To be elaborated on later in this report.

T	O	J	Q	0	0	0	0	0	0	0	0	0	4	4	5	0	0	3	2	2
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Alternative 3:

Portions 33 and 168 of the Farm Hartebeestfontein 445 JQ was identified as site Alternative 3.

T	O	J	Q	0	0	0	0	0	0	0	0	0	4	4	5	0	0	0	3	3
T	O	J	Q	0	0	0	0	0	0	0	0	0	4	4	5	0	0	1	6	8

1.3 Scope of the activity

The proposed **Kroon's Hatchery** will comprise of a hatchery facility to be constructed in five phases catering for 150 000 chicks per phase, which will eventually cover a surface area of 4 100m² and a facility capable of hatching and despatching 600 000 chicks per week.

1.3.1 Description of associated structures and infrastructure

The hatchery facility will comprise of egg receiving areas, egg storage rooms, incubation rooms, hatching rooms, chick handling rooms and hatchery debris treatment, storage and removal. It is estimated that approximately 9.5 tonnes of solid waste will be generated per week (± 42 tonnes per month or ± 500 tonnes per annum) which includes, office waste and biological waste in the form of infertile eggs, mortalities and egg shells. Biological waste will go through a macerator situated inside the facility before being transferred into steel drums situated outside the facility via a screw conveyor. Dryden Rendering will then collect the biological waste for further processing. **Refer to Appendix D for the Facility Layout and associated phasing.**

The treatment/ processing of more than 500kg of hazardous (biological waste) will trigger a Waste Licence in terms of the National Environmental Management: Waste Act (NEM: WA), Act No. 59 of 2008, as amended). Phase 1 of the Hatchery comprising

of 150 000 chicks hatching per week, will generate less than 500kg of hazardous waste per day and thus does not trigger a waste licence.

Ancillary activities associated with the hatchery facility will include the upgrading of an existing access road which falls within a registered 9.44m wide servitude, construction of an on-site sewage package plant and waste water pond, irrigation with wastewater and groundwater abstraction. Effluent (waste water) from the hatchery facility in the form of wash water containing soap, detergent and fluff of approximately 160m³ per week (640m³ per month), as well as treated effluent from the on-site package plant, will be discharged into the waste water pond for the purpose of irrigation. **Refer to Appendix B1 for the Site Layout.**

1.3.2 Listed activities triggered

The listed activities triggered by the proposed hatchery and associated infrastructure is tabulated below.

Table 1: Listed Activities

Listed activity as described in GN R.983, 984 and 985	Description of project activity
GN. R. 327, 7 April 2017 - Activity 5 The development and related operation of facilities or infrastructure for the concentration of— (i) more than 1 000 poultry per facility situated within an urban area, excluding chicks younger than 20 days; (ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days; (iii) more than 5 000 chicks younger than 20 days per facility situated within an urban area; or (iv) more than 25 000 chicks younger than 20 days per facility situated outside an urban area.	Triggered The construction of a chicken hatchery that will accommodate approximately 600 000 chicks per week, triggers this listed activity due to concentration of more than 25 000 chicks younger than 20 days, outside an urban area.
GN. R. 327, 7 April 2017 - Activity 8 The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.	Triggered The development of a hatchery outside an industrial complex with a development footprint of 4 100m ² triggers this listed activity.

Listed activity as described in GN R.983, 984 and 985	Description of project activity
<p>GN. R. 327, 7 April 2017 - Activity 27</p> <p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</p> <p>(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>Triggered</p> <p>The proposed facility will be developed on a site that is covered with natural vegetation and the area to be cleared for the development of the hatchery and associated infrastructure will exceed 1ha, thus this listed activity is triggered by the proposed development.</p>
<p>GN. R. 327, 7 April 2017 - Activity 28</p> <p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</p> <p>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</p> <p>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</p> <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>Triggered</p> <p>The development of a chicken hatchery (industry) on land bigger than 1 hectare outside the urban area triggers this listed activity.</p>
<p>GN. R. 324, 7 April 2017 - Activity 12. h. iv</p> <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>h. North West</p> <p>iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.</p>	<p>Triggered</p> <p>The proposed site is situated within a Critical Biodiversity Area (CBA2), and considering that more than 300m² of vegetation will be cleared to give effect to the hatchery development, this listed activity is triggered.</p>

Listed activity as described in GN R.983, 984 and 985	Description of project activity
<p>GN. R. 324, 7 April 2017 - Activity 18 h. v.</p> <p>The widening of road by more than 4 meters, or the lengthening of a road by more than 1 kilometer.</p> <p>h. North West</p> <p>i. . . .;</p> <p>ii. Areas within 5 kilometers from protected areas identified in terms of NEMPA or from a Biosphere reserve.;</p> <p>iii. . . .;</p> <p>iv. . . .;</p> <p>v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;</p>	<p>Triggered</p> <p>The existing road leading from the R511 to the proposed development site is only 3.4m wide, but falls within an existing 9.44m wide road servitude. Even though the traffic engineer for the project confirmed that it will not be necessary for the applicant to do any road upgradings to accommodate the facility, it might become necessary, at a later stage to do some road upgradings (i.e. to widen the road with more than 4m). This road is located within a Critical Biodiversity Area and within 5 km from the Magaliesberg Protected Natural Environment (MPNE) and the Hartebeestpoort Dam Nature Reserve, this listed activity is triggered. (This Listed activity did not form part of the initial Public Notice, but this is not a requirement of the Regulations. As EAPs we prefer to make as much information as possible (including listed activities applied for) available to I&APs from the outset)</p>

2. DETAILS OF THE EAP AND EXPERTISE

The new Environmental Regulations require that relevant details of the Environmental Assessment Practitioner be included as part of the EIA Report. In this regard, attached as **Appendix K1**, is a copy of the Curriculum Vitae (CV) of the Senior EAP for this project, Ms. Lizelle Gregory from Bokamoso Landscape Architects and Environmental Consultants CC. In summary details of the EAP are indicated below:

- **Name:** Lizelle Gregory
- **Company:** Bokamoso Landscape Architects and Environmental Consultants CC.
- **Qualifications:** Registered Landscape Architect and Environmental Consultant (degree obtained at the University of Pretoria) with more than 25 years' experience in the following fields:
 - Environmental Planning and Management;
 - Compilation of Environmental Impact Assessment;
 - Landscape Architecture; and
 - Landscape Contracting.

MS L. Gregory also lectured at the Technicon of South Africa and the University of Pretoria. She is a registered member of the South African Council of the Landscape Architects Profession (SACLAP), the International Association of Impact Assessments (IAIA) and the Institute of Environmental Management and Assessment (IEMA).

3. NEED AND DESIRABILITY

3.1 Existing land use rights

Based on the Due Diligence Report: Land Use Matters compiled by The Practice Group dated 2 May 2019, all three of the properties are zoned as 'Undetermined' in terms of the Peri-Urban Town Planning Scheme, 1975'. As per the findings of the report, in terms of the certificates and the definition of 'Undetermined', a Rezoning Application is required for the subject property to enable the use thereof for purposes of a hatchery. **Refer to Appendix G1i for the said report.**

The preferred development site currently serves as a smallholding with a single residence. The site is surrounded by Agricultural Holdings and agricultural land uses with an orchard situated approximately 2km due west of the site and a golf course is situated more than 2km to the south-west. The proposed site occurs within 5kms of two protected areas in the form of the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment. **Refer to Figure 3 below.**

Based on the Town Planning Memorandum: in support of an application for the amendment of the Peri-Urban Town Planning Scheme, 1975 for the rezoning of Portion 322 of the Farm Hartebeestfontein 445 JQ, it is the intention of the applicant to include a cultivation shed as the primary land use right for the purposes of a chicken hatchery. **Refer to Appendix G1ii.**

Currently, the land use accommodates a single farm house and outbuildings. The subject property is zoned as "Agricultural" in terms of the Peri-Urban Town Planning Scheme, 1975. Both the shape and the size of the subject site are sufficient to accommodate the proposed hatchery and also to cater for the circulation of trucks that will enter and exit the site.

As per the definition of an "Agricultural" land use, this caters for the use of the subject property for "Dwelling Houses" and "Agricultural Buildings" and does not include a "cultivation shed" for which a hatchery is categorised as.

For purposes of the proposed hatchery to be executed on the subject site, a rezoning application is required and an application has been submitted to the Madibeng Local Municipality in terms of Section 56 of the Madibeng Spatial Planning and Land Use Management By-Law 2016 for the amendment of the Peri-Urban Town Planning Scheme 1975, in order to rezone the property.

In line with the definition provided for in the town planning memorandum, a "cultivation shed" is defined as "Means a building or structure used or designed for purposes of raising plants or animals and/or animal products. Independently from the land outside the building, as for instance a building or structure used for the raising of mushrooms or

chickens, laying or incubating or eggs (battery systems); for the purposes of this scheme such a building is not considered an "agricultural building".

The raising and/or nurturing of chickens in a hatchery are excluded from the current zoning of the subject site.

It is worthy to note that there are no conditions that are associated with the subject site that will bear any negative implication on the proposed rezoning of the site; therefore, it is not necessary to get any condition removed from the title deed. A confirmation however will be obtained from the Madibeng Local Municipality in this regard.

In terms of compliance with the Spatial Planning and Land Use Management Act, 2013, the application complies with the relevant aspects of the act. In terms of Section 42 of the SPLUMA, the development proposal aligns positively with these principles.

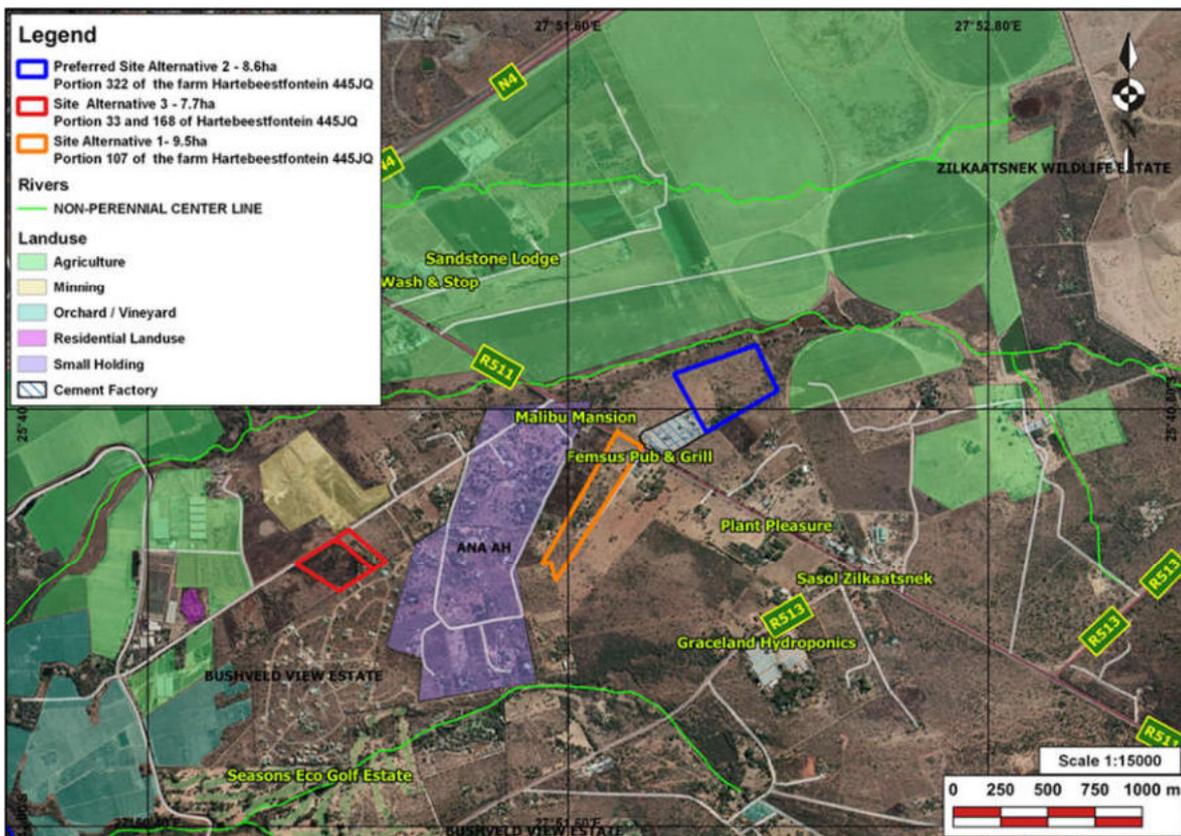


Figure 3: Surrounding Land Use Map

3.2 Local Spatial Development Framework

As per the Madibeng Spatial Development Framework (SDF) of June 2016, the area within which the subject properties fall is allocated for future residential land use purposes. It is worthy to note that although the subject properties are earmarked for future residential land use, the operation of a hatchery is not eliminated. It is also important to note that some industries and businesses are already located around the study area.

In terms of residential land use, it is not foreseen that the area concerned will come under pressure for residential development in the medium to long term.

The intention of the North West SDF is to transform the province into a sustainable region by sustaining agricultural uses as the linkage between the rural and urban areas.

The proposed hatchery is in accordance with both the national and the provincial policy guidelines. There are no deliberations in the guidelines that may counteract the approval of the application. Refer to the town planning memorandum for further information.

Overall, the rezoning of the land use for purposes of the hatchery is in accordance with the surrounding land uses. The hatchery will contribute to food security for a rapidly growing population and therefore it is of prime importance. The hatchery will eventually produce approximately 600 000 chicks over a period of a week, therefore contributing significantly to food resources in the country.

3.3 Local Integrated Development Plan (IDP)

According to the Madibeng Local Municipality IDP (2017 TO 2021), some of the main objectives include the following:

- To provide and promote access to free basic services in accordance with available resources and set targets;
- To provide basic municipal services (including street lighting) in accordance with approved budget and set targets;
- To upgrade (including capital infrastructure development) existing municipal services in accordance with set targets, standards and norms;
- To enhance quality of life of communities through social development initiatives in line with set targets, norms and standards;
- To maintain existing municipal services in accordance with set targets, standards and norms; and
- To enhance skills of employees, councillors and ward committees through training initiatives and set targets encapsulated in the WSP.

As per the IDP for 2017 to 2021 for the Madibeng Local Municipality, under the commercial farming sector, the animal products that dominate the market are broilers (chicken), dairy products and beef. Pork and egg production are not large scale (page 70).

The main aim of the SDF is the provision of guidance with regard to physical development of Madibeng Local Municipality so as to improve the manner in which activities are arranged in the physical space. By enhancing the ways in which activities are situated in Madibeng Local Municipality as well as interrelation of several activities with others, the efficient and effective functioning of Madibeng Local Municipality will improve. This strategic arrangement of activities will also improve the municipality's capability to contribute to economic expansion, social well-being and environmental sustainability.

The key objective of Madibeng SDF is the attainment of an integrated and coordinated municipal area wherein all the sectors have the ability to contribute to an effective, well-

organized, justifiable, liveable as well as sustainable urban environment. The SDF has an influence on both private and public capital investments in the sense that it needs to fulfil the following:

- The SDF ought to give direction to private investors with regard to where certain developments will be allowed as well as where they won't be allowed;
- The SDF should make it a point that it creates a conducive environment for the implementation of municipality's Integrated Development Plan; and
- SDF ought to provide guidance in terms of spatial location of Madibeng capital interventions in ensuring that the maximum benefits are attained from investment in place.

In terms of both the IDP and the SDF, the proposed hatchery will be in line with both of the plans as the development will be contributing towards food production and employment creation.

3.4 Motivation of Preferred Site

Site Alternative 2 - Portion 322 of the Farm Hartebeestfontein 445 JQ, has a low ecological sensitivity. The shape of this site presents several placement options for the hatchery building and leaves space for expansion of the facility in the future. This site is easily accessible via the R511 and is located in an isolated geographical location to facilitate hygiene and disease control.

The proposed hatchery development is in line with both of the Madibeng Local Municipality IDP and the SDF, as the development will be contributing towards food production and employment creation.

The proposed hatchery can be viewed as a societal priority as it will contribute to food production. As stated above, egg production is not conducted on a large scale within the Madibeng Local Municipality and thus the hatchery will contribute indirectly to expanding the commercial farming sector, specifically egg production, which has the potential to be expanded upon.

4. LEGISLATIVE CONTEXT

4.1 National Legislation

4.1.1 National Environmental Management Act, 1998 (Act No. 107 of 1998, as amended) (NEMA)

The National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998, as amended) provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state, and to provide for matters connected therewith.

Integrated Environmental Management

- Integrated Environmental Management (IEM) is a philosophy, which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development.

In terms of the 2014 Environmental Impact Assessment (EIA) Regulations of the National Environment Management Act, 1998 (Act No. 107 of 1998, as amended) published 4 December 2014 (and updated on 7 April 2017), a Basic Assessment Report is required for activities listed in Notices R983 and R985, and a Scoping and Environmental Impact Assessment is required for activities listed in Notice R984.

IMPLICATION

The proposed hatchery triggers listed activities listed in terms of Listing Notice 1 (R.983) and Listing Notice 3 (R.985) of the NEMA EIA Regulations and therefore a Basic Assessment process has to be followed.

4.1.2 National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended

The National Environmental Management: Waste Act, 2008 (Act No. 58 of 2008, as amended) aims to consolidate waste management in South Africa, and contains a number of commendable provisions, including:

- The establishment of a national waste management strategy, and national and provincial norms and standards, for amongst other, the classification of waste, waste service delivery, and tariffs for such waste services;
- Addressing reduction, re-use, recycling and recovery of waste;
- The requirements for industry and local government to prepare integrated waste management plans;
- The establishment of control over contaminated land;
- Identifying waste management activities that requires a Licence, which currently include facilities for the storage, transfer, recycling, recovery, treatment and disposal of waste on land;
- Co-operative governance in issuing Licences for waste management facilities, by means of which a licensing authority can issue an integrated or consolidated Licence jointly with other organs of state that has legislative control over the activity; and
- The establishment of a national waste information system.

A List of Waste Management Activities that have, or are likely to have, a detrimental effect on the environment, was published in R.921 on 29 November 2013 under the Act. This list divides the storage, recycling, treatment and disposal of waste in to Category A, Category B and Category C activities. A Basic

Assessment process must be followed as part of a waste management licence application, for Category A activities triggered. A Environmental Impact Assessment (EIA) process must be followed as part of a waste management licence application, for Category B activities triggered. If Category C listed activities related to either storage or recycling are triggered, the relevant norms and standards, as set out in the applicable legislation must be complied with.

Implications:

The treatment of hazardous waste (biological waste) exceeding 500kg per day from Phase 2 (300 000 chicks per week) onwards, triggers a Waste Management Licence Application in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008, as amended), waste management activities in respect of which a waste management licence is required in accordance with Section 20 (b) of the NEMA: WA, Category A (7).

The hazardous waste to be treated/processed during the 1st phase of the hatchery development will be less than 550kg per day and therefore it will not be necessary to apply for a waste license for the 1st phase of the hatchery development. The applicant will apply for a waste license at the National Department of Environmental Affairs (DEA) by means of a Full EIA and will only commence with the 2nd phase of the development once the required waste license has been issued by DEA.

According to Annexure 1(a) of the National Waste Information Regulations, 2012, the owner has to register the generation of hazardous waste on the South African Waste Information System (SAWIS). This Regulation is regarded as applicable, because the facility generates more than 20kg of hazardous waste per day. The facility will also treat/process hazardous waste and according to the Regulations, the treatment of general waste using any form of treatment at a facility that has the capacity to process 10 tons of general waste or 500kg of hazardous waste per day excluding the treatment of effluent, wastewater or sewerage, must register on SAWIS.

4.1.3 National Norms and Standards for the Remediation of Contaminated Land and Soil Quality in the Republic of South Africa, 2014 GN 331 of 2 May 2014 published under NEM: WA

Implication:

The subject site is not situated on contaminated land; therefore, the aforementioned norms and standards do not apply.

4.1.4 Carbon Tax Act, 2019 (Act No. 15 of 2019)

The Carbon Tax Act imposes levies for the benefit of the National Revenue Fund. Persons conducting activities that result in greenhouse gas emissions above the "Threshold" for the activity listed in the "Activity/Sector" column in Schedule 2, must pay carbon tax.

Implication:

This Act came into effect in 2019 and it will be implemented in phases. The first Phase is currently effective and it currently exempts the Poultry industry from the payment of Carbon Tax.

For Phase 1 Livestock and Manure Management of Livestock qualifies for 100% Basic tax-free allowance for Fossil fuel combustion emissions in terms of the Carbon Tax Act, 2019 (Act No. 15 of 2019) due to the "Threshold" for all Livestock sectors including Poultry listed as Not Applicable.

The Act however remains applicable and it is advisable for the applicant to consider this Act once in operation. There are also tax incentives associated with this Act that are worthwhile exploring.

It will also be necessary to confirm the implications of the 2nd phase of this Act on the tax to be paid by the new Hatchery. It is expected that tax will be charged for

the industry in Phase 2, because the livestock industry is regarded as one of the industries with the highest potential impacts on climate change.

4.1.5 National Environmental Management: Air Quality Act (Act No. 39 of 2004), as amended

The National Environmental Management: Air Quality Act (NEM: AQA), 2004 (Act No. 39 of 2004 as amended) replaced the Atmospheric Pollution Prevention Act (Act No. 45 of 1965).

The purpose of the Act is "To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto."

The Act describes various regulatory tools that should be developed to ensure the implementation and enforcement of air quality management plans. These include:

- Priority areas, which are air pollution 'hot spots';
- Listed activities, which are 'problem' processes that require an Atmospheric Emission Licence;
- Controlled emitters, which includes the setting of emission standards for 'classes' of emitters, such as motor vehicles, incinerators, etc.;
- Control of noise; and
- Control of odours.

IMPLICATION

Portion 322 is situated the furthest from residential areas i.e. Bushveld View Estate and Ana Agricultural Holdings. From this perspective Portion 322 is the least likely to pose any potential nuisance impact on residential estates situated to the west or south-west, which could result in continuous complaints by residents. Considering

the hatchery will be within an enclosed structure and that chicks will be removed from site within 48 hours of hatching, the chance of the hatchery facility and associated activities posing a nuisance in terms of odour or noise, is very unlikely.

The prevalent wind direction in the area is easterly during winter and westerly during summer i.e. any potential odour or noise emanating from the hatchery proposed on Portion 322 would only affect the Horizon Bricks factory bordering the proposed hatchery to the west. If the proposed hatchery was established on Portion 107, any odour or noise emitted could potentially pose a nuisance to the surrounding food and lodging facilities. If the proposed hatchery was established on Portions 33 and 168 then any odour or noise emitted could affect the residents of the Bushveld View Estate to the south or the Multi Plant Seedling Nursery situated to the north-west.

During the construction phase, generation of dust and noise could become a nuisance factor to the food and lodging facilities situated 300m to the south-west and agricultural homesteads and residential estates situated between 1km and 2kms to the west-south-west and south-west respectively of the proposed development site. The aforementioned has been addressed in the EMPr.

Although the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment is situated south-west within 3kms and south-south-east within 2kms of the proposed hatchery site respectively, it is not foreseen that the hatchery will have any impact on the aforementioned protected areas.

Category 10: Animal Matter Processing of NEM: AQA is triggered by the treatment of hazardous waste by means of maceration and thus an Atmospheric Emissions Licence is triggered by the proposed hatchery, however, only from Phase 2 as this listed activity only applies to installations, handling more than 1 ton of raw material per day.

4.1.6 The National Greenhouse Gas Emission Regulations, Government Notice 275 of 3 April 2017

A facility conducting an activity per source category and above the threshold stipulated in Annexure 1 is regarded as a Category A data provider and must register within 30 days of the Regulations coming into effect, on the National Atmospheric Emission Inventory System (NAEIS).

Implications:

We are of the opinion that it will be necessary for the applicant to register on the data base as referred to above as soon as the hatchery becomes operational. The information as captured on the data base will eventually be used for purpose of the determination of Tax payable when Phase 2 of the Carbon Tax Act comes into effect.

4.1.7 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The purpose of the National Environmental Management: Biodiversity Act (NEM: BA), 2004 (act No. 10 of 2004 as amended) is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

Implications:

In terms of the Act, and the North West Biodiversity Sector Plan (NW BSP) 2015 published in terms of the Act, the northern most corner of Portion 322 of the Farm Hartebeestfontein 445 JQ is situated within a Threatened Ecosystem in the form of the Marikana Thornveld which is classified as Vulnerable. Approximately 60% (eastern part) of Portion 322 is classified as Critical Biodiversity Area 2 (CBA2) and the remaining 40% (western part) is classified as Ecological Support Area 2 (ESA2) due to occurring within the 5km buffer of a Protected Area in the form of the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment and due to occurring within an Important Bird Area (IBA) and within a Freshwater Ecosystem Protected Area (FEPA) Catchment.

A Flora and Fauna: Comparative Site Assessment Report was compiled by Bokamoso Landscape Architects and Environmental Consultants CC. **Refer to Appendix G3 for the said report.** The entire development site falls with a Freshwater Ecosystem Protected Area (FEPA) classified as Ecological Support Area 1.

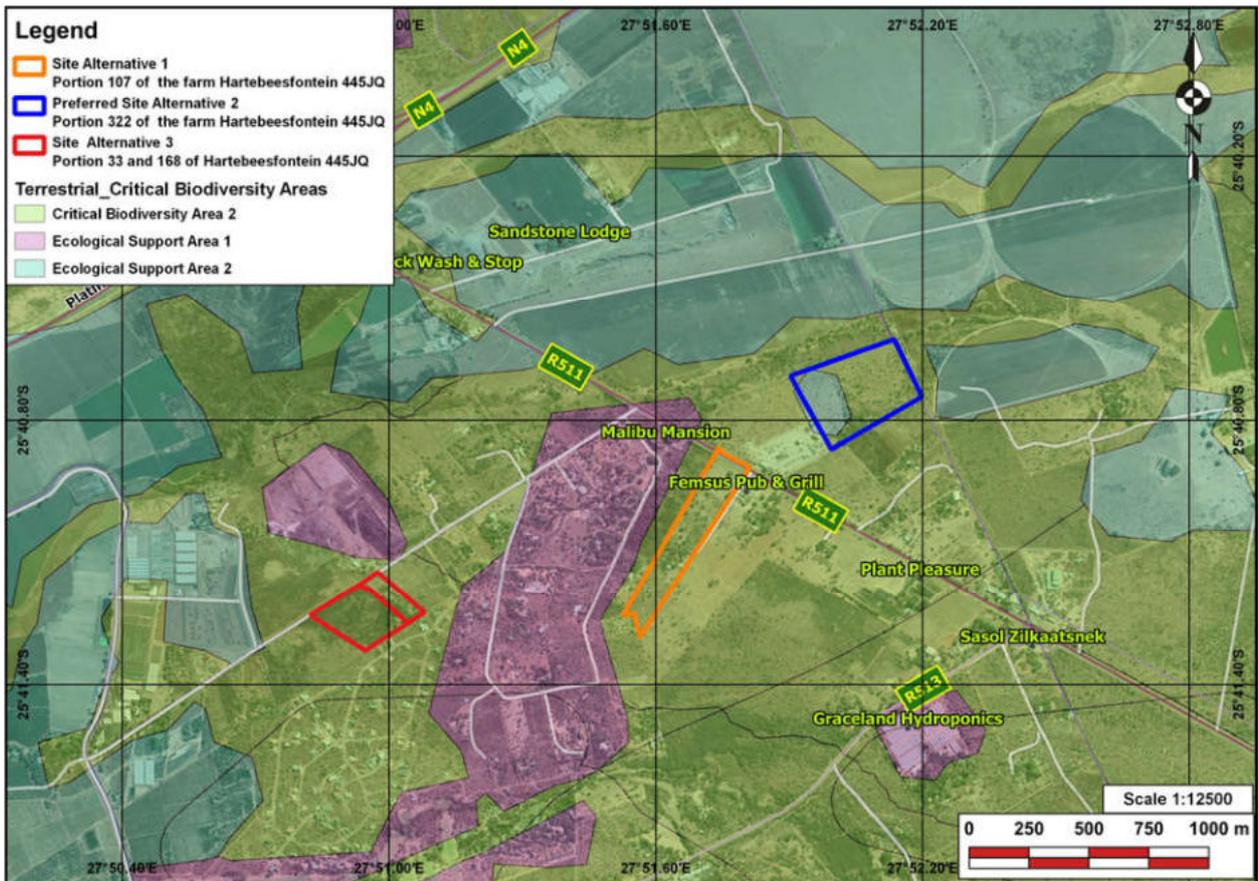


Figure 4: Critical Biodiversity Areas Map

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

The purpose of National Environmental Management: Protected Areas Act (NEM: PAA), 2003 (Act No. 57 of 2003) is to provide the protection, conservation and

management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

IMPLICATION

The proposed hatchery site does not occur within an area declared as protected in terms of the Act, but the Magaliesberg Protected Natural Environment occurs 1.5km south-south-east and the Hartebeestpoort Nature Reserve occurs 3km south-west from the preferred development site. The proposed hatchery development site occurs within the 5km buffer of a Protected Area, thus the widening of the existing road servitude in order to provide access to site, triggers listed activity 18 h. v. of Listing Notice 3 of the NEMA 2014 EIA Regulations as amended. **Refer to Figure 5 and Figure 6 below.**

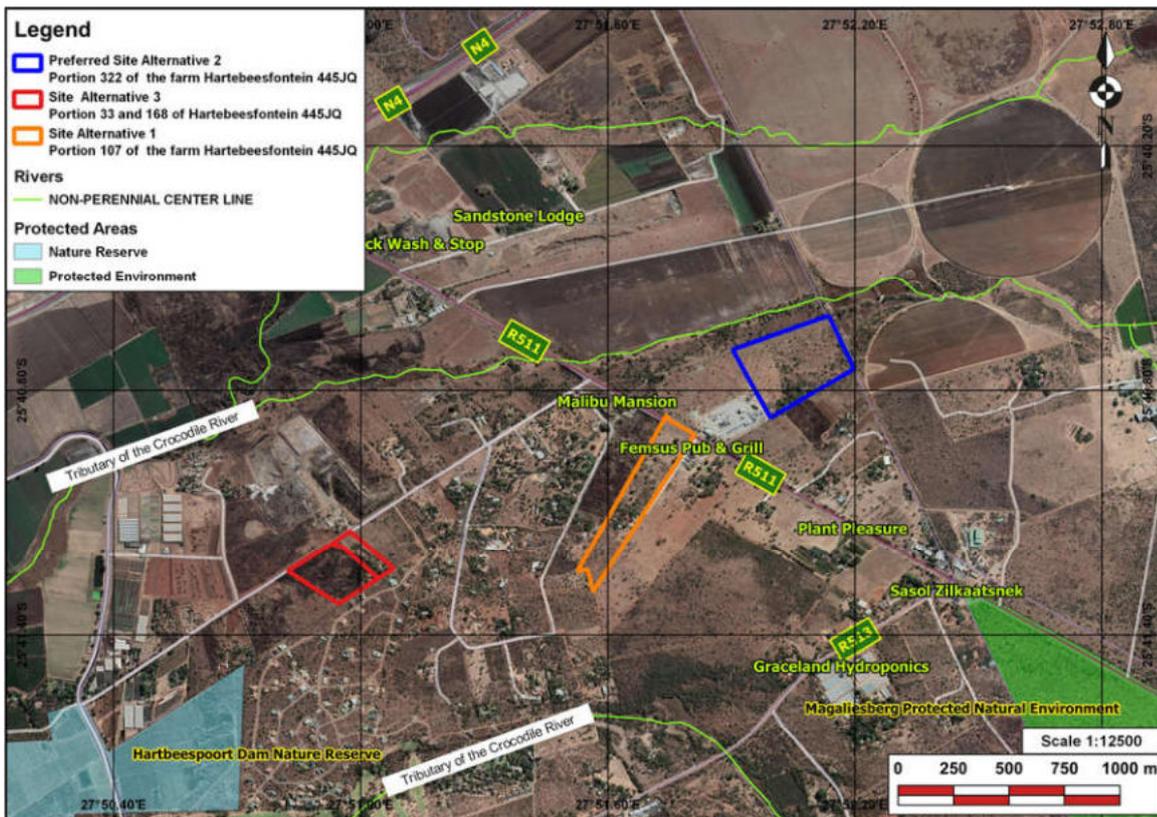


Figure 5: Protected Areas Map

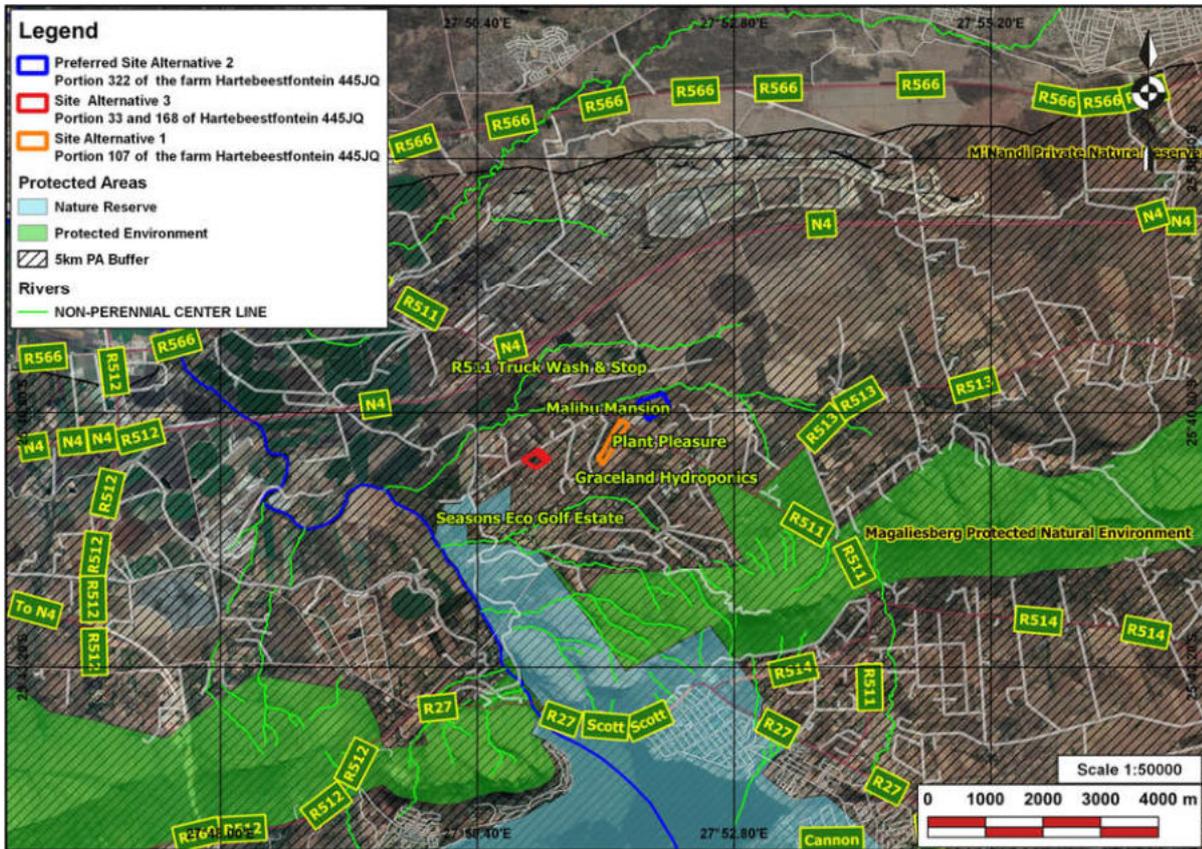


Figure 6: Protected Areas Buffers Map

4.1.9 The National Water Act, 1998 (Act No. 36 of 1998)

The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed, and controlled in ways that takes into account, amongst other factors, the following:

- ❑ Meeting the basic human needs of present and future generations;
- ❑ Promoting equitable access to water;
- ❑ Promoting the efficient, sustainable and beneficial use of water in the public interest;
- ❑ Reducing and preventing pollution and degradation of water resources;
- ❑ Facilitating social and economic development; and
- ❑ Providing for the growing demand for water- use.

IMPLICATION

The Kroon Chickens properties are located within the quaternary catchment A21J of the Limpopo Water Management Area. A non-perennial tributary of the Crocodile River flows from east to west 30 to 40m north of the preferred site. The Hartebeestpoort Dam is situated 5km to the south of the preferred hatchery site.

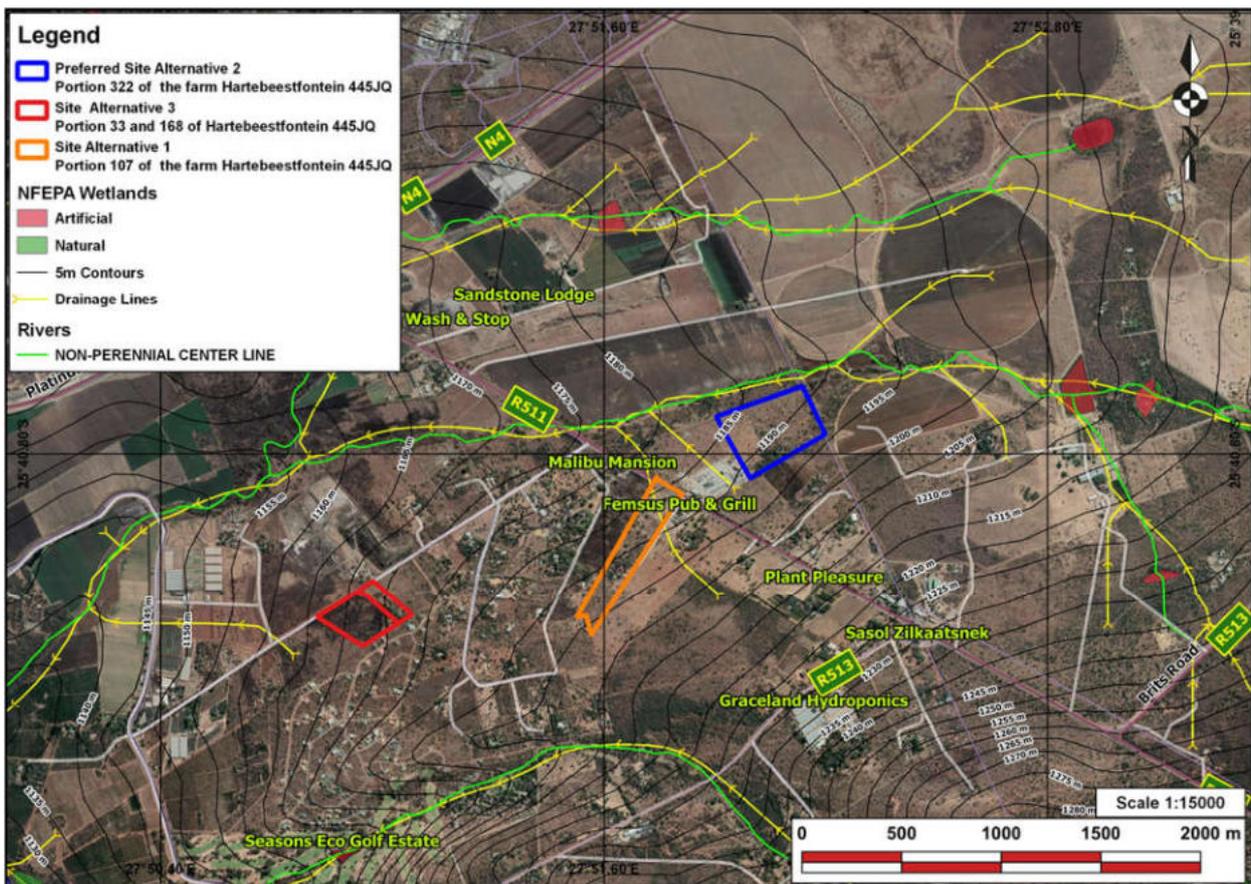


Figure 7: Hydrology Map

The North West Biodiversity Sector Plan (NW BSP) 2015 denotes the non-perennial stream as an Instream Wetland classed as Ecological Support Area 1 (ESA1). A Wetland Delineation and Risk Assessment Report was compiled by Bokamoso Landscape Architects and Environmental Consultants CC dated March 2019. **Refer to Appendix G6 for the said report.**

Although no wetlands were identified on site during the Wetland Assessment conducted, the Wetland Specialist recommended that a **100m buffer** be applied around the non-perennial watercourse due to the site occurring outside the urban edge, especially due to the fact that connectivity still exists upstream and downstream of the watercourse.

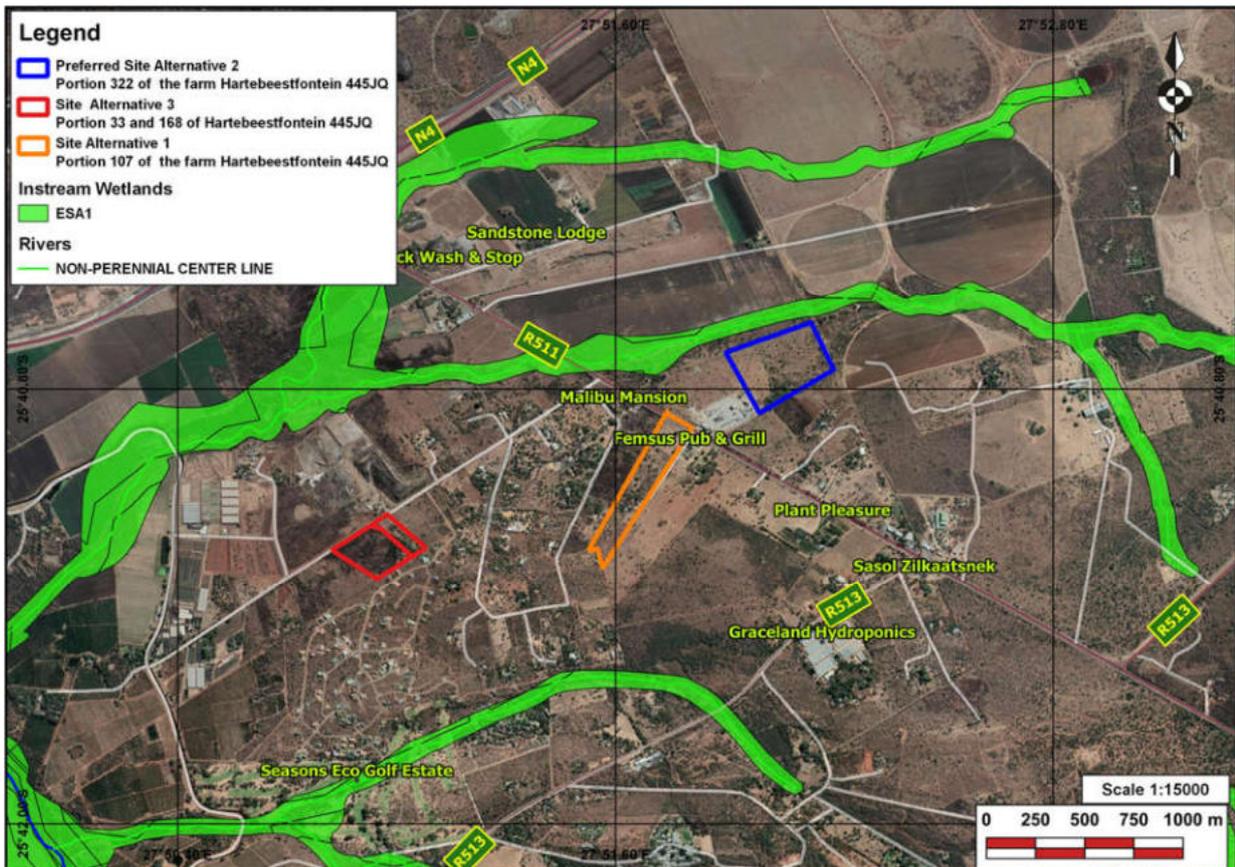


Figure 8: Wetlands Instream Map

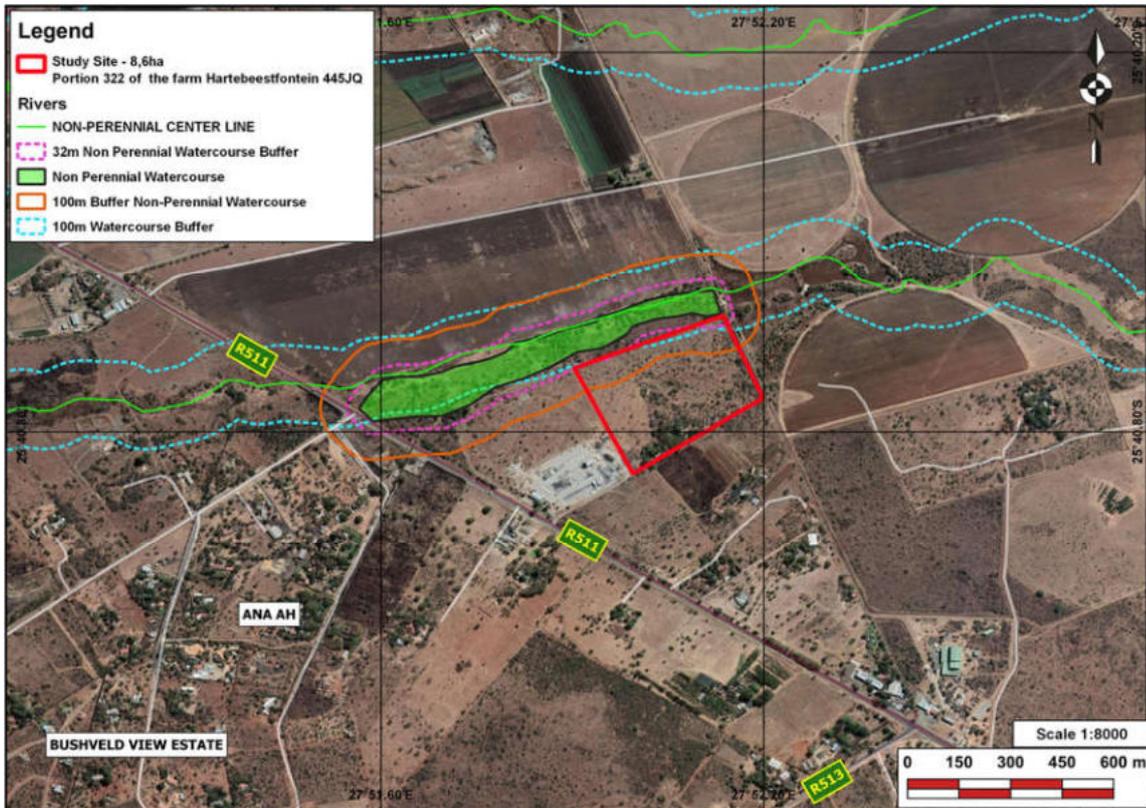


Figure 9: Regulated Areas Map

The Crocodile River is highly utilised for irrigation, which has significantly diminished the available water reserves for further use. According to NWBSP all three of the proposed development sites occur within a Freshwater Ecosystem Protected Area (FEPA) Catchment and thus all three sites are classed as Ecological Support Area 1 (ESA1).

