

To: Neil Construction Limited

Date: 17 November 2021

Attention: David Page

Job No: 63907

Subject: 98 & 100-102 Totara Road, Whenuapai – Wetland Assessment

Neil Construction Limited (NCL) has applied to the Minister for the Environment (MfE) to have a development at 98 & 100-102 Totara Road, Whenuapai (Site) fast-tracked under the Covid-19 Fast Tracking legislation. Bioresearches have previously prepared a watercourse classification for the aforementioned development¹.

MfE have assessed that the application requires further additional information (RFI). This memorandum is in response to the RFI regarding potential wetlands within the Site. MfE's requests that are relevant are shown in blue italics below.

7. *Potential Natural Wetlands. The memo provided by Bioresearches addresses watercourse classification and contains limited reference (Watercourse C) to areas of the site that have been investigated/considered as potential natural wetlands. Please provide comment on all areas of the site that have been considered as potential natural wetlands, including any additional assessment that has been undertaken to confirm there are no natural wetlands on the site (if applicable).*

Five features (A-E) were identified as potential aquatic habitat (Figure 1). The site was assessed via a desktop review and site visit. The desktop assessment noted factors such as changes in vegetation and surface water on current and historical aerial images, and a review of data such as the Current Biodiversity layers, predicted watercourses and contours on Auckland Council's Geomaps was undertaken.

A site assessment was undertaken on 21 October 2020, by a qualified freshwater ecologist. During the site assessment, the presence and extent of wetland and associated stream features of the Site were noted and the quality of any freshwater habitat was visually assessed.

Potential wetlands (those areas typically characterised by soggy soils, water loving plants and water) were assessed, following the Ministry for the Environment's (MfE) wetland delineation protocols², including vegetation assessments to determine whether the areas meet the definition of a 'natural wetland' under the National Policy Statement for Freshwater Management 2020 (NPS-FM). Assessments were carried out within the Auckland region's 'growing season'⁴. The assessments were undertaken during normal hydrologic and climatic conditions. Historical aerial imagery shows that the area has been cleared and subject to agricultural practices since at least 1940 (>80 years). As such, the wetland assessments were considered to be undertaken under normal circumstances with no recent disturbances or modifications having occurred.

¹Bioresearches. 9 November 2020. 98 & 100-102 Totara Road, Whenuapai – Watercourse Classification. Prepared for Neil Construction Limited.

² Ministry for the Environment (2020). Wetland Delineation Protocols.

Vegetation was assessed based on the dominance and prevalence of:

- Obligate wetland vegetation (OBL) – almost always a hydrophyte, rarely in uplands;
- Facultative wetland (FACW) – usually a hydrophyte but occasionally found in uplands;
- Facultative (FAC) – commonly occurs as either a hydrophyte or non-hydrophyte;
- Facultative upland (FACU) – occasionally a hydrophyte but usually occurs in uplands; and
- Upland (UPL) – rarely a hydrophyte, almost always in uplands.

Where the Dominance Test and/or Prevalence Tests showed unclear results, hydric soils and hydrology assessments were undertaken, where appropriate, in accordance with the associated protocols^{3, 4}.



Key

- Property Boundary
- Farm Crossing (culvert)
- Permanent Watercourse
- Intermittent Stream
- Ephemeral overland flow path
- Artificial Watercourse

0 50 100 150 200 m

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Figure 1. Classified watercourses within the Site.

³ Fraser *et al.* (2018). Hydric soils – field identification guide.

⁴ Ministry for the Environment (2021). Wetland delineation hydrology tool for Aotearoa New Zealand.

Wetland Assessment

With the exception of the dwelling and associated garden, the entire Site has historically been used for pasture for over 80 years and all aquatic habitat has been degraded as a result. The site is still actively grazed. None of the aquatic features have been fenced off and as a result streambanks have been eroded, causing ill-defined streambanks. In addition, extensive pugging has occurred compacting the soil and creating divots where surface water can temporarily pool. Photos of all the features are provided within the watercourse classification memorandum.

Features A & B

Features A and B were classified as intermittent streams¹. The stream channel edges have been eroded due to stock access which have caused ill-defined channels in areas. Recent aerals (May 2021) show a clear stream channel with no surrounding wetland features (Figure 2). Hydrophytes were present but were largely confined to within the stream channel and were considered stream macrophytes. Macrophyte species included watercress (*Nasturtium officinale*) and water celery (*Apium nodiflorum*). Riparian vegetation was dominated by upland or facultative upland pasture species. Due to the almost complete dominance of pasture species within the riparian yard no wetland vegetation assessments were considered necessary. Features A and B were considered 'non-wetlands' (i.e. not a 'natural wetland' as defined by the NPS-FM) and should still be classified as an intermittent stream.



Figure 2. May, 2021 aerial showing the Site.

Feature C

Feature C consisted of two reaches of the Ratara Stream (C.1 and C.2) which were classified as two ephemeral reaches in 2020¹, however due the request from MfE and as well as the higher abundance of hydrophyte species compared to the rest of the Site, a wetland vegetation assessment was undertaken.

Feature C is small (<2ha), with only one major vegetation type and strata present (herb). As such, only one representative 2m x 2m plot was established for the feature. Tables 1 present the vegetation data for the representative plot.

Table 1. Vegetation data for the Feature C representative plot.

Scientific Name	Common Name	Biostatus Origin	Indicator Status	% Cover	Dominant
<i>Cenchrus clandestinus</i>	Kikuyu	Exotic	FACU	30	Yes
<i>Lolium perenne</i>	Perennial ryegrass	Exotic	FACU	35	Yes
<i>Ranunculus repens</i>	Creeping buttercup	Exotic	FAC	10	No
<i>Callitiche stagnalis</i>	Starwort	Exotic	OBL	8	No
<i>Persicaria hydropiper</i>	Water pepper	Exotic	FACW	3	No
<i>Plantago lanceolata</i>	Narrow-leaved plantain	Exotic	FACU	1	No
Percent of dominant species that are OBL, FACW or FAC					0%
Prevalence Index					3.56

With the exception of starwort (8% coverage), the vegetation within the plot was made up of common pasture species (rye grass and kikuyu) and common pasture weeds (buttercup, water pepper and plantain) all of which are exotic species.

The representative plots failed the Dominance Test ($\leq 50\%$) and did not meet the PI threshold (> 3). The Wetland Delineation Protocols states that “[PI] values around 3.0 should be used alongside other wetland indicators”. The plot had a PI value of 3.56 which is not considered close or around 3.0 and as such there was no uncertainty and no further investigations (i.e. hydric soil and hydrology assessments) were considered necessary. In this instance, it was considered that Feature C is considered a ‘non-wetland’ and should still be classified as an ephemeral reach.

Feature D

No wetland features, such as hydrophyte species or saturated soils, were evident within or surrounding Feature D. The feature is clearly not a ‘natural wetland’. As such, no wetland assessments were considered necessary, and the feature should still be classified as an artificial ephemeral drainage channel.

Feature E

Feature E is a reach of the Ratara Stream. The stream had clearly defined banks with a permanent flow of water. No macrophytes were present within the channel and no wetland features such as hydrophyte species or saturated soils were evident within the riparian margin of Feature E. The feature is clearly not a ‘natural wetland’ and as such, no wetland assessments were considered necessary. The feature should still be classified as a permanent stream.



Figure 3. Ratara Stream within the Site (Feature E), May 2020.

In summary, all features within the site were considered not to be 'natural wetlands' as per the NPS-FM.

Regards,



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