



Huon Aquaculture Company Pty Ltd

Representation to the Planning Authority (c/- Marine Farming Branch, Department of Primary Industries, Parks, Water and Environment)

(8th February 2018)

1. Introduction

This representation made by Huon Aquaculture Company Pty Ltd (Huon) relates to the following two documents released by DPIPW for public comment:

- Draft Storm Bay North Marine Farming Development Plan 2017;
- The Environmental Impact Statement prepared by Petuna to accompany the Draft Storm Bay North Marine Farming Development Plan November 2017

Please note that Huon would like to follow up this written representation by presenting information in person to the Marine Farming Review Panel at the appropriate stage in the process.

Huon Aquaculture contact: General Manager Fish Performance, [REDACTED]

2. Background

Huon's concerns centre on biosecurity issues relating to the proposed Development Plan and Petuna's Environmental Impact Statement (EIS), particularly in relation to Pilchard Orthomyxovirus (POMV).

Since the initial largescale outbreak of POMV at Tassal's Killala lease on the Huon River in May 2012, this disease has emerged as a serious threat to the future viability of the Tasmanian salmon farming industry.

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Prior to the outbreak in 2012, POMV had only ever been diagnosed as an incidental finding in two mortos submitted by Van Diemen Aquaculture from their Tamar River lease in late 2005/early 2006 to the Fish Health Unit in Launceston.

Since 2012, POMV has caused serious clinical infection and mortality at all three companies throughout the south east region from Dover to Tasman Peninsula, in the north of Tasmania on the Tamar River and broadly across Macquarie Harbour (MH).

Initially POMV was usually associated with infection in recently transferred smolt in the period 25–70 days post-transfer from the hatchery during the period from Autumn to Spring. Once fish had been through a clinical outbreak they seemed to be resistant to any subsequent clinical infection and mortality.

However, POMV is now diagnosed as the cause of clinical infection and mortality in salmon year round in larger fish (up to 3 kg) as well as smolt, and second waves of clinical infection and mortality are now occurring in previously infected populations.

Recently, an outbreak of POMV has occurred in MH following the introduction of 17 year class (YC) smolt to a lease holding 16YC fish that had previously suffered an outbreak of POMV. POMV infection and mortality has now spread to all companies and all leases holding 17YC smolt in MH. It is Huon's view that POMV is now likely to have become established in MH and likely to require significant measures to mitigate the future impact of the disease, including possible major reconfiguration of leases and/or complete fallowing of the harbour to break the infection cycle.

The Tasmanian industry is now faced with significant decisions across all regions to mitigate the future impact of POMV. Huon strongly believes that all current and future salmon farming expansion proposals in Tasmania must include serious consideration of biosecurity matters to control the spread and emergence of increased pathogenicity of POMV. These same biosecurity matters will also be critical in minimising the risk of new infectious diseases emerging and/or spreading in the industry. Biosecurity issues have not been a high enough priority consideration historically in salmon farming proposals.

The importance of rigorous biosecurity measures was reinforced at the recent Blue Future Salmon Symposium hosted by IMAS in Hobart in December 2017. International experts from Norway, Scotland, Ireland, Faroes Islands and Canada presented a consistent message that appropriate biosecurity regulation and practices is critical to the sustainability of salmon farming in their regions. This message was largely based on the lessons learnt from the collapse of salmon farming in their respective countries, and the change in biosecurity protocols and procedures necessary to restore production.

In July 2017, Huon released a Discussion Paper titled "Tasmanian Salmonid Industry Sustainability Assurance Framework". This document presents Huon's vision for ensuring a safe, sustainable Tasmanian salmon industry long into the future while maintaining the Tasmanian industry at the forefront of world's best practice and where the hard lessons from catastrophic industry collapses elsewhere are learned to ensure that such collapses are avoided in Tasmania. This document provides further background to the specific comments made in this representation.

3. General comments on expansion of salmon farming in Storm Bay

Storm Bay is predominantly a new region for salmon farming in Tasmania.

Huon has been farming at exposed high-energy locations on the western side of Storm Bay since 2014. Tassal currently farm relatively inshore-sheltered sites near Nubeena on the eastern side of Storm Bay.

After three years of successful production at Huon's Storm Bay sites, the Company has learnt some important lessons that should be used to guide decision making for future expansion in Storm Bay.

Given the emergence of POMV in the Tasmanian industry, it is critical that no new leases are developed in the Tasmanian industry without specific consideration to biosecurity matters. Storm Bay is an emerging growing region with high potential to grow substantial salmon volumes successfully and to ensure that this potential can be achieved, sufficient regard to best practice biosecurity is needed. As is currently being faced by the Tasmanian industry in other growing regions, it is much harder to retrospectively make changes to growing regions to address biosecurity issues as evidenced by the experiences in MH and as acknowledged in the Tasmanian Government's "Sustainable industry Growth Plan for the Salmon Industry" (the Plan) which states;

"Industry and government acknowledge that currently farmed inshore waters are at capacity and the zone locations are not optimised for biosecurity, in particular. For instance, the current distribution of leases does not facilitate the separation of companies and year classes that are now accepted good practice. As new offshore farming sites are established there is an opportunity for industry and government to work together to analyse existing inshore finfish leases, to improve management of biosecurity and possibly operational efficiency.

Huon notes that there is currently no information available regarding the process, regulatory or legislative framework to facilitate such changes nor a timeline to achieve them. Therefore, it is Huon's view that an emerging region such as Storm Bay must be established, from the outset, using the highest level of biosecurity particularly in light of POMV.

POMV is known to be transmitted by wild pilchards, however once POMV outbreaks occur within a region, farmed fish as well as associated equipment and infrastructure will then likely become a key source of disease transmission. This is evidenced by the fact that many POMV infections occur in the absence of pilchards being known to be present at the time.

4. Background comments on industry access to new farming areas to enable expansion of production

Three key messages on biosecurity from the Blue Future Salmon Symposium were:

- Separation of year classes
- Fallowing of sites between stocking (at least two months)
- Single companies in each growing area

Huon, Tassal and Petuna all have aspirations to expand production. This is not unexpected and reasonable. However, it is critical that this expansion takes place in a manner that properly considers community, environmental and biosecurity matters that are critical to the long-term future of individual companies and the industry more generally.

