Toni Belcher
Aquatic Ecologist

53 Dummer Street

Somerset West

7130

Tel: 082 883 8055

email: toni@bluescience.co.za

29 October 2025

Infinity Environmental

Suite 17

Private Bag X11

Mowbray

7705

Attention: Mr J Rose and Ms K Gilmour

Dear Jeremy and Kelly

AQUATIC COMMENT ON THE PRESENCE OF WATERCOURSES/WETLAND AREAS AND RISK ASSESSMENT ON PORTION 1 OF FARM 974, MISTY CLIFFS IN CAPE TOWN

Your request for comment from an aquatic ecologist regarding the presence of a watercourse/wetland on Portion 1 of Farm 974, Misty Cliffs, Cape Town refers. The property is approximately 15 hectares in extent and located on the South Peninsula in Quaternary catchment G22A within the Breede Olifants Water Management Area.

A brief freshwater assessment and opinion are provided below, based on knowledge of the area, a review of available literature and freshwater conservation mapping for the area. Past aerial imagery was also examined to understand the pre-development state and more recent modifications to the area. The site and much of the surrounding area are however still in a natural to largely natural ecological condition. The surrounding area forms part of the Table Mountain National Park and is a World Heritage Site (Cape Floral Region Protected Area).

No aquatic features (watercourses or wetlands) have been mapped in the National Wetland Map or the City of Cape Town wetland mapping for the site. The 1 in 50 000 topographical map does however indicate a small watercourse, the Varingkloof draining the site. There is a visible drainage/seep area within the property where there is drainage off the relatively steep, southwestern-facing slopes of the Misty Cliffs and seepage of groundwater from the Table Mountain Group aquifer.

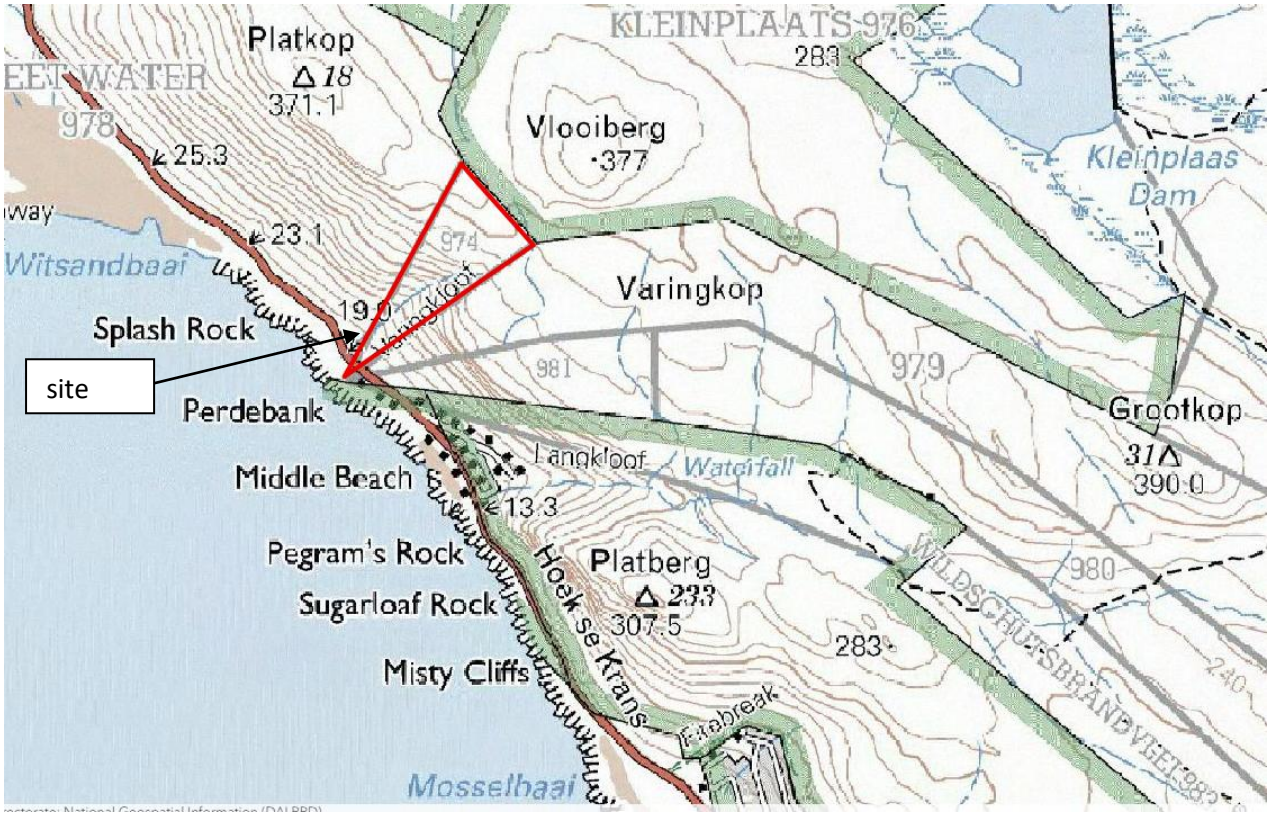

Figure 1. 1:50 000 Topographical map for the area, showing the location of the property.

