

**Review comments to 'Baseline Plan'
(Baseline Monitoring plan for new salmon farm sites,
Marlborough Sounds, report ref: NEL2013-015, dated
July 2013)**

**Report prepared for King Salmon Ltd and Marlborough District
Council**

by

Mark James, Aquatic Environmental Sciences Ltd

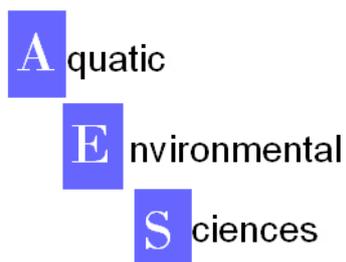
Peter Longdill, COWI A/S

Shaun Ogilvie, Eco Research Associates Ltd

Review date 27.08.2013, revised 13.12.13 based on Tangata Whenua input.

NIWA responses to review comments are shown in blue text

PRP final responses in red



COWI



1. Introduction

As part of the final conditions of consent for the development of new salmon farms in the Marlborough Sounds New Zealand King Salmon are required to establish a Peer Review Panel for the purposes of reviewing and providing recommendations to the Council and consent holder in respect of the adequacy and appropriateness of the Baseline Plan.

The Peer Review Panel (PRP) was established in May 2013. A draft baseline plan from NIWA was submitted to King Salmon in July 2013 and was provided to the PRP for comment in August 2013. One of the conditions for the Waitata and Richmond Farms was to provide the Ngati Koata Trust and Te Runanga o Ngati Kuia Charitable Trust the opportunity to set up a Tangata Whenua Panel which would advise and provide input to the Peer Review Panel on matters of concern or issues from an iwi perspective. Issues and comments which these groups provided to the PRP, and we consider need to be addressed, are provided in relevant sections below.

2. Review of Baseline Plan

General comments

- The Peer Review panel (PRP) need assurance throughout this baseline monitoring plan that there will be sufficient information and data to be able to assess whether there has been a change as a result of the development of the farms and to apply an adaptive management approach. This requires adequate spatial and temporal sampling and statistical power from the samples. It is a complex and comprehensive set of monitoring requirements that require very careful consideration as there will only be one chance to get baseline information.
- It must be recognised that a number of factors, natural and anthropogenic, and stakeholders influence the wider scale aquatic environment thus monitoring of the wider environment needs to be considered in this context and as part of the wider monitoring by all involved in the Sounds. The ecosystem functioning and relative inputs of Cook Strait water and river inputs is very complex and beyond the scope of a single consent holder.
- Some aspects that the PRP considered will be dealt with at the next phase i.e. preparation of the Adaptive Environmental Management Plan (AEMP) and Baseline Report. An important part of this stage will be the setting of Environmental Quality Standards (EQS) for the water column and details on how the benthic standards and before and after comparisons will be analysed.
- Consent condition references in the comments below refer to those dated 13 March 2013, and issued by the Board of Inquiry as an addendum to their final report.

