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APPENDIX A

PLANT SEARCH & RESCUE PLAN

WETLAND REHABILITATION, ELGIN FREE RANGE CHICKEN SITE, GRABOUW

Plant Search & Rescue Plan

Wetland Rehabilitation, Elgin Free Range Chicken site, Grabouw

June 2024

Author details

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Mark Berry is an independent botanical specialist with over 25 years of experience mainly in the Western Cape, but also in the adjacent provinces, Free State and KwaZulu-Natal. He is also experienced in undertaking/compiling Environmental Impact Assessments (EIA's), Environmental Management Programmes (EMPr's), Environmental Control Officer (ECO) duties, audits, land use surveys and due diligence investigations. CV is available upon request.

Citation of plan

Berry, M.G. 2024. Plant Search & Rescue Plan: Wetland rehabilitation at Elgin Free Range Chicken site, Grabouw. MB Botanical Surveys, Somerset West.

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1. Introduction & brief site description

The preparation of this plan came as a condition of approval for the extension of the Elgin Poultry Abattoir in Grabouw. The Environmental Authorisation was issued on 24 February 2015. The site is located on Erven 2759-2761 in Grabouw Industria, west of the 'middedorp' (**Figure 1**). The subject area for wetland rehabilitation comprises a degraded area mainly covered by grasses, shrubs and a few aquatic features. There is also evidence of spoiling. It is envisaged that aquatic species, such as *Typha capensis* and *Cyperus textilis*, will be established inside the deeper depressions (permanently inundated), and the wetland fringe species in the seasonally wet areas away from the depressions. The strictly terrestrial species, such as *Athanasia trifurcata* and *Passerina corymbosa*, will be established on the drier or well-drained, elevated areas. **Figure 2** illustrates the engineer's design of the wetland.

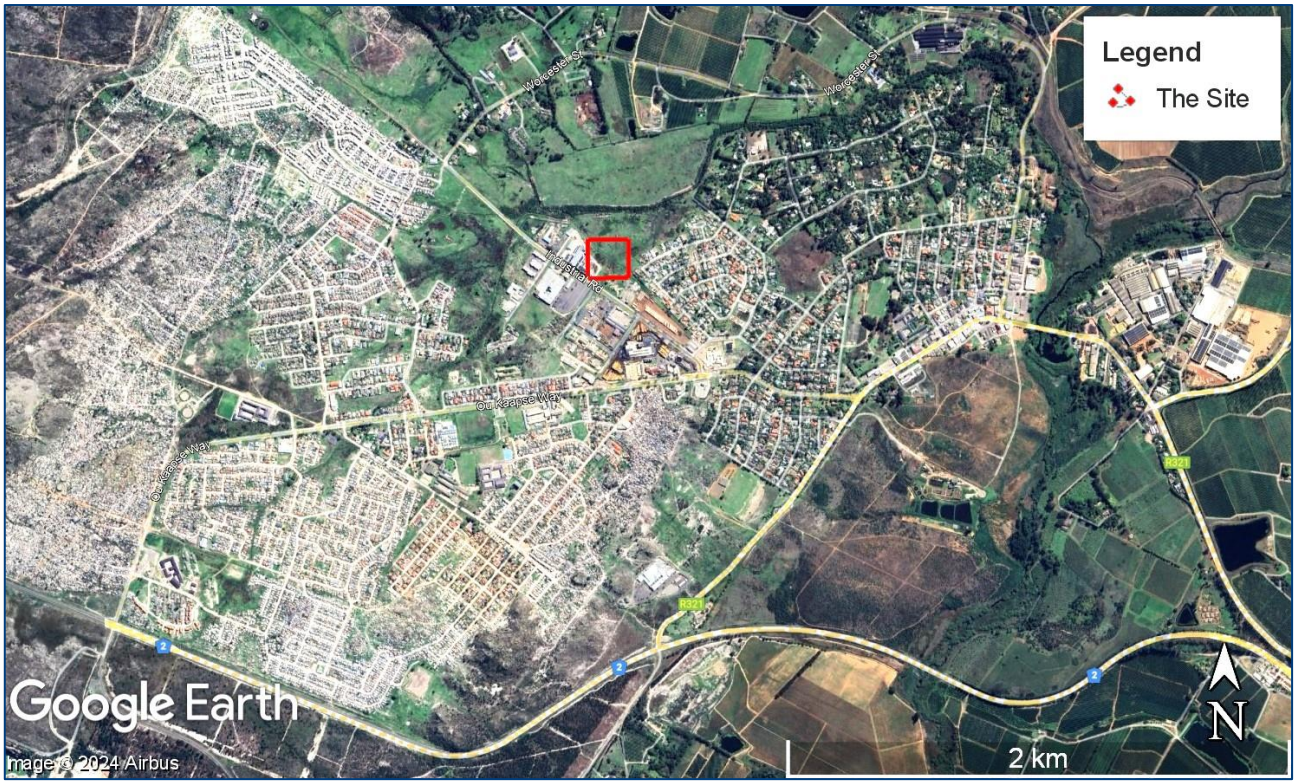


Figure 1: **Aerial photo showing the location of the site.**

2. Plant species suitable for search & rescue (S&R)

Plant species considered suitable for S&R, include certain shrubs, succulents, geophytes and sedges. A survey of the site and surrounding area undertaken on 20 May 2024 revealed several species which could be useful for search and rescue, as shown in the table below. *Carpobrotus edulis* can be partly or wholly removed for replanting purposes. *Chasmanthe aethiopica* and *Zantedeschia aethiopica* are the only bulb species recorded, both favouring seasonally wet areas or wetland fringes.

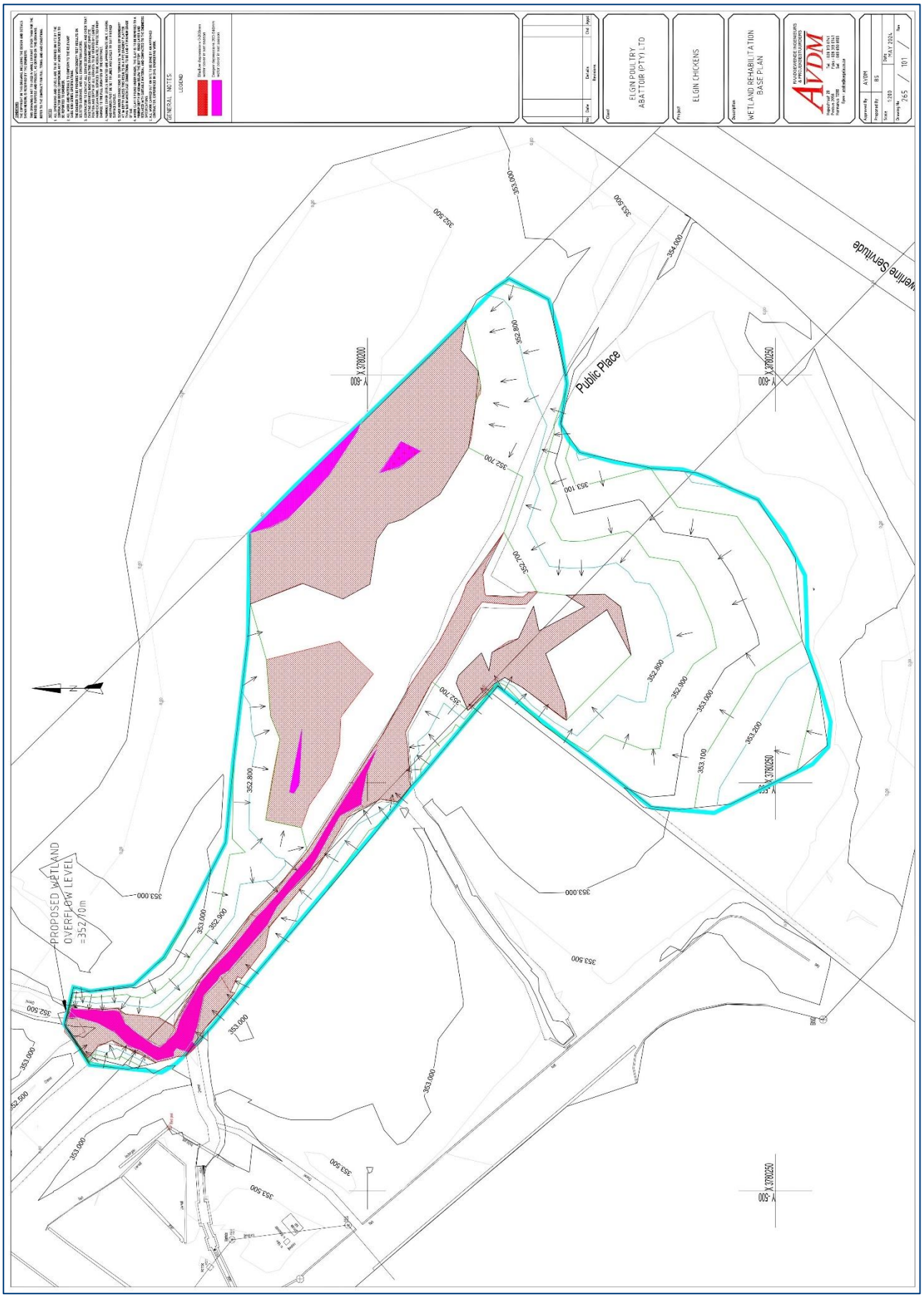
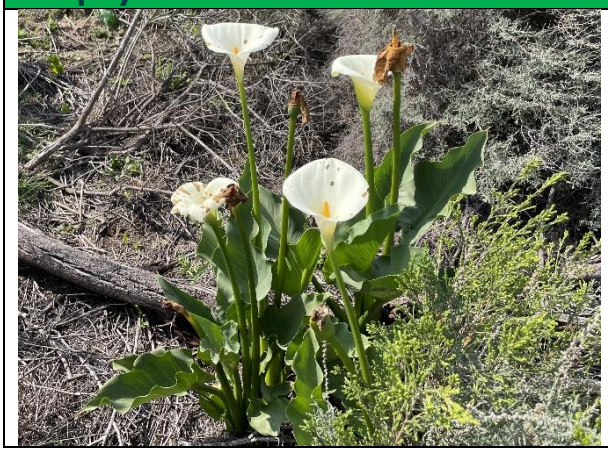


Figure 2: Engineer's design of wetland rehabilitation area. The purple areas indicate depressions deeper than 0.2 m, while the lighter hatched areas are shallow depressions (<0.2 m deep).

Grasses, sedges & rushes	
	*Capeochloa cincta* (tall wire grass) Tall, reed-like, densely tufted perennial grass found in moist areas and on streambanks.
	*Cenchrus caudatus* (African feather grass) Tall, densely tufted, perennial grass found next to watercourses and in seasonally wet areas.
	*Juncus effusus* (soft rush) Mat-forming perennial found in wetlands and watercourses.
	*Juncus capensis* (Cape rush) Tufted perennial found in wetlands.

	*Cyperus congestus* (purple umbrella sedge) Grass-like perennial sedge found on damp streambanks, moist depressions and on margins of temporary water bodies.
	*Cyperus textilis* (matjiesgoed) Colony-forming perennial found in shallow water along watercourses.
	*Typha capensis* (bulrush) Robust, underground creeping perennial found along watercourses and in water bodies.
Geophytes	
	*Zantedeschia aethiopica* (arum lily) Perennial geophyte found in wetlands and wet depressions.

	*Chasmanthe aethiopica* (cobra-lily) Cormous geophyte found on damp flats.
Succulents	
	*Carpobrotus edulis* (suurvy) Succulent perennial with trailing stems, widespread.
Shrubs	
	*Athanasia trifurcata* (klaaslouwbos) A 1.5 m tall terrestrial shrub, widespread.
	*Passerina corymbosa* (ganna bush) Terrestrial shrub or small tree, widespread.

	*Psoralea pinnata* (fonteinbos) Shrub or small, slender tree found along streams and in moist areas.
	*Cliffortia strobilifera* (vleibos) Spreading, perennial shrub found on sandstone flats and lower slopes, often near watercourses.
	*Helichrysum patulum* (kooigoed) Straggling terrestrial shrub found on sandy flats and slopes.
	*Seriphium plumosum* (slangbos) Sprawling terrestrial shrub found on rocky flats and slopes.

	*Osteospermum moniliferum* (bietou) Terrestrial shrub or small tree, often acting as a pioneer, widespread.
	*Metalasia densa* (blombos) Terrestrial erect shrub found on sandy or stony flats and slopes, widespread.
	*Leonotis ocymifolia* (wild dagga) Terrestrial erect shrub found on rocky flats and slopes, widespread.
	*Salix mucronata* (small-leaved willow) Shrub or small tree found along streams and rivers.

3. Approach

Please note that this plan focuses more on the S&R and replanting of indigenous plant species. An experienced rehabilitation contractor should be employed to handle or advise on S&R and the relocation of plants.

Plant material

The areas away from the inundated and wetland fringe areas should be revegetated (and potentially reseeded) with the succulent and shrub species listed in the table above. **Figure 3** shows the different habitat types on site after rehabilitation. Species selected for these areas should heed to their respective habitat preferences. Other indigenous species available commercially from nurseries should be screened by a botanist before being sourced and planted on site. Some of the plant material can be obtained from the area earmarked for the extension of the abattoir.

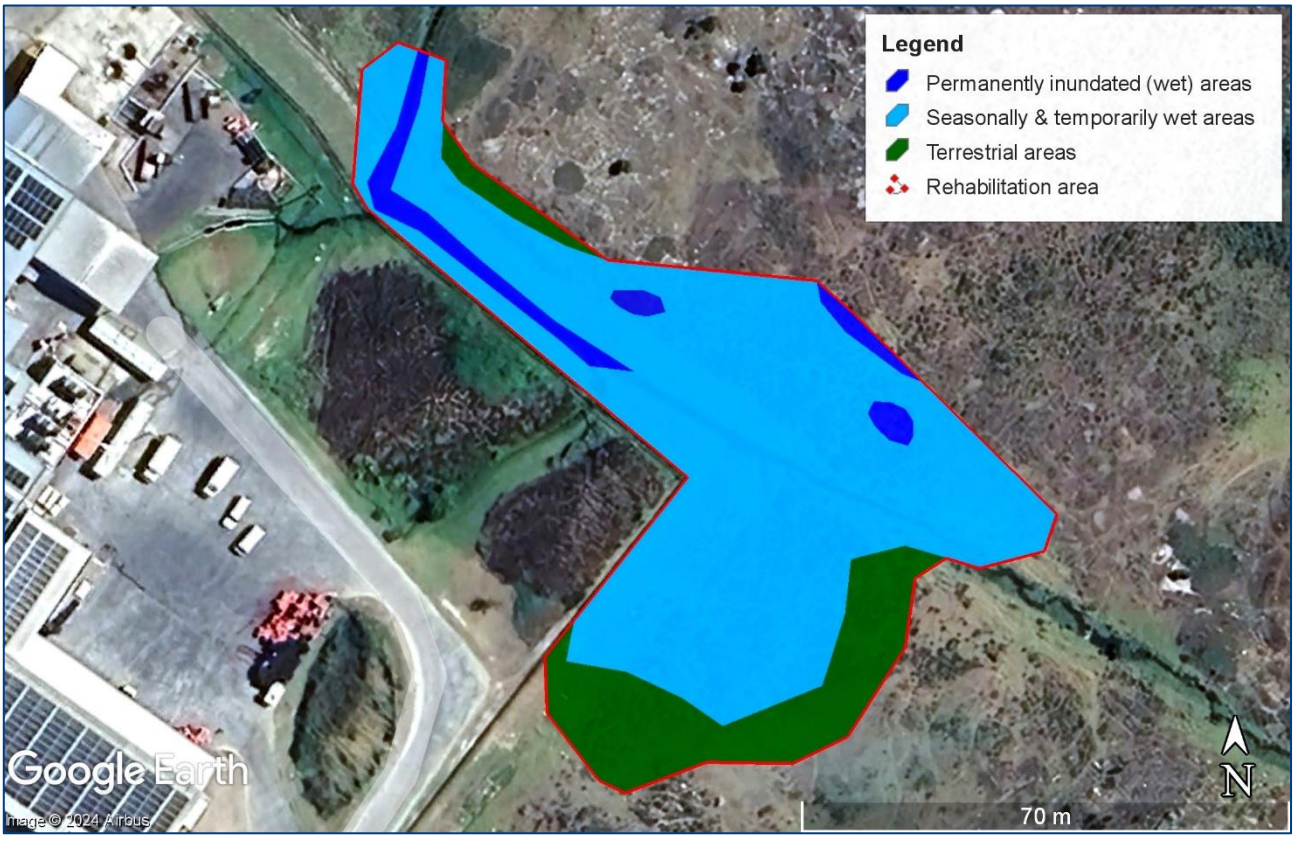


Figure 3: Habitat types after rehabilitation.

Ideally, all the material should be sourced from the site and surrounding areas. Plant material from the surrounding areas shall include mostly cuttings, sods and runners. Sods of plants such as sedges, rushes and grasses are the best means of replanting. Plant material shall be obtained on condition that the necessary permissions are obtained from the Provincial authorities (and landowners) and the disturbance to natural areas is negligible. While seed can be purchased commercially, it is recommended that seed be collected from vegetation surrounding the site to ensure genetic integrity.

Topsoil preparation

Large parts of the rehabilitations area have been compacted and covered by grasses, notably *Cynodon dactylon* (fynkweek) and *Stenotaphrum secundatum* (buffalo grass). These grasses can be invasive and need to be controlled. The surface must be slightly scarified, up to 300 mm in depth, in order to reverse the impact of compaction and allow for natural vegetation to establish more easily.

Where necessary, topsoil material to a depth of at least 15-20 cm must be spread in preparation for replanting of indigenous species. Topsoil must be sought from a suitable source nearby, and be of the right type (texture, pH, etc.) for this area, and be free of weeds.

Mulching

Mulch must be used in all areas where replanting is to take place. The following shall apply for mulching:

- Mulch shall be harvested from areas that are to be cleared of vegetation during construction activities, provided that they are free of seed-bearing alien invasive plants.
- Any collection of indigenous material from nearby veld outside the rehabilitation area shall only be done in mature vegetation, in areas identified by the rehabilitation contractor. Harvesting in these areas shall be performed in a chequer board fashion, cutting the indigenous vegetation down to 100 mm above the ground, in 2 m wide strips, leaving 2 m gaps of undisturbed vegetation in between the harvested strips.
- The contractor shall take every effort to ensure the retention of as much seed as possible in mulches made from indigenous vegetation. Mulches shall be collected in such a manner as to restrict the loss of seed. The timing of mulch harvesting shall, where possible, coincide with the season when most seed is available on the plants on site.
- The vegetative material shall be reduced by either mechanical means (chipper) or by hand-axing to sticks no longer than 100 mm. The chipped material shall be mixed with the topsoil at a ratio not exceeding 1:1.
- Brush-cut mulch shall be stored for as short a period as possible, and seed released from stockpiles shall be collected for use in the rehabilitation process
- Compost from a local source can also be utilised as mulch during replanting and rehabilitation of the river. The compost shall be well decayed, friable and free from weed seeds.
- Wood chips (including bark), which are half composted and have not been treated with preservatives can also be utilised as mulch during replanting of the site. These should preferably be obtained from indigenous species removed from the area through unavoidable clearing activities.

- The chips shall be no longer than 50 mm in length or breadth.