Should the proposed hatchery development on Portion 322 be approved, a General Authorisation (GA) in terms of Section 21 (c) and (i) water uses will need to be applied for with the Department of Human Settlements, Water and Sanitation (DHSWS) due to the proposed site being affected by a "Regulated Area".

In addition, a Section 21 (a) water use will also need to be applied for, for abstraction of water from the on-site borehole. In terms of the Revision of General Authorisation for the Taking and Storing Water only 45m³ may be abstracted per hectare per annum from quaternary catchment A21J which equates to 580m³

(45m³ X 12.9ha) per annum for Portion 322. It was confirmed by the geo-hydrologist that the yields of the existing boreholes are sufficient to provide in the water needs for the 1st phase of the development. A full Section 21 (a) water-use license application, which includes the required geo-hydrological inputs, have been prepared for submission to DHSWS for consideration, due to no municipal water available.

A Section 21 (e) water use will also have to be applied for due to treated waste water effluent from the proposed on-site sewage package plant being used for irrigation of the garden and landscape areas.

Section 21 (g) water use will be triggered due to the potential discharge of treated effluent into the regulated area.

4.1.10 Water Services Act, 1997 (Act No. 108 of 1997)

The purpose of this Act is to ensure the regulation of national standards and measures to conserve water taking into account, amongst other factors, the following:

- ❑ Basic sanitation;
- ❑ Basic water supply;
- ❑ Interruption in provision of water services;
- ❑ Quality of potable water;
- ❑ Control of objectionable substances;
- ❑ Disposal of grey water;
- ❑ Use of effluent; and
- ❑ Quantity and quality of industrial effluent discharged into a sewerage system.

IMPLICATION

A Baseline Hydrogeological Water Supply Investigation Report was compiled by GCS dated 23 April 2019. **Refer to Appendix G2 for the said report.** According to the report, The Madibeng Local Municipality and Rand water confirmed that there is currently no bulk water supply in this area although the Zilkaatsnek Reservoir (constructed in 2008) is situated approximately 4km south-east of the proposed development site. The Madibeng Local Municipality confirmed there is no bulk sewer infrastructure including Waste Water Treatment Works, in the area.

Groundwater abstraction from an existing borehole as potable and process water supply, and an on-site sewage package plant, is thus proposed for the proposed hatchery facility. This Act does not apply to the proposed hatchery as water and sanitation will be supplied by the developer, and not by a Water Service Provider.

4.1.11 National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA)

Section 38 (1) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) states the following:

"38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

(c) any developments or other activity which will change the character of the site-

(i) exceeding 5000 m² in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which has been consolidated within the past five years; or

- (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA or a provisional heritage resources authority;*
- (d) *the re-zoning of a site exceeding 10 000 m² in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,*

In terms of Section 38 (8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999):

"The provisions of this section do not apply to a development as prescribed in sub section (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act. No 73 of 1989), or the integrated environmental management act guidelines issued by the Department of Environmental Affairs and Tourism, or the Mineral Act, 1999 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of sub-section (3), and any comments and recommendations of the relevant heritage resources authority with regards to such development have been taken into account prior to the granting of the consent".

IMPLICATION

Section 38(1) requires that SAHRA be notified at the very earliest stages of a development, which triggers activities as listed under Section 38(1) of an applicant's intent to develop a site. The applicant must also furnish SAHRA with details regarding the location, nature and extent of the proposed development."

SAHRA was notified of the proposed development in terms of Section 38(1) and it was eventually requested that a Phase 1 Heritage Assessment Report be conducted and submitted as part of the Basic Assessment (BA) application.

Section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) confirms that a heritage impacts assessment can be incorporated as part of an

Environmental Impact Assessment process. The PP process for the HIA can be incorporated as part of the EIA/BA PP process and the BA Report must also be circulated to SAHRA for comments. The Decision to be issued by the competent authority regarding the BA Report will then also be regarded as a positive Decision from a Heritage point of view.

A Phase 1 Heritage Impact Assessment Report was conducted by A Pelsler Archaeological Consulting (APAC) dated March 2019 for all three of the development sites. **Refer to Appendix G4 for the said report.**

Only one site of cultural heritage origin and significance, namely a grave site was identified during the assessment, at Site Alternative 3/ Portion 33 and 168 of the Farm Hartebeestfontein 445 JQ. The grave site incorporates between 30 and 50 graves. Two graves have formal headstones with inscriptions. Site Alternative 3 is regarded as the least preferred site from a cultural and historical point of view.

From a cultural heritage perspective, site Alternatives 1 and 2 are regarded as the preferred development sites as there will be no impacts on archaeological or historical sites, features or material.

A final comment letter has been received from the SAHRA who acknowledges that the preferred development site is Site Alternative 2. However, a Chance Finds Procedure is recommended. The final comment letter of the SAHRA recommends that specific mitigation measures are incorporated into the FBAR and the EMPr. Such measures are stipulated in the impact assessment and the EMPr. The SAHRA comment letter is attached as **Appendix I - the Public Participation Section of the BAR.**

4.1.12 National Veld and Forest Fire Act, 1998 (Act No. 101, 1998)

The purpose of this Act is to prevent and combat veldt, forest, and mountain fires throughout the Republic. Furthermore, the Act provides for a variety of institutions, methods and practices for achieving the prevention of fires.

IMPLICATION

Mitigation measures associated with the prevention of fires during the construction phase as well as operational phase of the proposed development are critical considering the close proximity to two Nature Reserves as well as surrounding agricultural holdings.

The owner will have to maintain fire breaks during the operational phase of the hatchery.

4.1.13 Conservation of Agricultural Resources Act (Act No. 43 of 1983)

This Act provides for control over the utilization of natural agricultural resources of South Africa in order to promote the conservation of soil, water sources and the vegetation as well as the combating of weeds and invader plants; and for matters connecting therewith.

IMPLICATION

Portion 322 of the Farm Hartebeestfontein 445 JQ is surrounded by agricultural and commercial land uses. The site is suitable for agricultural activities, such as the proposed hatchery, due to it being situated on a small holding. Portions 33 and 168's proximity to residential estates makes it less desirable for agricultural activities, due to potential noise and odours emanating from the hatchery.

4.1.14 National Road Traffic Act, 1996 (Act No. 93 of 1996)

This Act provides for all road traffic matters which shall apply uniformly throughout the Republic and for matters connected therewith.

IMPLICATION

A Traffic Study was not carried out for the proposed hatchery. An existing gravel road which falls within an existing servitude, leading off the R511 may have to be widened in order to cater for delivery of eggs to and collection of chicks from site.

The proposed use of the property for hatchery purposes will however not trigger an application to The South African Roads Agency (SANRAL) for approval, as confirmed by Techworld Consulting Traffic Engineers.

According to the Traffic Impact Statement (TIS) for the proposed development on Portion 322 (the preferred development site), the following vehicular traffic will be generated by the proposed facility:

- Two trucks will be entering and exiting the site daily;
- One utility vehicle (probably for the transportation of water); and
- Approximately twenty (20) private vehicles.

Due to the fact that less than fifty (50) peak hour trips will be generated, the development of the proposed facility on the study area will not trigger a Traffic Impact Assessment (TIA). It was also confirmed that the site will not require any mitigation or road improvements as the subject property is adequate to permit safe traffic movements by utilizing the one point of access to and from the R511. Although the TIS states that the site will not require any mitigation or road improvements, upon a site inspection on the subject property, as Environmental Consultants we are of the opinion that it may become necessary to widen the gravel road or upgrade at a later stage, and for this reason we have catered for the widening of the road as a part of the listed activities. **Refer to the Traffic Impact Statement attached as Appendix G8.**

4.1.15 Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)- (SPLUMA)

The purpose of the Act is to consolidate and amend laws relating to town-planning and the establishment of townships.

IMPLICATION

A rezoning application for a change of land use from to "Agriculture" to "Cultivation shed" to cater for the proposed hatchery, has been submitted in terms of SPLUMA, to the Municipality for consideration and approval, as discussed above in item 3.1. **Refer to Appendix G1ii for the Town Planning Memorandum.**

A right of way servitude of 9.45m wide runs along a section of the southern boundary of the site, providing for access to the proposed development site as well as the adjacent brick factory. **Refer to Appendix G1i for the Due Diligence Report: Land Use Matters.**

4.1.16 Occupational Health & Safety Act (OHSA), 1993 (Act No. 85 of 1993), as amended

The Act was created to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected herewith.

IMPLICATION

Construction Regulations, 7 February 2014 of the Act will apply during the construction and operational phase of the proposed hatchery and is covered in the EMPr attached as **Appendix J.**

The minimum standards pertaining to Health and Safety for the employees working at Chick Hatcheries as set out in the South African Poultry Association Abridged Code of Practice: Chick hatchery must also be conformed to.

4.1.17 Fertilizers, Farm Feeds, Agricultural Remedies, Stock Remedies Act, 1947 (Act No. 36 of 1947)

The act provides for the appointment of a Registrar Fertilisers, Farm Feeds, Agriculture, Remedies, and Stock Remedies; for the registration of Fertilisers, Farm, Feeds, Agriculture remedies, sterilisation installations and pest control operatives, for controlling or prohibiting the importation, sale, procurement, alienation or use of Fertilisers, Farm Feeds, Agricultural Remedies, and Stock Remedies; for the appointment of technical advisers and analysts; and for related matters.

IMPLICATION

Considering the nature of the proposed development and control measures required to prevent the transmission of diseases i.e. the vaccine store, it is foreseen that the hatchery might have to register in terms of the Fertilizers, Farm Feeds, Agricultural Remedies, Stock Remedies Act.

4.1.18 Animal Disease Act, 1984 (Act No. 35 of 1984)

The act provides for prevention of diseases and the spread thereof.

IMPLICATION

Acceptable control measures must be implemented at the Hatchery to prevent the transmission of diseases. Hatcheries shall conduct regular tests for Salmonella. The Hatchery should have a comprehensive cleaning, disinfection and hygiene monitoring system. Disinfectant foot baths shall be placed at strategic points within the Hatchery to prevent the transfer of bacteria from one section to another.

4.1.19 Animal Protection Act, 1962 (Act No. 71 of 1962)

The act caters for the prevention of cruelty against animals.

IMPLICATION

Personnel shall be trained to prevent the unnecessary suffering of chicks. Staff shall be trained in any required procedure e.g. sexing, toe-removal, maceration, transportation or de-spurring without causing suffering to the chicks, as per the Code of Practice for Hatcheries.

4.2 Provincial Legislation

4.2.1 North West Biodiversity Sector Plan, 2015

The North West Biodiversity Sector Plan (NW BSP) was developed to combat the loss of biodiversity in the North West Province and the North West Department of Economic Development, Environment, Conservation and Tourism (NWDEDECT) is the implementing agent of the NW BSP.

The purpose of a Biodiversity Sector Plan is to inform land use planning, environmental assessments, land and water use authorisations, as well as natural resource management, undertaken by a range of sectors whose policies and decisions impact on biodiversity. This is done by providing a map of biodiversity priority areas, referred to as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), with accompanying land use planning and decision-making guidelines.

IMPLICATION

Approximately 60% (eastern part) of Portion 322 is classified as Critical Biodiversity Area 2 (CBA2) and the remaining 40% (western part) is classified as Ecological Support Area 2 (ESA2). This classification referred to is contributed to the fact that the

site is located within a 5km buffer of Protected Areas, namely the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment (MPNE). Provincial maps also indicated that the site is situated within an Important Bird Area and within a Freshwater Ecosystem Protected Area (FEPA).

Detailed site investigations conducted by an ecologist and wetland specialist confirmed that the natural vegetation of the study area is not pristine and that the proposed development can receive the go-ahead from a fauna, flora and hydrological point of view if buffers as set by the specialists are applied.

4.3 Local Government Legislation

4.3.1 Madibeng Spatial Development Framework

The main aim of the SDF is the provision of guidance with regard to physical development of Madibeng Local Municipality so as to improve the manner in which activities are arranged in the physical space. By enhancing the ways in which activities are situated in Madibeng Local Municipality as well as interrelation of several activities with others will eventually improve the efficient and effective functioning of Madibeng Local Municipality. This strategic arrangement of activities will also improve the municipality capability to contribute to economic expansion, social well-being and environmental sustainability. The key objective of Madibeng SDF is the attainment of an integrated and coordinated municipal area wherein all the sectors have the ability to contribute to an effective, well-organized, justifiable, liveable as well as sustainable urban environment. The SDF has an influence on both private and public capital investments in the sense that it needs to fulfil the following:

- The SDF ought to give direction to private investors with regard to where certain developments will be allowed as well as where they won't be allowed;

- The SDF should make it a point that it creates a conducive environment for the implementation of municipality's Integrated Development Plan; and SDF ought to provide guidance in terms of spatial location of Madibeng capital interventions in ensuring that the maximum benefits are attained from investment in place.

IMPLICATION

As per the Madibeng Spatial Development Framework of June 2016, the area within which the subject property falls is allocated for future residential land use purposes. It is worthy to note that although the area is earmarked for future residential development, the operation of a hatchery is not eliminated.

Many of the properties around the study area are occupied by businesses, industrial-like activities, agricultural activities and other non-residential activities. No objections were received from owners of residential properties against the development of the proposed hatchery on the preferred site.

The proposed hatchery is regarded as in line with and as compatible with the surrounding land-uses and with the local authority planning for the area.

4.3.2 Madibeng Local Municipality IDP (2017 TO 2021)

According to the Madibeng Local Municipality IDP (2017 TO 2021), some of the main objectives include the following:

- To provide and promote access to free basic services in accordance with available resources and set targets;
- To provide basic municipal services (including street lighting) in accordance with approved budget and set targets;
- To upgrade (including capital infrastructure development) existing municipal services in accordance with set targets, standards and norms;

- To enhance quality of life of communities through social development initiatives in line with set targets, norms and standards;
- To maintain existing municipal services in accordance with set targets, standards and norms; and
- To enhance skills of employees, councillors and ward committees through training initiatives and set targets encapsulated in the WSP.

IMPLICATION

As per the IDP for 2017 to 2021 for the Madibeng Local Municipality, under the commercial farming sector, the animal products that dominate the market are broilers (chicken), dairy products and beef. Pork and egg production are not large scale.

The proposed hatchery can be viewed as a societal priority as it will contribute to food production. As stated, egg production is not conducted on a large scale within the Madibeng Local Municipality and thus the hatchery will contribute indirectly to expanding the commercial farming sector, specifically egg production, which has the potential to be expanded upon. The proposed hatchery is thus in line with the IDP of the Local Municipality.

4.3.3 Madibeng Local Municipality Draft Spatial Planning and Land Use Management By-Law 2016

In terms of this By-Law the Municipality must draft a municipal Spatial Development Framework in accordance with the provisions of sections 20 and 21 of the Act read with sections 23 to 35 of the Municipal Systems Act and a Land Use Scheme.

IMPLICATION

An SDF was developed and implications are covered under Section 4.3.1 above.

4.3.4 Madibeng Local Municipality Draft Waste Management By-Law 2019

To give effect to the right contained in Section 24 of the Constitution by regulating waste management within the area of the Municipality's jurisdiction; to provide, in conjunction with any other applicable law, an effective legal and administrative framework, within which the Municipality can manage and regulate waste management activities; to ensure waste is avoided, or where it cannot be altogether avoided, minimised, re-used, recycled, recovered, treated and disposed of in an environmental sound manner; and to promote and ensure an effective delivery of waste services.

IMPLICATION

In terms of this By-Law any person has duty to manage any waste generated in terms of the waste hierarchy i.e. avoid, recycle/reuse, treat, and dispose. This By-Law only applies to general waste generated on site. The Municipal waste management officer must be informed of the intention to generate general waste, 60 days prior to commencement of generating waste.

5. ENVIRONMENTAL ASPECTS

5.1 BIO-PHYSICAL ENVIRONMENT

5.1.1 Geology and Soils

The geology of the site is composed of Rustenburg, lebowa and rashoop rock type. The study area and its surroundings are mainly underlain by pyroxinite, harzburgite and norite rocks. The northern parts of the study site are underlain by plinthic catena with eutrophic red soils. The southern part of the study site is composed of plinthic catena with eutrophic red soils.

Implications for Development:

Soils associated with such rocks usually have heave characteristics and therefore foundation designs and all other structures and features to be erected on the study area must be designed to accommodate some swelling and shrinking. Corrosiveness can also be an issue and therefore services designs, especially pipes and connections to be used must be able to tolerate heave and corrosive conditions.

Refer to Figure 10 and 11 below

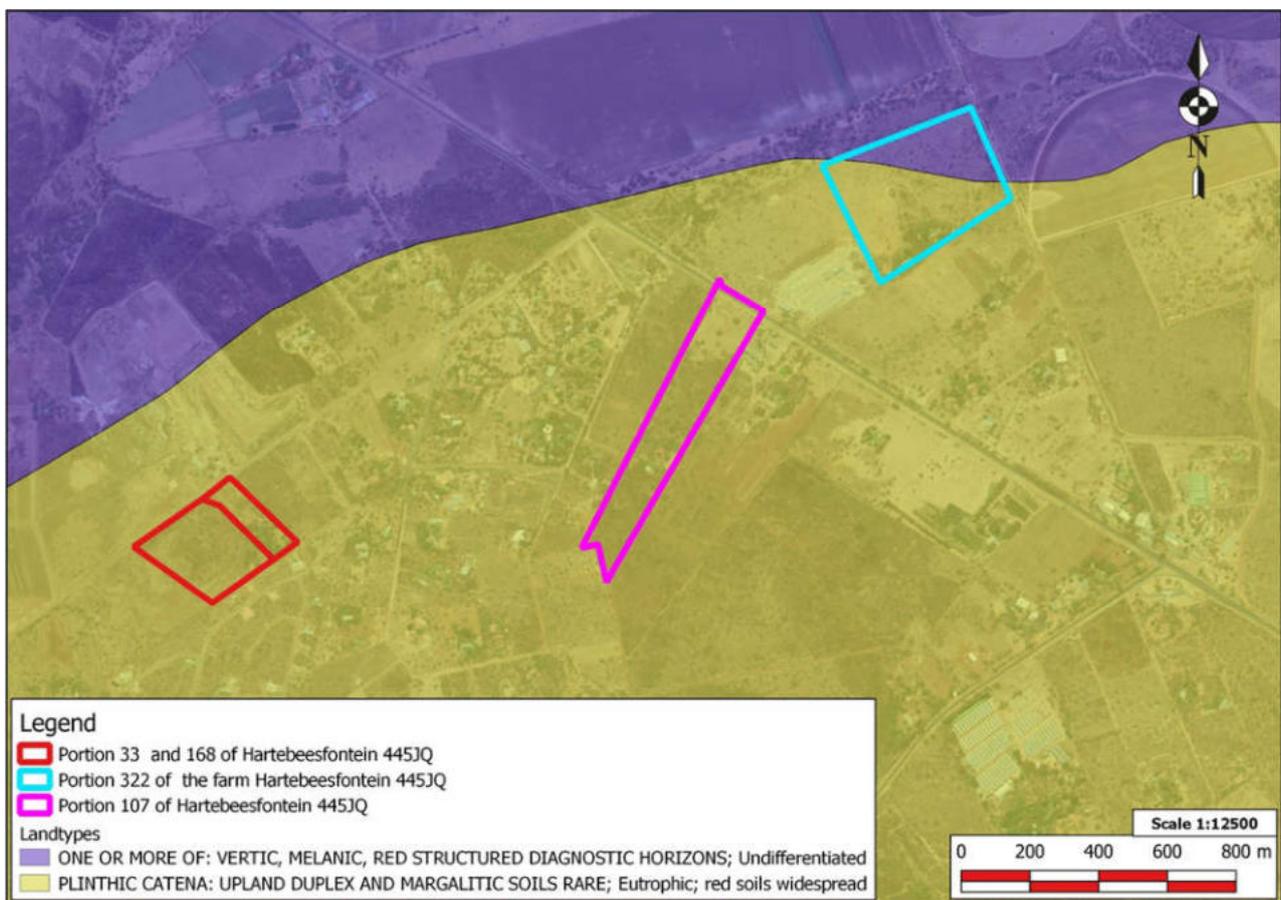


Figure 10: Soils Map



Figure 11: Simplified Geology

5.1.2 Agricultural Potential

The subject site occurs within an area denoted as arable. This means that the soils associated with the study area and its surroundings are regarded as suitable for crops.

Implications for Development:

Take note that the hatchery (also an agricultural activity) will only cover a small portion of the study area. The remainder of the study area will remain in its natural state.

The proposed development will thus not have a significant impact on the agricultural potential of the land and if well planned and managed, it will not have a significant negative impact on the quality of the soil or on the natural vegetation. **Refer to Figure 12 below.**

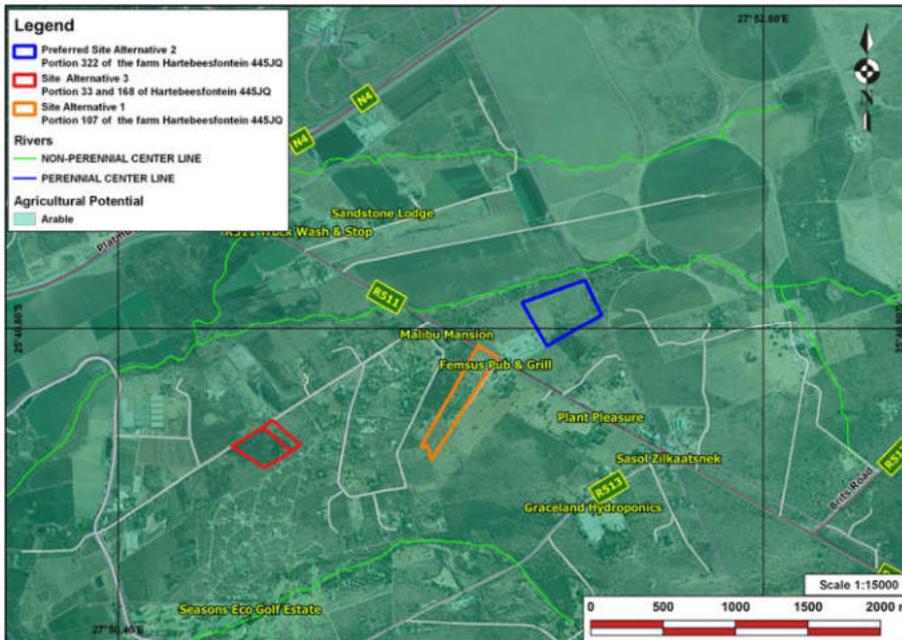


Figure 12: Agricultural Potential Map

5.1.3 Topography

The study area has a gradual slope from the south-east towards the north-west.

Implications for Development:

The topography of the study area is regarded as favourable for the installation of engineering services. The site slopes approximately 11metres over a distance of approximately 520m (approximately 1 metre every 45 metres). The proposed hatchery will be located in the southern, higher lying section of the study area and the proposed on-site sewer treatment facility will be situated at a point lower than the facility in order to allow for the sewer to gravitate. The sewer treatment facility will be situated outside of the 1:100-year flood line and the watercourse buffer.

Storm water will also be directed to the lower lying sections of the study area. Storm water will mainly be sheet flow and the industrial water will be separated from the clean storm water.

5.1.4 Climate

In the North-West Province, specifically the town of Brits summer temperatures can range between 19° and 29°C, and winter is usually associated with arid sunny days and relatively chilly nights.

The average winter temperature which is from May to July varies from 2°C to 20°C during the day. In terms of rainfall patterns, the Brits receives approximately 540mm of rain per annum with most of the rainfall occurring during the summer months.

Horizon Bricks borders the proposed development site to the west. The prevalent wind direction in the area is easterly during winter and westerly during summer. Considering the hatchery facility will be in an enclosed building it is not foreseen that dust generated by activities associated with Horizon Bricks will have a negative impact on proposed hatchery.

An existing dwelling occurs on site, but will not affect the proposed hatchery site layout.

5.1.5 Hydrology

5.1.5.1 Surface Hydrology

The subject site occurs within the quaternary catchment A21J, Upper Crocodile Sub-Catchment in the Limpopo Water Management Area. A non-perennial tributary of the Crocodile River flows from east to west, just outside and almost parallel to the northern boundary of the study area. **Refer Figure 13 – Hydrology, The Quaternary Catchment and The Water Management Area**

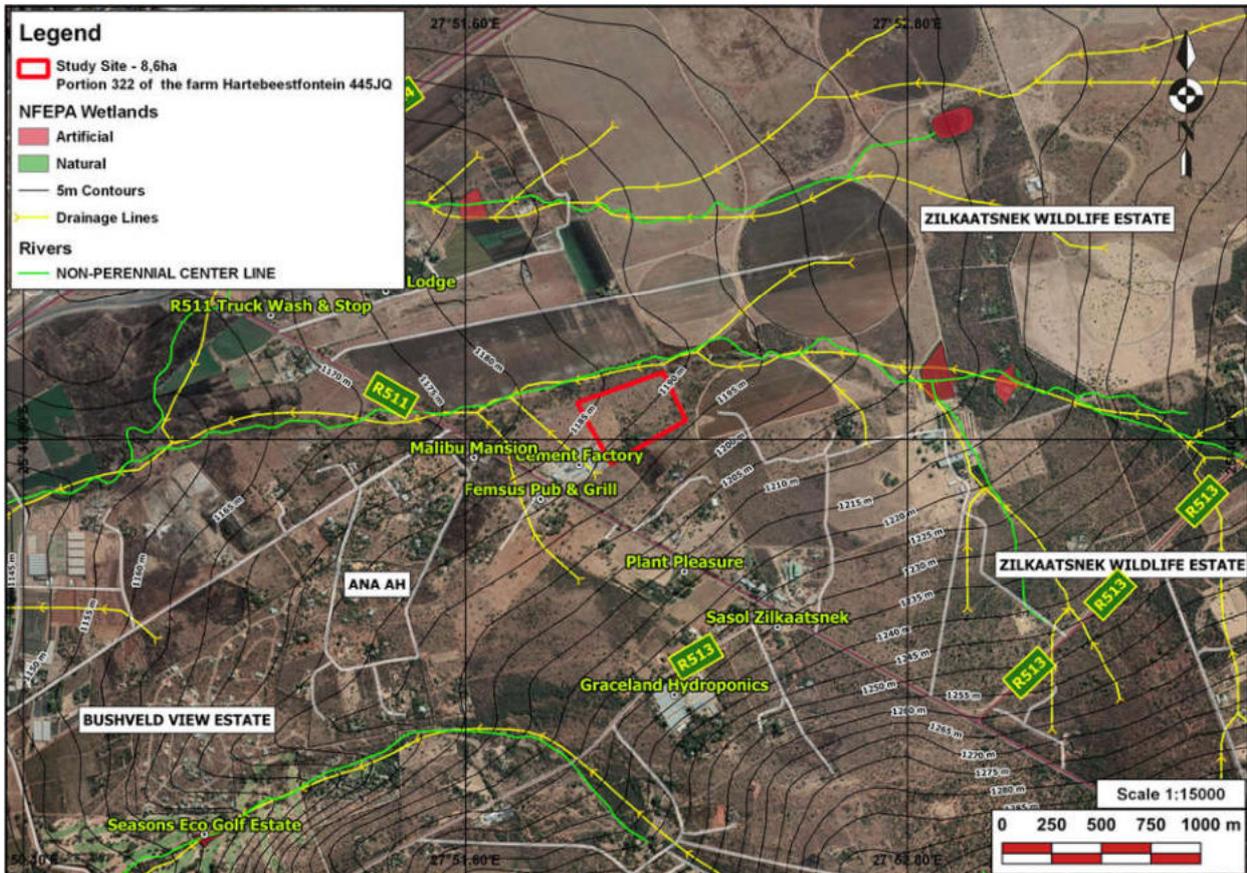


Figure 13: Hydrology Map

Implications for Development:

The site slopes from the south-east towards the north-west and this means that the surface water mainly drains from the south-east towards the north-west (across the study area) and it eventually reaches the tributary of the Crocodile River which flows just outside the northern boundary of the study area.

A Wetland Delineation and Risk Assessment Report dated March 2019 concluded that that no wetlands occur within a 500m radius from the proposed hatchery site, however a 100m buffer was recommended for the non-perennial watercourse due to the study site occurring outside the urban edge. **Refer to Appendix G6.**

No development is planned within this buffer area as part of the proposed hatchery. The Ecological Importance and Sensitivity of the watercourse is regarded as being Moderate due to high vegetation cover.

Should the proposed hatchery development on Portion 322 be approved, a General Authorisation (GA) in terms of Section 21 (c) and (i) water uses will need to be applied for with the Department of Human Settlements, Water and Sanitation (DHSWS) due to the proposed site being affected by a "Regulated Area".

A Section 21 (e) water use will also have to be applied for due to treated waste water effluent from the proposed on-site sewage package plant being used for irrigation of the garden and landscape areas.

Section 21 (g) water use will be triggered due to the potential discharge of treated effluent into the regulated area.

5.1.5.2 Sub-Surface Hydrology

Refer to Figure 13 above

There are no significant wetlands present on the study area or within 500m from the study area.

A Section 21 WULA for the abstraction of water already commenced and according to the desktop geo-hydrological study conducted for the site, the groundwater yield potential for the study area is regarded as high. The geo-hydrological report for the study area will also address the pollution potential of the study area.

According to the Geohydrological Assessment, the aquifer system that underlies the subject site is classified as a minor/low yield potential intergranular and fractured aquifer with yields ranging between 0.5 and 2.0l/second and with variable water quality.

Thirty-six (36) boreholes were identified within a 2km radius of the subject site, of which eight (8) of the 36 were accessible for ground water level measurements with the remaining 28 boreholes either being blocked, vandalized, collapsed or not accessible.

According to the hydro census results, groundwater in the catchment is mostly used for domestic purposes and for the small-scale irrigation of crops and vegetated areas.

The ground water level in the vicinity of the subject site is intermittent at various depths with the depth to water varying from 2.55 metres below ground level (m bgl) to 23.51 m bgl. This could be attributed to the depth of water filled lattices and/or fractures, typically associated with fractured rock aquifer systems, or intrusive rock that exercise great hydrogeological control on groundwater movement.

In terms of auger holes that were drilled around the proposed waste water pond, no ground water seepage was encountered in any of the five auger holes.

Based on the sustainable abstraction rate and the long-term drawdown response, the proposed abstraction rate for the existing production borehole is 1.8ℓ/s at a 24-hour pumping schedule, however, an abstraction rate of 2.63ℓ/s is proposed for a 12-hour day pumping schedule which totals to 113.62m³/day. As per the geohydrologist, at the above pumping rates, the borehole efficiency losses are small as the risk of encountering no flow boundary effects is also reduced substantially.

Phase 1 of the hatchery requires less than 7.5m³ of water per day and the existing on-site borehole has the potential to yield 19.2m³. There is thus already more than sufficient groundwater supply to in the existing borehole on the site cater for Phase 1 and phase 2 of the hatchery. The geo-hydrologist conducted a geo-physical survey of the study area in order to identify the preferred positions, from a ground water availability point of view, for the drilling of additional boreholes for the remaining phases of the hatchery. The remaining phases of the hatchery will only be developed once sufficient borehole water is available.

Water Quality

An inorganic groundwater analysis was conducted and the results of the analysis were compared to SANS 241-1:2015 drinking water quality standards (SABS, 2015) and the hatchery water quality guidelines. All general water quality parameters comply with the SANS standards. In terms of anions, all parameters comply with SANS excluding nitrate (N) and nitrate as (NO_3). It is integral to note that when large amounts of water containing nitrate and nitrate concentrations between 10 to 20mg/ℓ as N, it may potentially cause methaeglobinaemia (increase in red blood cells) in infants at concentrations exceeding 20mg/ℓ as N, methaemoglobinaemia occurs in infants and irritation of the mucous membrane in adults can potentially occur. The cations and metals are compliant with SANS standards.

In terms of compliance with the hatchery water quality, pH, the sum of chloride and sulphate and iron are within the guideline limits. In contrast, the total hardness (560 mg CaCO_3/ℓ) exceeds the recommended maximum concentration of 35 to 107mg mg CaCO_3/ℓ for typical hatchery water quality. It is therefore recommended that water softeners will be required to reduce the water hardness. The magnesium concentration (96.8mg/ℓ) exceeds the recommended maximum concentration of 50 mg/ℓ and requires specific treatment.

The potential seepage of waste water containing bacterial viruses such as Salmonella, Shigella etc and pathogen strains such as E. coli from the proposed on-site sewer facility into the groundwater can occur if the development is not well planned and managed. Such waste water pollutants can seep into the groundwater system as the lateral movement of water can occur towards the non-perennial river as subsurface seepage. The waste water can also collect on the less impermeable rock interface comes across fractures where it could eventually reach the underlying groundwater.

It is therefore recommended that surface runoff drains and maintenance of structures and equipment that surround the pond are maintained and kept in a good working condition.

Implications for Development:

Not significant.

There is no municipal water connection available for the study area and it will therefore be necessary to abstract ground water for use at the hatchery. There is currently a borehole on the study area, which has been in use for many years and the yields of the borehole is regarded as sustainable. The yield of the borehole is sufficient to supply in the water needs of the 1st two phases of the development.

It will be necessary to drill more production boreholes on the study area in order to cater in the water need of the remaining three phases of the hatchery.

According to the Geohydrological Assessment, the aquifer system that underlies the subject site is classified as a minor/low yield potential intergranular and fractured aquifer with yields ranging between 0.5 and 2.0ℓ/second and with variable water quality.

The geohydrologists conducted a geo-physical survey across the study area in order to identify the preferred areas to drill for water from a ground water potential point of view.

It will be necessary to apply for a Section 21 (a) water-use license for the abstraction of water from a resource.

Ground Water tests conducted on the study area confirmed that the ground water quality complies with the water quality requirements for a hatchery. Minor treatment of the water will be required in order to achieve the water standards as set by the Department of Human Settlement, Water and Sanitation (DHSWS).

5.1.6 Fauna and Flora

The subject property is located within a Savannah Biome within the Central Bushveld Bioregion and the Moot Plains Bushveld Vegetation Unit as denoted in **Figures 14 to 16** below.

Updated Basic Assessment Report for the proposed Kroon's Hatchery

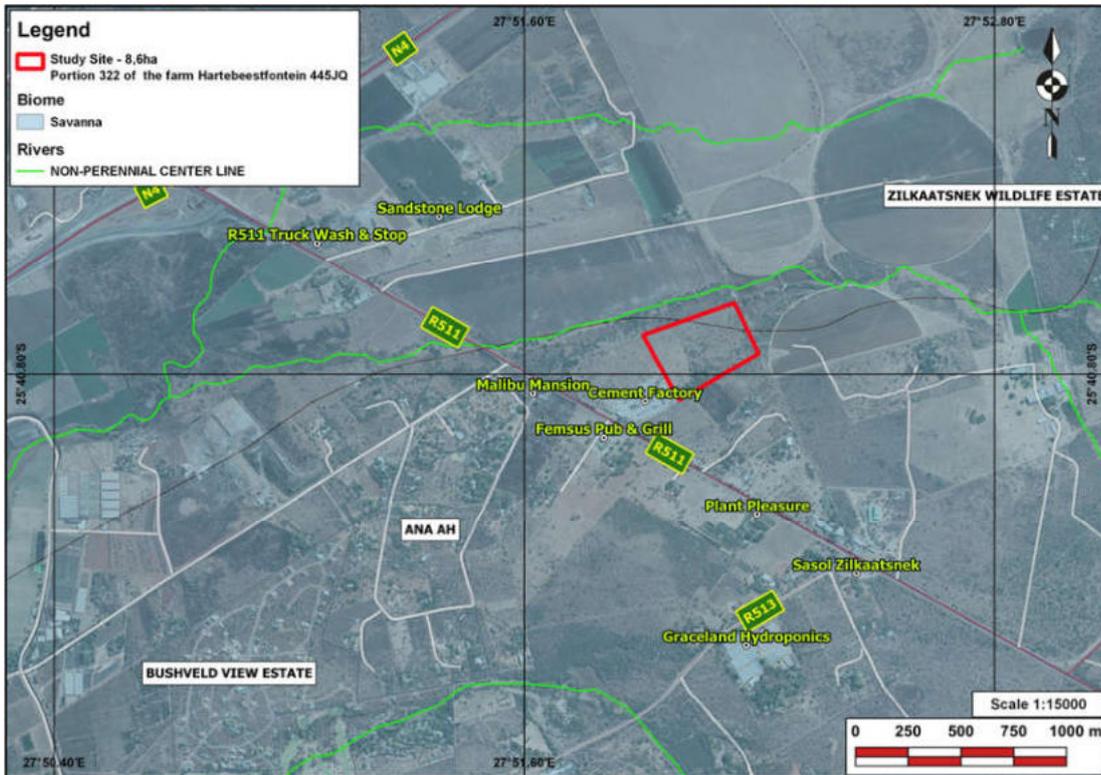


Figure 14: Biome Map

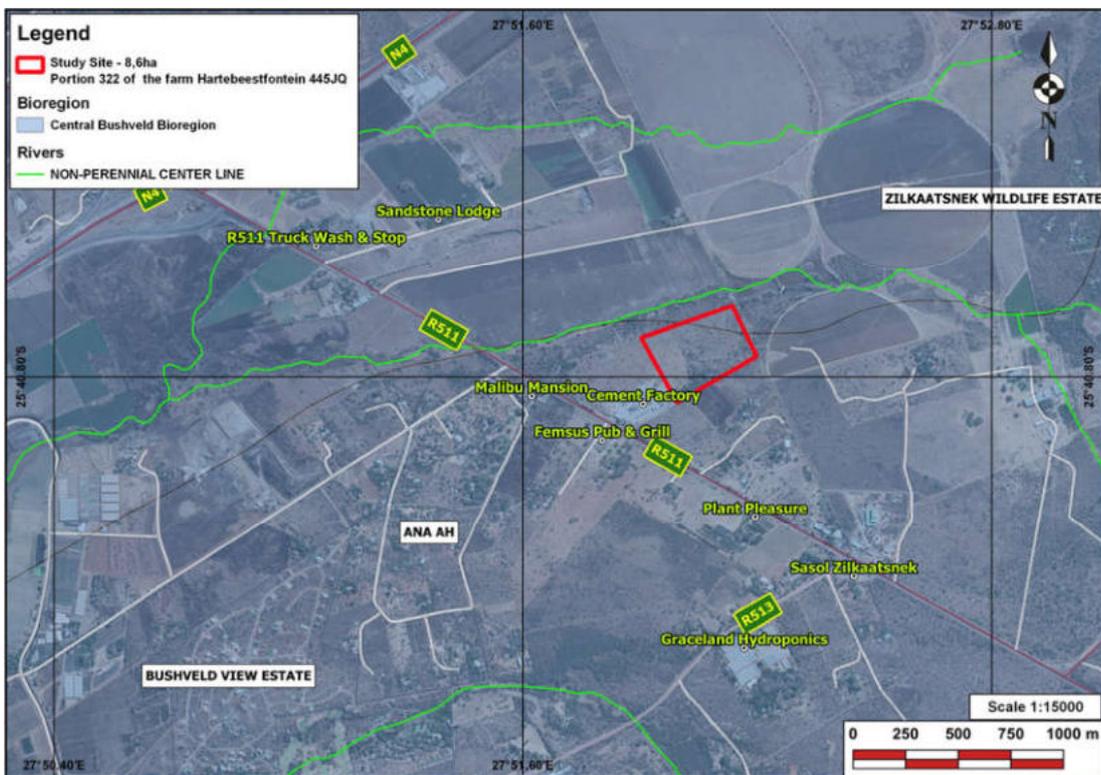


Figure 15: Bioregion Map

Updated Basic Assessment Report for the proposed Kroon's Hatchery

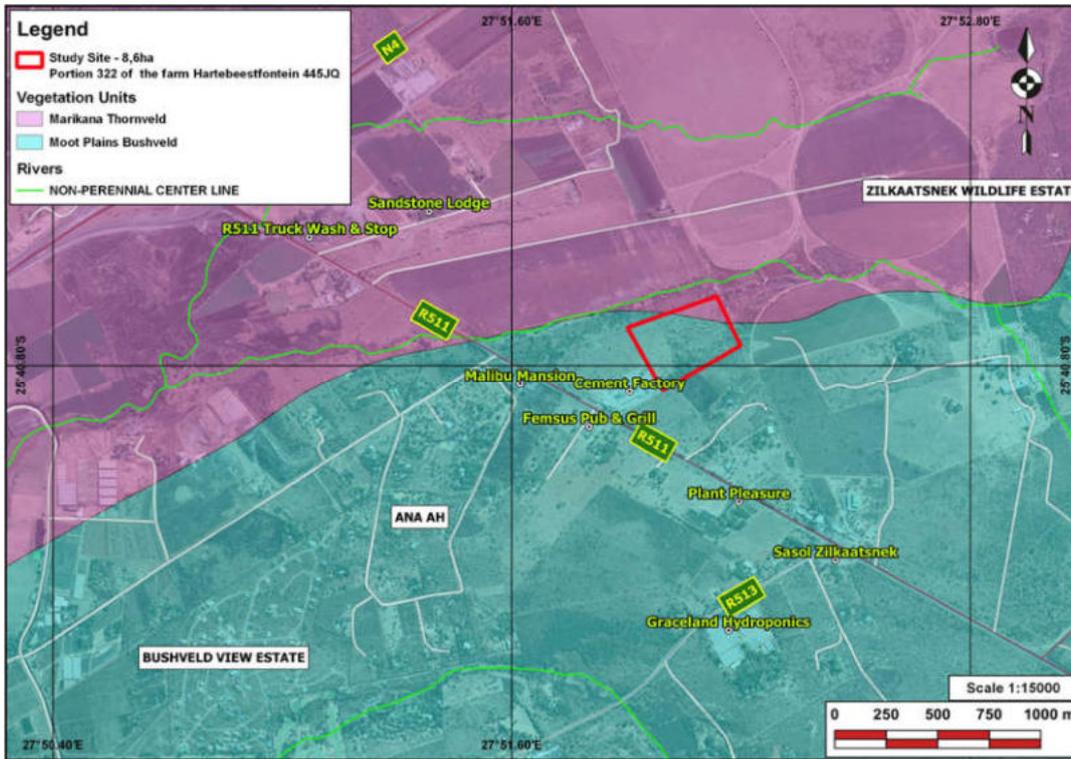


Figure 16: Vegetation Unit Map

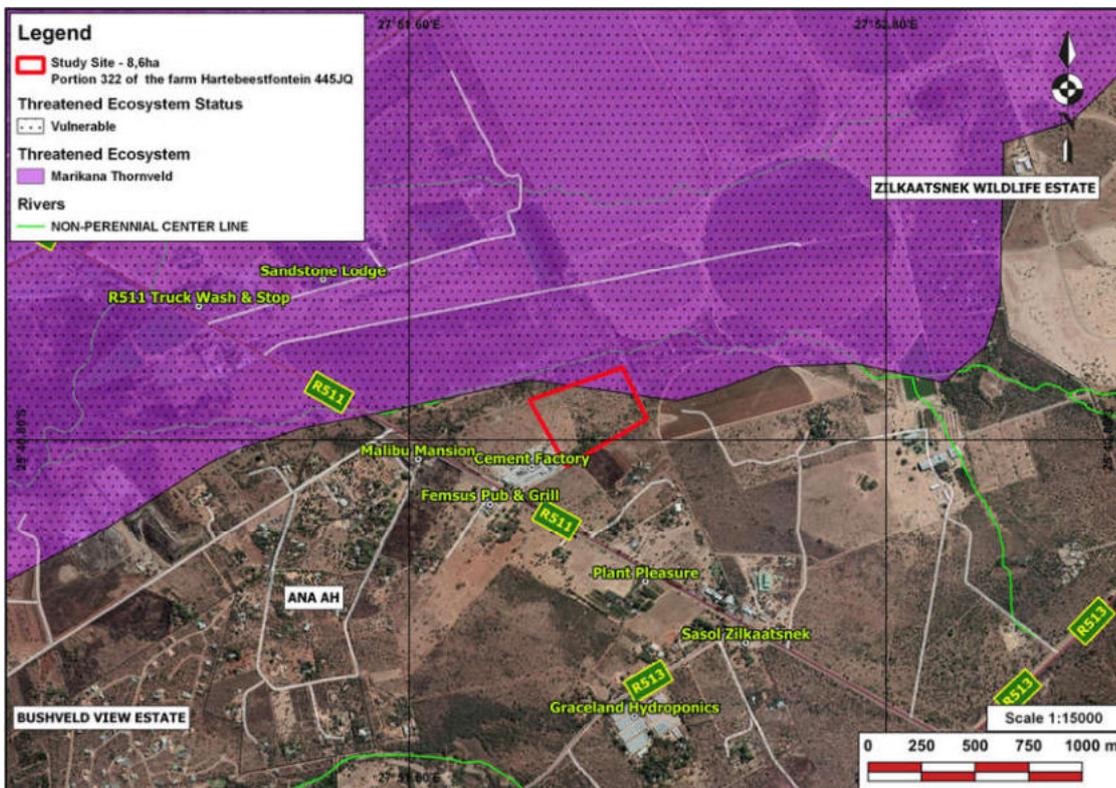


Figure 17: Threatened Ecosystems

The north-eastern corner of the site lies within a Threatened Ecosystem in the form of the Marikana Thornveld, carrying the status Vulnerable. **Refer to Figure 17 above.**

According to the North West Biodiversity Sector Plan, the proposed development site has moderate to high hyper-diversity. **Refer to Figure 18 below.** The non-perennial watercourse flowing past the site is regarded as having high hyper-diversity.

