BEFORE THE TASMAN DISTRICT COUNCIL

Under	the Resource Management Act 1991
In the matter of	of an application by **THE NELSON REGIONAL SEWERAGE BUSINESS UNIT** for resource consents to continue applying biosolids to land (forestry blocks) at Moturoa/Rabbit Island.

STATEMENT OF EVIDENCE OF CHRISTOPHER BENDER FOR THE NELSON REGIONAL SEWERAGE BUSINESS UNIT

11 MAY 2022

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STATEMENT OF EVIDENCE OF CHRISTOPHER BENDER

Introduction

1 My full name is Christopher James Bender.

2 My qualifications include a Bachelor of Science in chemistry and biochemistry and postgraduate studies in atmospheric science. I am employed as a Service Leader (Air Quality) at Pattle Delamore Partners (PDP) where I have worked since April 2019. Prior to this I worked at Jacobs NZ Limited as an air quality specialist for 12 years. I provide technical advice on management of air discharges, measurement of discharges to air for compliance and to support consent applications, as well as assessing environmental effects for the consenting of air discharges. I am a member of the Clean Air Society of Australia and New Zealand (CASANZ) and a Certified Air Quality Practitioner (CAQP) under that body.

3 My past experience with discharges to air from wastewater treatment processes include: odour modelling assessments for the Auckland Central Interceptor and Mangere WWTP; odour monitoring investigation for the Wellington Central Interceptor; reverse sensitivity assessments of proposed plan changes on wastewater infrastructure for Selwyn District Council; effects assessment for application to discharge wastewater to land from a dairy factory operation in Hawera; and consent application reviews for Paraparaumu and Waikanae wastewater treatment infrastructure.

4 I was engaged by the Nelson Regional Sewerage Business Unit (NRSBU) to assess the potential odour effects associated with the disposal of treated biosolids from the Bell Island wastewater treatment plant (WWTP) to Moturoa/Rabbit Island. In undertaking my assessment, I have reviewed the consent application documents including the *Moturoa/Rabbit Island Biosolids Reconsenting Assessment of Effects on the Environme*nt report (Tonkin & Taylor Ltd, August 2020) (the **AEE**) and the associated *Environmental Effects of Discharges of Odour to Air from Moturoa/Rabbit Island Biosolids Application to Land* report (Stantec, July 2020). I also undertook a site visit to the Bell Island WWTP and the Moturoa/Rabbit Island biosolids application facility (**BAF**) on 26 April 2022.

5 While this is a Council-level hearing, I acknowledge that I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014, and that I agree to comply with it. I confirm that this evidence is within my area of expertise, except where I state that this evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions I express in this evidence.

Scope of Evidence

6 In my evidence I will outline the following:

6.1 Discuss the nature and origin of sources of odour from the biosolids application activity, including comments on what odours may be considered offensive or objectionable;

6.2 Comment on the register of complaints received in regard to offensive odours attributed to the biosolids activity;

6.3 Comment on the results of recent odour monitoring activities that have been carried out as compliance monitoring for the air discharge consent of the nearby Bell Island WWTP;

6.4 Summarise the assessment of effects on air quality from the biosolids application activity by Mr Paul Heveldt of Stantec, including assessment of the activity considering the FIDOL factors;

6.5 Discuss the likelihood of the biosolids application to generate additional, more intense odours in coming years, taking into account the potential for timber harvesting over time;

6.6 Comment on the content of the current Biosolids Management Plan (BMP), and proposed Odour Management Plan (OMP) including response procedures and contingency plans;

6.7 Consider the ability of the biosolids application activity to comply with proposed Condition 25 (i.e. “no offensive or objectionable odour beyond the boundary of the activity”);

6.8 Comment on the NRSBU’s proposed consent term of 35 years;

6.9 Comments on the Officer’s Report; and

6.10 Comments on submissions where relevant to my evidence.

Nature and origin of sources of odour from the biosolids application

7 Nuisance odours are a common occurrence at wastewater treatment plants, biosolids processing facilities, and biosolids recycling locations. The odours are generated by microbial activities within the biosolids which breaks down organic material and releases organic and inorganic sulphur compounds, ammonia, amines, and organic fatty acids. The nature of the odour is generally considered to be offensive.