Topic	Sub-topic	Sect.	Comment
General			<p>Reference to the consent conditions should be the 'final' or most up to date consent conditions issued by the Board of Inquiry. We understand these to be those issued by the Board and dated 13 March 2013. Note that the latest consent conditions separate the roles of the Tangata Whenua Panel and Te Atiawa Manawhenua ki te Tau Ihu Trust. (Te Atiawa).</p> <p><i>We have noted this and adjusted references to the consent conditions accordingly. The final conditions are site-specific and the numbering of conditions are not consistent among all four sites. In a few places in the plan we have omitted reference to the number where it would otherwise make the text cumbersome and where it does not create ambiguity. We have amended the references to the Tangata Whenua Panel and Te Atiawa Manawhenua ki te Tau Ihu Trust.</i></p> <p><i>PRP happy with references to conditions</i></p>
General			<p>Frequent reference to figures from the AEE means the plan is a little disjointed – please consider including the appropriate figures/diagrams that are needed and referencing it in the caption.</p> <p><i>We have added the appropriate figures as appendices (maps of benthic habitats at each site and site boundaries) or text figures (schematic of sampling stations around farms) and removed references in the text to the figures in the AEE. Addressed in revised Plan</i></p>
Water Quality	Review of existing data	2	<p>Review and synthesis of 'all available' existing water quality data (as required by consent conditions (e.g. 58b for Papatua) is presently incomplete due to unknowns around the additional MSSQP data (e.g. bacteria and algae counts). This does mean that phytoplankton composition background information is missing/undefined in the synthesis at present.</p> <p><i>This has been addressed in the report 'Algal cell count data from the Marlborough Sounds: Marlborough Sounds Quality Programme and Marlborough District Council data' (October 2013). Addressed now in new report</i></p> <p>There is a general scarcity of data from Queen Charlotte Sound and Tory channel presented in the review of historical data. The review indicates that additional data is available for different parts of the Sounds (i.e. NIWA data from Crail bay and Waihinau, and Cawthron data). Inclusion of further available data (esp. those within and immediately nearby Tory Channel as well all data from Pelorus) should be included. This should not, in itself, prevent the commencement of baseline monitoring - as the synthesis is to be used to supplement the collected baseline data. We are aware that the MDC have been collecting water quality data from various sites in Pelorus and Queen Charlotte Sounds since July 2011 and July 2012 respectively which include sites close to the proposed farms. On this basis we would agree that data be gathered for one year prior to development at the Richmond, Waitata and Ngamahau sites and two years at the Papatua site as there is no historical data from this area.</p> <p><i>The MSQP data include sites in Port Gore, East Bay (Queen Charlotte) and Tory Channel and these are reviewed in the report cited above. These and the MDC data are the only datasets we are aware of for QCS and Tory Channel. Accept</i></p>

Soft Sediment habitats	Occupancy and activity areas	3.1.2	<p>For the ease of the reader, please consider including a schematic of the layout of sampling stations otherwise it is difficult to follow. <i>We have added the schematic used in Figure 2 (Figure 3 for Richmond) of the Final Conditions of Consent</i></p> <p>For the no. of sampling stations some reference is given in the Figure 2 to the consent conditions – the baseline plan is consistent with that, but the PRP are concerned that more coverage than this is required as the baseline. There is only one chance to get this information/data.</p> <p>The baseline benthic sampling surrounding the activity area(s) should aim to quantify and map the baseline enrichment status of the area surrounding the activity such that the changes post-stocking can be identified. This would require considerably more (in number and spatial spread) than the proposed 6 sample sites. As a minimum we would expect to see a grid or at least 2 transects sampled at 50, 100, 250 and 500 m from the farm perimeter.</p> <p><i>In designing the sediment sampling programme, we took into account the qualitative and quantitative sampling done as part of the assessment of environmental effects (AEE) for the proposed farms, but did not make this explicit in the Baseline Plan. We have now included a table in the plan listing the numbers of grabs (9 – 31), drop-camera stations (> 100 - 400), dive transects (3 – 18) and video sled transects (0 – 11) collected at each of the four sites during the AEE work, and an appendix containing figures showing the locations of these. The PRP assume that these sites are GPS located so can be repeated and ES calculated if necessary?</i></p>