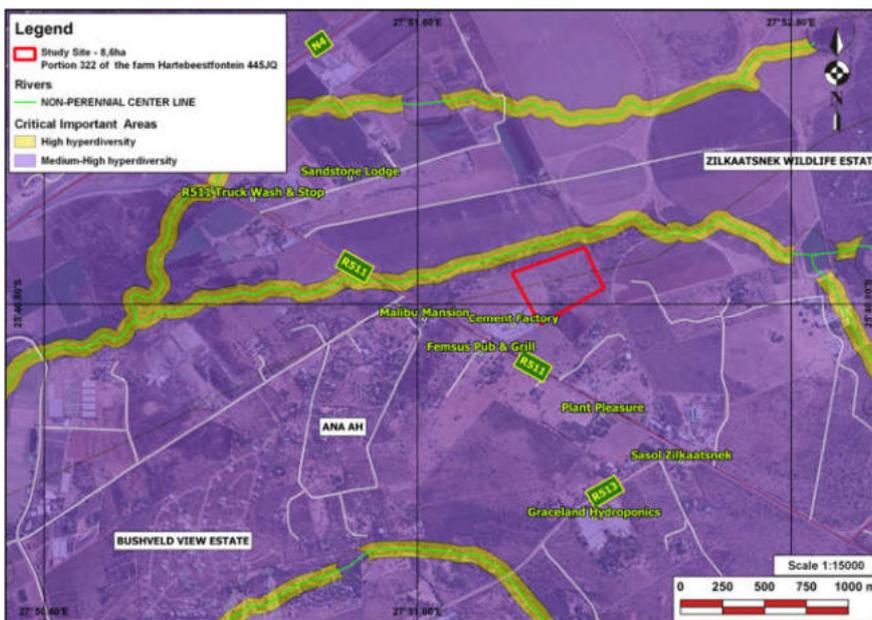


Figure 18: North West Biodiversity Sector Plan Areas

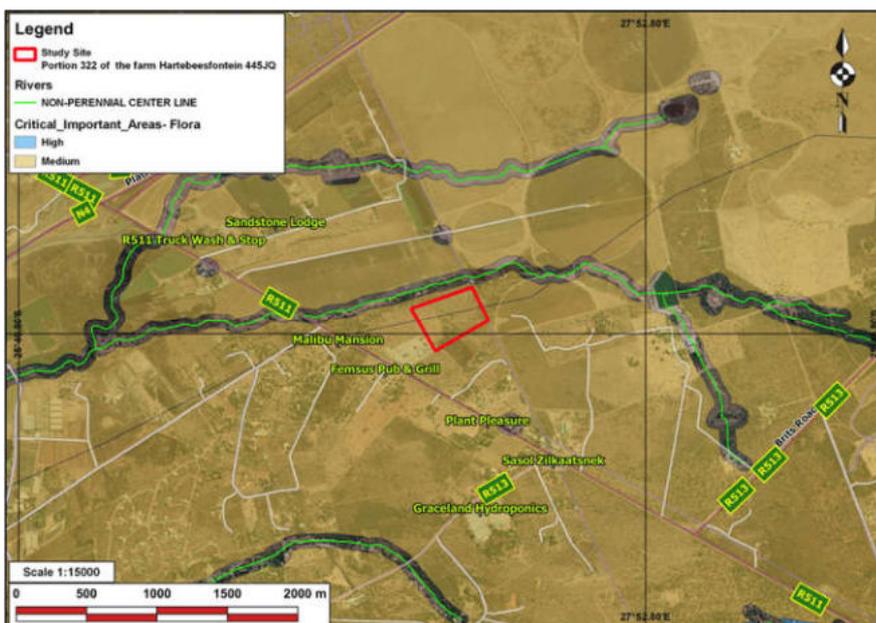


Figure 19: Critical Important Area - Flora

According to the North West Biodiversity Sector Plan, the proposed development site is classified as Critical Important Area in terms of Flora. **Refer to Figure 19 above.**

According to the South African National Biodiversity Institute (SANBI) Geographical Information System, the proposed hatchery site occurs within an Important Bird and Biodiversity Area (IBA) which is in a natural state. **Refer to Figure 20 below.**

Important Bird and Biodiversity Areas (IBAs), as defined by Bird Life International, constitute a global network of over 13 500 sites, of which 112 sites are found in South Africa. IBAs are sites of global significance for bird conservation.

Implications for Development:

The sensitivity classifications as set out on the relevant provincial maps triggered activities as listed in Listing Notice 3 of the 2014 NEMA EIA Regulations. It was thus necessary to assess and address the listed activities associated with sensitive areas as part of the BA process.

The assessments conducted for purpose of this application included site surveys conducted by suitably qualified specialists. The specialists conducted assessment of all three sites that were selected and considered.

Based on the Fauna and Flora Comparative Assessment conducted, Portion 322 of the Farm Hartebeestfontein 445 JQ is deemed to be the most suitable site from an environmental perspective as it is categorised to be a low sensitivity site, with no protective species having been observed on site. **Refer to Appendix G3 for the Fauna and Flora Comparative Assessment.**

The specialists thus gave the go ahead from an ecological and hydrological point of view on the condition that the buffers as proposed and the mitigation measures as supplied are implemented where possible.

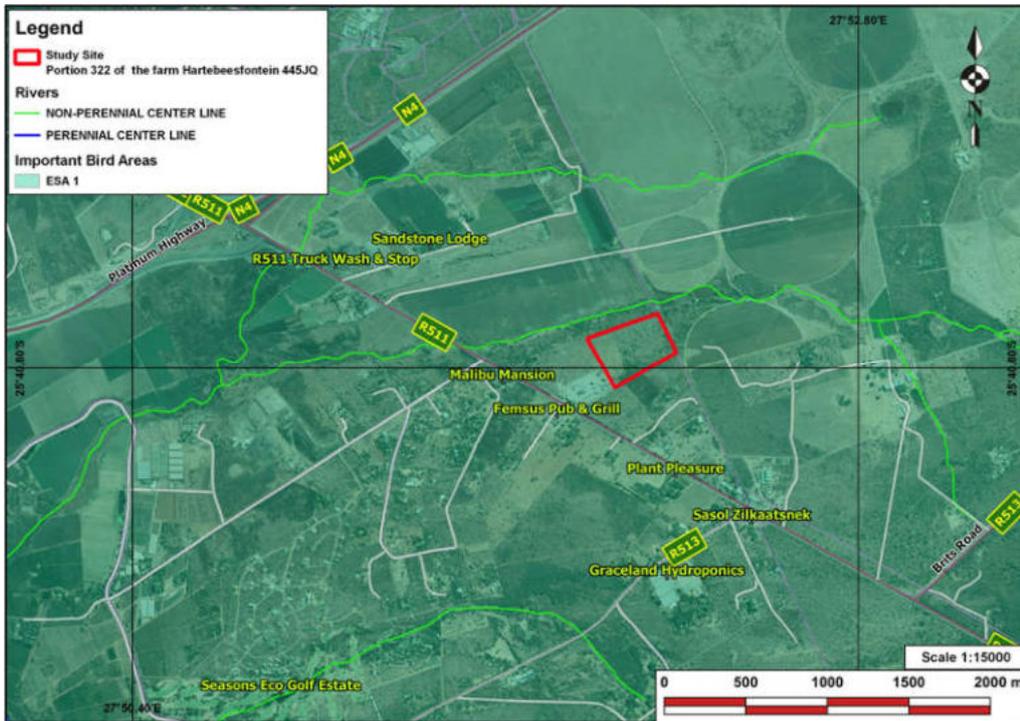


Figure 20: Important Bird and Biodiversity Areas

5.2 SOCIO-ECONOMIC ENVIRONMENT

5.2.1 Cultural and Historical

A Phase 1 Heritage Impact Assessment Report was conducted by A Pelsers Archaeological Consulting (APAC) dated March 2019. **Refer to Appendix G4 for the said report.**

Only one site of cultural heritage origin and significance was identified during the assessment. A grave site is located close by to Site Alternative 3 which is Portion 33 and 168 of the Farm Hartebeestfontein 445 JQ. The grave site has approximately between 30 and 50 graves. Two graves have formal headstones with inscriptions.

From a cultural heritage perspective, Site Alternative 1 and 2 are preferred development sites as there will be no impacts on archaeological or historical sites, features or material. Site Alternative 3 is the least preferred site due to the grave site in close proximity.

Implications for Development:

A final comment letter has been received from the SAHRA who acknowledges that the preferred development site is site alternative 2 and that no heritage resources have been identified within site 2. However, a Chance Finds Procedure is recommended. The final comment letter of the SAHRA recommends that specific mitigation measures are incorporated into the FBAR and the EMPr. Such measures are stipulated in the impact assessment and the EMPr. The SAHRA comment letter is attached as **Appendix I in the Public Participation**.

5.2.2 Services and Infrastructure

5.2.2.1 Water Supply

The Madibeng Local Municipality and Rand water confirmed that there is currently no bulk water supply in this area although the Zilkaatsnek Reservoir is situated approximately 4km southeast of the proposed development sites. Due to Municipal water not being readily available in the area, property owners and local communities and businesses rely on groundwater as the sole source of water supply for domestic use, irrigation and process water. The proposed hatchery site has an existing production borehole utilised for domestic use. This on-site borehole, as well as additional boreholes to be drilled, will be utilised as water source for the proposed hatchery. The installation of elevated storage tanks might also be required.

A Section 21 WULA for the abstraction of water already commenced and according to the desktop geo-hydrological study conducted for the site, the groundwater yield potential for the study area is regarded as high. The geo-hydrological report for the study area will also address the pollution potential of the study area.

According to the Geohydrological Assessment, the aquifer system that underlies the subject site is classified as a minor/low yield potential intergranular and fractured aquifer with yields ranging between 0.5 and 2.0ℓ/second and with variable water quality.

Thirty-six (36) boreholes were identified within a 2km radius of the subject site, of which eight (8) of the 36 were accessible for ground water level measurements with the remaining 28 boreholes either being blocked, vandalized, collapsed or not accessible.

According to the hydro census results, groundwater in the catchment is mostly used for domestic purposes and for the small-scale irrigation of crops and vegetated areas.

The ground water level in the vicinity of the subject site is intermittent at various depths with the depth to water varying from 2.55 metres below ground level (m bgl) to 23.51 m bgl. This could be attributed to the depth of water filled lattices and/or fractures, typically associated with fractured rock aquifer systems, or intrusive rock that exercise great hydrogeological control on groundwater movement.

In terms of auger holes that were drilled around the proposed waste water pond, no ground water seepage was encountered in any of the five auger holes.

Based on the sustainable abstraction rate and the long-term drawdown response, the proposed abstraction rate for the existing production borehole is 1.8ℓ/s at a 24-hour pumping schedule, however, an abstraction rate of 2.63ℓ/s is proposed for a 12-hour day pumping schedule which totals to 113.62m³/day. As per the geohydrologist, at the above pumping rates, the borehole efficiency losses are small as the risk of encountering no flow boundary effects is also reduced substantially.

Phase 1 of the hatchery requires less than 7.5m³ of water per day and the existing on-site borehole has the potential to yield 19.2m³. There is thus already more than sufficient groundwater supply to in the existing borehole on the site cater for Phase 1 and phase 2 of the hatchery. The geo-hydrologist conducted a geo-physical survey of the study area in order to identify the preferred positions, from a ground water availability point of view, for the drilling of additional boreholes for the remaining phases of the hatchery. The remaining phases of the hatchery will only be developed once sufficient borehole water is available.

5.2.2.1.1 Bulk Water Needs

Water is required by the following main users/processes in the hatchery:

- Potable water (for taps, human consumption, showers, toilets). Volume is mainly dependent on the size of the hatchery operation and its staff and the number of chicks being hatched per week.
- Humidification (spray nozzles, rotating discs, fogging), consumption depends on the outside climate and on the volume of intake air.
- Circulating systems (chilled or hot water) are filled once and only require replenishing in the case of spills or leaks in the system. Note: the risk of limescale and water aggressiveness increases with temperature, making hot water systems more vulnerable to the development of sub-optimal water quality than chilled water systems.
- Production water (cleaning water for building, machines, trays, crates, trucks). Volume (expressed in litre/day old chick) varies significantly, depending on the hatchery's cleaning protocols, which may be one or other of the following extremes, or anywhere in between:
 - Not manually removing debris (shells, fluff) prior to washing, using low pressure water hoses (1-3bar) and manually cleaning and rinsing
 - Removing debris prior to washing. Soaking, using detergent foam. Cleaning with mid-to-high pressure water jets (25-100 bar). Using high- pressure industrial tray/crate/trolley washers with internal water circulation.

As a general rule, 0.35 litre of water is required per day old chick in order to address the water requirements of a hatchery. At full production following implementation of all five phases, the proposed hatchery will hatch 600 000 chicks per week. The water requirements including process water (production, humidifying, cleaning and circulation) and potable water amounts to 210m³ of water per week or approximately 11 000m³ per annum.

In terms of potable water and ablution needs i.e. is estimated that the proposed Hatchery will require 20 litres per person per day for the 50 employees i.e. 365m³ of potable water per annum which is included in the 11 000m³ per annum.

The intake water will generate approximately 8 250m³ of effluent per annum calculated as 75% of the intake volume.

The Total volume of groundwater required in order to cater for the proposed Hatchery amounts to approximately 11 000m³ per annum.

A four-hour test conducted on the existing production borehole situated on the proposed hatchery site, yielded 4 800 litre per hour consistently for four hours, i.e. the borehole can yield 19.2m³ per day and 7 008m³ of water per annum.

Phase 1 of the hatchery requires 7.5m³ of water per day (water calculated for 150 000 chicks) or approximately 2 750m³ of water per annum. The on-site borehole thus has sufficient capacity to cater for the water needs of Phase 1 of the hatchery. Following completion of all five phases of the hatchery, 30m³ of water will be required per day or approximately 11 000m³ per annum in order to cater for 600 000 chicks hatching per week at full production.

A 24-hour yield test has been carried out in order to confirm availability of water for all five phases of the hatchery development. Borehole water quality tests must also be carried out to ascertain whether the borehole water quality meets hatchery standards or whether water treatment will be required. A full Geohydrological Assessment is currently underway as part of the Water Use Licence Application.

In terms of Table 2: Groundwater Abstraction Rates of the Revision of the General Authorisation (GA) for the Taking and Storing of Water, Notice 538 of 2016, only 45m³ of water may be abstracted per hectare per annum from quaternary catchment A21J, within which the proposed development site is located. Considering the size of the property on which the proposed hatchery will be situated is 12.9 hectares in extent, only 580.5m³ of groundwater may be abstracted from the on-site borehole per annum in terms of the GA, and only 2000m³ of water may be stored on the property.

A full Water Use Licence Application (WULA) is thus triggered by the proposed groundwater abstraction on 322 of the Farm Hartebeesfontein 445 JQ.

A Section 21 WULA for the abstraction of water already commenced and according to the desktop geo-hydrological study conducted for the site. The geo-hydrological report for the study area will also address the pollution potential of the study area.

5.2.2.1.2 Water Quality

An inorganic groundwater analysis was conducted and the results of the analysis were compared to SANS 241-1:2015 drinking water quality standards (SABS, 2015) and the hatchery water quality guidelines. All general water quality parameters comply with the SANS standards. In terms of anions, all parameters comply with SANS excluding nitrate (N) and nitrate as (NO₃). It is integral to note that when large amounts of water containing nitrate and nitrate concentrations between 10 to 20mg/ℓ as N, it may potentially cause methaeglobinaemia (increase in red blood cells) in infants at concentrations exceeding 20mg/ℓ as N, methaemoglobinaemia occurs in infants and irritation of the mucous membrane in adults can potentially occur. The cations and metals are compliant with SANS standards.

In terms of compliance with the hatchery water quality, pH, the sum of chloride and sulphate and iron are within the guideline limits. In contrast, the total hardness (560 mg CaCO₃/ℓ) exceeds the recommended maximum concentration of 35 to 107mg mg CaCO₃/ℓ for typical hatchery water quality. It is therefore recommended that water softeners will be required to reduce the water hardness. The magnesium concentration (96.8mg/ℓ) exceeds the recommended maximum concentration of 50 mg/ℓ and requires specific treatment.

The potential seepage of waste water containing bacterial viruses such as Salmonella, Shigella etc and pathogen strains such as E.coli from the proposed on-site sewer facility into the groundwater can occur if the development is not well planned and managed. Such waste water pollutants can seep into the groundwater system as the lateral movement of water can occur towards the non-perennial river as subsurface seepage.

The waste water can also collect on the less impermeable rock interface comes across fractures where it could eventually reach the underlying groundwater.

It is therefore recommended that surface runoff drains and maintenance of structures and equipment that surround the pond are maintained and kept in a good working condition.

Implications for Development:

Not significant.

There is no municipal water connection available for the study area and it will therefore be necessary to abstract ground water for use at the hatchery. There is currently a borehole on the study area, which has been in use for many years and the yields of the borehole is regarded as sustainable. The yield of the borehole is sufficient to supply in the water needs of the 1st two phases of the development.

According to the Geohydrological Assessment, the aquifer system that underlies the subject site is classified as a minor/low yield potential intergranular and fractured aquifer with yields ranging between 0.5 and 2.0l/second and with variable water quality.

Based on the sustainable abstraction rate and the long-term drawdown response, the proposed abstraction rate for the existing production borehole is 1.8l/s at a 24-hour pumping schedule, however, an abstraction rate of 2.63l/s is proposed for a 12-hour day pumping schedule which totals to 113.62m³/day. As per the geohydrologist, at the above pumping rates, the borehole efficiency losses are small as the risk of encountering no flow boundary effects is also reduced substantially.

The geohydrologists conducted a geo-physical survey across the study area in order to identify the preferred areas to drill for water from a ground water potential point of view.

It will be necessary to apply for a Section 21 (a) water-use license for the abstraction of water from a resource.

Phase 1 and 2 of the hatchery require 7.5m³ of water per day for each phase (15m³ of water for both phases) and the existing on-site borehole can yield 19.2m³. There is thus sufficient groundwater supply to cater for Phase 1 and 2 of the hatchery.

It will be necessary to drill more production boreholes on the study area in order to cater in the water need of the remaining three phases of the hatchery.

5.2.2.1.3 Water Supply Quality

Sub-optimal water quality and insufficient water supply can cause losses, by undermining hatching results, contributing to mechanical breakdowns and presenting hygiene risks. A properly designed water system is therefore critical to the success of any hatchery and since good water is generally becoming more scarce and costly, it has become increasingly important to understand how to optimise the hatchery's water quality and supply.

Ground Water tests conducted on the study area confirmed that the ground water quality complies with the water quality requirements for a hatchery. Minor treatment of the water will be required in order to achieve the water standards as set by the Department of Human Settlement, Water and Sanitation (DHSWS).

5.2.2.1.4 Typical Water Requirements for a Hatchery

A good hatchery water system starts with knowing the quality of the water source. This is commonly achieved by regular laboratory analysis, with typical parameters including:

Acidity/alkalinity (pH): A pH of 7 is neutral. Below 7, the water becomes acid (can cause corrosion) while above 7 means the water is alkaline (can indicate hard water due to high levels of calcium). Generally, a pH of 6-8 is acceptable - and pH can be corrected by adding chemicals.

Total hardness is an indication of hard water, which can cause limescale build-up, resulting in inefficiencies or the breakdown of equipment. The most common unit used is °dH (German degree) or mg CaCO₃/l. Generally, 2-6°dH (35-107 mg CaCO₃/l) is advised, with

a maximum of 2°dH recommended for nozzle/spray humidification. Water softeners are used to reduce water hardness.

Suspended particles should be absent, as these will block pipes, nozzles etc. Suspended solids are removed by filters.

Microbial contamination should be absent. If water is contaminated, another source should be used. Disinfection can reduce contamination, but for example, using water contaminated with Pseudomonas, Acentobacter, Proteus, yeasts or molds - even after disinfection - for humidification is not advised.

Some elements in water are known for aggressive reactions which cause the discolouration of equipment. Commonly, the following thresholds are used: the total sum of chloride and sulphate (Cl & SO₄) max 200mg/l, Magnesium (Mg) max 50mg/l, Iron (Fe) max 0.02mg/l. These elements require specific treatments. Extremely pure water (for example distilled or Reverse Osmosis water) is also known to be aggressive. It is therefore advisable to build a small bypass into the system.

5.2.2.1.5 Water Treatment Systems

Depending on the differences between the results of water analysis and the hatchery's requirements, water treatment may be needed. Typically, water treatment is implemented using modular units:

- Filtration eliminates suspended solids, usually by means of cartridge and/or sand filters;
- Chemical treatment: usually anti-bacterial and anti-scaling treatments and/or a UV disinfection unit;
- Water softener, which reduces water hardness by replacing calcium and magnesium with sodium;
- Reverse osmosis, which uses membranes to separate dissolved salts, producing pure water;

- Pumps, sensors and control units, to monitor equipment function, with buffer tanks to balance the difference between supply and demand. Reject or backwash water needs to be drained.

5.2.2.2 Sewer System

Due to the rural setting of the proposed development site, outside the urban edge, there are no municipal sewerage infrastructure occurring in close proximity to the site.

The Madibeng Local Municipality confirmed there is no bulk sewer infrastructure including Waste Water Treatment Works in the area.

Three options were proposed for dealing with sewage to be generated on site by the proposed hatchery:

- a package plant with effluent captured in a waste water pond to be utilised for the irrigation of gardens;
- a conservancy tank to be emptied on a weekly basis; and
- a septic tank drains that can be emptied if required.

As the proposed septic tank cannot cater for the volume of sewage (\pm 50 employees) and process water effluent to be generated by the proposed hatchery and the conservancy tank will have to be emptied on a weekly basis, it was decided to construct a proper on-site sewage package plant with a settling pond, which receives the treated effluent prior to such water being irrigated on the property. The re-use of the treated effluent at the hatchery will be investigated and will most probably be implemented from Phase 3 onwards if the re-use of such treated water is regarded as viable and sustainable option. The re-use of treated effluent will reduce the water requirements of the facility significant.

Hatchery wash water containing soap, detergent and fluff as well as sewage will be diverted into the on-site package plant. Treated effluent from the on-site package plant amounting to approximately 8 250m³ per annum will be discharged into a waste water pond for the

purpose of irrigation. **Refer to Appendix G5 Desktop Study for Availability of Civil Engineering Services.**

6. QUALITATIVE ENVIRONMENT

6.1 Waste Management

It is estimated that approximately 9.5 tonnes of solid waste will be generated per week (\pm 42 tonnes per month or \pm 500 tonnes per annum) which includes, office waste and biological waste in the form of infertile eggs, mortalities and egg shells. Biological waste will go through a macerator situated inside the facility before being transferred into steel drums situated outside the facility, via a screw conveyor.

A breakdown of waste volumes to be generated per Phase is given below.

Phase 1: 150 000 chickens hatch per week

327 kg per day of hazardous biological waste

Weight of egg = 65g on average

150 000 X 15% mortalities and infertile eggs = 22 500 eggs per week X 65g per egg =
1 462.5kg per week / 7 days = 209kg per day

Plus

150 000 X 85% egg shells = 127 500 egg shells per week X 0.65g (10%) per egg = 829kg
per week / 7 days per week = 118 kg per day

Equals: 327 kg per day of hazardous biological waste

Phase 2: 300 000 chickens hatch per week

654kg per day of hazardous biological waste i.e. more than 500kg but less than 1 tonne of hazardous waste per day triggering a Waste Management Licence Application in terms of Category A (7) of NEM: WA listed activities.

Phase 3: 450 000 chickens hatch per week

981kg per day of hazardous biological waste.

Phase 4: 600 000 chickens hatch per week

1 308kg per day of hazardous biological waste i.e. more than 1 tonne per day triggering Category B (4) of NEM: WA of NEM: WA listed activities.

Implications for Development:

The storage and treatment of hazardous waste (biological waste) exceeding 500kg per day from Phase 2 (300 000 chicks per week) onwards, triggers a Waste Management Licence Application in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008, as amended).

Note: Hazardous waste resort under the Minister of Environmental Affairs and thus the National Department of Environmental Affairs is the competent authority responsible for issuing a Waste Management Licence.

The hazardous waste to be treated/processed during the 1st phase of the hatchery development will be less than 550kg per day and therefore it will not be necessary to apply for a waste license for the 1st phase of the hatchery development. The applicant will apply for a waste license at the National Department of Environmental Affairs (DEA) by means of a Full EIA and will only commence with the 2nd phase of the development once the required waste license has been issued by DEA.

The hatchery will need to comply with the Norms and Standards for Storage of Waste, 2013 published in terms of the NEM: WA due to triggering Category C (2) of the List of Waste Management Activities that have, or are likely to have a detrimental effect on the environment, due to storing more than 80m³ of hazardous waste.

According to Annexure 1(a) of the National Waste Information Regulations, 2012, the owner has to register the generation of hazardous waste on the South African Waste Information System (SAWIS). This Regulation is regarded as applicable, because the facility

generates more than 20kg of hazardous waste per day. The facility will also treat/process hazardous waste and according to the Regulations, the treatment of general waste using any form of treatment at a facility that has the capacity to process 10 tons of general waste or 500kg of hazardous waste per day excluding the treatment of effluent, wastewater or sewerage, must register on SAWIS.

It must be emphasized that Phase 1 of the proposed hatchery (150 000 chicks) do not trigger a Waste Management Licence; however, Bokamoso already commenced with a Waste Management Licence application process.

6.2 Noise Pollution, Air Pollution and Visual Pollution

- **Noise**

Some construction phase noise associated with builder's machinery and processes are expected for the construction phase.

The proposed hatchery will not generate large amounts of traffic and the hatchery activities will mainly take place indoors. It is therefore not anticipated that the noise levels associated with the proposed facility will exceed 45dBA (an acceptable noise level for a rural residential area)¹ at any of the property boundaries. Also take note that the study area is bordered by a brick factory to the immediate west and other business properties as well as a busy road also occur to the north-west, west and south-west of the study area. The land-use to the north-east, east and south-east is mainly agricultural and the dwellings of the farms to the north-east, east and south-east is not located in close proximity of the hatchery facility.

Implications for Development:

¹ In terms of the Gauteng Noise Regulations
Bokamoso Landscape Architects & Environmental Consultants CC
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It will be necessary to manage and monitor the noise levels throughout the construction and operational phases and complaints lodged regarding noise by surrounding land-owners, tenants etc. must be captured in the site incidents book and must be addressed.

- **Air**

Dust generation on the gravel access road to the study area as well as some dust associated with the excavations for the development are expected during the construction phase.

There is also a possibility the activities at the brick factory to the immediate west of the study area could have an impact, especially during times when the prevailing wind direction is towards the east and the north-east.

Implications for Development:

Once in operation, the study area will be covered with hard surfaces immediately around the facility and the exposed/disturbed areas further away will be rehabilitated and covered with natural vegetation and maybe some crops.

The gravel road will not be upgraded, but it will be necessary to monitor and manage the dust levels generated by the trucks (approximately 4 trucks per day) and the employees of the hatchery. If the dust generated by the traffic of the facility becomes a nuisance to the hatchery and the surrounding properties, it will be necessary to implement measures to reduce the dust levels to more acceptable levels.

The developer of the hatchery facility was aware of the brick factory when they purchased the property and it was confirmed by the applicant that most of the hatchery activities will take place indoors and that the design of the facility will make provision for measures that will prevent dust accumulation on packaging stock, working surfaces etc.

The brick factory is also obliged to implement measures that will reduce air pollution and the facility must also take legislation which regulated the qualitative environment (including air pollution) into consideration during all their current and future manufacturing activities.

Soil contamination tests that were taken of the soils on the study area prior to the purchasing of the land for the development, confirmed that the soil is not currently polluted by the cement manufacturing activities on the adjacent property.

It is recommended that the management of the Hatchery take soils samples, ground water samples and surface water samples on a 6 monthly basis in order to ensure that the environmental conditions on the Hatchery study area remains within acceptable pollution limits and to prevent the land from being contaminated.

The National Environmental Management: Air Quality Act (NEM: AQA), 2004 (Act No. 39 of 2004 as amended) must be taken into consideration when developing the facility, when the facility is in operation and when the facility is decommissioned.

From a site selection point of view Portion 322 is situated the furthest away from residential areas i.e. Bushveld View Estate and Ana Agricultural Holdings. From this perspective Portion 322 is the least likely to pose any potential nuisance impact on residential estates situated to the west or south-west, which could result in continuous complaints by residents.

Considering the hatchery will be within an enclosed structure and that chicks will be removed from site within 48 hours of hatching, the chance of the hatchery facility and associated activities posing a nuisance in terms of odour or noise, is very unlikely.

The prevalent wind direction in the area is easterly during winter and westerly during summer i.e. any potential odour or noise emanating from the hatchery proposed on Portion 322 would only affect the Horizon Bricks factory bordering the proposed hatchery to the west. If the proposed hatchery was established on Portion 107, any odour or noise emitted could potentially pose a nuisance to the surrounding food and lodging facilities.

If the proposed hatchery was established on Portions 33 and 168 then any odour or noise emitted could affect the residents of the Bushveld View Estate to the south or the Multi Plant Seedling Nursery situated to the north-west.

During the construction phase, generation of dust and noise could become a nuisance factor to the food and lodging facilities situated 300m to the south-west and agricultural homesteads and residential estates situated between 1km and 2kms to the west-south-west and south-west respectively of the proposed development site. The aforementioned has been addressed in the EMPr.

Although the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment is situated south-west within 3kms and south-south-east within 2kms of the proposed hatchery site respectively, it is not foreseen that the hatchery will have any impact on the aforementioned protected areas.

Category 10: Animal Matter Processing of NEM: AQA is triggered by the treatment of hazardous waste by means of maceration and thus an Atmospheric Emissions Licence is triggered by the proposed hatchery, however, only from Phase 2, as this listed activity only applies to installations, handling more than 1 ton of raw material per day. The applicant already commenced with the application for the required air emissions license at DEA and the local authority. If the local authority is not equipped to issue the required Waste License, the license will be issued by the DEDECT of DEA (the department need to agree on the competent authority for the issuing of the license – it will usually be the provincial authority)

The impacts of the National Greenhouse Gas Emission Regulations, Government Notice 275 of 3 April 2017 and the Carbon Tax Act, 2019 (Act No. 15 of 2019), especially Phase 2 of the Carbon Tax Act must also be considered throughout the operational phase of the facility.

According to the National Greenhouse Gas Emission Regulations a facility conducting an activity per source category and above the threshold stipulated in Annexure 1 is regarded

as a Category A data provider and must register within 30 days of the Regulations coming into effect, on the National Atmospheric Emission Inventory System (NAEIS).

We are of the opinion that it will be necessary for the applicant to register on the data base as referred to above as soon as the hatchery becomes operational. The information as captured on the data base will eventually be used for purpose of the determination of Tax payable when Phase 2 of the Carbon Tax Act comes into effect.

- **Visual**

The proposed hatchery facility will be in line with the surrounding land-uses and it is not anticipated that the facility will have a significant negative impact on the visual qualities of the study area or the surrounding areas.

Implications for Development:

Not significant.

Some mitigation measures to prevent lighting pollution and visual pollution during the construction and operational phases have been included as part of the EMPr.

- **Electricity supply**

The proposed hatchery development site has an existing dwelling unit which is supplied with electricity. The electricity is supplied from an existing 25kVA transformer situated on Pole BL14/2 located at the entrance to Portion 322. Eskom confirmed in e-mail correspondence dated 12 October 2018 that they will be able to upgrade the transformer to a 500kVA transformer immediately subsequent to the property transferring to Kroon Chickens. **Refer to Appendix E1 for Eskom confirmation of transformer upgrade**

7. PUBLIC PARTICIPATION

Please Refer to **Annexure I** for Public Participation information.

7.1 Purpose of Public Participation

Public Participation is a cornerstone of any Environmental Impact Assessment process. The principles of the National Environment Management Act, 1998 (Act No. 107 of 1998) govern many aspects of Environmental Impact Assessments, including Public Participation. These include provision of sufficient and transparent information on an on-going basis to the Stakeholders. This will allow stakeholders to comment and ensuring the participation of previously disadvantaged people, women, and youth.

Effective public involvement is an essential component of many decision-making structures, and effective community involvement is the only way in which the power given to communities can be used efficiently. The Public Participation Process is designed to provide sufficient and accessible information to Interested and Affected Parties (I&APs) in an objective manner which assist them to:

- Raise issues of concern and suggestions for enhanced benefits.
- Verify that their issues have been captured.
- Verify that their issues have been considered by the technical investigations.
- Comment on the findings of the EIA.

7.2 Identification of Interested and Affected Parties and other Stakeholders

Potential Interested and Affected Parties relevant to the project and the surrounding area were listed. The list was updated throughout the Basic Assessment process with information forthcoming from discussions with various role players and authorities (**Refer to Annexure I6**).

Authorities and organs of state identified as key stakeholders. Key stakeholders identified in terms of Regulation 7(1) and (2) and Regulation 40(2) (a)-(c) of GN R.982:

Table 2: Interested and Affected Parties

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	E-mail
Rand Water	Ms. Natalie Koneight	011 682 0911	nkoneigh@randwater.co.za
Department of Health	Albert Marumo		albert.marumo@gauteng.gov.za
Department of Human Settlements, Water and Sanitation	Lehthabo Ramashala	082 908 3177	RamashalaL@dws.gov.za
South African Heritage Resource Association	Natasha Higgitt	021 462 4502	nhiggitt@sahra.org.za
North West Heritage	M. Mosiane	018 388 2826	mosianem@nwpg.gov.za
South African National Roads Agency Limited	Victoria Botha	012 844 8031	BothaV@nra.co.za
Ward Councillor 33 – Madibeng	Maritza du Plessis	082 683 7891	maritzadp@absamail.co.za

7.3 Notifications to I&APs

Stakeholders (I&APs) were notified of the Basic Assessment process for the hatchery through:

- 1) **Site notices** were erected at prominent points in and around the study area on 25 February 2019 regarding the Basic Assessment process inviting I&APs to register **(Refer to Annexure 11 for proof of Site Notices and display)**.
- 2) **Notices** were distributed to the surrounding land-owners and Interested and Affected Parties by means of faxes, hand delivery and e-mail on 25 and 26 February 2019 regarding the Basic Assessment process **(Refer to Annexure 12 for proof of Public Notice and Land owner letter)**.
- 3) **A Newspaper advertisement** was placed in the Platinum Weekly on 1 March 2019 serving as notice of the Basic Assessment process **(Refer to Annexure 13 for proof of advertisement)**.
- 4) **Comments and objections** received from I&APs are recorded in **Annexure 14** and summarised with responses in **Comments & Response Report in Annexure 17**.
- 5) The **Draft Basic Assessment Report was made** available for review by I&APs for a period of 30 days and comments received is addressed in this Final BAR submitted to the Competent Authority for review. The FBAR has also been made available to the I&APs on Bokamoso's website in order to promote transparency throughout the process. The FBAR addresses the issues that were raised by the I&APs and organs of state in their comments regarding the DBAR.

Since commencement of the Basic Assessment process the following individuals and Associations registered as Interested and Affected Parties; Hartebeestfontein Residents Association, Seasons Home Owners Associated and ML Claassens **(refer to Annexure 16 - List of Interested & Affected Parties)**, and comments were received from the aforementioned parties as well as SAHRA regarding the proposed hatchery development **(refer to Annexure 17 – Comments and Response Report)**.

7.4 Comments from I&APs

Bokamoso responded to comments and objections received from I&APs. Detail of the aforementioned is available in **Annexure 17 – Comments & Response Report** with a brief summary of comments and objections listed below.

- **Comment Received During the Public Participation Registration Period:**

The Home Owners Association of the Seasons Eco Golf Estate objected to the proposed hatchery development on any of the site alternatives but specifically to the development proceeding on Portion 33 and 168 of the Farm Hartebeestfontein 445 JQ (**Site Alternative 3**) and Portion 107 of the Farm Hartebeestfontein 445 JQ (**Site Alternative 1**) due to the aforementioned proposed sites being located adjacent to the upmarket Seasons Eco Golf Estate.

Concerns

Concerns raised relates to odour (manure), storm water run-off, groundwater contamination, noise pollution, rodents and property values.

Response

The selected site for the proposed hatchery is not located in close proximity of the Seasons Eco Golf Estate. Location Alternative 3 is located adjacent to the Golf Estate, but it was eventually recommended that the Hatchery be developed on location alternative 2.

We therefore no longer regard the impacts as raised by the golf estate as significant. We however decided to address the issues as raised in any way.

It must be emphasized that a hatchery is very different from a broiler as the facility is enclosed and live chicks are dispatched off site within 48 hours. The potential nuisance impacts of a hatchery thus differ significantly from that of a broiler farm.

The development proposed is not a broiler farm, but an enclosed hatchery facility with a small development footprint of only 4100m². Considering that all activities will occur indoors and that all biological waste in the form of infertile eggs, mortalities and egg shells will go through a macerator situated inside the facility before being transferred into enclosed steel drums situated outside the facility, no odour is expected to occur as a result of the proposed hatchery facility and associated infrastructure.

The same applies to the concern relating to noise. As the proposed hatchery will be part of an enclosed building, no noise will be generated by the hatchery facility during the operational phase. Ancillary activities such as egg delivery trucks or chick collection trucks could potentially pose a noise nuisance during the operational phase of the project, however no deliveries or collections will occur after hours, thus the potential impact is regarded as negligible.

All effluent (wash water and treated sewage effluent) generated by the proposed hatchery will be discharged into an impermeable waste water pond. Effluent will be used to irrigate gardens on site. Clean storm water run-off falling on the roof of the hatchery facility or elsewhere on site will be allowed to flow undeterred by means of natural sheet flow to the watercourse flowing past the northern boundary of the site. Due to the proposed waste water pond being lined, no contamination of groundwater is foreseen. Any potential groundwater contamination will be detected in the production borehole situated on site during periodic groundwater monitoring, as the water quality required for Hatcheries is very strict.

In terms of the South African Poultry Association Code of Practice: Chick Hatchery, Hygiene and chick health is of high priority and there should be a comprehensive cleaning, disinfection and hygiene monitoring system in place and thus rodents are not foreseen to be a potential impact.

Considering the above, it is not foreseen that the proposed hatchery will have any impact, positive or negative on surrounding property values.

SAHRA was notified of the proposed hatchery facility and responded as per the comments contained below.

Comments

SAHRA stated that a Palaeontological Study is not required for any of the proposed development sites and requested that the HIA compiled be submitted to the North West Provincial Heritage Resources Authority and that the report be amended to assign unique site names and assess the impact to each site adequately.

Response

It must be noted that no sites of cultural historical significance are present on the preferred alternative, namely site Alternative 2.

- **After the 30-day BAR Review Process:**

Comment (Monica Claassens)

The following was received from Monica Claassens (a private land owner): ***“You can remove us on the I&AP list, we sold our property and is long longer involved or affected”***.

Response

Thank you for your response, Bokamoso Environmental take note of your notification. You will be removed from the Registered I&AP list.

Comment (SAHRA)

The Final Comment from SAHRA, which has been incorporated into the FBAR and the EMPr:

“The following comments are made as a requirement in terms of section 3(4) of the NEMA Regulations and section 3(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the Final BAR and EMPr.

- 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit no objections to the proposed development;
- 38(4)b – The recommendations of the specialists are supported and must be adhered to. No additional specific conditions are provided for the development;
- 38(4)c(ii) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone, artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- 38(4)d – See section 51(1) of the NHRA;
- 38(4)e – The following conditions apply with regards to the appointment of specialists;
- i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The Final BAR and EMPr must be submitted to SAHRA for record purposes;
- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application."

Response:

The final comments as stipulated on pages 3 and 4 of the SAHRA comment letter have been considered, analysed, assessed and addressed in the BAR, the relevant specialist inputs and the mitigation measures/development guidelines, which is a product of the impact's assessment, has been carried over into a well-informed EMPr. The SAHRA comment letter is attached in the **Public Participation section of the BAR as Appendix I.**

Comment (DEDECT):

DEDECT, the competent authority responsible for the issuing of the Decision regarding this application supplied the following comments:

- "1. The Draft Basic Assessment Report (DBAR) submitted for comments, in respect of the above-mentioned proposed development received by this Department on 13 September 2019 has reference.*
- 2. The Draft Basic Assessment Report has been reviewed by this Department and the following amendments are recommended:*
 - a. To give an indication to the Department of the conclusion date of the development in order to determine the validity period of the Environmental Authorisation.*
 - b. Amend your application form and only include listed activities that are applicable to the above-mentioned project.*
 - c. Environmental Assessment Practitioner (EAP) should complete and sign the form Declaration of Interest form entitled "Details of EAP and declaration of interest" available from the Department.*

It is an offense in terms of Section 24F of the National Environmental Management Act to commence with a listed activity prior to obtaining an Environmental Authorisation."

Response

1. The DEDECT's comment which confirms that the DBAR was made available for comment is noted.
2. Please refer to the response below:

- a. The conclusion date and/or operational phase of the development is approximately 20-30 years.
- b. The application form has been amended to include only the applicable listed activities and has been added to the FBAR.
- c. The EAP declaration has been completed and signed, and it is attached to this FBAR as **Appendix K3 – EAP Details**.

8. IMPACT ASSESSMENT AND MITIGATION

8.1 Anticipated Impacts, Including Cumulative Impacts

The impacts/aspects (beneficial and adverse) of the proposed hatchery for the preferred site (Alternative 2) on the receiving environment during all phases of the proposed hatchery, were identified and mitigation measures proposed and tabulated below.

