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12 December 2018

Consents Division
Environment Southland
Private Bag 90116
Invercargill 9840

Attention - Andrew Maclennan, Incite / Joanna Gilroy

Dear Andrew,

APP-20181316 – Zane Smith & Jim Maass Barrett

Response to an additional request for information dated 8 November 2018 for an application for a coastal permit for marine farming

The information that follows is in response to matters raised in your letter dated 8 November 2018.

Before responding to your specific queries, I wish to make some general comments that will hopefully be helpful. The comments are not intended to override or be a response in themselves to the issues raised but simply provide some perspective.

In your letter, you specifically asked, in some instances, for comment from a science provider. However, the applicants have been reluctant to go to that extent because of the knowledge and experience of Jim Maass-Barrett with marine farming in Big Glory Bay, the uncertainty about the benefit to be obtained over and above what is already known, and the cost, which has already been significant.

Mr Maass-Barrett has been involved in marine farming in Big Glory Bay for 33 years as both an employee for other farmers and as a marine farm owner. His experience includes carrying out dive surveys and working with scientists in that environment, which, coupled with a desire to know as much as possible about the marine environment in which he makes his living, has made his knowledge of that particular environment invaluable.

Having said that, Mr Maass-Barrett acknowledges that he may not have some of the scientific tools available for data analysis and change prediction that a qualified scientist might have. However, having observed the growth of the industry in Big Glory Bay, and the effects associated with it, he is confident that what he and Mr Smith are now proposing is well within the capacity of the Bay and will not adversely impact on existing operations. Others operators have a similar view, as evidence by the willingness of the largest operator in Big Glory Bay, Sanford Ltd, to share its information to assist the applicants.

The information that is now provided, and that has been provided in the application and the response to the first information request, is considered to include "… such detail as corresponds with the scale and significance of the effects that the activity may have on the environment" [from Clause 2(3)(c) of Schedule 4 Resource Management Act].

Now, in response to your request for further information, I provide the following:

1. On page 5, of his review when considering the relevant monitoring reports within Big Glory Bay, Mr Davidson notes that:

   'The extent of mussel farm impacts away from production droppers is generally accepted in the literature to be approximately <30 m distance. This can mean impacts from shell debris and sediment extend outside the consent. This is not usually regarded as an issue provided there are no biological features of importance in this zone. Little or no data has been presented on the benthic attributes other than the six NIWA sample stations. It is probable that these sites are representative of the whole application sites as depths are consistent.'

   Please provide further comment from a science provider confirming that benthic attributes discussed in the further information provided are likely to be representative of the wider application sites? Please include evidence of this confirmation.

Response

Mr Davidson is correct, the sample stations are representative of the whole site. The seabed is flat and largely featureless, as can be seen from the paucity of species and individuals in the diving survey results undertaken by Mr Maass-Barrett on Sites 2 and 3 back in 1996. This point is reflected in the modest species richness index of 4.7, found in 2017 by Stenton-Dozey, which was actually the highest recorded at all the sample sites.

However, there is a visible change in Site 3 after 21 years due to the presence of recently dislodged shell and saddle squirts lying on the seabed, no doubt washed off the deck of a mussel work barge recently.

There is no parallel sampling of Site 1 to corroborate the two recent site samples, however as the seabed is also almost perfectly flat. Mr Maass-Barrett has dived on the seabed on the NW flank of the site in previous years, finding the same relatively barren flat mud bottom, so it can be assumed that most of the site is similar to the photo shots and grab samples. However, the infauna species show a particular spike in the results with very high numbers of amphipods, which Mr Maass-Barrett has explained are probably dislodged animals from the removal of massive quantities of mussel crop during MPI's oyster cull during spring 2017 (the two shellfish species were grown together on the same lines). For further information, see the response to Question 9 on Page 6 of this report.

2. On page 6 of his review, when discussing the existing shellfish farm monitoring to date in Big Glory Bay, Mr Davidson notes that:

   'The Table provided in the response document provides a brief summary of monitoring since 1997. This fulfils the request for a "brief summary" of what monitoring activity has occurred. It does not outline "the where" and "an overall finding summary" as requested by ES.'

   Please provide a brief outline of where monitoring has occurred since 1997 and outline a summary of findings? This information will assist addressing the question of whether farms in the Bay conform to impacts described for mussel farms in the literature.

