WETLAND VERIFICATION BASED ON SOIL AUGERING FOR PORTION 22 OF FARM 82, CALEDON, WESTERN CAPE

Prepared for:

By

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1. Purpose of this Opinion

The client, Cropmax, cleared approximately 1 hectare of indigenous vegetation on Portion 22 of Farm 82, Caledon, without first obtaining an Environmental Authorisation. As a result, a Section 24G Directive was issued in terms of the National Environmental Management Act (Act No. 107 of 1998).

A freshwater impact assessment was commissioned in February 2025 as part of the Section 24G process, following which a rehabilitation plan was requested by the competent authority. During the review of the freshwater studies, CapeNature raised concerns regarding the extent of the wetland delineated on site, and requested that soil augering of the surrounding areas be undertaken to further investigate the potential presence of additional wetland features.

This opinion letter therefore presents the findings of a soil augering investigation undertaken to assist in identifying the presence of any wetland features located to the west of the site, as well as in confirming the outer boundary of the wetland feature on the abovementioned site. The investigation was conducted in accordance with accepted South African wetland delineation practice, with specific reference to soil-based indicators recognised by the Department of Water Affairs (DWAF), the Department of Water and Sanitation (DWS), and Government Notice 509 of 2016 (GN509).

2. Legislative and Guideline Context

In terms of GN509, wetlands are delineated based on the presence of, amongst others, hydromorphic soil characteristics, supported where applicable by vegetation and hydrological indicators. Where vegetation indicators are absent, ambiguous, or disturbed, soil indicators are considered the primary and most reliable determinant of wetland extent, as supported by DWAF and DWS guidance.

This investigation, therefore, focused on the identification of diagnostic soil features associated with prolonged or recurrent saturation, including reduced conditions within the soil profile.

3. Methodology: Soil Augering for Wetland Delineation

3.1 Augering Approach

Soil augering was undertaken on the 24th of January, using a hand auger, along transects extending across the indicated wetland area as marked in the Cape Nature Report (Wetland Report; Gouws, J.E., 2017). Auger points were positioned to intercept the anticipated transition from wetland to non-wetland soils.

Augering was conducted to a maximum depth of approximately 0.5m, or until refusal, whichever occurred first.



Figure 1: The Klipfontein area edited NFEPA wetlands layer, updated after ground-truthing in June 2017 where the red triangles denote the soil auger sites, the beige polygons depict a bench flat, the aquamarine-green colour depicts a seep wetland and the pink polygon depicts a unchanneled valley-bottom wetland. The red rectangular shape depicts the area where the transgression took place and does not exactly follow the property boundary. It must be noted that here only the relevant wetland section was updated for the purposes of this report. (Cape Nature Report - Wetland Report; Gouws, J.E., 2017)).



Figure 2: Location of the augering points during the field visit on the 24th of January 2026.

3.2 Soil Indicators Assessed

At each auger point, the following soil characteristics were recorded, consistent with DWAF / DWS wetland delineation guidance: Soil colour (matrix and mottles), with emphasis on:

- Grey, blue-grey, or olive-grey matrix colours,

- Low chroma colours indicative of reduced conditions;
- Mottling (presence, abundance, colour, and contrast);
- Gleying, indicating prolonged saturation and anaerobic conditions;
- Soil texture and structure;
- Organic material accumulation, where present;
- Evidence of periodic or permanent saturation within the soil profile.

These indicators were used to identify hydromorphic soils, defined as soils that develop under conditions of saturation sufficient to produce anaerobic conditions in the upper soil horizons.

4. Findings

Although the larger site was affected by recent wildfires, sufficient vegetation remnants remained to indicate the pre-burn vegetation conditions. The site was divided into two main areas for assessment: firstly, the area west of the platform corresponding to the 'unchannelled valley-bottom wetland' indicated in the CapeNature report, and secondly, the area east of the platform corresponding to the 'wetland seep' identified in the same report.

As no significant vegetation indicators of wetland conditions were observed within the investigated areas, the site was assessed using soil transects to obtain a representative understanding of the soil profile across the indicated areas. The locations of auger points are shown in Figure 2.

Soils observed on site were predominantly sandy to loamy in texture, with Munsell values generally higher than 6 and chromas higher than 3. These characteristics are not indicative of hydromorphic (wetland) soils. Wetland indicators, primarily in the form of orange mottling, were recorded only at Auger Point 7, which is located on the boundary of the wetland delineated in the Freshwater Report (EverWater, 2025).

Soils occurring within wetlands are typically characterised by grey to bluish-grey soil matrices with prominent mottling and/or gleyed horizons. In contrast, the majority of auger points (with the exception of Point 7) displayed uniform brown soil colours, an absence of mottling or gleying, and well-drained, oxidised profiles. Such soil conditions are indicative of terrestrial environments. Soils samples at the other Auger points are therefore not considered hydromorphic and fall outside the wetland system.

Auger Point 1	Auger Point 2	Auger Point 3	Auger Point 4	Auger Point 5
				
Munsell: 10YR 7/3	Munsell: 10YR 7/4	Munsell: 10YR 7/2	Munsell: 10YR 7/3	Munsell: 10YR 7/4
Auger Point 6	**Auger Point 7 (on delineated wetland boundary)**	**Close-up of Auger Point 7**	**Auger Point 8 (within buffer zone)**	**Auger Point 9 (within buffer zone)**
				No Image
Munsell: 10YR 8/2	Munsell: **10YR 4/3 with orange mottles**	Munsell: 10YR 6/3	Munsell: 10YR 6/3	Munsell: 10YR 6/3

5. Wetland Boundary Delineation

In accordance with GN509 and DWAF / DWS guidance, the outer boundary of the wetland can be delineated at the point where:

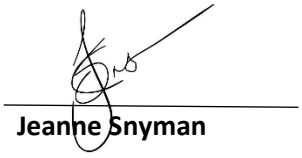
- Hydromorphic soil indicators (gleying, mottling, reduced matrix colours) are no longer present within the soil profile; and
- Soil conditions transition to well-drained, oxidised terrestrial soils.

Based on the soil profiles observed on site, the delineated boundary as presented in the 2025 Freshwater Assessment (EverWater, 2025) is considered to be accurate, and no amendments are proposed. The wetland areas indicated in the CapeNature report (Wetland Report; Gouws, J.E., 2017) were not found to correspond with the soil evidence recorded during the augering investigation and are therefore not supported by the findings of this assessment.

6. Conclusion

It is the professional opinion of the undersigned that the soil augering investigation provides sufficient and reliable evidence to delineate the wetland boundary in accordance with accepted South African practice, and that the delineation as indicated in the 2025 Freshwater Assessment (EverWater, 2025) is accurate.

It is noted that, wetland boundaries may vary seasonally depending on rainfall and groundwater conditions, subsurface variability may occur between auger points and this opinion is specific to site conditions observed at the time of assessment.



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