Planting guidelines

- During transplanting of indigenous plants, care shall be taken to ensure that it is not exposed to the sun. The roots as well as the leaves shall be covered with wet hessian to prevent water loss.
- There shall be sufficient topsoil around each plant to prevent desiccation of the root system. Where plants are stored on site prior to planting they shall be maintained to ensure that the root systems remain moist.
- Indigenous vegetation and grass sods shall be clean of weeds or invasive plants before planting.
- Sods obtained directly from the veld shall contain at least a 50 mm topsoil layer and the roots shall be minimally disturbed. They shall be obtained from the near vicinity of the site from an area selected by contractor. The soil shall be compatible with that that of the rehabilitation area and shall not have been compacted by heavy machinery.
- The size of holes shall be sufficiently large to ensure that the entire root system is well covered with topsoil, without having to be compressed. The soil around the roots of the plants being transplanted shall not be disturbed. Topsoil and subsoil from the hole shall be stored nearby to be replaced to the same depth intervals from which it was originally removed.
- Plants should be planted in clumps rather than evenly spaced, as this allows some protection of smaller plants by the larger individuals, and appears more natural. Individual spacing between tall shrubs or trees shall be 2-3 m and clumps shall consist of 5-10 tall shrubs/trees. The tall shrubs/trees in the clumps shall be planted in staggered rows of 5 tall shrubs/trees per 6 m^2 with lower shrubs planted between the clumps. The clumps shall be spaced at about 8-12 m distance.
- Shrubs shall be planted 1-2 m apart around the trees, and in the intervening areas between the clumps, or as circumstances dictate.
- Plugs of herbaceous species shall be planted at densities of up to 12 per 1 m^2 and no less than 6 per 1 m^2.
- With regards to the S&R of bulb species, the best time for removal is during leaf fall ('blaarval'). In other words, toward the end of the growth period, but before or after the flowering. For most flowering bulb species in the Western Cape, this will be towards the end of the winter season. The bulbs should then be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area. If needed, please water the area once transplanted.

- Before the placement of the plant specimens into prepared holes, the holes shall be watered, if needed.
- It is also important to protect the planting area(s) from trampling by erecting suitable fencing around the site. Signage may also be needed, stating 'Rehabilitation in progress, do not enter' or something similar.

Preferred time of planting

- Reseeding shall occur in autumn (March to May).
- Where possible, replanting should be timed to fall between the end of May and the end of July. The hot summer months should be avoided. If the plants are not properly established, the mortality will be high over the summer period. This can of course be overcome if the area is irrigated. Stabilisation of the surface may be needed during the wet winter months to prevent washaway. Therefore, after initial shaping undertaken, the rehabilitation area must be stabilized using netting, logging, etc.
- Wetland preparation shall occur during autumn, and planting shall occur during early winter after the first rains (June). If planting occurs during a dry late autumn (April-May) or early winter (June) season it shall be necessary to irrigate plants to ensure their successful establishment.
- Plant material shall be planted into the ground within a maximum period of 5 days after delivery to the site, unless otherwise specified by the rehabilitation contractor.

4. Maintenance

The rehabilitation area should be marked (staked or fenced off) for maintenance and monitoring purposes. If it does not rain during the maintenance (caring) period, please water the area manually at least twice or three times during the following couple of weeks. Remove any invasive aliens from the area, such as *Acacia longifolia* (long-leaved wattle), *A. mearnsii* (black wattle) and *Solanum mauritianum* (bugweed). Disturbance of the soil will provide ideal conditions for the establishment of these plants.

5. Monitoring

Monitoring of the success of rehabilitation will provide valuable data for future similar operations. Monitoring should include at least two visits of the demarcated rehabilitation area. Monitoring results must include recorded plant species (diversity), establishment success and presence of invasive species. The results should be copied to the interested parties, such as DEA&DP and CapeNature.

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APPENDIX B

FRESHWATER ASSESSMENT FOR ELGIN CHICKEN INDUSTRIAL SITE IN GRABOUW INDUSTRIAL AREA

FRESHWATER ASSESSMENT FOR ELGIN CHICKEN INDUSTRIAL SITE IN GRABOUW INDUSTRIAL AREA

16 SEPTEMBER 2014

Prepared by:

BlueScience (Pty) Ltd

www.bluescience.co.za

Mr Dana Grobler and Ms Toni Belcher

Email: dana@bluescience.co.za

Email: toni.b@iburst.co.za

Project number: P148-May14 (BlueScience (Pty) Ltd)

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1. BACKGROUND AND QUALIFICATIONS OF SPECIALIST CONSULTANTS

Contact details: BlueScience (Pty) Ltd, PO Box 455, Somerset Mall, 7137

BACKGROUND AND QUALIFICATIONS OF SPECIALIST CONSULTANT

Full Name	Antonia Belcher
Year of Birth	1966
Nationality	South African
Profession	Aquatic Ecologist and Environmental Management(Pr.Sci.Nat. 400040/10)
Years in Profession	20+ years

Professional Qualifications:

1984	Matriculation	Lawson Brown High School
1987	B.Sc. – Mathematics, Applied Mathematics	University of Port Elizabeth
1989	B.Sc. (Hons) – Oceanography	University of Port Elizabeth
1998	M.Sc. – Environmental Management (*cum laude*)	Potchefstroom University

Key Skills:

Areas of specialisation: Water education, Monitoring and evaluation of water resouces, Catchment management, River, wetland and estuary management, Water resource legislation, Water resource institutions, River classification, River Reserve determination and implementation, Aquatic ecosystem assessments (Environmental Impact Assessments) and water use authorisations.

Toni Belcher has worked in the Department of Water Affairs and Forestry for more than 17 years. During this period she worked for the Directorate Water Quality Management, the Institute for Water Quality Studies and the Western Cape Regional Office and has built up a wide skills base on water resource management and water resource quality for rivers, estuaries and the coastal marine environment. Prior to this she taught mathematics for a period of two years. She is currently working in her private capacity, working in the fields of water resource and water environmental education, as well as undertaking aquatic ecosystem assessments for environmental impact assessment and water use authorisation purposes. In 2006 she was awarded a Woman in Water award for Environmental Education and was a runner up for the Woman in Water prize for Water Research.

Summary of Experience:

1987 – 1988	Part-time field researcher, Department of Oceanography, University of Port Elizabeth
1989 – 1990	Mathematics tutor and administrator, Master Maths, Randburg and Braamfontein Colleges, Johannesburg
1991 – 1995	Water Pollution Control Officer, Water Quality Management, Department of Water Affairs, Pretoria
1995 – 1999	Hydrologist and Assistant Director, Institute for Water Quality Studies, Department of Water Affairs and Forestry, Pretoria
1999 – 2007	Assistant and Deputy Director, Water Resource Protection, Western Cape Regional Office, Department of Water Affairs, Cape Town
2007 - present	Self-employed

Papers and Publications:

More than 200 publications, papers and posters relating mostly to water resource quality and river health assessments in South African rivers and their management.

Recent projects that she has been involved in are:

- Classification of Water Resources in the Olifants-Doorn Water Management Areas, Department of Water Affairs;
- Development and piloting of a National Strategy to Improve Gender Representation in Water Management Institutions, where the focus is on improving the capacity to participate in water related decision making, Department of Water Affairs and Forestry;
- Compilation of a background document as well as a framework management plan towards the development of an integrated water resources management plan for the Sandveld;
- Specialist on the City of Cape Town project: Determination of additional resources to manage pollution in stormwater and river systems;
- River Health Programme monitoring for the Free State Region, Department of Water Affairs; and
- Framework for Education and Training in Water (FETWATER), Resource Directed Measures Network partner which has undertaken training initiatives on environmental water requirements in the SADC region.

Name: Mr Dana Grobler

Profession: Mr Dana Grobler (Environmental Scientist – *Pr. Sci. Nat 400058/93*);

Full Name	Dana Grobler
Year of Birth	1964
Nationality	South African
Profession	Environmental Management (Pr.Sci.Nat. *400058/93*)
Years in Profession	25+ years

Professional Qualifications:

1981	Matriculation	High School Carolina
1986	B.Sc. – Zoology Botany	University of Pretoria
1987	B.Sc. (Hons) – Oceanography	University of Pretoria
1988	HED Higher Educatuion diploma	Univeristy of Pretoria

Fields of Expertise: Specialist in environmental water requirements, river and wetland monitoring and reporting.

Relevant work experience (Mr Dana Grobler):

2013 -

- Project manager for the Berg River riparian zone restoration project. A three year Department of Environmental Affairs and Development Planning (South Africa) project. The project is based on the Extended Public Works Programme project principles.
- Compilation of an alien invasive plant removal plan for the dune slack wetland on the property of the Cape Town Film Studios, Faure Cape Town (8 ha).

- Supervision of alien vegetation removal in the Wetlands area of the Cape Town Film Studios (8 ha);
- Compilation of a rehabilitation plan for the Swartland Renosterveld vegetation and wetlands on the Cape Town Film studios property (26 ha).
- More than **45 freshwater impact assessments studies** and assisted in the compilation of more than **60 Water use authorisation applications**. These studies included wetland delineation and assessment studies.
- More than **15 power line and substation applications** and more than **10 alternative energy projects**.
- Development of RDM curriculum for a Master degree programme at University of science institutions in South Africa.

1.1 DECLARATION OF INDEPENDENCE (MR DANA GROBLER)

I, Dana Grobler, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Note: The terms of reference is included in the following section.

Signature of the specialist:

Mr Dana Grobler, Date: 16 September 2014

1.2 DECLARATION OF INDEPENDENCE (MS ANTONIA BELCHER)

I, Antonia Belcher, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Note: The terms of reference is included in the following section.

Signature of the specialist:

Ms Antonia Belcher, Date: 16 September 2014

2. TERMS OF REFERENCE

Interpretation of the terms of reference and work conducted

2.1 FRESHWATER ASSESSMENT

Task 1: Freshwater Impact Assessment

1.1 Literature survey and initialisation

1.2 Field assessment to determine current impacts of structures and vegetation sensitivity

1.3 Compile freshwater assessment report

1.4 Review of report and liaison with client

1.5 Liaison with BOCMA staff to determine water use authorisation requirements

2.2 WATER USE AUTHORISATION APPLICATION

Task 2: Compilation of the documentation for submission of the water use authorisation application (WULA) to the Department of Water Affairs

- *Collate all relevant information for the water use authorisation application in terms of Section 21 c and i water uses,*
- *Compile licence application forms and supporting documentation, and*
- *Review and liaison with client and BOCMA.*

3. LIMITATIONS AND ASSUMPTIONS OF THE STUDY

Limitations and uncertainties often exist within the various techniques adopted to assess the condition of ecosystems. The following techniques and methodologies were utilized to undertake this study:

- Analysis of the freshwater ecosystems was undertaken according to nationally developed methodologies as defined by WET Health Series developed for the Water Research Commission. This level is considered to be sufficient for the project.
- The Department of Water Affairs Guideline for Wetland Delineation (2005) was followed for the delineation of the wetland area.
- Recommendations are made with respect to the adoption of buffer zones within the development site, based on the wetlands/river's functioning and site characteristics.

These recommendations are based on professional opinion due to the lack of a formal methodology for buffer zone determination within South Africa.

4. USE OF THIS REPORT

This report reflects the professional judgment of its authors. The full and unedited content of this should be presented to the client. Any summary of these findings should only be produced in consultation with the authors.

5. STUDY OVERVIEW

5.1. OVERVIEW OF THE PROJECT AND STUDY AREA

The industrial site that is proposed to be developed is situated in the Grabouw industrial area. Elgin Chicken would like to extend its existing facilities towards the south east into a vacant property. The proposed development will take place in two phases (Figure 1c and 1d).

Phase 1 includes the development of the southern half of the property (erf 2761) and does not impact on the two wetlands, which will remain on site. A smaller stormwater retention pond will also be included to polish on-site stormwater before it is fed into the existing wetlands (Figure 1c).

As part of Phase 2 the access road and marshalling yard will be extended to the north of the property, requiring the infilling of the two wetlands. In order to mitigate this impact it is proposed to recreate the wetland off-site (Figure 1d).

There are currently no buildings on the vacant property. The property towards the east of the site is also vacant and belongs to the Local Municipality. The property is in the industrial area of Grabouw and zoned for industrial use.

The site under investigation has been altered over many years to accommodate storm water run-off from Industria road, which is situated towards the south. Other developments in the area have also contributed towards storm water runoff into Industria road and an informal storm water trench was created to drain the storm water runoff from Industria road via the property under investigation to the depression north of the property.

During the period 2003 to 2007 a trench was created north of the property draining the depression located on and north of the property. This was most likely the response of land owners along the northern side of Industria road in order to drain away stagnant water from the properties and ensuring the swift drainage of wash water and storm water emanating from

these industrial properties and also the properties situated further south of the proposed development.

A large portion of the property is overgrown with kikuyu grass *Pennisetum clandestinum* and a total of three storm water drains transects the property.

Figure 1a provides a topographic map of the site and the area around the site which is to be developed. Figure 1b provides an indication of the storm water drains on the property and other drains towards the north of the property. Figure 1c and 1d provides a site development plan which is proposed in two phases in which the applicant indicates the construction of buildings and loading bays in the southern and western part of the property under investigation to link to existing buildings on the current property occupied by Elgin chicken. A ring road along the eastern boundary and transecting the property in the middle form south to north is proposed to allow delivery vehicles improved access to existing and future building to be constructed in phase 1 and 2. A number of site visits were undertaken, including 27 February and 14 March 2014 to assess the freshwater ecosystems on the property and adjacent properties.

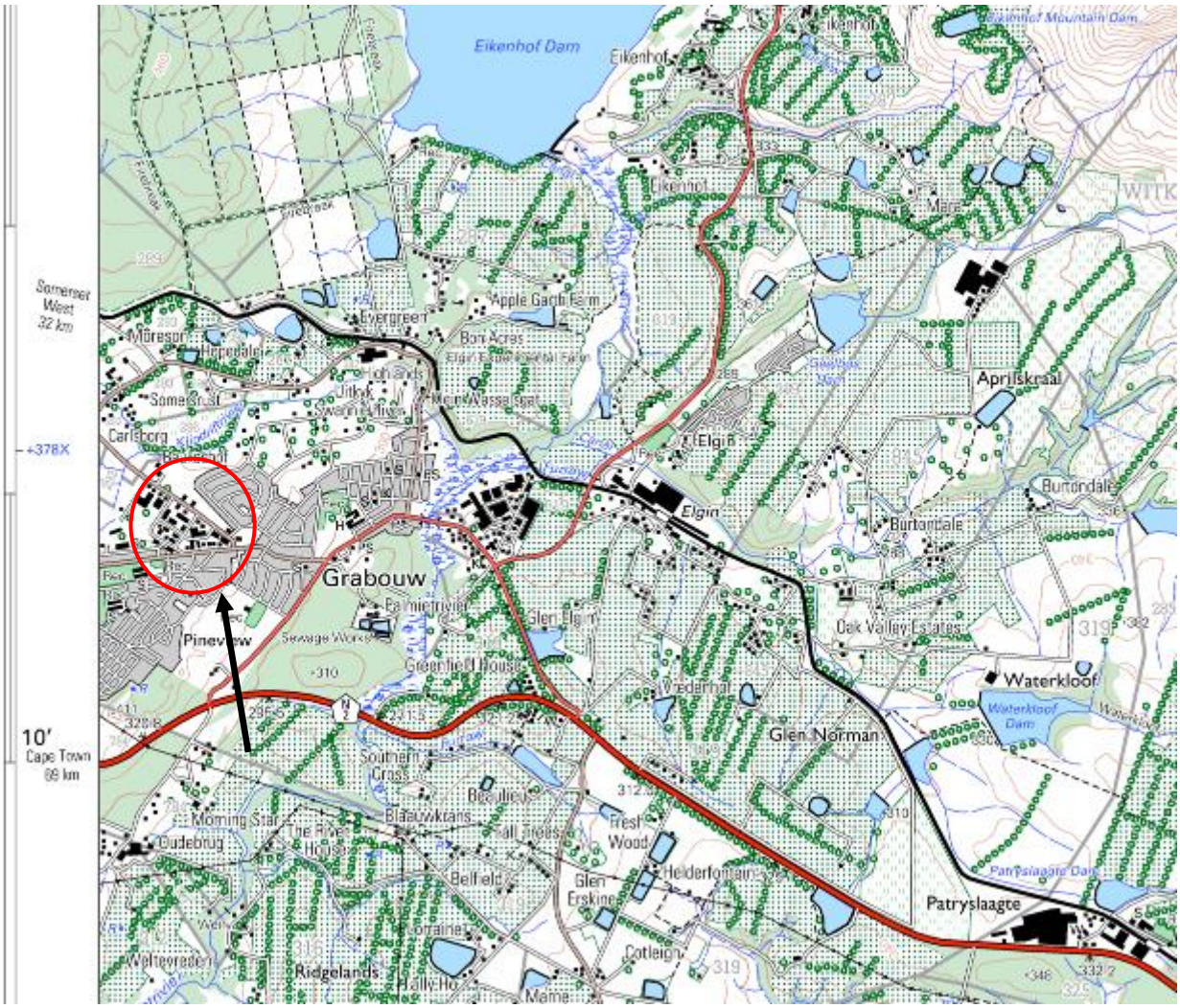


Figure 1a: Grabouw industrial area indicating the site of the proposed development west of Grabouw (1:50 000 map 3419AA Grabouw)

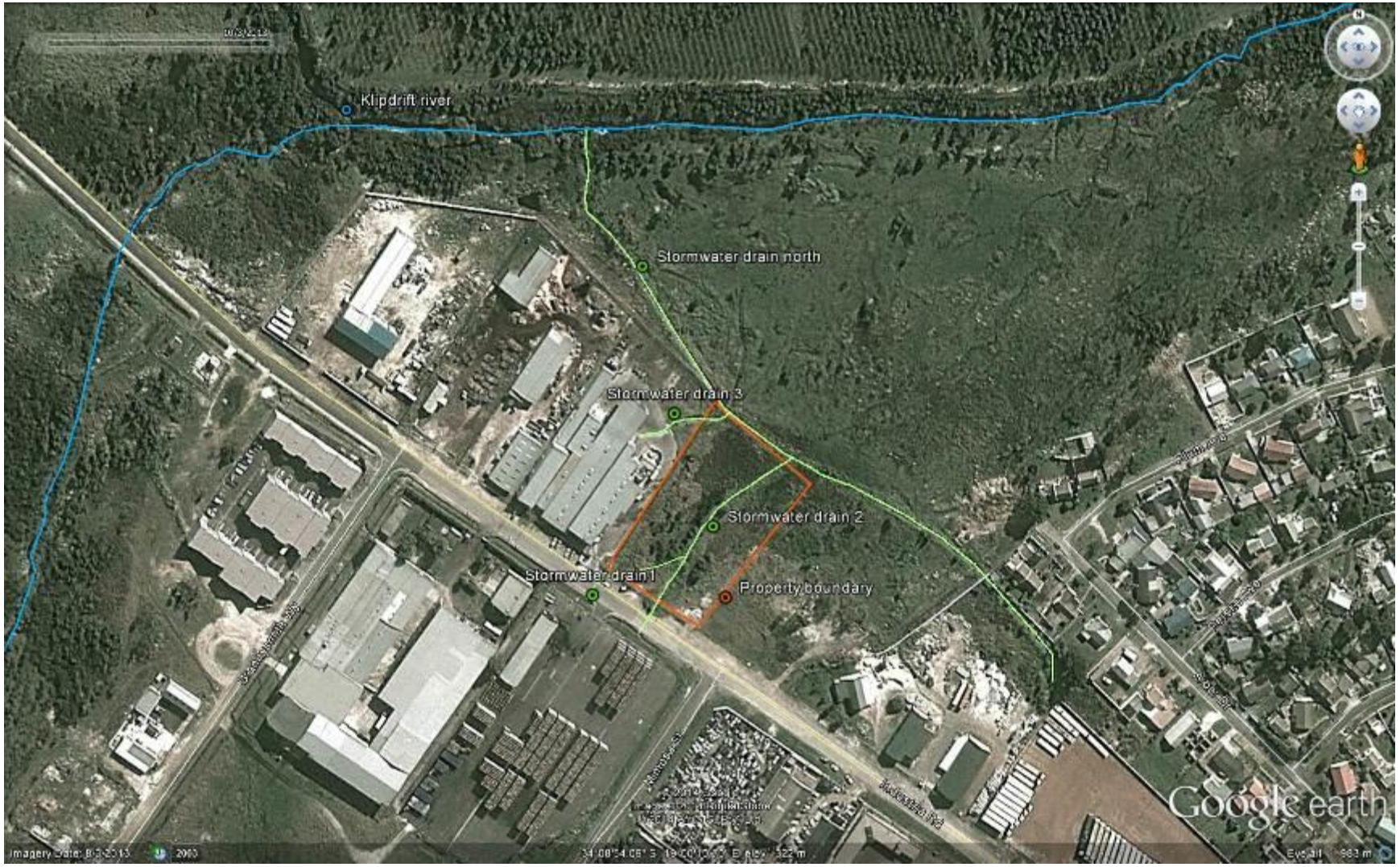


Figure 1b: Industrial area in Grabouw indicating the property to be developed (red line), storm water drains (green lines) and Klipdrift Rivier (blue line) (Google Earth image 10 March 2013).