Table 3: Impacts and Mitigation Table

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
PLANNING AND DESIGN PHASE									
<u>Bio-Physical</u>									
Geotechnical and Soils	Direct and Indirect	-Excavation of soils for foundations -Vegetation clearing for site camp/s, parking areas and stockpile areas	-No	-Negative	-Low	-High	-Site 2 is not located near any geological structural defects. --It is critical that all civil design and construction must be in accordance with prevalent soil conditions. -Designs of storage tanks for water must be appropriate to site layout. -Determine the ground water levels on the site before designing of the structures and the tank installation. -Designs of on-site sewage package plant to cater for leak detection system and underground containment tank in the case of a power failure. -Waste water pond where the waste water (wash water, detergent and fluff) effluent from the hatchery and on-site package plant will be discharged into must be appropriately lined (SANS approved) to counteract leakage. -Include dust pollution control measures. - The gravel road will not be upgraded, but it will be necessary to monitor and manage the dust levels generated by the trucks (approximately 4 trucks per day) and the employees of the hatchery. If the dust generated by the traffic of the facility becomes a nuisance to the hatchery and the surrounding properties, it will be necessary to implement measures to reduce the dust levels to more acceptable levels. The developer of the hatchery facility was aware of the brick factory when they purchased the property and it was confirmed by the applicant that most of	-High for all anticipated impacts	-Low

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)
TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>the hatchery activities will take place indoors and that the design of the facility will make provision for measures that will prevent dust accumulation on packaging stock, working surfaces etc.</p> <p>The brick factory is also obliged to implement measures that will reduce air pollution and the facility must also take legislation which regulated the qualitative environment (including air pollution) into consideration during all their current and future manufacturing activities.</p> <p>Soil contamination tests that were taken of the soils on the study area prior to the purchasing of the land for the development, confirmed that the soil is not currently polluted by the cement manufacturing activities on the adjacent property.</p> <p>It is recommended that the management of the Hatchery take soils samples, ground water samples and surface water samples on a 6-monthly basis in order to ensure that the environmental conditions on the Hatchery study area remains within acceptable pollution limits and to prevent the land from being contaminated.</p> <p>The National Environmental Management: Air Quality Act (NEM: AQA), 2004 (Act No. 39 of 2004 as amended) must be taken into consideration when developing the facility, when the facility is in operation and when the facility is decommissioned. From a site selection point of view Portion 322 is situated the furthest away from residential areas i.e. Bushveld View Estate and Ana Agricultural Holdings. From this perspective Portion 322 is the</p>		

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						<p>least likely to pose any potential nuisance impact on residential estates situated to the west or south-west, which could result in continuous complaints by residents.</p> <p>-Paved areas to be impermeable surfaces and such surface must also be lined in order to prevent leachate/ soil pollution and ground water pollution.</p> <p>-Make provision for ground water quality in monitoring boreholes to assist with the monitoring of ground water levels and quality.</p> <p>- Soils associated with such rocks usually have heave characteristics and therefore foundation designs and all other structures and features to be erected on the study area must be designed to accommodate some swelling and shrinking. Corrosiveness can also be an issue and therefore services designs, especially pipes and connections to be used must be able to tolerate heave and corrosive conditions.</p>			
Topography	-Direct	-Siting and layout of the site. Levelling of the site and building it up.	-No	-Negative	-Medium	-High	<p>-Take environmental features (water bodies, environmentally sensitive areas, heavy traffic) into consideration during site foundation.</p> <p>-Avoid drainage lines,</p> <p>-Avoid large indigenous trees or include them in the landscaping.</p> <p>-Ensure sloped rehabilitated areas do not erode by using appropriate erosion control such as berms and stakes.</p> <p>-Rehabilitate slope areas to 1.3 and cover with topsoil, revegetate and water regularly.</p> <p>-Ensure that Storm water is properly managed and diverted around the site to avoid erosion.</p> <p>-Rehabilitation with stockpiled topsoil to occur as soon as possible.</p>	-High for all anticipated impacts	-Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>--It is recommended for storm water to be channeled away from the facility.</p> <p>-Industrial stormwater should be separated from natural storm water.</p> <p>-Industrial storm water (parking, washing bays, effluent related to industrial activities etc) to be separated from natural storm water. This water must go through a filtration system (grease/oil, silt traps etc).</p> <p>-Industrial storm water to go through a drainage point with a grid cover to remove litter and other large solids.</p> <p>-It is recommended that green technology such as rain water harvesting be used to capture storm water on the hatchery roof tops.</p> <p>- Surface water runoff should be spread as wide as possible and not directed on specific areas as this could lead to the increase of soil erosion potential. Groundwater seepage and erosion control measures should be implemented to prevent water stagnation, siltation and loss of existing and remaining topsoil on site.</p> <p>- Return of topsoil and seed with endemic vegetation must commence immediately once construction is completed;</p> <p>Embankments are to be compacted and covered with grass;</p> <p>Suitable stormwater structures and techniques must be implemented to prevent erosion; and</p> <p>Attenuate stormwater on the site, where required as necessary and break the speed and quantity of the stormwater to be discharged into the natural environment.</p>		

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE		DESCRIPTION	CUMULATIVE						NATURE
Hydrology	Direct	-Leakage of on-site package plant and waste pond (that will receive effluent from the hatchery and package plant) can cause ground water pollution. -Spillages on the surface can cause surface water pollution potentially pollute the non-perennial tributary of the Crocodile River that flows from east to west along the northern boundary of the Site Alternative 2 (Portion 322 of the Farm Hartebeestfontein 445 JQ)	-Yes	-Negative	-High	-High	-Although no wetlands were identified on site during the Wetland Assessment conducted, the wetland specialist recommended that a 100m buffer must be applied around the non-perennial watercourse due to the site occurring outside the urban edge (due to connectivity that still exists upstream and downstream of the watercourse). -Design the on-site package plant should be situated at the lowest point of the site to prevent surface water and ground water contamination. -Design the waste pond to include an appropriate lining (SABS approved) to prevent any leakage. -Compile an emergency and response plan for pollution and other incidents. -Take the necessary SANS standards for poultry facilities, into consideration. -Take the contaminated land provisions as set out in the National Environmental Management: Waste Act into consideration. -Paved areas to be impermeable. -Confirm water discharge standards with the local authority. -Prevent the mixing of cleaning/process water with storm water and roof water. -A proper storm water management system should be designed or in place for implementation during construction to manage all surface water flows in a sustainable manner. Provision should in addition be made for an oil-water separator to remove all hydrocarbons, greases etc. as a result of waste items that may be contaminated, prior to be discharged into the municipal storm water system. - This separator must be compliant with SANS. - Proper provision should be made for a designated area on site for the duration of the operational phase for the storage	-High for all the anticipated impacts	-Low
	Indirect								

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)
TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>of hazardous and/ or flammable items, including oils, greases, fuel etc. The said area should be lined with secondary containment and banded to contain at least 110% of the spilled substance.</p> <p>-- <u>Storage of liquid waste in settling ponds:</u> Where possible, solids and larger suspended matter should be removed from the effluent stream by the use of coarse screening equipment prior to entering a settling pond. The capacity of any settling pond should provide adequate retention time for entrained solids to settle out (one and a half to two hours are normally satisfactory). Adequate free board should be provided to prevent storm water overflowing from the pond. The outflow from the settling pond should be conveyed either to a holding pond before irrigation over land or to wastewater stabilisation ponds. Captured solids should be applied to land in a sustainable manner using crop nutrient needs and status of soil. The nutrient loading to land is a cumulative loading from all sources, i.e. solid manures, liquids and any artificial fertiliser added.</p> <p>- The hazardous waste to be treated/processed during the 1st phase of the hatchery development will be less than 550kg per day and therefore it will not be necessary to apply for a waste license for the 1st phase of the hatchery development. The applicant will apply for a waste license at the National Department of Environmental Affairs (DEA) by means of a Full EIA and will only commence with the 2nd phase of the development once the required waste license has been issued by DEA. According to Annexure 1(a) of the</p>		

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						National Waste Information Regulations, 2012, the owner has to register the generation of hazardous waste on the South African Waste Information System (SAWIS). This Regulation is regarded as applicable, because the facility generates more than 20kg of hazardous waste per day. The facility will also treat/process hazardous waste and according to the Regulations, the treatment of general waste using any form of treatment at a facility that has the capacity to process 10 tons of general waste or 500kg of hazardous waste per day excluding the treatment of effluent, wastewater or sewerage, must register on SAWIS.			
Geohydrology	Direct and Indirect	-Leakage of on-site package plant and waste pond (that will receive effluent from the hatchery and package plant) can cause ground water pollution. -Spillages on the surface can cause surface water pollution potentially pollute the non-perennial tributary of the Crocodile River that flows from east to west along the northern boundary of the Site Alternative 2 (Portion 322 of the Farm Hartebeestfontein 445 JQ)	-Yes	-Negative	-High	-High	-A Section 21 (a) Water Use Licence Application will need to be applied for the abstraction of water from existing borehole on the site. -The water needs of the hatchery at 322 400m ³ , exceeds the abstraction allowed in terms of the GA and that a non-perennial tributary of the Crocodile River flows from east to west past the site outside the northern boundary of the site, a full Water Use Licence Application is triggered. No development is allowed within the 100m buffer associated with the non-perennial stream flowing past the site outside its northern boundary. -A 24-hour yield test is required to confirm availability of water for all five phases of the hatchery development. -Borehole water quality tests must also be carried out to ascertain whether the borehole water quality meets the hatchery standards or whether water treatment will be required. - In terms of compliance with the hatchery water quality, pH, the sum of chloride and sulphate and iron are within the guideline limits. In contrast, the total hardness (560 mg CaCO ₃ /ℓ) exceeds the		

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>recommended maximum concentration of 35 to 107mg mg CaCO₃/ℓ for typical hatchery water quality. It is therefore recommended that water softeners will be required to reduce the water hardness. The magnesium concentration (96.8mg/ℓ) exceeds the recommended maximum concentration of 50 mg/ℓ and requires specific treatment.</p> <p>-The quality of groundwater supply must be monitored frequently for parameters as stipulated in the EMPr.</p> <p>--Monitoring boreholes downstream of the hatchery to detect any groundwater contamination which emanate from this activity.</p> <p>--Regular water quality tests of the watercourse should be performed at regular intervals during the operational phase to ensure no pollution of surface water has occurred.</p> <p>-Adherence to borehole pumping rates and ensure the correct pump is installed to enable pumping of the recommended volumes.</p> <p>-Monitoring of water levels in the abstraction borehole.</p> <p>- Designs of on-site sewage package plant to cater for leak detection system and underground containment tank in the case of a power failure.</p> <p>-On site sewage package plant should have spare capacity of 48 hours to store untreated sewage.</p> <p>-Waste water pond where the waste water (wash water, detergent and fluff) effluent from the hatchery and on-site package plant will be discharged into must be appropriately lined (SANS approved) to counteract leakage.</p> <p>-Paved areas to be impermeable surfaces and such surface must also be lined in order to prevent leachate/ soil pollution and ground water pollution.</p>		

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>-Make provision for ground water quality in monitoring boreholes to assist with the monitoring of ground water levels and quality.</p> <p>-Water quality in the hatchery must consider the following water quality parameters: Acidity/alkalinity (pH): A pH of 7 is neutral. Below 7, the water becomes acid (can cause corrosion) while above 7 means the water is alkaline (can indicate hard water due to high levels of calcium). Generally, a pH of 6-8 is acceptable - and pH can be corrected by adding chemicals. Total hardness is an indication of hard water, which can cause limescale build-up, resulting in inefficiencies or the breakdown of equipment. The most common unit used is °dH (German degree) or mg CaCO3/l. Generally, 2-6°dH (35-107 mg CaCO3/l) is advised, with a maximum of 2°dH recommended for nozzle/spray humidification. Water softeners are used to reduce water hardness.</p> <p>Suspended particles should be absent, as these will block pipes, nozzles etc. Suspended solids are removed by filters. Microbial contamination should be absent. If water is contaminated, another source should be used. Disinfection can reduce contamination, but for example, using water contaminated with Pseudomonas, Acentobacter, Proteus, yeasts or molds - even after disinfection - for humidification is not advised.</p> <p>Some elements in water are known for aggressive reactions which cause the discolouration of equipment. Commonly, the following thresholds are used: the total sum of chloride and sulphate (Cl & SO4) max 200mg/l, Magnesium (Mg) max 50mg/l, Iron (Fe) max 0.02mg/l. These elements require specific treatments.</p>		

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TYPE		DESCRIPTION	CUMULATIVE						NATURE
						Extremely pure water (for example distilled or Reverse Osmosis water) is also known to be aggressive. It is therefore advisable to build a small bypass into the system. Surface water runoff drains and maintenance of structure and equipment that surrounds the waste water pond is maintained and kept in a good working condition.			
<u>Social and Economical</u>									
Financial	-Direct	No financial provision for the decommissioning phase and for rehabilitation. Must be included as part of the EMP. -Peruse all the mitigation measures as supplied by all the specialists and ensure that there are sufficient funds available for rehabilitation purposes and decommissioning.	-Yes	Negative	High	Medium	Make provision for the decommissioning phase and for rehabilitation and emergency incidents prior to the construction of the proposed hatchery. If required obtain the necessary insurance to cover pollution incidents, contaminated land queries and reports as well as any other health, safety or environmental incidents that could arise during the construction, operation and decommissioning phases of the hatchery.	High	Low
Cultural/historical	Direct	Heritage discovery potential	No	Negative	Low	Low	Site Alternative 2 is the preferred site due to no impacts that will be posted on archaeological or historical sites, features or material. During the construction phase, should the construction workers identify any cultural heritage features, all construction work must cease and this must be reported to the appointed Environmental Control Officer (ECO) or site officer in charge, and the relevant Heritage Authority and in this context the North West Provincial Heritage Authority. The following have been recommended as per comments received from the SAHRA in accordance with Section 38(4) of the NHRA:	Low	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>- Section 38(4)a-The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit no objections to the proposed development;</p> <p>-Section 38(4)b –The recommendations of the specialists are supported and must be adhered to. No additional specific conditions are provided for the development;</p> <p>-Section 38(4)c(i)- If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;</p> <p>-Section 38(4)c(ii)-If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;</p> <p>-Section 38(4)d-See section 51(1) of the NHRA;</p> <p>-Section 38(4)e- The following conditions apply with regards to the appointment of specialists:</p> <p>i) if heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage</p>		

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TYPE		DESCRIPTION	CUMULATIVE					
						<p>resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation maybe required subject to permits issued by SAHRA;</p> <p>-The Final BAR and EMPr must be submitted to SAHRA for record purposes; and</p> <p>-The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.</p>		
Roads Upgrades	Direct and Indirect	Impacts on provincial and local roads and on adjacent properties	Yes	Negative	Medium	<p>Medium</p> <p>-The existing gravel road that falls within an existing servitude, leading off the R511 may need to be widened or upgraded to cater for deliveries and collections to and from the hatchery.</p> <p>-During the construction and operational phases of the gravel road, dust suppression measures will have to be implemented.</p> <p>-- The gravel road will not be upgraded, but it will be necessary to monitor and manage the dust levels generated by the trucks (approximately 4 trucks per day) and the employees of the hatchery. If the dust generated by the traffic of the facility becomes a nuisance to the hatchery and the surrounding properties, it will be necessary to implement measures to reduce the dust levels to more acceptable levels.</p> <p>The developer of the hatchery facility was aware of the brick factory when they purchased the property and it was confirmed by the applicant that most of the hatchery activities will take place indoors and that the design of the facility will make provision for measures that will prevent dust accumulation on packaging stock, working surfaces etc.</p>	High	

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>The brick factory is also obliged to implement measures that will reduce air pollution and the facility must also take legislation which regulated the qualitative environment (including air pollution) into consideration during all their current and future manufacturing activities.</p> <p>Soil contamination tests that were taken of the soils on the study area prior to the purchasing of the land for the development, confirmed that the soil is not currently polluted by the cement manufacturing activities on the adjacent property.</p> <p>It is recommended that the management of the Hatchery take soils samples, ground water samples and surface water samples on a 6-monthly basis in order to ensure that the environmental conditions on the Hatchery study area remains within acceptable pollution limits and to prevent the land from being contaminated.</p> <p>--Identify surrounding properties that could potentially be affected by road widening (i.e. accesses temporarily affected) and prepare notices to distribute to such affected parties.</p> <p>-Due to the low trip generation where there are less than fifty (50) peak hour trips, the site will not require any mitigation or road improvements as the subject property is adequate to permit safe traffic movements by utilizing the one point of access to and from the R511</p>		
Qualitative Environment	Direct and Indirect	-Dust pollution -Noise Pollution -Soil pollution -Construction after hours and	Yes, some impacts	Negative	Low, Medium and High	Medium	-Address dust pollution and specify damping down of exposed surfaces during the dry and windy seasons. -- The gravel road will not be upgraded,	

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
	during weekends and public holidays -Visual Pollution -Waste Management -Lighting Pollution -Signage authorisations					<p>but it will be necessary to monitor and manage the dust levels generated by the trucks (approximately 4 trucks per day) and the employees of the hatchery. If the dust generated by the traffic of the facility becomes a nuisance to the hatchery and the surrounding properties, it will be necessary to implement measures to reduce the dust levels to more acceptable levels.</p> <p>The developer of the hatchery facility was aware of the brick factory when they purchased the property and it was confirmed by the applicant that most of the hatchery activities will take place indoors and that the design of the facility will make provision for measures that will prevent dust accumulation on packaging stock, working surfaces etc.</p> <p>The brick factory is also obliged to implement measures that will reduce air pollution and the facility must also take legislation which regulated the qualitative environment (including air pollution) into consideration during all their current and future manufacturing activities.</p> <p>Soil contamination tests that were taken of the soils on the study area prior to the purchasing of the land for the development, confirmed that the soil is not currently polluted by the cement manufacturing activities on the adjacent property.</p> <p>It is recommended that the management of the Hatchery take soils samples, ground water samples and surface water samples on a 6-monthly basis in order to ensure that the environmental conditions on the Hatchery study area remains within acceptable pollution limits and to prevent the land from being</p>		

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)
TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>contaminated.</p> <p>-Supply working hours and rules regarding persons allowed to reside on site and noise during the construction phase.</p> <p>- Some construction phase noise associated with builder's machinery and processes are expected for the construction phase.</p> <p>The proposed hatchery will not generate large amounts of traffic and the hatchery activities will mainly take place indoors. It is therefore not anticipated that the noise levels associated with the proposed facility will exceed 45dBA (an acceptable noise level for a rural residential area)² at any of the property boundaries. Also take note that the study area is bordered by a brick factory to the immediate west and other business properties as well as a busy road also occur to the north-west, west and south-west of the study area. The land-use to the north-east, east and south-east is mainly agricultural and the dwellings of the farms to the north-east, east and south-east is not located in close proximity of the hatchery facility.</p> <p><i>It will be necessary to manage and monitor the noise levels throughout the construction and operational phases and complaints lodged regarding noise by surrounding land-owners, tenants etc. must be captured in the site incidents book and must be addressed.</i></p> <p>-All contractors and sub-contractors must comply with Part F: Site Operations- attached hereto as Appendix B of the EMPr (EMPr attached as Appendix J of the BAR).</p> <p>-Require that construction equipment be furnished with noise muffing devices.</p>		

² In terms of the Gauteng Noise Regulations
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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<ul style="list-style-type: none"> -Make provision for drip trays in the tender documentation. -Plan signage to be visible during the day and night in such a way that it complies with the standards of the local authority, and the relevant roads authorities. -Signage must be designed to cause minimum distraction of vehicles passing by and it should not reflect into the windows of the surrounding properties (nearest property is Horizon Bricks-no residential or commercial properties are in close proximity to Portion 322). -Confirm signage application requirements with the relevant local authority, district municipality and provincial road authority -Confirm with the local authority that builder's waste can be dumped at the local registered landfill site. -Confirm the local authority's capacity to collect operational phase waste and that waste will be removed by the local authority. -Confirm locality of waste collection areas during the construction and operational phase. -Allow enough space in layout for local authority trucks and other large vehicles to move safely though the site. -Biological waste such as infertile eggs, mortalities and egg shells will be processed or reduced in size before being carried through into steel drums situated outside of the facility via a screw conveyor. Biological waste will then be transported to the Kroon's Chickens Abattoir's rendering plant situated in close proximity to the site. - Category 10: Animal Matter Processing of NEM: AQA is triggered by the treatment of hazardous waste by means of maceration and thus an Atmospheric Emissions Licence is triggered by the proposed hatchery, however, only from 		

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						<p>Phase 2 as this listed activity only applies to installations, handling more than 1 ton of raw material per day.</p> <p>- A facility conducting an activity per source category and above the threshold stipulated in Annexure 1 is regarded as a Category A data provider and must register within 30 days of the Regulations coming into effect, on the National Atmospheric Emission Inventory System (NAEIS).</p> <p>Therefore, it will be necessary for the applicant to register on the data base as referred to above as soon as the hatchery becomes operational. The information as captured on the data base will eventually be used for purpose of the determination of Tax payable when Phase 2 of the Carbon Tax Act comes into effect.</p>			
Health and Safety	Direct and Indirect	-Impacts on the health and safety of the surrounding environment during the construction and operational phase - Impacts on the health and safety of the employees at the chicken hatchery and any clientele at the hatchery during construction and operational phases	Yes, in some cases	Negative	High	High	<p>-Make provision for the appointment of a suitably qualified health and safety officer to assist with compliance with the relevant health and safety legislation during all the development phases of the hatchery.</p> <p>-The minimum standards relating to the health and safety for chick hatcheries as stipulated in the South African Poultry Association Abridged Code of Practice: Chick Hatchery, must be adhered to.</p> <p>-Plan and discuss fire prevention measures and allow for the installation of the required fire equipment and health and safety signage for the operational phase.</p> <p>- In light of the nature of the proposed development and control measures that are required to be implemented to counteract the transmission of diseases, it is recommended that the developer may have to register in terms of the Fertilizers, Farm Feeds, Agricultural Remedies, and Stock Remedies Act.</p>	High	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
Institutional								
Compliance with the relevant local authority by-laws and policies	Direct	-Local authorities have specific requirements for storm water management, discharge of treated effluent into the municipal system, emergency procedures, construction works that affect roads and accesses to roads, road safety conditions, temporary disruption of services, air emissions, waste management, outdoor advertising, water services, health and safety, security etc.	Yes	Negative	Medium to High	- It is recommended that the proposed hatchery be authorised due to being in line with local plans and strategies with the provision that the hatchery development complies with the recommendations as contained in the EMPr. - Obtain copies of such by-laws/polices from the local and district municipality in order to ensure compliance. -Confirm that the proposed hatchery will comply with the relevant local authority and district municipality by-laws and policies: North West Biodiversity Sector Plan, 2015; Madibeng Local Municipality Integrated Development Plan (IDP); Madibeng Local Municipality Draft Spatial and Land Use Management By-Law 2016 and; Madibeng Local Municipality Draft Waste Management By-Law, 2017. - Site Alternative 2 is in line with national, provincial and local development policies and frameworks. -The proposed hatchery is in line with the IDP, the SDF plans and SPLUMA as the development will be contributing towards food production and employment creation. -Application made in terms of Section 56 of the Madibeng Spatial Planning and Land Use Management By-Law, 2016 for the amendment of the Peri-Urban Town Planning Scheme, 1975 for the rezoning of the property to include a "cultivation shed" for purposes of the hatchery. -Proposed hatchery viewed as a societal priority due to contribution to food production egg production is not conducted on a large scale within the Madibeng Local Municipality and therefore the hatchery will indirectly	High	Low

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						contribute to expanding the commercial farming sector, specifically egg production. -Minimum standards pertaining to Health and Safety, for Chick Hatcheries as set out in South African Poultry Association Abridged Code of Practice: Chick Hatchery must be conformed to. -In terms of the Madibeng Local Municipality Draft Waste Management By-Law 2019, the Municipal waste management officer must be informed of the intention to generate general waste, 60 days prior to commencement of generating waste. -The hatchery will need to comply with the Norms and Standards for Storage of Waste, 2013 published in terms of the NEM: WA due to triggering Category C (2) of the List of Waste Management Activities that have, or are likely to have a detrimental effect on the environment, due to storing more than 80m ³ of hazardous waste. -The hatchery must register in terms of the Fertilizers, farm feeds, Agricultural Remedies, Stock Remedies Act, if required. -A separate Environmental Impact Assessment process will be conducted for the Waste Management Licence and Air Quality Licence triggered by the processing of waste by means of the macerator.			
CONSTRUCTION PHASE									
Bio-Physical									
Geology and Soils	Direct	Loss of topsoil for vegetation clearing, clearing for parking areas and stockpile areas	No	Negative	Low	Medium	-Impact on the environment is expected to be of minimal importance as Portion 322 of the Farm Hartebeestfontein 445 JQ has a low ecological sensitivity. -Earth moving and vehicle access must	Medium	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						not occur within the watercourse. -Spillages must be contained. -Vehicles are to be parked and serviced in a bermed or bunded area away from the buffer. -Demarcated and secure storage facilities must be used for the storage and handling of lubricants, oils, paint and cement. -Hay bales and/or sandbags must be used for areas close to the watercourse. -Top soil must be stockpiled separately. -Once the construction phase is complete, the stockpiled topsoil must be added to the areas to be rehabilitated.			
	Direct	Loss of land capability	No	Negative	Low	Medium	-Although Portion 322 of the Farm Hartebeestfontein 445 JQ occurs in an area that is signified as arable, the site is classified as having a low ecological sensitivity. -The proposed site is also earmarked for future residential purposes (although not foreseen that the land will be under pressure for residential development in the long term).	High	Low
	Direct	Soil collapse	No	Negative	Low	Medium	- Pyroxinite, harzburgite and norite soils are the soils of the study site. Such soils do not present any collapse potential. -Mark all excavations clearly and make workers aware of possible soils collapse in and around excavations. -Trucks and equipment should be kept away from the unstable areas in order to avoid collapse.	Medium	Low
	Direct	Soil pollution	No	Negative	Low	Medium	- Temporary measures (i.e. drip trays/ temporary bunded areas) will be implemented to ensure that no hydrocarbons and/or other pollutant liquids are spilt, and if so, they are contained and a clean-up protocol to be followed. -A Waste Management Plan must be developed specifically for the hatchery. -All unusable waste must be stored in an	High	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						appropriately sealed container and store in a bunded area. -Waste bins must be sealed appropriately to prevent leakage of waste and which must be emptied out regularly. -Waste should be recycled as far as possible and separated into different containers (paper, plastic, glass etc.). -Waste water is recommended to be re-used where possible. -Waste water disposal methods must ensure no pollution of the environment (soil and water) occurs.			
	Direct	-Perched water conditions (mainly during the rainy periods) could make excavations and the installations of the underground containment tank for sewage	No	Negative	Low	Low	Ground water elevation recorded during the geohydrological investigation reveals 1, 139 and 1, 200m above mean sea level. - It is important to take note of possible perched water conditions during the construction phase. -Sewage containment tanks must preferably be installed on a section of the site where the ground water table is the lowest.	High	Low
	Direct	Clayish conditions: -Possible cracks in structures -Possible damage to tanks to be installed (swelling and shrinking of soils) – can cause ground water pollution	No	Negative	Low	Low	-Geotechnical engineer to conduct more detailed geotechnical investigation of site in order to determine perched water conditions and expansiveness of soils that could pose an impact on the infrastructure and cause potential ground water pollution.	High	Low
Topography	Indirect	-Alteration of topography- cut and fill exercises- low gradient -Loose soils cause siltation	No	Negative	Low	Medium	-The impact on the environment is expected to be Low. Topography is generally flat. -Temporary construction phase storm water management measures to be implemented (i.e. sand bags and hay bales) in order to prevent siltation.	High	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
Hydrology	Direct	-No sanitation facilities for workers -Perched water tables/ higher water tables during the rainy season -Ground water and surface water pollution	No	Negative	Low	Low	-A 100m buffer zone must be applied around the non-perennial watercourse due to the subject site being located outside of the urban edge. - No development is permitted within the buffer zone. -It is integral that waste management measures be implemented to ensure that no pollution of the environment occurs.	Medium	Low
	Direct	Siltation and Erosion	Yes	Negative	Low	Medium	-Temporary storm water management solutions such as silt traps, hay bales and sand bags (especially close by to the watercourse) must be properly implemented to minimise silt discharge into surrounding systems during rainstorm events. -It is also recommended that precautionary measures be taken in order to prevent the extensive loss of soil during rainstorms. Large exposed areas should adequately be protected against erosion. -Measures should be implemented during the rainy season to channel storm water away from open excavations and foundations.	Medium	Low
Effects on fauna and flora/ bio-diversity	Direct/ indirect	Removal of indigenous vegetation	No	Neutral The study area has a low ecological sensitivity	Low	Low	-Approximately 60% (eastern part) of Portion 322 is classified as a Critical Biodiversity Area 2 (CBA 2) and the remaining 40% (western part) is classified as Ecological Support Area (ESA2) due to occurrence within the 5km buffer of a Protected Area in the form of the Hartebeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment, and due to occurring within an Important Bird Area and within a Freshwater Ecosystem Protected Area (FEPA) Catchment. -Due to the proposed development site occurring within the 5km buffer of a Protected Area, specific NEMA listed activities apply to the proposed hatchery.	High	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						-The study site of Portion 322 has been classified as having a low ecological sensitivity. -Prior to construction commencing with any construction works, the development area should be fenced off from the areas that are to be retained as an open space system. The construction related impacts must be contained within the fenced-off development area. -An Ecological Management Plan (EMP) must be developed for the construction and the operational phase of the hatchery. - The indigenous plants that naturally grow on the study site (that would otherwise be destroyed) should be incorporated into the landscaped area. -The area must be properly managed throughout the construction phase in terms of fire, eradication of exotics etc. to ensure continuous biodiversity. It is proposed that as little of the vegetation cover to be cleared to prevent erosion on the application site. Only sections that are intended for the development must be cleared from vegetation. Each section must be rehabilitated as soon as construction is done.			
<u>Social and Economical</u>									
Cultural/historical	Direct	Heritage discovery potential – regarded as low	No	Negative	Low	Low	Site Alternative 2 is the preferred site due to no impacts that will be posted on archaeological or historical sites, features or material. During the construction phase, should the construction workers identify any cultural heritage features, all construction work must cease and this	Medium	Low

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TYPE		DESCRIPTION	CUMULATIVE					
						must be reported to the appointed Environmental Control Officer (ECO) or site officer in charge, and the relevant Heritage Authority, and in this context the North West Provincial Heritage Authority.		
Installation of services and upgrading of roads	Direct and Indirect	Impacts on provincial and local roads and on adjacent properties	Yes	Negative	Medium	<p>Medium</p> <p>-The existing gravel road that falls within an existing servitude, leading off the R511 will need to be widened to cater for deliveries and collections to and from the hatchery.</p> <p>--Identify surrounding properties that could potentially be affected by road widening (i.e. accesses temporarily affected) and prepare notices to distribute to such affected parties.</p>	Medium - High	Low
Atmospheric Emissions/Air quality pollution	Direct	Dust emissions	No	Negative	Low	<p>Medium</p> <p>-Dust suppression measures must be implemented during the construction phase to minimise dust generated by construction activities.</p> <p>-Regular and effective damping down of working areas (especially during the dry and windy periods) must be carried out to prevent dust pollution that will have a negative impact on the surrounding developments.</p> <p>-When necessary, these working areas should be damped down at least twice a day depending on the volume of dust.</p> <p>-- The gravel road will not be upgraded,</p>	High	

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TYPE	DESCRIPTION	CUMULATIVE	NATURE					
						<p>but it will be necessary to monitor and manage the dust levels generated by the trucks (approximately 4 trucks per day) and the employees of the hatchery. If the dust generated by the traffic of the facility becomes a nuisance to the hatchery and the surrounding properties, it will be necessary to implement measures to reduce the dust levels to more acceptable levels.</p> <p>The developer of the hatchery facility was aware of the brick factory when they purchased the property and it was confirmed by the applicant that most of the hatchery activities will take place indoors and that the design of the facility will make provision for measures that will prevent dust accumulation on packaging stock, working surfaces etc.</p> <p>The brick factory is also obliged to implement measures that will reduce air pollution and the facility must also take legislation which regulated the qualitative environment (including air pollution) into consideration during all their current and future manufacturing activities.</p> <p>Soil contamination tests that were taken of the soils on the study area prior to the purchasing of the land for the development, confirmed that the soil is not currently polluted by the cement manufacturing activities on the adjacent property.</p> <p>It is recommended that the management of the Hatchery take soils samples, ground water samples and surface water samples on a 6-monthly basis in order to ensure that the environmental conditions on the Hatchery study area remains within acceptable pollution limits and to prevent the land from being</p>		

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
	Direct	Emissions from vehicles and equipment (CO ₂ , NO _x , SO _x , VOC's etc.)	No	Negative	Low-Medium	Medium	<p>contaminated.</p> <p>-All construction vehicles must be maintained such as to operate efficiently. Idling times of machinery to be minimised.</p> <p>- A facility conducting an activity per source category and above the threshold stipulated in Annexure 1 is regarded as a Category A data provider and must register within 30 days of the Regulations coming into effect, on the National Atmospheric Emission Inventory System (NAEIS). Therefore, it will be necessary for the applicant to register on the data base as referred to above as soon as the hatchery becomes operational. The information as captured on the data base will eventually be used for purpose of the determination of Tax payable when Phase 2 of the Carbon Tax Act comes into effect.</p>	Low	Low
	Direct	Air pollution (odours)	No	Negative	Low	Low	<p>-The study site of Portion 322 is located the furthest from the residential areas (specifically Bushveld View Estate and Ana Agricultural Holdings), and is therefore very unlikely to pose an air pollution issue in terms of odour which would cause continuous complaints by the residents.</p> <p>-The wind direction is easterly during winter and westerly during summer. Any probable odour emanating from the hatchery would affect the Horizon Brick factory.</p> <p>- Category 10: Animal Matter Processing of NEM: AQA is triggered by the treatment of hazardous waste by means of maceration and thus an Atmospheric Emissions Licence is triggered by the proposed hatchery, however, only from Phase 2 as this listed activity only applies to installations, handling more than 1 ton of raw material per day.</p>	Low	Low

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TYPE		DESCRIPTION	CUMULATIVE						NATURE
Noise	Direct	Noise	No	Negative	Low	Medium	-Noise could become a factor to the Hartbeestpoort Nature Reserve and the Magaliesberg Protected Natural Environment situated south-west within 3kms and south-south east within 2kms of the proposed hatchery site. - Some construction phase noise associated with builder's machinery and processes are expected for the construction phase. The proposed hatchery will not generate large amounts of traffic and the hatchery activities will mainly take place indoors. It is therefore not anticipated that the noise levels associated with the proposed facility will exceed 45dBA (an acceptable noise level for a rural residential area) ³ at any of the property boundaries. Also take note that the study area is bordered by a brick factory to the immediate west and other business properties as well as a busy road also occur to the north-west, west and south-west of the study area. The land-use to the north-east, east and south-east is mainly agricultural and the dwellings of the farms to the north-east, east and south-east is not located in close proximity of the hatchery facility. <i>It will be necessary to manage and monitor the noise levels throughout the construction and operational phases and complaints lodged regarding noise by surrounding land-owners, tenants etc. must be captured in the site incidents book and must be addressed.</i> -Construction operations shall not occur before or after normal working hours. Noise monitoring should be undertaken as spot checks. -When required noise mufflers should be utilized to reduce noise. It is important to keep an open channel of	High	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						communication between all stakeholders and keep record of any concerns raised i.e. Complaints Register to be kept on site. -All construction activities must be restricted to normal working hours as depicted in the NBR document for site operations. -No construction may take place on Sundays and public holidays. -If any construction activities are required to take place on the aforementioned days, the surrounding neighbours must be informed of such planned works at least 48 hours prior to the relevant Sunday or public holiday.			
	Direct	Visual impact	No	Negative	Low-Medium	Medium	-The visual impact of construction activities will be low-medium term. Bollards and protective barriers as well as safety tape may be utilised around the site. -A specific location must be designated for the stockpiling of builders' rubble and associated construction material. -Prior to construction commencing on the site, an area on site must be demarcated for a site camp. -The selected site should not impair views (line of sight) of drivers utilising roads, nor should it be a distraction.	Low	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
Waste Generation	Direct	Domestic waste	No	Negative	Low	Medium	<ul style="list-style-type: none"> -A Waste Management Plan must be developed specifically for the hatchery. -All unusable waste must be stored in an appropriately sealed container and store in a bunded area. -Waste bins must be sealed appropriately to prevent leakage of waste and which must be emptied out regularly. -Waste should be recycled as far as possible and separated into different containers (paper, plastic, glass etc.). -Waste water is recommended to be re-used where possible. -Waste water disposal methods must ensure no pollution of the environment (soil and water) occurs. -All employees will be subjected to induction to understand the environmental management requirements on site. -Domestic waste will be removed from the site by a certified waste contractor. -Waste disposal certificates must be kept on record. 	High	Low
	Direct	Construction waste	No	Negative	Medium	Medium	<ul style="list-style-type: none"> -All construction waste must be placed in a demarcated area and disposed of accordingly. --This area will be bermed or appropriately bunded so as to prevent the dispersal of said waste by wind and rain. -Waste disposal certificates will be kept on record. 	Medium	Low-Medium
	Direct	Hazardous waste	No	Negative	Medium	Medium	<ul style="list-style-type: none"> -The proposed hatchery must comply with the Norms and Standards for Storage of Waste, 2013 published in terms of the National Environmental Management: Waste Act, as the hatchery will store more than 80m³ of hazardous (biological waste: infertile eggs, mortalities and egg shells) waste. -During the operational phase, all biological waste will be reduced through the use of a macerator situated inside of 	Medium	Low-Medium

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						the facility before being transferred into steel drums outside the facility via a screw conveyor. The waste will then be transported to the Kroon's Chickens Abattoir's rendering plant. -- Category 10: Animal Matter Processing of NEM: AQA is triggered by the treatment of hazardous waste by means of maceration and thus an Atmospheric Emissions Licence is triggered by the proposed hatchery, however, only from Phase 2 as this listed activity only applies to installations, handling more than 1 ton of raw material per day.			
Resource Consumption	Indirect	Electricity consumption	No	Negative	Low	Low	-Fair usage and minimisation of over usage. -A generator to be put in place during incidental power outages. Solar panels are also recommended for use as a backup source for power. -Energy saving light bulbs are also recommended to be used inside of the facility. -Eskom has confirmed ability to upgrade the transformer to a 500kVA transformer immediately subsequent to the property transferring to Kroon's Chickens.	High	Low
	Direct	Water consumption	No	Negative	Low	Medium	-Fair usage and care not to over use the water resources. Promote the re-use and recycling of process waste water if possible.	High	Low
	Indirect	Fuel consumption	No	Negative	Low	Medium	-All construction vehicles will be maintained such as to operate efficiently. Idling times of machinery to be minimised.	Medium	Low
	Indirect	Raw materials consumption	No	Negative	Low	Medium	Raw materials will be used efficiently. Recycling will be implemented on applicable waste streams and in accordance with the Waste Management Plan.	Medium	Low

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TYPE	DESCRIPTION	CUMULATIVE	NATURE						
Incidents, Accidents and Potential Emergency Situations	Direct	Pollution incidents	No	Negative	Low-Medium	Medium	-Spillages to be cleaned up immediately. Notification to the Department of Human Settlements, Water and Sanitation (DHSWS) should groundwater be affected. -An emergency response plan should be devised in the event of a spillage or leak.	Medium	Low
	Direct	Health and safety	No	Negative	Low-Medium	Medium	-Make provision for the appointment of a suitably qualified health and safety officer to assist with compliance with the relevant health and safety legislation during all the development phases of the hatchery. -The minimum standards relating to the health and safety for chick hatcheries as stipulated in the South African Poultry Association Abridged Code of Practice: Chick Hatchery, must be adhered to. -Plan and discuss fire prevention measures and allow for the installation of the required fire equipment and health and safety signage for the operational phase. - In light of the nature of the proposed development and control measures that are required to be implemented to counteract the transmission of diseases, it is recommended that the developer may have to register in terms of the Fertilizers, Farm Feeds, Agricultural Remedies, and Stock Remedies Act.	Medium	Low
	Direct	Storage of hydrocarbons	No	Negative	Low-Medium	Medium	-All hazardous materials will be stored in a bunded and lockable area. Material Safety Data Sheet (MSDS) sheets will be available for all hazardous products. -Concrete mixing and tar preparation have to be carried out away from sensitive areas and on an impermeable substratum, all unused concrete and tar need to be removed. -Areas such as oil storage facilities must still be fitted with the necessary oil interceptors or whatever appliances / interceptors are required to prevent	Low	Low

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POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						pollution. -Any damage or spills onto the existing roads will be cleaned or fixed immediately after noticing, at the contractor's/developer's cost. -All spillages of oil or fuel onto concrete surfaces shall be controlled by the use of an approved absorbent material. -All soil contaminated by oil, fuel, etc. shall be collected immediately and disposed of at an acceptable disposal site to be approved by the ECO. -Water pollution through fuels, oils or other substances must be avoided. -All clean storm water will be diverted away from potential sources of hydrocarbon contamination, dirty water will be captured and disposed of in a proper manner. -Regular maintenance will be done according to a preventative maintenance program and the SABS standards. -Records will be kept of all spills, substantial spills will immediately be reported to the authorities.			
	Indirect	Fire	No	Negative	Low	Medium	-Fire and emergency plans will be implemented during construction especially due to the two nature reserves and surrounding agricultural holdings located in close proximity. -Adequate firefighting equipment will be instituted as recommended. -Fire breaks will have to be maintained during the operational phase of the hatchery by the owner. -The containment of fuel stored on site: a groundwater monitoring programme must be implemented. -An accurate oil records (register) must be kept in terms of the purchase, disposal, and recycling of oil). -Ensure that clean-up protocols are in place and are adhered to.	Medium	Low

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
	Indirect	Safety and security	No	Negative	Low	Medium	<ul style="list-style-type: none"> -Health and safety officer to be appointed prior to commencement with construction and the safety plan as well as the required safety gear for workers to be available on the study area. -Allow for 24-hour security on the study area. -Fence the construction site at strategic points. This will keep the public out of the potentially dangerous construction area. -Site security will ensure that the site is secured and only authorised access allowed. -If required for some of the workers to sleep on the site, such workers must be accommodated in an allocated area on the construction site. -Plan for the implementation of a security system that will reflect a database of all workers and personnel on site during the construction phase. -Also indicate the names of the workers that will reside on the study area during the construction phase. -Remove the names of workers no longer involved in construction works on the study area immediately after such workers stopped with their duties/ we removed from their duties. -The 24-hour security must be notified of new construction workers/ workers to be accommodated on the study area and must also be informed of workers no longer involved in construction activities on the study area. -Workers that sleep on the study area must sign out when they leave the premises after hours and must sign back in when they return to the accommodation supplied on site. On site accommodation could prevent illegal occupation of open spaces in close proximity of the study area by workers that cannot afford daily travelling costs. -Where possible local laborers must be 	High	Low

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						used in order to avoid an influx of people into the area. -Details of all persons to work on the site that must be supplied to the security and project manager must include the following: <ul style="list-style-type: none"> Name and Surname, ID Number or Passport Number, Driver's License, copy of relevant ID document/ passport/ driver's license/ service delivered by worker/ employee of the worker/Contact Details of the worker and contact details of a family member or employee. -Fence the area earmarked for the temporary accommodation of construction workers. - If possible, fence the construction site and allow for one/ two allocated and monitored contractor's entrance/s.			
Qualitative Environment	Direct	Visual impact	No	Negative	Low-Medium	Medium	-The visual impact of construction activities will be low-medium term. Bollards and protective barriers as well as safety tape may be utilised around the site. -A specific location must be designated for the stockpiling of builders' rubble and associated construction material. -Prior to construction commencing on the site, an area on site must be demarcated for a site camp. -The selected site should not impair views (line of sight) of drivers utilising upgraded roads, nor should it be a distraction.	Low	Low
	Indirect	Damage to roads	No	Negative	Medium	Medium	-Construction vehicles must avoid using sub-standard roads (i.e. roads in agricultural holdings/ rural areas that are not constructed to provincial/ local authority standards). -Record the condition of the surrounding roads (with photographs) prior to construction and require that contractors repair all damages caused during the construction phase.		

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						-Construction vehicles should only be permitted to use a designated construction entrance. -Construction vehicles and activities as well as other heavy vehicles to avoid peak hour traffic times.			
	Indirect	Traffic disruptions	No	Negative	Medium	Medium	-Traffic warning and calming measures will be put in place when construction activities may impact on traffic flow.	Medium	Low-Medium
	Direct	Temporary employment opportunities for construction workers	Yes	Positive	Medium	High	Not required	N/A	N/A
OPERATIONAL PHASE									
Bio-Physical									
Geology and Soils	Direct and Indirect	-Soil pollution due to spillages -Washing of paved surfaces and equipment with chemicals, soaps etc. and releasing polluted water onto the surface and allowing it to mix with storm water -On-site package plant and containment tank leakage	Yes	Negative	Medium	Medium – HIGH	-Always ensure that storm water and dirty water are separated. -Install oil traps and grease traps where required. -Maintain impermeable paved surfaces and repair areas where leakages into the ground can occur on a regular basis. -Wash paved surfaces on a regular basis. -An Emergency Plan must be implemented. -Monitoring boreholes downstream of the hatchery to detect any groundwater contamination which emanate from this activity. -Compile and implement a waste management plan which includes management of all types of waste created throughout the facility processes and include mitigation measures to prevent pollution in the case of equipment failure or spillages. -Regular water quality tests of the watercourse should be performed at	High	Low

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE		DESCRIPTION	CUMULATIVE						NATURE
						regular intervals during the operational phase to ensure no pollution of surface water has occurred. - A spill Contingency or Emergency Response Plan must be drawn up and should include the actions that need to be taken in account in the event of spillages of chemicals, fuels etc, during the construction and operational phase of the proposed activity.			
Hydrology	Direct and Indirect	Contamination of ground water and surface water	Yes	Negative	Medium	Low	- Monitoring boreholes downstream of the hatchery to detect any groundwater contamination which emanate from this activity. --Regular water quality tests of the watercourse should be performed at regular intervals during the operational phase to ensure no pollution of surface water has occurred. -Implement the emergency preparedness and response plan for the operational phase and put emergency contact number on walls at strategic points for purpose of dealing with emergencies (i.e. fires, explosions, oil spills, fuel spills etc.). - Surface water runoff drains and maintenance of structure and equipment that surrounds the waste water pond is maintained and kept in a good working condition. -Ensure the adequate lining and drainage systems are installed. -Ensure that surface water runoff is contained and treated before disposal.	High	Low
Social and Economical									

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)
TYPE		DESCRIPTION	CUMULATIVE					
Waste Generation	Direct	Domestic waste	No	Negative	Medium	High	High	Low-Medium

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE	DESCRIPTION	CUMULATIVE	NATURE						
						fertiliser added.			
	Direct	Hazardous waste	No	Negative	Medium	Medium	<p>The proposed hatchery must comply with the Norms and Standards for Storage of Waste, 2013 published in terms of the National Environmental Management: Waste Act, as the hatchery will store more than 80m³ of hazardous (biological waste: infertile eggs, mortalities and egg shells) waste.</p> <p>-During the operational phase, all biological waste will be reduced through the use of a macerator situated inside of the facility before being transferred into steel drums outside the facility via a screw conveyor. The waste will then be transported to the Kroon's Chickens Abattoir's rendering plant.</p> <p>A separate Environmental Impact Assessment process will be conducted for the Waste Management Licence and Air Quality Licence triggered by the processing of waste by means of the macerator.</p> <p>-- Category 10: Animal Matter Processing of NEM: AQA is triggered by the treatment of hazardous waste by means of maceration and thus an Atmospheric Emissions Licence is triggered by the proposed hatchery, however, only from Phase 2 as this listed activity only applies to installations, handling more than 1 ton of raw material per day.</p>	High	Low

Updated Basic Assessment Report for the proposed Kroon's Hatchery

POTENTIAL ADVERSE IMPACTS				SIGNIFICANCE (Prior to mitigation)	PROBABILITY	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (with mitigation)	
TYPE		DESCRIPTION	CUMULATIVE						NATURE
	Indirect	Lighting	No	Negative	Low- Medium	Medium	-Security lighting during the construction and operation phase must be carefully planned. These lights must not spill into the eyes of oncoming traffic and must not shine into adjacent properties. -Prevent the implementation of exterior advertising signs and name boards that will flicker into the eyes of surrounding neighbours and into the eyes of oncoming traffic. -Exterior lighting, especially the lighting in the vicinity of the open space areas must be designed to shine downwards and the bulbs to be used should preferably be dim.	High	Low

9. CONCLUSION

A Comparative Assessment conducted for three site alternatives considered concluded that Site Alternative 2 situated on Portion 322 of the Farm Hartebeestfontein 445 JQ, 12.9ha in extent, was the preferred development site alternative.

This site has low ecological sensitivity and the shape of this property presents more placement options for the hatchery building and leaves space for expansion in the future. Yields tests of the existing borehole on the study area confirmed that there is currently sufficient water for the first 2 phases of the development and the geophysical survey conducted by the geo-hydrologist in order to identify the priority drilling areas for boreholes required for the following phases, confirmed that there are structures on the site, which increases the yield potential of the boreholes to be drilled.

This site is easily accessible via the R511 and is located in an isolated geographical location to facilitate hygiene and disease control. The study area is also having the lowest impact on surrounding residential properties.

The construction and operational phases of the development will create temporary and permanent job opportunities in the area.

No "fatal flaws" were identified that could prevent the proposed project from being executed.

From an assessment of the biophysical, social-economic, cultural, and legislative environments it is evident that the **proposed hatchery – Alternative 2**, is in line with national, provincial, and local development policies and frameworks. Potential Impacts identified can be sufficiently mitigated as not to detrimentally affect the environment.

10. RECOMMENDATION

It is recommended that the proposed hatchery be authorized due to being in line with local plans and strategies, with the proviso that the hatchery development complies with the recommendations as contained in the EMPr and specific conditions as stipulated below.

- The EMPr compiled for the various development phases of the development be implemented;
- That the 3rd phase of the hatchery only commence once DHSWS and the geo-hydrology confirmed the availability of water for phases 3 onwards;
- That a construction phase and operational phase storm water management plan be compiled for the development. The storm water management plan must also address the storm water management on the gravel access road during the construction and operational phases. A conceptual storm water and waste water management and monitoring plan has already been compiled. This plan is attached as Appendix G9 of the FBAR and it is recommended that this conceptual plan, which is based on the requirements of DHSWS and DEDECT be considered when compiling the plan. It is recommended for storm water to be channeled away from the facility. Industrial stormwater must be separated from natural storm water. Industrial storm water generated on parking areas, washing bays, effluent related to industrial activities etc. are to be separated from natural storm water;
- That an emergency plan be compile to address potential spillages and leakages of the possible pollution sources on the study area (i.e. storage of diesel, spillages associated with the on-site sewer treatment facility etc.);
- That the owner maintains fire breaks during the construction and operational phases of the hatchery;
- The minimum standards pertaining to Health and Safety, for Chick Hatcheries as set out in the South African Poultry Association Abridged Code of Practice: Chick hatchery, must be conformed to;
- The hatchery must register (if required) in terms of the Fertilizers, Farm Feeds, Agricultural Remedies, Stock Remedies Act;

- A Waste Management Licence must be obtained from the Department of Environmental Affairs for the Treatment of more than 1 tonne of biological waste per day by means of a macerator for Phases 2 – 5 of the facility and a copy of the license must be supplied to DEDECT as soon as it has been issued;
- The Municipal waste management officer must be informed of the intention to generate general waste, 60 days prior to commencement with the generation of waste; and
- An Air Emissions license must be obtained for Phases 2 – 5 of the hatchery development and a copy of the license must be supplied to DEDECT as soon as it has been issued.

Application Form



dedect

Department:
Economic Development, Environment, Conservation and Tourism
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



AgriCentre Building
Cnr. Dr. James Moroka &
Stadium Rd
MMABATHO 2735
www.nwpg.gov.za

CHIEF DIRECTORATE: ENVIRONMENTAL SERVICES
DIRECTORATE: ENVIRONMENTAL QUALITY MANAGEMENT

Enquiries: Ouma Skosana
Tel: +27 (18) 389 5156
Email: oskosana@nwpg.gov.za
Fax: +27(18) 384 0104

APPLICATION FORM FOR ENVIRONMENTAL AUTHORISATION

(For official use only)

File Reference Number:
NEAS Reference Number:
Application Fee Reference Number:
Date Received:

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014

PROJECT TITLE

Kroon's Hatchery

Kindly note that:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the competent authority.
2. This form is current as of December 2014. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. A proponent must pay a fee for the processing of environmental impact assessment applications as set out in the Fee Regulations¹ published in terms of sections 24(5) and 44(1) of the National Environmental Management Act, 1998 (Act No. 107 of 1998). A fee of **R2 000** is applicable to an application which must be subjected to **Basic Assessment** and an application for **amendment of an environmental authorisation**, and a fee of **R10 000** is applicable to an application which must be subjected to **Scoping and Environmental Impact Reporting**.

An applicant is excluded from having to pay the application fee if:

- The activity is a community based project funded by a government grant; or
- The applicant is an organ of State



4. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.
5. The use of “not applicable” in the form must be done with circumspection. Incomplete applications or applications that do not meet the requirements in terms of Regulation 16 of the 2014 NEMA EIA Regulations will be rejected to be revised and be resubmitted.
6. Unless protected by law, all information filled in on this application will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this application on request, during any stage of the application process.
7. An application for environmental authorisation/amendment lapses if the applicant fails to meet any of the timeframes prescribed in terms of the 2014 EIA Regulations. The applicant must comply with the Project Time Schedule.
8. This application must be handed in at the offices of the relevant competent authority as determined by the Act and regulations.
9. All EIA applications submitted to this Department must be accompanied by a screening report as required in terms of Regulation 16(1)(v) of the 2014 EIA Regulations. The screening tool can be accessed on the following link: <https://screening.environment.gov.za/screeningtool/#/pages/welcome>
10. All reports to be submitted in respect of this application must comply with the content layout requirements stipulated/described in relevant appendices of the 2014 EIA Regulations (i.e. Appendix 1 – 7)

Queries must be addressed to the contact hereunder:

Departmental Details/Provincial Authority

Physical address:

Department of Economic, Development, Environment, Conservation and Tourism

Agricentre Building

Cnr. Dr. James Moroka & Stadium Road

Mmabatho

2735

Tel: 018-389 5959/5156

The signed Application Form together with proof of payment must be couriered for attention EIA Administrator: Office 36 at Agricentre Building, Mmabatho.