   Note: it is not necessary to outline every instance of monitoring, rather a summary of findings sufficient to establish the impacts of mussel farms in the Bay. It is also noted that bacterial mats are related to salmon farm impacts and need not be included in this summary.

Response

See maps of monitoring sites for pre 2009 and post 2011 sites that are attached and labelled as 'Question 2'. See also the comments in the response to Question 4.

3. On page 6 of his review, when discussing potential benthic impacts of shellfish farming, Mr Davidson notes that:

   'Mussel farm impacts are well documented. The key question is how farms in the Bay conform to the literature and whether the applications are expected to also conform.'

   Please provide further comment from a science provider as to whether the impacts of the proposed farms will conform with the literature? Please include evidence that supports your comments.

See Question 4 below. As the farms will not be additional to the historical maximum production of mussels in Big Glory Bay (BGB), and farming methods would be the same as all the BGB mussel farms, there will be no difference in performance and no difference to the adverse effects already reported in Big Glory Bay.

See also the response to Ms Newcombe's review under Question 10 below.

4. On pages 9 and 10 of his review, when discussing discharges and in particular the requirement within Policy 23(1)(b) of the New Zealand Coastal Policy Statement 2010 to avoid significant adverse effects on ecosystems and habitats after reasonable mixing, Mr Davidson notes that:

   'This has not been well addressed in the response document. The following comments provide some guidance. Shellfish farms result in a detectable impact within 30 m of growing structures. Although it is detectable, it is not usually regarded by biologists as adverse. Adverse is usually reserved for use in situations where detected impacts are at a level that leads to serious or intense change. It can also be used when the impact occurs on a "special" habitat or community type that is sensitive, vulnerable or rare.'

   Please provide further assessment from a science provider that confirms that:

   (a) the literature shows shellfish farms in this type of environment do not lead to adverse impacts; and

   (b) "special" or significant habitats or communities are not present under the application sites.

Response

(a) NIWA has provided a record of the monitoring done in Big Glory Bay from 1997 to 2009 each year and since then Sanford have had the reduced bay wide monitoring for mussel and salmon farming done by either DHI 2012 - 2013 or ADS 2016 - 2017.

The executive summary in the NIWA reports has repeatedly concluded the effects of mussel farming in the bay are not leading to significant adverse effects, the only noticeable thing being an increase in the number of Greenshell mussels on the seabed on some sites.

In the ADS report from the 2016 monitoring, page 66, it states;

> "*Results of the seabed sampling and analysis indicate that the seabed in and around the mussel and finfish farm sites is typical of that observed in several marine aquaculture impact studies including those undertaken in the Marlborough Sounds during the early 2000's*" (Hartstein 2003).

(b) See comments to Questions 7 and 9 below.

5. On page 10 of his review, when discussing discharges and in particular the requirement within Policy 23(1)(f) of the New Zealand Coastal Policy Statement 2010 to minimise adverse effects on the life-supporting capacity of water within a mixing zone, Mr Davidson notes that:

> *'This has not been well addressed in the response document. The following comments provide some guidance. In Marlborough, there has been considerable debate about the cumulative effect of mussel farms on food supplies (i.e. seston) for other species. The need for scientific study was recognised as early as 1995 but little work has occurred. In BGB, there are lower numbers of shellfish farms compared to the Marlborough Sounds and there are several salmon farms that produce nitrogen that drives the production of phytoplankton.'*

Please provide further information as to how the proposed activity can minimise the effects on the life-supporting capacity of water within a mixing zone?

This may include a discussion related to calculation of CT (clearance time) / RT (retention time) ratio.

Response

Question 14 of the first request for information was about "discharges arising from the proposed activity", which was presumed to be about the rinsing/washing of the mussels and barge deck during harvesting. The quote from Mr Davidson's second report in Question 5 above appears to be about the cumulative effect of mussel farms on the food supply in the wider area for other species occurring naturally, i.e. not farmed species.

It is also noted that the paragraph from which this quote in Question 5 is taken finishes with the comment that "*This question is best answered at an industry level rather than imposing an expectation that each farmer embark on a long term study*". The applicants agree with that suggestion mainly because it is not aware of any meaningful data on clearance times in Big Glory Bay, nor is there any indication within the

bay that it is potentially an issue, which is probably why it has not been a priority for monitoring or a scientific study.

