Development of a Dwelling (Seebederfie) on Erf 4735, Tergniet, Mossel Bay.

Aquatic Compliance Statement

Prepared For:	Cape EAPrac
Author:	Dr. J.M. Dabrowski (PhD) Confluent Environmental Pty (Ltd) 7 St. Johns Street, Dormehlsdrift, George, 6529
SACNASP:	Pr. Sci. Nat. (Water Resources) – 113456
Reviewer:	Dr. J. Dabrowski (PhD)
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confluent

EXECUTIVE SUMMARY

Confluent Environmental was appointed by the applicant to undertake a freshwater survey for construction of a main dwelling on Erf 4735, Tergniet, Mossel Bay Local Municipality. The dwelling was constructed on the property and used as a guesthouse called “Seebederfie”. The applicant further commenced with the unlawful clearance of indigenous vegetation, flattening of the frontal dune, and moving 5 m^3 of soil within 100 m of the high-water mark of the sea without prior Environmental Authorisation. The screening tool classified the site as being of Very High aquatic biodiversity due to the presence of an aquatic Critical Biodiversity Area (CBA) that extends into the north-western most corner of the property. According to the protocol, a site sensitivity verification must be undertaken to confirm the sensitivity of the site as indicated by the screening tool.

The designation of the area by the WCBSP as a CBA wetland most likely stems from the earlier NFEPA Wetland Atlas (2011) which identified an unchannelled valley-bottom wetland extending from the north-west corner of the property. The more recent 2018 National Biodiversity Assessment map does not highlight this area as a wetland and according to the most recent geospatial data sources no freshwater features are indicated to occur within the footprint of the property or within close proximity to the property. The site visit confirmed that there are no clear areas of natural drainage on the property and no hydro-geomorphological landscape features (depressions, confined valleys, channels etc.) indicating the presence of a watercourse on the property (i.e. stream, river or wetland). Vegetation on site has been confirmed as the Hartenbos Dune Thicket vegetation type, which has been heavily invaded by Rooikrans (*Acacia cyclops).*

The area mapped as a CBA wetland to the west of the property is a low-lying area in between two vegetated dunes. Observations on site however confirmed the lack of any wetland immediately adjacent to the property. In contrast, as mentioned above the terrain is characterised by a relatively long dune depression which is densely vegetated by dune thicket vegetation that has been heavily invaded by *A. cyclops.* There was no indication of any obvious wetland habitat within the depression.

Based on the results of the desktop review and the site verification, it can be concluded that the development has not impacted on any freshwater biodiversity and that the sensitivity of aquatic biodiversity on the property can be regarded as Low.

DECLARATION OF SPECIALIST INDEPENDENCE

- I consider myself bound to the rules and ethics of the South African Council for Natural Scientific Professions (SACNASP);
- At the time of conducting the study and compiling this report I did not have any interest, hidden or otherwise, in the proposed development that this study has reference to, except for financial compensation for work done in a professional capacity;
- Work performed for this study was done in an objective manner. Even if this study results in views and findings that are not favourable to the client/applicant, I will not be affected in any manner by the outcome of any environmental process of which this report may form a part, other than being members of the general public;
- I declare that there are no circumstances that may compromise my objectivity in performing this specialist investigation. I do not necessarily object to or endorse any proposed developments, but aim to present facts, findings and recommendations based on relevant professional experience and scientific data;
- I do not have any influence over decisions made by the governing authorities;
- I undertake to disclose all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by a competent authority to such a relevant authority and the applicant;
- I have the necessary qualifications and guidance from professional experts in conducting specialist reports relevant to this application, including knowledge of the relevant Act, regulations and any guidelines that have relevance to the proposed activity;
- This document and all information contained herein is and will remain the intellectual property of Confluent Environmental. This document, in its entirety or any portion thereof, may not be altered in any manner or form, for any purpose without the specific and written consent of the specialist investigators.
- All the particulars furnished by me in this document are true and correct.