BANKING DETAILS FOR PAYMENT:

BANK:	First National Bank
Account name:	NW: Department of Economic, Development, Environment, Conservation and Tourism
Account No:	62811734848
Branch Code:	210244
Reference:	1419EA + Municipal District Code (e.g. 1419EANMM)

District Codes (BOJ=Bojanala, NMM=Ngaka Modiri Molema, DKK=Dr Kenneth Kaunda, RSM=Dr Ruth Segomotsi Mompati)



SITE IDENTIFICATION AND LINKAGE

Please indicate all the Surveyor-general 21 digit site (erf/farm/portion) reference numbers for all sites (including portions of sites) that are part of the application.

Alternative 1

Portion 107 of the Farm Hartebeestfontein 445 JQ (Site 1)

T	O	J	Q	0	0	0	0	0	0	0	0	0	4	5	0	0	1	0	7
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Alternative 2 (Preferred alternative)

Portion 322 of the Farm Hartebeestfontein 445 JQ (previously known as Portion 124 and 125) (Site 2 –Preferred site)

T	O	J	Q	0	0	0	0	0	0	0	0	0	4	4	5	0	0	3	2	2
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Alternative 3

Portion 33 of the Farm Hartebeestfontein 445 JQ (Site 3)

T	O	J	Q	0	0	0	0	0	0	0	0	0	4	4	5	0	0	0	3	3
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and

Portion 168 of the Farm Hartebeestfontein 445 JQ (Site 3)

T	O	J	Q	0	0	0	0	0	0	0	0	0	4	4	5	0	0	1	6	8
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(if there are more than 6, please attach a list with the rest of the numbers)

(These numbers will be used to link various different applications, authorisations, permits etc. that may be connected to a specific site)

PROJECT DESCRIPTION

Please provide a detailed description of the project.

The proposed Kroon's Chickens Hatchery site with associated infrastructure will be situated on one of the following sites: Portion 107 of the Farm Hartebeestfontein 445 JQ (Site 1), Portion 322 of the Farm Hartebeestfontein 445 JQ (previously known as Portion 124 and 125) or Portion 33 and 168 of the Farm Hartebeestfontein 445 JQ (Site 3). The three sites are situated within the area of Jurisdiction of the Madibeng Local Municipality, North West Province. The proposed sites are surrounded by agricultural land and urban developments. Portion 107 is situated approximately 5km north of the Hartebeestpoort Dam and the R511 runs along the northern boundary of the site. Portion 322 is situated approximately 6km to the north of the Hartebeestpoort Dam and is



situated approximately 200m to the north-east of the R511 road. Portions 33 and 168 situated approximately 4.8km to the north of the Hartebeestpoort Dam and approximately 1.2km south west of the R511 road.

Based on the Town Planning Due Diligence Report, all three of the properties are zoned as 'Undetermined' in terms of the Peri-Urban Town Planning Scheme, 1975'. As per the findings of the report, in terms of the certificates and the definition of 'undetermined', a rezoning application is required for the subject properties to enable the use for purposes of a hatchery.

According to the Geographic Information System (GIS), all three of the proposed sites for the proposed hatchery are less than 20ha in extent and thus the proposed development triggers a Basic Assessment Report in terms of the amended 2014 NEMA EIA Regulations.

PLEASE INDICATE WHICH SECTOR THE PROJECT FALLS UNDER BY CROSSING OUT THE RELEVANT BLOCK IN THE TABLE BELOW:

Table 1: National Sector Classification in terms of Regulation 9 of the 2014 EIA Regulations

Infrastructure /Transport Services/Roads - Public	
Infrastructure /Transport Services/Roads - Private	
Infrastructure /Transport Services/Rail - Public	
Infrastructure /Transport Services/Rail - Private	
Infrastructure /Transport Services/Airport/Runways/Landing Strip/Helipad - Commercial	
Infrastructure /Transport Services/Airport/Runways/Landing Strip/Helipad - Private	
Infrastructure /Transport Services/Airport/Runways/Landing Strip/Helipad - Public Services	
Infrastructure /Transport Services - Ports	
Infrastructure /Transport Services - Inland Waterways	
Infrastructure /Transport Services - Marina	
Infrastructure /Transport Services - Canal	
Infrastructure /Localised infrastructure - Infrastructure in the Sea/Estuary/Littoral Active Zone/Development Setback/100M Inland/or coastal public property.	
Infrastructure /Localised infrastructure - Zip Lines & Foefie Slides	
Infrastructure /Localised infrastructure - Cableway or Funiculars	
Infrastructure /Localised infrastructure - Billboards	
Infrastructure /Localised infrastructure/Storage/Dangerous Goods/Hydrocarbon - Gas	



Infrastructure /Localised infrastructure/Storage/Dangerous Goods/Hydrocarbon - Petroleum	
Infrastructure /Localised infrastructure/Storage/Dangerous good – Chemicals	
Utilities Infrastructure/Pipelines/water - Fresh/Storm Water	
Utilities Infrastructure/Pipelines/water - Waste Water	
Utilities Infrastructure/Pipelines/Dangerous Goods - Chemicals	
Utilities Infrastructure/Pipelines/Hydrocarbon – Petroleum	
Utilities Infrastructure/Pipelines/Hydrocarbon - Gas	
Utilities Infrastructure/Telecommunications/ Radio Broadcasting - Tower	
Utilities Infrastructure/Telecommunications/ Radio Broadcasting - Mast	
Utilities Infrastructure/Telecommunications/ Radio Broadcasting - Receivers	
Utilities Infrastructure - Marine Cables	
Utilities Infrastructure/Electricity /Generation/Non Renewable/Hydrocarbon - Petroleum	
Utilities Infrastructure/Electricity /Generation/Non Renewable/Hydrocarbon - Coal	
Utilities Infrastructure/Electricity /Generation/Non Renewable - Nuclear	
Utilities Infrastructure/Electricity /Generation/Renewable - Hydro	
Utilities Infrastructure/Electricity /Generation/Renewable/Solar - PV	
Utilities Infrastructure/Electricity /Generation/Renewable/Solar - CSP	
Utilities Infrastructure/Electricity /Generation/Renewable - Wind	
Utilities Infrastructure/Electricity /Generation/Renewable - Biomass/ biofuels	
Utilities Infrastructure/Electricity /Generation/Renewable - Wave	
Utilities Infrastructure/Electricity /Distribution and Transmission - Power line	
Utilities Infrastructure/Electricity /Distribution and Transmission – Substation	
Utilities Infrastructure/Gas /Distribution and Transmission – Compressor Station	
Services/Waste Management Services/Disposal facilities - Hazardous	
Services/Waste Management Services/Disposal facilities - Nuclear	
Services/Waste Management Services/Disposal facilities - General	
Services/Waste Management Services/Treatment facilities - Hazardous	
Services/Waste Management Services/Treatment facilities - General	
Services/Waste Management Services/Storage Facilities - General	



Services/Waste Management Services/Storage Facilities - Hazardous	
Services/Waste Management Services/Storage Facilities - Nuclear	
Services/Burial and cemeteries - Cemeteries	
Services/Burial and cemeteries - Cremators	
Services/Water services/Storage - Dams	
Services/Water services/Storage - Reservoirs	
Services/Water services - Desalination	
Services/Water services - Treatment & Waste Water	
Services - Hospitality	
Mining - Prospecting rights	
Mining - Mining Permit	
Mining - Mining Right	
Mining/Exploration Right - Gas or Oil Marine	
Mining/Exploration Right - Gas or Oil Terrestrial	
Mining/Production Right - Gas or Oil Marine	
Mining/Production Right - Gas or Oil Terrestrial	
Mining/Underground gasification of coal - Oil	
Mining/Beneficiation - Hydrocarbon	
Mining/Beneficiation - Mineral	
Agriculture/Forestry/ Fisheries - Crop Production	
Agriculture/Forestry/ Fisheries - Animal Production	
Agriculture/Forestry/ Fisheries - Afforestation	
Agriculture/Forestry/ Fisheries/Aquaculture/Inland- Alien	
Agriculture/Forestry/ Fisheries/Aquaculture/Inland- Indigenous	
Agriculture/Forestry/ Fisheries/Aquaculture/Marine - Alien	
Agriculture/Forestry/ Fisheries/Aquaculture/Marine - Indigenous	
Agriculture/Forestry/ Fisheries - Agro-Processing	X
Transformation of land - Indigenous vegetation	X



Transformation of land - From open space or Conservation	
Transformation of land - From agriculture or afforestation	
Transformation of land - From mining or heavy industrial areas	
Any activities within or close to a watercourse	X
Any activity in an estuary, on the seashore, in the littoral active zone, or in the sea.	
Activity requiring permit or licence in terms of National or Provincial legislation governing the release or generation of emissions - Emissions	
Activity requiring permit or licence - Marine Effluent	
Activity requiring permit or licence - Fresh Water Effluent	
Release of Genetically Modified Organisms	

1. BACKGROUND INFORMATION

Project applicant:	Kroon Familie Trust		
Trading name (if any):			
Contact person:	Jacques Robert Kroon		
Physical address:			
Postal address:	PO Box 48657, Hercules		
Postal code:	0030	Cell:	083 632 5770
Telephone:	012 504 2117/28/29	Fax:	086 565 8949
E-mail:	jacques@kroonchickens.co.za		

Landowner:	Kroon Familie Trust		
Contact person:	Jacques Robert Kroon		
Postal address:	PO Box 48657, Hercules		
Postal code:	0030	Cell:	082 632 5770
Telephone:	012 504 2117/28/29	Fax:	086 565 8949
E-mail:	jacques@kroonchickens.co.za		



In instances where there is more than one landowner, please attach a list of landowners with their contact details to this application.

Local authority in whose jurisdiction the proposed activity will fall:	Madibeng Local Municipality		
Municipal Ward No:	33		
Nearest town or districts:	Hartebeestpoort		
Contact person:	Sigidi Muthotho		
Postal address:	PO Box 106, Brits		
Postal code:	0250	Cell:	
Telephone:	012 318 9299	Fax:	012 318 9203
E-mail:	customercare@madibeng.gov.za		

2. ACTIVITIES APPLIED FOR TO BE AUTHORISED

For an application for authorisation that involves more than one listed or specified activity that, together, make up one development proposal, all the listed activities pertaining to this application must be indicated.

Indicate the number and date of the relevant notice:	Activity No (s) and Activity Description (in terms of the relevant notice)	Describe each listed activity as per project description
GN. R. 327, 7 April 2017	Activity 5 The development and related operation of facilities or infrastructure for the concentration of— (i) more than 1 000 poultry per facility situated within an urban area, excluding chicks younger than 20 days; (ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days; (iii) more than 5 000 chicks younger than 20 days per facility situated within an urban area; or (iv) more than 25 000 chicks younger than 20 days per facility situated outside an urban area.	The construction of a chicken hatchery that will accommodate approximately 600 000 chicks per week at the facility.
GN. R. 327, 7 April 2017	Activity 8 The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.	The construction of a chicken hatchery that will be more than 1 hectare, however under 20 hectares.
GN. R. 327, 7 April 2017	Activity 27 The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance	Due to each site being more than 1 hectare however less than 20 hectares, and the site requiring the removal of vegetation in order to construct the proposed hatchery.



Indicate the number and date of the relevant notice:	Activity No (s) and Activity Description (in terms of the relevant notice)	Describe each listed activity as per project description
	with a maintenance management plan.	
GN. R. 327, 7 April 2017	Activity 28 Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	The development of a chicken hatchery which is an industry that will be located outside the urban area and the site is greater than 1 hectare.
GN. R. 324, 7 April 2017	Activity 12. h. iv The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. h. North West iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	The proposed hatchery site which is more than 300 square metres is located within a Critically Important Area.
GN. R. 324, 7 April 2017	Activity 18 h. v. The widening of road by more than 4 meters, or the lengthening of a road by more than 1 kilometer. h. North West i. . . ; ii. Areas within 5 kilometers from protected areas identified in terms of NEMPPA or from a Biosphere reserve.; iii. . . ; iv. . . ; v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;	The existing road leading from the R511 to the proposed development site is only 3.4m wide, but falls within an existing 9.44m wide road servitude. Even though the traffic engineer for the project confirmed that it will not be necessary for the applicant to do any road upgradings to accommodate the facility, it might become necessary, at a later stage to do some road upgradings (i.e. to widen the road with more than 4m). This road is located within a Critical Biodiversity Area and within 5 km from the Magaliesberg Protected Natural Environment (MPNE) and the Hartebeestpoort Dam Nature Reserve, this listed activity is triggered. (This Listed activity did not form part of the initial Public Notice, but this is not a requirement of the Regulations. As EAPs we prefer to make as much information as possible (including listed activities applied for) available to I&APs from the outset)

Please note that any authorisation that may result from this application will only cover activities specifically applied for.

Is the application fee for Environmental Authorisation Paid?

Yes	No
-----	----

3. SOCIO-ECONOMIC BENEFITS

3.1 What is the expected capital value to be contributed for North West Province Growth Domestic Product?

± R50 million (including the development and infrastructure)



3.2 How many new employment opportunities will be created in the development phase?

± 30

3.3 How many permanent employment opportunities will be created during operational phase?

± 50

3.4 What is the **estimated conclusion date of the activity or activities applied for** (excluding activities that have operational phase)?

CONSTRUCTION PHASE: JUNE 2020
OPERATIONAL PHASE: 20 YEARS

4 OTHER AUTHORISATIONS REQUIRED

4.1 DO YOU NEED ANY AUTHORISATIONS IN TERMS OF ANY OF THE FOLLOWING LAWS?

- 4.1.1 National Environmental Management: Waste Act Yes/No
- 4.1.2 National Environmental Management: Air Quality Act Yes/No
- 4.1.3 National Environmental Management: Protected Areas Act Yes/No
- 4.1.4 National Environmental Management: Biodiversity Act Yes/No
- 4.1.5 Mineral Petroleum Development Resources Act Yes/No
- 4.1.6 National Water Act Yes/No
- 4.1.7 National Heritage Resources Act Yes/No
- 4.1.8 Other (please specify) Yes/No
- 4.2 Have such applications been lodged already? Yes/No

5 ACTIVITY POSITIONS

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds using the Hartebeeshoek94 WGS84 co-ordinate system.

Description of Site Locations:

List alternative sites, if applicable.

The description of site locations must include farm names, farm portions, erf numbers, erven numbers etc

Alternative Site 1	Portion 107 of the Farm Hartebeestfontein 445 JQ
---------------------------	--



Alternative Site 2 (preferred site alternative)	Portion 322 of the Farm Hartebeestfontein 445 JQ (previously known as Portion 124 and 125) (Preferred site)
Alternative Site 3	Portion 33 and 168 of the Farm Hartebeestfontein 445 JQ

Site Co-ordinates

	Latitude (S):			Longitude (E):		
Alternative S1	25°	41'	5.26"	27°	51'	39.34"
Alternative S2 (preferred or only site alternative)	25°	40'	45.64"	27°	52'	0.85"
Alternative S3	25°	41'	12.20"	27°	51'	0.31"

In the case of linear activities:

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Latitude (S):

Longitude (E):

o	'	"	o	'	"
o	'	"	o	'	"
o	'	"	o	'	"

o	'	"	o	'	"
o	'	"	o	'	"
o	'	"	o	'	"

o	'	"	o	'	"
o	'	"	o	'	"
o	'	"	o	'	"

LIST OF APPENDICES SUBMITTED

Appendix 1	List of land owners (with contact details) and proof of notification of land owners.	YES	NO
Appendix 2	List of co-ordinates and/or SGIDs for more activities in different areas	YES	NO
Appendix 3	Copies of Environmental Authorisations obtained for the same property	YES	NO
Appendix 4	Map indicating study areas for GN R.985	YES	NO



Appendix 5	Project schedule	YES	N/A
Appendix 6	Proof of payment	YES	NO



6 DECLARATION BY APPLICANT

I **Jacques Robert Kroon**, in my personal capacity or duly authorized thereto hereby declare/affirm all the information submitted or to be submitted as part of the application is true and correct, and that I:-

- am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") as amended, the Environmental Impact Assessment Regulations ("EIA Regulations") in terms of NEMA (Government Notice No. R. 982 refers) and any relevant specific environmental management act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- appointed the environmental assessment practitioner, where applicable, which meets all the requirements in terms of Regulation 13 of GN No. R. 982 to act as independent environmental assessment practitioner for this application;
- will provide the environmental assessment practitioner and specialist, where applicable, and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the NEMA EIA Regulations, 2014 and other environmental legislation including but not limited to –
 - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
 - costs incurred in respect of the undertaking of any process required in terms of the regulations;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the regulations;
 - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
 - the provision of security to ensure compliance with applicable management and mitigation measures;
- am responsible for complying with conditions that may be attached to any decision(s) issued by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of NEMA EIA Regulations, 2014 and other environmental legislation;
- hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or Environmental Assessment Practitioner is responsible in terms of the NEMA EIA Regulations, 2014 and any Specific Environmental Management Act; and
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to an appeal being decided (if there is an appeal) in terms of the NEMA Regulations, 2014.
- I realise that a false declaration is an offence and is punishable in terms of Section 49B of the Act

Signature of the applicant



KroonFamilie Trust

Name of company

20.11.2019

Date



Appendix 1

List of Landowners (with contact details) and proof of notification of land owners



List of landowners

PROPERTY DESCRIPTION	SIZE (HA)	REGISTERED OWNER	MORTGAGE BOND	TITLE DEED	SG DIAGRAM
Portions of the farm Hartebeestfontein 445 JQ:					
• Remaining Extent of Portion 33	12,929	E.D. Ras	Barclays/ABSA R180 000 FNB R400 000	T26597/1976	SG487/28
• Remaining Extent of Portion 168	5,1117	E.D. Ras	Ras SW – R20 000	T32449/1984	SG4312/84
• Portion 322	12,8480	Kroon Familie Trust	Not Applicable	T43774/2019	SG11989/07
• Portion 107	9,4219	D Olivier WPH Olivier L Olivier AJ Olivier	ABSA R35 000	T28280/2005	SG7114/47

Appendix 2

List of co-ordinates and/or SGIDs for more activities in different areas

Not Applicable



Appendix 3

Copies of Environmental Authorisations obtained for the same property

Not Applicable

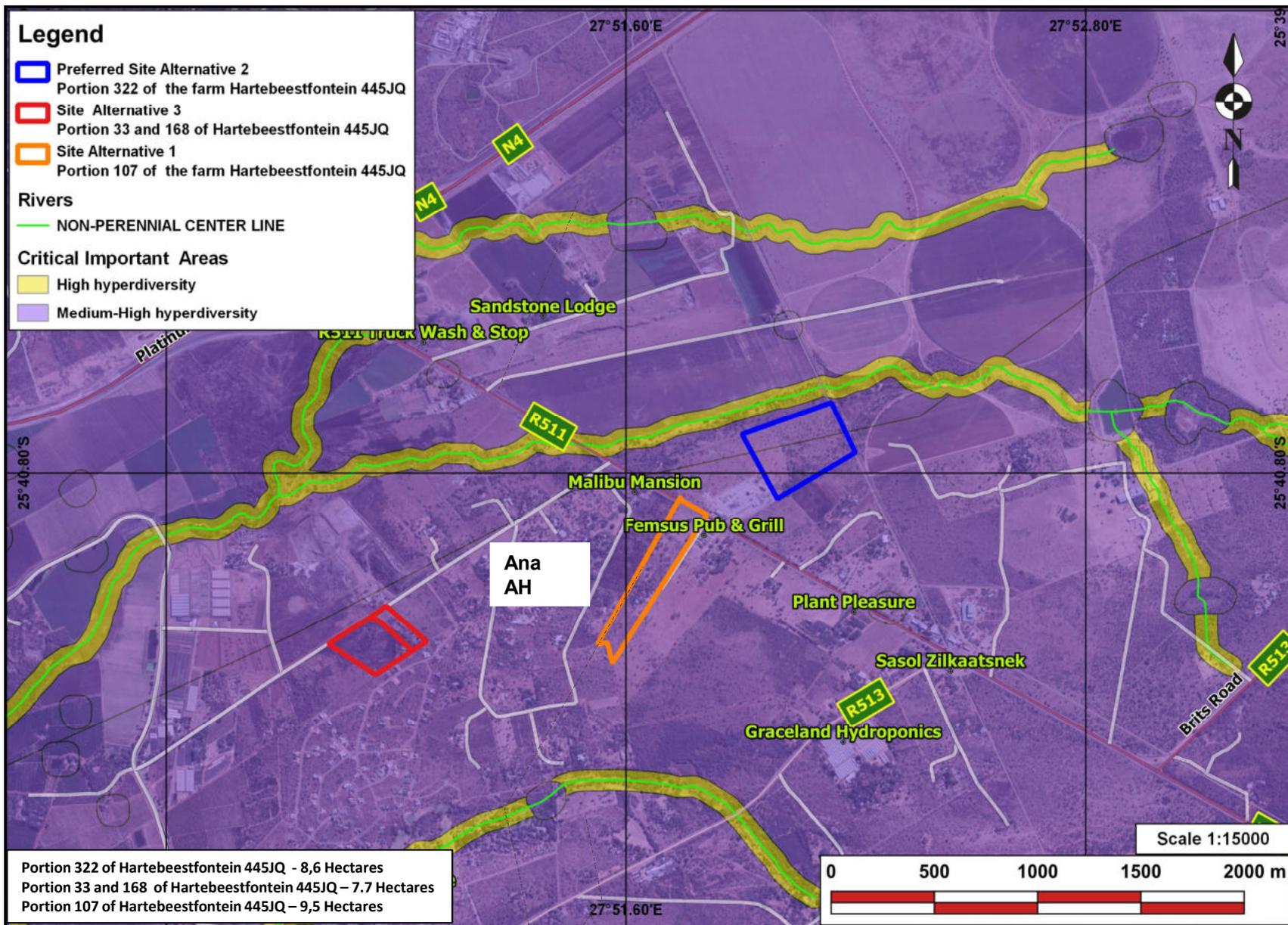


Appendix 4

Map indicating study areas for GN R.985



Kroon Chicken Hatchery Critical Important Areas



Appendix 5
Project Schedule



Appendix 6
Proof of Payment





Internet Banking
Standard Bank Centre
5 Simmonds Street, Johannesburg
2001

P.O. Box 2577, Johannesburg, 2000
Telephone: 0860 123 000
International: +27 11 299 4701
Fax: +27 11 631 4456

Website: www.standardbank.co.za

Hello,

We confirm that the following payment has been made into your account from Lizelle:

Reference number	1582581255
Beneficiary name	NW DEP RURAL, ENVIRO
Bank name	FIRSTRAND BANK
Beneficiary account number	0000062811750042
Beneficiary branch number	250655
Beneficiary reference	1419EABOJ
Amount	R 2 000.00
Payment date and time	2019-07-01,08:42

If you need more information or have any questions about this payment, please contact:

Lizelle.
0832558384.

Payments to Standard Bank accounts may take up to one day.
Payments to other banks may take up to three business days.
Please check your account to confirm that you have received this payment.

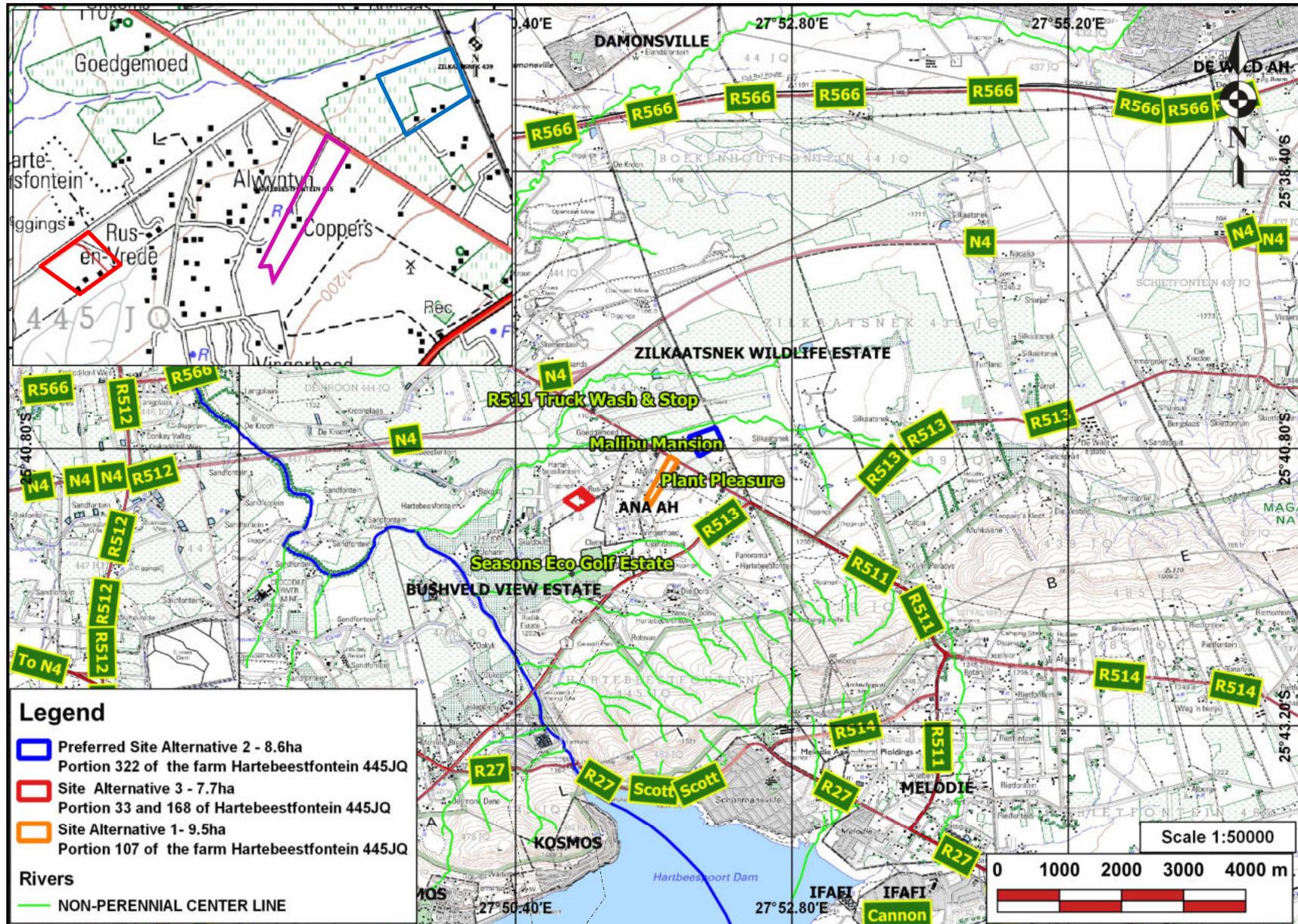
Regards,

The online banking team

Appendix A:

A3 Locality Map

Kroon Chicken Hatchery Locality



Appendix B:

Layout Plan and Sensitivity Maps

Appendix B1:

Site Layout Plan

Kroon's Hatchery: Preferred Layout Concept, Storm Water Concept and Effluent Handling Concept Plan

GENERAL NOTES :
 Copyright is vested in this document and no use or reproduction or duplication thereof may occur without the written consent of the author.

1. Contractor to check and verify sufficiency of information, levels and dimensions on drawing before commencing work.
2. Report any omissions, discrepancies or errors immediately to the landscape architects.
3. Do not scale dimensions from drawing.
4. Should the contractor proceed without the above approval, he does so entirely at his own risk.
5. Soil will be sloped to assist with the storm water drainage.
6. All existing trees on the site should be marked and assessed.
7. Plant 1 tree for every second open parking bay.



LEGEND

- Site Boundary
- Cement Factory Boundary
- 9.44m Wide Servitude/Access Road
- Non-Perennial Watercourse
- 32m Watercourse Buffer
- 100m Regulated Area
- 100m Regulated Area Boundary
- Compacted Ground Driveway
- Paved Area
- Washing Bay and Overnight Parking
- Servitudes
- Footbath
- Existing Structure
- Spray Boom/ Access to Site
- Existing Trees
- Vehicle Movement
- Storm Water Direction Diagram

NOTES PERTAINING TO STORM WATER:

- It is recommended that all storm water be channeled away from the facility.
- Industrial storm water (i.e. water that flows over paving areas where vehicles and trucks park or any other surfaces where industrial activities occur) **SHOULD BE SEPARATED** from natural storm water.
- Industrial storm water should go through a filtration system before released into the settling pond.

Filtration system

Industrial storm water

1. It is recommended that water be channeled to a storm water drainage point with a grid cover to remove litter and other large solids.
2. The water should then flow into a silt trap followed by an oil/grease trap.
3. The water should then flow into the packaging plant.
4. From the packaging plant water should flow into a settling pond.

Industrial Effluent

Industrial effluent in the case of the hatchery will consist of water contaminated during the cleaning processes of the hatchery (this water may contain manure and soap).

1. It is recommended that water be channeled to a drainage point with a grid cover to remove litter and other large solids.
2. The water should then flow into an effluent pit.
3. The water should then flow into a silt trap followed by an oil/grease trap.
4. Water should then flow into the packaging plant.
5. From the packaging plant water should flow into a settling pond.

OTHER NOTES

It is recommended that green technology be used in the functioning of the facility.

Rain water harvesting: The roof top of the hatchery can be used to catch water that will be diverted into water tanks via storm water gutters. The tanks may be situated at the corners of the hatchery on ground level.

Solar Power: Solar panels can be installed on the roof tops of the layer houses to generate electricity for the facility. Please note that a backup generators should be provided.

BOKAMOS
 Landscape Architects & Environmental Consultants CC

36 Lebombo Road, Ashlea Gardens, 0081
 PO Box 11375, Maroelana, 0161
 Email: reception@bokamoso.net
 Tel: (012) 346 3810
 Fax: 086 570 5659

PROJECT DESCRIPTION:
Kroon's Hatchery
 - Concept Site Layout Plan

CLIENT: Kroon Familie Trust
 DESCRIPTION: Site Layout Plan

DATE: 11/11/2019 SCALE: Varies
 PAPER SIZE: A1

DRAWN: L van Wyk BSc(Larch) (UP)	CHK: L Gregory BL Arch (UP) SACLAP nr: 97078	COMPUTER NUMBER: KroonsHatchery-Layoutplan-03Dec2019-rev7 REVISION: 07
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DRAWING NUMBER: 1 of 1

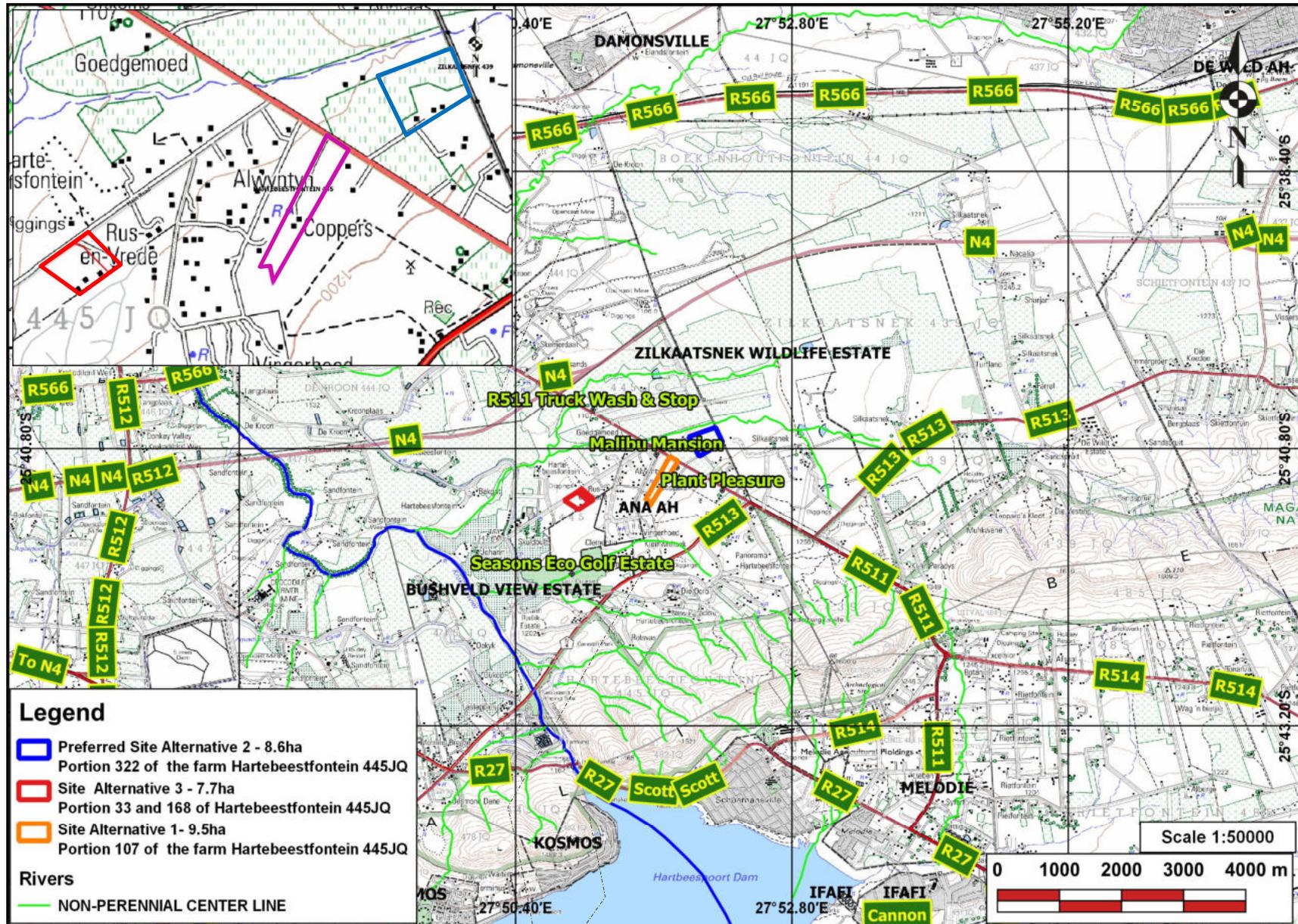
LOCATION: Madibeng Local Municipality, North West Province.
 Portion 322 Of The Farm Hartebeestfontein 445 JQ.

Chicken Hatchery Site Layout Plan - Scale 1:1500

Appendix B2:

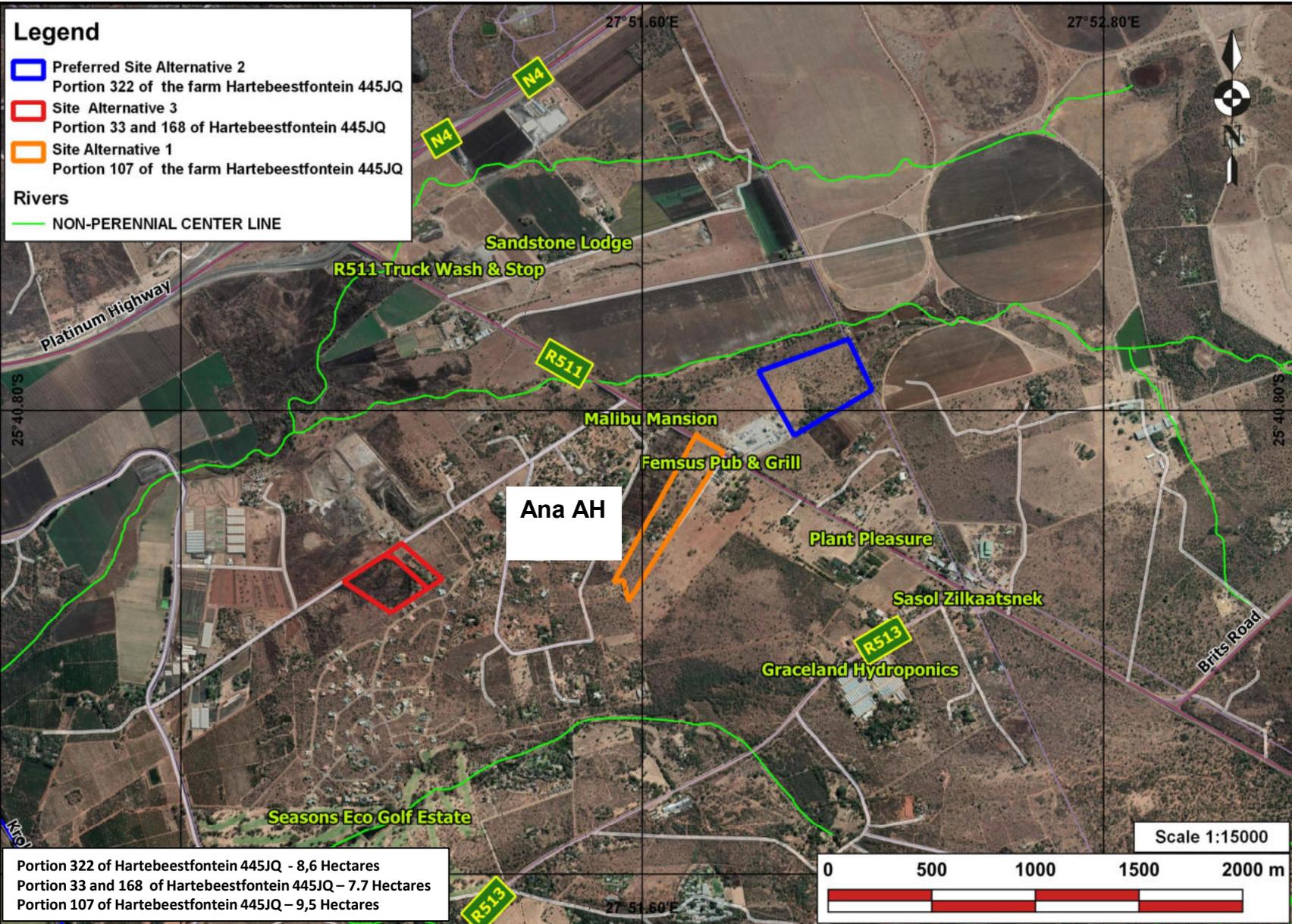
Sensitivity Maps

Kroon Chicken Hatchery Locality

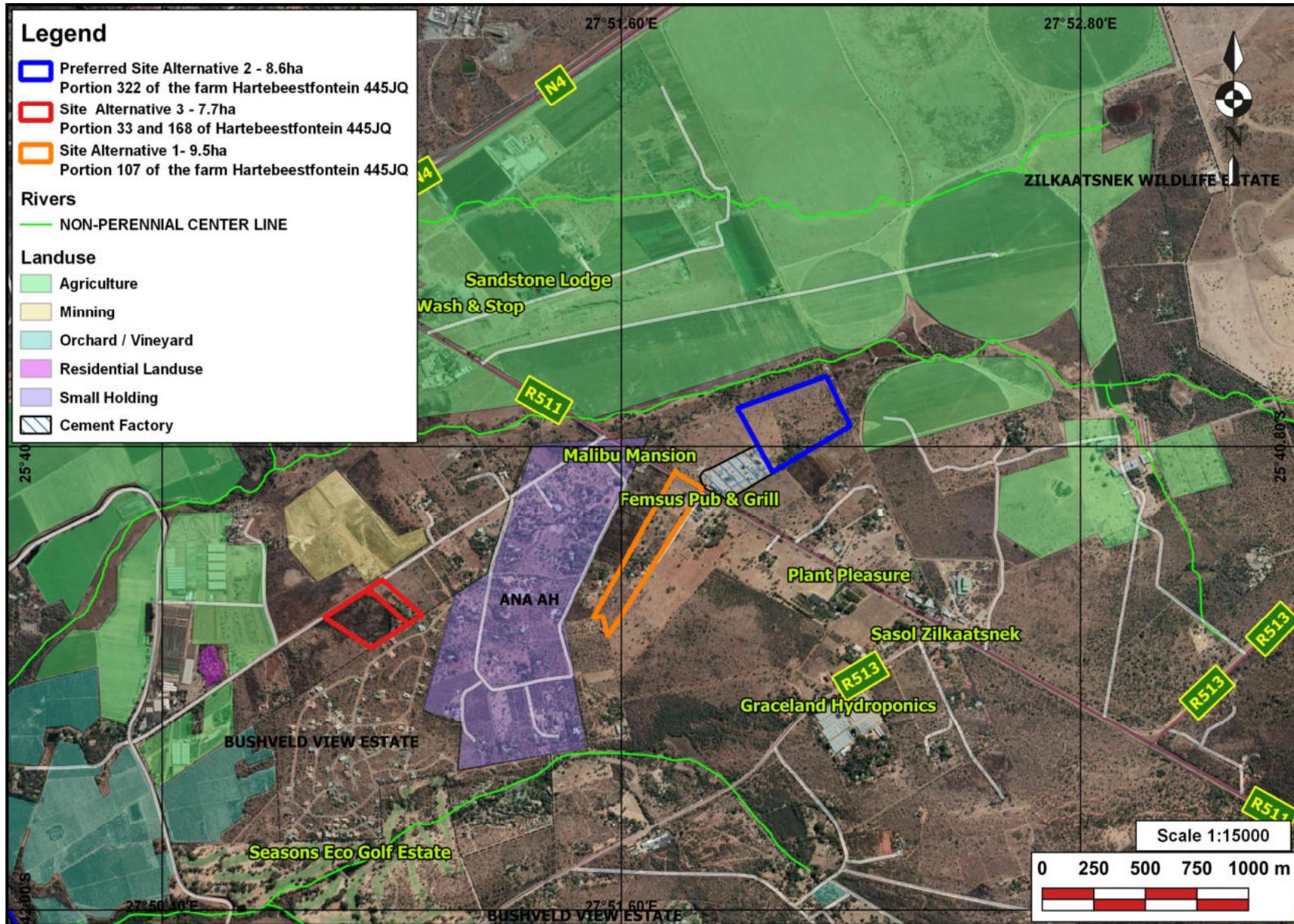


Kroon Chicken Hatcheries

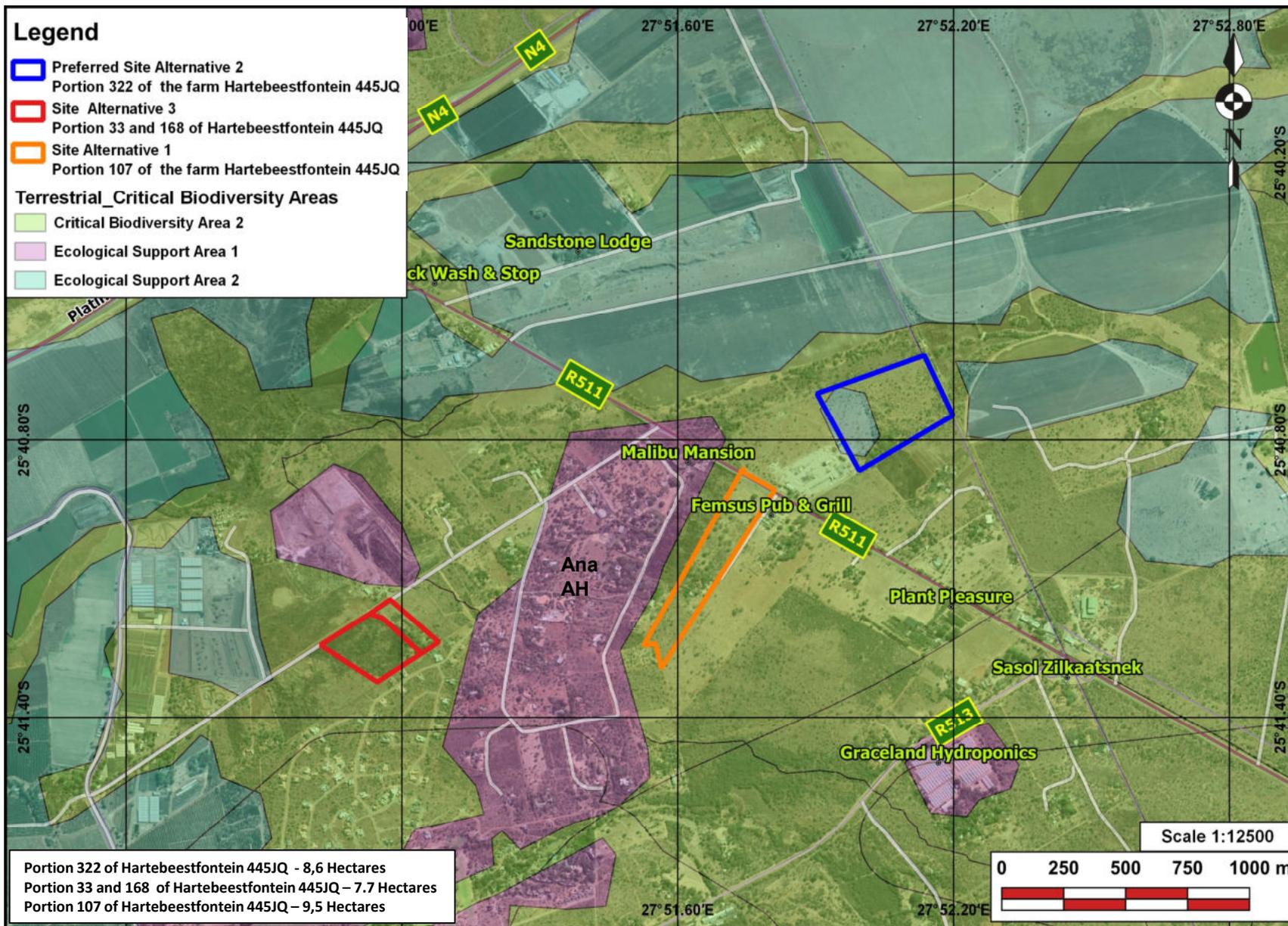
Aerial



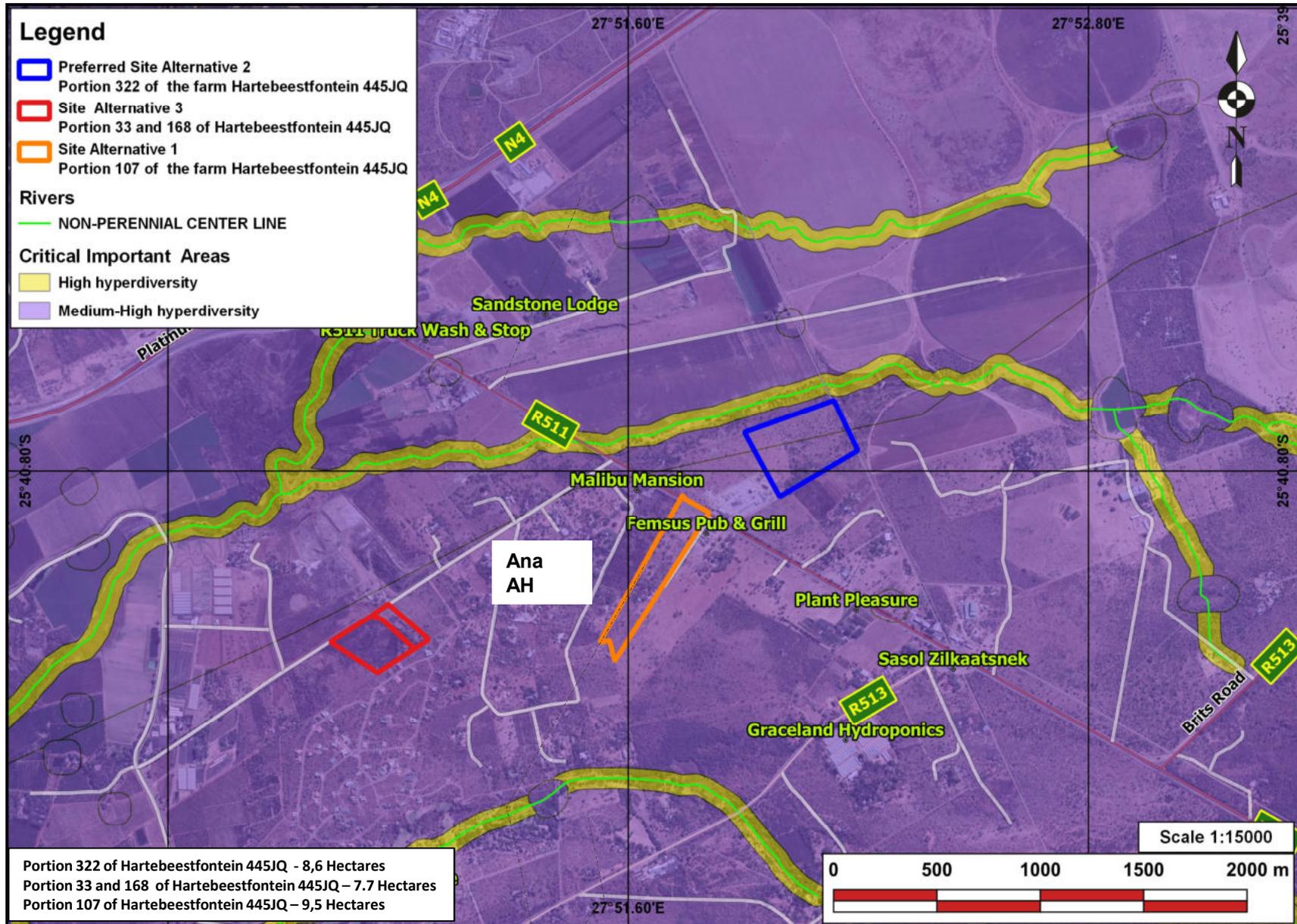
Kroon Chicken Hatchery Landuse



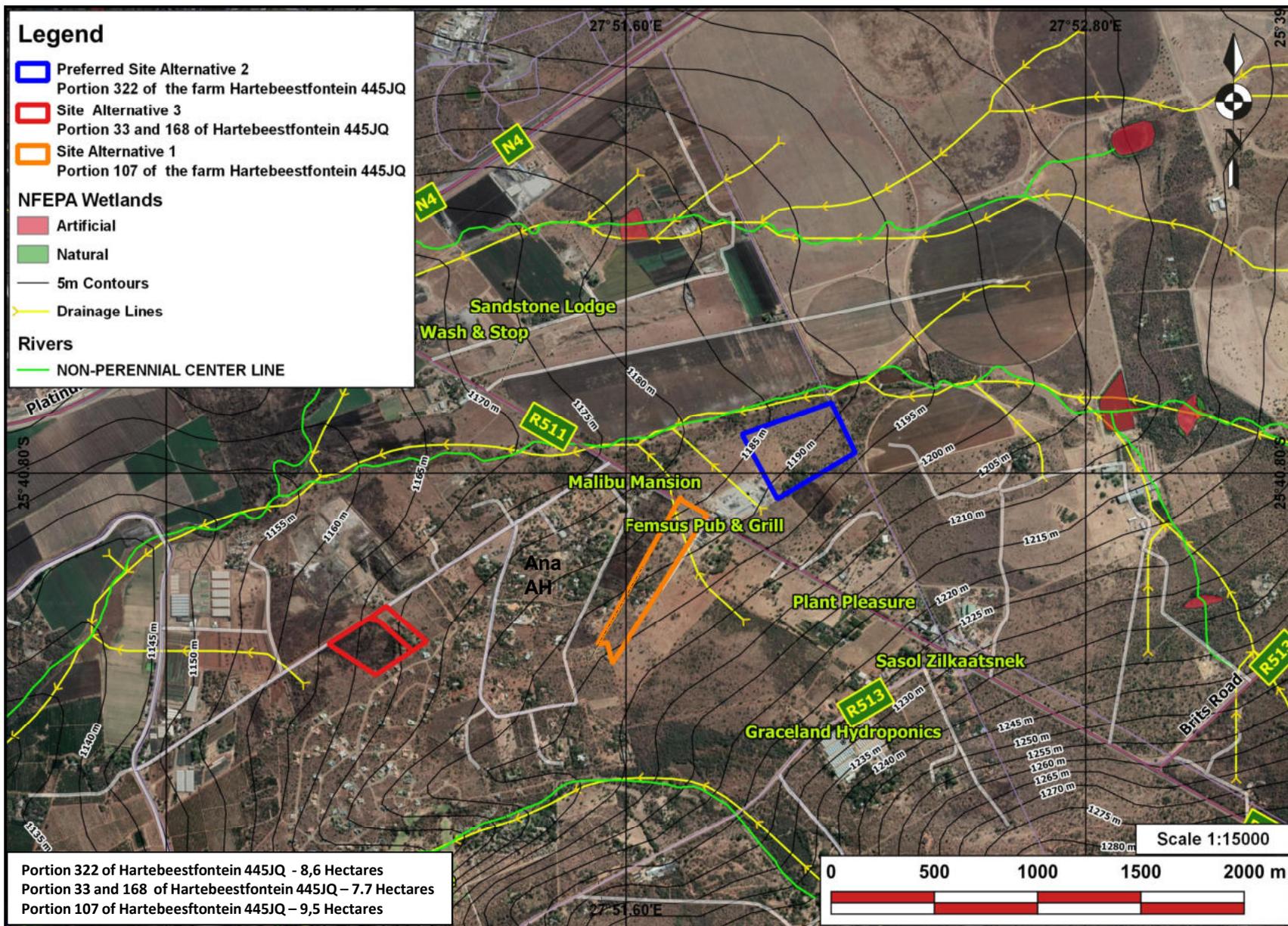
Kroon Chicken Hatchery Critical Biodiversity Areas



