



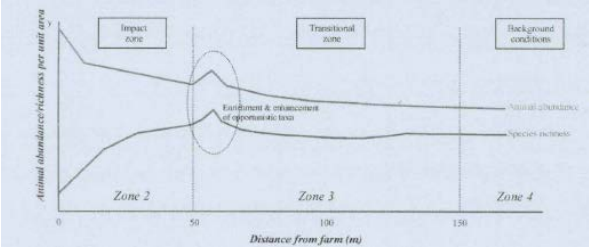
# The New Zealand King Salmon Company Limited- 2015 Compliance Report for Coastal Permit (040217)

## Assessment of Compliance with Resource Consent U040217

This report sets out the compliance status for the disposal of discharge from the New Zealand King Salmon Otanerau Bay Site. The information in this report is based on the 'Environmental Impacts of the Otanerau bay Salmon Farm: Annual Monitoring 2015' Report provided by Cawthron Institute and additional information dated 28 June 2016.

Compliance Status has been indicated using a monitoring traffic light system where **green** indicates compliance; **yellow** indicates technical non-compliance; **orange** indicates that corrective or remedial action(s) is required and a time frame for completion has been set, and **red** indicates non-compliance.

Please note that the following consent conditions are representative only, they do not include the complete list of conditions of consent.

Condition	Comment	Compliance Status															
<p><i>Coastal Permit-Discharge to Seawater</i>                      2. Only extruded pellets or similar shall be fed at the marine farm.</p>	<p>The annual monitoring report discusses the pellets distributed between November 2014 and October 2015.</p>																
<p><i>Staging of discharge volumes</i>                      Stage 2.                      7. Following receipt by Council of the monitoring report specified under stage 1 above and subject to any review of conditions of this consent specified in condition 23, the consent holder may for the following year discharge a maximum of 4000mT per annum.</p>	<p>A total of 1,011 Tonnes of feed was discharged into the salmon farm between November 2014 and October 2015. This is well below the maximum consented discharge volume.</p>																
<p><i>Environmental Quality Standards</i>                      13. The environmental quality standards (EQS) that shall be applied for seabed effects follow the model as presented in the application i.e. seabed effects are zoned around the cages to allow for a mixing or transition zone. Outside this zone no adverse effect on the seabed is allowed. Three zones under and around the marine farm shall be established as follows:                      a. Referred to as 'Zone 1' - Beneath the cages and out to 50m from the cages.                      b. Referred to as 'Zone 2' - From 50 m to 150 m from the outside edge of the cages.                      c. Referred to as 'Zone 3' - Beyond 150 m from the outside edge of the cages.</p>	<p>These zones are used for monitoring in the annual monitoring report</p>																
<p>16. The EQS in each zone is as follows:</p> <table border="1" data-bbox="92 1451 683 1783"> <thead> <tr> <th>Zone</th> <th>Spatial Extent</th> <th>Description and Bottom Line</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Beneath the cages and out to 50 m from their outside edge</td> <td>Sediments become highly impacted and contain low species diversity, dominated by opportunistic taxa (e.g. polychaetes, nematodes). It is expected that a gradient will exist within this zone, with higher impacts present directly beneath the cages.</td> </tr> <tr> <td>2</td> <td>From 50 m to 150 m from the outside edge of the cages</td> <td>A transitional zone between zones 2 and 4. Within this zone, some enrichment and enhancement of opportunistic species may occur, however species diversity remains high with no displacement of functional groups. It is expected that a gradient will also exist within this zone.</td> </tr> <tr> <td>3</td> <td>Beyond 150 m from the outside edge of the cages</td> <td>Normal conditions (i.e. background or control conditions).</td> </tr> <tr> <td>All Zones</td> <td>These conditions are not permitted beneath any NZKS farm</td> <td>Sediments that are anoxic and azoic (i.e. no life present) will not be permitted.</td> </tr> </tbody> </table> 	Zone	Spatial Extent	Description and Bottom Line	1	Beneath the cages and out to 50 m from their outside edge	Sediments become highly impacted and contain low species diversity, dominated by opportunistic taxa (e.g. polychaetes, nematodes). It is expected that a gradient will exist within this zone, with higher impacts present directly beneath the cages.	2	From 50 m to 150 m from the outside edge of the cages	A transitional zone between zones 2 and 4. Within this zone, some enrichment and enhancement of opportunistic species may occur, however species diversity remains high with no displacement of functional groups. It is expected that a gradient will also exist within this zone.	3	Beyond 150 m from the outside edge of the cages	Normal conditions (i.e. background or control conditions).	All Zones	These conditions are not permitted beneath any NZKS farm	Sediments that are anoxic and azoic (i.e. no life present) will not be permitted.	<p>The report discussed the results gained in regards to 'zone 1' the three pen stations. The report outlines that the pen stations had muddy sediment and mussel shell debris with bacteria. The sediment organic matter concentrations were elevated. The average redox potential was negative and lower than all other stations. Sulphide levels were extremely elevated. The taxa richness was very low while diversity, margalef richness and EQR scores were also lower than the control sites. Species abundance was variable between pens (pen 2 was higher than the control, pen 3 was lower than the control) Pen 3 had higher copper concentrations than pen 1-2 which exceeded ISQG-low. The zinc concentrations across all three pens exceeded the ISQG-high trigger level. DO was reduced mid-water by approximately 20% which decreased with depth. Turbidity was increased under the beds. The report summarises that the stations are at hypoxic conditions with moderate enrichment, lower redox and higher sulphide compared with the controls. The biological communities indicated highly enriched conditions. The ES assessment was</p>	