Currently each company farms in the following growing areas. Each of these areas could be considered as potentially separate on a biosecurity basis, albeit that there is more than one company currently in certain areas:

- Tassal (6 existing areas + 1 proposed area + 1 exploratory area)
 - Huon River/Lower D'Entrecasteaux Channel

- Upper D'Entrecasteaux Channel
- Nubeena
- Port Arthur
- Okehampton Bay
- Macquarie Harbour
- Storm Bay – West of Wedge Island (Current Planning Application)
- King Island (Exploratory Leases)
- Petuna (2 existing areas + 1 proposed area + 1 exploratory area)
 - Macquarie Harbour
 - Tamar River
 - Storm Bay – East of Betsy Island (Current Planning Application)
 - North West Tasmania (Exploratory Leases)
- Huon (3 existing areas + 1 exploratory area)
 - Huon River/Lower D'Entrecasteaux Channel
 - Storm Bay (North East Bruny Island) – this would include the proposed Yellow Bluff lease
 - Macquarie Harbour
 - Cape Connella – South East Bruny (Exploratory Leases)

Huon has stated that the Company has no intention of farming in the North West (including King Island), the North East, West Coast and East Coast. Huon would reasonably expect that Tassal or Petuna would object to any such proposal on a biosecurity basis. Therefore, Huon is very reliant on the integrity of biosecurity in the current three growing areas of Storm Bay, Huon/Lower D'Entrecasteaux Channel and MH.

Huon has made a representation to the Planning Authority in regard to Tassal's proposed expansion at West of Wedge Island. As outlined in that submission, Huon believes there are important biosecurity improvements that can be made to the proposal, but given that Tassal is already farming in the region, Huon is not opposed to the proposal per se and would endeavour to work with Tassal in optimising biosecurity in the region where possible.

However, Huon is totally opposed to the Petuna proposal in Storm Bay (East of Betsy Island) on a number of grounds:

- Individual growing areas should be limited to one (or two) companies as is best practice overseas
- Petuna already has un-utilised lease space in the Tamar River with potential for expansion and is currently investigating a growing area in north west Tasmania identified as a "Go Zone" by the State government and encompassing an area identified as potentially suitable by Petuna of 27,000 Ha¹. These two areas potentially provide Petuna with significant possibilities for expansion in areas where there are no other companies farming salmon.
- Petuna has no historical presence in the Storm Bay area and based on the information in this representation the introduction of Petuna into Storm Bay industry has the potential to impact the biosecurity risks of all three companies negatively.
- Huon is highly reliant on the integrity of farming in the south east, including Storm Bay. Huon is not investigating potential new areas for farming in north west Tasmania and King Island.

¹ Testing out the Waters, Circular Head Chronicle, published 11 January 2018, accessed 11 January 2018

5. Background comments on Petuna's consultation in regard to the Storm Bay North Marine Farming Development Plan 2017

Page 175 of Petuna's EIS states that "Petuna consulted with the other salmonid growing companies operating in southeast Tasmania during early project planning in order to identify potential biosecurity risks and ensure proposed marine farm locations provided adequate separation distance between marine farming zones. The minimum distance between Petuna's proposed lease site and any other company's existing or proposed lease site is 4 km (to Tassal's proposed lease to the east of Petuna's proposed lease). Petuna and Tassal agreed that this distance was adequate to mitigate the risk of pathogen transfer between leases to an acceptable level."

This statement gives the impression that Huon has been consulted on Petuna's proposal and agrees with Petuna's proposal.

Huon would like it noted that at no stage has Petuna consulted with Huon on these matters and Huon is opposed to Petuna's proposal in Storm Bay (as outlined in this representation).

In addition, Huon notes that information and concern regarding biosecurity in Storm Bay and the proposed Petuna lease has been provided over an extended period. Summarised below is a list of occasions in the previous six months on which Huon advised their specific concerns related to biological separation distances and year class stocking in recent months (this is not an exhaustive list but a representative one).

- 6 December 2017: Blue Futures Salmon Symposium – biosecurity was a core theme of the conference
- 4 December 2017: Meeting with Minister Rockliff, CEO Bakkafrost, CEO Huon Aquaculture and staff regarding biosecurity. A copy of the presentation provided at the meeting provided in Appendix 1.
- 29 November 2017: Meeting with Premier, Deputy Premier and Deputy Premier's Chief of Staff. Presentation slides showing concerns for Storm Bay expansion provided in Appendix 2.
- 29 September 2017: Huon Aquaculture response to Tasmanian Government 's DRAFT *A sustainable industry growth plan for the salmon industry*. Appendix 3.
- 11 September 2017: Meeting with Minister Rockliff's Chief of Staff and DPIPWE Secretary expressing concern regarding Storm Bay expansion
- 11 July 2017: Letter and copy of Huon Aquaculture "Sustainability Assurance Framework" discussion paper provided to Deputy Premier Rockliff. Appendix 4.

6. Specific comments on the Petuna Environmental Impact Statement (EIS)

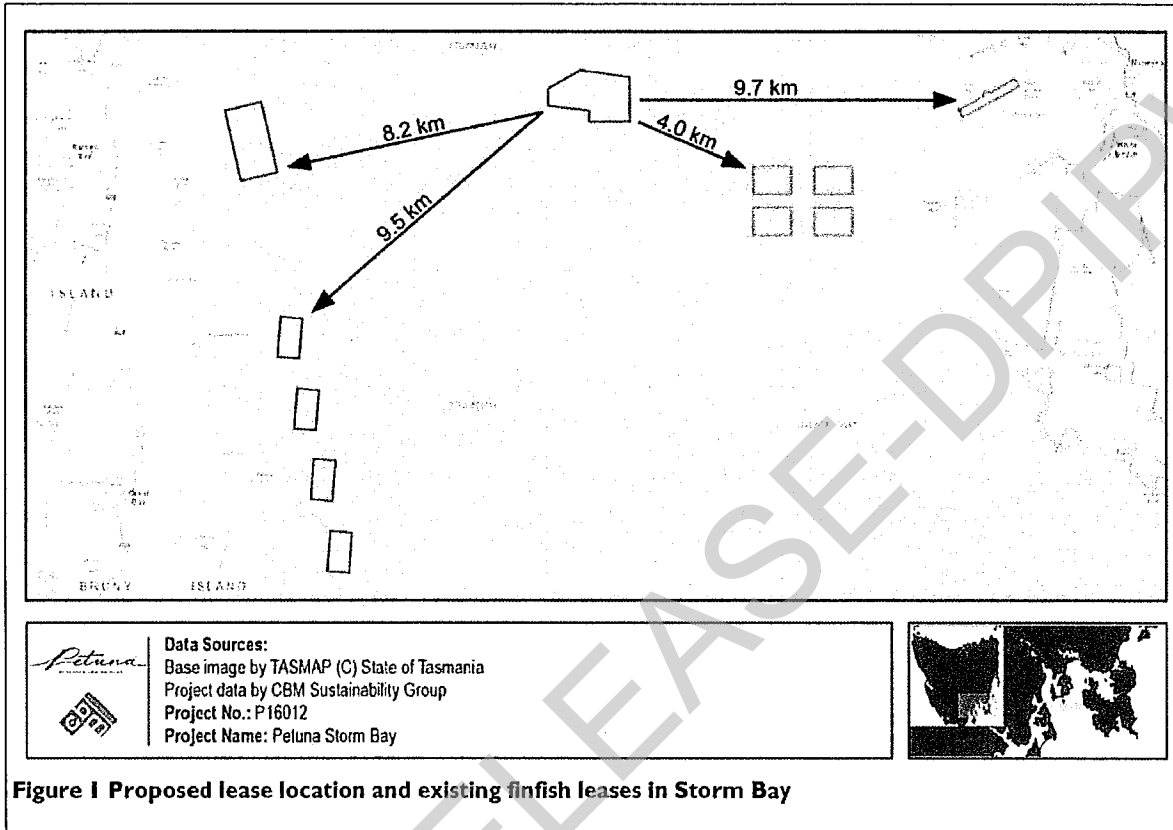
There are a number of concerns within the Draft Amendment proposal and Petuna EIS, particularly with regard to biosecurity.