1. Aquatic Biodiversity Conservation Importance

Most of the property is located within a wider area considered of Very High Aquatic Biodiversity Sensitivity (Figure 2). The high sensitivity is associated with an aquatic Critical Biodiversity Area (CBA) mapped along the Varingkloof (this is from the 2017 Western Cape Biodiversity Spatial Plan (WCBSP) and not the more recent 2023 WCBSP), a National Freshwater Ecosystem Priority Area (FEPA) River Sub-catchment, as well as the Strategic Water Source Area for surface water (Table Mountain) that covers a far larger area.

In terms of other aquatic biodiversity conservation mapping, the site is mapped only as a terrestrial CBA in the 2023 WCBSP with the closest aquatic CBA associated with wetland habitat at the Shusters River at Scarborough more than 2.5 km to the southeast (Figure 3). The Shusters River wetlands and wetlands at Kleinplaas Dam 1.5 km to the northeast are the closest wetlands mapped in the National FEPA Wetland mapping (Figure 4). The National Wetland Map (Figure 4), informed by the City of Cape Town wetland mapping, contains seep wetlands 100m to the northeast of the site as well as 500m to the east and 600m to the southeast of the property boundaries.

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

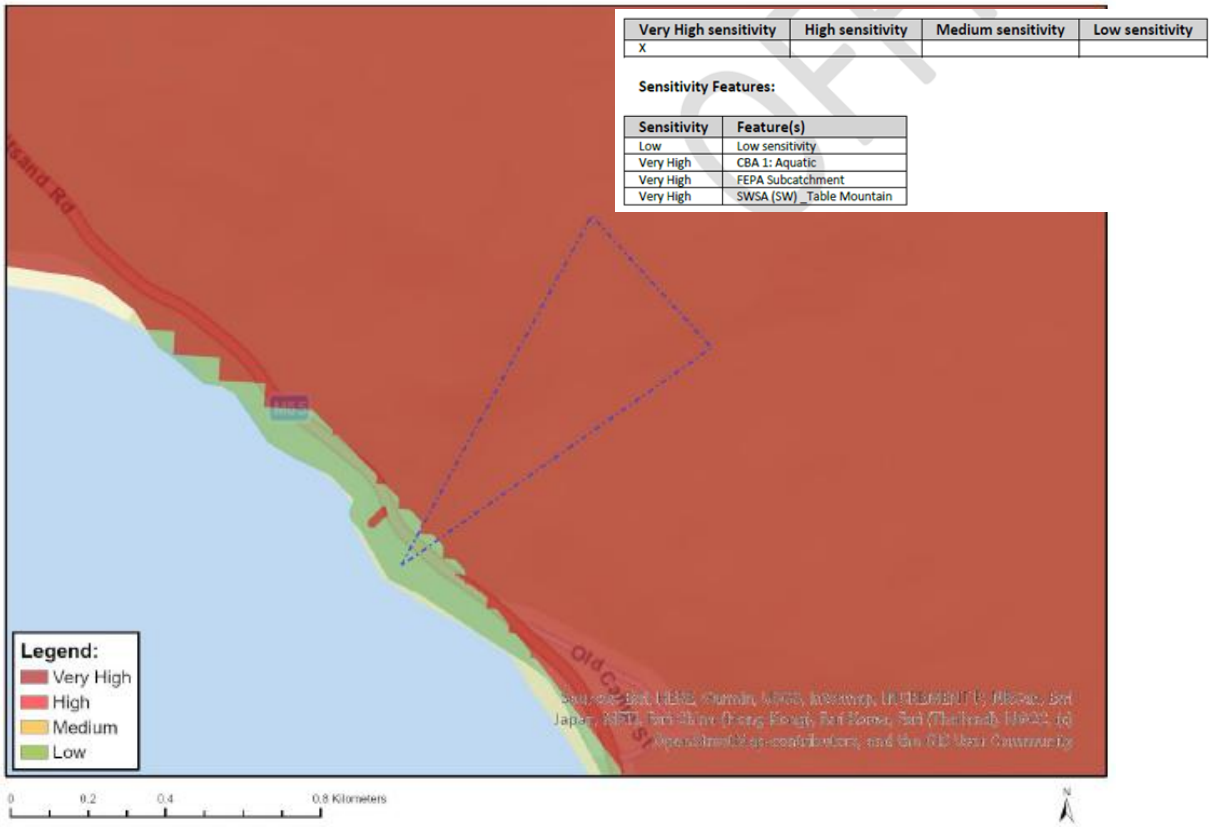

Figure 2. DFFE Screening Tool for the site for Aquatic Biodiversity Sensitivity

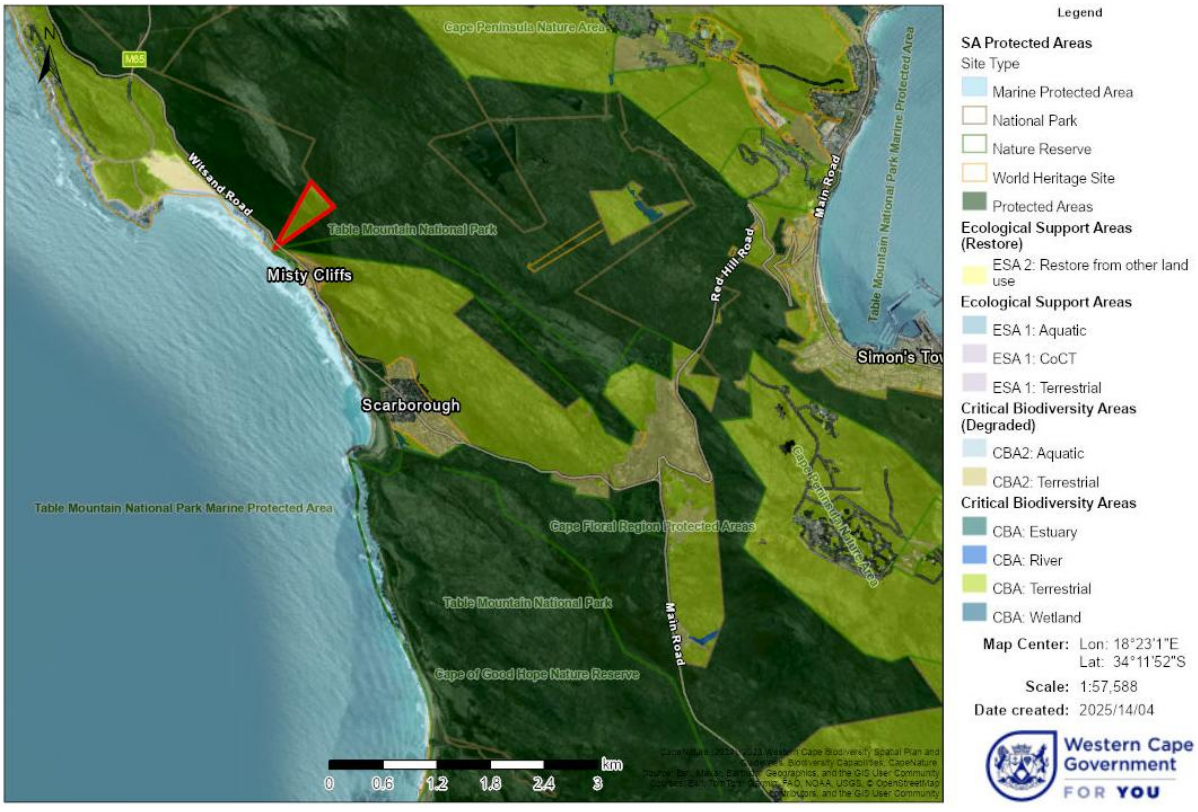

Figure 3. 2023 Western Cape Biodiversity Spatial Plan mapping for the site (obtained from (CapeFarmMapper and SANBI Biodiversity Websites, 2025)