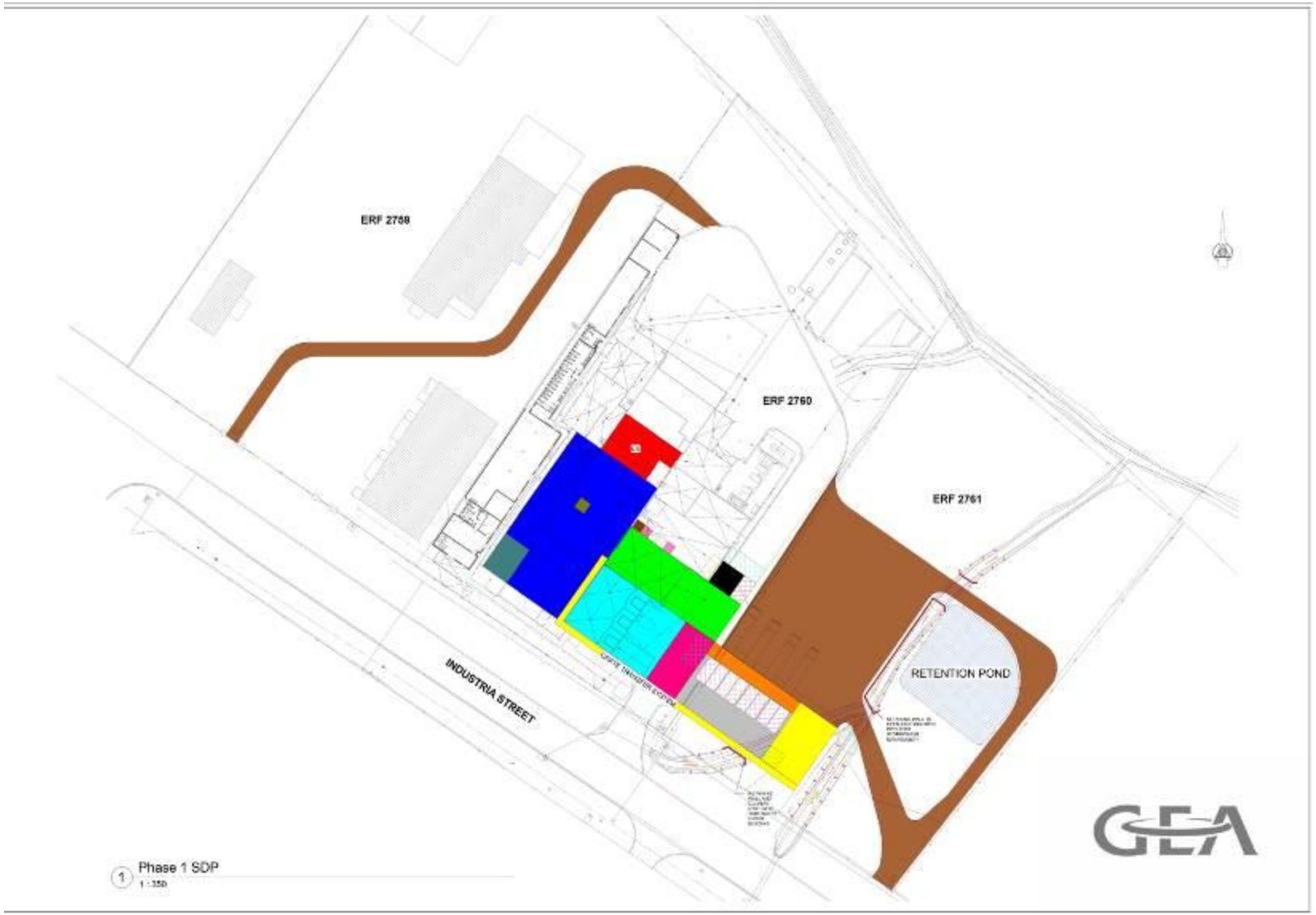


Figure 1c: Site development plan (phase 1)

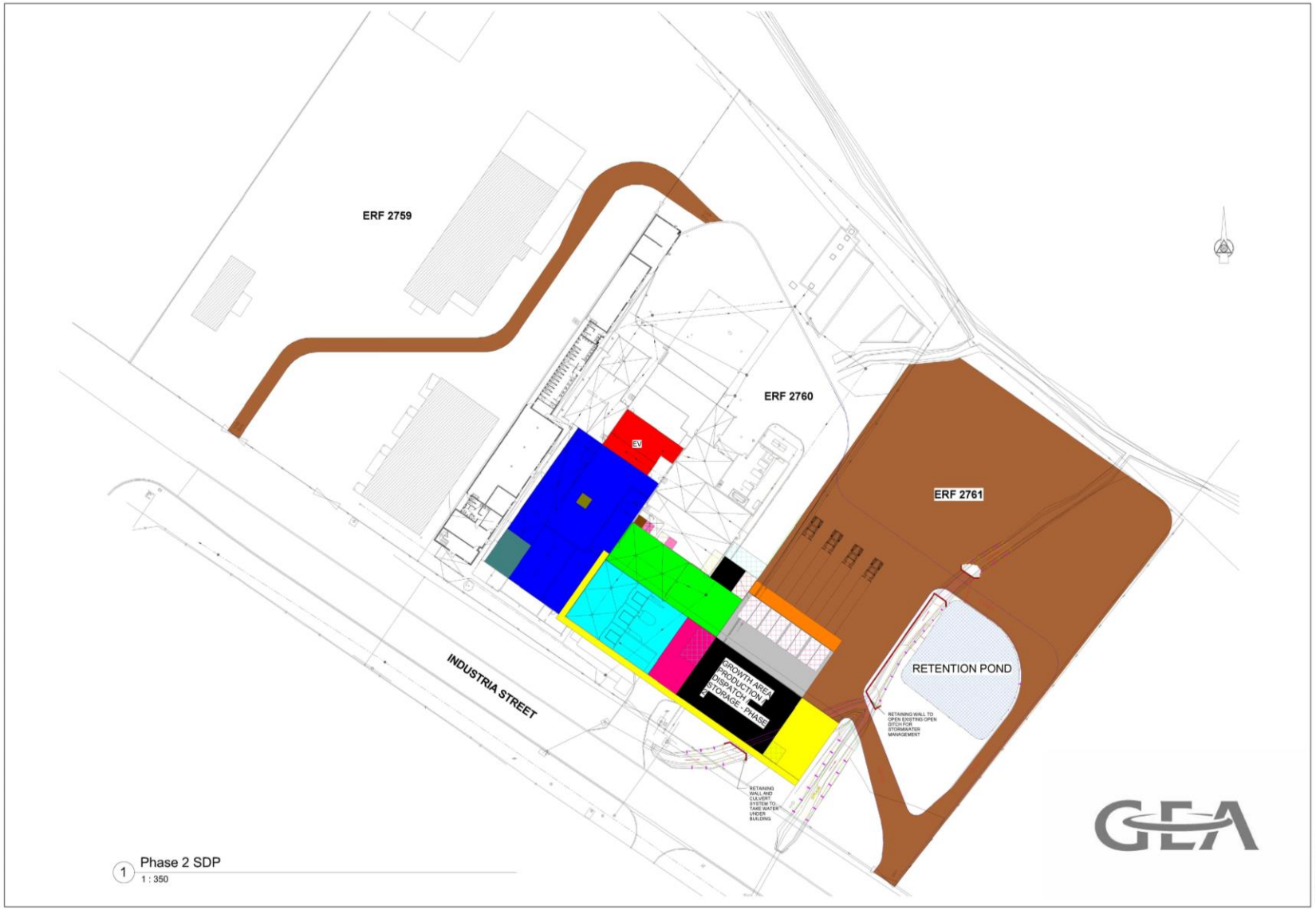


Figure 1d: Site development plan (phase 2)

6. PHYSICAL CHARACTERISTICS OF THE STUDY AREA

6.1. VISUAL CHARACTERISTICS AND TOPOGRAPHY

The property that is proposed to be developed is situated in the north western part of the town of Grabouw. The rainfall drainage in this area is in general in a north easterly direction and flow into the Klipdrift River which is a tributary of the Palmiet River.

The industrial area is located south of the property and a narrow strip of public open space is situated north of the property and stretches along most of the industrial properties north along Industria road.

The property receives storm water runoff from adjacent industrial sites, situated to the south along Industria road.

The site is situated in quaternary drainage catchment G40C.

6.2. CLIMATE

Grabouw normally receives about 990mm of rain per year and because it receives most of its rainfall during winter it has a Mediterranean climate. The chart below (fig 2b) shows the average rainfall values for Grabouw per month. It receives the lowest rainfall (10 mm) in January and the highest (90 mm) in June. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Grabouw range from 19°C in July to 29°C in February. The region is the coldest during July when the mercury drops to 7°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures.

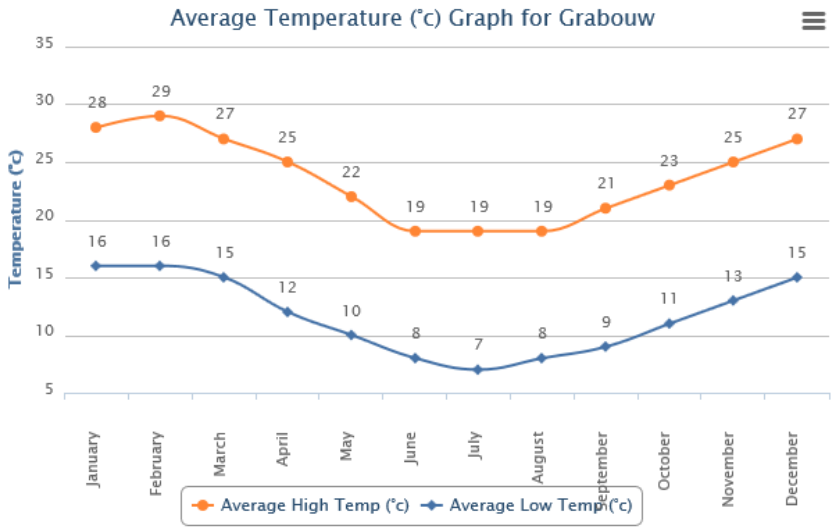


Figure 2a: Avergae temperature for Grabouw (Worldweatheronline, 2014)

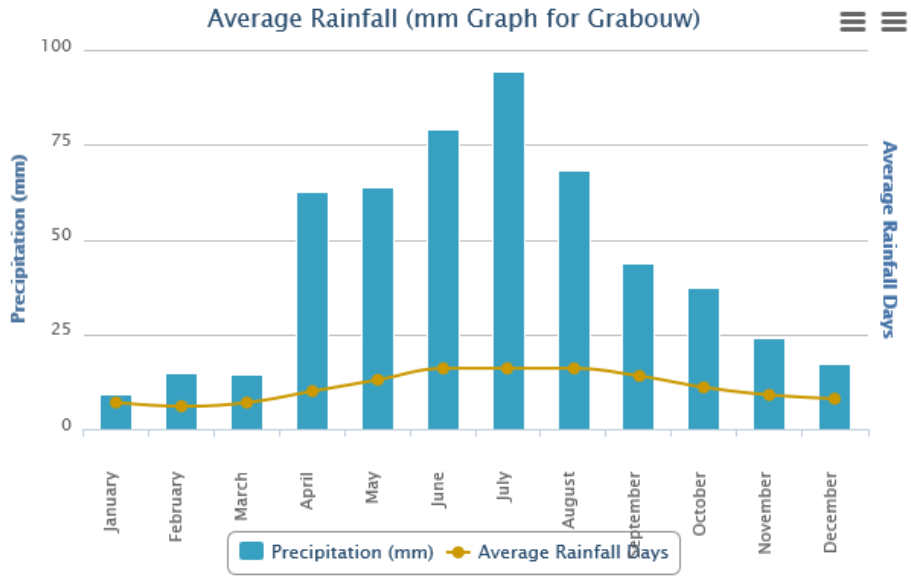


Figure 2b: Climate graphs for the area (Worldweatheronline, 2014)

6.3 CONSERVATION VALUE OF THE TERRESTRIAL AND FRESHWATER FEATURES

Two sets of conservation mapping results are of relevance to the national and provincial identification of the ecological importance that has been attributed to the freshwater features in the study area: the Critical Conservation Areas map that was a product of a fine scale mapping process and the National Freshwater Ecosystem Priority Areas (FEPA) map. The Critical Biodiversity Areas (CBA) map aims to guide sustainable development by providing a synthesis of biodiversity information to decision makers.

It serves as the common reference for all multi-sectorial planning procedures, advising which areas can be developed, and which areas are of critical biodiversity value and, together their support zones should be protected against impacts. The broad objective is to ensure appropriate land use and planning for the best possible long-term benefits and to promote integrated management of natural resources.

CRITICAL BIODIVERSITY AREAS

The main CBA Map categories are Critical Biodiversity Areas (Terrestrial and Aquatic), Ecological Support Areas (Critical and Other), Other Natural Remaining Areas and No Natural Remaining Areas. The first two mentioned categories represent the biodiversity priority areas which should be maintained in a natural to near natural state. The last two mentioned categories are not considered as priority areas and a loss of biodiversity within these areas may be acceptable. The CBA map indicates the most efficient (least land-hungry) selection and classification of land portions requiring safeguarding in order to meet national biodiversity objectives (termed biodiversity thresholds). Furthermore, wherever possible, the selection has attempted to avoid conflict with other land uses.

Figure 3a provides the CBA for the terrestrial component. The terrestrial CBA map corresponds with the aquatic biodiversity as most of the terrestrial areas around the study site have been permanently transformed (Figure 3b).

Figure 3a: Terrestrial CBA map (SANBI Biodiversity GIS, 2013)

Figure 3b: Tranformed layer of the terrestrial CBA map (SANBI Biodiversity GIS, 2013)

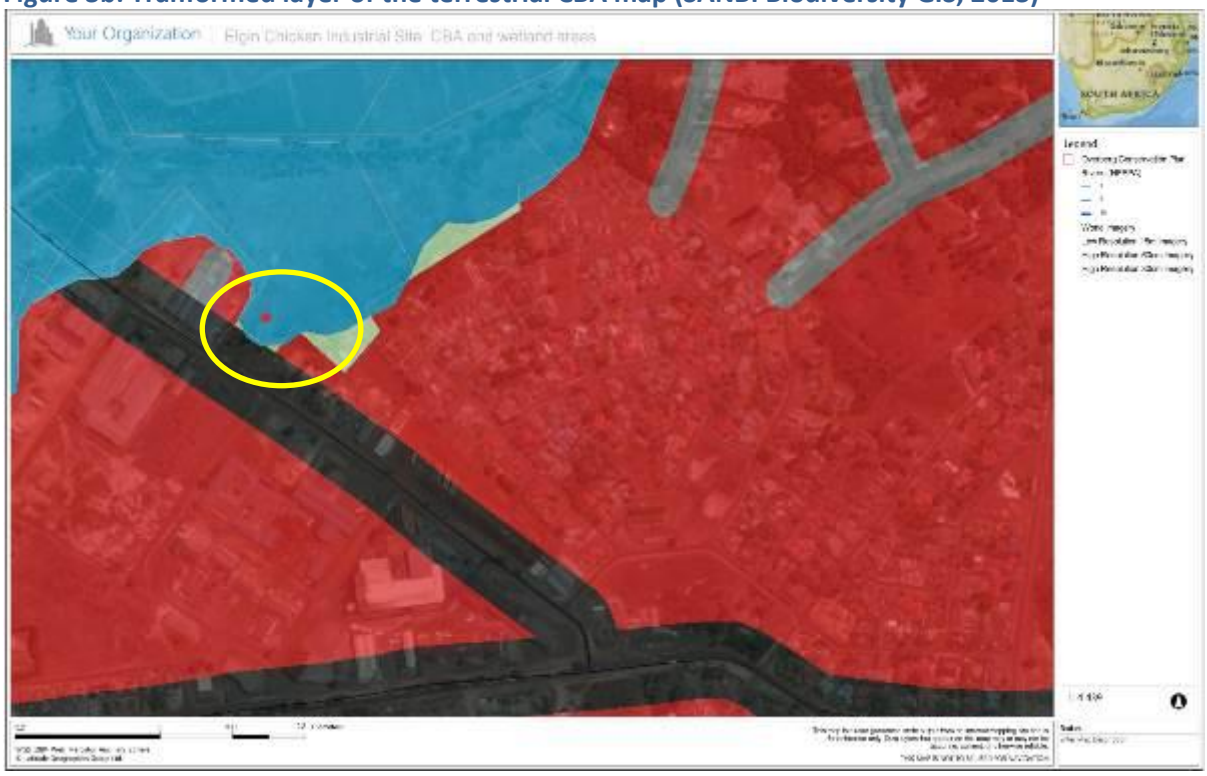


Figure 3c: Critical Biodiversity Areas map with transformation layer for the area (SANBI Biodiversity GIS, 2013)

FRESHWATER ECOSYSTEM PRIORITY AREAS (FEPA)

FEPAs are intended to provide strategic spatial priorities for conserving South Africa's freshwater ecosystems and supporting sustainable use of water resources. FEPAs were determined through a process of systematic biodiversity planning and were identified using a range of criteria for serving ecosystems and associated biodiversity of rivers, wetlands and estuaries. The river and wetland FEPAs are required to be maintained in a largely natural ecological state while fish support areas should not be allowed to degrade from their existing ecological condition. The shading of the whole sub-quaternary catchment (FEPA) indicates that the surrounding land and smaller stream network need to be managed in a way that maintains the good condition of the river reach.

Figure 4a: National Freshwater Ecosystem Priority Areas (SANBI Biodiversity GIS, 2013)

From both the CBA (Figure 4a) and the FEPA (Figure 4c) maps it is clear that the proposed development is situated at the southernmost tip of the mapped CBA area and because the FEPA corresponds with the CBA areas is also at the tip of the FEPA area (Figure 4c). Approximately 40% of the site is included in the mapped CBA area.

The condition of the portion of the CBA in and around the property is such that only of a substantial effort is put in to improve the condition of the wetland areas (primarily outside the property) can it be considered to be contributing to overall conservation of the area.

