Kenepuru & Central Sounds Residents Association Inc.

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Dear Sir/Madam

Re: Application U190988 – Two M F Limited Ltd, Clova Bay, Pelorus Sound (the 'Application')

I write in my capacity as President of the Kenepuru and Central Sounds Residents' Association Inc., **(Association**) in making this submission in opposition to the Application.

1. Introduction

1.1. The Association was established in 1991 and currently has approximately 270 household members who live full time or part time in the Kenepuru and Pelorus Sounds. The Association's objects include, among others, to coordinate dealings with central and local government and represent members on matters of interest to them.

1.2. A few years ago members became concerned at the seemingly endless tide of marine farm applications in the Kenepuru and Pelorus Sounds area without regard to the cumulative adverse impacts on what is often referred to as a unique and iconic New Zealand environment. We decided to make a principled evidence based stand. Consequently the Association has built up a sound knowledge and understanding of issues concerning the unsustainability of some marine farming in the Sounds.

2. Background

2.1. The Association knows the Clova Bay Residents Association is deeply concerned about the unsustainability of mussel farming in Clova Bay and is opposed to the Application. The Association both supports their submission and concerns. This concern extends to the impact the mussel farms are having on the natural ecosystems

of the bay, problematic navigational issues, visual amenity issues, and the dominance of marine farm structures on natural character and natural landscape values of the bay.

2.2. The adverse impacts of Aquaculture in parts of the Marlborough Sounds and particularly Clova Bay are significant. They have derived from planning weaknesses in the existing Marlborough Sounds Resource Management Plan ('MSRMP') and from systemic failures of decision makers over the last two to three decades. These include failing to monitor mussel farm ecological effects, failing to grapple with the concept of cumulative ecological, landscape, natural character and other effects, and repeatedly putting the demands of applicants for more and more short term economic gain ahead of long term social and community values and appropriate aquaculture thresholds. As matters stand Clova Bay is a particularly acute example within the Central Sounds area of what these failures have led to today.

2.3. We submit, this Application breaches acceptable thresholds for marine farming on several fronts and as it stands it, we submit, must be declined.

3. Existing Consents

3.1. Site 8551 is consented in two parcels. The original 3 hectare regular polygon was licensed in 1992 and a 1.6 hectare irregular polygon was added to the outside in 2000. The original 3.0 hectare consent does not expire until 31 December 2024. The 1.6 hectare extension expires in October 2020.

4. Consent Application

4.1. The activity status of the application is variously described in the Application as controlled, permitted and discretionary. The Application is for a marine farm that will have structures less than 50 meters from low tide on the inside and beyond 200 meters from low tide on the outside (the application seeks to extend out to around 330 meters from low tide). As such the Application is, we submit, for **a non-complying activity**.

4.2. There is no notion of 'renew' when assessing a coastal permit application. It must, of course, be assessed as a new farm application and thus against a baseline of the proposed activity not being there at all[1]. This is precisely the purpose of the finite term coastal permit regime – to facilitate a full re-check of the appropriateness of an activity in today's environment and against today's standards, values and information.

4.3. This submission covers issues around cumulative effects. Cumulative effects should be assessed on an "area of influence" basis – i.e. through the identification of that part of the water column that is being affected by a particular group of activities or farms, or the identification of that part of a natural landscape that is being affected by a particular group of activities or farms. Some might suggest that responsibility for redressing adverse cumulative effects is most fairly attributed if spread across all of the farmers that are each contributing. This is a mis-conception as it assumes that

[1] *Port Gore Marine Farms* v *Marlborough District Council* Decision No. [2012] NZEnvC 72. Confirmed by the High Court in Nagati Rangi Trust v Manawatu-Whanganui Regional council[2016] NZEnvC 72 ar [140].

the holder of an expiring consent to farm has a pre-emptive right to re-farm in the expired area. Coastal permit holders operate through privilege and the charity of the public estate.

