

**BEFORE ENVIRONMENT SOUTHLAND
AT INVERCARGILL**

**IN THE MATTER OF A HEARING UNDER S100A OF THE
RESOURCE MANAGEMENT ACT 1991**

BETWEEN **JIM MAASS-BARRETT & ZANE SMITH**
Applicants

AND **TE RŪNANGA o AWARUA, DEPARTMENT
OF CONSERVATION, MINISTRY FOR
PRIMARY INDUSTRIES, SANFORD LTD,
EEC LTD, and BLUFF OYSTER
MANAGEMENT CO. LTD.**
Submitters

REBUTTAL EVIDENCE OF JOHN FRANCIS ENGEL

31 OCTOBER 2019

INTRODUCTION

- 1 The evidence that follows is provided to address the matters raised at the hearing for this application and the information provided after it was adjourned. My evidence will address the relevant resource management issues. Mr Maass-Barrett's evidence, prepared on behalf of himself and Zane Smith, will respond to the technical issues that have been raised based on his expert knowledge of marine farming in Big Glory Bay.
- 2 This response is prepared on the basis that the following matters have been addressed:
 - the correct map is the one dated 16/08/2018, labelled Job no. 8085, Sheet 1 of 1, Revision B and that it was appropriately lodged with Environment Southland, as confirmed in the Reporting Officer's Addendum to the Section 42A Report;
 - the matter of notification of affected persons has been addressed by the Reporting Officer in the Addendum to the Section 42A Report;
 - although carried out late, the applicants' for Customary Marine Title have now been notified. I note the legal advice provided to the Council and concur with the advice provided. I have received the standard response form Cletus Maanu Paul advising that he is not prepared to engage in any processes until the question of Crown funding is addressed. No other responses were received, which is consistent with other notices sent; and
 - all other effects of marine farming that I have not addressed below are minor or less than minor as originally assessed.
- 3 I also wish to have it noted that the very brief statement of the reasons for submitting in Sanford's submission did not give any real indication of where the company's main concerns were and these were not clarified in any subsequent meetings (see Mr Maass-Barrett's rebuttal evidence). It is my submission that the navigation issues raised are within the scope of the submission but that the carrying capacity issues raised go beyond altering "... hydrodynamic processes, particularly water circulation patterns and phytoplankton distributions." That view extends to Mr Schofield's submission.
- 4 Notwithstanding the scope of the submission, I consider that the concerns raised in regard to both issues have been addressed by both the applicants and the reports commissioned by the authority.

5 For the sake of certainty, I note here that the application is not put forward on an “all or nothing basis”. The Commissioner is able to grant the application in part or in full.

RESPONSE TO LEGAL SUBMISSIONS

6 Counsel for the submitter has criticised the provision of additional reports from both legal advisers and science experts. I wish to note that section 41C(4) of the Resource Management Act provides the authority with the power to commission such reports as are considered necessary if the proposed activity may have a significant effect on the environment. A copy of the reports commissioned were provided to all parties. Use of this section is not uncommon.

7 Other procedural matters raised by Ms Appleyard have been addressed.

NAVIGATION

8 I have read the opinion provided by Wynn Williams in regard to the consideration of occupation for navigation and consent derogation matters under the Resource Management Act. Ms Appleyard states that Sanford has not raised arguments about those matters but, despite not using those words, it certainly appears to be the issues that are of concern.

9 The key points are that:

- Sanford has no occupation rights, actual or implied, beyond its authorised sites; and
- while there is some uncertainty about legal application of the derogation principle, it is only likely to apply in this situation if Sanford was frustrated in its ability to comply with conditions 19 and 20.

10 I note here that there does not appear to have been any evidence before the consent authority when it considered the Sanford amendment application on how it would move the cages when conditions 19 and 20 were applied. All of this information has only been produced at this hearing and there has been no opportunity to test to understand if there are alternatives that would not require the use of so much space.

11 From a non-expert’s point of view, Sanford are going to introduce a new way of managing the effects of its activities but still using cage technology that does not appear to be designed to provide for regular shifting. I acknowledge that such changes may come at

some cost, however, it is clear that how the new management would be implemented with no more than minor adverse effects was not addressed in the amendment consent process.