6.1 Proposed Marine Farming Development Plan

The proposed Marine Farming Development Plan consists of a single zone of 430 hectares with a maximum leasable area of 273.1 hectares. The following two figures are taken from the Petuna EIS

Figure 1. Proposed lease location and existing finfish leases in Storm Bay (page 10)

Figure 3. Proposed Zone and Lease Dimensions (page 13)



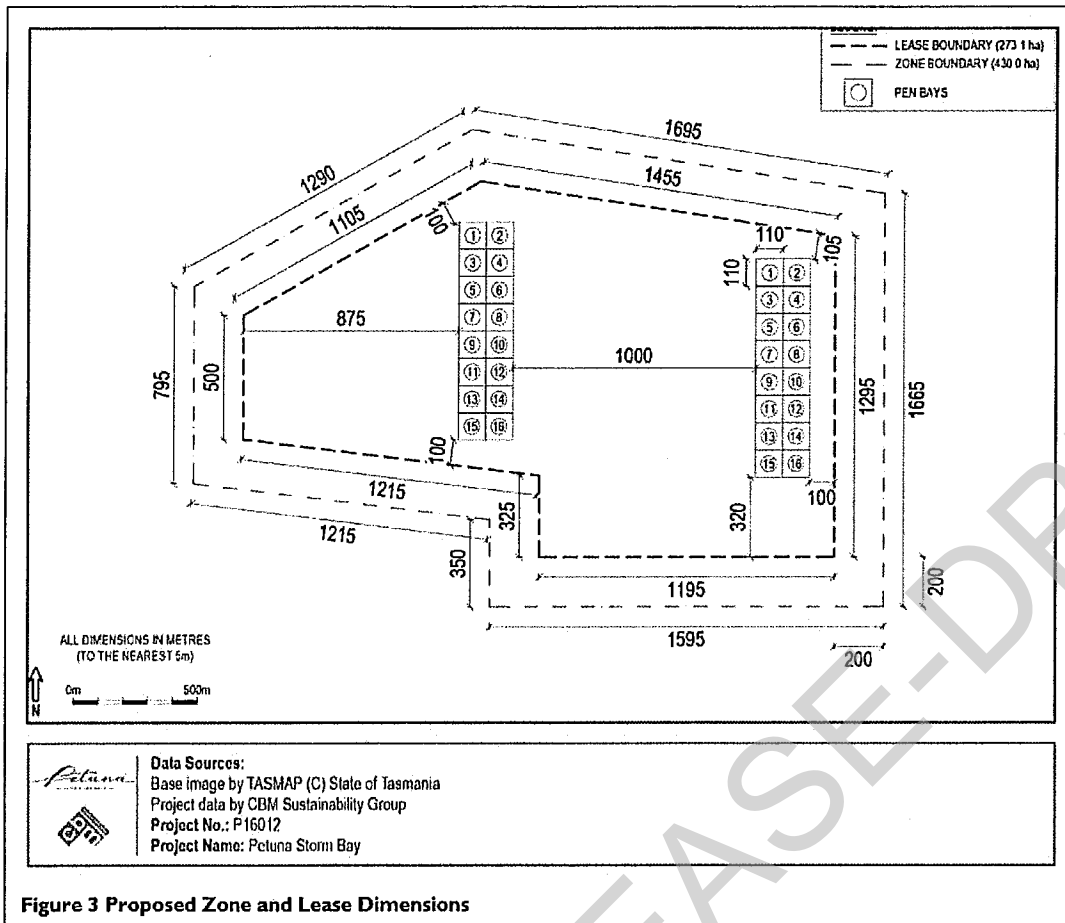


Figure 3 Proposed Zone and Lease Dimensions

The above Figure 1 shows distances between the proposed Petuna zone and Tassal and Huon zones. Distances are 4.0 km, 8.2 km, 9.7 km and 9.5 km from Tassal’s proposed West of Wedge Zone, Huon’s proposed Yellow Bluff Zone, Tassal’s Creese’s Mistake Lease and Huon’s Storm Bay 1 Zone respectively.

Note: All distances are less than 10 km which Petuna states on page 34 they believe would be ineffectual as a biosecurity buffer zone. See further discussion of the inadequacy of distance between companies below.

Figure 3 in the EIS shows that Petuna are proposing to hold two different year classes on lease located 1 km from each other.

6.2 Petuna’s Proposed Production Strategy

The Petuna EIS states that “the lease area will contain a maximum 32 pens (200 m circumference per pen) arranged in two grids (16 pens per grid). Grids will be spaced approx. 1 km apart for optimal year-class biosecurity separation and sequentially stocked with Atlantic salmon smolt grown to harvest size (4.5 kg live weight) at a maximum stocking density of 12 kg/m³” (p. 2)

“The proposed lease will be used as a production site whereby smolt are initially stocked and grown out over an 18-month period to optimal size for harvest.” (p. 145)

Note: The Chief Veterinary Officer’s advice on page 176 states that “a separation distance of approx. 5 km would provide some protection but would not be a complete barrier.” See further discussion of the inadequacy of year class separation on the proposed Petuna Zone below.

6.3 Advice from Chief Veterinary Officer (CVO)

The Petuna EIS includes advice provided by the CVO in regard to disease and biosecurity.