8 The biosolids associated with the proposal are a product of the wastewater treatment process at the Bell Island WWTP. Biosolids generated at the WWTP are transported by pipeline to the BAF on Moturoa/Rabbit Island where they are stored in a series of four open tanks. The biosolids are then transferred by tanker to mobile irrigators for application within the forest blocks of the Island. There are two main activities associated with biosolids application that have the potential to generate adverse odour effects, these include:

8.1 Odour from the storage and handling of biosolids at the BAF, in particular from the biosolids storage tanks which are open to the atmosphere. The biosolids are kept in an aerobic state through mechanical stirring, supplemented by forced aeration of the tanks. During my site visit on 26 April 2022, I observed a moderate to strong biosolids odour within the vicinity of the biosolids tanks, although the odour was not discernible beyond a distance of 200 metres. I understand the NRSBU is proposing to install covers over the tanks and extract the air through a biofilter for treatment of odour. I consider that enclosure and extraction to an appropriately designed and operated biofilter will substantially reduce the potential for odours experienced in the vicinity of the BAF.

8.2 The main source of odour generation from the activity is from the application of the biosolids to land. Biosolids are transferred from the BAF by tanker, and then transferred by flexible pipeline to a purpose-built travelling irrigator. The Moturoa/Rabbit Island forest blocks are managed to allow for a clear path at every fourth row of trees to permit access to the travelling irrigator. The irrigator drives along tracks between the rows of pine trees and sprays the biosolids on either side of the irrigator out to a distance of 20 metres, which covers the two rows of trees on either side of the irrigation path. The biosolids are sprayed into air at an angle of 20-30 degrees above the horizontal in order to reach the required distance. As outlined in the AEE, the associated Stantec Air Quality Assessment (**AQA**), and later in the body of this evidence, various mitigation efforts will reduce odour emissions to levels that are less than minor at sensitive locations.

Receiving Environment and Meteorology

9 The location of the Moturoa/Rabbit Island BAF and associated biosolids application is on a low-lying island in the middle of the Waimea Inlet. Much of the island itself is closed to the public, with public access areas limited to the north shore of the island, and bike trails around the southern and western areas of the island. The BAF is located over 600 metres from the nearest public access area, and in my opinion, it is unlikely that odour generated at the BAF would be observed at these distances.

10 Figure 1 shows the biosolid application areas, which are limited by the current consents so as to exclude recreational and culturally sensitive areas. The permitted application area under the existing consent excludes areas within the following buffer zones:

- A buffer area of 50 metres from Mean High Water Springs (MHWS) around the entire coastal edge of Moturoa/Rabbit Island;
- A buffer area of 15 metres from the edge of the plantation forest; and,
- A buffer area of 30 metres around the perimeter of the Moturoa/Rabbit Island Domain during winter months (April-October), and of 100 metres during summer months (November to March).

11 I understand from the AQA report, that the above buffer zones are designed to mitigate against potential health effects from the biosolids spraying rather than to protect against odour effects, and that the relatively small separation distances may result in adverse odours occurring in areas used for recreation.