- 12 The effect of this omission is now being used to limit new activity in Big Glory Bay by claiming a larger area for navigating through the area than has previously been sufficient to provide for vessel movements in the bay. As is pointed out in the Wynn Williams report, the weight to be placed on navigation effects is a matter for the Commissioner to decide.
- 13 It is my submission that the most weight should be applied to navigation to enable safe access, and that less weight should be applied to providing operational space for Sanford to move its cages.
- 14 In regard to the report from the Council's Harbourmaster, it is clear that his concerns relate to vessel navigation when relocating marine farms. The applicants' agree with his findings.
- 15 The Reporting Officer's consideration of the effects on navigation in his Final Recommendation starts with the definition of "navigation" in the Regional Coastal Plan. I do not repeat that definition but note that it refers to "*a ship*" not "*a ship and anything it may be towing*". I do not mean to be flippant when saying that, but rather to point out that there is significant difference between navigation of either a commercial or recreational vessel from Point A to Point B, and navigation of a vessel towing salmon cages for an operational marine farming activity that requires ready access to significant part of the coastal marine area.
- 16 When considering the effect of the proposed mussel farm sites, the Reporting Officer has made no distinction between the two scenarios and effectively provided Sanford with the right to that space, a right that the legal opinion says does not exist. In my opinion, that right can only be provided by a resource consent. The process to get that consent would consider, amongst other things, the effect of the occupation required and what alternatives may be available.
- 17 As things stand, the Commissioner only has the submitters untested statements that the cages must be moved in this way and using this much space. Any other use of that space would frustrate its ability to comply with its consent.
- 18 Notwithstanding my consideration and opinion of the navigation issues associated with this application, the applicants acknowledge that, as proposed, they will impact on the way

Sanford can farm its salmon sites. They are agreeable to amending the application to enable better access and address the concerns raised by the Harbourmaster.

- 19 Attached to Mr Maass-Barrett’s response are two options for amended layouts¹, of which Option 1 is preferred because it provides the area that the applicants are seeking. In the event that Option 1 is considered to be beyond the scope of the application and requires a new consent process, Option 2 is provided. Option 2 obviously provides a significantly reduced area but it enables the applicants to commence farming and an additional site can be applied for at a later date if it is still wanted. The sites dimensions are now as follows:

Site	Option 1		Option 2	
1	200m x 225m	4.5 ha	200m x 225m	4.5 ha
2	200m x 250m	5 ha	250m x 250m	6.25 ha
3	200m x 250m	5 ha	-	-
Total area (16 ha applied for)		14.5 ha		10.75 ha

- 20 In support of Option 1, the followings points are relevant:

- Site 1 is a reduction in size and is within what has been applied for. It ensures that there is no reduction in the channel to the north of as the site’s north boundary matches the adjoining site;
- Site 2 is unchanged; and
- Site 3, which is the site of most concern, is moved beyond the original site boundaries to ensure the navigation concerns are fully addressed. It is considered to be within the scope of the application for the following reasons:
 - i. the application is for three mussel farming sites in Big Glory Bay and the amended site is within the same vicinity;

¹ The actual map references have not been included but will be provided, depending on the Commissioner’s decision on the application.

- ii. the benthic environment in this part of the bay is reasonably consistent based on Mr Maass-Barrett's diving experience, however, it would be appropriate to survey it before any lines were established on site;
- iii. the effects on bay carrying capacity are unchanged;
- iv. the effects on the bay hydrodynamics are shifted from one site to another but the overall impact is essentially unchanged. Arguably, the effect is reduced due to the greater separation between the cages;
- v. navigation effects are significantly reduced, particularly for moving salmon cages but there is still an extra site added to the bay that must be navigated around;
- vi. all other effects are unchanged; and
- vii. the application was publicly notified. No other submitter raised the issues identified by Sanford. Their concerns were primarily about the inclusion of oysters and biosecurity matters. While it could be argued that the amended site is different enough that someone may have a concern, I consider that likelihood to be low. The farm is no different to others that are located close to the navigation channel and the space around it is significantly increased. Mr Schofield's concerns related to carrying capacity and this move makes no difference to that issue.

21 I therefore submit that Option 1 can be considered under this application and is an appropriate means by which the adverse effect of navigation can be addressed. If the Commissioner disagrees, then Option 2 is provided. Site 3 is removed and Site 2 is enlarged to partially compensate for the loss of Site 3. Similar considerations apply to the Site 2 amendment as they do for the Site 3 shift that are set out above. Option 2 obviously has greater consequences for the applicants but it addresses the navigation issue if the Commissioner accepts the Reporting Officer's assessment.