	Reference stations, neighbouring bays	3.1.2	<p>Input from the Tangata Whenua Panel and te Atiawa have been received and issues which need to be addressed are outlined below, particularly with regard to site selection. (see below)</p> <p>It is also understood that the final selection of sites awaits the collection and interpretations of multi-beam swath data, which is sensible. However, to be compliant with the intent of the consent conditions, the baseline plan should be updated upon that selection, and the sites subject to peer review and iwi inputs. More detail of the swath methods would also be helpful.</p> <p><i>Swath mapping data are now available and confirm the suitability of proposed sampling stations. The maps will be included in the revised Baseline Report. Further details of the swath mapping methods have been added to the Baseline Plan. Addressed in revised plan</i></p> <p>Conditions [58e for Papatua, 63e for Waitata and Richmond, 62e for Ngamahau] stipulate that neighbouring bays need to be sampled for soft-sediment habitat but this does not appear to be addressed in 3.1.2 where for Richmond and Waitata the suggested sites are in these bays, not neighbouring bays?</p> <p><i>These two farms are either in the Pelorus main channel (Waitata) or on the outer perimeter of an open bay adjacent to the main channel (Richmond), rather than within enclosed bays (see Appendix 1, Figure 2 of the draft Baseline Plan). Consequently, Waitata and Richmond Bays are the nearest “neighbouring bays”. Accept as appropriate</i></p>
	Sampling/Analyses methods	3.1.2	<p>Statistical treatment of benthic infauna data should be defined.</p> <p><i>Summary statistics for infaunal assemblages will be those used to estimate ES values for the EQS, namely number of taxa, number of individuals, Shannon-Wiener and M-AMBI diversity indices. Multivariate methods (non-parametric multidimensional scaling and ANOSIM: PRIMER statistical package) will be used to visualise and test differences among stations.</i></p> <p>How will the 'baseline' Enrichment Status of the sea bed surrounding the farms be established/calculated/weighted? A key question is whether the ES scores will be provided for each sample station or averaged within a zone. The PRP would be concerned if it is only the latter. How the different parameters will be weighted is also important although we realise this may need some discussion before the baseline report is written.</p> <p><i>We will use the methods developed by Cawthron for existing farms (and as used for the basis of the EQS in the conditions) and published in reports to NZKS and published in the peer-reviewed literature.</i></p> <p><i>The PRP have no reason to doubt that Keeley et al. 2012 and 2013 references are not current “best practice” and thus the PRP are happy to accept.</i></p>

			<p>Please confirm and define that all sediment parameters as required to calculate EQS are being measured and determined - what method will be used to calculate the sediment Enrichment Stage?. –What about sediment out-gassing observations, bacterial mat coverage which are not included but required for ES assessment and/or are in conditions? There is no mention of epifauna in the benthic environment sampling?</p> <p><i>We confirm that we will measure sediment redox and total sulphides, OM, and grain size. The first two will be measured by electrode – redox on site and sulphides on return of samples to the lab (to avoid having to take strongly basic buffer solutions out on a boat). Accept and in line with expectations and standard methods</i></p> <p><i>Drop-camera images will be taken at each station to identify any epifauna (though epifauna are not included in ES calculations as far as we are aware), bacterial mats and out-gassing. Bacterial mats, outgassing and sediment odour will also be determined from grab samples. Accept and in line with standard methods</i></p> <p>Add confirmation that “Samples will be transferred to the laboratory in a manner consistent with the laboratories recommendations and/or quality control system and accreditation.”</p> <p><i>We have added confirmation that faunal samples will be sieved and preserved on the day of collection and sediment samples for determination of physicochemical variables will be frozen on the day of collection if not processed on site (redox and sulphides) Accept and in line with standard methods</i></p> <p>Will Copper and Zinc chemistry be collected at all sites or select sites?</p> <p><i>We plan to take replicate samples at all stations to provide baseline information but will only analyse those from farm stations. Those from reference stations will be archived. Accepted</i></p> <p>Analyses for copper and zinc should be via composite samples. Please describe how these composite samples will be collected.</p> <p><i>Composite samples of sediment from the upper 3 cm of sediment will be obtained by removing a random subsample of material from each replicate grab, mixing and placing in a bag prior to freezing. Accept and in line with standard methods</i></p>
Water column	Background	3.2.1	<p>If there are changes to MDC sampling then the far field/reference sampling stations must be reassessed not just “may need to be considered” as they are integral to the monitoring network.</p> <p><i>Agreed, and options will be discussed with MDC in this event but at present MDC have no plans to change their sampling design. Accept</i></p>