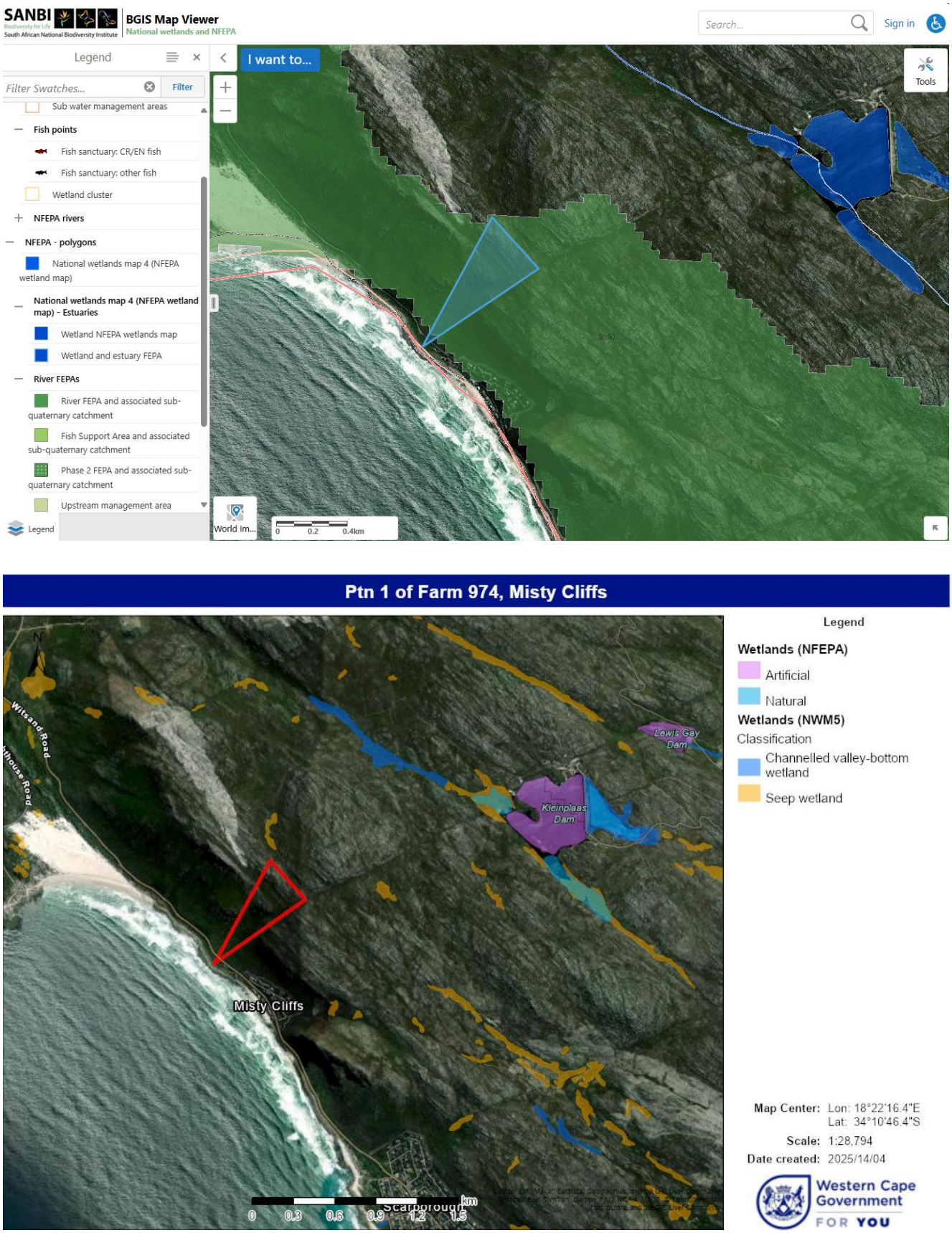

Figure 4. National Freshwater Ecosystem Priority River Sub-catchments (top) and the mapped FEPA Wetlands and National Wetland Map (version 5) features (bottom) (obtained from CapeFarmMapper and SANBI Biodiversity Websites, 2025)

2. Physical and Visual Characteristics

The site is located north of the small settlement of Windy Cliffs on the Cape Peninsula. The Varingkloof valley crosses the property in a southwesterly direction. The general drainage at the site is southwestwards, towards the coastline. The altitude on the site drops from about 290 m above mean sea level on the northeastern boundary to less than 10 m above sea level at the southern point, over a distance of about 900m, with an average gradient of about 31%.

The underlying geology in the area comprises mainly quartzitic sandstone with siltstone, shale and conglomerate beds of the Peninsula Formation, Table Mountain Group. The soil is shallow with rock. A minor fractured aquifer occurs at the site that has an average yield of between 0.5 and 2 l/s. The recharge rate in the area is high and typically about 98 mm/a. The average depth of the groundwater table is 6.7 m below ground level. The general groundwater quality is relatively good, with an electrical conductivity of less than 150 mS/m. The aquifer is considered to have a moderate to high susceptibility and vulnerability to contamination from anthropogenic activities.