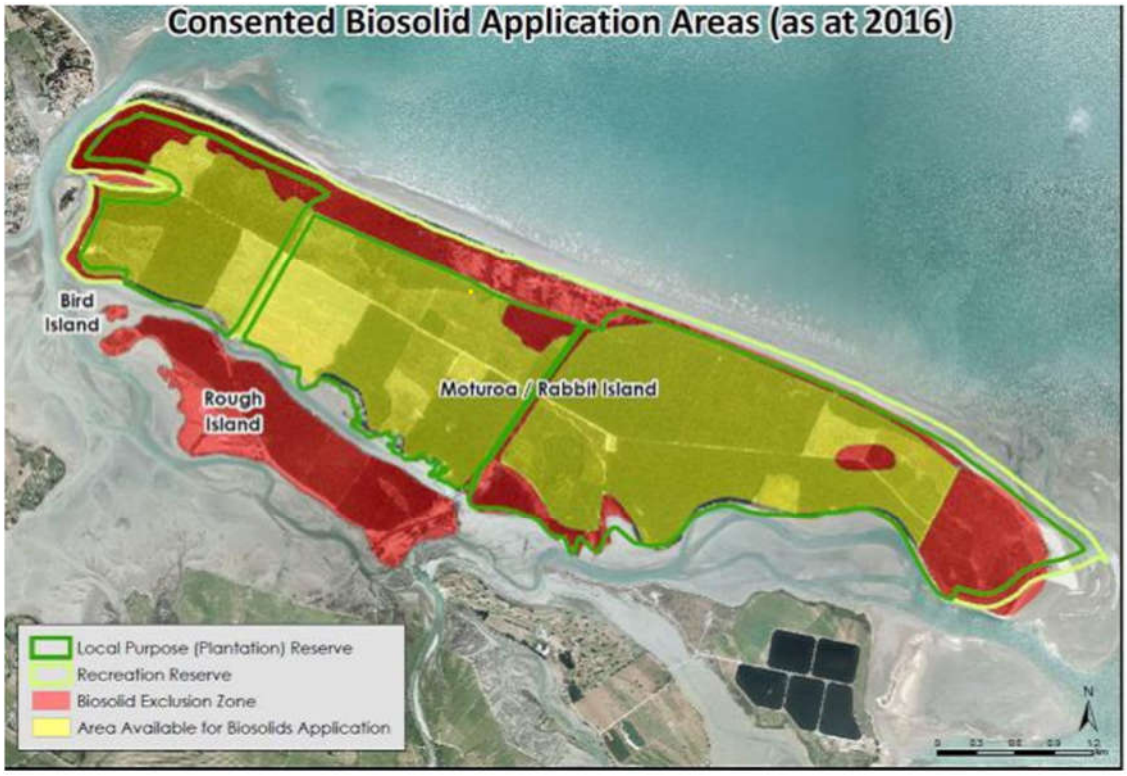

Figure 1 Currently Consented Biosolids Application Areas at Moturoa/Rabbit Island

12 The nearest residential area, which may be exposed to odour generated from the biosolids activities is the Mapua township. The township is located to the northwest of Moturoa/Rabbit Island at a distance of 300 metres from the closest point of biosolids application. The residential area on Best Island lies approximately 1.8 kilometres from the southeast of the nearest point of Moturoa/Rabbit Island. The Greenacres Golf Club is also

located on Best Island, with the shortest distance from the golf course to the biosolids application area being over 400 metres.

13 The biosolids spraying occurs for the most part within forested areas of Moturoa/Rabbit Island within mature stands of trees. The trees provide some mitigation of odours in that they tend to increase local turbulence and partially absorb/adsorb aersolised biosolids. I understand that individual forest blocks are subject to harvesting as the trees mature. I consider that the application of biosolids within harvested blocks has the potential to result in increased odours downwind of the application area as compared to odours downwind of application within forested blocks. In my opinion however, the overall separation distance from the biosolids application area to the nearest sensitive receptors is sufficient to protect against significantly adverse odour effects.

14 The local winds as measured at the Nelson Airport meteorological station are shown on the windrose in

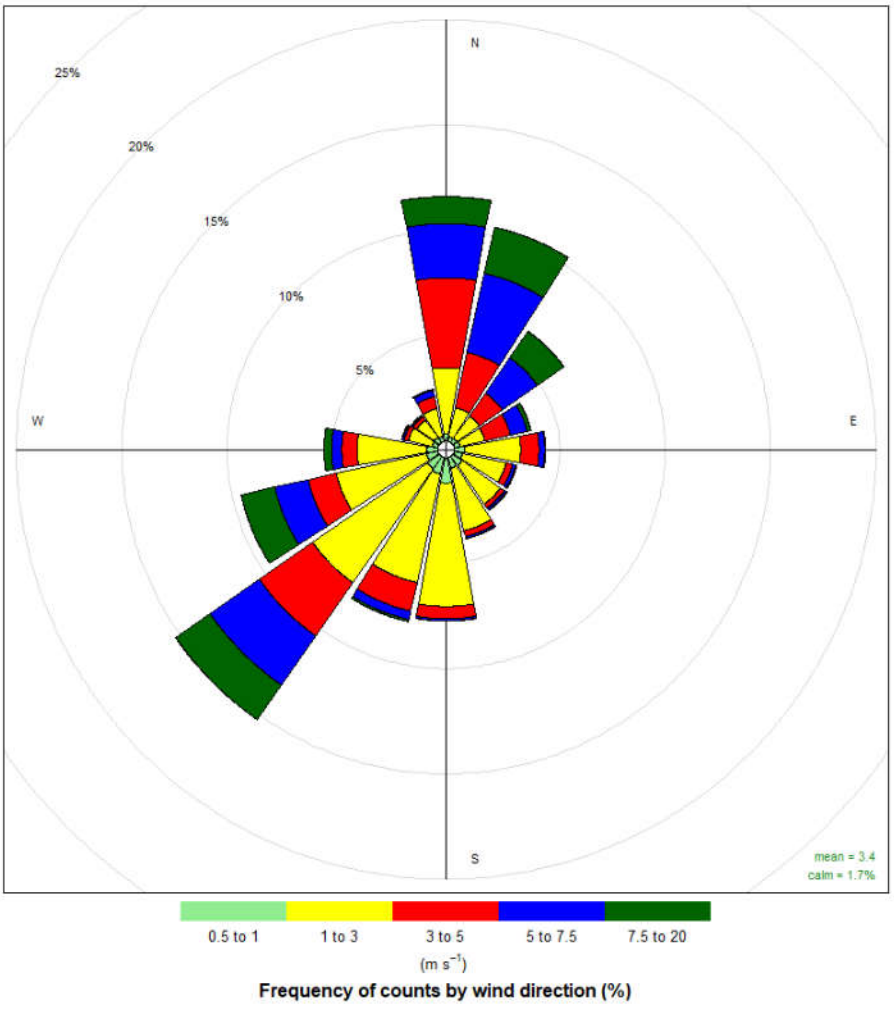

Figure 2.