Dr. James Dabrowski (PhD)

January 2024

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1. INTRODUCTION

Confluent Environmental was appointed by the applicant to undertake a freshwater survey for construction of main dwelling on Erf 4735, Tergniet, Mossel Bay Local Municipality. A main dwelling was constructed on the property and used as a guesthouse called “Seebederfie”. The Applicant further commenced with the unlawful clearance of indigenous vegetation, flattening of the frontal dune, and moving 5 m^3 of soil within 100 m of the high-water mark of the sea without prior Environmental Authorisation.

The scope of work for this report is guided by the legislative requirements of the National Environmental Management Act (NEMA).

1.1 Key Legislative Requirements

According to the protocols specified in GN 1540 (Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in Terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998, when Applying for Environmental Authorisation), assessment and reporting requirements for aquatic biodiversity are associated with a level of environmental sensitivity identified by the national web-based environmental screening tool (screening tool). An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of:

- **Very High** sensitivity for aquatic biodiversity, must submit an Aquatic Biodiversity Specialist Assessment; or
- **Low** sensitivity for aquatic biodiversity, must submit an Aquatic Biodiversity Compliance Statement.

The screening tool classified the site as being of **Very High** aquatic biodiversity due to the presence of an aquatic Critical Biodiversity Area (CBA) that extends into the north-western most corner of the property. According to the protocol, a site sensitivity verification must be undertaken to confirm the sensitivity of the site as indicated by the screening tool:

- Where the information gathered from the site sensitivity verification differs from the screening tool designation of **Very High** aquatic biodiversity sensitivity, and it is found to be of a **Low** sensitivity, an Aquatic Compliance Statement must be submitted.

1.1.1 National Water Act

The Department of Water & Sanitation (DWS) is the custodian of South Africa’s water resources and therefore assumes public trusteeship of water resources, which includes watercourses, surface water, estuaries, or aquifers.

A watercourse means:

- A river or spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland, lake or dam into which, or from which, water flows; and
- Any collection of water which the Minister may, by notice in the Gazette, declare to be watercourse, and

- A reference to a watercourse includes, where relevant, its bed and banks.

For the purposes of this assessment, a wetland area is defined according to the NWA (Act No. 36 of 1998):

"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 therefore have one or more of the following attributes to meet the NWA wetland definition (DWAF, 2005):

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

No activity may take place within a watercourse unless it is authorised by the Department of Water and Sanitation (DWS). According to Section 21 (c) and (i) of the National Water Act, an authorization (Water Use License or General Authorisation) is required for any activities that impede or divert the flow of water in a watercourse or alter the bed, banks, course or characteristics of a watercourse. The regulated area of a watercourse for section 21(c) or (i) of the Act water uses means:

a) The outer edge of the 1 in 100-year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam;

b) In the absence of a determined 1 in 100-year flood line or riparian area the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (subject to compliance to section 144 of the Act); or

c) A 500 m radius from the delineated boundary (extent) of any wetland or pan.

According to Section 21 (c) and (i) of the NWA, any water use activities that do occur within the regulated area of a watercourse must be assessed using the DWS Risk Assessment Matrix (GN 509) to determine the impact of construction and operational activities on the flow, water quality, habitat and biotic characteristics of the watercourse. Low Risk activities require a General Authorisation (GA), while Medium or High Risk activities require a Water Use License (WUL).

1.2 Scope of Work

The objectives of this assessment included the following:

- To undertake a desktop analysis and site inspection to verify the sensitivity of aquatic biodiversity as **Very High** or **Low**; and
- Compile an Aquatic Biodiversity Compliance Statement or Aquatic Biodiversity Specialist Assessment based on the site verification of the sensitivity of the site.

- Determine whether any activities fall within the regulated area of a watercourse as defined by the NWA.

2. APPROACH

The following rationale was adopted to determine the sensitivity of aquatic biodiversity within the footprint of the site:

- In the event that watercourses are confirmed to fall within the development footprint and that these watercourses will be impacted by the development, then the site sensitivity is confirmed as **Very High** and a full specialist freshwater assessment is required; and
- In the event that no watercourses are identified within the development footprint the site sensitivity is confirmed as **Low** and an Aquatic Compliance statement is required.