There is a distinct seep on the midslopes within Varingkloof, with an associated distinct vegetation but no defined channel. On the lower slope, the drainage down the kloof is visible from the distinct vegetation but is mostly sub-surface with no defined channel. The drainage surfaces near the shoreline to form small coastal wetlands. There are also minor patches of coastal wetland along the shore that are fed where deep groundwater surfaces and maintains small patches of sedges.

The natural vegetation in the area is indicated to comprise Peninsula Sandston Fynbos on the upper slopes with Cape Flats Dune Strandveld on the very lower slopes. Most of the natural vegetation type remains, and as a result, the vegetation type is considered a Least Threatened vegetation type. The vegetation at the site comprises mainly proteoid, ericaceous and restioid fynbos, with some asteraceous fynbos. Dominant species include *Leucadendron xanthoconus, Protea lepidocarpodendron, Protea nitida, Metalasia densa, Tarchonanthus littoralis, Lobostemon montanus* and *Cliffortia obcordata*. Distinct different vegetation was observed within the kloof and seep area that was dominated by *Pteridium aquilinum, Searsia tomentosa, Olea capensis, Polygala mytifolia* and *Berzelia abrotanoides*. Figures 5 to 7 provide images of the site while the mapped aquatic features are shown in Figure 8.

Figure 5. View of the site, as seen mid-slope looking upslope towards the kloof and seep area.

Figure 6. View of the taller, distinctly different vegetation present within the kloof and seep area

Figure 7. View of the coastal wetland areas downslope of the site and below the M65 tar road.