Clearance times were considered in the paper by D R Plew (see page 9 of the first response, Footnote 4) for a site in Golden Bay but its applicability to Big Glory Bay is likely to be low due to the significant differences between the two localities. However, Mr Plew states the following in the Executive Summary of the report:

> *"The issue of seston or phytoplankton depletion is considered briefly through the examination of fluorescence, turbidity, and acoustic backscatter data. Although the results are consistent with a reduction of seston within the farm, differences between the inside and outside of the farm are not statistically significant."*

Effects on seston reduction in that situation are therefore at the minor, if not less than minor, end of the scale. Big Glory Bay differs due to, amongst other things, the input of nitrogen from salmon farming. Whether the potential effect will be more or less is not known but there is no suggestion that it would be significant.

6. On page 12 of his review, when discussing wildlife interactions, Mr Davidson notes that:

> *'Many seabirds roost on mussel farm floats while some species feed within farms. In Marlborough, considerable contention exists over the potential exclusion of king shags by mussel farms. This question remains unanswered; however, recent Environment Court decisions have erred on the side of caution. The Stewart Island (Otago) shag and Foveaux shag are closely related but these populations are considerably larger than the king shag and the colonies more widespread.'*

Please provide further assessment as to whether the foraging habitat of the Stewart Island (Otago) shag, the Foveaux shag, the Dusky Dolphin, and Common Dolphin overlap with Big Glory Bay, and if it does, please provide and assessment as to how the proposed activity will affect that habitat.

Response

It appears that the difference between the "Otago" shag and the "Foveaux" shag is still unclear. NZ Birds on-line mentions the Stewart Island shag Leucocarbo chalconotus and gives its conservation status as recovering. However, it gives other names as bronze shag, kawau, South Island cormorant, Gray's shag, Otago shag and Foveaux shag.

Wikipedia gives us the Stewart Island (Otago) shag, which ranges from about the Waitaki River to the Catlins in the south, and the Foveaux shag which ranges throughout Foveaux Strait and all around Stewart Island. Because of its relevance to the area, only the Foveaux shag will be considered as it appears to be the one that forages around Paterson Inlet and Big Glory Bay.

The Foveaux shag appears to benefit from the presence of mussel farms in the Bay through the thousands of perches supplied as mussel floats. The fact that it is usually present, feeding within and under the farm structures during the day and at mussel harvest time, it is considered to be comfortable with, and accepting of, that altered environment. The shags line up with dozens of spotted shags during harvest to

feast on the bounty of small fish released from the clumps of mussels. They do not seem to be put off by the presence and noise of an operating vessel. The applicants are not aware of any shag deaths due to mussel farming activity in Big Glory Bay.

As to the Dusky dolphin, in 33 years working in BGB Mr Maass-Barrett has never seen one in Paterson Inlet or Big Glory Bay. However, he has seen common dolphins three times in that time. In consecutive years, three dolphin were seen in Big Glory Bay on the day that a large cruise ship had entered and moored in Paterson Inlet. On another occasion time, Mr Maass-Barrett saw five or six of these small and relatively shy animals that seemed to be feeding well away from any structures. In regard to the Hector's dolphin, none have been seen on the south side of Foveaux Strait.

In summary, while common dolphins have visited Big Glory Bay, and may have foraged for feed in that time, they only visit infrequently and the area is not part of their normal foraging territory. It is difficult to know if dolphins now avoid this area due to marine farming activity as there is little information available from the period before farming started in the late 1970's – early 1980's.

7. On pages 12 and 13 of his review, when discussing whether any specific habitat areas will be impacted by the proposed application, Mr Davidson notes that:

> *'The NIWA study sampled the biota at the three applications using drop camera (n=4 per site) and grab sampler (2 per site). As depths were relatively consistent at each site, it is assumed their samples are representative of the species and substratum over the wider site. Some species of brachiopods are of scientific interest and are a group known to be impacted by mussel faring activities (Davidson and Richards, 2014). The giant lampshell (Neothyrus) was recorded from two of the applications and also CM13-A and CM 13-B (control mouth stations). In their discussion (Page 27), the authors state this species is "common around Stewart Island, especially Paterson Inlet where they are protected in the local marine reserve." The authors also state they can be found under mussel farms where they can be more abundant than adjacent dredge areas. Davidson and Richards (2014) also recorded giant lampshell under a retired mussel farm in the Marlborough Sounds, however, their abundance under droppers was lower compared to control areas suggesting they were impacted to some degree.*
>
> *The key issue in this instance is their distribution in Paterson Inlet. NIWA state they are common around the Island and especially so in Paterson Inlet. It is presumed they are suggesting a reduction in their abundance at the present site would therefore represent a small loss.'*

Please provide further assessment from a science provider as to whether the abundance of brachiopods and giant lampshell (Neothyrus) recorded at the application sites are above or below densities known from the wider bay area?