The determination of the site sensitivity relied upon the following approaches:

- Interrogation of available desktop resources including:
    - DWS spatial layers;
    - National Freshwater Ecosystem Priority Areas (NFEPA) spatial layers (Nel et al., 2011);
    - National Wetland Map 5 and Confidence Map (CSIR, 2018) – the latest national wetland inventory map for South Africa;
    - Western Cape Biodiversity and Spatial Plan (WCBSP) for Mossel Bay (CapeNature, 2017).
- A site visit was undertaken, during which time the following activities were undertaken:
    - Identification and classification of watercourses within the footprint of the site according to methods detailed in Ollis et al. (2013);
    - Soil augering to confirm the presence of soil indicators (DWAF, 2005) that may indicate the presence of a wetland (if applicable); and
    - Identification of hydrophilic plant species that may indicate the presence of wetland plant species (if applicable).

3. ASSUMPTIONS & LIMITATIONS

- The assessment of the site visit represents a brief temporal snapshot of conditions on the site. Changes in season or short-term changes in climatic conditions may possibly result in the formation of aquatic habitats (e.g. temporary or seasonal wetlands) under significantly wetter conditions. Despite this limitation the sensitivity of aquatic biodiversity on the site was determined with a very high level of confidence.

4. DESKTOP SURVEY

The site falls within Primary Catchment K (Kromme) area and in quaternary catchment K20A (Figure 1). The designation of the area by the WCBSP as a CBA wetland most likely stems from the earlier NFEPA Wetland Atlas (Nel, 2011) which identified an unchannelled valley-bottom wetland extending from the north-west corner of the property (Figure 2). The more recent NWMV5 (CSIR, 2018) map does not highlight this area as a wetland and according to

the most recent geospatial data sources no freshwater features are indicated to occur within the footprint of the property or within close proximity to the property (Figure 3).