Key points from the CVO's advice relevant to Huon's representation include:

- The CVO notes that *"Storm Bay is a single area from a disease management perspective, including being contiguous with existing salmon farms in the norther section of the D'Entrecasteaux Channel."*
 - This means any farm lease within this area has the potential to impact other farm leases in the region. Disease can be transmitted across the region from lease to lease if the separation distance is inadequate, whether they be within a single farm zone or located in separate farm zones. Therefore, leases even a significant distance away are still at risk through a chain of spread from lease to lease.
 - Despite the EIS stating on page 2 of the Executive Summary that a distance of 1 km between grids will provide optimal year class biosecurity separation (which is patently incorrect) the EIS also states on page 33 in Table 10 of Stakeholder Consultation that *"the outputs of CONNIE 3 dispersion modelling indicate that Storm Bay is a highly connected system, and that a 10 km buffer zone would be ineffectual."* The EIS goes on to state that *"Petuna believes that the best biosecurity relies on a strengthened diligence around equipment and vessel management"*.
 - Biosecurity measures around equipment and vessel movement are very important. However, these measures will largely be nullified in a situation where sites are located in an inter-connected system with inadequate year class and company separation which enables spread of pathogens through water movement.
 - Recent events in Macquarie Harbour with POMV clearly highlight the limited capacity of other biosecurity measures to control the spread of disease where year classes and companies have inadequate separation.
- The CVO notes that *"the risk of spread in the water column is dependent on a number of variables, including water temperature, salinity, pathogen survival and hydrodynamics"* and that *"water flows in Storm Bay drive quite variable movements of any particle based on point of release and season, with possible movements of infective material in the order of 10-30 km over 24 hrs."*
 - Research at the DPIPWE Fish Health Unit in Launceston has shown that the POMV virus is stable in seawater at 12°C, 15 °C and 22 °C for > 9 days and at salinities ranging from freshwater to full strength seawater (Morrison et al., 2013, "Assessment of orthomyxovirus like virus pathogenicity in Atlantic salmon. FRDC Project Report No. 2012/053)
 - The EIS states on page 34 that *"a 10 km buffer zone will be ineffectual"*
 - Clearly 4 km separation from the adjacent Tassal West of Wedge proposed Zone and only 1 km separation between year classes on the proposed Petuna Zone in these circumstances is not going to control spread of a disease like POMV. There are well recognised salmon pathogens overseas that have significantly greater potential to spread eg. IPN virus, Pancreas disease. Biosecurity considerations in Tasmania need to also consider potential future disease issues.

- The CVO notes that *“there is no separation distance that can be applied in Storm Bay to reduce the disease transmission risk to zero. A separation distance of 5 km would provide some protection but would not be a complete barrier. Reduced distances would be considered appropriate where agreement exists between affected companies”* *“Separation of companies within Storm Bay needs to be based on the acceptable level of risk.”*
 - An acceptable level of risk needs to be discussed and agreed across all potentially impacted companies. The consequences of disease outbreaks and mitigation can be very significant.
 - The EIS states that Tassal has agreed that a 4 km separation distance between Petuna’s and Tassal’s proposed zones is *“adequate to mitigate the risk of pathogen transfer between leases to an acceptable level.”*
 - Huon strongly disputes that this distance is adequate and has not been approached by Petuna in regard to this matter nor agreed that separation of 4 km between proposed Tassal and Petuna zones or separation of 1 km between year classes on the proposed Petuna zone is acceptable.
 - Once again, recent events with POMV in MH provide a very clear example where, despite strong lobbying by Huon not to do so, Tassal and Petuna agreed that it was acceptable for Tassal to transfer new 17 YC smolt onto a lease holding 16 YC stock that had previously undergone an outbreak of POMV. Over the last several months mortality due to POMV which was first reported on the Tassal lease in question has now spread to all three companies and all leases in MH holding 17 YC. Mortality as a result of this outbreak has been very significant.
- The CVO notes that *“the risk of spread can also be impacted by things such as the size of farms – the larger the farm the more likely it is to become infected if exposed to a risk due to greater number of fish being exposed.”*
- The CVO notes that *“to make the most of separation distances, especially of leases under management of different companies, companies need to adhere to best practice disease and biosecurity management practice to address the risks.”*
 - Huon asserts the proposed distance between companies is inadequate from a biosecurity perspective and this is exacerbated by the proposed holding of year classes with only 1 km separation distance within the proposed Petuna Zone.

6.4 Petuna EIS Section 6.1.10 Disease

6.4.1 POMV

There is virtually no discussion in the EIS about POMV which has been a serious and emerging disease issue over the last five years.

Huon’s experience over the last three years farming in Storm Bay is that POMV is consistently present as a threat and can cause high mortality in certain circumstances (potentially > 90% within a single pen).

The EIS states that *“multiple vaccines are under development”* for POMV. This may suggest that effective commercial vaccination against POMV will be available. Research into the development of a POMV

vaccine is underway, however there is no evidence of vaccine effectiveness to date other than a possible effect of the adjuvant in the vaccine. It is important to note that even if an effective POMV vaccine is ultimately developed, it is unlikely to be a silver bullet for controlling POMV outbreaks based on overseas experience with ISA and other viral vaccines. Therefore, it is critical to instigate appropriate biosecurity measures regardless. This is particularly the case given that there is also the ongoing potential for new disease issues to emerge. It is far better to minimise the possibility of new diseases emerging and if they occur, to minimise their spread rather than have to deal with a new disease once established. This can only be achieved through strict biosecurity measures.

Given the known presence of POMV across the Storm Bay region and that it can cause high levels of mortality, it is critical that any new developments consider biosecurity issues as a top priority.

6.4.2 Amoebic Gill Disease (AGD)

The EIS identifies amoebic gill disease (AGD) as a fish health issue in Storm Bay indicating Petuna will manage this disease *“via freshwater bathing using their fish transport/bathing vessel. This will allow the water to be re-used, while also increasing the efficacy of the treatment and avoid the requirement for liners to be towed from shore based fresh water sources to pens.”* (p. 27)

Thirty years of experience has clearly demonstrated the seriousness of AGD as a disease issue in south east Tasmania. Huon’s experience is that AGD presents a number of challenges when farming in high energy exposed sites such as Storm Bay. Contrary to expectation, AGD has come on more quickly and heavily in Storm Bay than in Huon/D’Entrecasteaux Channel leases. This is exacerbated by more frequent and more severe adverse weather conditions in Storm Bay which impede the ability to freshwater bathe fish. In addition to the direct impacts of AGD on fish, the stressors associated with AGD infection and handling at bath have the potential to increase the risks associated with infectious diseases such as POMV.