Water quality	Sampling sites	3.2.2	<p>Agree with the comment regarding fixed near-field sites introducing unwanted variability into the monitoring data (during farm operation). The suggested approach for the near-field sites seems sensible. However how would you plan to determine the ‘anticipated direction of current’ during each campaign as this dictates where the site just downstream of the farm perimeter is determined? The PRP consider that the baseline should be considering more perimeter sites.</p> <p><i>The clusters of sampling stations around farm sites will provide an estimate of spatial variability in water quality at the scale of hundreds of metres. As noted, the MDC stations provide coverage of the inner Sounds and near the entrances to Cook Strait, as required in the Conditions. The issue of variability during farm operation is, of course, less significant during the baseline monitoring. Accept as long as they are satisfied the current data from earlier surveys is good enough</i></p>
		3.2.2	<p>A map of the proposed sampling stations would be very beneficial as it is very difficult to put the sites into the context of the conditions which specify the criteria for setting out baseline sampling stations (i.e. Conditions 58c for Papatua, 63c for Waitata and Richmond, 62c for Ngamahau)</p> <p>It is also very difficult to see some labels on Figure 1 to determine where the MDC sites are.</p> <p><i>Revised maps have been included in the Plan to address these points.</i></p>
		3.2.2	<p>The selection of (non-reference) far-field water quality monitoring stations should be based on sites that are expected to have the greatest potential for farm related cumulative enrichment effects. The consent conditions indicate that this should be guided by modelling results.</p> <p>At present the plan does not sufficiently describe the justification for the selection of the monitoring sites (i.e. which sites are anticipated to have ‘the greatest potential for marine farm related cumulative enrichment effects’ and on what basis has that been decided? – the same goes for sites with progressively lesser potential for effects and reference sites). It is not clear how the sites chosen relate to the requirements in Conditions [58c for Papatua, .63c for Waitata and Richmond, 62c for Ngamahau].</p> <p>Based upon a subsequent justification to be provided (and possible amendment of locations), the PRP will be in a position to review in accordance with those relevant consent conditions and establish a position on any requirement for further modelling (as per conditions 65a for Papatua, 70a for Waitata, Richmond, and Ngamahau).</p> <p>There do not appear to be any sites selected for the “inner Sounds” or ones with “high ecological” value as per conditions [58(c) for Papatua, 63(c) for Waitata and Richmond, 62(c) for Ngamahau]. We assume MDC sampling will be used at least for the inner Sounds but this is not stated?</p> <p><i>Text has been added to the report giving more detail on the selection of monitoring sites. We are not aware of any sites that might be considered of “high ecological value” from a water-quality perspective and the PRP</i></p>

		<p><i>indicated at a meeting with NIWA and NZKS on 30/8/13 that they are not either.</i></p> <p><i>The additional text supplied by NIWA is appreciated and justifies the selection of the far field water column sites (based on Figures 8,9,10 within Benjamin Knights Evidence, and Figures 1 and 2 of Benjamin Knights rebuttal evidence - see links below)</i></p> <p><i>http://kingsalmon.co.nz/KingSalmonEvidence_documentation/2429577%20Benjamin%20Robert%20Knight%20-%20(a)%20Supplementary%20Document%20of%20Figures%20and%20Tables%20-%20v1.pdf</i></p> <p><i>and</i></p> <p><i>http://kingsalmon.co.nz/RebuttalDocs/14%20Benjamin%20Robert%20Knight%20-%20Water%20Column%20Biophysical%20Modelling%20-%20v2.pdf</i></p> <p><i>The Figures referenced by NIWA as justification for the selection of far field sites are cumulative model results which are influenced by farms which were included within the application but were <u>not</u> permitted by the BoE process, and hence should not be considered within the plans. Specifically, this means the farms which were initially proposed at Kaitira, Taipipi, White Horse Rock, Ruaomoko, and Kaitapeha (which were not approved by the BoE process). Thus there is a high likelihood that the modelled discharge from these non-approved farms have influenced the designation of the far-field monitoring sites. Due to the importance given to the baseline monitoring within the consent conditions, the PRP recommend that this potential for biasing be removed by using the simulated discharge from only those approved farms to set out (or to verify) the location of the far-field monitoring sites. It is understood from the Cawthron modelling approach that such a process could be performed rather easily without the need for re-modelling (as the presented figures represented the spatial addition of separate model results, the addition could take place for those approved farms only).</i></p> <p><i>The PRP would like to see this investigated and if appropriate the sites checked again.</i></p>
	3.2.2	<p>Suggest adding confirmation that “Samples will be transferred to the laboratory in a manner consistent with the laboratories recommendations and/or quality control system and accreditation.”</p> <p>Please verify that the time and preservation of water quality samples will be consistent with the laboratories procedures and sample holding times to prevent any degradation. This may require delivery of samples at the end of each day or other preservation.</p> <p><i>Our advice from NIWA’s laboratory manager (and from Max Gibbs, NIWA) is that samples will not degrade if kept chilled on ice (not frozen) overnight and couriered the following day (to arrive at the lab no more than two days after collection).Accept</i></p>
	3.2.2	<p>The single (0-15m) integrated sample is not sufficient to characterise lower layers in what is known to be a</p>