4.4. The absence of a framework to attribute the required redress in a way that was considered fair across farmers does not, we submit, condone a Hearing Authority pushing the effects aside in the meantime. If an application is made in the face of adverse cumulative effects then those effects must be mitigated or avoided. In our view, under the current framework this means that applications for coastal permits in an area that is found, on the balance of probabilities, to be over-farmed, must be declined if and to the extent that it is found that it will add to what are already unacceptable cumulative effects.

5. Our Concerns - Detail

5.1. The cumulative and negative environmental impact of mussel farms is undeniable - aesthetically, recreationally, navigationally, and ecologically.

5.2. We have grouped our concerns into Natural Character, Landscape, Navigation and Recreation. The following sections summarise our concerns in each of these areas. Following that we address some of the information contained in the Application.

6. Natural Character

6.1. It is accepted that the present intensity of aquaculture has a significant adverse effect on the natural character values of the coastal marine area of Clova Bay. For example, Mr James Bentley (Boffa Miskell) in his S42A Hearings Report on Topic 5, Natural Character, for the proposed Marlborough Environment Plan (MEP), records as follows:

> *Both Crail Bay and Clova Bay are recognised areas of Pelorus Sound where aquaculture is present.* ***As a consequence of this, the marine environment of both of these bays is not rated at the Level 4 scale as holding high, very high or outstanding levels for natural character*** *(however some parts may retain higher levels of natural character at the more refined scale of mapping at Level 5).*

6.2. In other words, aquaculture in these areas has been allowed to grow to the point that it has now reduced these marine areas to something less than high natural character when it would otherwise be of high, very high or outstanding natural character. This view is endorsed by other recognised experts in the area[2]. *This is a significant cumulative effect*. Moreover, the effects of existing aquaculture on the natural character values of the marine environment in Clova Bay are greater than for Beatrix Bay. This is because marine farm structures are not just a conspicuous coastal modification of all of the coastal ribbon of the Bay, as they are in Beatrix Bay. In Clova Bay marine farms dominate the natural character of all of the marine area.

6.3. Natural character extends also to natural biodiversity and to the ecological health of the benthic and water column environment. To this end aquaculture in Clova Bay is

[2] For example, Dr Michael Steven, "Natural Character Assessment of Clova Bay" 2 February 2018.

significantly above what is considered a safe intensity by the Aquaculture Stewardship Council (ASC)[3]. Calculations under this standard for Clova Bay were reviewed by NIWA for Marlborough District Council in 2017. These used a mussel filtration rate as used by the Cawthorne Institute for a similar calculation in *RJ Davidson Family Trust* v *MDC* (ENV 2014 CHC 34). NIWA tested the calculations under four different assumptions governing mussel numbers. All calculations showed cultured mussels in Clova Bay filtering the entire water column in less than 4 days, one calculation being as low as 2 days. The ASC standard prescribes a *minimum* time for cultured mussels to filter a bay's water column of around 6 days. These calculations indicate that farming intensity in Clova Bay needs to reduce by between **33% and 66%** to be at a sustainable level.

6.4. This result is corroborated by the NIWA Biophysical Model for the Pelorus Sound, which indicates that there would be as much as *10 times more* zooplankton in Clova Bay without the existing aquaculture[4].

6.5. It follows that the existing level of aquaculture in Clova Bay is, at the least, *more likely than not* having a significant adverse effect on the natural ecological values of Clova Bay. Dr Brian Stewart opines that there are *strong indications that the low flush areas of Clova Bay, Crail Bay and Beatrix Bay are being farmed beyond what might be considered an acceptable ecological carrying capacity*[5].

6.6. The Application, taken as a new application as it must be, stands to add to what are more likely than not significant cumulative effects on natural character values in the Bay. This in turn amounts to a significant effect and as such it must be avoided under New Zealand Coastal Policy Statement Policy 2010 (NZCPS) – policy 13.1 (b).