Kroon Chicken Hatchery Critical Important Areas

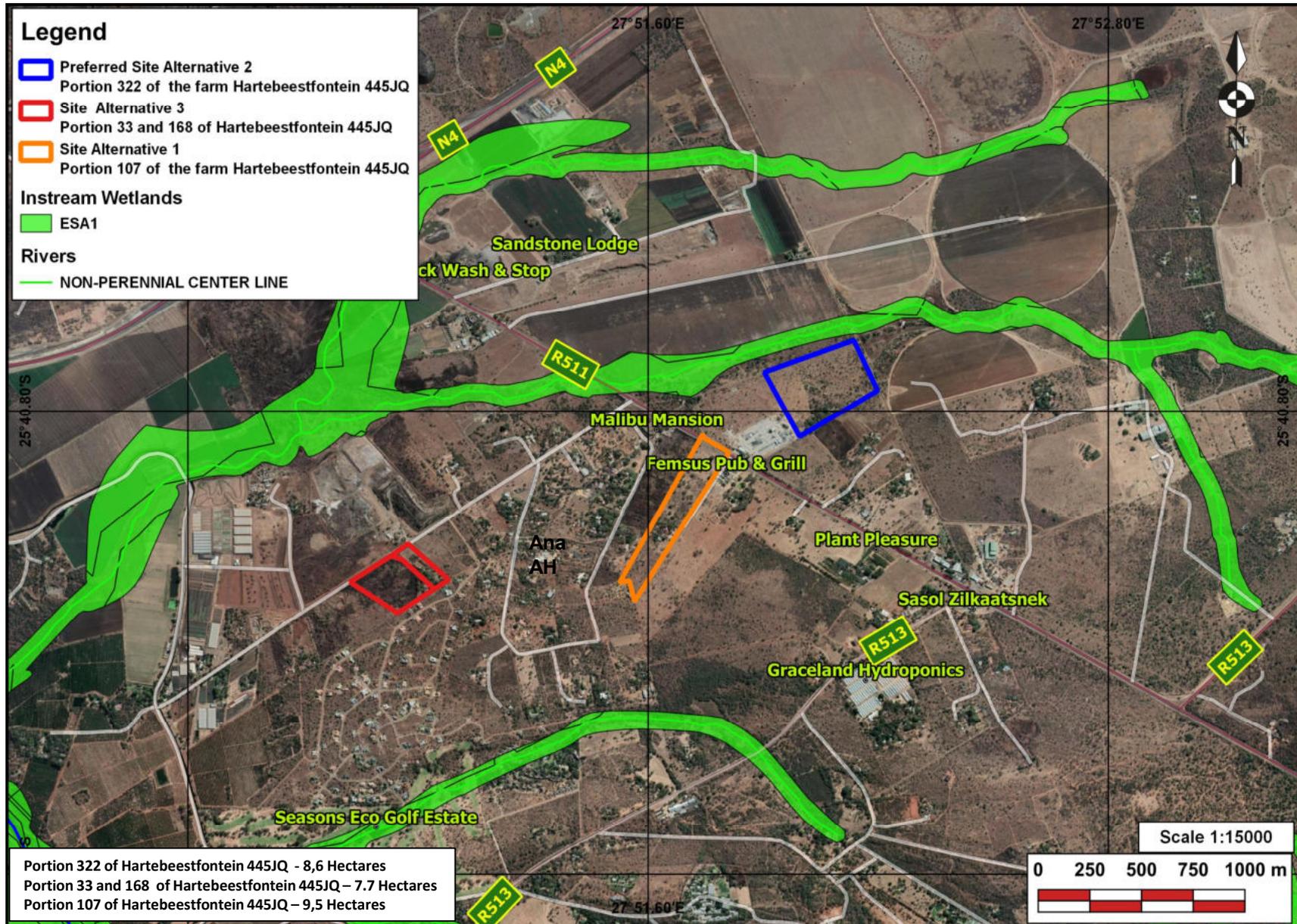


Kroon Chicken Hatcheries Hydrology

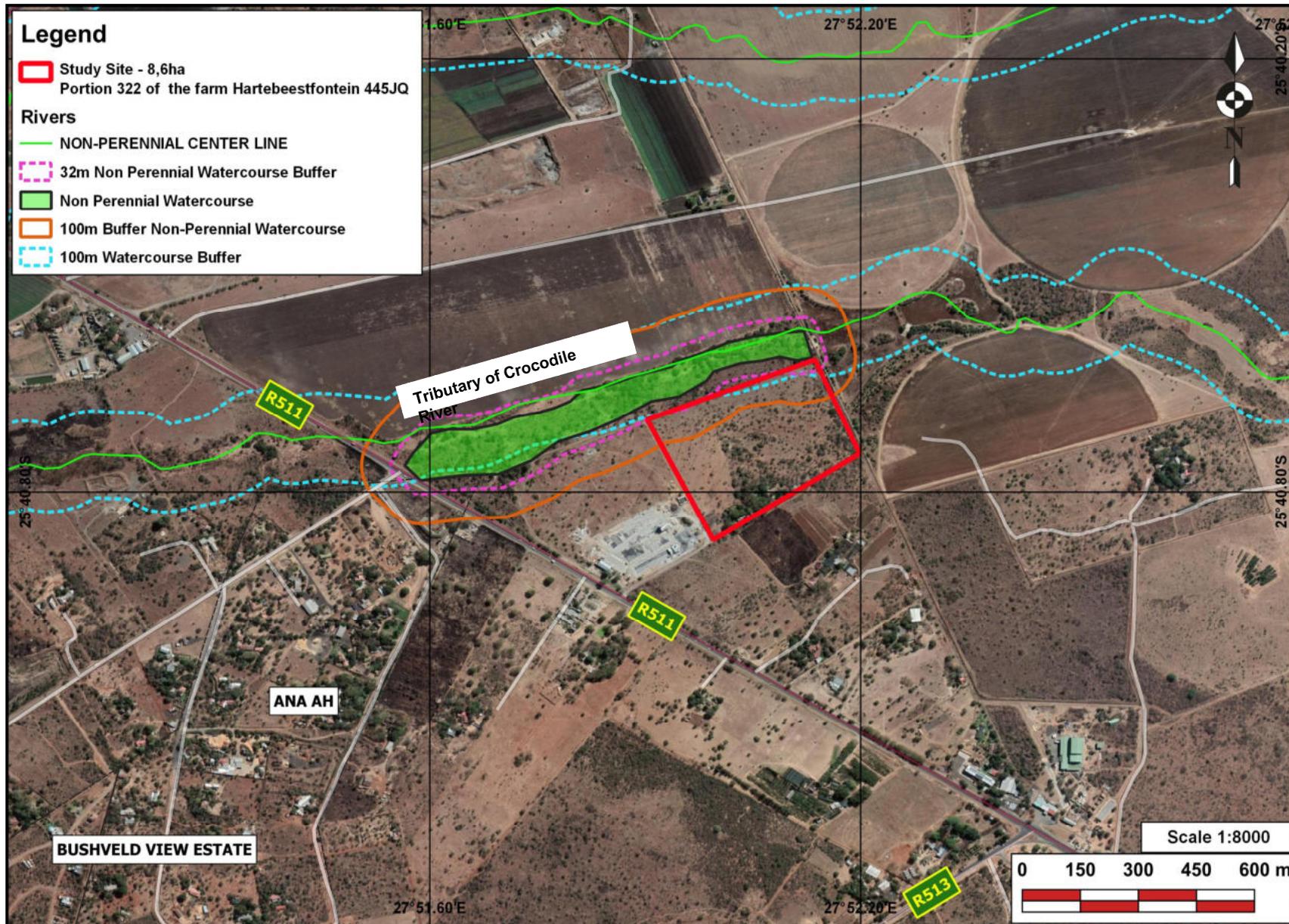


Contours and drainage lines created with SRTM 30m Elevation model acquired from Consortium for Spatial Information

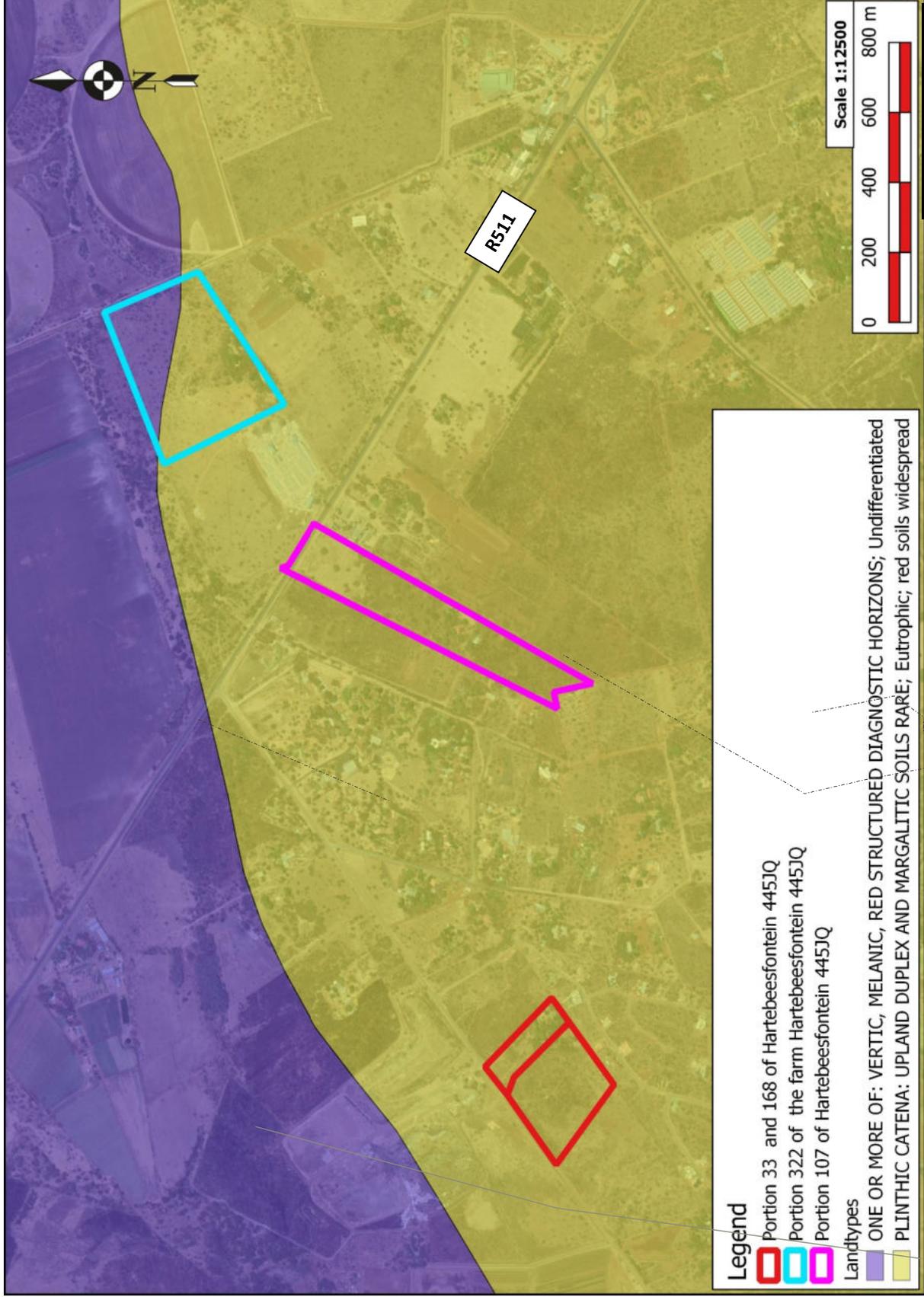
Kroon Chicken Hatchery Wetlands Instream



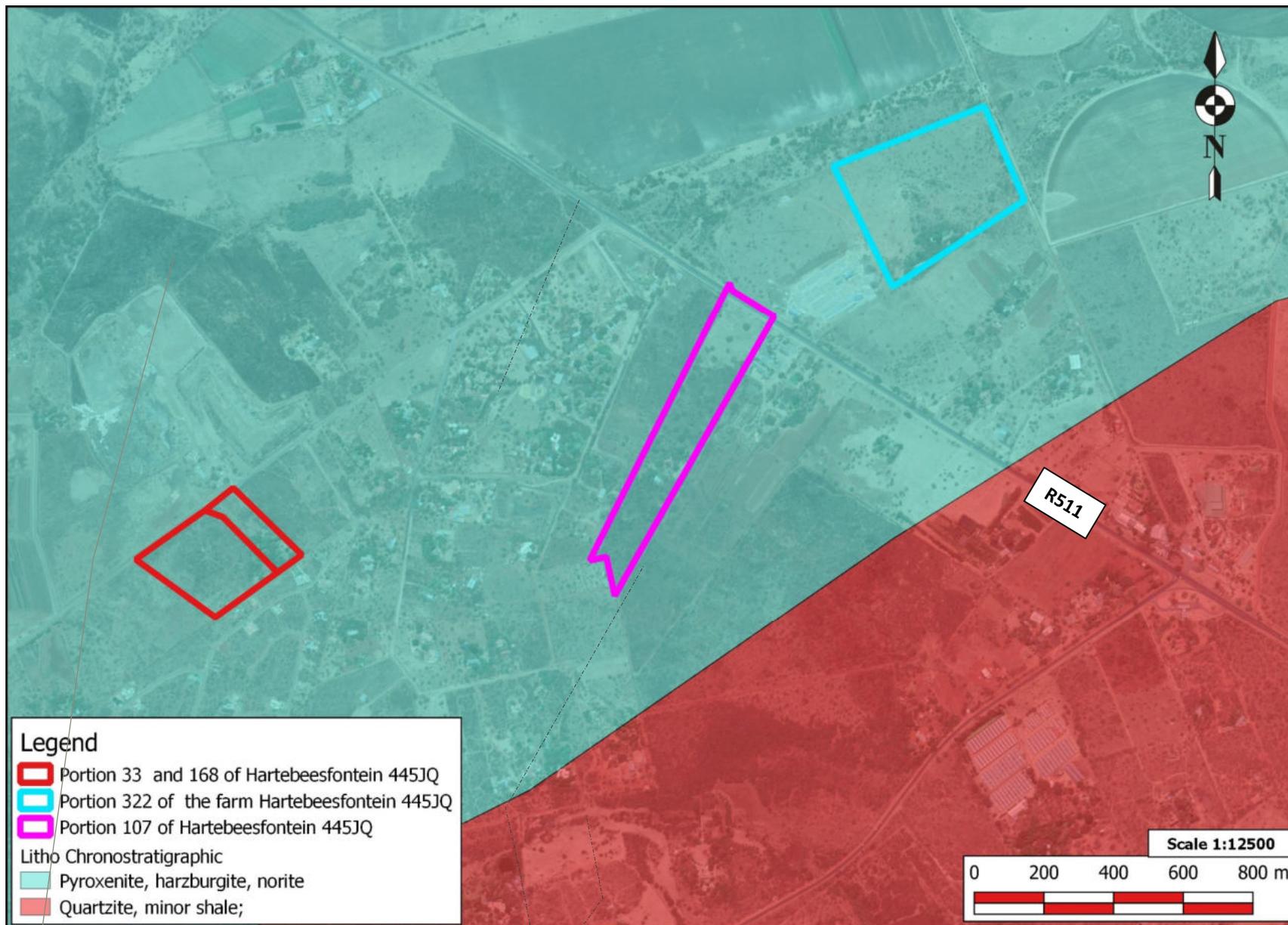
Kroon Chicken Hatchery Watercourse



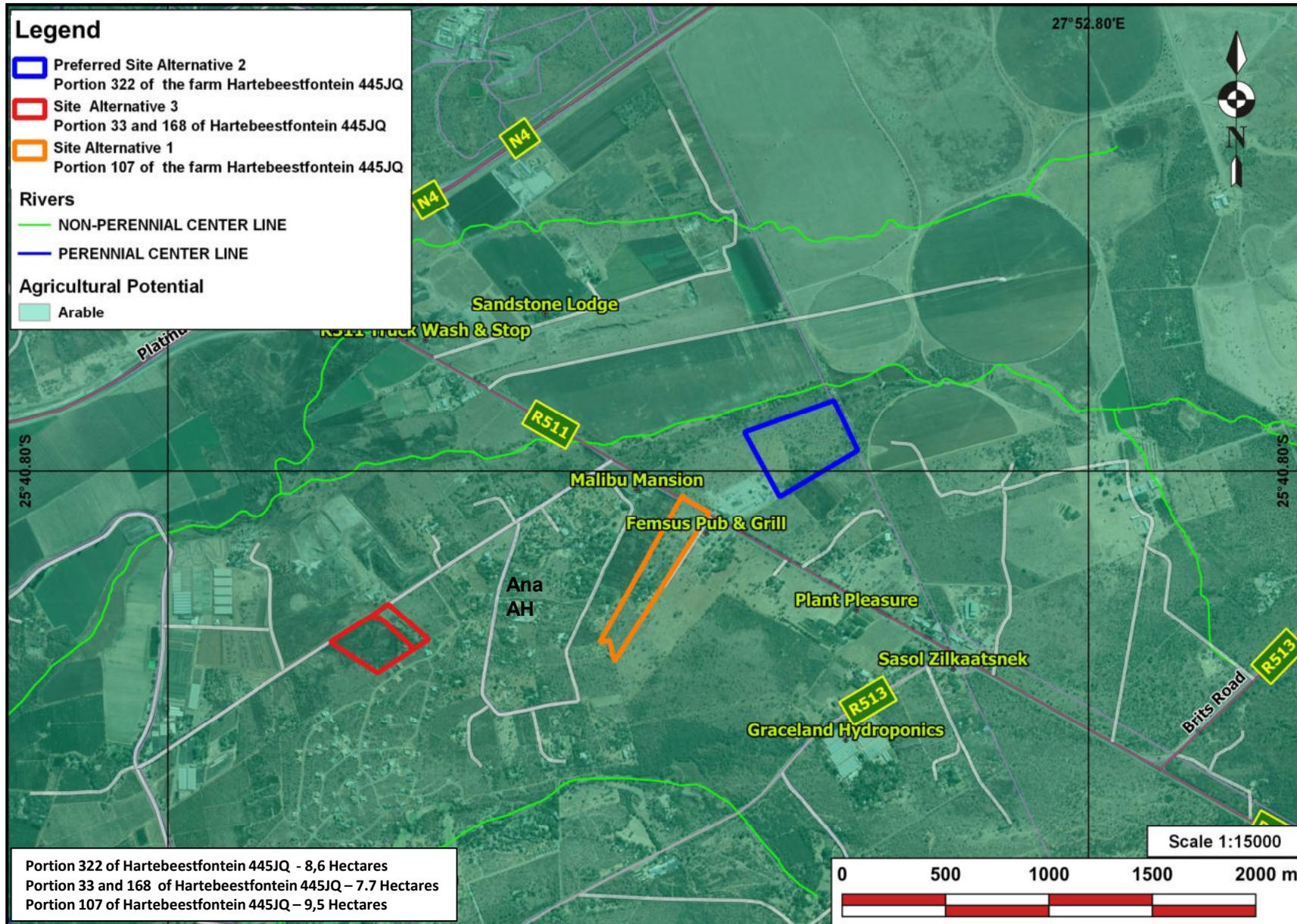
Portion 322 of the farm Hartebeesfontein 445JQ



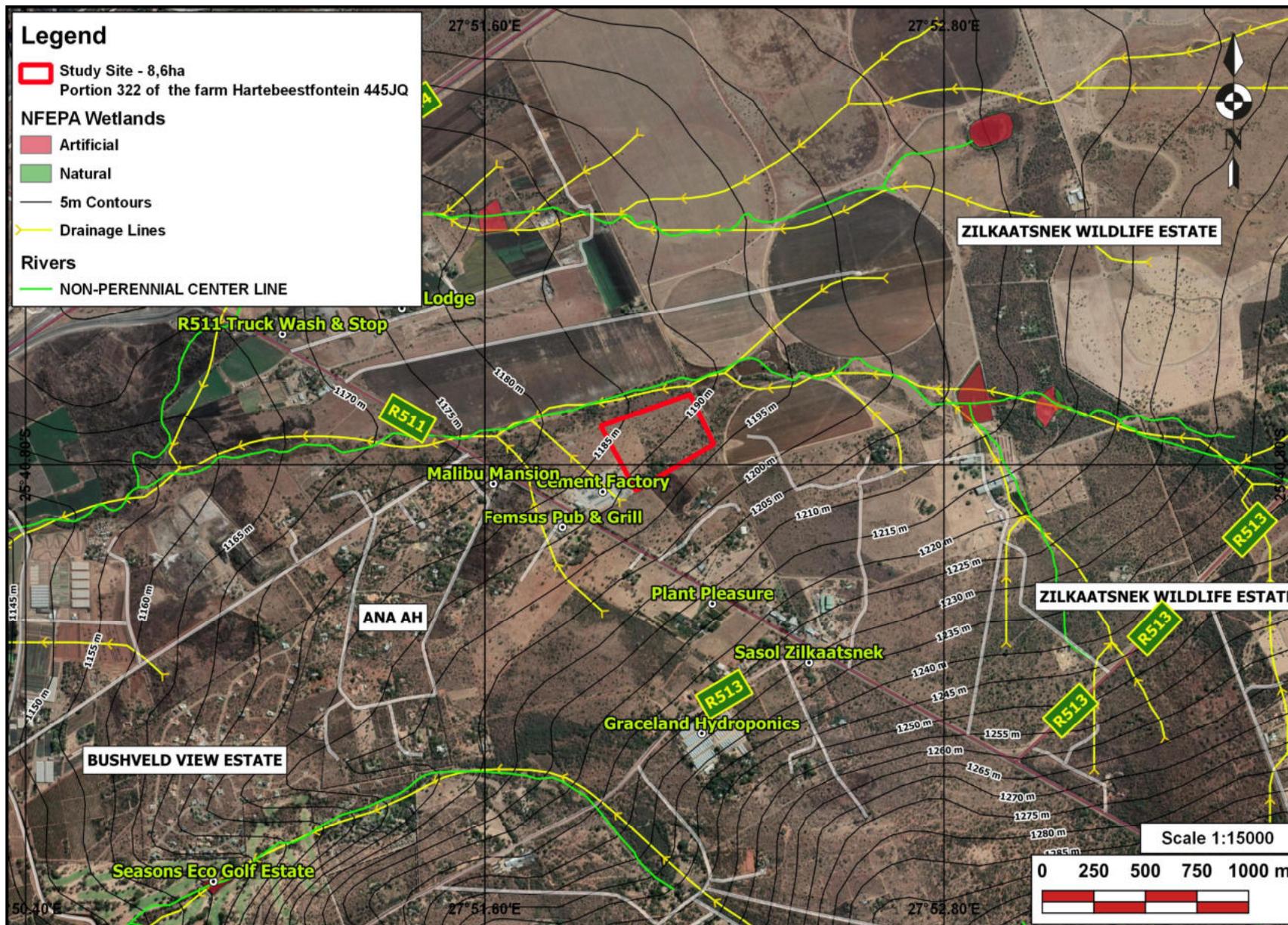
Kroon Chicken Hatchery Geology



Kroon Chicken Hatchery Agricultural Potential

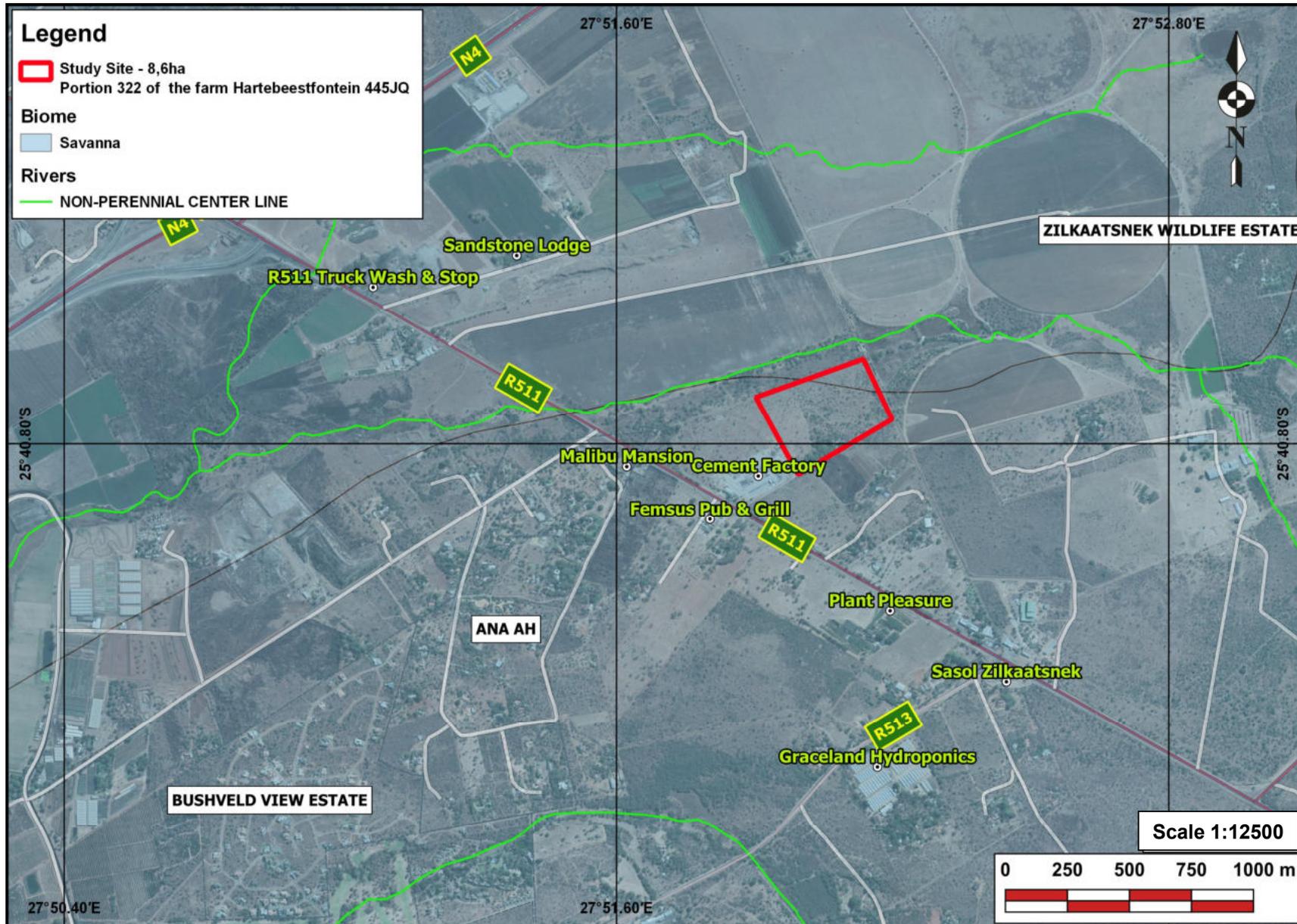


Kroon Chicken Hatcheries Hydrology



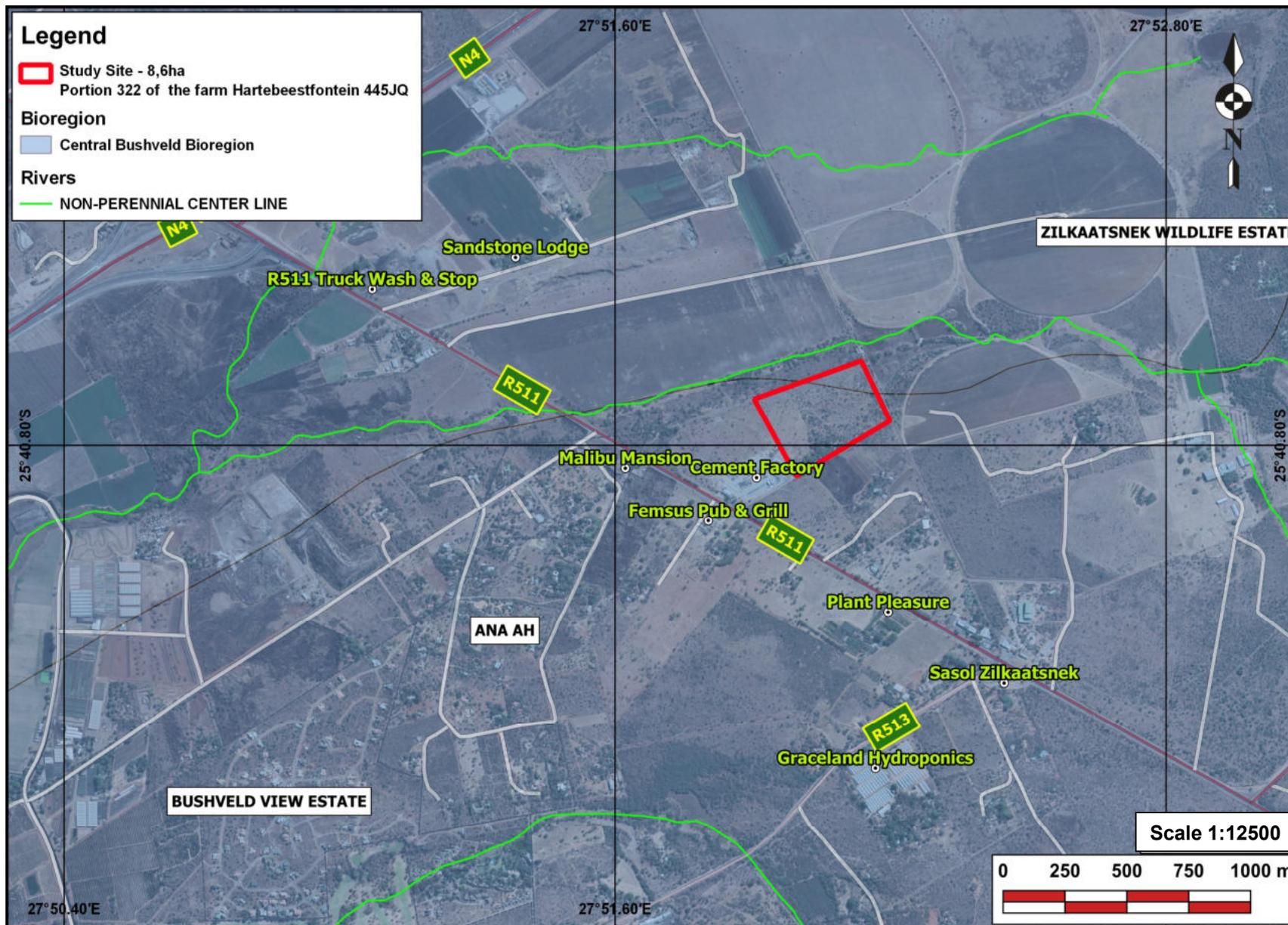
Portion 322 of the farm Hartebeestfontein 445JQ

Kroon Chicken Hatchery Biome



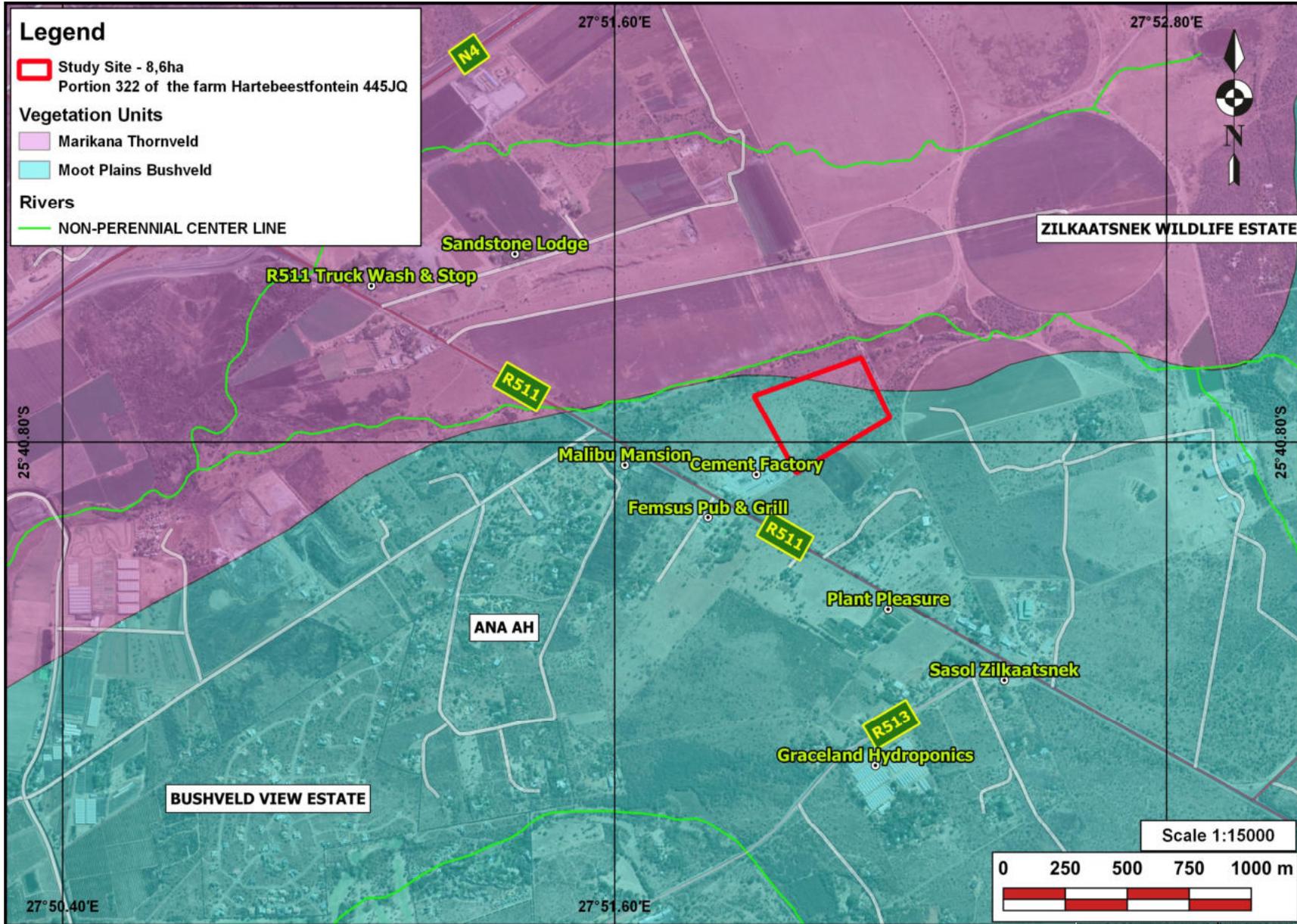
Portion 322 of the farm Hartebeesfontein 445JQ

Kroon Chicken Hatchery Bioregion



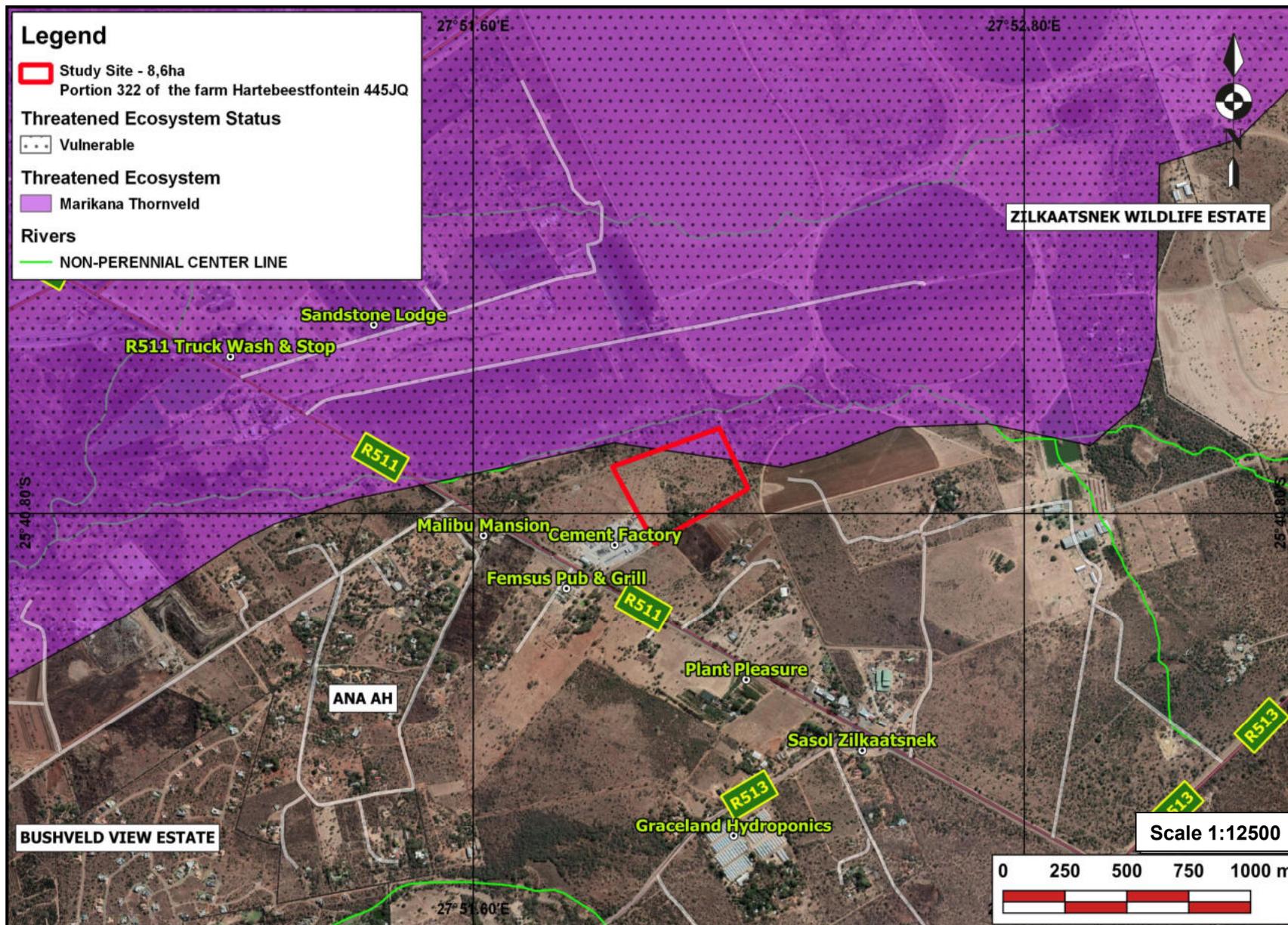
Portion 322 of the farm Hartebeestfontein 445JQ