			<p>stratified water column over much of the year (at most sites). Though this depth range may be applicable at some near-field sites (pending actual cage depths), select lower/bottom layers should also be sampled and quantified as water quality can change markedly close to the seabed,</p> <p>Can NIWA provide evidence that one integrated tube sample will be sufficient for analysis of effects, noting there could be considerable variability in some locations?</p> <p>Further, through a combination of the historical review and monitoring plan the contributions from Cook Strait based upwelling (to isolate the periodic major inputs of nutrients) should be addressed at least at a wider contextual level. We accept that the 'deep layer sampling' at these sites may not constitute the same range of parameters as at the surface and that select data from the MDC sampling could be used in lieu if appropriate (but not Port Gore).</p> <p><i>We have added a near-bed sample to address the above points and the Baseline Plan revised to reflect this. Issue now addressed.</i></p> <p>CTD casts should extend beyond 30 m (at sites where depth allows) – particularly important for those sites near Cook Strait, and at very minimal additional effort. Please confirm the chlorophyll sensor on the CTD will be back-calibrated with the lab results.</p> <p><i>CTD casts will be to the maximum depth of water present at each site. Issue now addressed.</i></p>
		3.2.2 Table 2	<p>Proposal to measure and report NO₂-N+NO₃-N as opposed to NO₂-N, NO₃-N.</p> <p>Proposal to include PN as it is an important indicator of food availability and is the only particulate measurement.</p> <p>Agree with the NIWA proposal on both items.</p> <p><i>Changes noted in Baseline Plan. Noted and accepted</i></p>
Benthic	Habitats with notable features	3.3.2	<p>The PRP has received inputs from Tangata Whenua in connection with these features and these are provided in the section below.</p> <p>The PRP would like to see some assurance that the methods (especially towed sleds) will be non-destructive in sensitive and important habitats. The PRP would also like to see more details on the ROV surveys in the plan egg length of surveys etc. It is not clear where these surveys would be other than inshore, is this all inshore regions from the farms as in some cases they are surrounded by coastline on most sides?</p> <p><i>We will fly the ROV "free" in areas of sensitive habitat, which has a low risk of damaging sensitive habitats because</i></p>

			<p><i>the ROV pilot can monitor the habitat via live video feed. We will only use it attached to a sled in areas without easily-damaged features (e.g. areas of soft sediment where scallops are likely to be present) and when strong currents make free-flying impractical. Noted and accepted</i></p> <p>There needs to be more detail for some of the methods used for “smaller scale transect and quadrat counts”.</p> <p><i>Detail has been added in the Reef habitats section (3.4.2), referenced in Section 3.3.2. Noted and accepted</i></p> <p>Please confirm the basis upon which the reference stations are deemed to have a comparable hydrodynamic environment.</p> <p><i>Reference stations were selected on the basis of having similar aspect (level of exposure and direction of fetch), to the extent that conditions allowed. A note to this effect has been added to the Plan. Noted and accepted</i></p>
	Reef habitats	3.4.2	<p>The PRP has received inputs from Tangata Whenua in connection with these features and these are provided in the section below.</p> <p>Why are all grazers on rocky shore surveyed instead of a few key indicator ones as suggested in Condition [58f for Papatua, 63f for Waitata and Richmond, 62f for Ngamahau].</p> <p><i>We will focus on the indicator species suggested. Noted and accepted</i></p>