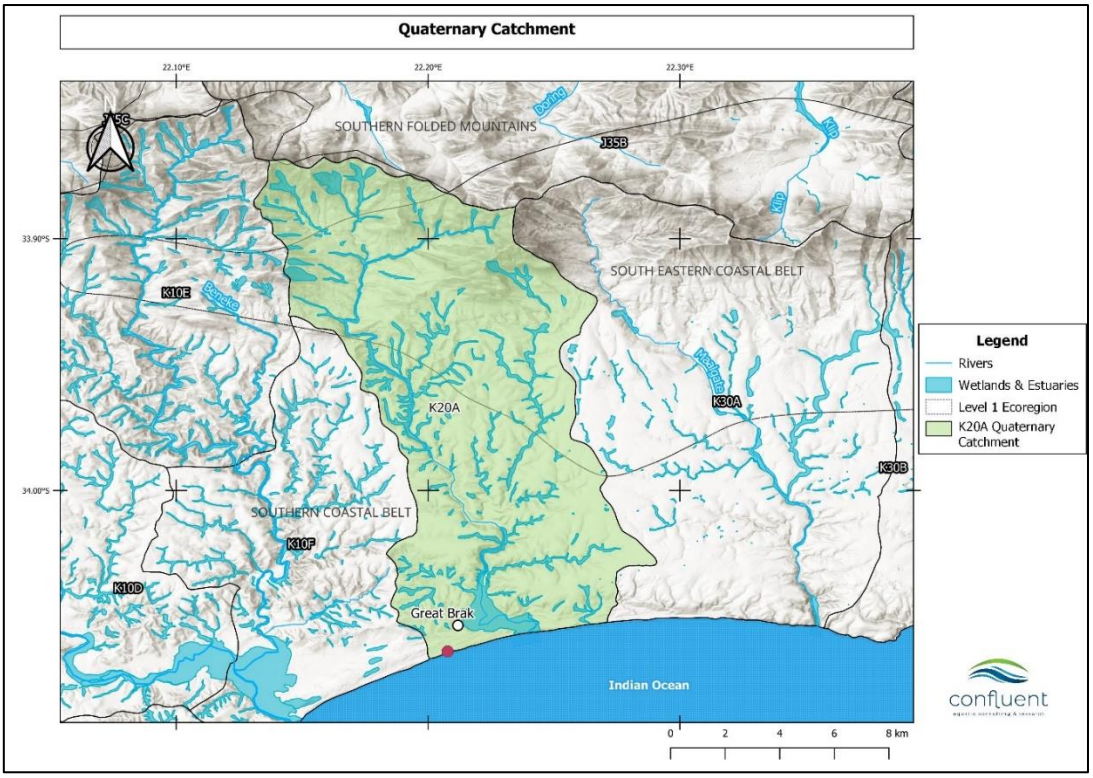

Figure 1: Map indicating the location of the property in quaternary catchment K20A.

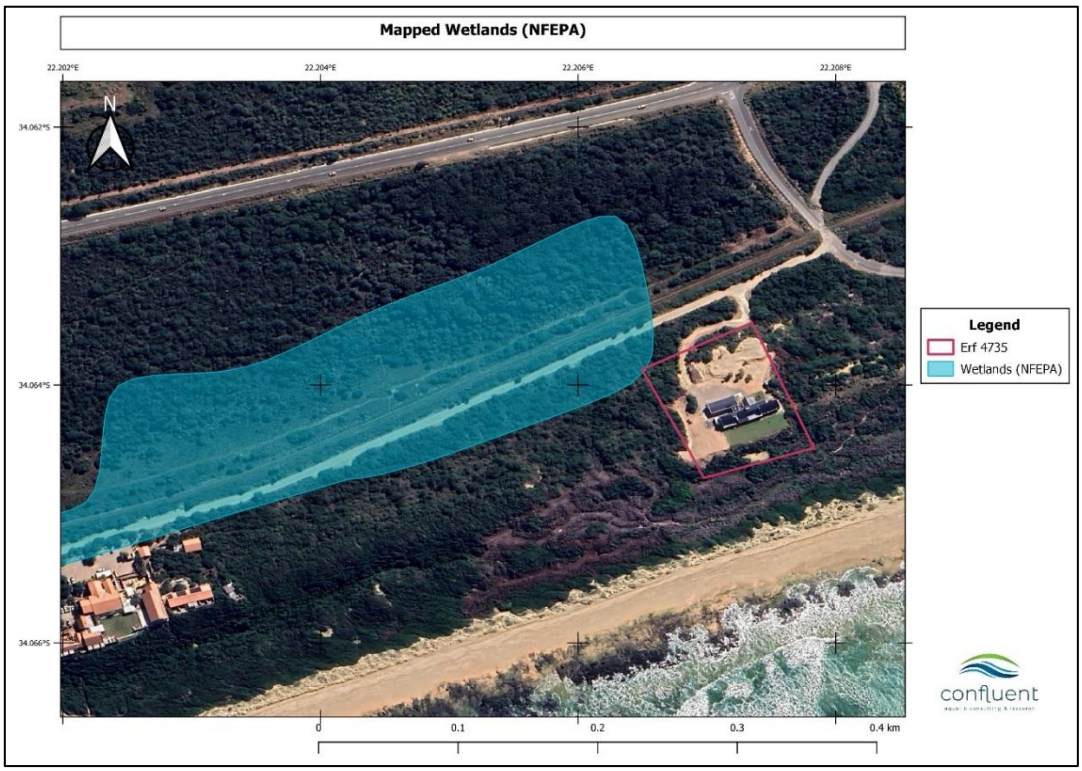

Figure 2: Mapped wetlands according to the NFEPA Atlas (Nel et al., 2011).

Figure 3: Mapped wetlands according to the 2018 National Biodiversity Assessment (CSIR, 2018).