Kroon Chicken Hatchery Vegetation Units



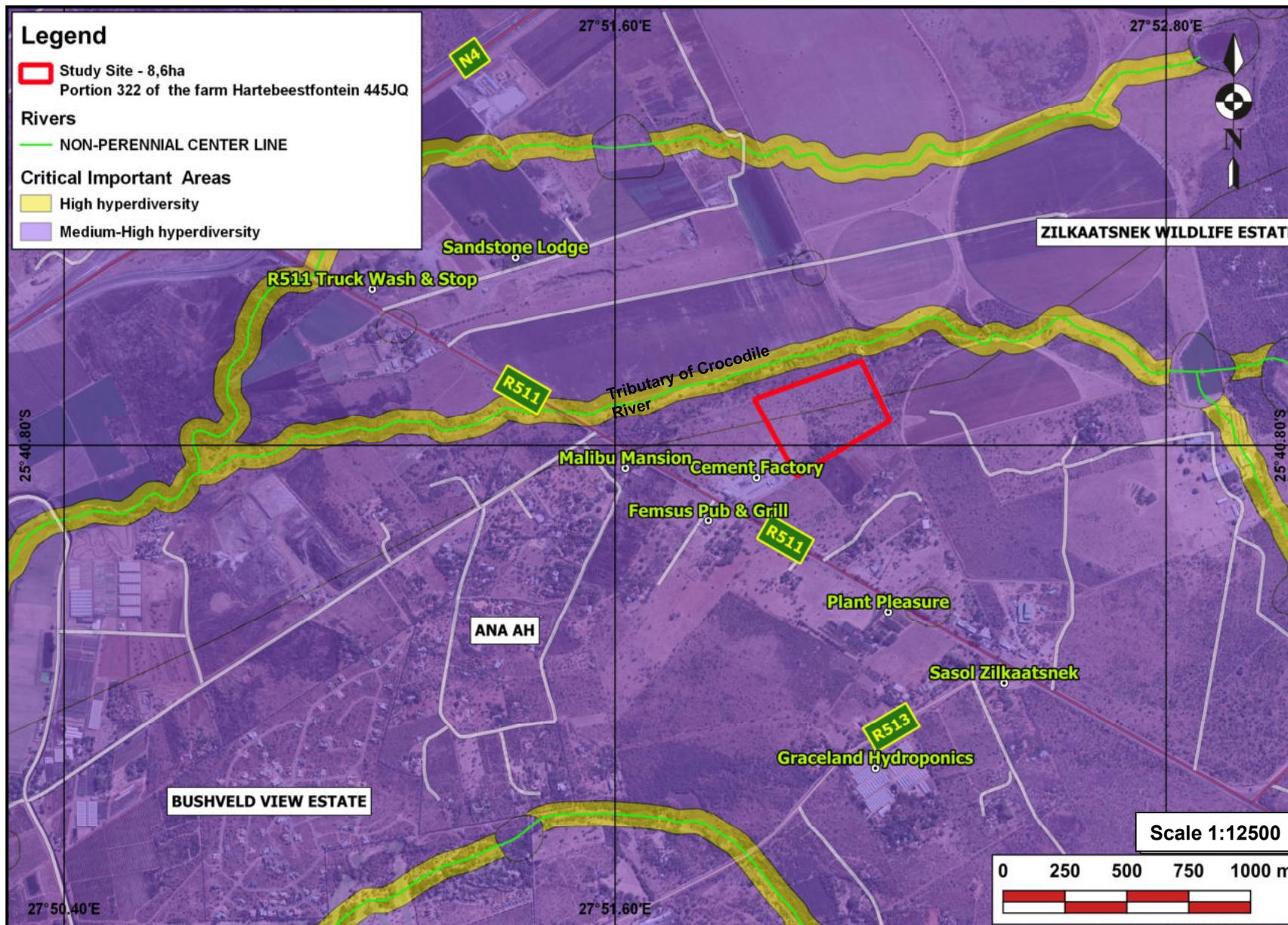
Portion 322 of the farm Hartebeesfontein 445JQ

Kroon Chicken Hatchery Threatened Ecosystem



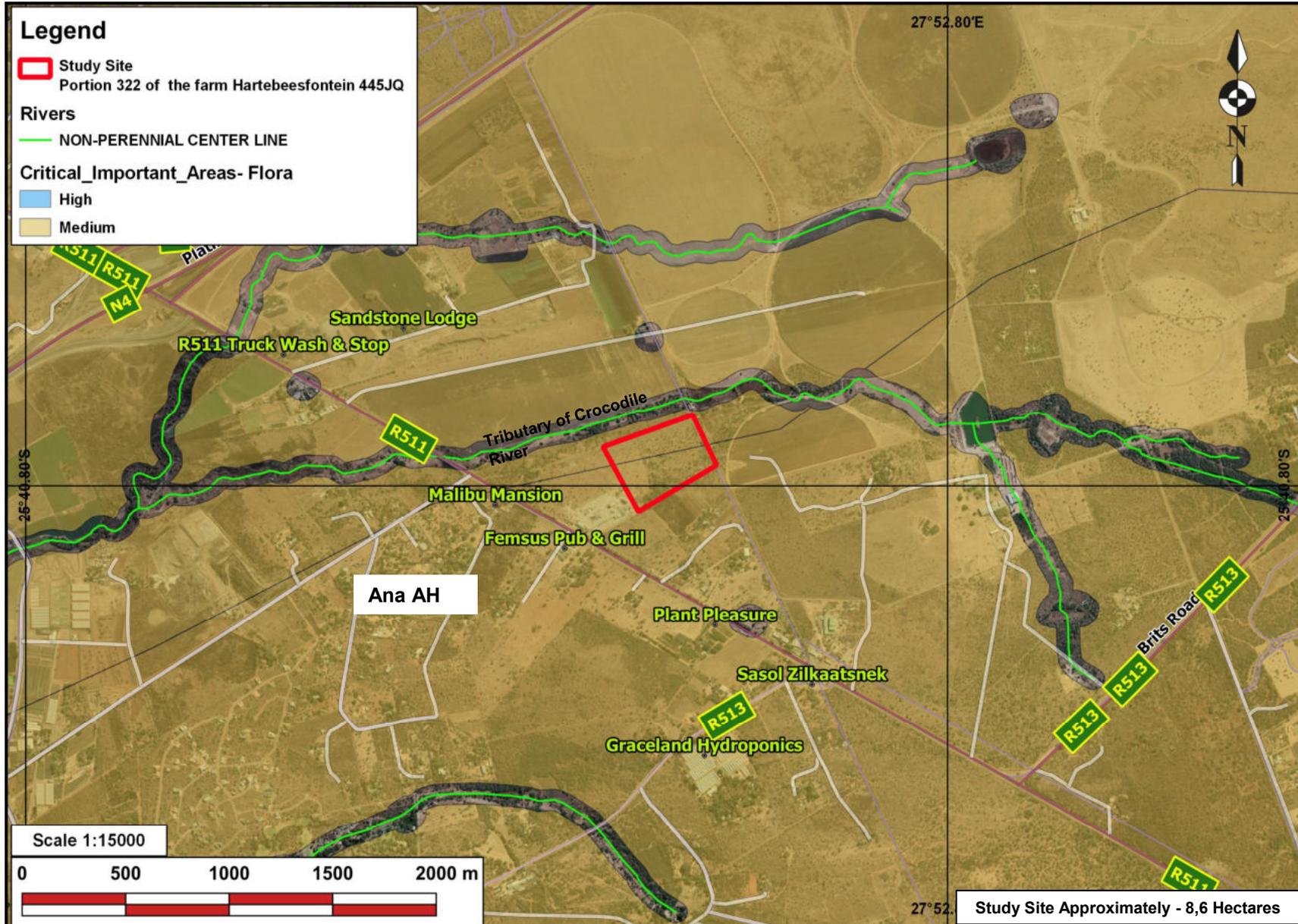
Portion 322 of the farm Hartebeestfontein 445JQ

Kroon Chicken Hatchery Critical Important Areas



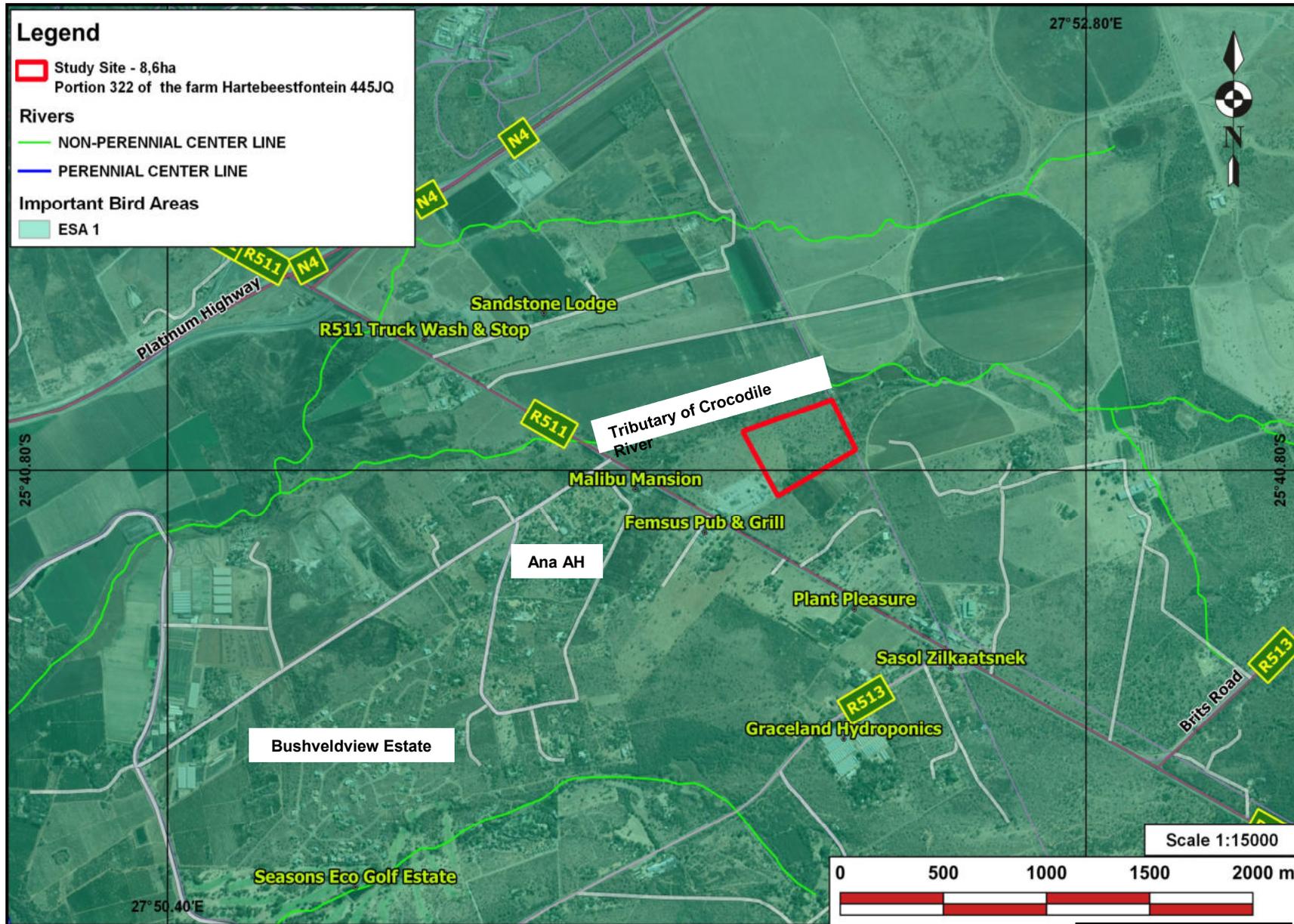
Portion 322 of the farm Hartebeesfontein 445JQ

Kroon Chicken Hatchery Critical Important Areas- Flora



Location Coordinates: 25°40'44" S, 27°52'3" E Portion 322 of the farm Hartebeesfontein 445JQ

Kroon Chicken Hatchery Important Bird Areas



Location Coordinates: 25°40'44" S, 27°52'3" E

Portion 322 of the farm Hartebeestfontein 445JQ

Appendix C:

Photographs

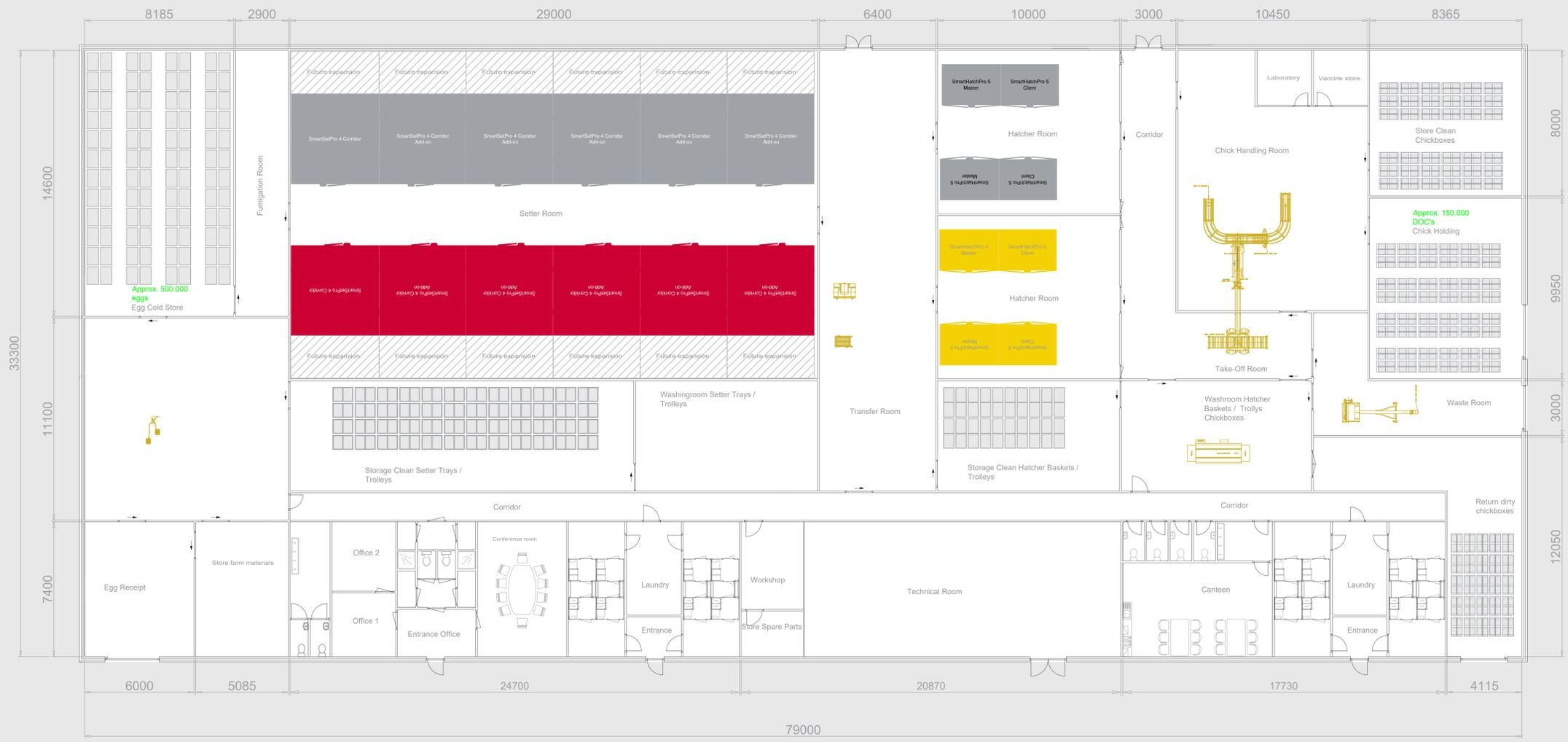




Appendix D:

Facility illustration(s)

Plant Layout Plan

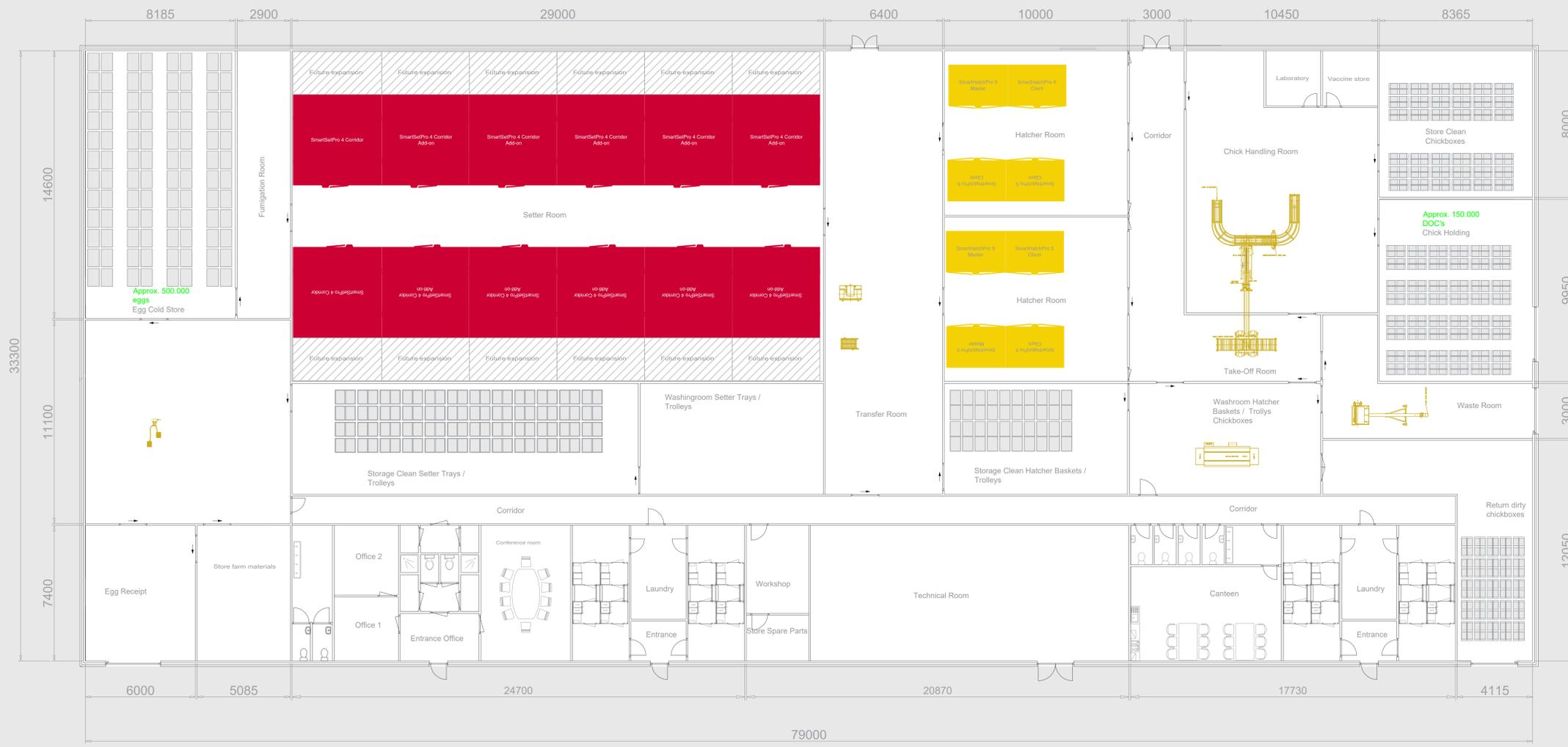


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Drawing number:	D181116	Description: LO-01 Hatchery Layout
Project number:		Drawn by: H.M.
Revision:	0	Description: Phase 1
Accord by:		Accord date:
Status:	Preliminary Design	Sizes in: mm
<small>The drawing is property of Pas Reform B.V. Reproduction or disclosure to a third party in any form is not allowed. P.O. Box 2, 7038 ZD Zeeland, The Netherlands, www.pasreform.com Tel: +31 (0)314 699 111 Fax: +31 (0)314 692 575</small>		Scale: 1:100
		A0

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7038 CH Zeeland
The Netherlands
www.pasreform.com

Pas Reform
Hatchery Technologies



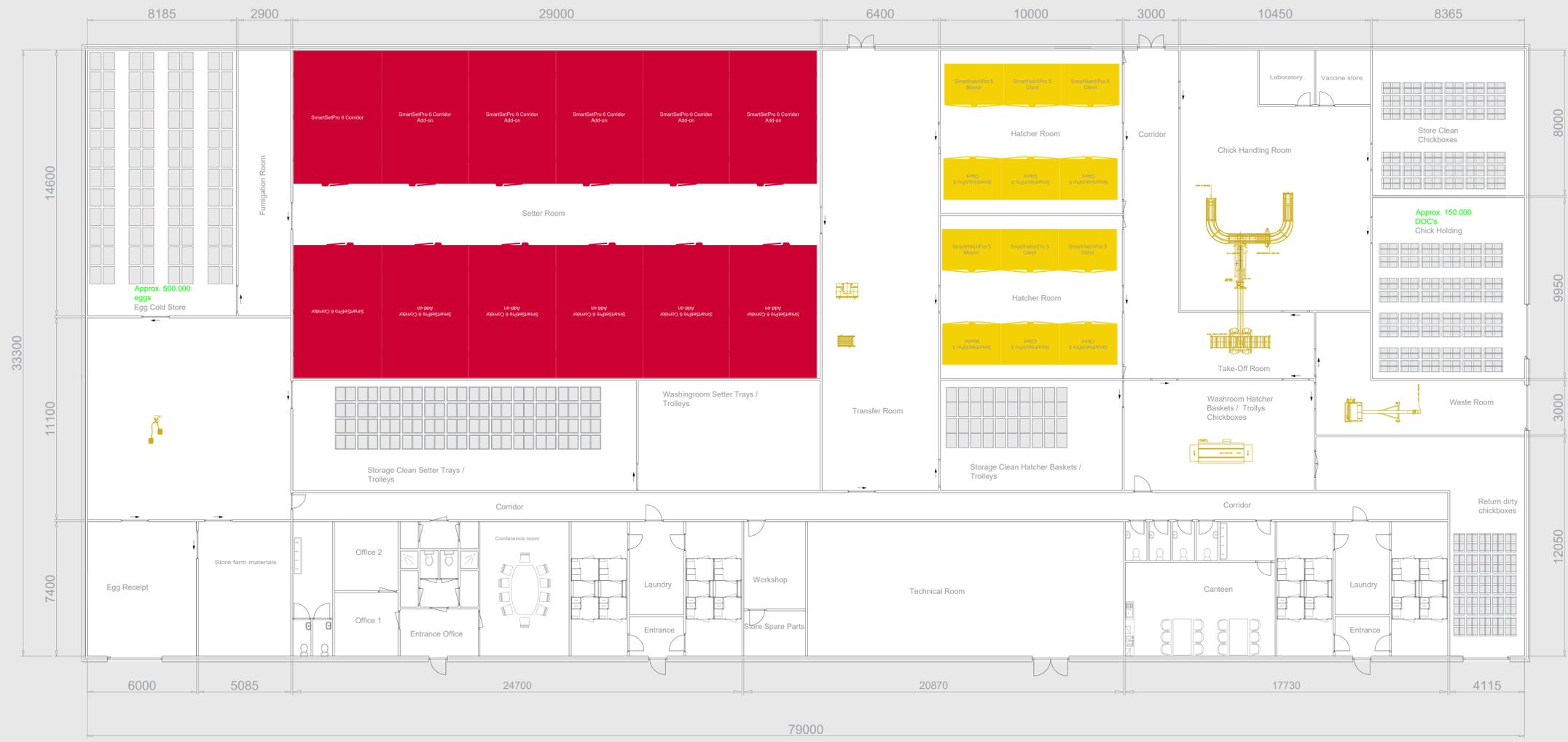


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Project number:		Drawn by: H.M.
Revision:	0	Description: Phase 2
Accord by:		Accord date:
Status:	Preliminary Design	Sizes in: mm
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 7038 CH Zeeland
 The Netherlands
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Pas Reform
 Hatchery Technologies



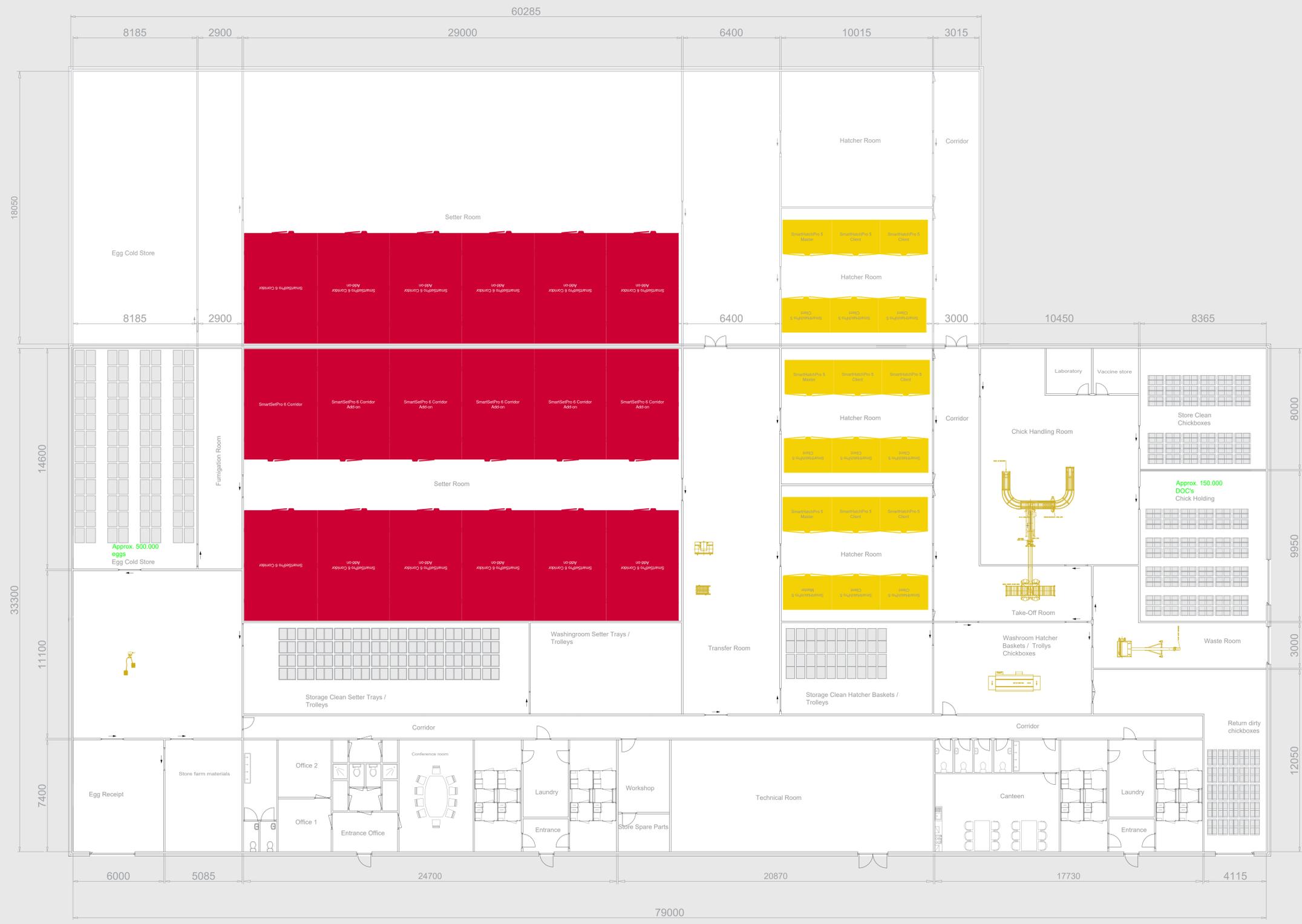


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Drawing number:	D181116	Description: LO-01 Hatchery Layout
Project number:		Drawn by: H.M.
Revision:	0	Description: Phase 3
Accord by:		Accord date:
Status:	Preliminary Design	Sizes in: mm
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P.O. Box 2, 7038 ZJ Zeeland, The Netherlands, www.pasreform.com Tel: +31 (0)314 699 111 Fax: +31 (0)314 692 575		A0

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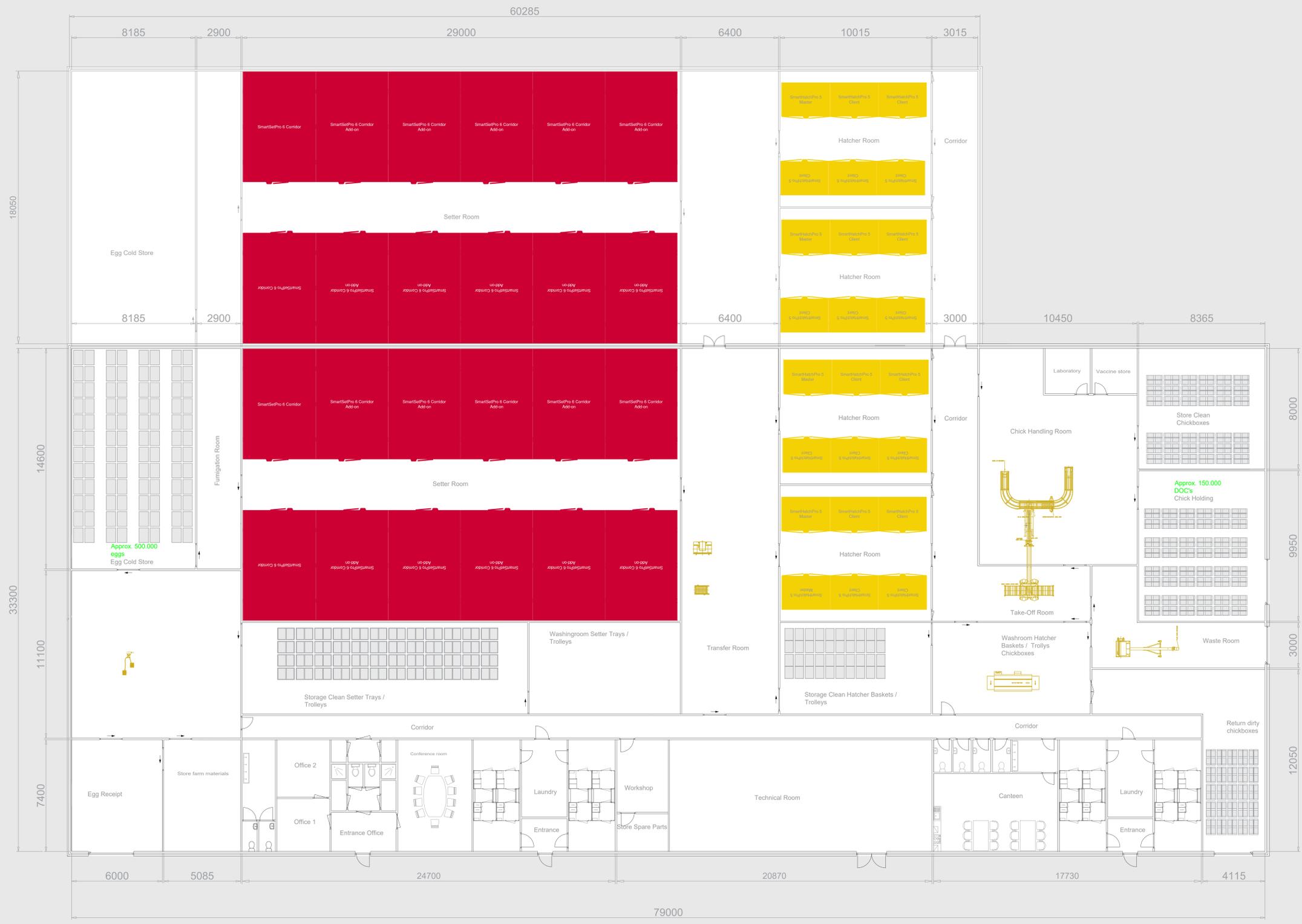


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Project number:		Drawn by: H.M.
Revision:	0	Description: Phase 4
Accord by:		Accord date:
Status:	Preliminary Design	Sizes in: mm
<small>The drawing is property of Pas Reform B.V. Reproduction or disclosure to a third party in any form is not allowed. P.O. Box 2, 7038 ZJ Zeeland, The Netherlands, www.pasreform.com Tel: +31 (0)314 699 111 Fax: +31 (0)314 692 575</small>		Scale: 1:100
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Pas Reform
 Hatchery Technologies



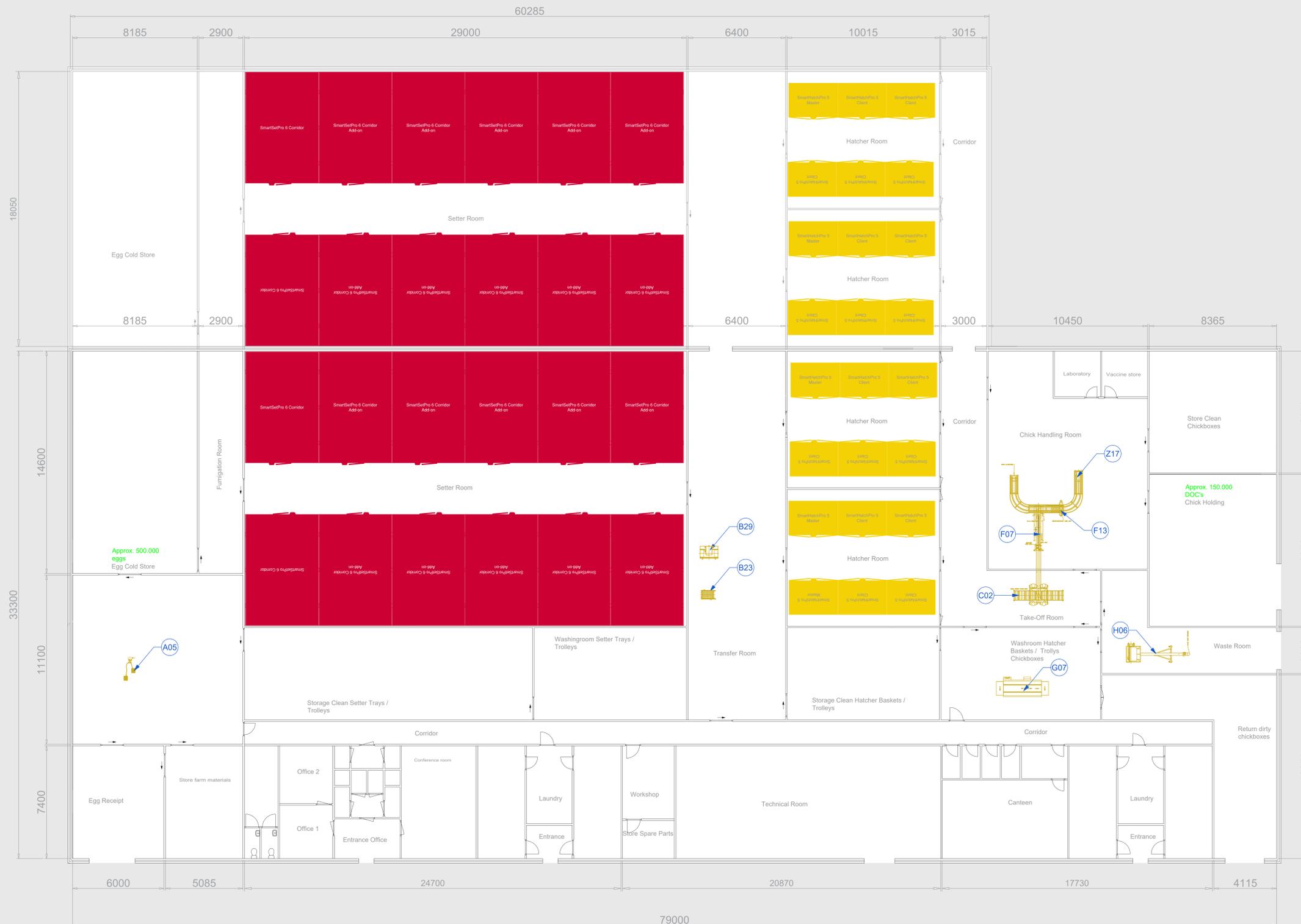


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Project number:		Drawn by: H.M.
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Accord by:		Accord date:
Status:	Preliminary Design	Sizes in: mm
The drawing is property of Pas Reform B.V. Reproduction or disclosure to a third party in any form is not allowed.		Scale: 1:100
P.O. Box 2, 7038 ZJ Zeeland, The Netherlands, www.pasreform.com Tel: +31 (0)314 699 111 Fax: +31 (0)314 692 575		A0

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 Bovendorpstraat 11
 7038 CH Zeeland
 The Netherlands
 www.pasreform.com

Pas Reform
 Hatchery Technologies





HAS Bill of Material			
POSNR.	Name	CODE	Qty
A05	Vacuum egg lifter 2 suction heads	625003	1
B23	Manual candling table excl conveyor CT-15	600150	1
B29	Semi-automatic transfer machine TM3-150	631274	1
C02	Chick take-off system for 4 persons conveyor 3700mm	HASPR0403	1
F07	Chick counter KT-30 R 4 compartment filling stopper lower conveyor	HASPR0513	1
F13	Automatic spray vaccinator for chain conveyor	HAS004036	1
G07	Washing machine type UNW-2500-PR-300	HAS366918	1
H06	Macerator (stand-alone) incl. funnel screw conv	71592	1
Z17	Chain conveyor for chick counter with smal left u-turn 470mm	HASPR0533	1

Index HAS
 A = Egg Handling
 B = Egg Candling & Transfer
 C = Chick Take-off
 D = Chick Saving
 E = Chick Vaccination
 F = Chick Counting & Boxing
 G = Washing
 H = Waste Handling
 Z = Conveyors

Kroons Poultry	
Date: 19-11-18	Description: LO-HAS-01 Hatchery Automation System
Drawing number: D181116	Drawn by: H.M.
Project number:	Description:
Revision: 0	Accord date:
Accord by:	Status:
Sizes in: mm	Scale: 1:100

Appendix E:

Confirmation of services by
Municipality (servitude and
infrastructure planning)

Appendix E1:

Electricity Supply – Eskom
Confirmation

From: Fin Assistant <finassist@kroonchickens.co.za>
Sent: Tuesday, 16 April 2019 15:41
To: jacques@kroonchickens.co.za
Cc: Eddie <orders@kroonchickens.co.za>
Subject: Zilkaatsnek grond

Hello Jacques

Hier is die bewys van Eskom dat hulle wel die transformer kan verander na 500kVa

Die paalnommer is BL14/2

Groete

Letsie Oosthuizen
Finance Department
Kroon's Chickens

From: [Boledi Bokaba](#)
Sent: Friday, October 12, 2018 12:12 PM
To: [Fin Assistant](#)
Subject: RE: Pole LA112A/2

HI

Yes it will be possible to upgrade immediately after taking over
And I do believe the application will come to myself or my colleague Theresa Smith

So when you are ready, you put in an application via contact centre 0860 0037566 and then send me the reference no

Regards

From: Fin Assistant [<mailto:finassist@kroonchickens.co.za>]
Sent: 11 October 2018 03:41 PM
To: Boledi Bokaba; Eddie
Subject: Fw: Pole LA112A/2
Importance: High

Good day Boledi

Can you please confirm if it is possible to upgrade this transformer to a 500kVA within 12 months?

If we decide to buy this property, can we do the upgrade and everything through you?

Kind regards
Letsie Myburgh
Finance Department
Kroon's Gourmet Chickens

From: [Fin Assistant](#)
Sent: Wednesday, October 10, 2018 8:54 AM

To: [Boledi Bokaba](#)
Cc: [Eddie](#)
Subject: Re: Pole LA112A/2

Good morning Boledi

Thats good news, thank you

And is it possible to upgrade to 500kVA within 12 months?
If we decide to buy this property, can we do the upgrade and everything through you?

Kind regards
Letsie Myburgh
Finance Department
Kroon's Gourmet Chickens

From: [Boledi Bokaba](#)
Sent: Wednesday, October 10, 2018 8:42 AM
To: [Fin Assistant](#)
Cc: [Eddie](#)
Subject: RE: Pole LA112A/2

Good morning

Alright I managed to locate the property in question the Transformer on property is a 25kVA
The correct pole number to be used when you apply is BL14/2, this will fall under our Brits office and not Gauteng as I had previously indicated

I hope this is helpful

Regards



From: Fin Assistant [<mailto:finassist@kroonchickens.co.za>]
Sent: 09 October 2018 11:55 AM
To: Boledi Bokaba
Cc: Eddie
Subject: Fw: Pole LA112A/2

Hello Boledi

Please find attach the deed search for the property

The property agent currently in a meeting
I hope this information will help

Regards
Letsie Myburgh
Finance Department
Kroon's Gourmet Chickens

From: [Fin Assistant](#)
Sent: Tuesday, October 09, 2018 10:28 AM
To: [Boledi Bokaba](#)
Cc: [Eddie](#)
Subject: Pole LA112A/2

Good day Boledi

Hope you are well

We are interested in buying a new portion of land and hope you can help us
Pole number is LA112A/2

Can you please check for us on the system what is the current kVA on that transformer
And if it is possible to upgrade the transformer to a 500kVA within 12 months??

If you can't help us, can you please refer me to somebody who can us urgently

Thank you

Regards
Letsie Myburgh
Finance Department
Kroon's Gourmet Chickens

NB: This Email and its contents are subject to the Eskom Holdings SOC Ltd EMAIL LEGAL
NOTICE which can be viewed at

http://www.eskom.co.za/Pages/Email_Legal_Spam_Disclaimer.aspx

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NOTICE which can be viewed at

http://www.eskom.co.za/Pages/Email_Legal_Spam_Disclaimer.aspx

Appendix F:

Details and expertise of Specialist
and Declaration of Interest



dedect

Department:
Economic Development, Environmental Conservation and Tourism
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



AgriCentre Building
Cnr. Dr. James Moroka &
Stadium Rd
Private Bag X2039
MMABATHO 2735
www.nwpg.gov.za

CHIEF DIRECTORATE: ENVIRONMENTAL SERVICES
DIRECTORATE: ENVIRONMENTAL QUALITY MANAGEMENT

Enquiries: Ouma Skosana
Tel: +27 (18) 389 5156
Email: oskosana@nwpg.gov.za
Fax: +27(18) 384 0104

DETAILS AND EXPERTISE OF SPECIALIST AND DECLARATION OF INTEREST

File Reference Number:
NEAS Reference Number:
Date Received:

(For official use only)

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014

PROJECT TITLE

Kroon's Chickens Hatchery.

1. Details of Specialist

Type of Specialist:
Company Name:
Contact person:
Postal address:
Postal code:
Telephone:
E-mail:
Professional affiliation(s) (if any)

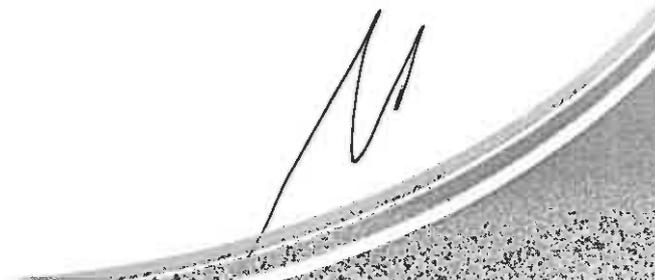
TOWN PLANNING	
THE PRACTICE GROUP (PTY) LTD	
C WIEHANN	
PO BOX 35895 MENLOPARK	
0102	Cell:
012 3621741	Fax:
conrad@practicegroup.co.za	

Project Consultant:
Contact person:
Postal address:
Postal code:
Telephone:
E-mail:

C WIEHANN	
PO BOX 35895 MENLOPARK	
0102	Cell:
012 3621741	Fax:
conrad@practicegroup.co.za	



Together we move North West forward.



2. Expertise of the Specialist including Curriculum vitae (Appendix 6 (1)(a)(ii) of EIA Regulations, 2014)

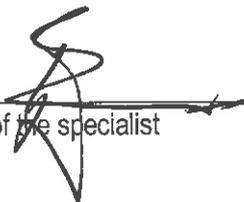
TOWN PLANNING
CV ATTACHED



3. Declaration by Specialist

I, C WIEHANN (Name of Specialist) of THE PRACTICE GROUP (name of company) declare that;

- I act as an independent specialist in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant/ Environmental Assessment Practitioner appointed by applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of Section 48B(2) of the Act.**

Signature of the specialist 

Name of company (if applicable)

THE PRACTICE GROUP PTY LTD

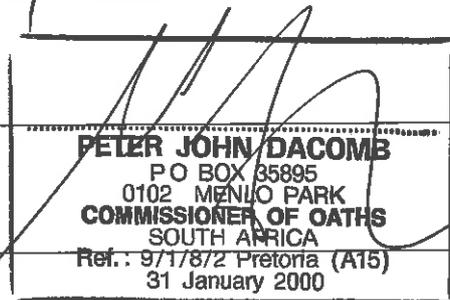
Date

16/09/2019

Signature of the Commissioner of Oaths

16/09/2019

Date



PETER JOHN DACOMB
 P O BOX 85895
 0102 MENLO PARK
COMMISSIONER OF OATHS
 SOUTH AFRICA
 Ref.: 9/1/872 Pretoria (A15)
 31 January 2000

Designation

Official stamp:

*Details and Expertise of Specialist and Declaration of Interest
EIA Regulations, 2014*

CURRICULUM VITAE**CONRAD HENRY WIEHAHN**

Name of Firm The Practice Group (Pty) Ltd
 Name of Staff WIEHAHN, Conrad Henry
 Date of birth 23 September 1956
 Profession Professional Planner (Town and Regional Planner)
 Position in firm Director
 Specialisation Spatial Planning and Land Use Management
 Years with Firm: 32 years
 Nationality South African
 Years of experience 36 years
 HDI Status White male, no disabilities

**EDUCATION**

Qualification	Institution	Year
BSc (Town and Regional Planning)	University of Pretoria	1982
National Certificate Property Development	Witwatersrand Technicon	1985
Senior Management Course on Property Investment Development Marketing and Maintenance	UCT Graduate School of Business (1994)	1994

PROFESSIONAL MEMBERSHIP

Institution Name	Membership Number	Year Joined
South African Council for Planners (SACPLAN)	A/527/1987	1987
South African Association of Consulting Professional Planners (The Practice Group)	000101	1992
South African Planning Institution	Corporate Member	1987

COUNTRIES OF WORK EXPERIENCE

Country	Dates (from – to)
South Africa	1981 - present
Lesotho	
Swaziland	
Namibia	

LANGUAGES (Scale of 1 to 5 where 1 is excellent and 5 is Poor)

Language	Speaking	Reading	Writing
English	1	1	1
Afrikaans	1	1	1
Sepedi (Northern Sotho)			

KEY QUALIFICATIONS

Professional experience to date includes, inter alia:

- Writing of specialist town planning opinions/reports to assist legal counsellors and attorneys in either opposing or promoting new land development projects.
- Assisting and co-ordinating applications for authorisation to conduct mining activities on land zoned for other purposes throughout South Africa.

EXPERIENCE RECORD**THE PRACTICE GROUP (PTY) LTD**

Director

1986 – to date

- Responsible for co-ordinating spatial planning and land use management projects for private and public clients.
- Expert witness providing town planning evidence to various courts, tribunals and arbitration bodies re land development projects.
- Gautrain Rapid Rail Link: Co-ordinating environmental impact assessment procedure relevant to land use management and planning considerations.
- Gautrain Rapid Rail Link: Co-ordinating land development application process to subdivide remnant land portions from proclaimed rail reserve.
- Co-ordinating various projects related to large mixed use precincts with regard to spatial planning and land use management matters.

UNITED DEVELOPMENT CORPORATION, A SUBSIDIARY OF UNITED BUILDING SOCIETY, JOHANNESBURG

Townships Development Manager

1983 - 1986

- Responsible for compilation of township establishment applications, co-ordination of the professional teams involved in the establishment process and the procurement of land use rights.
- Conducting of the feasibility of various property development projects.
- Reporting to the Board of Directors regarding the department's property development projects.

DEPARTMENT OF LOCAL GOVERNMENT, TRANSVAAL PROVINCIAL ADMINISTRATION, PRETORIA

Senior Town Planner

1981 – 1983

- Responsible for receiving and evaluating land development applications for various projects throughout Transvaal Province.
- Representing the Provincial Government as an expert witness in Townships Board and Townships Appeal Board Hearings and Services Appeal Board Hearings throughout Transvaal.
- Acting for Provincial Government in preparing policy guidelines for various planning related matters including the establishment of a hierarchy of shopping centres/business centres for the Transvaal Province.
- Evaluating land development applications and preparing recommendation reports for considerations by the provincial government represented by the provincial townships board.