Response

Mr Davidson's presumption is incorrect as NIWA is just stating a fact, one pointed out by any number of scientists from Roper et al (1988) to Mr Davidson himself. The abundance of either of the two brachiopod species here in question is comparatively very low on the soft mud bottom encountered throughout the middle part of Big Glory Bay, simply because of a lack of solid surfaces for the larval stages to settle upon.

The following comment about his experience with one species of brachiopod is provided by Mr Mass-Barrett:

> "*When we were farming oysters on our site MF 365 in the middle of Big Glory Bay, in the manner of solid strings of oysters, say 30 to 50 per metre, some years we would find an over-settlement of Terebratella sanguinea on the oysters, maybe up to 6 to 10 on each oyster shell. They were very firmly attached and often many would not be dislodged in the rumbler so we would be obliged to spend much time chipping them off with the back of a knife. But there was never a great deal of them living on the seabed under our farm or anywhere else. Why? Because of a lack of settlement surfaces. And probably like some of the bivalves in southern waters, such as scallops, brachiopods occasionally have a year of heavy recruitment*".

Despite the widespread settlement of brachiopods on mussel crops occasionally in the past, and on oyster crops more recently, there is no evidence they have settled in numbers on the seabed throughout the mid bay area of flat, soft mud bottom. Neothyrus that is referred to by Mr Davidson is known to be found in the oyster beds in Foveaux Strait where it can bind onto the shell. Brachiopods typical habitat is rocky surfaces, some times in the intertidal area, but binding on to shell is not uncommon.

If the results of the video transects in NIWA's first 12 years of monitoring in Big Glory Bay are examined, Site 1, which is near to the mouth of the bay, has brachiopods seen in 10 of the 12 years, as would be expected. The video transect covers a 25 by 2 metre swath so you would expect to see a species if it was reasonably abundant.

Excluding Site 1, the following was observed on other sites:

- in the first 4 years, brachiopods were seen 10 times over 12 transects;
- In the middle 4 years, years 5-8 inclusive, brachiopods were not sighted over the 12 transects; and
- In the last 4 years, years 9-12 inclusive, brachiopods were seen eight times in the 12 transects.

With a such a limited presence over 12 sites, including a control site (CH), the numbers of brachiopods seen can be said to be similar over the whole middle of Big Glory Bay including the proposed mussel sites.

8. On page 13 of his review, when discussing the effects of the proposal on indigenous biological diversity, Mr Davidson notes that:

'Some comment on the use of the area by Stewart Island and Foveaux shag would be helpful to address relevant aspects of the NZCP.'

Please provide additional comment on the use of the Big Glory Bay area by Stewart Island and Foveaux shag. Please include as assessment as to how the proposed activity will give effect to the direction provided within Policy 11 of the NCZPS.

Response

See response to Question 6 above.

These birds are not particularly rare around Big Glory Bay and seem to accept the benefits of having mussel farms present. They still roost in trees overlooking the water in the bay, particularly rata trees, and can be seen roosting around the Bravo Islands group and Ulva Island in Paterson Inlet as well as other areas on the shoreline. In essence, the proposed activities would appear to be consistent with Policy 11(a) of the New Zealand Coastal Policy Statement as the effects appear to be more beneficial than adverse.

9. Finally, on page 15 of his review, when discussing the biological aspects that required a response from the applicants science expert, Mr Davidson states that:

> *'Of note is the presence of Neothyrus lenticularis (giant lampshell). In Marlborough this species is negatively impacted by mussel farming activities (Davidson and Richards, 2014). This species is however, widespread over many areas in Paterson Inlet (Richardson 1981; Davidson, 2002). Some discussion about the relevance of adversely impacting this species should the farms be approved is suggested (i.e. how does their decline in abundance under the farms relate to the bigger picture of Big Glory Bay and Paterson Inlet). Would the loss be regarded as significant to this species in the Inlet or are they so common and widespread it would represent a small or minor loss?"*

and:

> *"Based on NIWA and other data presented or mentioned in the application, there appears to be a biological pattern from inner to outer Big Glory Bay. This trend appears to influence grain size as well as surface and within sediment dwelling invertebrates? A brief overview of bay-wide patterns based on a variety of reports and data would be helpful. Questions such as: are the application sites similar to inner, low diversity epifaunal sites or more similar to higher diversity epifaunal sites in the outer bay?"*

Please answer the questions raised by Mr Davidson in the paragraph's above.