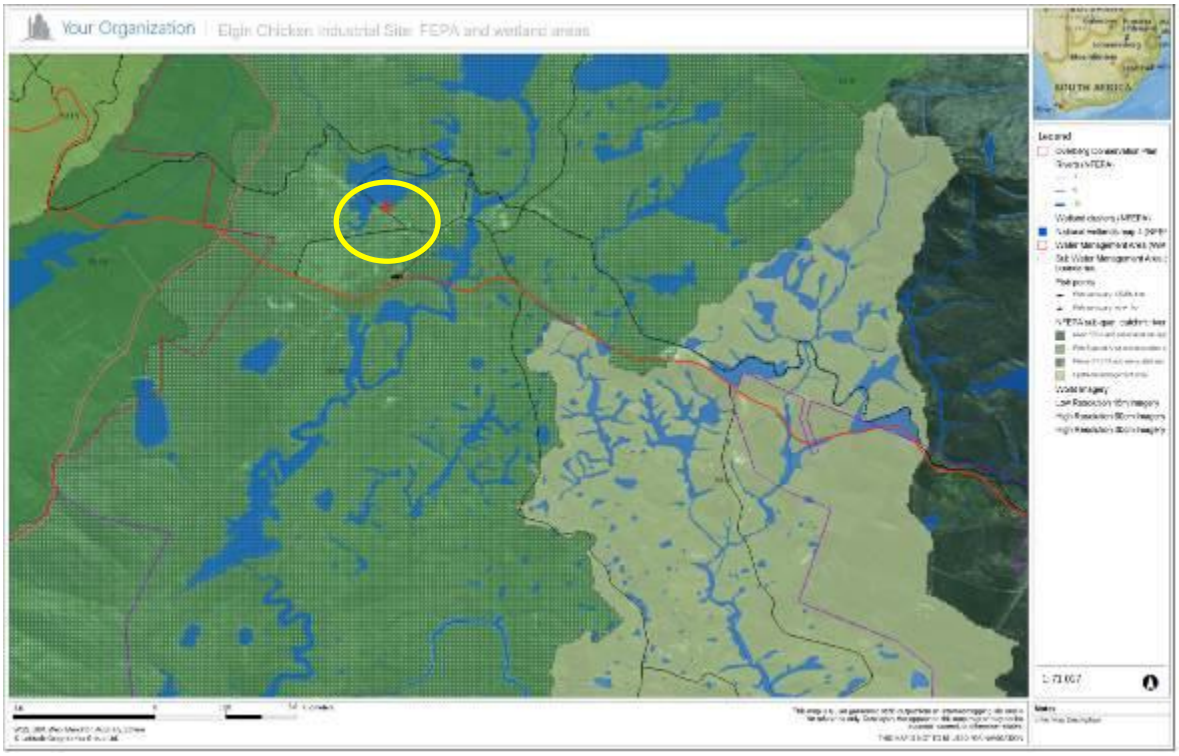


Figure 4b: National Freshwater Ecosystem Priority Areas (SANBI Biodiversity GIS, 2013) – zoomed

Figure 4c: National Freshwater Ecosystem Priority Areas (SANBI Biodiversity GIS, 2013) – zoomed

7. ASSESSMENT OF THE FRESHWATER FEATURES IN AND AROUND THE SITE

7.1 GENERAL DESCRIPTION OF THE FRESHWATER FEATURES

The freshwater features on the property are the result of the canalisation of storm water from Industria road onto the property. The storm water enters the property via two drains from Industria road and spreads over the northern parts of the property. These drains have been excavated some years ago and they are approximately 1.5m deep (Fig 5a) on the southern end of the property and spills in the north into the northern drain (Fig 5d). A third wash water (storm water) drain emanates from the west (on the existing property of Elgin Chicken) and transects the site from west to north.

Water also drains onto the property from the south east through the vacant land. The exit point of all water draining and canalised via the property is situated in a depression in the north and north-east. The water accumulation in the northern and north-eastern part of the property has resulted in the formation and enhancement of a *Typha* wetland which extends far beyond the property boundary in an eastern and northern direction. The extent of the *Typha* wetland beyond the site can be attributed to storm water draining from the industrial premises situated further east which drain storm water and discharges via a furrow and often overflows the furrow north of the site under consideration.

Figure 6b provides an indication of the storm water runoff direction in and around the site.

Irrespective if the wetlands have been created by storm water runoff manipulation and enhancement it provides ecosystems functions and should be assessed to determine the degree of importance, sensitivity and function. Section 7.2 of the report provides an assessment of the wetlands.

Figure 5a: Storm water drain 1 at southern fence

Figure 5b: Storm water drain 2 at southern fence

Figure 5c: Storm water drain 3 at western fence

Figure 5d: Storm water drain north of the property

Figure 6a: Wetland delineation on the site (*Typha* wetland green line, *Juncus* wetland brown line).

Figure 6b: Wetland delineation on the site (*Typha* wetland green line, *Juncus* wetland brown line) and storm water drainage directions.

7.2 WETLAND ASSESSMENT

Two wetlands were identified on the site. The *Typha* wetland in the north eastern corner of the property and the *Juncus* wetland in the north western corner. Both wetlands extend well beyond the property. Approximately 25% of the *Typha* wetland is situated on the site and about 30% of the remainder of the *Juncus* wetland remains on the site to be developed.

WET-EcoServices and WET-Health were utilised to assess the benefits and services supplied by the *Typha* and *Juncus* wetlands as well as to determine the integrity of the ecological processes for the wetlands. Ecological Importance and Sensitivity assessments were also utilised to contextualise results for the water feature.

7.2.1 WETLAND CHARACTERISATION

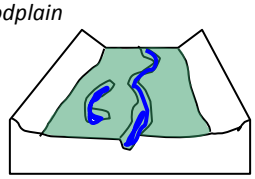
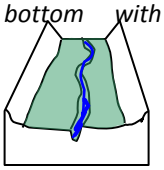
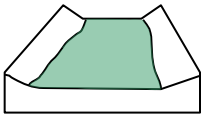
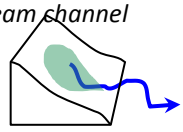
According to Table 1, the wetlands that occur on the site can be considered to be depression wetlands.

The areas dominated by *Typha* receives more water and is for longer periods of time inundated with water and it can be concluded this wetland is situated at the lowest end of the property. The areas in which the *Juncus* specie dominates is less wet and not inundated for prolonged periods. This is the result of the digging of the storm water drains through the property which diverts more water towards the north and north-east resulting in the accumulation of water in the north eastern portion of the property.

Under natural topographic conditions the water distributions on the site would have been over a wider area and would not have been stagnant. The drain / furrow to the north (outside of the property) actually acts as a retention wall inundating the area resulting in a reduction of diversity as it favours *Typha* wetland. The *Typha* wetland has most likely expanded over time as a result of the establishment of the trench and its excavated soils on its banks.

Most of the site that is proposed to be developed is overgrown with kikuyu grass (Fig 5a-c), and the wetland areas outside of the boundary of the property are even more severely overgrown (Fig 5d).

Table 1: Wetland hydro-geomorphic types typically supporting inland wetlands in South Africa

Hydro-geomorphic types	Description	Source of water maintaining the wetland[1]	
		Surface	Sub-surface
Floodplain 	Valley bottom areas with a well defined stream channel, gently sloped and characterized by floodplain features such as oxbow depressions and natural levees and the alluvial (by water) transport and deposition of sediment, usually leading to a net accumulation of sediment. Water inputs from main channel (when channel banks overspill) and from adjacent slopes.	***	*
Valley bottom with a channel 	Valley bottom areas with a well defined stream channel but lacking characteristic floodplain features. May be gently sloped and characterized by the net accumulation of alluvial deposits or may have steeper slopes and be characterized by the net loss of sediment. Water inputs from main channel (when channel banks overspill) and from adjacent slopes.	***	*/ ***
Valley bottom without a channel 	Valley bottom areas with no clearly defined stream channel usually gently sloped and characterized by alluvial sediment deposition, generally leading to a net accumulation of sediment. Water inputs mainly from channel entering the wetland and also from adjacent slopes.	***	*/ ***
Hillslope seepage linked to a stream channel 	Slopes on hillsides, which are characterized by the colluvial (transported by gravity) movement of materials. Water inputs are mainly from sub-surface flow and outflow is usually via a well defined stream channel connecting the area directly to a stream channel.	*	***
Isolated Hillslope seepage 	Slopes on hillsides, which are characterized by the colluvial (transported by gravity) movement of materials. Water inputs mainly from sub-surface flow and outflow either very limited or through diffuse sub-surface and/or surface flow but with no direct surface water connection to a stream channel.	*	***
Depression (includes Pans) 	A basin shaped area with a closed elevation contour that allows for the accumulation of surface water (i.e. it is inward draining). It may also receive sub-surface water. An outlet is usually absent, and therefore this type is usually isolated from the stream channel network.	*/ ***	*/ ***

[1] Precipitation is an important water source and evapotranspiration an important output

 Wetland

Water source: * Contribution usually small

*** Contribution usually large

*/ *** Contribution may be small or important depending on local circumstances

7.2.2 HISTORICAL ASSESSMENT OF AREA AND ITS WETLANDS

Figures 7a - d provide Google Earth images from 2003 to 2014 to enable a historical overview of the modifications to wetlands and its surrounding areas.

In 2003 both the site to be developed and the neighboring sites, were not fenced and alien vegetation has dominated the site (most likely black wattle) and the areas towards the north of the industrial area. The storm water drainage furrows which are situated through the property were established prior to 2003.

By 2011 most of the woody alien invasive trees have been removed and the extent of the wetlands that have formed or have been enhanced by storm water diversions is visible (figure 7b). It would appear that the storm water drains have been "maintained" and kikuyu grass has overgrown the storm water canals and has also invaded the adjacent remaining natural vegetation.

Later during 2011 building rubble and concrete slabs have been dumped on the property east of the site and partially leveled. Soil has also being deposited on the southern end of the site and leveled in a northerly direction.

The property was fenced in the period 2011 to 2014. The fence has divided the original wetland areas into smaller units dissecting the *Typha* wetland in an east-west direction and further dividing the *Juncus* wetland in a north west – south east direction.

The drainage furrow north of all the industrial properties was established between 2003 and 2011. This furrow divided the wetlands along a southeastern to northwestern direction and created conditions in which kikuyu grass could start to overgrow and dominate the natural wetland plants to the north of the property. The trench has diverted the flow which would naturally most likely drain into a north eastern line.

The wetland areas have formed and are most likely maintained and enhanced by the additional storm water that emanates from the road and adjacent properties to the east.

It is most likely that the natural extent of the wetlands was less in a southerly direction and more pronounced in a northerly direction. The furrow north of the industrial properties partially cuts off water from flowing further northeast and has therefore contributed to the reduction in the extent of the wetlands north of the study site.

Figure 7a: Google Earth image of the site 2003

Figure 7b: Google Earth image of the site 2011

Figure 7c: Google Earth image for the site later in 2011

Figure 7d: Google Earth zoomed image of the delineated wetlands (Google Image 2014).

7.3 DELINEATION OF THE AQUATIC FEATURES IN AND NEAR THE AREA TO BE DEVELOPED

The national Water Act (Act 36 of 1998) defines wetlands as "*land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil*."

Wetlands must have one or more of the following attributes:

- Wetland (hydromorphic) soils that display characteristics resulting from prolonged saturation;
- The presence, at least occasionally, of water loving plants (hydrophytes); and
- A high water table that results in saturation at or near the surface, leading to anaerobic conditions developing in the top 50cm of the soil.

Wetland delineation

In order to delineate the extent of a wetland, an approach that is commonly followed which identifies the indirect indicators of prolonged saturation by water: wetland plants (hydrophytes) and wetland (hydromorphic) soils can be used. The presence of these distinctive indicators in an area implies that the frequency and duration of saturation is sufficient to classify the area as a wetland. Terrain unit is another indicator, which will help identify those parts of the landscape where wetlands are more likely to occur.

Wetland indicators

Finding the outer edge of the temporary zone requires the delineator to give consideration to four specific indicators:

- The Terrain Unit Indicator helps to identify those parts of the landscape where wetlands are more likely to occur;
- The Soil Form Indicator identifies the soil forms, as defined by the Soil Classification Working Group (1991), which are associated with prolonged and frequent saturation;
- The Soil Wetness Indicator identifies the morphological "signatures" developed in the soil profile as a result of prolonged and frequent saturation; and
- The Vegetation Indicator identifies hydrophilic vegetation associated with frequently saturated soils.

In an attempt to determine the boundaries of the wetland two site visits were undertaken and a GPS was used to delineate the extend of the wetland plants. The site is overgrown with kikuyu grass and made the identification of all wetland features problematic.

A *Typha* and *Juncus* dominated wetland areas were identified and is indicated in Figure 7d.

7.4 WETLAND INTEGRITY ASSESSMENT

The Present Ecological Status (PES) Method (DWAF 2005) was used to establish the integrity of the wetlands in the study area and was based on the modified Habitat Integrity approach developed by Kleynhans (DWAF, 1999; Dickens *et al*, 2003). Table 2 and 3 below displays the criteria for the assessment of the habitat integrity of a wetland.

The two wetlands of which portions occur on the east and north of the site were assessed. Table 4 provides the results from the assessment of the habitat integrity of the wetland. These criteria were selected based on the assumption that anthropogenic modification of the criteria and attributes listed under each selected criterion can generally be regarded as the primary causes of the ecological integrity of a wetland.

The habitat integrity of the wider area containing the wetlands remnants area that could potentially be rehabilitated but currently it can be considered to be largely modified (table 4).

Figure 8a: Portion of the *Juncus* wetland inside the property overgrown with kikuyu grass

Figure 8b: Deteriorated and overgrown remainders of the *Juncus* wetland outside of the property in the north

Figure 8c: Portion of the *Typha* wetland situated inside the property

Figure 8d: *Typha* wetland extensions towards the east outside the property

Table 2: Habitat integrity assessment criteria for palustrine wetlands (Dickens *et al*, 2003)

Criteria & Attributes	Relevance
Hydrologic	
Flow Modification	Consequence of abstraction, regulation by impoundments or increased runoff from human settlements or agricultural land. Changes in flow regime (timing, duration, frequency), volumes, velocity which affect inundation of wetland habitats resulting in floralistic changes or incorrect cues to biota. Abstraction of groundwater flow to wetland.
Permanent Inundation	Consequence of impoundment resulting in destruction of natural wetland habitat and cues for wetland biota.
Water Quality	
Water Quality Modification	From point or diffuse sources. Measure directly by laboratory analysis or assessed indirectly from upstream agricultural activities, human settlements and industrial activities. Aggravated by volumetric decrease in flow delivered to the wetland.
Sediment Load Modification	Consequence of reduction due to entrapment by impoundments or increase due to land use practices such as overgrazing. Cause of unnatural rates of erosion, accretion or infilling of wetlands and change in habitats.
Hydraulic/Geomorphic	
Canalisation	Results in desiccation or changes to inundation patterns of wetland and thus changes in habitats. River diversions or drainage.
Topographic Alteration	Consequence of infilling, ploughing, dykes, trampling, bridges, roads, railway lines and other substrate disruptive activities that reduce or change wetland habitat directly in inundation patterns.
Biota	
Terrestrial Encroachment	Consequence of desiccation of wetland and encroachment of terrestrial plant species due to changes in hydrology or geomorphology. Change from wetland to terrestrial habitat and loss of wetland functions.
Indigenous Vegetation Removal	Direct destruction of habitat through farming activities, grazing or firewood collection affecting wildlife habitat and flow attenuation functions, organic matter inputs and increases potential for erosion.
Invasive Plant Encroachment	Affects habitat characteristics through changes in community structure and water quality changes (oxygen reduction and shading).
Alien Fauna	Presence of alien fauna affecting faunal community structure.
Over utilisation of Biota	Overgrazing, over fishing, etc.

Table 3: Relation between scores given and ecological categories

Scoring Guidelines Per Attribute*	Interpretation of Mean* of Scores for all Attributes: Rating of Present Ecological Status Category (PESC)
Natural, unmodified - score=5.	Within general acceptable range CATEGORY A >4; Unmodified, or approximates natural condition.
Largely natural - score=4.	CATEGORY B >3 and ≤4; Largely natural with few modifications, but with some loss of natural habitats.
Moderately modified- score=3.	CATEGORY C >2 and ≤3; moderately modified, but with some loss of natural habitats.
Largely modified - score=2.	CATEGORY D ≤2; largely modified. A large loss of natural habitats and basic ecosystem functions has occurred.
	OUTSIDE GENERALLY ACCEPTABLE RANGE
Seriously modified - rating=1.	CATEGORY E >0 and <2; seriously modified. The losses of natural habitats and basic ecosystem functions are extensive.
Critically modified - rating=0.	CLASS F 0; critically modified. Modifications have reached a critical level and the system has been modified completely with an almost complete loss of natural habitat.

Table 4: Wetland habitat integrity assessment (score of 0=critically modified to 5=unmodified)

Criteria & Attributes	Score
Hydrologic	
Flow Modification	1
Permanent Inundation	3
Water Quality	
Water Quality Modification	3
Sediment Load Modification	2
Hydraulic/Geomorphic	
Canalisation	2
Topographic Alteration	2
Biota	
Terrestrial Encroachment	3
Indigenous Vegetation Removal	2
Invasive Plant Encroachment	1
Alien Fauna	4.5
Over utilisation of Biota	3
Total Mean	**2.4**
Category	**Largely modified**

7.5 ECOSYSTEM SERVICES SUPPLIED BY WETLAND

The assessment of the ecosystem services supplied by the identified wetlands (*Typha* and *Juncus*) was conducted according to the guidelines as described by Kotze *et* al (2005). An assessment was undertaken that examines and rates the services listed in Table 5. The characteristics were scored according to the general levels of services provided. The assessment is done of the current situation and the goods and services can be improved over time with the correct management interventions. It is important to manage the wetlands to ensure that they can continue to provide the valued goods and services.

Table 5: Goods and services assessment results for wetland (low = 0; high = 4)

Goods and services	
Flood attenuation	3
Stream flow regulation	3
Sediment trapping	4
Phosphate trapping	2
Nitrate removal	2
Toxicant removal	2
Erosion control	2
Carbon storage	2
Maintenance of biodiversity	3
Water supply for human use	1
Natural resources	2
Cultivated foods	0
Cultural significance	0
Tourism and recreation	0
Education and research	1

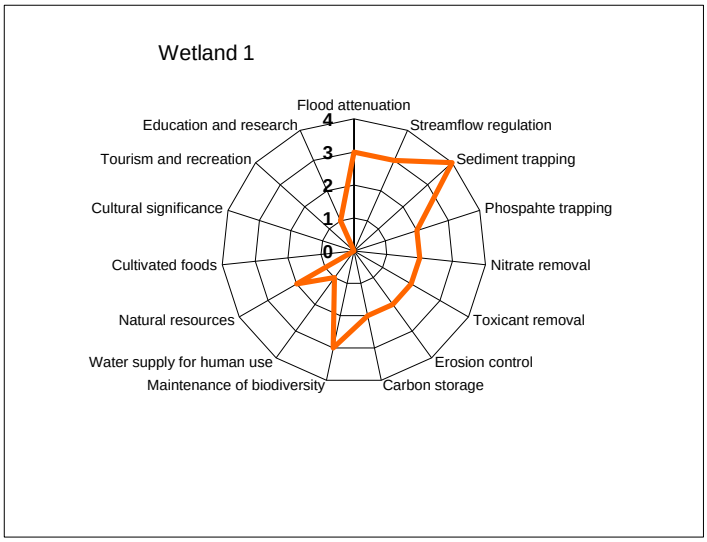


Figure 9: Current ecosystem services provided by the wetland areas and around the site to be developed

7.6 ASSESSMENT OF IMPACTS OF PROPOSED ACTIVITIES

The proposed activities are to take place within an area that has already largely been impacted by industrial activities and storm water diversions. The freshwater features on the site are the result of increased concentration of water onto the site by storm water drains from the adjacent properties and the road. This situation has enhanced the domination of wetland vegetation. The grater extend of the wetlands outside the boundaries of the property has deteriorated largely as a result of invasive alien vegetation overgrowing the wetland vegetation and the manipulation of natural flow course and pattern by trenches. These activities have deteriorated the ecological condition of the area. It is also at the same possible to restore and recreate the functionality of the wider area by taking specific steps.

Therefore it can be expected that the likely impacts of the proposed development is that the ecological functionality on the site will be reduced and that this impact will be taking place in the short term during construction.

Longer term impacts may result if adequate measures are not taken to prevent the complete alteration of storm water runoff and the supply of runoff to the areas outside the property to be developed.