15 The predominant wind directions come from the southwest and north-northeast, although winds may occur from any direction. On-shore sea breezes are generally from the north and are prevalent in the afternoon and evenings. Sea breezes typically begin around 10:00 am and peak at around 4:00 pm. Offshore land breezes occur from the southwest and are predominant during the hours of 8:00 pm to 9:00 am. Given the

biosolids application typically occurs during periods favouring onshore winds, the locations to the south of the application sites are at increased risk of being impacted by odour plumes. As discussed later in my evidence, the majority of historical odour complaints have been received from Best Island residents. While biosolids spreading has been associated with some complaints, the majority of complaints have been associated with the Bell Island WWTP.

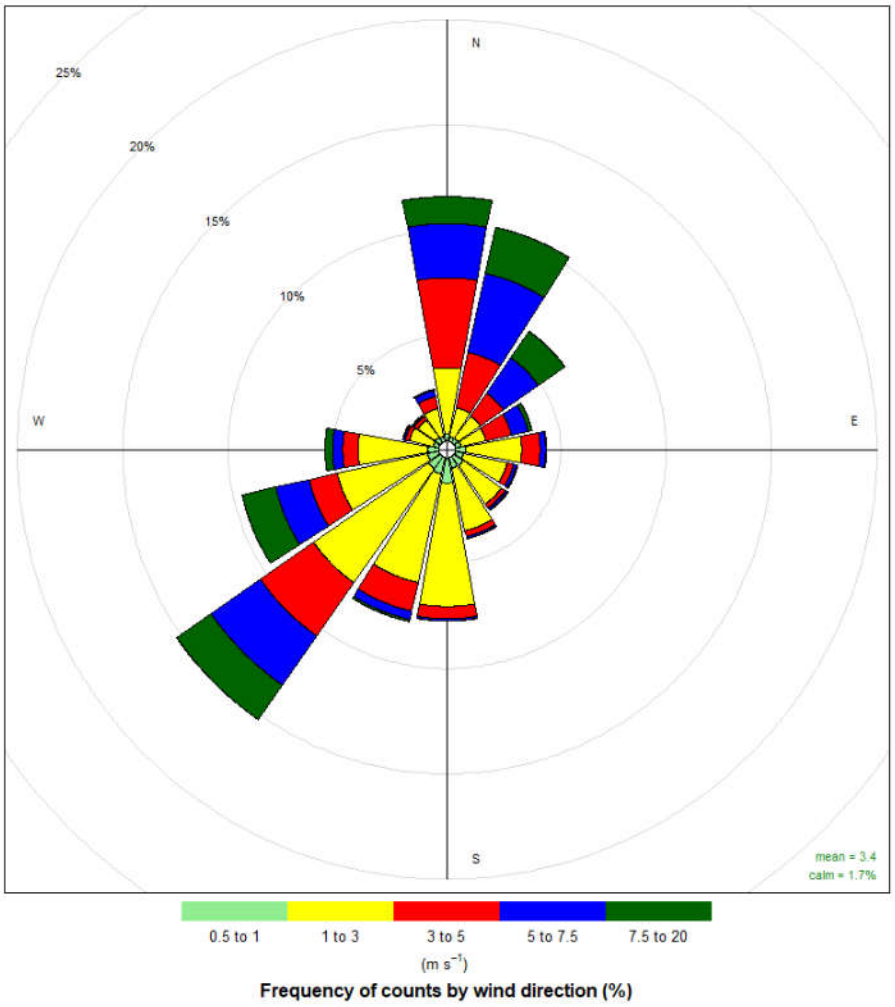

Figure 2 Nelson Airport Windrose, 2010-2021

Complaints Register Analysis

16 NRSBU maintains a complaints register to record odour complaints resulting from the biosolids application as well as odour complaints from the Bell Island WWTP. The complaints are generally received by Nelson City Council (NCC) or Tasman District Council (TDC) and passed on to NRSBU for investigation. The complaints register holds 88 complaints that were received between 17 August 2014 and 19 April 2022.

17 I have reviewed the complaints and determined that 77 of the complaints originate from a limited number of residences within the Best Island residential area. There were at least

three complaints from a Lower Queen Street address, which is approximately 2.3 kilometres from Moturoa/Rabbit Island and implicated odour from biosolids spraying.