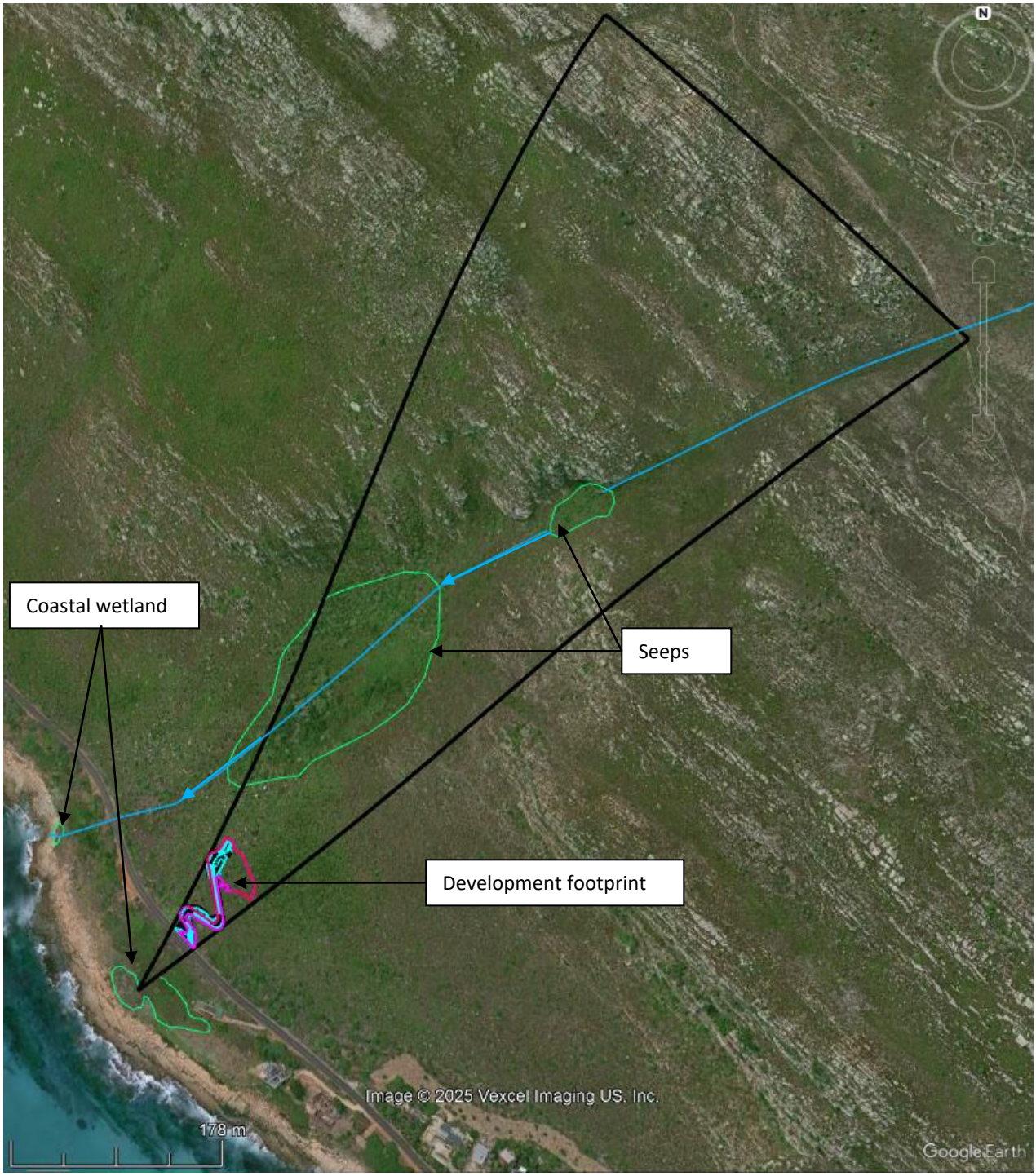

Figure 8. Mapped aquatic features within and adjacent to the property, shown in Google Earth together with the area of the proposed development footprint for the site.

3. Development of the area and aquatic ecosystem impacts

The site and surrounding area are still mostly natural with little change from pre-development/disturbance conditions (Figure 9). Only localised impacts occur along the roads and at Misty Cliffs. Within the site, it is only the very recent vegetation clearing that appears to have taken place. The initial disturbance was undertaken more than 100m downslope of the seep area and east of the drainage area. It is thus not likely to have had any impact on the seep and Varingkloof drainage area.