The Western Cape Biodiversity Spatial Plan (WCBSP) identifies the wetland mapped in the NFEPA atlas and has classified most of it as an aquatic Ecological Support Area (ESA), while a thin section along its southern perimeter is mapped as an aquatic Critical Biodiversity Area (CBA) covering the property (Figure 3). The site does not fall within a sub-quaternary catchment (SQC) that has been categorised as a Freshwater Ecosystem Priority Area (FEPA) or a Strategic Water Source Area (SWSA).

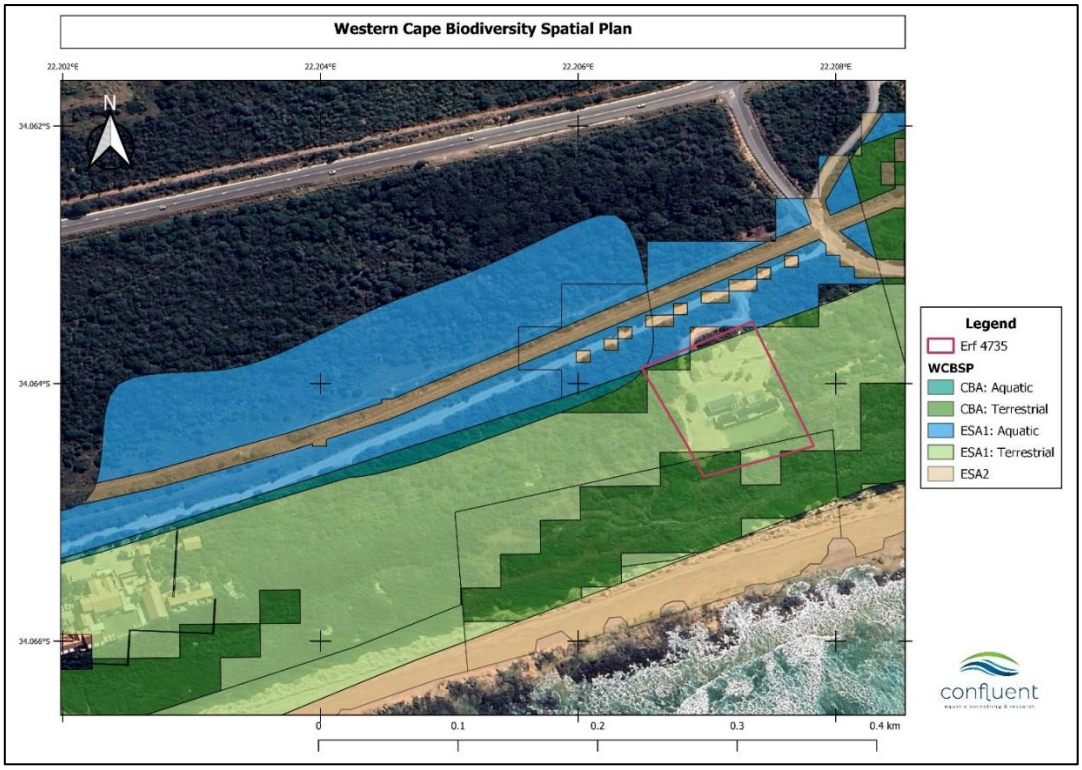

Figure 4: Location of the property in relation to the Western Cape Biodiversity Spatial Plan.

4.1 Development Plan

The applicant has already constructed a primary dwelling with two existing guest rooms (constructed in 2018 and 2019). In addition, the applicant removed indigenous vegetation for the construction of a wooden staircase, that led to a bonfire area, within the 100m high-water mark of the sea. In 2022, the applicant removed indigenous vegetation and levelled the frontal dune with the intent to develop three guest rooms (within the 100m high-water mark of the sea). The north-eastern corner of the property, near the access road, was also stripped of indigenous vegetation for the proposed construction of a parking area.