18 NRSBU investigations of the odour complaints attempted to identify the cause of the odour. Investigations included: communicating with the complainant to determine the nature and timing of the odour, consulting with operational staff at the Bell Island WWTP and the Moturoa/Bell Island BAF, and independent odour observations by a third party. The source of odours for most of the complaints was found to be attributed to the Bell Island WWTP rather than the biosolids application that is the subject of this application

19 When investigated by NRSBU, around 31 of the complaints were assessed as potentially being generated from biosolids storage or spraying; these complaints were primarily received from Best Island residents. The biosolids storage tanks were identified as the likely source of around 11 of the odour complaints, and biosolids application to land the likely source of the remaining 20 complaints.

20 The number of complaints received in each month of the year (both total complaints and those attributed to biosolids) is plotted in Figure 3, and indicates that the complaints are received more frequently during the summer months. This is potentially due to increase odour generation potential during warmer weather as well as the greater prevalence of northerly winds during summer which would carry odour generated on Moturoa/Rabbit and Bell Islands toward sensitive residential receptors at Best Island.

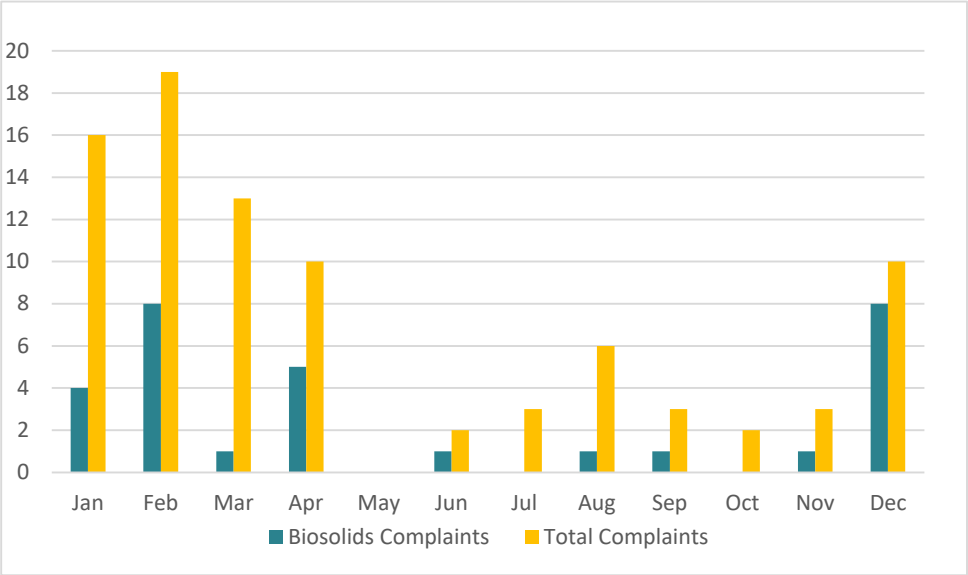

Figure 3 Number of Odour Complaints Received by Month of Year (2015-2022)

21 No complaints have been received from users of the recreational areas of Moturoa/Rabbit Island. This may be a consequence of the transient nature of the recreational users of the island. Additionally, a large number of recreational users during the summer periods would

be located at the northern shore of the island and would be upwind of the biosolids activities on the island during these periods.

22 The number of complaints received can be indicative of performance of the NRSBU infrastructure on Bell Island and Moturoa/Rabbit Island. I note that complaints investigations undertaken by NRSBU have endeavoured to identify the causes of odour from either the WWTP or the biosolids storage and spraying activities and include recommendations for mitigation in future. As discussed later in my evidence, the findings of these observations should be used to develop mitigation for incorporation in an OMP.

23 In conclusion, the complaints register indicates that odour effects have been experienced offsite and that the source of the odours discharged are both from the Bell Island WWTP and the biosolids storage and spraying on Moturoa/Rabbit Island. The overall frequency of complaints from the biosolids storage and spreading activities is relatively low; being on average around four complaints per year over the 7-year period covered by the complaint register.

Odour Monitoring

24 NRSBU contracts out proactive odour monitoring around Bell Island and Moturoa/Rabbit Island which is undertaken on a regular basis by an independent third party. The monitoring entails traversing the southern and eastern edges of Rabbit Island, the perimeter of the Bell Island WWTP, and points along the foreshore of Best Island. Odour monitoring is also undertaken on a 'callout' basis to respond to any complaints received by NRSBU. The contractor generates a report for each odour monitoring event which describes the intensity and nature of odours at various points. If significant odour events are observed during an odour survey, the observations made are immediately passed on to operators at the Bell Island WWTP and Moturoa/Rabbit Island BAF so that immediate action can be taken to mitigate the odour.