Other longer term impacts that are likely to occur as a result of the proposed development can relate to the encroachment of invasive alien vegetation into the freshwater features outside the property. This should be prevented as large stands of alien woody vegetation have been removed from the area in the recent past.

This section provides a combined assessment of the potential impacts to freshwater ecosystems that are likely to be associated with the proposed development.

NATURE OF IMPACT: LOSS OF WETLAND HABITAT AND ASSOCIATED BIOTA

Some ***loss of freshwater habitat*** could be expected due to the development activities associated with the new buildings and road development. However considering the current state and ecological importance and sensitivity of the freshwater features on the property to be developed the significance of the impact is likely to be of a medium significance.

Significance of impacts without mitigation: A localized impact of medium intensity that is expected to have a low overall significance in terms of its overall impact on the freshwater features in the wider study area.

Proposed mitigation: The storm water retention pond must be constructed in such a way as to maximise the potential for new wetland features to form within the retention pond. The natural

vegetation that will be removed for construction purposes can be used for the re-vegetation of the storm water retention pond.

The on-site property area that will not be developed during phase 1 should be rehabilitated in terms of alien invasive species removal (e.g. removal and eradication of kikuyu grass) and other alien invasive species.

It is recommended that an off-site retention embankment be created to improve the wetland features directly north of the property. This should be done in conjunction with the Local Municipality to improve the overall situation in terms of storm water runoff and water quality in the area. The wetland plants that will be impacted on the site during the development should be used to re-vegetate the embankment area and pond that is created outside the property (see detail in section 8 of this report).

No new trenches should be created to drain the area outside the property to be developed.

Significance of impacts after mitigation: The significance of the impact on the aquatic ecosystems with mitigation is expected to be **low-medium positive** as it would improve the overall ecological condition of the area.

NATURE OF IMPACT: MODIFICATION OF THE FLOW / STORMWATER RUNOFF CHARACTERISTICS

The proposed development could alter the current storm water runoff across the site and could affect the freshwater features downstream (outside) the property.

Significance of impacts without mitigation: The proposed activities would be expected to have a low to medium impact on the storm water flow across the site if no mitigation measures are implemented.

Proposed mitigation: The regime of storm water drainage **through** the site should be retained to ensure that the downstream freshwater features retain its functionality.

The **on-site** storm water runoff should be accommodated into the proposed on site wetland (storm water retention pond – Figure 10). This pond should be created during phase 1 of the development (Figure 1c). The pond should be created in such a way that a diversity of habitat in terms of water depth can be created in the pond.

The outlet structures must be directed in such a way as to link to the other pathways of storm water drainage that will be created and will benefit the downstream freshwater features.

Significance of impacts after mitigation: A localised impact of low intensity that is expected to have a low to insignificant overall significance.

CUMULATIVE IMPACT OF THE OVERALL PROJECT ACTIVITIES ON FRESHWATER ECOSYSTEMS:

The freshwater features and wetland areas within the area to be impacted by the development are already in a largely modified ecological state or are artificial bodies associated with storm water runoff from the adjacent road and other properties.

Providing that the recommended mitigation measures are successfully implemented in terms of the creation of a storm water retention pond on-site and an embankment and retention facility off-site the impact would be of low significance.

7.7 SUMMARY OF ASSESSMENT OF POTENTIAL IMPACTS OF THE PROPOSED ACTIVITIES

Construction Phase:

Potential impact on freshwater features	Proposed new buildings and road
Nature of impact:	Loss *of freshwater related habitats* on site as a result of construction of new buildings and road
Extent and duration of impact:	A localized impact
Intensity of Impact	A localized impact of medium intensity
Probability of occurrence:	Probable as a result of the erection of new buildings and road
Degree to which impact can be reversed:	Partially reversible
Irreplaceability of resources:	Low
Cumulative impact prior to mitigation:	Low due to the existing modification or artificial nature of freshwater features
Significance of impact pre-mitigation	Medium
Degree of mitigation possible:	Medium
Proposed mitigation:	The storm water retention pond must be constructed in such a way as to maximise the potential for new wetland features to form within the retention pond. The natural vegetation that will be removed for construction purposes can be used for the re-vegetation of the storm water retention pond. The on-site property area that will not be developed during phase 1 should be rehabilitated in terms of alien invasive species removal (e.g. removal and eradication of kikuyu grass) and other alien invasive species. It is recommended that an off-site retention embankment be created to improve the wetland features directly north of the property. This should be done in conjunction with the Local Municipality to improve the overall situation in terms of storm water runoff and water quality in the area. The wetland plants that will be impacted on the site during the development should be used to re-vegetate the embankment area and pond that is created outside the property (see detail in section 8 of this report). No new trenches should be created to drain the area outside the property to be developed.
Cumulative impact post mitigation:	Low
Significance after mitigation	Low

Potential impact on freshwater features	Proposed new buildings and road
Nature of impact:	MODIFICATION OF THE FLOW / STORMWATER RUNOFF CHARACTERISTICS
Extent and duration of impact:	Localised short term impacts
Intensity of Impact	Low to medium
Probability of occurrence:	Probable depending on the new storm water layout and configuration
Degree to which impact can be reversed:	Fully reversible
Irreplaceability of resources:	Low
Cumulative impact prior to mitigation:	Medium
Significance of impact pre-mitigation	Medium
Degree of mitigation possible:	High
Proposed mitigation:	The regime of storm water drainage through the site should be retained to ensure that the downstream freshwater features retain its functionality. The on-site storm water runoff should be accommodated into the proposed on site wetland (storm water retention pond – Figure 10). This pond should be created during phase 1 of the development (Figure 1c). The pond should be created in such a way that a diversity of habitat in terms of water depth can be created in the pond. The outlet structures must be directed in such a way as to link to the other pathways of storm water drainage that will be created and will benefit the downstream freshwater features.
Cumulative impact post mitigation:	Low
Significance after mitigation	Low

8. MITIGATION MEASURES

8.1. MAINTENANCE OF WETLAND FUNCTIONALITY

The most important feature of the fragmented wetland areas in and around the property to be developed is the functions that it provides in terms of sediment trapping, prevention of erosion and the removal of nutrients and other possible contaminants in the storm water. The retention of storm water plays an important role in the prevention of contamination of the water resources. It is proposed that the wetland functionality can be retained and possibly enhanced if the following measures are taken:

8.1.1 CREATION OF AN ON-SITE STORMWATER RETENTION POND

It is proposed that an on-site storm water retention pond be created and maintained to trap and retain the storm water that will emanate from the newly developed and paved areas (Figure 10). The storm water retention pond must be developed in such a way that the soil levels in the pond provide diversity in depth of water to allow for the creation and establishment of a diversity of plants within

the pond. The level of the outlet of the storm water pond must be such that it gradually lets water out and assists towards the improvement of water quality in the area.

The indigenous vegetation in the storm water retention pond area should be retained as far as possible to enable the enhancement after construction of the "ring" road around the pond (phase 1).

The storm water retention pond can be vegetated with plants transplanted from areas that will be developed. The successful establishment of vegetation will be dependent on the season in which the transplanting is taking place. It is recommended that this should take place in the early stages of winter (May – June).

8.1.2 CREATION OF AN OFF-SITE WETLAND AREA

Both the *Typha* and *Juncus* wetlands extend well beyond the boundaries of the property. It is proposed that the wetland features and functionality should be enhanced outside of the property in order to enhance not only the sites storm water but to improve storm water from the broader area by implementing the following onto the Public Open Space and adjacent property owned by the Municipality:

Create a retention embankment in the north western part of the public open space area to ensure the retention of water in the area (Figure 11). This embankment should be designed and constructed in such a way as to retain water in the area and provide diversity in water depths. This will allow for the re-establishment of a diversity of plants along a soil moisture gradient in the embanked area. This will need to be done in collaboration with the Theewaterskloof Local Municipality. Outlet pipes will need to be installed to allow the area to be spilling at an appropriate level into the north western area through the berm/embankment. The gentle slope of the area is such that a small embankment will be sufficient to achieve the retention of water and enhancement of the functionality of the deteriorated wetland areas outside the property.

The wider area is largely overgrown with kikuyu grass and this should be removed to allow the survival of indigenous wetland plants. Plants removed from the site to be developed can be transplanted used for the re-creation and enhancement of the wetland area. This can include but should not be limited to:

- *Juncus sp.*
- *Typha*
- *Phragmites*
- *Zantedeschia*

Only plant species that naturally are indigenous to the area should be used. No foreign plant material should be planted in the stormwater retention ponds or the enhanced wetland area to the north of the property. A qualified botanist with sufficient experience should be appointed to advise on the methods, timing and plant species to be used.

The operational phase should comply with the following conditions:

- During the operation phase the outlet levels of the structure may not be altered;
- The embankment structure may not be altered (lowered);
- The vegetation must be managed to avoid the encroachment of kikuyu grass back into the rehabilitated area;
- The anticipated water level must be achieved by the structure and should be ensured that it is operated in such a way as to be compliant with the design and goals that are set out for the enhanced wetland; and
- The Local Municipality must be operational.

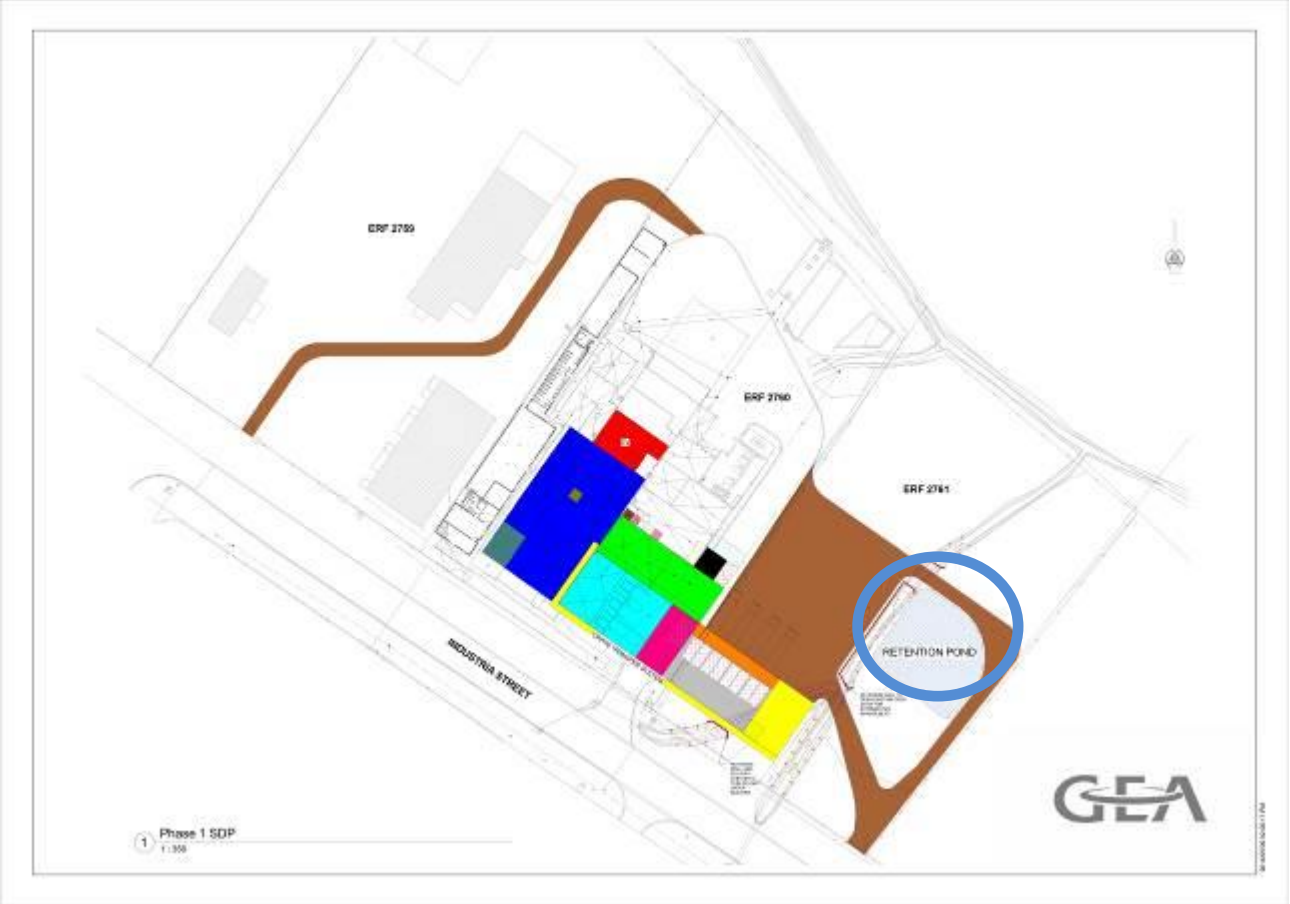


Figure 10: Proposed creation of an on-site storm water retention pond (phase 1 of the development)

Figure 11: Proposed off-site wetland area to be improved and enhance wetland functionality and diversity (as part of phase 2)

8.2. GENERAL REHABILITATION MEASURES

The following measures, aimed at rehabilitation and re-establishment of wetland functionality is proposed:

8.2.1 SHORT TERM MEASUREMENTS:

A. ALIEN PLANT CONTROL

Irrespective if the site is to be developed or not the phased and progressive removal and continued control of invasive alien plants should be undertaken. This should include the removal of alien (invasive and non-invasive plants) from the wetland areas in and around the property. This includes but not limited to the following species:

- *Acacia saligna (*Port Jackson willow)*;*
- *Acacia cyclops* (Black wood);
- *Acacia mearnsii* (Black wattle);
- *Cortaderia selloana* (Pampas grass)
- *Casuarina cunning-hamiana* (Beef wood);
- *Paraserianthes lophantha subsp. Lophantha* (stinkbean, Australian albizia)
- *Pennisetum clandestinum* Kikuyu grass (this is a major problem across the entire wetland area). Methods to prevent the re-growth of the grass should be implemented;
- *Rubus fruticosus* (black berry)
- *Sesbania punicea* (red Sesbania);

B. PREVENTION OF POLLUTION

The discharge of industrial waste and organic waste water into the formal and informal municipal storm water systems is illegal and is a separate issue that must be addressed by the Theewaterskloof Local Municipality, especially where it concern the drainage taking place east of the property into the northern drainage furrow.

10. CONCLUSION AND RECOMMENDATIONS

Portions of a more extended *Juncus* and *Typha* wetland is present on the industrial site that is proposed to be developed. The condition of the wetlands can be described a largely modified but still provides functionality for the aquatic ecosystem in the area.

The wetland is at the edge of the Critical Biodiversity Area and also at the edge of the Freshwater ecosystems property areas.

The general condition of the adjacent storm water drains (outside the property) is unacceptable due to the discharge/runoff from various industrial land owners in the area. This situation should be addressed and improved.

It is proposed that the development should create an on-site storm water retention facility to capture and slowly release storm emanating from the newly paved and developed areas.

It is proposed that the decreased wetland functionality be recreated outside the property by enhancing the existing wetlands features towards the north of the property. This should be done in conjunction with the Theewaterskloof Local Municipality.

Adequately skilled scientists should be used to provide advice in terms of the shape, water level and outlet capacity that should be achieved in the newly created and enhanced wetland features in the public open space.

11. REFERENCES

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Department of Water Affairs and Forestry. (2007). *River Ecoclassification: Manual for Ecostatus Determination (Version 2)*. Riparian Vegetation Response Index, Water Research Commission Report Number KV 168/05. Pretoria.

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APPENDIX C

ENVIRONMENTAL AUTHORISATION (EA) FOR THE PROPOSED EXTENSION OF THE ELGIN POULTRY ABATTOIR IN GRABOUW INDUSTRIA

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Jeffares & Green
ENGINEERING & ENVIRONMENTAL CONSULTING

Our Ref.: 3574
DEA&DP Ref.: 16/3/1/1E4/11/2068/14

24 February 2015

Attention: Interested and Affected Party

PROPOSED EXTENSION OF THE ELGIN POULTRY ABATTOIR IN GRABOUW INDUSTRIA ON ERVEN 2759, 2760 AND 2761, GRABOUW: ENVIRONMENTAL AUTHORISATION

Our previous correspondence, dated 30 October 2014, with regards to the above-mentioned project refers.

The Department of Environmental Affairs and Development Planning (DEA&DP) has issued an Environmental Authorisation (EA) for the proposed extension of the Elgin Poultry Abattoir in Grabouw Industria. The date of the decision is 23 February 2015, while the date of issue is 24 February 2015. Please find enclosed the EA, as well as the Reasons for the Decision (see Annexure 1). A copy of the EA is also available for download from www.jgi.co.za.

Your attention is drawn to your right to lodge an appeal against the decision in terms of the National Appeal Regulations, 2014.

An appellant must:

1. Submit an appeal in accordance with Regulation 4 to the appeal administrator, within twenty (20) calendar days from the date the applicant notified registered Interested and Affected Parties (I&APs) of this decision (i.e. date of this letter).
2. If the appellant is a person other than the applicant, provide any registered I&AP, any Organ of State and the decision-maker with a copy of the appeal lodged with the appeal administrator.

The appeal form/s must be submitted by means of one of the following methods:

By post:
Attention: Mr Jaap de Villiers
Western Cape Ministry of Local Government: Environmental Affairs and Development Planning
Private Bag X9186
Cape Town
8000

By fax:
(021) 483 4174

Branches

Cape Town
Durban
Johannesburg
Maputo
Pietermaritzburg
Port Elizabeth
Postmasburg
Pretoria

Jeffares & Green (Pty) Ltd • Reg. No. 1977/000524/07

Directors: CJ Robinson (Managing), Ms MV Makhetha, SN Makhetha, Ms VG Mkaza, Ms JC Norris, PA Olivier, HH Tiganis.
Member Firm: Consulting Engineers South Africa (CESA).
Jeffares & Green is a level 2 B-BBEE contributor and is ISO 9001:2008 certified for its full range of services.

CESA

By hand:
Attention: Mr J. de Villiers
Room 809
8th Floor: Urilitas Building
1 Dorp Street
Cape Town
8001

Email:
Jaap.DeVilliers@westerncape.gov.za

An electronic copy (word document format) of the appeal and supporting documents must also be submitted.

A prescribed appeal form, as well as assistance regarding the appeal process is obtainable from the office of the appeal authority at:

Tel: (021) 483 3721
Email: Jaap.deVilliers@westerncape.gov.za
Web: http://www.westerncape.gov.za/eadp

The applicant's (i.e. holder of this EA) contact details are as follows:

Attention:
Ms Linka Bester
Elgin Free Range Chickens
PO Box 6
Elgin
7180

Tel: (021) 859 2795
Fax: (021) 859 4554
Email: linka@freerangechickens.co.za

Should no appeals be received within the stipulated timeframes, the applicant may commence with the project.

Please do not hesitate to contact the undersigned, should you have any other queries.

Yours faithfully

TAMRYN HEYDENRYCH
for: JEFFARES & GREEN (PTY) LTD

Western Cape Government
Environmental Affairs and Development Planning

DIRECTORATE: DEVELOPMENT MANAGEMENT
REGION 1

EIA REFERENCE: 16/3/1/1/E4/11/2068/14
ENQUIRIES: AYESHA HAMDULAY
DATE OF ISSUE: 2015-02-24

The Board of Directors
Elgin Free Range Chickens (Pty) Ltd.
% GEA Project Solutions
P O Box 6
ELGIN
7180

Attention: Linka Bester

Tel.: (021) 859 2795
Fax: (021) 859 4554

Dear Sir/Madam

APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998), THE ENVIRONMENTAL IMPACT ASSESSMENT AMENDMENT REGULATIONS, 2010 AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014: THE PROPOSED EXPANSION OF THE ELGIN POULTRY ABATTOIR IN GRABOUW INDUSTRIA ON ERVEN 2759, 2760 AND 2761, GRABOUW

With reference to your application for the abovementioned, find below the outcome with respect to this application.