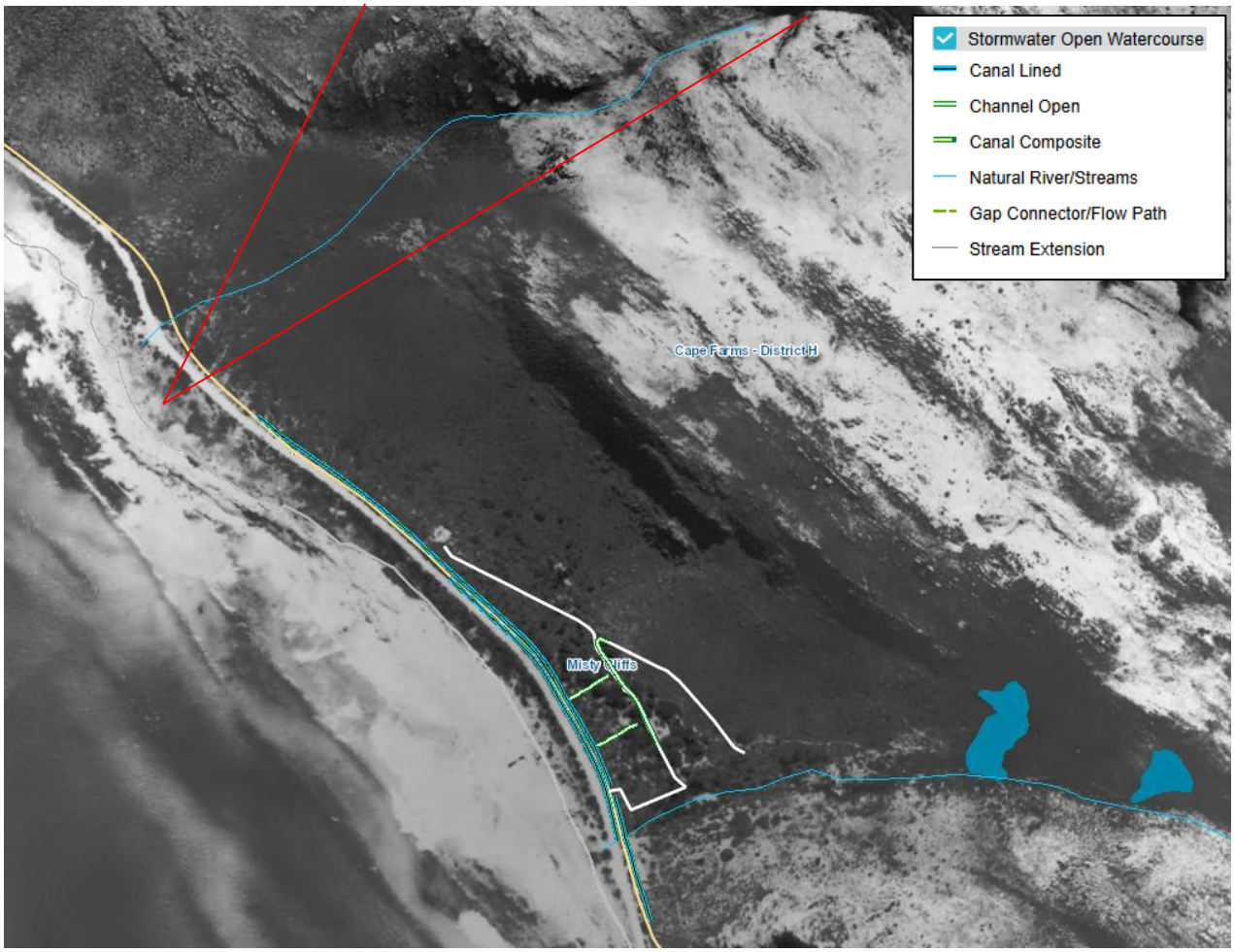

Figure 9. Aerial image of the site and surrounding area, taken in 1945, shown together with the City's mapped stormwater system (natural and constructed areas) (City of Cape Town Map Viewer)

With regards to the proposed development of the site, it is proposed to construct a residence with terraces/courtyards and an access road that will cumulatively result in disturbance of not more than 900 m^2 of the southeastern corner of the site which is about 15 ha in extent. The area of disturbance will be about 60m east of the Varingskloof drainage and seep area and about 50m upslope of the M65 road.

The only aquatic features thus likely to be at any risk of degradation from the proposed activities are the small patches of coastal wetland that are fed from the surfacing of groundwater at the shore, as well as local stormwater runoff and interflow. These features are relatively rare along the coastline and sensitive to flow impacts. The potential risks to these features would be in terms of flow interception and contamination. The wetlands are fed from deep groundwater unlikely to be intercepted by the proposed activities. Any water quality impacts are also likely to be insignificant given the extent of the wetlands; and their distance from the residence and with the tar road in between. Given the above, it is my opinion that no risk assessment in terms of Section 21c and Section 21i water uses is deemed to be required for the proposed activities nor would any water use authorisation for these water use activities be required.

To mitigate and prevent any potential impact of the activities of the residence on the adjacent aquatic features the following is recommended:

- Adequate stormwater, sanitation and solid waste services must be in place and properly maintained. The stormwater management measures must prevent direct runoff from the residence and road onto the downstream R65 tar road and from there into the sensitive coastal wetlands. Infiltration of stormwater and dispersion of the flow should be encouraged through use of permeable paving, planting of local indigenous vegetation and shaping of the surface to prevent concentration of runoff;

- If a conservancy tank is to be utilised, it must be regularly evacuated and maintained to ensure that no contamination of groundwater takes place.

- Any consideration of groundwater use would need to follow an investigation to ensure that the abstraction of groundwater would not impact on the groundwater flow to the downstream coastal wetland;

- Only appropriate local indigenous vegetation should be utilised to landscape the disturbed areas within the residence and access road, and care should be taken to not introduce any alien invasive plant seed to the site;

- A buffer from the Varingskloof drainage corridor and seep areas, as delineated in Figure 10 below, should be maintained into which no activities associated with the proposed residence should take place such as the establishment of wide firebreaks (greater than 10m) around the residence or access roads.