25 Further to the odour monitoring analysis undertaken as described in the AQA report, I have reviewed the more recent odour monitoring survey reports from 8 January 2021 through to 12 April 2022 to assess the nature of the odour. During the 15-months of monitoring reviewed, 40 odour surveys were undertaken around Moturoa/Rabbit Island and Bell Island, ten of which were callout responses to odour complaints. Four of the odour surveys detected weak biosolids odour at offsite locations (i.e., at locations beyond Bell Island and Moturoa/Rabbit Island). A strong biosolids odour was observed on one occasion at the Best Island golf course.

26 Biosolids odours were generally observed on Moturoa/Rabbit Island at locations near where biosolids were being sprayed and in the vicinity of the BAF but were not detected beyond the site boundary. I consider these observations to be consistent with my own observations during my site visit to Bell Island and Moturoa/Rabbit Island, in which I

observed moderate to strong odours at the BAF and in the vicinity of the biosolids spraying but did not detect odours beyond these islands when downwind.

27 In regard to the odour surveys undertaken to respond to complaints, the observer typically noted that the complainants' locations were downwind of biosolids spraying, but that the odour was either very weak or not detected at the time of the survey.

28 In summary the odour monitoring undertaken indicates that biosolids odours are generally restricted to the BAF and application areas of Moturoa/Rabbit Island, but on occasion are observed at low levels beyond the island.

29 I consider the proactive and reactive odour monitoring undertaken by NRSBU to be a valuable tool for managing odour from the wastewater treatment and disposal activities undertaken at Bell Island and Moturoa/Rabbit Island, and support continued odour monitoring as a condition of consent.

FIDOL Assessment of Potential Odour Effects

30 The primary concern with odour is its ability to cause an effect that could be considered 'offensive or objectionable'. Whether an odour is offensive or objectionable to the extent that there is an adverse effect requires an overall judgement, which is typically made considering the FIDOL factors of frequency, intensity, duration, offensiveness, and location of odour events. Different combinations of these factors can result in adverse effects.

31 A FIDOL assessment of the potential odour effects from Moturoa/Rabbit Island biosolids activities was undertaken in the AQA included as Appendix L of the AEE supporting the consent application. I have reviewed the Stantec assessment and provide my own views below.

31.1 Frequency relates to how often a receptor may be exposed to an odour. This is a function of how often the odour is discharged together with meteorological conditions that could carry the odour to the receptor downwind. The emissions of odour from the BAF occur more or less continuously, whereas the application of biosolids to land will typically occur over the course of a few hours per day, Monday through Friday. Wind patterns, as discussed previously, consist of northerly and north-easterly sea-breezes in the summer daylight hours, and will tend to be south-westerly during night-time and early morning hours. The overall frequency of exposure is therefore likely to be higher during the biosolid application which typically occurs during normal business hours. The frequency of complaints received from biosolids activity is, however, low. I believe this to be in large part due to the separation distance of the activity to sensitive receptors downwind of the activity.

31.2 Intensity relates to the strength of the odour, which is typically assessed on a 7-point scale from 0 (no odour) to 6 (extremely strong). Table 1 provides a summary of the odour intensity descriptors as well as a longer description which of how the odour may be perceived at the different intensity levels.

Table 1 Odour Intensity Scale

Intensity Level	Odour Intensity	Description
6	Extremely strong	The odour is offensive and exceptionally strong and may cause nausea or require the observer to leave the area immediately. Observer experiences clear relief when distanced from the odour.
5	Very strong	The odour is offensive and is sufficiently strong to consider avoiding the area to avoid exposure, however it is at a level in which the observer can stay for a period.
4	Strong	The odour has a strong intensity but is not at the point which causes discomfort to the observer.
3	Distinct	The odour is present, and the character/source of the odour is apparent to the observer. This does not necessarily mean that the intensity is stronger than the 'weak' category, rather that the source of the odour can be identified.
2	Weak	Odour is present, but the character is difficult to determine.
1	Very weak	Odour is difficult to smell and there is doubt as the whether the odour is actually present.
0	No odour	No odour observed

31.3 The intensity of the biosolids odour has been characterised in the odour surveys as being very weak to strong (1 to 4 on the intensity scale) when observed close to the activities, i.e. near the biosolids storage tanks in the BAF, and near the application sites. The odour intensity decreases with distance from the activities due to dispersion and dilution. Given the separation distance of the activities to sensitive locations where the public may be exposed, the odour is typically not detectable or very weak i.e. 0 to 1 on the intensity scale.

