

APPROVAL TO TRIAL 5 WASTE CAPTURE UNITS ON PENS WITHIN THE AREA OF LEASE NOS. 219 AND 214, BEING AN AREA WITHIN THE AREA COVERED BY THE MACQUARIE HARBOUR MARINE FARMING DEVELOPMENT PLAN OCTOBER 2005

In accordance with Management Control 3.0.1 of the *Macquarie Harbour Marine Farming Development Plan October 2005* ("the Plan"), I provide that in relation to the area covered by all of the following leases:

- marine farming Lease No. 219 (lessee-Aquatas Pty Ltd),
- marine farming Lease No. 214 (sub-lessee-Tassal Operations Pty Ltd);

being an area within the area covered by the Plan, waste capture systems as described in the draft *Environmental Management Plan for Salmonid Aquaculture Waste Capture Systems in Fish Cages, Macquarie Harbour* dated 31 May 2017 may be trialled on no more than 5 salmon farming pens in Macquarie Harbour, subject to the following condition:

1. Monitoring and reporting must be undertaken in accordance with the requirements outlined at Attachment 1.

In accordance with Clause 1.4 of Schedule 3 of Marine Farming Licence No. 219 and Clause 1.4 of Schedule 3 of Marine Farming Licence No. 214, waste extracted from the systems must be captured and transported to a facility that is approved to receive it.

The date from which Tassal Operations Pty Ltd and Aquatas Pty Ltd must comply with my determination is 6 June 2017.

Dated: 6 June 2017



Wes Ford
DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Attachment 1: Macquarie Harbour waste capture trial, monitoring and reporting

Monitoring pre waste capture trial	Monitoring During waste capture trial	Waste testing and characterisation	Weekly reporting to EPA for the duration of the trial must include the following	Additional reporting at the completion of the trial
<p>Determine benthos condition Pre-condition of benthos beneath cage using ROV</p> <p>Detailed infauna analysis via grab samples</p> <p>Benthic respiration studies</p> <p>Metals and metalloids (totals and dissolved) REDOX Nutrients BOD COD DO TOC Sulphides</p> <p>Water Quality (control site & fallow site)</p> <p>Physico-chem (full vertical profile, 1m intervals) turbidity, pH, temperature</p> <p>Grab samples “down-current” and “up-current” but immediately adjacent to the cage. Collect samples at depths 0m, 10m, 20m, 30m (Needs to try and capture stratification and density)</p> <p>Analyse for: Nutrients (total and dissolved) fine particulates TOC DOC</p>	<p>Roll out schedule Monitor progress of installation to pens Monitor rate of growth of biomass against biomass cap</p> <p>Feed Total feed volume Feed TN and TP levels</p> <p>Waste settlement Record settlement time of uneaten food and faeces into capture device.</p> <p>Determine effectiveness of waste capture With capture device in place: ROV of fixed cameras on the outside of the cage Sediment traps</p> <p>Monitor rate of waste capture Monitor for escape of waste from capture systems</p> <p>Determine benthos condition Condition of benthos beneath cage using ROV</p> <p>Detailed infauna analysis via grab samples</p> <p>Metals and metalloids (totals and dissolved) REDOX Nutrients BOD COD DO TOC Sulphides</p> <p>Water Quality – determine if waste material captured is impacting water quality (including during extraction events)</p> <p>Real time monitoring of key success parameters (oxygen saturation at depth, oxygen demand at depth, sediment redox potential?)</p> <p>Physico-chem (full vertical profile, 1m intervals) turbidity, pH, DO, conductivity, temperature</p> <p>Grab samples “down-current” and “up-current” but immediately adjacent to the waste capture system. Collect samples at depths 0m, 10m, 20m, 30m (Needs to try and capture stratification and density)</p> <p>Analyse for: Nutrients (total & dissolved) fine particulates TOC DOC</p>	<p>Chemically characterise captured waste Metals and metalloids (totals and dissolved) REDOX Nutrients BOD COD DO TOC Electrical conductivity/ salinity</p> <p>Physically & chemically characterise cake % Moisture Volume Metals and metalloids (totals) REDOX Nutrients TOC Electrical conductivity/ Salinity</p> <p>Physically and Chemically characterise supernatant Volume Metals and metalloids (totals) Sulphides REDOX Nutrients Turbidity BOD COD DO TOC Electrical conductivity/ Salinity</p>	<p>For the duration of the trial, the following must be reported weekly in writing to EPA Tasmania:</p> <ul style="list-style-type: none"> • progress of installation of pens • rate of growth of biomass against biomass cap • quantity of feed and faeces captured by the waste capture systems • feed and faeces captured as a % of feed input • quantity of feed and faeces waste escaping the waste capture systems. • actions taken to improve capture of feed and faeces waste • cake classification details and storage / disposal /management arrangements • supernatant classification details and storage / disposal /management arrangements • faeces vs uneaten food being collected in the capture systems • all monitoring results against appropriate benchmarks and / or criteria • all incidents and complaints • issues to be resolved 	<p>When the trial is nearing completion a report must be provided which addresses the following points:</p> <ul style="list-style-type: none"> • In determining whether the trial is a success report and discuss the following: <ul style="list-style-type: none"> - estimate or measure volume of the feed and faeces waste that is currently escaping pens without waste capture systems; - measure waste that was captured expressed as a % of feed input; - calculate O₂ consumption of the waste material assuming no capture; - estimate (reduction of) O₂ consumption assuming complete capture of waste; - calculate (reduction of) O₂ consumption based on waste actually captured • Provide a summary of all monitoring data and draw conclusions and make recommendations regarding the success of the trial. Particular attention should be given to risks associated with ‘full scale’ implementation of the waste capture systems • Findings are to be presented in terms of a conceptual model of the harbour. In particular, it may be useful to present conceptual models without waste capture and with waste capture • Final report rate of growth of biomass against biomass cap • Management recommendations regarding whether scaled up roll-out of waste capture systems can successfully deliver against the biomass cap, or whether other management - such as early harvest or some other management strategy or combination of management strategies are to be implemented