Little detail is provided in the EIS regarding how Petuna will effectively manage AGD, including any detail in regard to their proposed fish transport/bathing vessel. There is no indication as to where freshwater will be sourced and Petuna as yet have not secured a shore base.

6.4.3 Disease Mitigation Measures proposed in the Petuna EIS

The EIS discusses Petuna’s Biosecurity and Fish Health Management Plan (BFHMP) and that it incorporates Standard Operating Procedures (SOPs) that ensure best practice biosecurity and health management, as well as a feedback mechanism to promote continuous improvement.

However, one of the key biosecurity measures identified consistently by international experts at the recent Blue Future Symposium was not to mix year classes of stock. Currently Petuna mix year classes at both their MH and Tamar River farming areas. This current EIS also proposes inadequate separation of year classes.

It is important to note that the Aquaculture Stewardship Council (ASC) standard mentioned on page 2 of the EIS states under Criterion 5.4 Biosecurity Management that the company must provide *“Evidence that all salmon on the site are a single year class”*. The Petuna proposal is inconsistent with this criterion.

The recent experience in MH where Tassal introduced new 17YC smolt onto a lease holding 16YC fish that had previously suffered an outbreak of POMV should be reason under the Petuna BFHMP to modify what is being proposed in Storm Bay. This POMV outbreak has now spread throughout all companies and leases in MH holding 17YC and is a good example of how hard it is to control an outbreak of POMV once it is

initiated and certainly shows that the distances of only 1 km between leases in MH are not an effective separation to stop POMV transmission.

The EIS also refers to the TSGA Biosecurity Program. It should be noted that the TSGA Biosecurity Program is currently being reviewed based on recent experience with POMV in the Tasmanian industry and the lessons learnt from international experts present at the recent Blue Future Symposium held in Dec 2017. The Program has not been reviewed since it was first drafted in September 2014 so does not reflect current thinking in regard to biosecurity matters for the Tasmanian industry and cannot therefore be considered as an agreed industry position on biosecurity matters until the current review is completed.

There is no mention in the EIS as to what stock types would be introduced on to the Petuna lease in Storm Bay. Even within the one year class it is important that smolt are transferred as groups over as short a period as possible. Normally this occurs as stock types eg. Out of Season Smolt, Marine Pre-Smolt, Spring Smolt. Each group then becomes a similar cohort in terms of exposure and potential infection with POMV. If smolt are transferred to a lease over an extended period the latest fish transferred are particularly susceptible and will be exposed to fish that may have already contracted POMV. This results in the disease being spread though the one year class and then into the next year class.

7. Summary of Biosecurity Matters not appropriately addressed in the Petuna EIS

The Petuna EIS fails to adequately address two key biosecurity issues associated with the proposed zone contained within the Draft Storm Bay North Marine Farming Development Plan:

- As a new company proposing salmon farming in the Storm Bay region, the Petuna Zone is too close to Tassal's existing lease at Creese's Mistake and Tassal's proposed West of Wedge Zone. Overseas information indicates a distance of two tidal excursions between leases is required for "best practice" biosecurity. Based on CSIRO hydrodynamic data, this would mean a distance between leases in the order of 10 km, but as indicated by the CVO, regardless of distance the Storm Bay region would be considered as one area from a biosecurity perspective.
- Only one year class of fish should be allowed to be stocked on the proposed Petuna Zone at any given time and there should be at least 2 months fallow period between vacating the Zone and restocking. Different year classes farmed by the same company should be separated by at least 5 km. The overall dimensions of the proposed Petuna Zone are not large enough to enable leases within the Zone to have adequate separation between year classes.
- The overall dimensions of suitable farming areas in Storm Bay do not support the addition of a third company to the region in a way that allows "best practice" biosecurity. In effect, the proposed Petuna lease would create a "bridge" between all three companies leases that would significantly and unacceptably increase biosecurity risk to all operators.
- Petuna already has potential for expanding production in the Tamar River where they operate existing leases, one of which hasn't been farmed to date. Further leases in this area could be explored. Petuna also has an exploratory permit from the government to explore potential sites for expansion in north west Tasmania. Petuna have indicated there is 27,000 Ha². of area in this

² Testing out the Waters, Circular Head Chronicle, published 11 January 2018, accessed 11 January 2018

region which they consider potentially suitable for salmon farming. This seems to offer Petuna plenty of potential for sites. In both these areas Petuna would have autonomy to expand production as appropriate with government approval, without other companies impacting on the environmental conditions and biosecurity.

- Huon has been farming in the south east region for over 30 years and is totally reliant on the biosecurity of this region and in MH. Huon does not intend to seek additional farming area in any of the north west of Tasmania, King Island, east or west coast or Port Arthur which are either existing growing areas or have been identified by Petuna and Tassal as potential growing areas.
- It will be critical that the two existing companies in the south east (i.e. Tassal and Huon) can reach agreement on appropriate measures to unravel some of the historical decisions that compromise good biosecurity. To add a third company to the south east region without imposing strict “best practice” biosecurity will threaten the sustainability of all three companies. This is particularly the case given that both Petuna and Tassal have exploratory permits for large areas elsewhere in Tasmania that should be investigated first.



Huon Aquaculture Company Pty Ltd

Representation to the Planning Authority (c/- Marine Farming Branch, Department of Primary Industries, Parks, Water and Environment)

(17th January 2018)

1. Introduction

This representation made by Huon Aquaculture Company Pty Ltd (Huon) relates to the following two documents released by DPIPWE for public comment:

- Draft Amendment No. 5 to the Tasman Peninsula and Norfolk Bay Marine Farming Development Plan November 2005
- The Environmental Impact Statement prepared by Tassal to accompany the Draft Amendment No. 5 to the Tasman Peninsula and Norfolk Bay Marine Farming Development Plan November 2005

Please note that Huon would like to follow up this written representation by presenting information in person to the Marine Farming Review Panel at the appropriate stage in the process.

2. Background

Huon's comments are largely concerned about biosecurity issues relating to the proposed Amendment and Tassal's Environmental Impact Statement (EIS), particularly in respect of Pilchard Orthomyxovirus (POMV)

Since the initial large scale outbreak of POMV at Tassal's Killala lease on the Huon River in May 2012, this disease has emerged as a serious threat to the future viability of the Tasmanian salmon farming industry.

Prior to the outbreak in 2012, POMV had only ever been diagnosed as an incidental finding in two morts submitted by Van Diemen Aquaculture from their Tamar River lease in late 2005/early 2006 to the Fish Health Unit in Launceston.