31.4 Duration relates to the length of each odour event and is typically a function of the duration of the activity generating the odour and the duration of specific meteorological conditions which carry the odour to a given receptor. The duration of the odour events has the potential to be sustained for up to several hours correlating

with the application activity and is constant in the case of the BAF. The duration of the perceived odour events downwind of the biosolids activities is dependent on distance from the activity as well as the dispersion conditions at the time. The duration of the odour events will be shorter at sensitive locations due to the distance from the activities.

31.5 Offensiveness relates to the hedonic tone of an odour which may be pleasant, neutral or unpleasant. The nature of biosolids odour will likely be unpleasant to most people and is generally characterised as being offensive in nature.

31.6 Location relates to the type of land use and nature of human activities in the vicinity of the odour source, accounting for the sensitivity to the odour. The biosolids activities are undertaken on Moturoa/Rabbit Island. Much of the island is not accessible to the public, however portions of the island are available for recreational use, including public cycleways and the Moturoa/Rabbit Island Domain along the northern shore of the island. Recreational uses are assessed as moderately sensitive to odour due to the transient nature of recreational activities in the locality. The nearest highly sensitive receptors are houses in the residential areas of Best Island, Mapua, and Richmond. These locations are, however, sufficiently distant that the worst effects of biosolids odour will be largely dispersed before reaching them. The biosolids storage tanks at the BAF are a minimum of 600 metres from where the public may be present, and 2.5 kilometres from the nearest residence. The areas where biosolids may be applied to land are 1.8 kilometres from the nearest residences on Best Island and 500 metres from the nearest residences at Mapua.

32 In summary, the frequency and duration of odour is assessed at a moderate to high level given the frequency of the discharge and the prevailing meteorological conditions. In addition, the character of the biosolids odour is considered to be offensive to most people. These factors in isolation would be expected to result in offensive and objectionable effects if the discharges are not appropriately mitigated. However, the location of the discharges, being a minimum of 500 metres from the nearest residential receptors, is such that the frequency, duration and intensity of perceived odours can generally be expected to be at a low level at sensitive locations. Consequently, I consider that the odour discharges can be managed to ensure that that the effects will be less than minor. In addition, the relatively low frequency of complaints received from neighbouring residences as well as the results of the odour monitoring undertaken by NRSBU confirms that the effects can be described as less than minor. In addition, the NRSBU is proposing mitigation of the biosolids storage tanks, which will effectively reduce odour from this source in line with good practice odour controls.

Proposed Consent Condition Regarding "Offensive or Objectionable" Effects

33 NRSBU has volunteered Draft Condition 25 stating that:

> *"There shall be no discharges to air from the biosolids application activity or the BAF that results in an adverse effect that is offensive or objectionable beyond the line of Mean High Water Springs around the perimeter of Moturoa / Rabbit Island."*

34 I consider that this may be addressed by an Advice Note stating:

> ***"Advice Note:** Non-compliance with Condition 25 shall be determined by a suitably qualified person having regard to the Frequency, Intensity, Duration, Offensiveness and Location (i.e. the FIDOL factors) of the odour discharge and any previous validated odour complaints relating to the same site and the same activity."*

35 I address this condition again later in my evidence, where it relates to recommendations made by the Council Reporting Officer in the section 42A Report.

Potential for Additional Odour Risks over the Duration of the Consent

36 Given NRSBU is proposing a consent duration of 35 years, consideration needs to be given to changes in operating conditions or external circumstances that may occur over this period including increased production of biosolids as a result of regional population increases and the harvesting of timber on the island.

37 I understand from the AEE that the projected increase of biosolids expected in the year 2053 is a 16% increase over the 2020 production rate. This is a relatively small increase in biosolids production over the duration of the proposed consent and in my opinion, will not result in significant increases in the biosolids irrigation activity and associated production of odour. Further, enclosure and treatment of extracted air from the storage tanks will reduce the overall risk of odour to have adverse effects off-site compared to the current operation.

38 The land use characteristics of the biosolids application areas will change over time. I understand that the forestry blocks will progress through the phases of timber planting, growth, and harvesting. The AEE supporting the application placed significant emphasis on the benefits of turbulence generated by the forest, which can assist with dilution of odour generated from the spraying of biosolids due to increased mixing. The effect of the trees will vary at the various phases of the forestry operations. I note, however, that the primary mitigation of adverse odour effects remains the large separation distance from the biosolids spraying areas to the sensitive residential areas. The residual effects of odour from the biosolids application on forest blocks can be managed by methods in the OMP as I describe below.