6.7. We note that the over-farming that is occurring in Clova Bay may *not* be typical of all marine farming in the Sounds. Initial indications are that there appear to be relatively few other areas where the ASC standard is so clearly breached and where the NIWA Biophysical Model predictions show such extreme levels of zooplankton depletion. Clova Bay (followed by Kenepuru Sound) is perhaps the most acute example in the Sounds of a low flush bay that has become farmed beyond its ecological carrying capacity.

7. Landscape

7.1. Natural character is an aspect of the wider concept of landscape character. Both phenomena are the product of a reasoned, descriptive analyses of a landscape or an area of the coastal environment.

7.2. The Clova Bay landscape, particularly through the outer reach of Clova Bay where this Application is located, is one of undeveloped hills cloaked in native or pine forest[6] plunging to a seascape that is largely unmodified but for marine farm

[3] Aquaculture Stewardship Council Bivalve Standard Version 1.1.
[4] Figure 5.14 NIWA - A biophysical model for the Marlborough Sounds Part 2: Pelorus Sound June 2015
[5] Mussel Farming in Central Pelorus Sound, Dr Brian Stewart, Ryder Consulting, December 2015.
[6] It is recognised that pine forest does not necessarily detract from natural landscape values. *Western Bay of Plenty District Council* v *Bay of Plenty Regional Council* [2017] NZEnvC 14 7.

structures. Beyond are vistas of unmodified seascape into the open Beatrix Basin area and out to Maud Island.

7.3. The Clova Bay landscape has at the least a moderate degree of natural landscape value and as such qualifies for protection under NZCPS Policy 15. As noted, marine farm structures dominate the Clova Bay seascape and accordingly detract from the natural landscape values of Clova Bay *to a significant degree*.

7.4. The Application stands to add to the significant adverse cumulative effects on natural landscape values that aquaculture is already having. This in turn amounts to a significant effect and as such it must be avoided under NZCPS Policy 15(b).

8. Navigation and Recreation

8.1. An appropriate farm position is one that facilitates an unimpeded and safe navigational flow both around the coastline inside farms and through the bay on the outside of farms. The positioning and shape of the existing farm on Site 8551 does neither. Its irregular shape and positioning epitomise a 'cramming in' of farms that has historically been allowed to proceed with scant regard to public navigational values.

8.2. The positioning of the farm renders it particularly difficult and dangerous to navigate around the coastline inside this farm. This is a function of the abrupt turn vessels are required to make by virtue of the way the farm intrudes into the bay at the north western end. This could be mitigated by requiring the inside boundary to run in line with the inside boundaries of the farms on either site of the Application site. This would facilitate a relatively smooth vessel transition path along the coast inside the farm and minimise the navigational risk that the present positioning poses.

8.3. We note that the Application proposes that the farm structures be located as close as 31 meters from low tide mark. This is clearly inappropriate for navigational reasons alone. We also note that the current MSRMP standard is no marine farm structures within 50 meters of the low tide mark and that the Davidson Environmental report shows a fine sand benthos, generally considered inappropriate for marine farming, within the 50 meter zone.

8.4. Secondly, the outer lines of the farm extend beyond the lines of the farm on Site 8552 to the south east. This presents a navigation hazard for vessels travelling up the bay. The outer boundary of the farm at the south east end should thus be aligned with the outer boundary of the farm on site 8552.

8.5. Finally under this head, we note that the Application seeks to extend as far as 330 meters offshore of the low tide mark. This renders only around 400 meters of the bay left between this farm and the farm on the opposite side of the bay. Vessels cannot navigate at more than 5 knots if within 200 meters of marine farms. A 400 meter navigation channel affords virtually no navigational latitude. Vessels are required to reduce to 5 knots if they need to deviate from the center of the bay for any reason, including to pass other vessels. Water sport activity is also significantly impeded. The reach of the marine farms across the bay means that boats towing skiers, water biscuits or wake boards are unable to deviate from the center of the bay or turn to avoid wake or waves.