Since 2012, POMV has caused serious clinical infection and mortality at all three companies throughout the south east region from Dover to Tasman Peninsula, in the north of Tasmania on the Tamar River and broadly across MH.

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Initially POMV was usually associated with infection in recently transferred smolt in the period 25–70 days post-transfer from the hatchery during the period from Autumn to Spring. Once fish had been through a clinical outbreak they seemed to be resistant to any subsequent clinical infection and mortality.

However, POMV is now diagnosed as the cause of clinical infection and mortality in salmon year round, in larger fish (up to 3 kg), as well as smolt and second waves of clinical infection and mortality are now occurring in previously infected populations.

Recently an outbreak of POMV has occurred in Macquarie Harbour (MH) following the introduction of 17 YC smolt to a lease holding 16 YC fish that had previously suffered an outbreak of POMV. POMV infection and mortality has now spread to all companies and all leases holding 17 YC smolt in MH. POMV is now likely to have been established in MH and likely to require significant measures to mitigate the future impact of the disease, including possible major reconfiguration of leases and/or complete following of the harbour to break the infection cycle.

The Tasmanian industry is now faced with significant decisions across all regions to mitigate the future impact of POMV. Huon strongly believes that all current and future salmon farming expansion proposals in Tasmania must include serious consideration of biosecurity matters to control the spread and emergence of increased pathogenicity of POMV. These same biosecurity matters will also be critical in minimising the risk of new infectious diseases emerging and/or spreading in the industry. Biosecurity issues have not been a high priority consideration in historical salmon farming proposals.

The importance of rigorous biosecurity measures was reinforced at the recent Blue Future Salmon Symposium hosted by IMAS in Hobart in December 2017. International experts from Norway, Scotland, Ireland, Faroes Islands and Canada presented a consistent message that appropriate biosecurity regulation and practices is critical to the sustainability of salmon farming in their regions. This message was largely based on the lessons learnt from the collapse of salmon farming in their respective countries and the change in biosecurity protocols and procedures necessary to restore production.

In July 2017, Huon released a White Paper titled “Tasmanian Salmonid Industry Sustainability Assurance Framework”. This document presents Huon’s vision for ensuring a safe, sustainable Tasmanian salmon industry long into the future, a future where Tasmania is always at the forefront of world’s best practice and where the hard lessons from catastrophic industry collapses elsewhere are embraced to ensure that such collapses never happen here. This document provides further background to the specific comments made in this representation.

3. General comments on expansion of salmon farming in Storm Bay

Storm Bay is predominantly a new region for salmon farming in Tasmania.

Tassal has been farming at sites near Nubeena. However, Huon is the only company that has been farming at exposed high energy locations within Storm Bay. After three years of successful production, Huon has learnt some important lessons that should be used to guide decision making for future expansion in Storm Bay.

Given the emergence of POMV in the Tasmanian industry which should act as a lesson of the importance of biosecurity when considering new lease developments, it is critical that no new leases are developed in the Tasmanian industry without due consideration to biosecurity matters. Storm Bay is such a region.

As is currently being faced by the Tasmanian industry, it is much harder to retrospectively make changes to growing regions to address biosecurity issues.

POMV is known to be transmitted by wild pilchards, however once POMV outbreaks occur within a region, farmed fish as well as associated equipment and infrastructure will then likely become the main source of disease transmission. This is evidenced by fact that many POMV infections occur in the absence of pilchards being known to be present at the time.

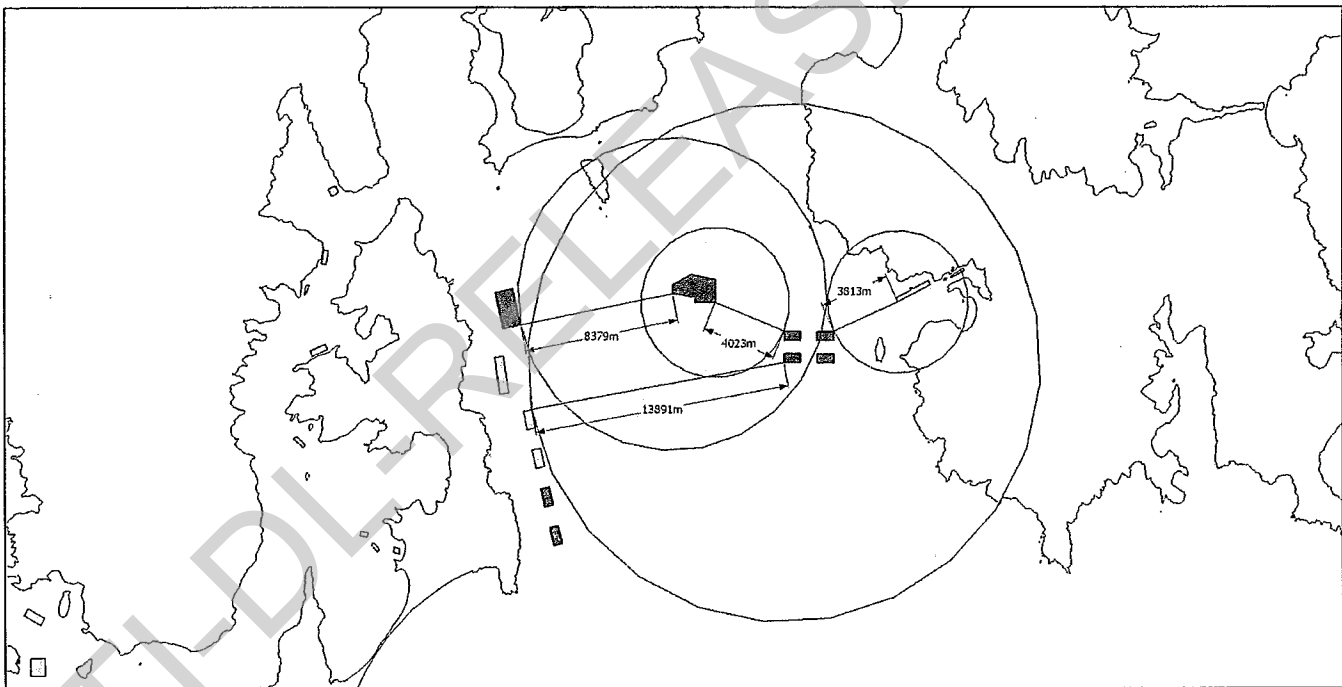
4. Specific comments on the Draft Amendment No. 5 and the Tassal EIS

There are a number of concerns within the Draft Amendment proposal and Tassal EIS with regard to biosecurity.