The site development plan for the preferred alternative is indicated in Figure 5 and involves keeping the existing the house, driveway, lawn areas, wooden staircase and bonfire. In addition, this alternative includes the proposed future addition of two (2) guest rooms west of the property and six (6) parking areas that will be created within the existing footprint of the driveway. The remaining cleared area around the proposed guest rooms and the area previously cleared for the parking area will be rehabilitated.

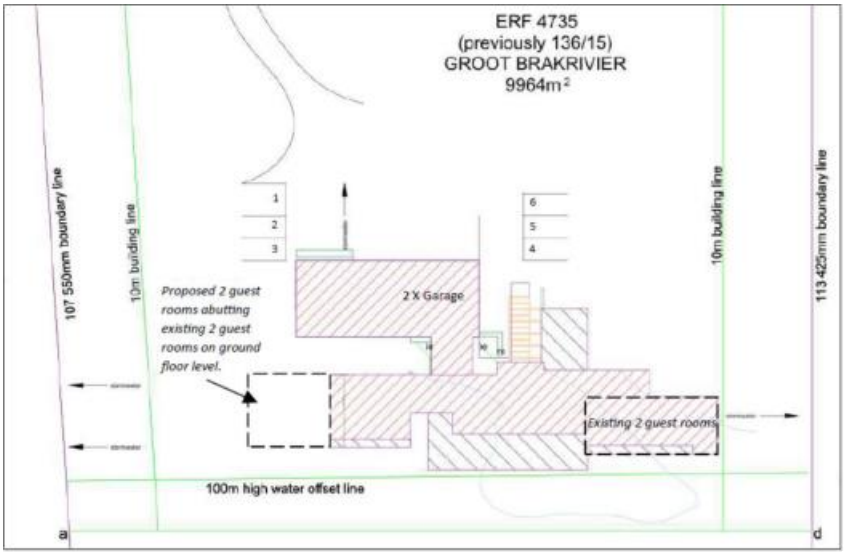

Figure 5: Proposed Site Development Plan.

5. SITE VISIT

The site visit was conducted on 6th of November 2023 during which time the entire extent of the property was traversed by foot. The main dwelling is located on the ridge of a vegetated dune which slopes down to the coastline to the south and to the main access road and railroad to the north. There are however no clear areas of natural drainage on the property and no hydro-geomorphological landscape features (depressions, confined valleys, channels etc.) indicating the presence of a watercourse on the property (i.e. stream, river or wetland) (Figure 6). Vegetation on site has been confirmed as the Hartenbos Dune Thicket vegetation type, which has been heavily invaded by Rooikrans (*Acacia cyclops).*

The area mapped as a CBA wetland to the west of the property is a low-lying area in between two vegetated dunes. Observations on site however confirmed the lack of any wetland immediately adjacent to the property. In contrast, as mentioned above the terrain is characterised by a relatively long dune depression which is densely vegetated by dune thicket vegetation that has been heavily invaded by *A. cyclops.* There was no indication of any obvious wetland habitat within the depression. Soil on the site is very sandy and, under wetter seasonal or short-term climatic conditions, is unlikely to retain water for long enough to result in the formation of temporary or seasonal wetland habitat. A road and railway cross through the middle of the CBA but there are no signs of saturated soils or associated wetland vegetation. The general area is therefore consistent with the most recent NBA assessment, which does not indicate the presence of a wetland adjacent to the property (Figure 3). It can therefore be concluded, with a high degree of confidence, that no freshwater features occur within or adjacent to the property boundaries and that no aquatic biodiversity was affected by the construction of the main dwelling or clearance of vegetation on the property.

Figure 6: Photographs of the site including view to the west (A) and east (B). Photographs C and D are to the north providing a view of the area that has been mapped as an aquatic CBA and ESA.

In terms of legislation pertaining to the NWA, the property falls outside of the regulated area of any nearby watercourses (i.e. greater than 100 m and 500 m away from a river/stream and natural wetland, respectively) (Figure 7).