8.6. In our view the effect of the Application on navigation and recreation values will be significant. As such, the Application should be declined.

9. The Application and Assessment of Environmental Effects

9.1. There are a large number of issues we have with information provided in the Application, many of which are repeated throughout. Rather than list them all out, we summarise some of the key matters as follows:

- Of some significance is that much of the Application analysis is founded on concepts of the Application having '*no additional impact*' or of the effects being '*no more than they already are*'. These assessments deny the relevance of existing effects, including cumulative effects, and are obviously mis-founded. There are also references to the area being a '*working environment*' with this somehow rendering effects nil or less than minor. Aside from being a stretch of fact, this is also a fallacious analysis. There is no notion of 'working environments' or, in other words, 'sacrificial areas' under the MSRMP or the Resource Management Act 1991 (RMA). To suggest existing development somehow means more development can be accommodated is the antithesis of a proper assessment having regard to cumulative effects. In our view these assessment errors have significantly and fundamentally undermined the Application.
- Claims that mussel farming enhance recreational fishing are made but are mis-founded. There are some anecdotal reports of large offshore mussel farms off the east coast of the North Island attracting fish. However, in the low flush close coastal farming environment of the Sounds this is not the case. Indeed, in our view it is more likely than not, given the extreme levels of zooplankton depletion from farming in Clova Bay and the extensive displacement of feeding area for traditional recreational fish species such as cod and snapper, that the effect of existing mussel farming on recreational fishing in Clova Bay is significantly adverse.
- The Application repeatedly refers to effects being reversible. There is no proposal to remove the farm so we fail to see the relevance of this. Further, such claims appear to focus on benthic functioning and overlook the loss of biodiversity through the passing of specific tipping points and lost system resilience - a matter we appear to be at serious risk of in Clova Bay.
- The Application records that the Applicant's compliance with the conditions of the existing consent amounts to conduct in favour of the Applicant under section 165ZJ(1) of the RMA. In our view section 165 ZJ(1) is only relevant to the extent an applicant has *not* been compliant. We note that currently almost all of the lines on the farm have structures outside of the consented area and all lines, on average, have backbones that are between 14% and 25% longer than permitted under the existing consent. It would appear that the Applicant has been aware of this for some time.
- Land adjacent to the farm is neither planted in pine trees nor is it forestry. It is regenerating native bush.
- The Application claims that mussel farming provides an ecosystem service by replacing ancient natural mussel beds that were, it is implied, present throughout the Kenpuru and Central Sounds prior to extensive commercial dredging in the 1970's. **This is quite misleading**. Rather, a recent NIWA

coring study found **insufficient evidence** to determine that extensive subtidal ancient natural mussel beds have been historically prevalent throughout the Kenepuru and Central Sounds.[7].

- The Application records that assessing cumulative effects is not up to individual applicants. We disagree. We are not aware of any provision in the RMA relieving the consideration or assessment of effects, or the onus of proof of effects, because there are multiple contributors to the effects.
- The Application glibly dismisses the Precautionary Principle because effects are unknown. This is precisely why the Precautionary Principle applies. The Precautionary Principle has a strong role to play in this Application. It must be applied to *proposed activities where effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse*[8]. This is obviously the position we face with ecological effects in Clova Bay.

9.2. We also note some issues with the RJ Davidson Environmental Report ("RJDR") (which accompanies the Application).

9.3. The RJDR appears to mis-represent the ecological carrying capacity issue facing Clova Bay. In particular at paragraph 7.2.2 it is stated "*There has been no data presented to show the ecological carrying capacity <u>of the Sounds</u> has been reached, however, this topic is not well researched."* Ecological carrying capacity is appropriately determined at an "area of influence" level, generally a bay by bay level, *not* at a *Sounds* level. This RJDR statement appears to suggest that some parts of the Sounds can be sacrificed so long as, overall, some parts of the Sounds are not. This is incorrect. No part of the Sounds is sacrificial.