Tangata Whenua input

- Consent conditions prescribe that for the Papatua and Ngamahau farm sites, the relevant iwi organisation is Te Atiawa Manawhenua ki te Tau Ihu Trust (hereafter referred to as Te Atiawa). Te Atiawa have representation on the PRP. Relevant to the Baseline Plan, they are requested to provide the following specific information:
 - For Papatua and [Ngamahau] consent condition 58d [62d] (for baseline monitoring of habitats that support notable biological features, areas identified as customary kaimoana gathering areas), 58e [62e] (for soft sediment monitoring, areas identified as customary kaimoana gathering areas), 58f [62f] (for potential effects on macroalgal biomass from biodeposition and/or nutrient enrichment, any reefs identified as customary kaimoana gathering areas).
 - Based on discussions with Te Atiawa in October the issues raised and supported by the PRP are:
 - For Papatua the reef site near Taratara move to the Point, and add further site towards Cape Lambert . For Ngamahau move the southern reef site to the point closest to Deep Bay. Should there be a need for further clarification on these locations, it can be provided.

The reef site near Taratara has been moved to the Point and a further site added towards Cape Lambert (Papatua) and the southern reef site moved closer to Deep Bay (Ngamahau) (see maps in Appendix 4 of the Plan). Noted and accepted

- For the Waitata and Richmond farm sites consent conditions prescribe that the relevant iwi are Ngati Koata (represented by Ngati Koata Trust) and Ngati Kuia (represented by Te Runanga o Ngati Kuia Charitable Trust). These two iwi were given the opportunity to collectively form a Tangata Whenua Panel (TWP), and did so. The TWP were given the draft Baseline Report, at about the same time that the PRP received it. The PRP held a hui with Ngati Kuia on 23 October 2013 and Ngati Koata on 14 November 2013. At these hui the TWP members provided input to the PRP review of the Baseline Plan. Ngati Kuia and Ngati Koata each also provided a separate Cultural Impact Assessment (CIA) report.
- Specific input from the TWP was sought on matters identified in the following conditions:
 - The Waitata and Richmond consent conditions 59b (review and provide input to the preparation of the Baseline Plan), 63d (for reef monitoring, specific reference to kaimoana gathering sites, and comparable habitats as reference sites), 63e (for seabed enrichment monitoring, specific reference to customary kaimoana gathering areas), 63f (for potential effects on macroalgal biomass from biodeposition and/or nutrient enrichment, specific reference to reefs identified as customary kaimoana gathering areas), 71 (refers to the PRP, in review role outlined in 70 (which includes review of the Baseline Plan) providing opportunity for the TWP to submit information), 77a (specifically, The mauri of

the water in the Sounds), 77b (any cultural matters the PRP should be aware of in considering the water column monitoring locations).

- The PRP would like to acknowledge the effort and input of the TWP, and is supportive of the matters below, raised by the TWP.
- During this process Ngati Kuia and Ngati Koata had separate input. Overall conclusions and recommendations from Ngati Kuia (presented in their CIA report, and in person) were:
 - The importance of this initial connection between the TWP and the PRP as the beginning of a long relationship,
 - An acceptance that the monitoring will only cover a specific time in the Maori fishing calendar,
 - Reluctant concession that there will be adverse effects on the ability of kaitiaki to extract customary take in the immediate areas where farms are established,
 - A genuine concern about the expansion of marine farming and a desire to ensure it is undertaken and expanded in a sensitive and culturally acceptable way,
 - A desire to be engaged and consulted during the installation and monitoring phases.
- The following feedback came from both Ngati Kuia and Ngati Koata about specifics that need to be addressed in the baseline plan:
 - In relation to Consent Conditions 63d and 63f:
 - ◆ Important taonga species identified were blue cod, triplefin (as food for blue cod), a range of other species in particular, paua, kina, scallops, mussels and oysters, crustaceans and algae (as food for other species), and tuere (hagfish). All these species need special attention in baseline and subsequent surveys,

The taonga species identified will be noted during ROV and diver transects, which target reef, cobble and other habitats where they are most likely to occur. We would still like to see the species specifically mentioned for attention.