4.1 Proposed Zone

The proposed zone at West of Wedge (WOW) is 2.4 km by 3.6 km (approx. 863 Ha) with a maximum leasable area of 360 Hectares of which surface located marine farming equipment will be restricted to 180 Ha (four leases of approx. 90 Ha of which surface located marine farming equipment will be restricted to 45 Ha).

Figure 1



The above Figure 1 shows approx. distances between leases rather than zones but gives some perspective. Note that leases can be moved within zones so distances could be less than indicated in the map.

The closest existing finfish lease is Tassal's Marine Farm 190 (Creeses Mistake) which Tassal notes in the EIS to be approx. 3.3 km to the northeast of the proposed WOW Zone. The proposed Tassal WOW Zone will also be approx. 4 km from the Marine Farming Zone south of Betsy Island proposed by Petuna.

4.2 Tassal's Proposed Production Strategy

The Tassal EIS proposes the following production strategies for the WOW Zone.

"For the purpose of this EIS, Tassal considers that the proposed West of Wedge development could potentially stock 1.8 million fish per year."

"The feed input to the proposed West of Wedge development, at a maximum capacity of 1.8 million smolt input per year, is expected to be 11,700 t/yr"

Annual emissions have been calculated to include the overlap of production cycles when two separate year classes are being accommodated within the proposed West of Wedge development zone. Figure 6.8 shows the monthly feed input where two colours represent the feed input to each of the year classes. Both year classes will only be held simultaneously within the zone for six months in any 12 month period." (A series of charts are presented on pages 118, 119, 137, 138 and 139 indicating the mixing of year classes on the proposed WOW Zone)

"The proposed West of Wedge development will be used as a production site where smolt will be introduced to the leases and grown out to harvest size." (p. 144)

4.3 Advice from Chief Veterinary Officer

Contained within the Tassal EIS is advice provided by the Chief Veterinary Officer (CVO) in regard to disease and biosecurity.

Key points from the CVO's advice relevant to Huon's representation include:

- The CVO notes that "Storm Bay is a single area from a disease management perspective, including being contiguous with existing salmon farms in the norther section of the D'Entrecasteux Channel." This means any farm lease within this region has the potential to impact other farm leases in the region. It is particularly important to note that disease can be transmitted across the region from lease to lease whether they be within a single farm zone or located in separate farm zones.
- The CVO notes that the risk of spread in the water column is dependent on a number of variables, including water temperature, salinity, pathogen survival and hydrodynamics.
 - The CVO notes "water flows in Storm Bay drive quite variable movements of any particle based on point of release and season, with possible movements of infective material in the order of 10-30 km over 24 hrs.
 - Research at the DPIPW Fish Health Unit in Launceston has shown that the POMV virus is stable in seawater at 12°C, 15 °C and 22 °C for > 9 days and at salinities ranging from freshwater to full strength seawater (Morrison et al., 2013, "Assessment of orthomyxovirus like virus pathogenicity in Atlantic salmon. FRDC Project Report No. 2012/053)
- The CVO notes that "there is no separation distance that can be applied in Storm Bay to reduce the disease transmission risk to zero. A separation distance of 5 km would provide some protection but would not be a complete barrier. Reduced distances would be considered appropriate where

agreement exists between affected companies” “Separation of companies within Storm Bay needs to be based on the acceptable level of risk.”

- An acceptable level of risk needs to be agreed across all potentially impacted companies because the consequences of disease outbreaks and mitigation can be very significant.
- The CVO notes that “the risk of spread can also be impacted by things such as the size of farms – the larger the farm the more likely it is to become infected if exposed to a risk due to greater number of fish being exposed.”
 - The number of fish proposed to be stocked by Tassal on the WOW Zone is high, potentially of an order > 3 million fish at peak numbers given the proposed stocking strategy in the EIS (ie. 1.8 million smolt per year and 6 month overlap between year classes). Also noting that Tassal have indicated in the EIS that even higher numbers may be possible in the future.
- The CVO notes that “to make the most of separation distances, especially of leases under management of different companies, companies need to adhere to best practice disease and biosecurity management practice to address the risks.”
 - This must include basic good practice measures such as NOT mixing year classes.

4.4 Tassal “Zero Harm to Fish Program”

There are several references in the Tassal EIS to the following programs, protocols and plans, including:

- Tassal Zero Harm to Fish Program
- Tassal Farm Disease Management and Biosecurity Protocol
- Tassal South East Tasmanian Fish Health Management Plan

Virtually all the information provided is high level with very little detailed information on biosecurity considerations, protocols and procedures which is important in understanding whether these documents adequately cover biosecurity issues relevant to the proposed WOW Zone that may impact on other companies.

Tassal Zero Harm to Fish Program

The EIS states “Zero Harm to Fish is an internal Tassal program that has been implemented since 2014. The Zero Harm to Fish program audits the functioning of the health management plan as well as other husbandry factors that can cause disease. The Zero Harm scorecard drives a culture of continual improvement that aims for a target of 91% survival. The program is a comprehensive roadmap to better fish health and welfare built around best-practice health and welfare principles. It is also an important platform to drive standardisation of operations and the sharing of best practice husbandry and systems. Feeding into this internal auditing tool is the ASC Salmon standard; OIE Aquatic Animal Health Code; National Aquatic Animal Health Schemes; RSPCA UK and RSPCA AUS guidelines.”

It is important to note that the ASC standard states under Criterion 5.4 Biosecurity Management that the company must provide “Evidence that all salmon on the site are a single year class”

Tassal Farm Disease Management and Biosecurity Protocol

The EIS states “Tassal’s Farm Disease Management and Biosecurity Protocol is designed to limit the incursion and transmission of existing or exotic pathogens between or within control regions as well as develop a proactive “biosecurity culture”. The protocol is based on a two-tiered system of alert depending on the disease status of individual pens, leases or regions, with changing actions and monitoring processes throughout the steps.”

“The protocol introduces two biosecurity statuses: normal and red. Red is full damage control in response to a major fish loss due to infectious disease. A red status results in all resources being utilised to produce a coordinated response to minimise fish fatality and control associated problems of disease spread to naïve stocks or regions. This is characterised by timely mitigation and mortality disposal and encompasses legislative requirements to notify government agencies as defined in the Australian Aquatic Veterinary Emergency Plan (AQUAVETPLAN).”

The Tassal Alert system only has two tiers. It would seem more appropriate to have an additional interim tier(s) such that it is not an all or nothing response. Additional measures should be instigated in response to emerging event and before the issue becomes an emergency response.