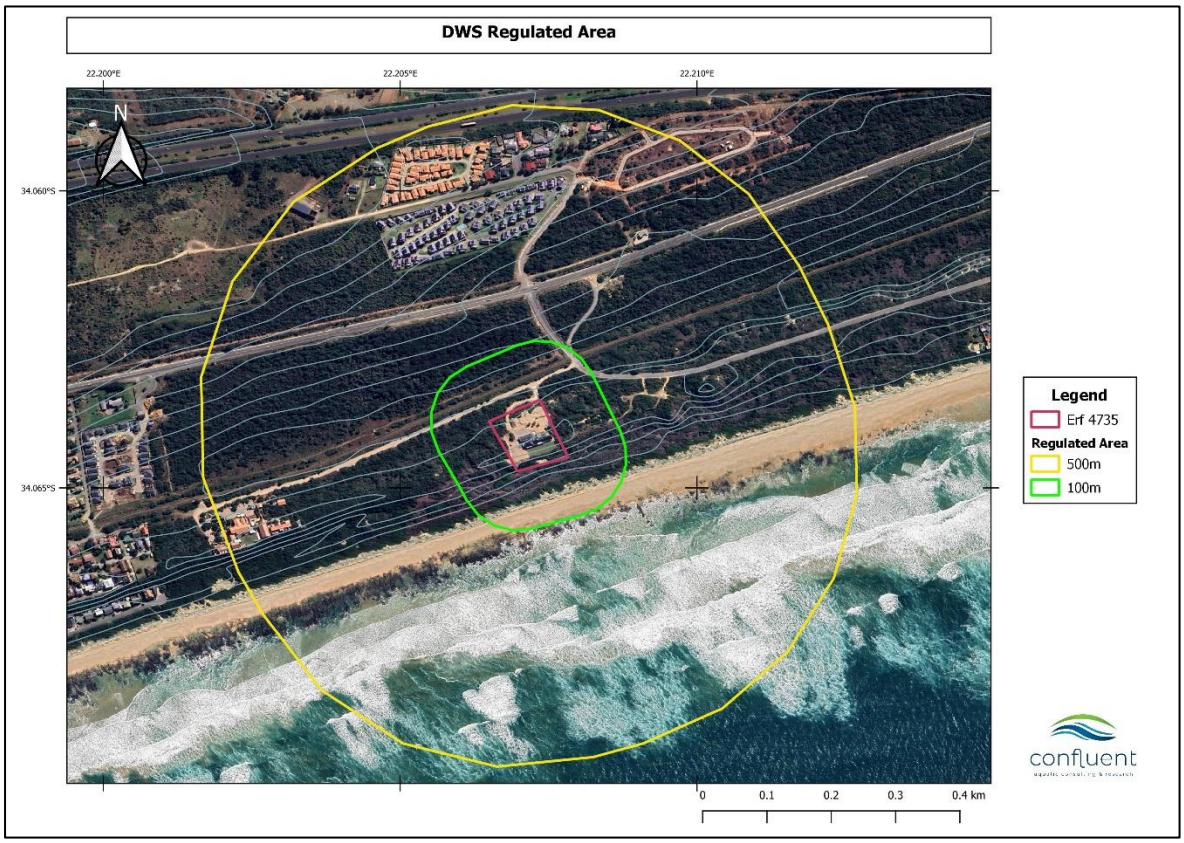

Figure 7: Map indicating Section 21 (c) and (i) regulated areas.

6. AQUATIC BIODIVERSITY COMPLIANCE STATEMENT

Based on the results of the desktop review and the site verification, it can be concluded that the development has not impacted on any freshwater biodiversity and that the sensitivity of aquatic biodiversity on the property can be regarded as **Low**.

7. REFERENCES

CapeNature (2017). 2017 WCBSP Mossel Bay [Vector] 2017. Available from the Biodiversity GIS website, downloaded on 26 March 2019

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Ollis, D.J., Snaddon, C.D., Job, N.M. and Mbona, N. (2013). Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland Systems. SANBI Biodiversity Series 22. South African National Biodiversity Institute, Pretoria