ENVIRONMENTAL AUTHORISATION

DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998), the Environmental Impact Assessment Amendment Regulations, 2010 and the

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Private Bag X9086, Cape Town, 8000
www.westerncape.gov.za/eadp

Environmental Impacts Assessment Regulations, 2014, ("NEMA EIA Regulations") the Competent Authority herewith **grants Environmental Authorisation** to the applicant to undertake the list of activities specified in Section B below with respect to Alternative 5 described in the final Basic Assessment Report ("BAR") dated October 2014.

The granting of this Environmental Authorisation is subject to compliance with the Conditions set out in Section E below.

A. DETAILS OF THE APPLICANT FOR THIS ENVIRONMENTAL AUTHORISATION

Elgin Free Range Chickens (Pty) Ltd.
% Linka Bester
P O Box 6
ELGIN
7180
Tel.: (021) 859 2795
Fax: (021) 859 4554

The abovementioned Applicant is the holder of this Environmental Authorisation and is hereinafter referred to as "the applicant".

B. LIST OF ACTIVITIES AUTHORISED

Government Notice No. R544 of 18 June 2010 –

Activity Number: 11
Activity Description:
"The construction of:
(i) canals;
(ii) channels;
(iii) bridges;
(iv) dams;
(v) weirs;
(vi) bulk storm water outlet structures;
(vii) marinas;
(viii) jetties exceeding 50 square metres in size;
(ix) slipways exceeding 50 square metres in size;

(viii) jetties exceeding 50 square metres in size;

(ix) slipways exceeding 50 square metres in size;

(x) buildings exceeding 50 square metres in size; or

(xi) infrastructure or structures covering 50 square metres or more

where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line."

Activity Number: 18

Activity Description:

"The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from:

(i) a watercourse;

(ii) the sea;

(iii) the seashore;

(iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater-

but excluding where such infilling, depositing , dredging, excavation, removal or moving;

(a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or

(b) occurs behind the development setback line."

Activity Number: 30

Activity Description:

"The expansion of facilities for the slaughter of animals where the daily product throughput will be increased by more than:

(i) 50 poultry or

(ii) 6 units of red meat and game."

Activity Number: 32

Activity Description:

"The expansion of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by:

(i) more than 1 000 poultry where the facility is situated within an urban area; or

(ii) more than 5 000 poultry per facility situated outside an urban area."

Activity Number: 40

Activity Description:

"The expansion of

(i) jetties by more than 50 square metres;

(ii) slipways by more than 50 square metres; or

(iii) buildings by more than 50 square metres

(iv) infrastructure by more than 50 square metres

within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, but excluding where such expansion will occur behind the development setback line."

Government Notice No. R546 of 18 June 2010 –

Activity Number: 12

Activity Description:

"The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.

(a) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;

(b) Within critical biodiversity areas identified in bioregional plans;

(c) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas."

Similarly listed activities in terms of the NEMA EIA Regulations, 2014:

Government Notice No. R983 of 08 December 2014 –

Activity Number: 12

Activity Description:

"The development of-

(i) canals exceeding 100 square metres in size;

(ii) channels exceeding 100 square metres in size;

(iii) bridges exceeding 100 square metres in size;

(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;

(v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;

(vi) bulk storm water outlet structures exceeding 100 square metres in size;

(vii) marinas exceeding 100 square metres in size;

(viii) jetties exceeding 100 square metres in size;

(ix) slipways exceeding 100 square metres in size;

(x) buildings exceeding 100 square metres in size;

(xi) boardwalks exceeding 100 square metres in size; or

(xii) infrastructure or structures with a physical footprint of 100 square metres or more;

where such development occurs-

(a) within a watercourse;

(b) in front of a development setback; or

(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; -

excluding-

(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;

(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;

(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;

(dd) where such development occurs within an urban area; or

(ee) where such development occurs within existing roads or road reserves."

Activity Number: 19

Activity Description:

"The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from-

(i) a watercourse;

(ii) the seashore; or

(iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater

but excluding where such infilling, depositing , dredging, excavation, removal or moving-

(a) will occur behind a development setback;

(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or

(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies."

Activity Number: 38

Activity Description:

"The expansion and related operation of facilities for the slaughter of animals where the daily product throughput will be increased by more than-

(i) 50 poultry;

(ii) 6 units of reptiles, red meat and game; or

(iii) 20 000 kg wet weight per annum of fish, crustaceans and amphibians."

Activity Number: 40

Activity Description:

"The expansion and related operation of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by-

(i) more than 1 000 poultry where the facility is situated within an urban area; or

(ii) more than 5 000 poultry per facility situated outside an urban area."

Activity Number: 49

Activity Description:

"The expansion of -

(i) jetties by more than 100 square metres;

(ii) slipways by more than 100 square metres;

(iii) buildings by more than 100 square metres;

(iv) boardwalks by more than 100 square metres; or

(v) infrastructure or structures where the physical footprint is expanded by 100 square metres or more;

where such expansion or expansion and related operation occurs-

(a) within a watercourse;

(b) in front of a development setback; or

(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

excluding-

(aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;

(bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;

(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;

(dd) where such expansion occurs within an urban area; or

(ee) where such expansion occurs within existing roads or road reserves."

Government Notice No. R985 of 08 December 2014 –

Activity Number: 12

Activity Description:

"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.

(a) In Eastern Cape, Free State, Gauteng, Limpopo, North West and Western Cape provinces:

i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;

ii. Within critical biodiversity areas identified in bioregional plans;

iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or

iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning."

Activity Number: 23

Activity Description:

"The expansion of-

(i) canals where the canal is expanded by 10 square metres or more in size;

(ii) channels where the channel is expanded by 10 square metres or more in size;

(iii) bridges where the bridge is expanded by 10 square metres or more in size;

(iv) dams where the dam is expanded by 10 square metres or more in size;

(v) weirs where the weir is expanded by 10 square metres or more in size;

(vi) bulk storm water outlet structures where the structures is expanded by 10 square metres or more in size;

(vii) marinas where the marina is expanded by 10 square metres or more in size;

(viii) jetties where the jetty is expanded by 10 square metres or more in size;

(ix) slipways where the slipway is expanded by 10 square metres or more in size;

(x) buildings where the building is expanded by 10 square metres or more in size;

(xi) boardwalks where the boardwalk is expanded by 10 square metres or more in size;

(xii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more in size;

Where such development occurs-

(a) Within a watercourse;

(b) In front of a development setback adopted in the prescribed manner; or

(c) If no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;

Excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.

(g) In the Western Cape:

i. Outside urban areas, in:

(aa) A protected area identified in terms of NEMPAA, excluding conservancies;

(bb) National Protected Area' Expansion Strategy Focus areas;

(cc) World Heritage Sites;

(dd) Sensitive area as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;

(ee) Sites or areas listed in terms of an International Convention;

(ff) Critical biodiversity area or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;

(gg) Core areas in biosphere reserves; or

(hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined."

The abovementioned list is hereinafter referred to as "the listed activities".

The applicant is herein authorised to undertake the following alternative related to the listed activities:

The proposed development (Alternative 5), as described in the final BAR, entails the expansion of existing buildings and infrastructure on Erven 2759, 2760 and 2761 in two phases over a period of four to five years in order to increase the size of existing operations at the abattoir, to include, *inter alia*, the following:

- Expansion of the packing area;

- Expansion of the holding room and chillers;
- Expansion of the bulk storage area;
- Expansion of the crate washing area;
- Expansion of the price marking area;
- Construction of a new dispatch, dock levelers and a marshalling yard;
- New internal access road (ring road) to improve separate access for the live bird trucks as required by the Department of Agriculture (one access road constructed on Erf 2761 and one existing access road on Erf 2759); and
- A stormwater retention pond.

An improved off-site wetland system will be created in the north to replace the two on-site wetlands that will be infilled during phase 2 of the development proposal. The new wetland system will attenuate stormwater flowing through the site from the south as well as stormwater from elsewhere, that drains to the north of Erf 2761.

The existing abattoir currently processes an average of 15 400 birds per day. This number will be increased to 30 000 birds per day with an expansion footprint of buildings and infrastructure of approximately 4700m² (Phase 1: approximately 3 300 m² and Phase 2: approximately 1 400 m²).

Phase 1:
All proposed building upgrades will be undertaken. However, the expansion of the marshalling yard will be limited to the southern half of Erf 2761. The existing on-site wetlands will be retained and alien vegetation clearing will be implemented. In addition, a smaller retention pond will be established on Erf 2761 for polishing the stormwater before the stormwater enters the downstream wetlands.

The applicant is required to comply with Condition 19 of this Environmental Authorisation prior to commencing with Phase 2.

Phase 2 entails the expansion of the marshalling yard area and the construction of an internal road in order to accommodate 25m long trucks. The two on-site wetlands will be infilled during this phase. A wetland system will be recreated on Portion 10 of Erf 291 to mitigate the impact of wetland infilling on Erf 2761.

The expansion of the Elgin Free Range Chickens Poultry Abattoir will continue to make use of the current water supply, solid waste and wastewater disposal services provided by the Theewaterskloof Municipality and the electricity supply provided by Eskom.

C. PROPERTY DESCRIPTION AND LOCATION

The listed activities will take place on Erven 2759, 2760 and 2761, Grabouw Industria, Grabouw.

The SG 21 digit codes are:
C01300000000276000000
C01300000000276100000
C01300000000275900000

Co-ordinates:
34° 08' 57.95" South 19° 00' 19.72" East

Hereinafter referred to as "the site".

D. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

Jeffares & Green Engineering and Environmental Consultants (Pty) Ltd
% Tamryn Heydenrych
P O Box 38561
PINELANDS
7430
Tel.: (021) 532 0940
Fax: (021) 532 0950

E. CONDITIONS OF AUTHORISATION

1. This Environmental Authorisation is valid for a period of five (5) years from the date of issue. The holder must commence with the listed activity/ies within the said period or this Environmental Authorisation lapses and a new application for Environmental Authorisation must be submitted to the Competent Authority, unless the holder has lodged a valid application for the amendment of the validity period of this Environmental Authorisation, at least three (3) months prior to the expiry of this Environmental Authorisation. The listed activities, including site preparation, may not commence during the period of administrative extension.

Please note that:

1.1 In terms of Regulation 28(2), failure to lodge an application for amendment at least three (3) months prior to the expiry of the validity period of the Environmental Authorisation may result in the Competent Authority being unable to process the application for amendment and in the lapsing of the Environmental Authorisation; and

1.2 It is an offence in terms of Section 49A(1)(a) of NEMA for a person to commence with a listed activity, unless the Competent Authority has granted an Environmental Authorisation for the undertaking of the activity.

2. The listed activities, including site preparation, must not commence within twenty (20) calendar days of the date of the notification of the decision being sent to the registered Interested and Affected Parties ("I&APs"). In the event that an appeal is lodged with the Appeal Administrator, the effect of this Environmental Authorisation is suspended until such time as the appeal is decided.

3. The applicant must in writing, within twelve (12) calendar days of the date of this decision and in accordance with Regulation 10(2)–

3.1 Notify all registered I&APs of –

3.1.1 The outcome of the application;

3.1.2 The reasons for the decision as included in Annexure 1;

3.1.3 The date of the decision;

3.1.4 The date of issue of the decision; and

3.1.5 Provide the registered I&APs with:

- The name of the holder (entity) of this Environmental Authorisation;
- Name of the responsible person for this Environmental Authorisation;
- Postal address of the holder;
- Telephonic and fax details of the holder; and
- E-mail address if any.

3.2 Draw the attention of all registered I&APs to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations, 2014 detailed in Section F below; and

3.3 Draw the attention of all registered I&APs to the manner in which they may access the decision.

4. A written notice of seven (7) calendar days, in writing, must be given to the Competent Authority before commencement of construction activities.

4.1. The notice must make clear reference to the site details and EIA Reference number given above.

4.2. The notice must include proof of compliance with the following Conditions described herein:

Conditions: 2, 3 and 14

5. The holder is responsible for ensuring compliance with the Conditions by any person acting on his/her behalf, including an agent, sub-contractor, employee or any person rendering a service to the holder.

6. Any changes to, or deviations from the scope of the description set out in Section B above must be accepted or approved, in writing, by the Competent Authority before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the Competent Authority may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder to apply for further authorisation in terms of the applicable legislation.

7. The applicant must notify the Competent Authority in writing, within 24 hours thereof if any condition herein stipulated is not being complied with.

8. The draft Environmental Management Programme ("EMPr") submitted as part of the application for Environmental Authorisation is hereby approved and must be implemented. This includes the implementation of the recommendations specified in the specialist studies included in the final BAR, *i.e.* the Freshwater Impact Report and the requirements of Heritage Western Cape.

The EMPr must be included in all contract documentation for all phases of implementation.

9. Should an amendment to the EMPr be required before an audit is undertaken in terms of this Environmental Authorisation, the applicant must:

9.1. Notify the Competent Authority of its intension to amend the EMPr at least sixty (60) days prior to the submission of the application for amendment to the EMPr;

9.2. Obtain comment from potential I&APs, including the Competent Authority, by using any of the methods provided for in the NEMA for a period of at least thirty (30) days; and

9.3. Submit the amended EMPr to the Competent Authority for approval within sixty (60) days of inviting comments on the proposed amendments.

10. A copy of the Environmental Authorisation and the EMPr must be kept at the site where the listed activities will be undertaken. Access to the site referred to in Section C above must be granted and, the Environmental Authorisation and EMPr must be produced to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the Conditions contained herein. The Environmental Authorisation and EMPr must also be made available for inspection by any employee or agent of the applicant who works or undertakes work at the site.

11. The applicant must submit an application for amendment of the Environmental Authorisation and/or EMPr to the Competent Authority in terms of Chapter 5 of the NEMA EIA Regulations, 2014 where any detail and/or change of scope with respect to the Environmental Authorisation and/or EMPr must be amended, added, substituted, corrected, removed or updated. However, such application for amendment shall not include the personal details of the holder of the Environmental Authorization.

12. Non-compliance with a Condition of this Environmental Authorisation or EMPr may result in suspension of this Environmental Authorisation and may render the holder liable for criminal prosecution.

13. Notwithstanding this Environmental Authorisation, the holder must comply with any other statutory requirements that may be applicable to the undertaking of the listed activities. This includes complying with the Department of Water and Sanitation in terms of the relevant legislation.

14. The holder must appoint a suitably experienced Environmental Control Officer ("ECO") or site agent where appropriate, for all phases of implementation before commencement of any land clearing or construction activities to ensure compliance with the EMPr and the Conditions contained herein.

15. An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be employed. Any solid waste must be disposed of at a landfill licensed in terms of the applicable legislation.

16. The applicable requirements with respect to relevant legislation pertaining to occupational health and safety must be adhered to.

17. Should any heritage remains be exposed during excavations or any actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in accordance with the applicable legislation). Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains include: archaeological remains (including fossil bones and fossil shells); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artifacts and bone remains; structures and other built features; rock art and rock engravings; shipwrecks; and graves or unmarked human burials.

    A qualified archaeologist must be contracted where necessary (at the expense of the applicant and in consultation with the relevant Authority) to remove any human remains in accordance with the requirements of the relevant Authority.

18. The mitigation measures as recommended in the Freshwater Specialist Report dated 16 September 2014 must be implemented. These mitigation measures are attached to this Environmental Authorisation as Appendix A.

19. The contents of the Letter of Commitment between Elgin Free Range Chickens (Pty) Ltd. and the Theewaterskloof Municipality dated 12 February 2015 for the establishment of an off-site wetland on Portion 10 of Erf 291, Grabouw must be fully complied with and must, in addition, be accompanied by the following appendices:

    19.1. The finalised engineering design of the off-site wetland system compiled in conjunction with a suitably qualified freshwater specialist. This design must fully accommodate the retention of the stormwater that traverses Erf 2761. In addition, the design must provide for variability in water depth to allow for the re-establishment of a diversity of plants;

    19.2. A maintenance management plan for the operational phase of the off-site wetland system that must illustrate the enhancement of the stormwater. The applicant must submit the maintenance management plan accompanied by written input from a suitably qualified freshwater specialist; and

    19.3. Written input from a qualified botanist to advise on the list of indigenous plant species to be used in the proposed off-site wetland and the methods and timing for the establishment thereof.

    The contents of the Letter of Commitment and all appendices must first be submitted to the Breede-Gouritz Catchment Management Agency and CapeNature for comment, before being submitted to this Department. This must be undertaken prior to the commencement of Phase 2.

20. The applicable general conditions stipulated in the letter by the Breede-Gouritz Catchment Management Agency dated 04 November 2014 must be adhered to.

21. An audit report which demonstrates compliance with the Conditions of this Environmental Authorisation must be submitted to this Department every four (4) months from the date of commencement of land clearing or construction works on the site, until the completion of Phase 1 of the development proposal. Furthermore, an audit report which demonstrates compliance with this Environmental Authorisation must be submitted to this Department every four (4) months from the date of commencement of Phase 2 of the development proposal for a period of one (1) year after the completion of Phase 2.

The audit report must:

21.1. Specifically state whether the Conditions of this Environmental Authorisation and EMPr are being adhered to;

21.2. Identify and assess any new impacts and risks as a result of undertaking the activities;

21.3. Identify shortcomings in the EMPr, if applicable;

21.4. Identify the need, if any, for any changes to the management, avoidance and mitigation measures provided for in the EMPr;

21.5. Specify whether or not any corrective action taken for the previous audit's non-conformities was adequate; and

21.6. Be submitted by the applicant to the Competent Authority within 30 days from the date on which the auditor finalised the audit.

22. Should any shortcomings in terms of Regulation 34(4) be identified, the applicant must submit recommendations to amend the EMPr in order to rectify any shortcomings identified with the aforementioned audit report.

F. APPEALS

Appeals must comply with the provisions contained in the National Appeal Regulations, 2014.

1. An appellant must –

1.1. submit an appeal in accordance with Regulation 4 to the appeal administrator, within twenty (20) calendar days from the date the applicant notified registered I&APs of this decision;

1.2. If the appellant is the applicant, provide any registered I&AP, any Organ of State and the decision-maker with a copy of the appeal lodged with the appeal administrator;

1.3. If the appellant is a person other than the applicant, provide any registered I&AP, any Organ of State and the decision-maker with a copy of the appeal lodged with the appeal administrator;

1.4. The applicant (if not the appellant), the decision-maker, I&APs and Organ of State must submit their responding statement, if any, to the appeal authority and the appellant within 20 days from the date of receipt of the appeal submission.

2. The appeal form/s must be submitted by means of one of the following methods:

By post: Attention: Jaap de Villiers
Western Cape Ministry of Local Government, Environmental Affairs and Development Planning
Private Bag X9186
CAPE TOWN
8000

By facsimile: (021) 483 4174; or

By hand: Attention: Mr J. de Villiers (Tel: 021 483 3721)
Room 809
8th Floor Utilitas Building, 1 Dorp Street, Cape Town, 8001

By e-mail: Jaap.DeVilliers@westerncape.gov.za

3. An electronic copy (word document format) of the appeal and supporting documents must also be submitted.

4. A prescribed appeal form, as well as assistance regarding the appeal processes is obtainable from the office of the appeal authority/ at: Tel. (021) 483 3721, E-mail Jaap.deVilliers@westerncape.gov.za or URL http://www.westerncape.gov.za/eadp.

G. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the Conditions of this Environmental Authorisation shall not be responsible for any damages or losses suffered by the holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the Conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours Faithfully

MR ZAAHIR TOEFY

DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 1)

DATE OF DECISION: 23/02/2015

Copied to: (1) Mr T. Heydenrych (Jeffares & Green (Pty) Ltd.) Fax: (021) 532 0950
(2) Mr H. Wallace (Theewaterskloof Municipality) Fax: (028) 214 1289
(3) Mr R. Smart (CapeNature) Fax: (021) 866 1523
(4) Mr F. Smith (BGCMA) E-mail: fsmith@bocma.co.za

FOR OFFICIAL USE ONLY:	
EIA REFERENCE NUMBER:	**16/3/1/1/E4/11/2068/14**
NEAS EIA REFERENCE NUMBER:	**WCP/EIA/0001794/2014**

ANNEXURE 1: REASONS FOR THE DECISION

In reaching its decision, the Competent Authority, *inter alia*, considered the following:

a) The information contained in the application form dated 12 June 2014, which was received by this Department on 13 June 2014, the draft BAR received by the Competent Authority on 23 September 2014, the EMPr dated September 2014 submitted together with the final BAR dated October 2014 and the comments and response reports received by this Department on 21 November 2014, and the letter acknowledging receipt thereof, issued by this Department on 05 December 2014;

b) Relevant information contained in the Departmental information base, including, the Guidelines on Public Participation, Alternatives and Exemptions (dated March 2013);

c) The objectives and requirements of relevant legislation, policies and guidelines, including Section 2 of the NEMA;

d) This application was submitted in terms of the previous NEMA EIA Regulations, 2010 and was pending at the time of the promulgation of the EIA Regulations, 2014. Some of the listed activities herein authorised may not have been listed in terms of the previous NEMA EIA Notices, but are now listed in terms of the EIA Regulations, 2014. In accordance with Regulation 53(3) of Government Notice No. R.982, these activities may be authorised as if applied for;

e) The information contained in the "*Freshwater Assessment for the Elgin Chicken Industrial Site in Grabouw Industrial Area*", prepared by Mr Dana Grobler and Ms Toni Belcher of BlueScience (Pty) Ltd dated 16 September 2014;

f) The Letter of Commitment between the applicant; being, Elgin Free Range Chickens (Pty) Ltd. and the Theewaterskloof Municipality dated 12 February 2015, submitted by Jeffares & Green (Pty) Ltd. and received by this Department on 16 February 2015; and

g) The sense of balance of the negative and positive impacts and proposed mitigation measures.

No site visit was conducted. The Competent Authority had sufficient information before it to make an informed decision without conducting a site visit.

All information presented to the Competent Authority was taken into account in the consideration of the Application for Environmental Authorisation. A summary of the issues which, according to the Competent Authority, were the most significant reasons for the decision is set out below.

1. Public Participation

The Public Participation Process included, *inter alia*, the following:

- A meeting was held between the applicant, the EAP and a representative from the Theewaterskloof Municipality on 14 March 2014. A site visit was also undertaken on 17 June 2014;
- The freshwater specialist met with representatives from the BGCMA and the Theewaterskloof Municipality with regard to the development proposal;
- A number of meetings were held by the project team to discuss and revise the layout plan;
- Identification of and engagement with I&APs, including landowners, occupiers of the land adjacent to the site, local and District Municipalities, relevant Organs of State and relevant State Departments;
- An advertisement was placed in the "*District Mail*" newspaper;
- Fixing notice boards along the site where the listed activities are to be undertaken on 25 September 2014;
- Giving written notice to registered I&APs, including landowners, occupiers of the land adjacent to the site, local and District Municipalities, relevant Organs of State and relevant State Departments in respect of the draft BAR between 25 September 2014 and 27 October 2014;
- A copy of the draft BAR was made available at the Grabouw Public Library; and
- The commenting period on the final BAR from 30 October 2014 – 20 November 2014.

This Department is satisfied that the Public Participation Process that was followed met the minimum legal requirements. All the comments and responses raised were included in the report.

Specific management and mitigation measures have been considered in this Environmental Authorisation and in the EMPr to adequately address the concerns of significance raised.

2. Alternatives

The applicant considered five layout options for the development proposal as well as the *"No-Go"* Alternative.

The Alternatives investigated include the following:

ALTERNATIVE 1

This Alternative entails utilizing the existing abattoir on Erf 2760 as much as possible, with some expansion of buildings onto Erf 2761. This alternative will not provide the applicant with an increase in production to a level that will meet the market demand.

ALTERNATIVE 2

Alternative 2 entails demolishing a part of the existing office structure on Erf 2760 to reduce the extent of construction on Erf 2761. This alternative requires the demolition of existing infrastructure, but will not provide the applicant with an increase in productivity that will meet the market demand and is thus not economically feasible.

ALTERNATIVE 3

Alternative 3 entails demolishing part of the existing office structure on Erf 2760 as well as existing structures on Erf 2759 and repositioning the entire operations between Erven 2759 and 2760. Only an access road will be included on Erf 2761 for Alternative 3. This will result in easier access to the marshalling yard compared to Alternative 2 and minor changes to the existing facilities. This alternative results in large demolition of existing infrastructure. This is costly and requires the installation of services on Erf 2759. Health risks will arise as the layout will not allow for separate "clean" and "dirty" product flows within the facility.

ALTERNATIVE 4

This Alternative entails the northwards expansion of the marshalling yard and includes establishing an internal access road around the perimeter of Erf 2761 to link to Erf 2760. This will enable a large portion of the existing wetlands to be conserved on Erf 2761. A second internal access road will be established on Erf 2759 to also link to Erf 2760. This Alternative will provide a separate "in and out" access for clean and dirty trucks, thereby improving current access and meeting legislative requirements. A large portion of the existing wetlands will be conserved and maintained and no major demolition work is required. This Alternative, however, limits the future possibility of further extensions and upgrades to the facility and could potentially reverse the polishing of stormwater by the on-site retention pond when stormwater is released. This will result in polluted stormwater.

The above alternatives were deemed undesirable during the assessment phase of the development proposal. The initial planning phase included the extensive involvement of key role players (*i.e.* the BGCMA, the freshwater specialist and the Theewaterskloof Municipality) in the consideration of these alternatives. The desired outcome is a layout plan (Alternative 5 below) that would result in the enhancement of the environment, whilst meeting the applicant and industries requirements.

ALTERNATIVE 5 (Preferred Layout – Herewith Authorised)

This alternative entails the expansion of existing buildings and infrastructure on Erven 2759, 2760 and 2761 in two phases over a period of four to five years in order to increase the size of existing operations at the abattoir, to include, *inter alia,* the following:

- Expansion of the packing area;
- Expansion of the holding room and chillers;
- Expansion of the bulk storage area;
- Expansion of the crate washing area;
- Expansion of the price marking area;
- Construction of a new dispatch, dock levelers and a marshalling yard;
- New internal access road (ring road) to improve separate access for the live bird trucks as required by the Department of Agriculture (one access road constructed on Erf 2761 and one existing access road on Erf 2759); and
- A stormwater retention pond.

An improved off-site wetland system will be created in the north to replace the two on-site wetlands that will be infilled during phase 2 of the development proposal. The new wetland system will attenuate stormwater flowing through the site from the south as well as stormwater from elsewhere, that drains to the north of Erf 2761.

The existing abattoir currently processes an average of 15 400 birds per day. This number will be increased to 30 000 birds per day with an expansion footprint of buildings and infrastructure of approximately 4700m² (Phase 1: approximately 3 300 m² and Phase 2: approximately 1 400 m²).

Phase 1:

All the proposed building upgrades will be undertaken. However, the expansion of the marshalling yard will be limited to the southern half of Erf 2761. The existing on-site wetlands will be retained and alien vegetation clearing will be implemented. In addition, a smaller retention pond will be established on Erf 2761 for polishing the stormwater before the stormwater enters the downstream wetlands.

The applicant is required to comply with Condition 19 of this Environmental Authorisation prior to commencing with Phase 2.

Phase 2 entails the expansion of the marshalling yard area and the construction of an internal road in order to accommodate 25m long trucks. The two on-site wetlands will be infilled during this phase. A wetland system will be recreated on Portion 10 of Erf 291 to mitigate the impact of wetland infilling on Erf 2761.

The expansion of the Elgin Free Range Chickens Poultry Abattoir will continue to make use of the current water supply, solid waste and wastewater disposal services provided by the Theewaterskloof Municipality and the electricity supply provided by Eskom.

"No-Go" ALTERNATIVE

The "No-go" Alternative will result in the status-quo being maintained. This alternative therefore entails discarding the proposal of upgrading the Elgin Free Range Chickens (Pty) Ltd. poultry abattoir. This will result in the loss of the opportunity to increase the number of permanent employees that will benefit from the operation of the abattoir. This alternative will furthermore result in the Abattoir not meeting health and other industry related requirements. Customer requirements relating to metal detection will also not be met, as metal detectors are required to detect metal contaminants. The status of the applicant as the leading free range poultry abattoir will also be lost.

3. Impacts, Assessment and Mitigation Measures

3.1 Activity Need and Desirability

The development proposal is in line with the Theewaterskloof Municipality 3rd Generation Integrated Development Plan ("IDP") of 2012 – 2017. Furthermore, the Overberg District Municipal Spatial Development Framework ("SDF") (June 2013), identifies the Elgin/Grabouw area as a peak economic area in the district. The proposed project is thus deemed to be in line with the SDF as it will continue to provide economic opportunities for people and will continue to contribute to the local economy. The properties are all zoned for industrial use and as such the land use is in line with the zoning.

3.2 Biodiversity / Biophysical Impacts

The implementation of the development proposal will result in the partial closure and slight realignment of two existing man-made stormwater channels that traverse Erf 2761. There are also two existing wetlands on Erf 2761, namely a *Juncus* wetland and a *Typha*

wetland, which largely evolved as a result of anthropogenic activities *i.e.* the digging of the two stormwater channels and directing of the stormwater through Erf 2761. According to the freshwater specialist report dated 16 September 2014, the existing wetlands are considered to be depression wetlands.

Phase 1 will not impact on the two existing wetlands. Phase 2 will result in the infilling of the two existing wetlands on Erf 2761, after which it is proposed to recreate an improved wetland system to the north of the properties within Public Open Space. This wetland system will not only accommodate and polish stormwater from the existing stormwater channels located on Erf 2761, but will also accommodate additional stormwater from the area. The improvement in the currently degraded quality of stormwater will reduce the negative impacts of the stormwater on the Klipdrift River.

A portion (approximately 40%) of Erf 2761 is mapped as a Critical Biodiversity Area ("CBA") as well as a Freshwater Ecosystem Priority Area ("FEPA"). The freshwater specialist report confirmed that the terrestrial Critical Biodiversity Area map corresponds with the aquatic biodiversity on the site and that these have been permanently transformed. The terrestrial vegetation is mapped as Kogelberg Sandstone fynbos, which is Critically Endangered according to the National list of threatened ecosystems published in terms of Section 52(1)(a) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004). This terrestrial vegetation is heavily infested with alien vegetation.

3.3 Hazardous Waste / General Waste

The following hazardous waste components are currently produced at the abattoir during the operational phase, per day:

- Blood (average 99g / bird);
- Feathers (average 193g / bird);
- Skin and fat (floor sweepings);
- Dead on arrivals (average 0.1%); and
- Manure
- Condemned meat and giblets, mince and other sick portions.

Current hazardous waste volumes produced at the abattoir are approximately 24 tons per week with a future projection of approximately 48 tons per week. Although it is proposed to double the number of birds processed daily, this increase will be implemented gradually, in response to, *inter alia*, market demand and the economic climate.

The estimated future waste volume above does not take into account any future planned improvements to minimise and manage waste, which the applicant is considering in order to reduce this volume.

The following general waste components are produced daily at the abattoir during the operational phase:

- Excess packaging and foam trays and liners;
- Disposal of Personal Protective Equipment (*e.g.* plastic smocks, cuffs, hairnets); Canteen and other waste food; and
- Office waste of approximately 84 wheelie bins collected per week.

It is estimated that approximately 99 wheelie bins would be collected per week, which equates to an increase of approximately 20% of current general waste volumes produced at the abattoir. This estimate does not take into account the future waste minimisation strategies that the applicant is considering.

3.4 Socio-economic Aspects

Approximately 50 temporary employment opportunities will be available during the construction phase and approximately 70 permanent employment opportunities during the operational phase. Grabouw has a high unemployment rate and as such, any potential employment opportunities are viewed as beneficial for the community of Grabouw/Elgin.

The development will result in both negative and positive impacts.

Negative Impacts:

- Potential negative impact on the Klipdrift River as a result of further degradation of the stormwater quality from construction activities polluting runoff;
- Potential loss of freshwater habitat;
- Potential further degradation and pollution of the aquatic ecosystem functioning of the two existing on-site wetlands; and
- Potential noise and visual impacts during the construction phase.

The Department is satisfied that the negative impacts of significance specified above can be addressed by the Conditions contained in this EA and the mitigation measures contained in the EMP. The requirement of complying with the EMP is included as a Condition of this Environmental Authorisation.

Positive Impacts:

- The creation of approximately 50 temporary employment opportunities during construction phase and approximately 70 permanent employment opportunities during operational phase, thus contributing to the local economy in Grabouw;
- The recreation of the off-site wetland on Portion 10 of Erf 291, Grabouw, which will enable the polishing of poor quality stormwater from the surrounding area before it reaches the Klipdrift River, reducing the negative impacts of polluted water in the said river; and
- A reduction in the average amount of water required to wash each bird from 22 litres per bird to 16 litres per bird due to the proposed upgrade and improvement of technology and operating measures.

4. National Environmental Management Act Principles

The National Environmental Management Act Principles (set out in Section 2 of the NEMA, which apply to the actions of all Organs of State, serve as Guidelines by reference to which any Organ of State must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:-

- The effects of decisions on all aspects of the environment to be taken into account;
- The consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- The co-ordination and harmonization of policies, legislation and actions relating to the environment;
- The resolving of actual or potential conflicts of interest between Organs of State through conflict resolution procedures; and
- The selection of the best practicable environmental option.

5. Conclusion

In view of the above, the NEMA principles, compliance with the Conditions stipulated in this Environmental Authorisation, and compliance with the EMP, the Competent Authority is satisfied that the proposed listed activities will not conflict with the general objectives of Integrated Environmental Management stipulated in Chapter 5 of NEMA and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

- Adherence to the NEMA principles;
- Compliance with the Conditions stipulated in this Environmental Authorisation; and

- Compliance with the mitigation measures in the EMP.

END

APPENDIX A

Recommendations contained in the Freshwater Assessment Report dated 16 September 2014.

Phase 1:

1. Ensure that on-site stormwater is accommodated in the proposed on-site retention pond;
2. The proposed on-site retention pond must be designed to ensure varied water depths, to allow for a diversity of plants within the pond and to maximize the potential of forming new wetland features to form within the retention pond;
3. Ensure that the level of the outlet pipe is such that it gradually lets water out and assists in the improvement of water quality in the area;
4. Any natural aquatic vegetation removed during construction must, as far as possible, be used for the re-vegetation of the proposed stormwater retention pond;
5. Transplanting must, as far as possible, take place during the early stage of winter (May – June) to increase the success and establishment of the vegetation; and
6. Alien clearing must take place within the existing on-site wetlands (e.g. removal of kikuyu grass and other alien species). Alien clearing must continue during the operational phase.

Phase 2:

1. Create an off-site retention embankment and pond to improve wetland features directly north / northwest of the property, in conjunction with the relevant Local Municipality;
2. Appoint a qualified botanist / freshwater ecologist with sufficient experience to advise on the methods, timing and plant species to be used for the proposed off-site wetland;
3. The pond must be designed with different water depths, to allow for the re-establishment of a diversity of plants;
4. Suitable wetland plants from the on-site wetlands must be removed and as far as possible be used to re-vegetate the embankment area and retention pond;
5. Ensure that only plants indigenous to the area are used for re-vegetation;
6. The following plants must, *inter alia*, be used within the proposed re-created off-site wetland:
    a. *Juncus sp.*
    b. *Typha*
    c. *Phragmites*
    d. *Zantedeschia*
7. No new stormwater trenches must be dug on Erf 2761 to drain the area outside of the Elgin properties.

Vegetation:

1. The continued removal of alien vegetation must take place on site (wetland areas) and within the proposed off-site wetland area, in conjunction with the relevant Local Municipality. This includes, *inter alia*, to the following species:
   a. *Acacia saligna* (Port Jackson willow);
   b. *Acacia cyclops* (Black wood);
   c. *Acacia mearnsii* (Black wattle);
   d. *Cortaderia selloana* (Pampas grass);
   e. *Casuarina cunning-hamiana* (Beef wood);
   f. *Paraserianthes lophantha subsp. Lophantha* (stinkbean, Australian albizia);
   g. *Pennisetum clandestinum* kikuyu grass;
   h. *Rubus fruticosus* (black berry); and
   i. *Sesbania punicea* (red Sesbania).

Visual:

1. Shade cloth / netting must be used around any visible site camps; and
2. All construction materials must be neatly stored.

Dust:

1. Prevent any fine material from blowing around by wetting the area and/or covering stockpiles;
2. If required, work areas prone to dust generation as a result of the project, must be made wet; and
3. Excavation, handling and transport of erodible materials must be avoided under highly windy conditions.

Freshwater:

On-site retention pond (Phase 1):-

1. Alien vegetation must be removed on a regular basis;

Off-site wetland (Phase 2):-

1. In conjunction with the relevant Local Municipality, on-going alien vegetation clearing must take place to ensure the optimal functioning of the system. The vegetation must be managed to prevent the encroachment of kikuyu grass back onto the rehabilitated area;
2. Monitor outflow pipes for any blockages and if any blockages are detected, repair the blocked outflow pipes to ensure they are maintained in good working condition;
3. Ensure that the outlet levels of the wetland are not altered;
4. Ensure that the embankment of the wetland is not altered (lowered);

5. Ensure that the anticipated water level is attained by the wetland;
6. Ensure that the wetland system is operated in line with the design and goals that are set out for the wetland; and
7. Ensure the outlet pipes allow the area to release water at an appropriate level.

APPENDIX D

LETTER OF COMMITMENT BETWEEN ELGIN FREE RANGE CHICKENS AND THEEWATERSKLOOF MUNICIPALITY FOR THE ESTABLISHMENT OF A WETLAND ON ERF 291 PORTION 10, GRABOUW

Letter of Commitment between Elgin Free Range Chickens and Theewaterskloof Municipality for the establishment of a wetland on Erf 291 Portion 10, Grabouw

1. THE PROJECT

Elgin Free Range Chicken's (EFRC) is currently undertaking a Basic Assessment process for the proposed expansion at their existing Poultry Abattoir on erven 2760 and 2761 in Grabouw Industria. The project is divided into two phases and as part of Phase 2 it is proposed to establish a wetland on Erf 291 Portion 10 in order to enable the completion of Phase 2. It is proposed to relocate the on-site wetland onto Erf 291 Portion 10 in order to not only handle stormwater flowing through Erf 2761 but to also handle other stormwater from Grabouw Industria. The following co-ordinates provide the approximate area for the off-site wetland in its entirety (see Figure 1 enclosed):

- 34° 8'55.61"S, 19° 0'19.99"E
- 34° 8'56.29"S, 19° 0'21.16"E
- 34° 8'56.40"S, 19° 0'22.67"E
- 34° 8'57.38"S, 19° 0'23.84"E
- 34° 8'57.62"S, 19° 0'23.43"E
- 34° 8'57.75"S, 19° 0'22.96"E
- 34° 8'57.19"S, 19° 0'22.00"E
- 34° 8'55.73"S, 19° 0'19.87"E

2. DUTIES TO BE UNDERTAKEN

This Letter of Commitment confirms that the following items will be undertaken prior to the commencement of Phase 2 by EFRC:

- EFRC to appoint a suitably qualified specialist to design the off-site wetland. The specialist must refer to the Freshwater Assessment Report compiled by BlueScience, dated 16 September 2014 (see attached) when designing the wetland.
- The specialist must compile a maintenance management plan for the on-going maintenance of the wetland during the operational plan.
- A Contract must be drawn up and signed between Theewaterskloof Municipality and EFRC's setting out the roles and responsibilities with regards to the long term maintenance of the wetland. According the freshwater specialist (Mr Dana Grobler), maintenance activities are likely to be focused on alien vegetation and litter clearing
- EFRC to submit wetland designs, maintenance management plan and signed Contract to the Department of Environmental Affairs and Development Planning prior to commencement of Phase 2.
- EFRC to construct the off-site wetland and cover all associated construction costs (e.g. re-shaping, planting of indigenous vegetation, etc.)