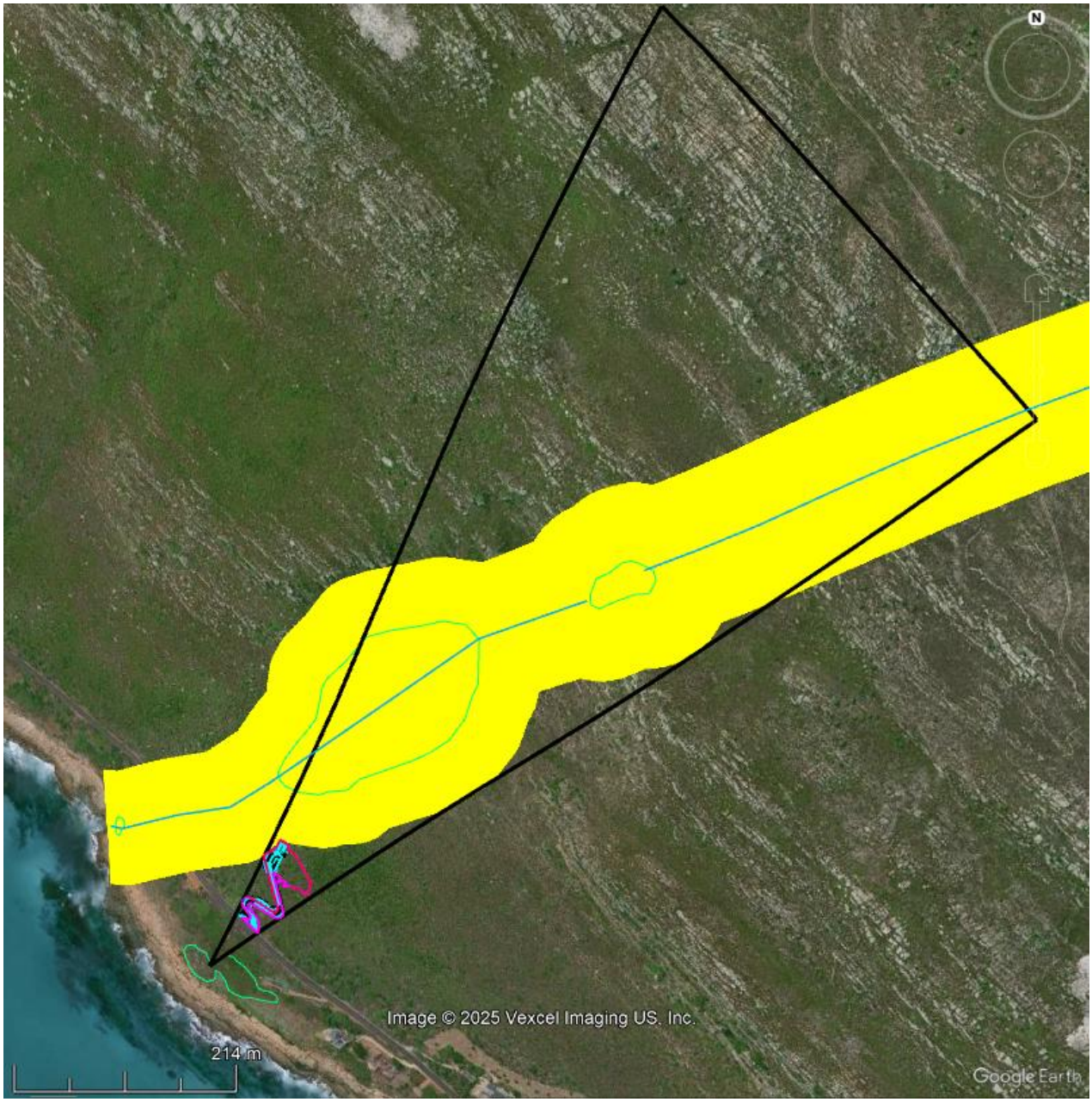

Figure 10. Google Earth image showing the recommended 50m setback from aquatic features within or adjacent to the property.

Please feel free to contact me should you have any questions regarding the above.

Kind regards

Toni Belcher
Aquatic ecologist (P. Sci. Nat. 400040/10)

Background and Qualifications of Specialist Consultant

Name: Antonia Belcher
Contact details: 53 Dummer St, Somerset West, 7130; Phone: 082 883 8055;
Email: toni@bluescience.co.za
Profession: Aquatic Scientist (P. Sci. Nat. 400040/10)
Fields of Expertise: Specialist in freshwater assessments, monitoring and reporting
Years in Profession: 30+ years

Toni Belcher worked for 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. Since leaving the Department in 2007, she has been working in her private capacity and was co-owner of BlueScience (Pty) Ltd, working in the field of water resource management and has been involved in more than 500 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.

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

Areas of specialisation: Aquatic ecosystem assessments, Monitoring and evaluation of water resources, Water resource legislation and authorisations, River classification and Resource Quality Objectives, River Reserve determination and implementation, Water Quality Assessments, Biomonitoring, River and Wetland Rehabilitation Plans, Catchment management, River maintenance management, Water education.

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 – 2012	Self-employed – Aquatic Specialist
2013 – 2020	Senior Aquatic Specialist and part-owner, BlueScience
2020 –	Self-employed– Aquatic Specialist

Declaration of Independence

I, A**ntonia Belcher,** as the appointed specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- in terms of the general requirement to be independent:
  - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - ~~am not independent, but another specialist that meets the general requirements set out in Regulation 13 of GN No. 326 have been appointed to review my work (Note: a declaration by the review specialist must be submitted);~~
- in terms of the remainder of the general requirements for a specialist, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- have disclosed/will disclose, to the Applicant, the Department and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application;
- have ensured/will ensure that information containing all relevant facts in respect of the application was/will be distributed or was/will be made available to interested and affected parties and the public and that participation was/will be facilitated in such a manner that all interested and affected parties were/will be provided with a reasonable opportunity to participate and to provide comments;
- have ensured/will ensure that the comments of all interested and affected parties were/will be considered, recorded and submitted to the Department in respect of the application; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations, 2014 (as amended).

Signature of the Specialist: 

Name of Company: -

Date: 29 October 2025