Tassal South East Tasmania Fish Health Management Plan

The EIS states “Tassal has also implemented a South East Tasmania Fish Health Management Plan (FHMP) which is a combination of compliance, best practice, and regulation through management controls and Marine Farming license conditions. The FHMP addresses detailed, standard operating procedures to prevent disease from entering the region, to prevent the spread and impact of disease in farming regions and to respond to emergency situations. The FHMP is scheduled to be reviewed annually; however this will occur more frequently if required. This sits as a backbone to Zero Harm to Fish Program.”

4.5 Tassal EIS Section 6.1.10 Disease

4.5.1 POMV

The Tassal EIS outlines historical incidents of POMV in salmon at their Creeses Mistake and Badger Cove leases near Nubeena on the Tasman Peninsula and that the disease has caused high mortality (p. 191).

Huon’s experience over the last three years farming in Storm Bay is that POMV is consistently present as a threat and can cause high mortality in certain circumstances (potentially > 90% within a single pen).

The Tassal EIS states that “development of a vaccine is underway and will be available in 2017.” This is not accurate. Research into the development of a POMV vaccine is underway, however there is no evidence of vaccine effectiveness other a possible effect of the adjuvant in the vaccine. It is important to note that even if an effective POMV vaccine is ultimately developed (no evidence to date) it is unlikely to be a silver bullet for controlling POMV outbreaks based on overseas experience with ISA vaccines. Therefore, it is critical to instigate appropriate biosecurity measures regardless. This is particularly the case given the ongoing potential for new disease issues to emerge. It is far better to minimise the possibility of new diseases occurring and if they occur minimise their spread rather than have to deal with a new disease once established. This can only be achieved through strict biosecurity measures.

Given the known presence of POMV across the Storm Bay region and that it can cause high levels of mortality, it is critical that any new developments consider biosecurity issues as a top priority.

4.5.2 Amoebic Gill Disease (AGD)

The Tassal EIS identifies “Amoebic gill disease (AGD) as the main fish health issue in the Eastern Farming Zone” indicating AGD is well managed by Tassal through their AGD management plan. (p. 190)

Huon’s experience is that AGD presents a number of challenges when farming in high energy exposed sites. Firstly contrary to expectation, AGD has come on more quickly and heavily in Storm Bay than in Huon/D’Entrecasteux Channel leases. This can be exacerbated by the inability to bath fish in freshwater in Storm Bay due to more frequent and more severe bad weather conditions. In addition to the direct impacts of AGD on fish, the stressors associated with AGD infection and handling at bath have the potential to increase the risks associated with POMV infection.

4.5.3 Disease Mitigation Measures proposed in the Tassal EIS

The Tassal EIS states (2.5 Conclusions) that “Under this proposal there will be the added benefits of year class segregation, rotation of fallowing and stocking regimes and improved biosecurity across the entire Tasman Peninsula farming region.” (p. 4/5)

- The Tassal WOW proposal does not adequately address basic biosecurity considerations such as adequate separation between leases and not mixing year classes. These issues could be significantly addressed by a revised proposal as outlined in this representation in Section 4.6.

“Tassal marine operations prioritise the segregation of year classes in farming leases in order to further reduce the chance of disease proliferation.” (p. 193)

- This is patently not evident in the information presented in the Tassal EIS

“Tassal has a Zero Harm to Fish Program which offers a framework for health and welfare of stock. Any fish incidents, hazards or mortality events are escalated and mitigation/changes made throughout operations and followed up to reduce the risk of future disease outbreaks.”

- The recent experience in Macquarie Harbour (MH) where Tassal introduced new 17 YC smolt onto a lease holding 16 YC fish that had previously suffered an outbreak of POMV should be escalated under the Tassal “Zero Harm to Fish Program” to mitigate/change what is being proposed for the WOW Zone. The POMV outbreak that subsequently started on this Tassal MH lease has now spread throughout all companies and leases in MH holding 17 YC smolt. This event is a very good example of how hard it is to control an outbreak of POMV once it is initiated and certainly shows that the distances of only 1 km between leases in MH are not an effective separation to stop POMV transmission.

“Risk assessment for potential biosecurity threats, particularly those originating from nearby salmonid growing companies, would follow the TSGA Biosecurity Program. These management measures which address specific threats and spreading of diseases, are in place to reduce risk to acceptable levels as a joint agreement between all salmonid companies in Tasmania.”

- It should be noted that the TSGA Biosecurity Program is currently being reviewed based on recent experience with POMV in the Tasmanian industry and the lessons learnt from international experts present at the recent Blue Future Symposium held in Dec 2017. The Program has not been reviewed since it was first drafted in September 2014 so does not reflect current thinking in regard to biosecurity matters for the Tasmanian industry and cannot therefore be considered as an agreed industry position on biosecurity matters until the current review is completed.

“Bloodwater is treated at Tassal’s Dover waste water treatment plant (WWTP)” (p. 26)

- Blood water is high risk material, therefore it is critical that treatment and disposal procedures at the Dover WWTP are adequate to provide appropriate biosecurity, particularly given it is Huon's understanding that treated blood water is piped out into the lower D'Entrecasteux Channel. Disposal of blood water on land would provide added biosecurity.

5. Summary of Biosecurity Matters not appropriately addressed in the Tassal EIS

The Tassal EIS fails to adequately address two key biosecurity issues associated with the proposed WOW Zone.

- The proposed Tassal WOW Zone is too close to Tassal's existing lease at Creeses Mistake and should be relocated at least 5 km away from the Creeses Mistake lease "to provide some protection" from disease spread as indicated by the advice from the CVO and in line with overseas regulatory practice. Overseas "Best Practice" would suggest a distance of two tidal excursions between leases is required for "best practice" biosecurity. Based on CSIRO hydrodynamic data this would mean a distance between leases in the order of 10 km, but as indicated by the CVO, regardless of distance the Storm Bay region would be considered as one area from a biosecurity perspective.
- Only one year class of fish should be allowed to be stocked on the proposed WOW Zone at any given time and there should be at least 2 months fallow period between vacating the Zone and restocking. Huon is not aware of anywhere else in the world where mixing of year classes would be allowed as this is fundamental good biosecurity practice. The overall dimensions of the proposed WOW Zone are only 2.4 km x 3.6 km so it is impossible to position leases within the Zone to create adequate separation between year classes.
- To enable Tassal to grow two year classes within Storm Bay one option would be to divide the proposed WOW Zone into two Zones half the size. One of the Zones could be located 5 km from the Creeses Mistake Lease and the other a further 5 km south/south east into Storm Bay.