Odour Mitigation Measures

39 Odour mitigation measures for the biosolids storage and application activities consist of the following:

- Biosolids are maintained in an aerobic state at the BAF storage tanks by mechanical mixing and forced aeration within the tanks;
- NRSBU is proposing to enclose the biosolids storage tanks at the BAF and extract odours from the tanks through a biofilter before discharging to air, which will substantially reduce odours from the BAF;
- Procedures that are used to determine the appropriate areas for biosolids application taking into account factors including:
    (a) Wind direction to limit potential odour transport to sensitive receptors;
    (b) Seasonal recreation usage of Moturoa/Rabbit Island;
    (c) Recent and predicted rainfall to ensure biosolids are not applied during wet weather where there is potential for ponding to occur;
- A complaint response procedure including independent odour monitoring to investigate the cause of odour complaints so that specific mitigation measures may be implemented (e.g. identifying areas for which applying biosolids is likely to generate odour complaints under certain weather conditions); and,
- Regular (fortnightly) odour monitoring by a third party to determine the presence or otherwise of odours from the biosolids or associated Bell Island WWTP, and proactively identify any odour issues.

40 I consider these odour mitigation measures, together with the separation distances to sensitive receptors, to be effective for minimising the potential for adverse effects of odour beyond the site from the biosolids activities. In summary, and provided the above measures are adopted, I consider that odour emissions from the biosolids activities will be less than minor.

Management plans

41 The current Biosolids Management Plan (BMP) (dated September 2017) for the Moturoa/Rabbit Island biosolids activities outlines operational procedures associated with the site including daily, monthly and annual checklists, and health and safety procedures. I consider that there is limited content in the BMP that specifically addresses odour management. I understand, however, that NRSBU does incorporate odour mitigation in the day-to-day management of the activities, including mitigation measures described previously in my evidence. I understand that NRSBU is proposing to codify the odour management procedures in an updated BMP or as a stand-alone OMP. I consider that the OMP should be a living document which is regularly updated to incorporate the findings from odour complaint investigations and routine odour monitoring.

42 I further understand that NRSBU is developing an app to assist with determining the most appropriate location for biosolids application. The app will consider operational constraints such as which forest blocks are due for biosolids application as well as meteorological conditions which relate to the block in regard to nearby receptors and potential for nuisance odours to occur downwind. Although the app is still in development, I understand the factors considered will include daily weather forecasts, analysis of application sites relative to sensitive receptors taking into account wind conditions, an assessment of the complaints received, and analysis of previous biosolids applications to ensure even application of biosolids across the island.

Consent Duration

43 I support NRSBU seeking a 35-year duration for the proposed consent because the effects on air quality can continue to be managed at a level that is less than minor for the duration being sought.

44 As described previously in my evidence, my analysis of the odour complaint register and odour monitoring indicate that odour is generally at a low level, which I assess as having an effect that is less than minor.

45 In my view the monitoring and review conditions proposed by NRSBU are appropriate to manage and minimise the potential effect of odour; and the OMP can be reviewed to adapt to process or environment changes during the consent term.

Comments on Officer's Report

46 The Council Reporting Officer agrees with the NRSBU odour assessment that accompanied the application and with the conditions proposed to ensure that environmental effects from odour are reduced to less than minor over a new consent term. This includes the "no objectionable or offensive" odour Condition 25. As stated previously in my evidence, I would recommend that an advice note be included to provide guidance in determining non-compliance with proposed Condition 25.

47 I note that the Council Reporting Officer is proposing that proposed Condition 25 be extended as per 7.19 of the Report so that the boundary is the public reserve on the front of Moturoa in addition to the mean high water springs line. Given the reserve is open to the public, I consider this condition to be appropriate in determining the boundary of the biosolids application activity for the purpose of mitigating adverse odour effects. I note that NRSBU accepts this addition, but for clarity and providing certainty of operations, NRSBU proposes to amend the wording to record the area boundary as the "Old Domain Area" as opposed to the public reserve (as set out in the redrafted condition 25 below). As also detailed in NRSBU's proposed amendment to the addition, NRSBU has prepared a map (Plan X) indicating the location and boundary of the Old Domain Area (as appended to the planning evidence of Mr Murray.

48 Accordingly, NRSBU proposes to amend proposed Condition 25 to read:

> *"There shall be no discharges to air from the biosolids application activity or the BAF that results in an adverse effect that is offensive or objectionable beyond the line of Mean High Water Springs around the perimeter of Moturoa / Rabbit Island, ~~and the public reserve on the front of Moturoa~~ or in the "Old Domain Area" shown on Plan X attached to and forming part of these consents."*

Comments on Submissions

49 I have reviewed the submissions received on the application. None of the submissions raised odour as an issue of concern.

Christopher Bender
11 May 2022