22 The significance of the effects on navigation safety depend on the weight applied to navigation for vessels towing salmon cages. I am satisfied that the effect on normal, vessel only navigation by the proposed sites is no more than minor. I am also satisfied, based on the Harbourmaster's report and the applicants' experience in the bay, that the effect on all

navigation, including for the movement of salmon cages, is minor for the amended layouts provided in Options 1 & 2.

- 23 However, while I consider the weighting to be applied to vessels towing cages to be less than for vessels operating when not towing, I cannot rule out the possibility that Sanford will be totally frustrated in its ability to move cages to follow its sites. My difficulty is a lack of information that goes beyond the submissions made by Sanford's witnesses to provide certainty on the potential adverse effects on the coastal marine area of moving the cages in this manner and that there are no other options.
- 24 Notwithstanding that uncertainty, I am of the opinion that a resource consent is the only mechanism to reserve space for marine farming activities, whether it is for actual farming or for moving cages from one site to another.

EXISTING ENVIRONMENT

- 25 In regard to the existing environment, Dr Mitchell's main concern appears to be that the application and Section 42A report do not address the environment as it exists following the recent granting of an amendment to the salmon farming consents held by Sanford. I disagree with Dr Mitchell's opinion, as the amendment was granted after the Maass-Barrett and Smith application had been notified (26 April 2019 and 7 February 2019 respectively), i.e. it was well down its processing track by that time.
- 26 Sanford did agree to its information lodged in support of its application for the amendments to be used for the Maass-Barrett and Smith application, and where it was, that use was referenced in the application and supporting information. I have reviewed some of those documents associated with the hearing of the amendment application and saw nothing that flagged a potential issue for this proposal.
- 27 In fact, the converse is true in that the Sanford amendment application included supporting information that made numerous references to the removal of excess nitrogen from the water column by mussels being beneficial. Two reasonably typical references are as follows:

- application – Part B – Assessment of Environmental Effects:

“The effect of the proposed changes on the water quality of Big Glory Bay has been modelled by ADS, and while the proposed changes will result in increased TAN and chlorophyll-a, this is

within the assimilative capacity of Big Glory Bay. Furthermore, it is anticipated that some of the increase will be consumed by mussel farms (Objective COAST.3 and Policy COAST.5).”

[Section 5.3.2.2 Chapter 7 – Coast, page 64]; and

- Big Glory Bay Carrying Capacity Update, Stewart Island, New Zealand, Volume I – Summary of Findings – October 2017 – Aquadynamic Solutions Sdn Bhd (ADS):

*“Based on the calculations of estimated Total N (without DON, **Figure 2**), there is evidence that N consumption occurs, and this is hypothesized to be a direct consequence of the large amount of mussels biomass in the bay, as filter feeders need to extract the food for their growth from their surrounding environment. Mussel farms act, albeit indirectly, as a mitigation measure limiting the impacts of extra loadings to the environment by consuming the algae as they grow from the additional nutrient loadings from the fish farms.”* [Section 4.2 Summary of Conclusions, page 34].

- 28 From my review of the amendment application, there is no suggestion that Sanford relied on mussels to mitigate the effects of the salmon production increase, though the actual monitoring data used is affected by the mussels that are farmed there now. However, the ability of mussels to consume nitrogen is continuously referred to as something that makes the assessment of the effects of an increased level of salmon farming conservative.
- 29 Reviewing those documents is as far as the Applicants could go in considering what the existing environment would look like following the granting of Sanford’s amendment. No information was available on the navigation effects that have been raised at this hearing, including any indication of the space requirements for moving salmon cages.
- 30 I am therefore of the view the existing environment has been properly defined on the information that was available up to the time of the hearing.

EFFECTS ON HYDRODYNAMIC PROCESSES AND PHYTOPLANKTON

- 31 This matter is obviously very technical. The most recent information available is that provided by ADS in support of Sanford’s amendment application. Dr Mitchell takes issue with the fact that the Applicants have not addressed the concern raised in the submission about this matter. The difficulty in doing that is the submission does not provide any specific information to say why there is a concern and it is not one that the Applicants’ could identify themselves.