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	<p>summarised as being 5.9 at Pen 1, 5.6 at Pen 2 and 4.8 at Pen 3 therefore they are meeting condition 16. Pen 1 in particular is almost meeting the compliance limit therefore the site would require a major alert response under the BMP guidelines.</p> <p>The report also outlines the results of the monitoring of zone 2. The 50-150m sediment organic matter concentrations were similar to the control sites. The copper and zinc concentrations were below the ISQG-low trigger level. Turbidity was increased at this station. The overall ES for the 50-150m stations were 3.2 and 2.3 respectively, therefore they are compliant.</p> <p>At zone 3, the control sites sediment was similar to the 50-150m stations with shell debris. Copper and Zinc wasn't measured due to historical data being low. Turbidity was lessened at this station. The ES for the control stations were 2.2 and 1.8 which meets the conditions.</p>	
<p>17. ENVIRONMENTAL MONITORING AND REPORTING Prior to exercising the consent, the consent holder shall prepare an environmental monitoring programme to show compliance with the Environmental Quality Standards set out in conditions 12 to 16 of this consent.</p>	<p>An annual monitoring plan and methods for 2015 was submitted to Council in October 2015. This plan covers five King Salmon farming operations.</p>	
<p>19. The survey/monitoring programme shall describe: a. the surveys, baseline and/or ongoing, to be undertaken; b. location and extent of environmental features within the vicinity and potential impacts on these features; c. the environmental performance indicators that are to be used to assess effects; d. methods, location and frequency of sampling, including reference sites; e. a definition of species diversity and what comprises the transitional zone; and f. recording and reporting requirements</p>	<p>The monitoring programme incorporates the water column, sea bed, and heavy metal sampling that will be undertaken. All aspects of condition 19 were met in the 2015 monitoring programme.</p>	
<p>20. ONGOING ANNUAL MONITORING A monitoring report is to be prepared at least annually, and will include: a. a description of the types, location and area of structures within the 2 hectare authorised area and a description of any movement or relocation of structures over the previous year; b. presentation of monitoring results; c. a comprehensive and integrated report on the effects of the development and operation of the farm to date, including maximum biomass of fish and feed volumes discharged over that year; d. an assessment as to whether or not the farm is having a significant adverse effect on the environment or not; e. recommendations as to how any adverse effects on the environment can be avoided, remedied or mitigated; and f. the adequacy of the monitoring programme. NB: The monitoring programme shall be public record.</p>	<p>A monitoring report was completed by Cawthron Institute dated February 2016 and submitted to Council in March 2016.</p> <p>The report covers all aspects of this condition as required except the recommendations as to how any adverse effects on the environment can be avoided, remedied or mitigated. The report concludes that the seabed underneath the pens shows hypoxic conditions with an overall ES of 5.9 at pen 1 and 5.6 at pen 2.</p> <p>Cawthron made a recommendation in the report to carry out additional replicate sampling as per the BMP. Following a request for further information in relation to the measured benthic effects, Cawthron provided the recommendation that an appropriate management response is explored to mitigate the measured benthic effects. TRIM reference 16120740.</p>	
<p>21. The consent holder shall commission an independent person (or persons) with appropriate expertise in environmental monitoring to undertake the monitoring and reporting work required by the conditions of this consent.</p>	<p>The annual monitoring and reporting was completed by the Cawthron Institute which are suitably qualified and independent.</p>	
<p>22. The Council may require an independent peer review of the surveys, monitoring and reporting required under conditions 15 to 20 above. Such a peer review will be at the cost of the consent holder.</p>	<p>The annual monitoring report was independently reviewed by Dr Kenny Black.</p>	-

**Please Note:**

Pursuant to section 36 of the Resource Management Act 1991 and the Marlborough District Council's schedule of fees, the consent holder shall be responsible for all costs associated with the monitoring of this consent in accordance with the schedule of fees.

Where non-compliance is noted on an inspection visit, remedial action is identified and advised to the consent holder in writing. A follow-up visit may confirm that appropriate remedial action has been taken. No charge is made for this visit if the consent holder is at this stage complying with the consent conditions. If the conditions of the consent are not being complied with the consent holder is charged and subsequent visits maybe required.