Note that should Phase 2 not be implemented then the off-site wetland will not be required and no Contract between the Theewaterskloof Municipality and EFRC will be necessary.

Signed and agreed at Grabouw on the 12 day of February 2015.

WITNESS: .....

WITNESS: ..... SIGNED: .....for: **Elgin Free Range Chickens (Pty) Ltd**

Signed and agreed at Caledon on the 12 day of February 2015.

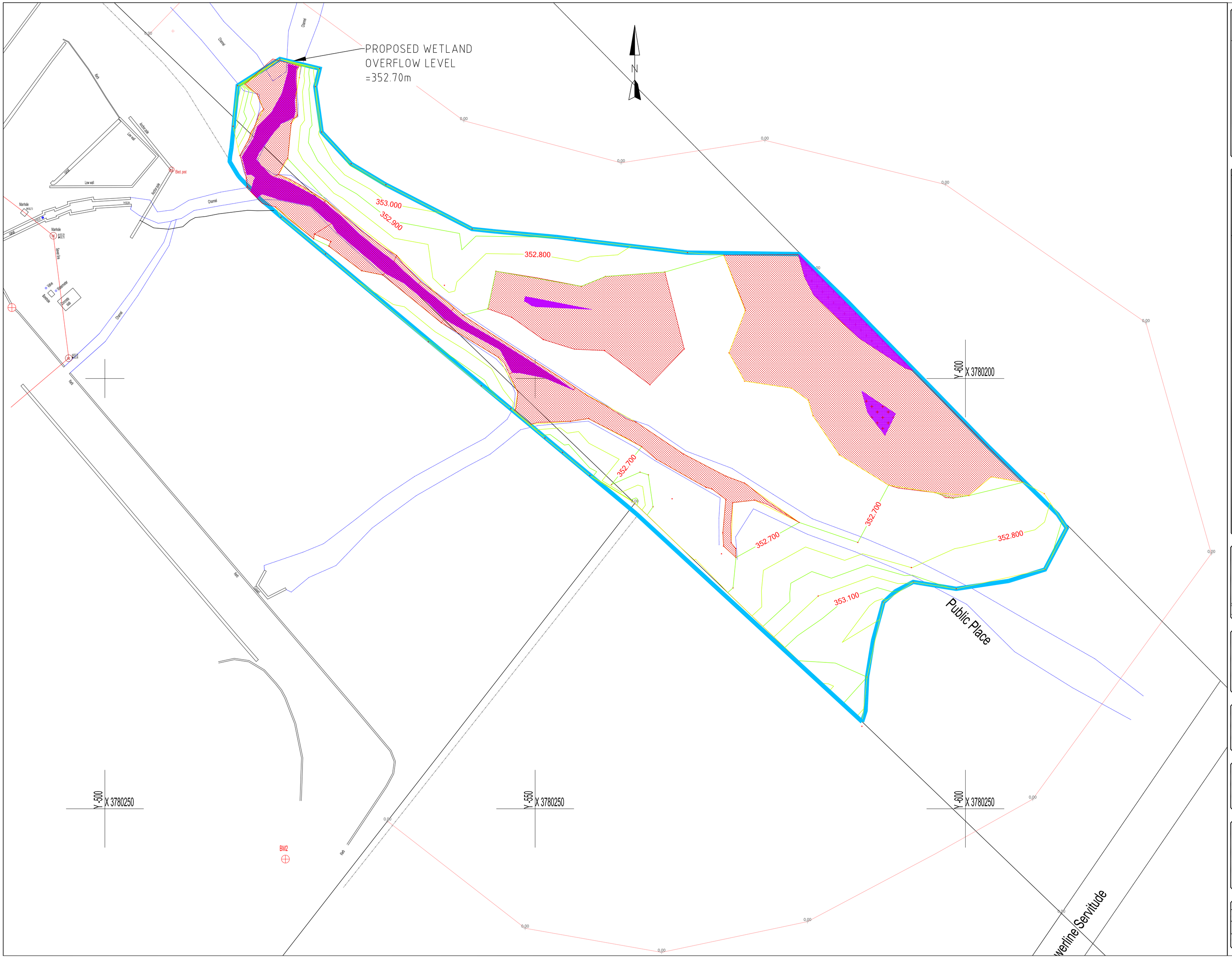
WITNESS: .....

WITNESS: ..... SIGNED: .....for: **Theewaterskloof Municipality**

Figure 1: Location of the planned off-site wetland to be constructed as part of Phase 2.

APPENDIX E

FINALISED ENGINEERING DESING OF THE OFF-SITE WETLAND SYSTEM



CONDITIONS

THE COPYRIGHT IN THIS DRAWING, INCLUDING THE DESIGN AND DETAILS SHOWN HEREON, IS RESERVED BY THE ENGINEERS.

THIS DRAWING IS NOT TO USED IN WHOLE OR PART OTHER THAN FOR THE INTENDED PURPOSE AND PROJECT, AS DEFINED ON THIS DRAWING.

REFER TO THE CONTRACT FOR FULL TERMS AND CONDITIONS.

NOTES

1. ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK. DISCREPANCIES TO BE REPORTED TO ENGINEER.
2. ALL WORK AND MATERIALS TO CONFORM TO THE RELEVANT SABS 1200 SERIES SPECIFICATIONS.
   THE ENGINEER TO BE PROVIDED WITH DENSITY TEST RESULTS ON SELECTED SUBGRADE, AND ALL CONSTRUCTION LAYERS.
3. CONTRACTOR TO CONTACT ALL SERVICE DEPARTMENTS AND CHECK THAT EXISTING SERVICES INDICATED ON THIS DRAWING ARE COMPLETE. POSITION AND DEPTH OF ALL SERVICES TO BE VERIFIED BY CAREFUL HAND EXCAVATIONS. SERVICES TO BE ADEQUATELY PROTECTED FROM DAMAGE TO THE FULL DURATION OF THE CONTRACT.
4. MANHOLE COVER LEVELS INDICATED ARE APPROXIMATE ONLY. COVERS AND FRAMES MUST BE SET TO LINES AND LEVELS TO SUIT FINISHED SURFACE LEVELS.
5. SEWER HOUSE CONNECTIONS TO TERMINATE 1m INSIDE ERF BOUNDARY AT 1m DEPTH UNLESS THIS RESULTS IN A PIPE GRADIENT FLATTER THAN 1:60 IN WHICH CASE CONNECTIONS TO BE LAID AT MINIMUM GRADE OF 1:60.
6. WHERE CLAY IS FOUND UNDER ROADS, THE CLAY IS TO BE REMOVED TO A MINIMUM DEPTH OF 630mm BELOW THE BOTTOM ROAD LAYER AND REPLACED WITH SUITABLE MATERIAL AND COMPACTED TO THE ENGINEERS SPECIFICATIONS.
7. ALL WORK CARRIED OUT ON SITE TO BE DONE BY AN APPROVED CONTRACTOR, EXPERIENCED IN CIVIL ENGINEERING WORK.

GENERAL NOTES:

LEGEND

- Shallow depressions 0-200mm water cover in wet season
- Deeper depressions 200-540mm water cover in wet season

No	Date	Details	Chd	Appd
A	16/07/24	Wetland Area revised	AvdM	

Revisions

Client

ELGIN POULTRY
ABATTOIR (PTY) LTD

Project

ELGIN CHICKENS

Description

WETLAND REHABILITATION
BASE PLAN

RAADGEWENDE INGENIEURS
& PROJEKBESTUURDERS
AVDM
Hopestraat 20
Posbus 2056
Hermanus 7200
Tel : 028 313 0741
Faks : 028 313 0747
Sel : 083 650 8103
Epos : andre@cegela.co.za

Approved By	AVDM
Prepared By	BS
Scale	1:200
Date	MAY 2024
Drawing No	265 / 101 / A

APPENDIX F

SIGNED AGREEMENT BETWEEN ELGIN FREE RANGE CHICKENS (PTY) LTD AND THE THEEWATERSKLOOF MUNICIPALITY FOR THE REHABILITATION OF A WETLAND ON THE REMAINDER OF ERF 8308, GRABOUW

AGREEMENT BETWEEN ELGIN FREE RANGE CHICKENS (PTY) LTD AND THE THEEWATERSKLOOF MUNICIPALITY FOR THE REHABILITATION OF A WETLAND ON THE REMAINDER OF ERF 8308, GRABOUW

1. THE PROJECT

In 2015, the Department of Environmental Affairs and Development Planning (DEA&DP) granted an Environmental Authorisation (EA) for the extension of the Elgin Poultry Abattoir in the Grabouw Industrial area on erf 8611. This extension involves expanding existing buildings and infrastructure in two phases. Phase 2 of this development will necessitate the infilling and subsequent loss of two wetland portions located in the north-eastern corner of erf 8611. To compensate for the loss of on-site wetland functionality, the rehabilitation of a wetland on the remainder of Erf 8308 (C01300100000830800000), as recommended in the Freshwater Assessment Report by BlueScience (Grobler & Belcher, 2014), was included as a condition in the EA. PHS Consulting has drafted a Wetland Rehabilitation and Maintenance Management Plan, detailing the necessary rehabilitation and long-term maintenance actions that need to be implemented for the required mitigation to be realised. The proposal involves rehabilitating and enhancing the wetland on the remainder of Erf 8308 to manage stormwater from both Erf 8611 and the broader Grabouw Industrial area. Erf 8308 is owned by the Theewaterskloof Municipality. The approximate area designated for the off-site wetland is depicted in Figure 1.

2. DUTIES CONDUCTED

This agreement confirms that the following actions have been undertaken, and therefore commencement of Phase 2 by EFRC is accepted by the parties to this agreement:

- EFRC appointed suitably qualified specialists, PHS Consulting and AVDM Consulting Engineers, to design the off-site wetland. The specialists referenced the Freshwater Assessment Report by BlueScience, dated 16 September 2014, during the wetland design process.
- PHS Consulting compiled a maintenance management plan for the ongoing maintenance of the wetland during its operational phase.
- This agreement, signed between Theewaterskloof Municipality and EFRC, outlines the roles and responsibilities of both parties regarding the long-term maintenance of the wetland as detailed below. According to the freshwater specialist, maintenance activities will likely focus on clearing alien vegetation and litter.
- EFRC prepared wetland designs with AVDM Consulting Engineers as part of the maintenance management plan. This signed agreement and the wetland designs were submitted to the Department of Environmental Affairs and Development Planning prior to commencement of Phase 2.
- Theewaterskloof Municipality hereby grants approval that EFRC can proceed with the rehabilitation construction works on the remainder of Erf 8308, per the Wetland Rehabilitation and Maintenance Management Plan.
- EFRC hereby agrees to construct and rehabilitate the off-site wetland on RE/8308 as specified in the Wetland Rehabilitation and Maintenance Management Plan, covering all associated construction costs.
- EFRC hereby agrees to manage and maintain the rehabilitated wetland on RE/8308 as per the Wetland Rehabilitation and Maintenance Management Plan, covering all associated maintenance and monitoring costs for the first three years after completing the works.
- The Theewaterskloof Municipality, as the owner of Erf 8308, agrees to manage and maintain the rehabilitated wetland on RE/8308 according to the Wetland Rehabilitation and Maintenance Management Plan, covering all associated maintenance and monitoring costs following the initial three-year period.
- If ownership is transferred to a new party, the new owner will assume all roles and responsibilities outlined in the Wetland Rehabilitation and Maintenance Management Plan.

L.A T

T
EFRC.

Signed and agreed at ……January……….on the ….8….. day of ……………….2025

WITNESS:…………………………..

WITNESS: J. VENTER…………………………..

SIGNED: ………………………………FOR: ELGIN FREE RANGE CHICKENS (PTY) LTD

Signed and agreed at …CALEDON…………..on the …12th… day of DECEMBER 2024

WITNESS:…………………………..

WITNESS:…………………………..

SIGNED: ………………………………FOR: THEEWATERSKLOOF MUNICIPALITY

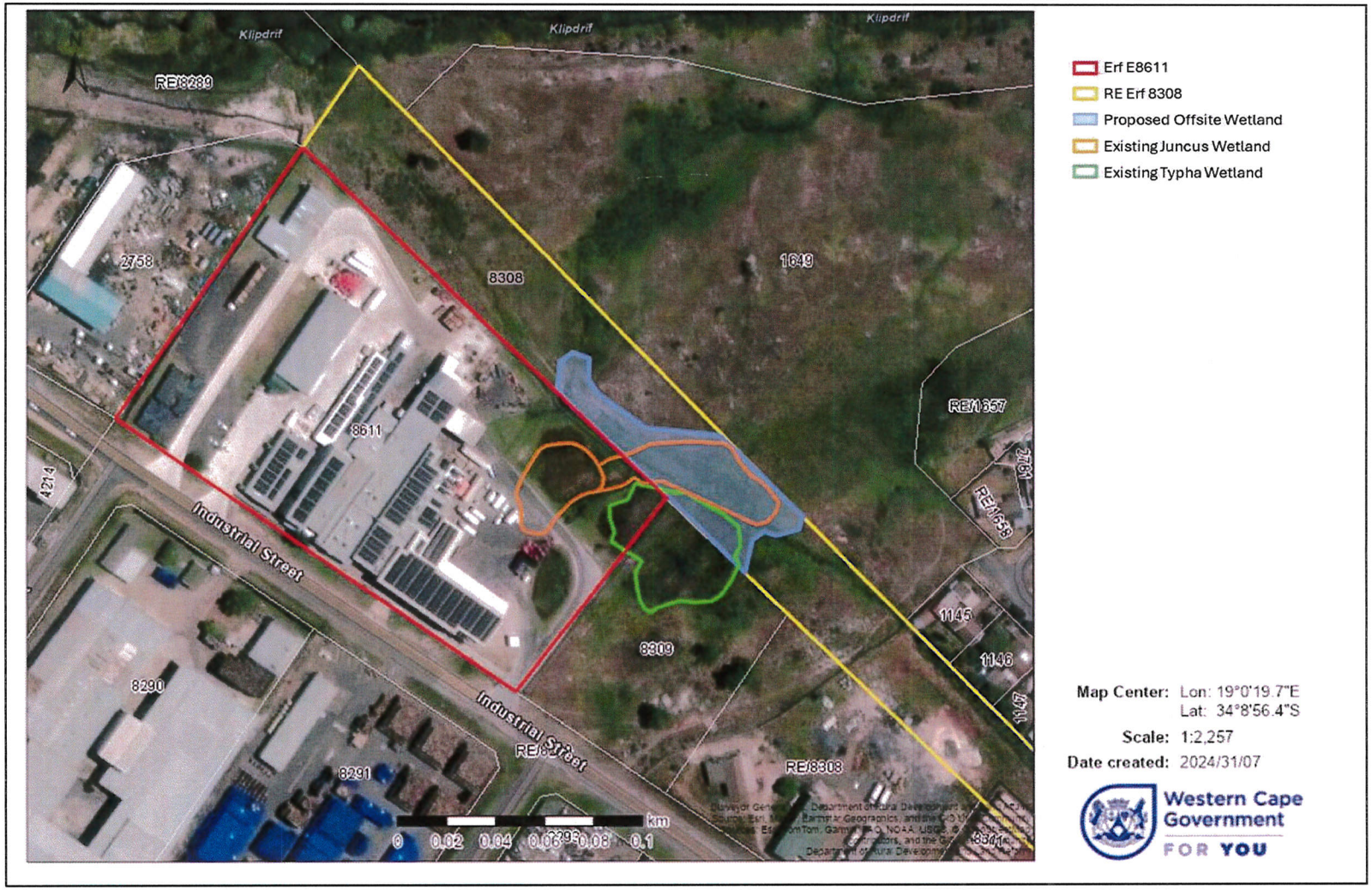


Figure 1: Location of the planned off-site wetland to be constructed as part of Phase 2.

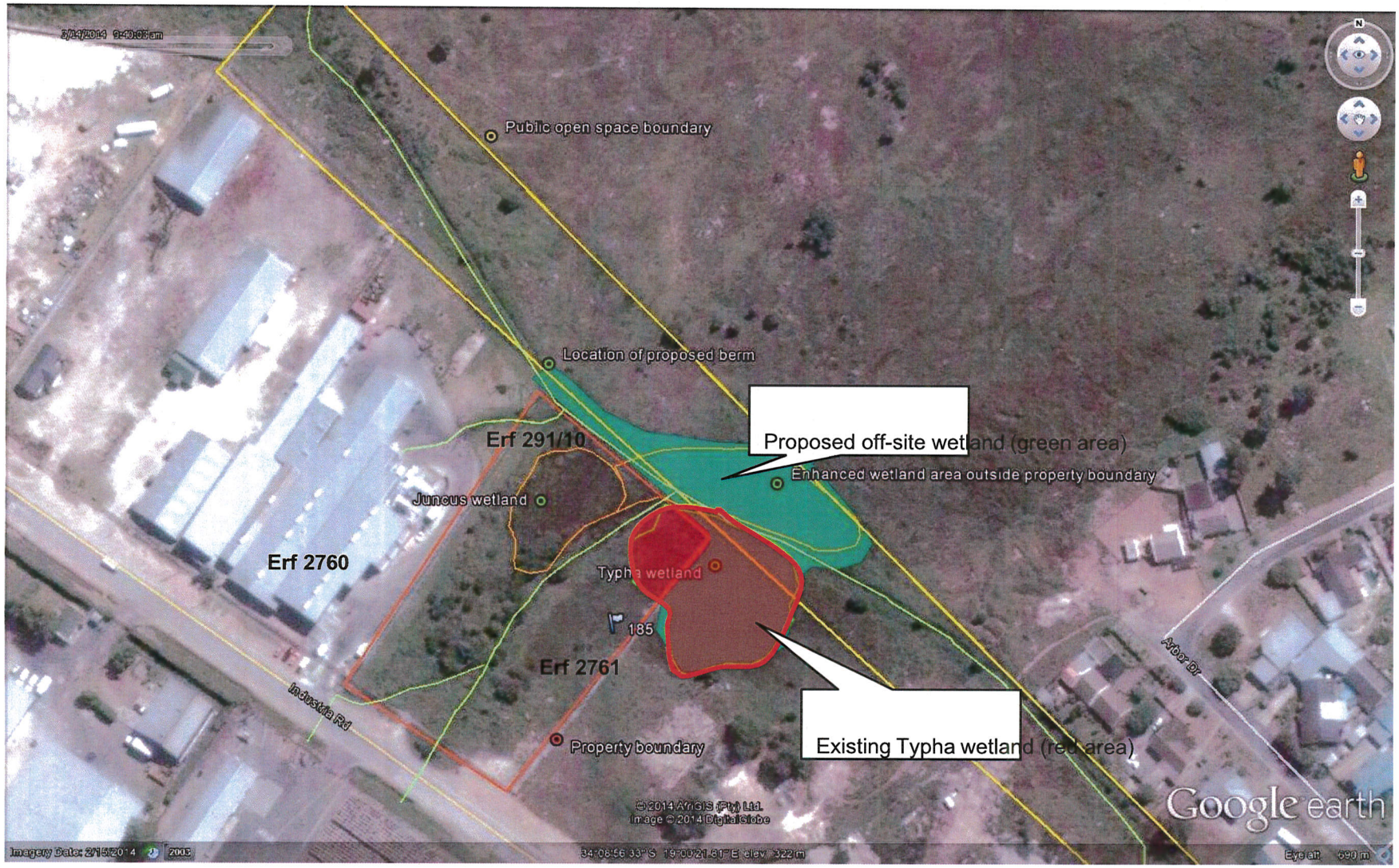


Figure 1: Location of the planned off-site wetland to be constructed as part of Phase 2.