- 32 As stated, the ADS reports were available to the Applicants and they were considered. In regard to the effect of marine farm structures on current direction, ADS stated:

“The reason that the current directions are not well calibrated is that there are numerous mussel farm and fish farm structures within Big Glory Bay. A number of studies have observed that such structures can affect localised current flow and current direction (Hartstein 2003, Plew et al 2005, Stevens et al 2008). It is beyond the capabilities of the model to take into account hundreds of mussel lines and other associated structures that can be found within the Big Glory Bay water column, noting that this has minimal implications for the overall modelling results.”

[From “Big Glory Bay Carrying Capacity Update, Stewart Island, New Zealand, Volume II – Hydrodynamic Modelling and Flushing – October 2017 – Aquadynamic Solutions Sdn Bhd (ADS)”- Section 3.2, page 18].

- 33 The NIWA report commissioned by the authority now provides more expert commentary on this issue, in particular, Dr David Plew’s part. I am aware of some of Dr Plew’s work on hydrodynamics and referenced one of his papers in one of the further information responses. On the basis of that information, I remain satisfied the effect of the proposed sites on hydrodynamics in the bay, including cumulative effects, will be no more than minor.

CARRYING CAPACITY

- 34 Most of the response to the issues raised on this issue have been addressed in Mr Maass-Barrett’s rebuttal evidence so I do not address it further.
- 35 I have reviewed the information available from the applicants, the submitter (Mr Hartstein’s report), and the authority (the NIWA reports). I am satisfied that the carrying capacity of the bay is unlikely to be exceeded and effects on the environment will be no more than minor. Assessing carrying capacity is not an exact process but, in this case, the assessments by Mr Maass-Barrett and NIWA are consistent with what has been seen in the bay as a result of the current farming activity.

PROVISIONS OF THE RELEVANT PLANNING DOCUMENTS

- 36 The differences in the assessments of the relevant planning documents, particularly the Regional Policy Statement and the Regional Coastal Plan, by Dr Mitchell, Mr MacLennan

and myself comes down to the significance of the adverse effects on navigation, hydrodynamics and carrying capacity.

- 37 In regard to all effects but navigation, Mr Maclennan and I are in agreement. Because we accept different evidence on the three matters that were the main areas of concern, Dr Mitchell and I disagree. I do not address each of the points made but accept the analysis provided by Mr Maclennan in all but the navigation.
- 38 The changes put forward to the size of Site 1 and the position of Site 3 address the navigation issues raised by the submitter and the Harbourmaster, to the extent that they can now be considered to be no more than minor. It is arguable to what extent navigation associated cage shifting needs to be addressed but the applicants, given the opportunity, do not wish to impede the activities of others operating in the bay.
- 39 This change addresses the inconsistencies with objectives and policies in the Regional Coastal Plan that Mr Maclennan details on page 9 his Final Recommendation, as well as his assessment that effects of the proposal will be more than minor.
- 40 In regard to Mr Maclennan's analysis for section 104D of the Resource Management Act, I note that he applies the wrong test. The requirement of section 104D(1)(b) is that the application not be "contrary" to the objectives and policies, not just "inconsistent". The former is a much higher bar to get over as the application must be "... opposed in nature, different to, or opposite ..." to the objectives and policies.²
- 41 My own assessment of the objectives and policies listed by Mr Maclennan is that the application is inconsistent with them at worst but not contrary to them.
- 42 On the basis of my assessment made with the site changes in place, I submit that the effects on all navigation are no more than minor and both tests in section 104D of the Resource Management Act are passed, so the application can be granted.

² *Queenstown Bungy Ltd v. Queenstown Lakes DC* EnvCC035/02, which followed the approach adopted in *New Zealand Rail Ltdv. Marlborough DC [1994] NZRMA 70 (HC)*.

CONCLUSION

43 On the basis of the information provided in both the application and the evidence before the Commissioner, I am satisfied that:

- the adverse effects of the application, as amended, are no more than minor;
- the application is not contrary to the objectives and policies of the Regional Coastal Plan; and
- passes both tests of section 104D of the Resource Management Act, only one of which is necessary.

44 I therefore submit that the application can be granted as amended by Option 1. However, if the Commissioner does not accept that Option 1 is within the scope of the application, Option 2 can be granted in the alternative.



John Engel

Manager, Bonisch Environmental