POSITIONS HELD

- Member of International Association of Impact Assessment (IAIA)
- Member of South African Property Owners Association (SAPOA)
- Member of South African Planning Institution (SAPI)
- Member of the Building Regulations Review Board (SABS)
- Member of the SA Association of Consulting Professional Planners (SAACPP)

SUMMARY OF RELEVANT EXPERIENCE

Planning Consultant on various projects over a period spanning 30 years.

- **Township Establishment**

Various residential townships ranging in size up to 3000 erven for private companies and local authorities, including ABSA Bank Development Company, Cosmopolitan Projects, SAND Developments.

- **Retail Developments**

Various shopping centres, including the Kolonnade Mall, Kolonnade Retail Park, Montana Corner, Village @ The Boardwalk, Mall of the North, Middelburg Waterfront, Rhodes Shopping Centre, Greenlyn Village Centre and others on behalf of pension funds and private clients.

- **Policy and Legislation**

As a senior partner in his firm, Conrad has been involved in assisting in the drafting of Planning Policies and also contributed to the preparation of provincial and national legislation and regulations such as:

- The Gauteng Planning and Development Bill; and
- The Spatial Planning and Land Use Management Bill (prepared on instruction from the Presidency)

- **Other**

Various types of development including high rise residential apartments, office parks, industrial developments, road planning, filling stations, resorts and other types of development.

GENERAL

Conrad Wiehahn was the founding member of the then OSGLO Town and Regional Planners (Pty) Ltd and opened his practice on 1 October 1986. After 4 years in association with OSGLO Architects (Pty) Ltd the firm ended the relationship and changed its name to Planpractice Incorporated. Conrad Wiehahn is mainly responsible for managing the group of companies although he plays an active role as a professional planner and property development consultant.

REFERENCES:

André Wright: Boogertman and Partners: 082 554 8098

Adriaan Venter: 012-346 1775

Advocate Allen Liversage: 082 490 1549

Advocate Johan Roux: Pinaroux: 082 658 0844

Anton Crouse: Cosmopolitan: 082 322 7400

Dirk Nel: Neotrend: 083 657 6113

Grant Celliers: Cornerstone: 082 800 4926

Jannie Moolman: 082 371 8599

Lennie Govender: ABSA Private Bank: 082 300 5365

Linda van Dyk: Sasol: 082 443 1668

Louis van der Walt: Atterbury Properties: 012-471 1600

Martin Ferreira: MacRobert Attorneys: 083 269 0861



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Department:
Economic Development, Environment, Conservation and Tourism
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



AgriCentre Building
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&
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CHIEF DIRECTORATE: ENVIRONMENTAL SERVICES
DIRECTORATE: ENVIRONMENTAL QUALITY MANAGEMENT

Enquiries: Ouma Skosana
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Email: oskosana@nwpg.gov.za
Fax: +27(18) 384 0104
www.nwpg.gov.za

DETAILS AND EXPERTISE OF SPECIALIST AND DECLARATION OF INTEREST

File Reference Number:	(For official use only)
NEAS Reference Number:	
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014

PROJECT TITLE

Kroon's Chickens Hatchery.

1. Details of Specialist

Type of Specialist:	Geohydrologist		
Company Name:	GCS Water and Environmental (Pty) Ltd		
Contact person:	Pieter Boshoff		
Postal address:	PO Box 2597 Rivonia		
Postal code:	2128	Cell:	
Telephone:	012 348 1114	Fax:	012 348 1180
E-mail:	pieterb@gcs-sa.biz		
Professional affiliation(s) (if any)	Pr.Sci.Nat 114659		

Project Consultant:	Pieter Boshoff		
Contact person:	Pieter Boshoff		
Postal address:	PO Box 2597 Rivonia		
Postal code:	2128	Cell:	
Telephone:	012 348 1114	Fax:	012 348 1180
E-mail:	pieterb@gcs-sa.biz		



Together we move North West forward.



2. Expertise of the Specialist including Curriculum vitae (Appendix 6 (1)(a)(ii) of EIA Regulations, 2014)

Pieter has more than 10 years of experience in the field of geophysics and hydrogeology in South Africa, Cameroon, Nigeria, Botswana, Democratic Republic of the Congo (DRC), Mozambique, Namibia Rwanda, Sudan, Zambia and Australia.

He has executed and managed different brown and green field studies. These include mine dewatering and water supply geophysical and hydrogeological investigations; aquifer hydraulic testing; groundwater monitoring network establishment and program implementation; aquifer conceptualisation and impact assessment/mitigation; hydro-chemical analyses; groundwater pollution and hydrocarbon pollution studies; groundwater contamination and remediation studies; geophysical investigations; and numerical modelling.

Curriculum Vitae attached.

3. Declaration by Specialist

I, Pieter Boshoff of GCS Water and Environment (Pty) Ltd declare that;

- I act as an independent specialist in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant/ Environmental Assessment Practitioner appointed by applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of Section 48B(2) of the Act.**





Signature of the specialist

GCS Water and Environmental (Pty) Ltd

Name of company (if applicable)

October 02, 2019

Date



Signature of the Commissioner of Oaths

2/10/2019

Date

CA(SA)

Designation

Official stamp:

I certify that the DEPONENT has acknowledged that he/she knows and understands the contents of this affidavit, that he/she does not have any objection to taking the oath, and that he/she considers it to be binding on his/her conscience, and which was sworn to and signed before me

at Rivonia on this the 2 day of 10 2019 and that the administering oath complied with the regulations contained in Government Gazette No. R1258 of 21 July 1972, as amended.



COMMISSIONER OF OATHS (RSA)
Wendy Sherriff CA(SA)
63 Wessel Road, Woodmead
Johannesburg





CORE SKILLS

- Technical report writing
- Numerical Modelling.
- Project and staff management.
- Site investigations
- Groundwater sampling
- Geophysical Investigation
- Risk assessment

DETAILS

Qualifications

- B.Sc. (Hons.): Completed B.Sc. (Hons.) Exploration Geophysics, University of Pretoria, South Africa, 2003
- Dissertation titled on the possibility of replacing the last phase of drilling in an open pit iron ore mine with detailed gravity survey.
- B.Sc.: Completed B.Sc. Exploration Geophysics, University of Pretoria, South Africa, 2003

Memberships

- SACNASP
- GWD GSSA

Languages

- English - Fluent
- Afrikaans - Fluent

Countries Worked In

Australia, Indonesia, Cameroon, Botswana, Democratic Republic of the Congo, Mozambique, Namibia, Nigeria, Rwanda, Sudan, Zambia

PROFILE

Pieter has more than 10 years of experience in the field of geophysics and hydrogeology in South Africa, Cameroon, Nigeria, Botswana, Democratic Republic of the Congo (DRC), Mozambique, Namibia and Australia.

He has executed and managed different brown and green field studies. Specific experience include management of hydrogeological drilling campaigns, hydraulic testing of aquifers and pumping test analyses; design and implementation of environmental monitoring plans; mine dewatering and water supply hydrogeological assessments (including impact assessment, mitigation and numerical modelling); geophysical investigations; and hydrogeological and geophysical project management (including project health and safety, budget and administration and client liaison) and reporting.



Previous Experience

Project Name	Country	Project Description
Water Breeze Rwanda Water Supply Hydrogeological Assessment (Surface Geophysical Investigation Component)	Bugesera District, Rwanda	Non-Intrusive Surface Geophysical Investigation as part of the Hydrogeological Water Supply Assessment for the Local Municipality in the Bugesera District of Rwanda. The objective of the non-intrusive surface geophysical investigation is to identify sustainable groundwater resources on 13 cattle farms to meet the farm-specific water demand.
Ghaghoo Dewatering Feasibility Project - Injection Testing	Ghanzi Region, Botswana	Hydrogeological Feasibility Study for the injection scheme at the Ghaghoo Diamond Mine Project: The objective of the study is to determine the technical, hydrogeological and economic feasibility of injecting the excess water into the Kalahari Sands.
Letšeng Diamond Mine Seepage Pathway Migration Assessment	Mokhotlong District, Lesotho	Non-Intrusive Surface Geophysical Investigation as part of the Seepage Migration Assessment for their earth embankment reservoirs. The objective of the non-intrusive surface geophysical investigation is to identify seepage zones and / or potential saturated zones associated with the earth embankment reservoirs for geotechnical and environmental purposes.
Matla Colliery Stooing Project - Hydrogeological and Impact Assessment	Mpumalanga Province, South Africa	Specialist Investigation (Groundwater Section) as part of the Environmental Impact Assessment and Environmental Management Plan according to the National Environmental Management Act, as well as according to the Mineral and Petroleum Resources Development Act. The objective of the investigation is to provide a technical assessment on dewatering potential and environmental impact assessment for the proposed underground stooing activities

Previous Experience

Ghaghoo Dewatering Pre-Feasibility Project - Hydrogeological	Ghanzi Region, Botswana	Hydrogeological Pre-Feasibility Assessment for a dewatering and injection scheme at the Ghaghoo Diamond Mine Project. The objective of the study (40 % accuracy) is to determine if the injection of the excess water balance is an economical, environmentally acceptable and sustainable manner.
Sumo Coal Project - Hydrogeological Assessment	Mpumalanga Province, South Africa	Specialist Investigation (Groundwater Section) as part of the Environmental Impact Assessment, Integrated Water Use Licence Application and Environmental Management Plan according to the National Environmental Management Act, as well as according to the Mineral and Petroleum Resources Development Act. The objective of the investigation is to assess the significance of the direct and indirect impacts arising from the proposed mining activities and recommend mitigation measures to mitigate and / or offset the proposed impacts
Kumba Pit Dewatering Project - Hydrogeological and Geophysical Assessment	Limpopo Province, South Africa	Hydrogeological Assessment for dewatering requirements at the Kumba Pit of the Thabazambi Iron Ore Project. The objective of the study is to provide a technical assessment on the dewatering potential and requirements and environmental impact assessment for the proposed expansion of the Kumba open pit.
Estima Project - Hydrogeological and Impact Assessment	Tete Province, Northwest Mozambique	Specialist Investigation (Groundwater Section) as part of the Environmental Impact Assessment and Environmental Management Plan according to the International Financial Corporation standards. The objective of the investigation is to provide a technical assessment on groundwater baseline characterisation, dewatering potential and requirements and environmental impact assessment for the proposed open pit.

Previous Experience

Tsumeb Project - Hydrogeological and Geophysical Assessment	Tsumeb, Namibia	Hydrogeological and Geophysical Assessment for sinkhole and contaminant plume mapping. The objective of the study is to evaluate the high-level risk for sinkhole formation, determination of preferential flow paths for groundwater as well as distribution of contamination in the unsaturated zone and saturated aquifer.
Browns Range HREE Project - Hydrogeological Assessment	Northeast Western Australia, Australia	Stygofauna Sampling Assessment (Groundwater Section) as part of the Browns Range HREE Project. The objective of the assessment is to assess the potential implications for the stygofauna sampling program due to the presence of hydrocarbon product in the bores and representativeness of groundwater sampling results conducted during the stygofauna sampling rounds.
Browns Range HREE Project - Hydrogeological Assessment	Northeast Western Australia, Australia	Specialist Investigation (Groundwater Section) as part of the Environmental Protection Authority's Impact Assessment according to the Assessment of Proponent Information'- category A process. The objective of the investigation is to provide a technical assessment on the groundwater baseline characterisation, resource and dewatering potential and requirements and environmental impact assessment for the proposed project.
Nullagine Gold Project - Hydrogeological and Geophysical Assessment	Pilbara, Western Australia, Australia	Hydrogeological and Geophysical Investigation for the water supply requirements as part of the Nullagine Gold Water Supply Augmentation Program. The objective of the investigation was to develop an understanding of the potential groundwater host media and to augment the water supply production bore network to meet Project requirements.

Previous Experience

Browns Range HREE Project - Geophysical Assessment	Northeast Western Australia, Australia	Surface Geophysical Assessment for water supply and dewatering requirements as part of the Browns Range HREE Project's Water Supply and Dewatering Study. The objective of the study is to provide an understanding of the potential groundwater host media, recharge mechanisms and identifying potential targets based on the water supply and dewatering requirements.
Browns Range HREE Project - Hydrogeological Assessment	Northeast Western Australia, Australia	Hydrogeological Scoping Assessment as part of the Browns Range HREE Project's Water Supply and Dewatering Study. The objective of the study is to conduct a desktop assessment of supply target and anticipated pit inflows from the proposed open cast pits.
Teck Highland Valley Copper Project - Hydrogeological Assessment	Vancouver, Canada	Specialist Groundwater Investigation as part of the geotechnical slope stability assessment. The objective of the assessment is to model and design appropriate sub-horizontal drain system to prevent possible liquefaction and potential flow failure associated with the existing 30 m high embankment and the proposed Pebble Crusher Facility.
Nkomati Anthracite Mine - Hydrogeological Assessment	Mpumalanga Province, South Africa	Specialist Groundwater Investigation as part of the Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP) and Integrated Water Use License Application (WULA). The objective of the investigation is to assess the pre-mining groundwater quality, develop a regional numerical model to evaluate the potential mining impact and future conditions.
Ncondezi Coal Project - Hydrogeological Assessment	Tete Province, Mozambique	Specialist Groundwater and Surface Water Investigation as part of the Environmental Social and Health Impact Assessment (ESHIA) Investigation. The objective of the study is to provide a technical

Previous Experience

		assessment on the groundwater baseline characterisation, resource and dewatering potential and environmental impact assessment.
Agbara Estate Project - Hydrogeological Assessment	Ogun State, Nigeria	Hydrogeological Assessment for water supply requirements at the proposed Agbara industrial Estate. The objective of the assessment is to provide a technical assessment on groundwater baseline characterisation and water supply potential for the proposed development.
Waste Water Treatment Plants - Hydrogeological Assessment	Gauteng Province, South Africa	Hydrogeological Assessment for the Sebokeng, Rietspruit and Leeuwkuil Waste Water Treatment Plants - Baseline Hydrogeological Investigation at the three Waste Water Treatment Works as a requirement by the Department of Water Affairs (DWA) for the individual water use license applications (WULA).
Fortier Mine - Hydrogeological Assessment	Haut-Katanga Province, Democratic Republic of the Congo (DRC)	Hydrogeological Desktop Review for dewatering requirements at the Fortier Mine. The objective of the study is to identifying dewatering borehole targets based on existing hydrogeological and geophysical data sets.
Mmamabula Project - Geological and Seismological Assessment	Dovedale, Botswana	The objective of the study is to identify the seismic characteristics and the potential hazard for a proposed power plant.
Nkomati Nickel Mine - Geophysical Investigation	Mpumalanga Province, South Africa	Open Pit Dewatering strategy and Dewatering Management. Several geophysical investigations for borehole siting.



Previous Experience

Sasol Midland Plant - Hydrogeological and Geophysical Assessment	Free State Province, South Africa	Dense Non Aqueous Phase Liquids (DNAPL) Conceptual Site Model (CSM). The objective of the study is to develop a holistic far and near-field CSM incorporating additional non-intrusive and intrusive investigation data.
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Department:
Economic Development, Environment, Conservation and Tourism
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



AgriCentre Building
Cnr. Dr. James Moroka &
Stadium Rd
Private Bag X2039
MMABATHO 2735
www.nwpg.gov.za

CHIEF DIRECTORATE: ENVIRONMENTAL SERVICES
DIRECTORATE: ENVIRONMENTAL QUALITY MANAGEMENT

Enquiries: Ouma Skosana
Tel: +27 (18) 389 5156
Email: oskosana@nwpg.gov.za
Fax: +27(18) 384 0104

DETAILS AND EXPERTISE OF SPECIALIST AND DECLARATION OF INTEREST

(For official use only)

File Reference Number:
NEAS Reference Number:
Date Received:

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014

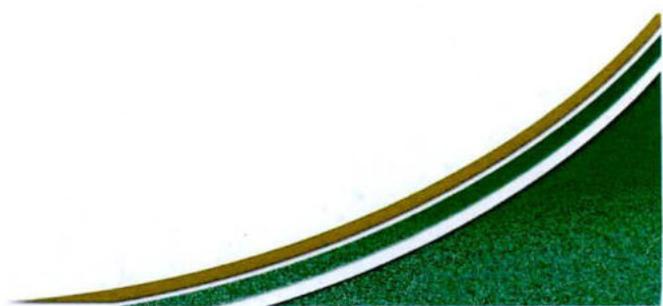
PROJECT TITLE

Kroon's Chickens Hatchery.

1. Details of Specialist

Type of Specialist:	Hydrogeologist		
Company Name:	GCS (Pty) Ltd		
Contact person:	Kobus Troskie		
Postal address:	PO Box 2597, Rivonia		
Postal code:	2128	Cell:	082 336 0069
Telephone:	011 803 5726	Fax:	
E-mail:	kobus@gcs-sa.biz		
Professional affiliation(s) (if any)	SACNSP 400218/05		

Project Consultant:	Same as previous		
Contact person:			
Postal address:			
Postal code:		Cell:	
Telephone:		Fax:	
E-mail:			



2. Expertise of the Specialist including Curriculum vitae (Appendix 6 (1)(a)(ii) of EIA Regulations, 2014)

- Aquifer Mechanics, optimum design of boreholes and wellfields.
- Water supply and well field management
- Risk assessments with regard to soil and groundwater contamination
- Mine dewatering studies
- Waste disposal site suitability studies
- Groundwater monitoring programmes – design and implementation
- Groundwater and aquifer assessments, management and protection plan
- Aquifer Mechanics, optimum design of boreholes and wellfields.



3. Declaration by Specialist

I, Kobus Trostie (Name of Specialist) of GCS (PTY) LTD (name of company) declare that;

- I act as an independent specialist in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant/ Environmental Assessment Practitioner appointed by applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of Section 48B(2) of the Act.**

Kobus Trostie
Signature of the specialist

GCS (PTY) LTD
Name of company (if applicable)

10/10/2019
Date

[Signature]
Signature of the Commissioner of Oaths

10/10/2019
Date



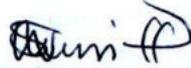
CA(SA)

Designation

Official stamp:

I certify that the DEPONENT has acknowledged that he/she knows and understands the contents of this affidavit, that he/she does not have any objection to taking the oath, and that he/she considers it to be binding on his/her conscience, and which was sworn to and signed before me

at Rivonia on this the 10 day of 10 2019
and that the administering oath complied with the regulations contained in Government Gazette No. R1258 of 21 July 1972, as amended.


COMMISSIONER OF OATHS (RSA)
Wendy Sherriff CA(SA)
63 Wessel Road, Woodmead
Johannesburg





CORE SKILLS

- Project planning and management: proposal writing,
- Conceptualisation, planning, management and coordination, financials.
- Data analysis and interpretation
- Technical report writing.
- Project and staff management.

DETAILS

Qualifications

- BSc (Biochemistry, Microbiology, Ecology)
- BSc (Hons) Hydrogeology

Memberships

- Registered Natural Scientist S.A (Reg. No. 400218/05)
- Member of: Geological Society of South Africa,
- Borehole Water Association of Southern Africa,
- Landfill Interest Group - Gauteng RSA,

Languages

- English - fluent
- Afrikaans - fluent

Countries Worked In

- South Africa, Botswana, Lesotho, Swaziland, Mozambique, Malawi, Zambia, Uganda, Tanzania, Angola, Namibia, Oman, Sierra Leone, Nigeria, DRC, Madagascar,

PROFILE

Kobus is a Senior Hydrogeologist at GCS (Pty) Ltd with 16 years' experience and manages the Groundwater Resources Unit. He has had extensive experience in water supply and well field management for a variety client base from small scale irrigation to large scale wellfield supply of up to 2500 m³/hour. His experience include characterisation of primary as well as secondary aquifers by means of hydro geophysical surveys, exploration drilling, production borehole drilling (design and implementation) groundwater resource evaluations and groundwater reserve determinations. Waste disposal site suitability studies. Groundwater monitoring programmes - design and implementation. Groundwater and aquifer assessments, management and protection plans.

Kobus has specialist skills in the following areas:

- *Aquifer Mechanics, optimum design of boreholes and wellfields.*
- *Water supply and well field management*
- *Risk assessments with regard to soil and groundwater contamination*
- *Mine dewatering studies*
- *Waste disposal site suitability studies*
- *Groundwater monitoring programmes - design and implementation*
- *Groundwater and aquifer assessments, management and protection plan*
- *Aquifer Mechanics, optimum design of boreholes and wellfields.*

Previous Work Experience

SPECIFIC EXPERIENCE IN GROUNDWATER RESOURCES (Selective Projects a detailed project list can be made available upon request)

- Moatize Alluvial Aquifer Assessment: 2012/18 Characterization and development of an alluvial aquifer for large scale groundwater abstraction. The hydrogeological studies comprised of, Electrical resistivity geophysical surveys, exploration borehole drilling, abstraction scenario modeling and feasibility of the demand.
- Moatize Alluvial Aquifer Assessment: 2018 Remediation of production borehole within an alluvial aquifer associated with the Revubue river, the remediation included both physical and chemical treatment and resulted in a 60-85% yield recovery upon completion of the remediation.
- Steynsrus water supply (2015 - 2016): the study involved groundwater resource assessments verification of the water demand, geophysical surveys, drilling and construction of production boreholes, groundwater resource evaluations, wellfield monitoring and management plans
- Lekubu Village Water Supply (2009- 2013): Development of a water supply for a rural village in the north west, the study included verification of the water demand, geophysical surveys, drilling and construction of production boreholes, groundwater resource evaluations, wellfield monitoring and management plans
- Nestle Waters / Clover Water (2006 - 2016): Development and management of sustainable water resources over a period of 10 years, the studies involved geophysical investigations, equipping the resource, drilling testing and pump supply, management and recommendations and the Water Use License Application
- Tsitsikama Crystal Springs (2015): Development and management of sustainable water resources, the studies involved geophysical investigations, equipping the resource, drilling testing and pump supply, management and recommendations and the Water Use License Application
- McCain Foods (2013-2018): Development and management of sustainable water resources the studies involved geophysical investigations, equipping the resource, drilling testing and pump supply, management and recommendations and the Water Use License Application
- Big Concessions Agriculture: Characterization and development of a Carbonate Rock aquifer for large scale groundwater abstraction for development. The hydrogeological studies comprised of: geophysical investigations, exploration

borehole drilling, aquifer development and abstraction scenario modeling and feasibility of the demand.

- Lesotho 2004 - 2009 - Groundwater resource assessment on the Six Towns Study European Union Project Ref nr. 8.ACP.LSO 017- Teyateyaneng, Roma, Morija, Mapoteng, Maputsoe, Quthing
- Zambia, 2006 - Groundwater resource assessment, Scientific siting of drilling targets, Borehole design and construction, Aquifer testing, Hydrochemical analysis, Management options
- RSA 2006 - 2007 - Development and implementation of Sanitation Protocol
- RSA 2006 - Contamination studies for on-site sanitation
- MOZAMBIQUE 2003 - Nampula, Niassa: Water Supply investigation: The project involved water supply in villages in Nampula, Niassa, and Cappel Delgado provinces of Northern Mozambique.
- RSA 2007 - 2008, GRIP Eastern Cape Project
- RSA 2002 - 2019 - Drilling supervision, Boreholes design, Alluvial aquifers, Well field design and management for a large variety client base.

SPECIFIC EXPERIENCE IN THE MINING INDUSTRY

- ZAMBIA, 2009 - Mine Dewatering assessment of a Gold Mine
- RSA, 2008 - 2009 - EIA Application for various Gold Heap leach Pad sites, Groundwater impact assessments, site selection from a groundwater perspective.
- MALAWI, 2006 - Kayelekera Uranium Project: The project involved Geophysical investigations, designing a monitoring network, drilling supervision and Aquifer test supervision. The report compilation included commenting on catchment characteristics, identification of hydrogeological units from previous studies and borehole logs, Assess the aquifer (s) surrounding the proposed surface mine. Determine the impact of mine infrastructure including, waste rock dumps, tailings storage facilities, open pit mining on the regional aquifer (s).
- RSA, 2005 - 2006 - Six-month secondment to Anglo Gold Ashanti in Vaal Reefs, position held Senior Environmental Coordinator Lesotho, Swaziland, Mozambique, Malawi, Zambia, Tanzania, Angola, Namibia, Oman, Sierra Leonetor - Hydrogeologist. Responsibilities included management of the groundwater as part of the water unit for the Vaal Reefs, West Wits, and Ergo mining operations.
- RSA, 2003 - 2010 - Data collection, data analysis and report writing for the groundwater sections, and surface water quality of environmental management

program reports (EMPRs), for various types of mines, including: coal, gold, platinum, nickel, uranium mines.

- RSA, 2001 - 2005 - Groundwater monitoring and audit reports. The evaluation of groundwater level fluctuation and hydrochemical data and the compilation of monthly, quarterly and annual monitoring reports.
- RSA, 2006 - Site suitability studies and designing a monitoring network for permit application and closure of a Ash Disposal Facility (Rand Water)

PROFESSIONAL EXPERIENCE - IMPACT AND AUDITING STUDIES

- Tanzania 2012 - (Senior hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II (2 sites).
- RSA 2012 (Project Manager) (Confidential Client) in-situ remediation of a hydrocarbon contaminated site.
- RSA 2012 (Project Manager) (Confidential Client) in-situ remediation of a hydrocarbon contaminated site.
- Zambia 2012 - (Senior hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II (2 sites).
- RSA SASOL 2011- (Senior hydrogeologist) Phase I Hydrocarbon Site Characterisations and risk assessment of 130 fuel stations across South Africa.
- Sasol: Groundwater & Soil Contamination Study.
- RSA, 2011 (Phase I / 2 Hydrocarbon Site Characterization and risk assessment of 70 sites within Gauteng Province.
- RSA, 2011 - (Senior hydrogeologist) - Thabazimbi Hydrocarbon Assessment: Field work, data compilation, data interpretation, RBCA.
- RSA, February 2010 (Senior hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II (2 sites).
- RSA, September 2009 (Project hydrogeologist) - Due Diligence Study - Organic contaminants ESA reports phase I/II (4 sites).
- RSA, September 2009 (Project hydrogeologist) - Organic contaminants, Due Diligence Study, Water quality objectives and sign off from DWAF.
- NIGERIA, September 2009 (Project hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II.

- NIGERIA, March 2008 (Project hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II.
- RSA, November 2007 (Project hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II.
- RSA, October 2007 (Project hydrogeologist) - Due Diligence Study - Organic contaminants, ESA reports phase I/II.
- RSA, July 2007 (Project hydrogeologist) - Due Diligence Study, ESA reports phase I/II.
- RSA, March 2007 (Project hydrogeologist) - Organic contamination, remediation, monitoring.
- RSA, March 2007 (Project hydrogeologist) - Organic contamination, soil and water study.
- ZAMBIA, 2006 (Project hydrogeologist) - Site selection and feasibility study - Livingstone, Zambia.
- RSA, 2005 (Hydrogeologist) - Site suitability study, permit application for an Ash Disposal Facility.
- RSA, 2006 (Hydrogeologist) - Contamination studies for on-site sanitation.
- MOZAMBIQUE, 2004 (Hydrogeologist) - Temane CPF, Villunkolos Mozambique: The project involved Geophysical investigations, designing a monitoring network, drilling supervision and Aquifer test supervision.
- MOZAMBIQUE, 2003 (Hydrogeologist) - Mozal Mozambique, the project involved monitoring and evaluation of onsite conditions to a hazardous waste disposal site.

DECLARATION

I, Kobus Troskie hereby declare that the details furnished above are true and correct to the best of my knowledge and belief and I undertake to inform you of any changes therein, immediately. In case any of the above information is found to be false or untrue or misleading or misrepresenting, I am aware that I may be held liable for it.

Signature:  _____ Date: 31/01/2019



dedect

Department:
Economic Development, Environment, Conservation and Tourism
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



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Cnr. Dr. James Moroka &
Stadium Rd
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MMABATHO 2735
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CHIEF DIRECTORATE: ENVIRONMENTAL SERVICES
DIRECTORATE: ENVIRONMENTAL QUALITY MANAGEMENT

Enquiries: Ouma Skosana
Tel: +27 (18) 389 5156
Email: oskosana@nwpg.gov.za
Fax: +27(18) 384 0104

DETAILS AND EXPERTISE OF SPECIALIST AND DECLARATION OF INTEREST

(For official use only)

File Reference Number:
NEAS Reference Number:
Date Received:

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014

PROJECT TITLE

Kroon's Chickens Hatchery.

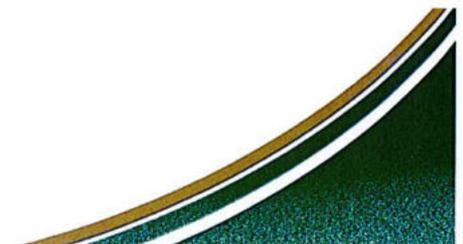
1. Details of Specialist

Type of Specialist:	Ecologist		
Company Name:	Bokamoso Landscape Architects and Environmental consultant		
Contact person:	Nkoliso Magona		
Postal address:	36 Lebombo Road, Ashlea Gardens, Pretoria		
Postal code:	0161	Cell:	0787256058
Telephone:	012 346 3810	Fax:	086 570 5659
E-mail:	Nkoliso@bokamoso.net		
Professional affiliation(s) (if any)			

Project Consultant:	Bokamoso Landscape Architects and Environmental consultant		
Contact person:	Nkoliso Magona		
Postal address:	36 Lebombo Road, Ashlea Gardens, Pretoria		
Postal code:	0161	Cell:	0787256058
Telephone:	012 346 3810	Fax:	086 570 5659
E-mail:	nkoliso@bokamoso.net		



Together we move North West forward.



2. Expertise of the Specialist including Curriculum vitae (Appendix 6 (1)(a)(ii) of EIA Regulations, 2014)

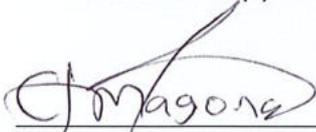
Flora and Fauna specialist



3. Declaration by Specialist

I, **Nkoliso Magona** (Name of Specialist) of **Bokamoso Landscape Architects and Environmental consultant** (name of company) declare that;

- I act as an independent specialist in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant/ Environmental Assessment Practitioner appointed by applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of Section 48B(2) of the Act.**



Signature of the specialist

Bokamoso Landscape Architects and Environmental consultant

Name of company (if applicable)

17 September 2019

Date



Signature of the Commissioner of Oaths

Date

Professional Accountant (SA)
IZAK JOHANNES ROSSOUW

Designation

Commissioner of Oaths Ex Officio
Professional Accountant (S.A.)
Membership Number: 31406
36 Lebombo Road, Ashley Gardens
Pretoria, 0081

Official stamp:

Details and Expertise of Specialist and Declaration of Interest
EIA Regulations, 2014



Official stamp:



CV OF SPECIALIST

NKOLISO MAGONA

Nkoliso@bokamoso.net

012 346 3810

Work history

BOKAMOSO ENVIRONMENTAL CONSULTANTS - Ecologist specialist intern

- Conduct Flora and Fauna Assessments
- Compiling Flora and Fauna Reports
- Serving as Environmental Control Officer

NATIONAL RESEARCH FOUNDATION - Research intern

- Manage Biosecurity Enforcement for Ants introduced to SA
- Compile national status of Ants in SA
- Conduct site visits

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE – Research intern

- Provide biodiversity input into the appeal process related to Environmental Authorizations
- Conduct site visits
- Compile site visit reports and incorporate the site visit findings into the recommendations

NATIONAL RESEARCH FOUNDATION - Laboratory Technician

- Preparing specimens and samples; constructing
 - Maintaining and operating standard laboratory equipment
 - Ensuring the laboratory is well-stocked and resourced
 - Contribute to the development and implementation of Capacity Development Programme
-

Education

MSc IN BOTANY – Stellenbosch University

BSc HONS IN ZOOLOGY – Walter Sisulu University

BSc BIOLOGICAL SCIENCES – Walter Sisulu University

Projects

Fauna and Flora survey

- Cavalier New parking Area and Solar Panels on Portion 83 of the farm Tweefontein, City of Tshwane
- Ecological Opinion for the Proposed Lotus Gardens X9, situated on Erven 7547 and 7548, City of Tshwane
- Ecological Scan for the Proposed Hidden Hills Golf Estate on Various Portions of the Farm Nooitgedacht 534 JQ, Lanseria.
- Environmental scan for the proposed Filling station on Holding 171 of Raslouw Agricultural Holdings, Gauteng Province
- Flora and Fauna survey for the Proposed Hidden Hills Golf Estate on Various Portions of the Farm Nooitgedacht 534 JQ, Lanseria.
- Garsfontein Filling station on ERF 1657 Garsfontein X8, City of Tshwane
- Groblersdal Filling station Portion 1 of the farm Loskop Suid 53 JS. Ecological potential opinion
- Hayzyview Filling station Portion 204 of the farm De Rust 12JU, Remainder of Portion 109 of the Farm De Rust 12JU
- Hayzyview Phase 2 Mall expansion Portion 204 of the farm De Rust 12JU, Remainder of Portion 109 of the Farm De Rust 12JU
- Hayzyview Residential development Portion 204 of the farm De Rust 12JU, Remainder of Portion 109 of the Farm De Rust 12JU
- Majesty Oil Mills development ecological opinion, Remaining Extent of Portion 88 (a portion of Portion 1) of the Farm Luipaardsvlei 246 IQ and Erven 125, 126, 127, 128, 129 and 131
- Malekane Mall on part of Portion 7 of the Farm Steelpoortdrift 365 KT, Limpopo
- Mooikloof Retail Park for the development on part of portion 54 of the farm Rietfontein 375 JR, City of Tshwane

- Munyaka Crystal lagoons for the approval of the x2 lagoons to be implemented in Midrand, South Africa
- N4 and Solomon Mahlangu Drive (M10) roads and storm water infrastructure construction and upgrading from the N4 interchange to the R104
- New proposed Hatchery farm on various portions of the farm Hartebeesfontein 445 JQ
- Onderstepoort Wholesale Diesel storage area on a portion of portion 99 of the farm De Onderstepoort 300-JR, Gauteng Province
- Paledi mall expansion Mankweng, Polokwane, 0727
- Peach Tree x20 Bulk Water Pipeline situated on portions 72 & 73, Remainder of Portion 332 of the Farm Knoppieslaagte 385-JR
- Peach Tree x21-25 Electrical situated on portions 20, 815 and the Remainder of Portion 332 of the Farm Knopjeslaagte 385 JR
- Peach Tree x21-25 New alignment Electrical situated on portions 20, 815 and the Remainder of Portion 332 of the Farm Knopjeslaagte 385 JR
- Proposed Development on Portions 287 to 295 of the Farm Mooiplaats 367 JR, City of Tshwane
- Rietvlei Filling station situated on portion 1 of the Farm Witkoppies 393-JR
- Rietvlei Waste Water Treatment Works situated on portion 1 of the Farm Witkoppies 393-JR
- Secunda X13 Filling station on Portion 5 of Erf 84
- Standerton X10 Mixed used Development on Portion of the Remainder of Portion 2, a Portion of the Remainder of Portion 7 and Portion 4 of the Farm Grootverlangen 409 IS
- Standerton X10 Residential Development on part of the Remainder of Portion 7 of the Farm Grootverlangen 409 IS. Mpumalanga
- Sunderland Ridge Portion 87 industrial 1 Township on Remainder of Portion 29 of the Farm Mooiplaats 355 JR
- Thulamahashe B Sewer Line on Erf 63 in the Township Thulamahashe B
- Waterfall Estate situated on the farm Waterval 5IR, Midrand, South Africa



dedect

Department:
Economic Development, Environment, Conservation and Tourism
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



AgriCentre Building
Cnr. Dr. James Moroka &
Stadium Rd
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CHIEF DIRECTORATE: ENVIRONMENTAL SERVICES
DIRECTORATE: ENVIRONMENTAL QUALITY MANAGEMENT

Enquiries: Ouma Skosana
Tel: +27 (18) 389 5156
Email: oskosana@nwpg.gov.za
Fax: +27(18) 384 0104

DETAILS AND EXPERTISE OF SPECIALIST AND DECLARATION OF INTEREST

File Reference Number: NEAS Reference Number: Date Received:	(For official use only)

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014

PROJECT TITLE

Kroon's Chickens Hatchery.

1. Details of Specialist

Type of Specialist:	Heritage Specialist	
Company Name:	APAC cc	
Contact person:	Anton Pelsler	
Postal address:		
Postal code:	Cell:	
Telephone:	Fax:	
E-mail:	083 459 3091	
Professional affiliation(s) (if any)	apac.heritage@gmail.com	
	ASAPA	

Project Consultant:	APelsler Archaeological Consulting cc	
Contact person:	Anton Pelsler	
Postal address:		
Postal code:	Cell:	083 459 3091
Telephone:	Fax:	
E-mail:	apac.heritage@gmail.com	



2. Expertise of the Specialist including Curriculum vitae (Appendix 6 (1)(a)(ii) of EIA Regulations, 2014)

See Attached CV

Heritage Impact Assessments

Archaeological Research

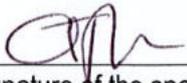
Grave Relocations



3. Declaration by Specialist

I, ANTON JOHAN PELSER (Name of Specialist) of APAC CC (name of company) declare that;

- I act as an independent specialist in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant/ Environmental Assessment Practitioner appointed by applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of Section 48B(2) of the Act.**


Signature of the specialist

Apaka Archaeological Consulting cc
Name of company (if applicable)

2019-09-16
Date


Signature of the Commissioner of Oaths

Date
Professional Accountant (SA)
Designation

Official stamp: **IZAK JOHANNES ROSSOUW**
Commissioner of Oaths Ex Officio
Professional Accountant (S.A.)
Membership Number: 31406
36 Lebombo Road, Ashley Gardens
Pretoria, 0081

Details and Expertise of Specialist and Declaration of Interest
EIA Regulations 2014

CURRICULUM VITAE



APelser Archaeological Consulting
Comprehensive and Professional Solutions for all Heritage Related Matters
CK 2006/014630/23 VAT NO.: 4360226270

P.O.BOX73703
LYNNWOOD RIDGE
0040

Tel: 083 459 3091
Fax: 086 695 7247

Email: apac.heritage@gmail.com

Personal Details

Anton Johan Pelser
Born: 23 December 1971
Divorced, four children
Bilingual

Academic Qualifications

BA (UNISA) 1995
BA (HONS) Archaeology WITS 1997
MA Archaeology WITS 2003
PHD Archaeology (Proposal stage) - UJ

Employment History

1991 – 30 September 2006

National Cultural History Museum (now Ditsong Museum of Cultural History)

February 1991 to October 1994: Assistant in Collections Management Department.

1994 to 1998: Assistant Museum Scientist in the Research Department (Archaeology).

1998 to September 2006: Museum Scientist (Researcher: Archaeology) in the same department. Was the Curator of the Archaeology Collection at the Museum during this time period.

Anton resigned in September 2006 to conduct Cultural Heritage Consultancy work and research on a full-time basis.

Publications

I have so-far published 30 articles in scientific and popular journals on archaeology and history, and have also been the author and co-author of nearly 800 unpublished reports on Heritage & Archaeological Impact Assessments, as well as 2nd phase Grave Exhumations and Archaeological Excavations and research work (including a number of Land Claims related projects over the last few years). I have also contributed a chapter on Archaeology in a book on the geology and history of the Vredefort Dome, compiled by the Geology Department of WITS University. This book was published and launched in conjunction with the proclamation of the Dome as the newest SA World Heritage Site during July/August 2005.

A complete list of publications will be given at the end of this document. A detailed list of unpublished reports can be provided if required.

CRM Accreditations (Association of Southern African Professional Archaeologists)

Principal Investigator for graves
Principal Investigator for Iron Age and Colonial Period Archaeology
Field Director for Stone Age

Professional Member of ASAPA (Association of Southern African Professional Archaeologists) and the South African Society of Cultural History (SASCH)
Registered at Amafa (Kwa-Zulu Natal Heritage Authority) as CRM Practitioner

References

Dr. Johnny van Schalkwyk – Head of Anthropology & Archaeology, Ditsong Museum of Cultural History – 076 790 6777

Prof. Marlize Lombard – UJ Anthropology and Development Studies – (011) 559 2859

Archaeological Excavations & Grave Relocation Projects – 1991 to 2012

1. UNISA First Year Archaeology Field School – Emamweni & Goergap (Iron Age & Stone Age). 1991/2 - 2 weeks
2. UNISA Biblical Archaeology 2nd Year Field School – Tel Hazor. 1992/3 - 3 weeks
3. 1913-house Historical-Archaeological Excavations. Willem Prinsloo Agricultural Museum (with Anton van Vollenhoven). 2 weeks. Date: 1994/5.
4. Melrose House Historical-Archaeological Excavations (NCHM). 1 week. Date: 1995
5. Pioneer House Silverton Edwardian House Historical-Archaeological Excavation (with Anton van Vollenhoven). 1 week. Date: 1996.
6. Makgabeng/Blouberg Early Iron Age Excavations (with Dr. Johnny van Schalkwyk). 2 weeks. 1996?
7. Pienaarspoort British Fortification Historical-Archaeological Excavations (Honours Archaeology Project). Various weeks. 1995/6.
8. Hatherley Late Iron Age Excavations (NCHM). 1 week. 1995/6
9. Minnaarstreet Historical Midden Excavation (NCHM). 1 week. Date: 1997
10. Leloreng Late Iron Age Excavations (NCHM). 2 weeks. Date:
11. Askoppies (Vredefort Dome) Late Iron Age Excavations (M.A. Archaeology). Various weeks. 2000-2003.
12. Medunsa Late Iron Age Excavations (with Frank Teichert). Various weeks. 1997-2003?
13. Kroondal Iron Age Excavations (NCHM). 1 week. Date: ?
14. Steinaecker's Horse Historical-Archaeological Excavations (NCHM & Archaetnos). Kruger National Park. Various sites (2 weeks per year). 1997, 2000, 2003, 2005-2011.

15. Albasini Ruins (Archaetnos). Kruger National Park. 2 weeks. 2004.
16. Loskopdam Stone Age Archaeology (NCHM/PAST). 2002; 2004-2006. 6 weeks in total.
17. Bandelierkop/Capricorn Toll Plaza Iron Age Excavations (Archaetnos). 1 week. Date: 1998
18. De Gladdeklipklop (NCHM) Iron Age Excavations. 3 weeks. Dates: ?
19. Rietfontein (Kriel Colliery) Iron Age Excavations (NCHM). 2 weeks. Date: 2004/5.
20. Silver Lakes Late Iron Burial Excavation (NCHM). Date: 2003
21. Greylingstad Graves Exhumation (NCHM) with Frank Teichert. Date: ?
22. Marikana Graves Exhumation (NCHM) with Frank Teichert. Date: ?
23. Kromdraai/Landau Colliery Graves (NCHM) with Frank Teichert. Date: ?
24. Ogies/Klipspruit Colliery Graves (NCHM) with Frank Teichert. Date: ?
25. Khutala and Optimum Colliery Graves (Archaetnos). Dates: 2004
26. Annlin Graves (Archaetnos). Date: 2004/5
27. Hoekfontein Late Iron Age Excavations (NCHM): 2 weeks. 1999/2000
28. Nandoni Dam Iron Age Excavations (NCHM). 1 week. 1999/2000
29. Letsitele Iron Age Excavations (NCHM). 1 week. 1999/2000.

Archaetnos Projects 2005-2012

30. Steenkoolspruit/Kleinkopje Graves Exhumation: 2005
31. Blesbokfontein Graves (Optimum Collieries): 2005
32. Goedehoop Colliery Graves: 2006
33. Apel Early Iron Age Excavations. 1 week: 2006
34. The Rest (Nelspruit) Graves: 2007
- 35: Doornrug Colliery Graves: 2007

36. Kleinkopje Graves (Ingwe Colliery): 2007
37. Brynterion Historical-Archaeological Excavations: 2007
38. Zwartkops Historical-Archaeological Excavations: 2007
39. Zeerust Historical Graves: 2007
40. Mmakau Late Iron Age Excavations and Reconstruction: 2007/8 (6 months)
41. Douglas Colliery Late Iron, Historical Excavations & rebuilding: 2008
42. Douglas Colliery Graves Exhumation: 2008
43. Happyland Early Iron Age Excavations: 2008
44. Klipgat Police Station Iron Age Burials: 2008
45. Norwesco Colliery (Delmas) Graves: 2008
46. Wemmershuis (Belfast) Historical Graves: 2008
47. Koni Stone Walled Site Excavations (Lydenburg): 2009
48. Klippan Colliery Graves: 2009
49. Paardekraal Historical Mine Graves: 2009
50. Hatherley (Nelmapius Ext 22) Late Iron Age Excavations: 2009
51. Siyabuswa Graves: 2009
52. Optimum Colliery Graves: 2009
53. Vuna Colliery Graves: 2009
54. Dorstfontein Colliery Graves: 2009 & 2010
55. Goedgevonden Colliery Graves: 2009-2012
56. Mafube Colliery Graves: 2009; 2011 & 2012
57. Praktiseer (Burgersfort) Early Iron Age: 2010
58. NBC Glisa (Belfast) Graves: 2010

59. Skychrome (Marikana) Late Iron Age Assessment: 2010
 60. Erasmuskasteel Late Iron Age Burial: 2010
 61. Sylvania Lannex Stone Age Mapping & Sampling: 2010
 62. Hatherley (Wildebeestfontein Powerline) Late Iron Age Excavations: 2011
 63. Kleinfontein Colliery Graves: 2011
 64. Zaaiwater Graves (Tweefontein Colliery): 2011
 65. Crown Mines Historical Graves: 2011
 66. Crown Mines Historical Midden Excavations: 2011
 67. Wemmershuis (Belfast) Coach House Historical-Archaeological Excavations: 2011
 68. Pampoennek Blockhouse Historical-Archaeological Excavations: 2011
 69. Kenhardt/Klein Zwart Bast Stone Age Mapping & Sampling: 2012
 70. Ikwezi Doornkop Colliery (Dannhauser) Stone Age Mapping & Sampling: 2012
 71. Kennedy's Vale (Steelpoort) Graves: 2012
 72. Bethlehem Graves: 2012
 73. Secunda (Holgatsfontein) Graves: 2012
 74. Paling 434 (Postmasburg) Historical Graves: 2012
 75. Fairview Mine (Barberton) Iron Age Excavations: 2012
 76. Lanseria Graves: 2012
 77. Paling 434 (Postmasburg) Historical-Archaeological Excavations: 2012
 78. Paling 434 (Postmasburg) Stone Age Mapping & Sampling: 2012
- APELSER ARCHAEOLOGICAL CONSULTING – 2012 onwards**
79. Booyse dal Iron Age Burial: 2012

80. Bergville Blockhouse Historical-Archaeological Excavations: 2012
81. Braamhoek/Ingula Graves (with J.van der Walt): 2012
82. Midrand (Waterval Estate) Graves: 2012
83. Lafarge Quarry (Polokwane) Iron Age Burials Rescue and Excavations: 2012

A total of 40 Grave Exhumation, Relocation and Investigation Projects, 6 Stone Age, 27 Iron Age & 19 Historical-Archaeological Excavation projects are represented.

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