Response

1. The proposed farm sites are over a soft mud bottom, which is poor habitat for brachiopod settlement, unless a bit of shell is present, hence the low numbers normally seen in video transects, drop camera shots and benthic grab samples. Mr Maass-Barrett observes as follows:

"Also nearly all the named brachiopod species seen in any sampling are Terrebratella sanguinea, so it was a surprise to me to see a cluster of seven shells of the Neothyrus lenticularis species in one grab sample from the initial NIWA sampling. Whenever there had been an oversettlement of brachiopods on our oyster droppers, they were Terebratella, as were most of the named species in the bay wide monitoring program run for many years and reported on by NIWA."

If the presence of mussel farms over this soft bottom has any effect on existing brachiopod numbers, it can only be minor, and could in fact provide more habitat in the form of hard surfaces for future settlement. The area of Big Glory Bay towards the mouth (the scour channel) has much higher densities (Roper et al. (1988)) and more suitable habitat for brachiopods, as has the much wider Paterson Inlet, as Mr Davidson himself has noted.

2. In the Baseline benthic survey carried out by NIWA for the three proposed sites, in Section 5.2 - Seabed features and epifauna, the authors describe some distinctive variations in epibenthic assemblages within sites (i.e. between triplicate samples), between the three proposed sites (1,2, and 3), between the control sites (CM12, CM13, CH12 and CH13) as well as between farm and control sites, though the differences were not significant when analysed.

   They also state in the Executive Summary;

   "*Cluster analysis of inter-site similarities in infauna community structures aligned Site 1 with the bay-entrance control and Sites 2 and 3 with the mid bay control, an outcome likely determined by their respective locations within the bay. Site 1 is close to the mouth of the bay where the CM site is positioned and sites 2 and 3 are adjacent to the CH site in the middle of the bay*".

   The report goes on to say in Section 5.3 – Infauna;

   "*The mean abundance of infauna individuals was higher at the proposed sites than the controls with the significantly highest number at Site 1 (166/core) mainly due to the presence of many amphipods*."

   This result may be explained by the fact the benthic sampling was done in September, which was only a short time after MPI had finished removing oysters and mussel crops containing oysters from some farm sites in close proximity to the application Site 1. When these mussels and oysters were harvested in bulk, maybe a thousand tons or more, there would have been billions of amphipods released and being very mobile would have sought shelter where ever they could. On the seabed would be the only available shelter because all the mussel ropes had been removed (Jim Barrett pers.com).

10. On page 3 of Ms Newcombe's review when discussing cumulative effects and carrying capacity, she notes:

> *'Although depletion [of phytoplankton] effects of the three proposed farms alone are likely to be minor, the total amount of mussel farming in the bay is unclear from the application. It is possible that the mussel farms cumulatively could have an adverse effect on phytoplankton communities and other filter-feeding organisms that rely on phytoplankton as a food source. The section on ecological carrying capacity addresses this to some extent, in that the authors state that 'Mussel production is consistent, and there does not appear to be any "competition" between the sites for … food supply' (page 9). In the RFI response, the authors state that 'there is an obvious reduction in sites originally growing mussels' as a result of conversions of mussel farming areas to salmon farms. No detail is provided regarding this change. Confirmation of a reduction in bay-wide mussel farming intensity could resolve any concerns about the cumulative effects of depletion of the three proposed farms in addition to the existing farms.'*

Additionally, on page 5 Ms Newcombe's notes that:

> *'The application focussed on nutrient enrichment potentially caused by the proposed farms, however depletion effects are a more important consideration for the water column. Depletion effects are not well considered in the application or the RFP. While the effects of small- to medium scale farms are not generally expected to be of concern, the siting of the farms in an enclosed bay with significant existing mussel farming and relatively slow current speeds increases the likelihood of phytoplankton depletion.'*
>
> *In this case, it seems that if it can be demonstrated that the three proposed farms would not increase the intensity of mussel farming beyond that of the past farming intensity (due to other farms being converted from mussel to finfish farming) and those historic effects were acceptable, then concerns regarding cumulative effects of mussel farms could be addressed. If an unacceptable degree of uncertainty remains after further information is sought, a staged approach to development (with appropriate monitoring) of the proposed farms may be appropriate.'*

Please provide further information on the potential for cumulative effects of phytoplankton depletion as a result of the proposed activity, in the context of Ms Newcombe's comments above, including an assessment as to whether a staged approach to the proposal development would mitigate any potential effects.