9.4. Unfortunately, there is no publicly available empirical data that can *definitively* show that ecological carrying capacity has been reached for any area[9]. It is accepted that in this situation scientific modelling and calculations must be used to set acceptable farming thresholds[10]. As noted above, the NIWA Biophyisical Model and the ASC Standard, coupled with other indicators or calculations, show that, at the least, it is more likely than not that the adverse effects of existing aquaculture in Clova Bay are significant. Accordingly, it is more likely than not that an acceptable ecological carrying capacity has already been exceeded in Clova Bay.

9.5. Moreover, the RJDR report goes on to record "*There is considerable evidence showing the major drivers of the Pelorus system, for example* [sic], *naturally leads to large within and between year variability. Relative to this, the impact of mussel farms appears to be material but relatively small compared to major environmental drivers (Broekhuizen et al., 2015).*"

9.6. A similar statement was made in a draft version of the NIWA Biophysical model for the Pelorus Sound but was conceded as being misleading by Mr Broekhuizen under cross examination in *RJ Davidson Family Trust* v *MDC* (ENV 2014 CHC 34). This because the statement did not account for the extreme zooplankton and other effects

[7] "A 1000 year history of seabed change in Pelorus Sound/Te Hoiere Marlborough"- S.Handley et al April 2017
[8] New Zealand Coastal Policy Statement 2010 Policy 3 (1).
[9] This is primarily because MDC never undertook baseline environmental surveys before mussel farming commenced in the Sounds, and has not monitored the effects of mussel farming since. As such, computer modelling and calculations assume some significance.
[10] See Management Options, Table 12.2 - Cumulative effects associated with extractive forms of aquaculture, Literature Review of Ecological Effects of Aquaculture, Ministry of Primary Industries August 2013.

shown under the model when the cumulative effects of all mussel farms in certain areas, such as Clova Bay, were taken into account.

9.7. Further, whilst the likes of the *Zeldis*[11] studies identify a wide natural variability in water column qualities, and a correlation (albeit low) between cultured mussel farm yields and oceanic and riverine nutrient supply to the Pelorus, they do not offer any assistance in determining how cultured mussels are, in turn, impacting on natural ecosystems that are competing for that same widely varying nutrient supply. Nonetheless, it can, at the least, be taken that when the widely fluctuating natural nutrient levels are low, to the effect that cultured mussels are struggling against each other, then the presence of those cultured mussels will, in turn, more likely than not **be having a significant adverse effect on nutrient availability** to, and thus the health of, the wider ecosystem and foodweb[12]. Accordingly, we submit, that the *Zeldis* studies are thus further evidence that the ecological carrying capacity for aquaculture is likely being exceeded in Clova Bay.

9.8. We are surprised no assessment is made as to the impacts of mussel farming on the listed (under the MEP) ecologically significant marine area in Clova Bay.

10. Conclusion

10.1. In our view, on the basis of the above, the application fails the discretionary activity criteria of the MSRMP. It also offends against the objectives and policies of the NZCPS, the Marlborough Regional Policy Statement and the MEP. It clearly stands to have a more than minor environmental impact and thus fails the legislative tests for the activity applied for as prescribed in sections 104 and 104D of the RMA.

10.2. As such, the application as it stands must be declined. However, if the applicant believes it worthwhile we are happy to have a pre-hearing meeting to discuss variations to the application to meet our concerns.

11. Present at Hearing

11.1. The Association would like to present to its submission at a hearing.

Yours sincerely

Andrew Caddie

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[11] *ENSO and riverine control of nutrient loading, phytoplankton biomass and mussel aquaculture yield in Pelorus Sound, New Zealand*, J. R. Zeldis et al 2008; and *Influence of climate on Pelorus Sound mussel aquaculture yields: predictive models and underlying mechanisms* J.R. Zeldis et al 2013.
[12] For example, see page 124 Marlborough District Council State of the Environment Report 2015.