- ◆ Ensure blue cod populations and habitat is adequately monitored including reference sites away from farm influence. ROV surveys and diver observations should include blue cod,

ROV surveys and diver observations at farm and reference locations will include blue cod. We would still like to see the species specifically mentioned for attention.

- ◆ Paua and kina are important taonga species. Most of the sites for kaimoana gathering are included in the proposed monitoring plan but one could be added in Richmond Bay or around The Reef Point at the southern end of Richmond Bay,

An additional site has been added at The Reef at the southern end of Richmond Bay (see maps in Appendix 4 of the Plan). Noted and accepted

- ◆ Surveys must be undertaken at the same time of each year,

This will be included in the recommendation for monitoring of farms. Noted and accepted

- In relation to Consent Condition 63e:

- ◆ The TWP were concerned at the level of baseline monitoring for seabed enrichment between the farms and the shoreline and towards the channel. They would like to see more extensive sites than just the enrichment gradient sites at least for this baseline,

For the purposes of the baseline study, additional information on the areas mentioned is available from the work done by Cawthron for the AEE and maps showing the locations of these samples have been added to the Plan as Appendix 1 (and see above for further detail). Noted and addressed

- ◆ King shag are an important species to iwi and the flatfish that they feed on. Even though the shag is outside the PRP brief its food resource and water clarity need to be considered and commented on,

Water clarity is recorded during the water-quality sampling programme at farm and reference locations. Noted and accepted

- ◆ Scallops in Ketu bay and elsewhere are an important taonga species and there needs to be adequate monitoring in Ketu Bay, at present there is only one site proposed in Ketu Bay. Scallops are found off the Waitata farm site and should be included in surveys,

Monitoring of scallops in Ketu Bay to identify effects of the new farm is confounded by the recently-commenced commercial scallop fishing in the bay. This will obviously affect the abundance and distribution of scallops in the bay. To separate out farm and fishing effects would require an intensive sampling programme over a large spatial scale and we believe that this is beyond what could reasonably be required of monitoring for effects of the new farm. We accept this is a very difficult one to address because of the commercial fishery and recommend that there is a commitment to analyse catches and trends for the Bay from commercial data that is available.

- In relation to Consent Condition 63f:

- ◆ Again there was concern that the real extent of the footprint is determined and monitored not just the ES gradient sites. This could be addressed from the earlier wider benthic surveys by Cawthron if suitable as baseline,

We agree that the more extensive benthic surveys done for the AEE provide a suitable baseline for this, as discussed above. Ok

- ◆ Reef species and sites of importance are covered above.

- In relation to Consent Condition 77a (specifically the Mauri of the water in The Sounds):

- ◆ With this consent condition, the Board of Inquiry made it clear that mauri is an important aspect of the monitoring. The concept of mauri is a central tenet in Maori environmental management, and indeed wider Maori views of the world. The way mauri is monitored and managed is locally unique to any particular Maori group. The PRP are therefore of the opinion, that for each of the farm sites, only local Maori representatives can be suitably qualified to undertake monitoring in relation to mauri.
- ◆ The PRP therefore recommend that the consent holder and local Maori representatives together devise an acceptable approach to monitoring mauri. One consideration is that during the process of creating their CIA reports, observations by local Maori representatives may well serve as an existing baseline for future comparison.
- ◆ For Ngati Kuia, no amount of impact on mauri was acceptable, but there was reluctant acceptance that changes to mauri are likely to occur.

We accept the PRP's recommendations and will not incorporate any attempts to monitor Māuri within the Baseline Plan. The PRP see this as something that needs to be discussed between iwi and King Salmon but would recommend that observations by iwi form part of the next stage of monitoring.

- In relation to Consent Condition 77b, no further specific matters were raised.