Response

As Ms Newcombe identifies from the first lot of further information provided, there is a change in mussel farm numbers from historical levels due to the replacement of mussel farms by Sanford Ltd (referred to as 'Sanford'), the only salmon farmer in Big Glory Bay. The former mussel farms are being used so that salmon sites can be fallowed, i.e. left to recover. The fallowing of these farms is done without replacing the salmon with mussels while that fallowing takes place.

The historically high levels of mussel farming would have occurred from the early 2000's until about 2011 when Sanford shifted its salmon cages (the main grower farm) from Site 320 to Site 249 out into the middle of the bay, removing 12 ha of mussel lines to do so.

Prior to this removal, mussel growing would have filled a maximum of 148 ha of Big Glory Bay. It is currently at 125ha maximum and may reduce further if Site 320 is used again for salmon and not re-stocked with mussels after fallowing. Site 320, known as the 47 South site, is shown in the Sanford application before ES, as being modelled with an increased nitrogen "allocation" of 200.6 tonnes N per year. It is currently the only fallowed site to have mussel lines reinstated.

From page 3 of the document prepared by Aqautic Environmental Sciences, "Assessment of ecological effects of expanding salmon farming in Big Glory Bay, Stewart Island-Part 2 Assessment of effects", which was included as part of Sanford's application to increase the nitrogen allocation, the following information is given:

1. Site 249, a 12 ha site, had mussels previously, then salmon were carried for about 5 years to 2016. It is now unoccupied while being fallowed;

2. Site 246 has been combined with site 323 (each were previously 3 ha mussel sites) and is now Sanford's main salmon grower farm; and

3. Site 339, side by side with site 340, (3 ha sites) are now alternating as the smolt growing site, one in use, one fallowing, after being mussel farms for more than 10 years.

This gives 24 ha previously farmed with mussels and now either holding salmon or being fallowed. This alone should allow for the 16 Ha of current application sites for mussels to proceed, as there has been no indication that the historic levels of mussel production was too high, i.e. causing phytoplankton depletion effects in the bay or affecting production on other sites.

If the Sanford application to expand numbers of salmon farmed by more than 30% proceeds, the number of mussel farms may well need to be increased above what is being proposed, to help mitigate the effects of increased phytoplankton production in the bay. Pages 10 and 11 of the above mentioned report give baseline figures of modelled Chl- a concentrations in the range of 4 to 8 micrograms per litre (µg/l), and at the proposed maximum salmon production, the Chl-a levels are modelled to be a maximum of approximately 2.5 to 4.0 µg/l above the baseline concentration.

Measured Chl-a levels are about an average of 1.67 µg/l throughout Big Glory Bay (from Sanford water column monitoring results for 2016 and 2017). The difference between this and the modelled baseline figures are assumed to be from consumption of the phytoplankton by the mussel farms, which is not taken into account in the model. Regardless, there will be a lot of extra phytoplankton available for mussel consumption if/when the additional salmon production gets underway.

As demonstrated above, there will be no requirement for a staged development with the proposed three new mussel farms as even with their addition to current farming levels in the bay, the historic harvest levels will not be exceeded.

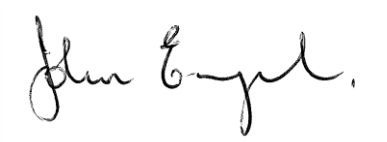
Conclusion

This information is provided to address the matters raised in the second information request.

I hope that it is now sufficient for the application to be processed. In the applicants' opinion, the information addresses the potential adverse effects to the level required for the application to be considered. While it is not possible to answer all questions with absolute certainty, the knowledge and experience gained from nearly 40 years of marine farming in Big Glory Bay provides some confidence in the assessment of environmental effects and additional information that has been provided.

Thank you for your consideration.

Yours faithfully,



John Engel
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