Title of Proposal - Kelly Channel Discharge, Macquarie Harbour, Tasmania

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Aquaculture

1.2 Provide a detailed description of the proposed action, including all proposed activities.

As part of Tassal's Waste Capture System (WCS) development at Macquarie Harbour, solid emissions from salmon farming operations are captured beneath selected salmon cages (using 900 gsm PVC liners) at Marine Farm leases 214 (Middle) and 219 (Gordon). Waste collected in the liners is removed from the base of the WCSs, pumped to the surface and stored in intermediate bulk containers (IBCs). Effluent is then transported to Tassal's processing facility at Strahan for further treatment (disinfection and dewatering).

The process for treating the extracted waste includes de-watering the primary emissions which comprise approximately 5% solids by weight. The liquid waste component, or 'supernatant' is transported and discharged through existing land-based sewerage infrastructure managed by TasWater.

Tassal has purchased a purpose-built water and fuel lighter (ex-RAN vessel – the 'Wallaby') to assist with waste capture and extraction activities from Tassal's leases within Macquarie Harbour. Waste extracted from beneath stocked cages will be separated, treated and disinfected onboard the Wallaby using a mechanical separator (centrifuge) to de-water the primary effluent and retain the solid and liquid components within separate storage locations. The liquid 'supernatant' component of the separated emissions will be subjected to chemical treatment (chlorination) for biosecurity and disinfection purposes consistent with the Australian AQUAVETPLAN.

Whilst the current disposal arrangements for solid and liquid emissions is manageable in terms of volumes extracted, Tassal requires additional options for disposal of the de-watered emissions as additional waste capture liners are installed across an increasing number of cages, and fish biomass increases. Tassal believes that the most efficient way in which in the waste can be adequately captured, treated and disposed of is through:

- Pumping the extracted waste from stocked cages directly onboard the 'Wallaby'

- Separation of the extracted waste into solid and supernatant components using the onboard mechanical separator (which can separate up to 20,000 L/h of extracted waste)

- Disinfection (using chlorine dioxide) and storage of supernatant and solid emissions within separate sullage tanks onboard the 'Wallaby'

- Discharge of treated supernatant within the proposed discharge zone during an ebb tide



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Transport of solid emissions to approved land-based disposal facility (for re-use as compost)
The discharge of treated supernatant will comply with the requirements of the AQUAVETPLAN and Tasmanian EPA emission and treatment guidelines.

PROPOSED ACTION

The treated supernatant will be discharged via the 'Wallaby' at Kelly Channel. The proposed discharge point is located approximately 2km from Hells Gates, within Macquarie Harbour (see 1.3 below). Kelly Channel is characterised by high water flows on ebb tides.

Predicted (monthly) volumes of supernatant discharge between November 2017 and May 2018 are relatively small, and range from approximately 867 m3 to 1531 m3. Based on the capacity of the Wallaby to pump the supernatant into the receiving environment, and the prevailing current regime during an ebb tide, Tassal proposes that a discharge frequency of approximately once per week from the Wallaby (and an approximate discharge volume of 300m3) during an ebb tide would meet with the projected volumes of waste generated from farming operations. Although the Wallaby has a storage capacity of 1 ML, a more frequent (weekly) discharge frequency would avoid excessive discharge flows during an ebb tide event.

The proposed discharge operation via the 'Wallaby' is a short-term proposition (from November 2017- May 2018). Tassal believes that waste capture extractions from liners in Macquarie Harbour will lead to longer term beneficial impacts to benthic conditions within the harbour – which is subject to a range of anthropogenic and natural environmental conditions that are difficult to predict and confound expected environmental responses associated with finfish aquaculture experienced elsewhere in Tasmania. Preliminary observations over the initial 3 months of waste capture trials (including the results from environmental monitoring) suggest that this initiative may prove to be successful in the long-term, and provide significant environmental benefits to overall benthic health of sediments within the harbour.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Proposed Discharge Location	1	-42.228982683081	145.22677686639
Proposed Discharge Location	2	-42.228961076687	145.22690046279
Proposed Discharge Location	3	-42.228706857702	145.2268146321
Proposed Discharge Location	4	-42.228579747826	145.22741544692
Proposed Discharge Location	5	-42.229024631273	145.22741544692
Proposed Discharge	6	-42.228982683081	145.22677686639



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Area Location

Point

Latitude

Longitude

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The proposed action will take place in Kelly Channel, Macquarie Harbour.

Macquarie Harbour is a large (276 km2) microtidal estuary on the west coast of Tasmania that extends for approximately 33 km north-south and for 9 km east-west (Koehnken, 2001). The harbour mouth of Macquarie Harbour is narrow and shallow channel only about 500 m wide in the north-west corner of the harbour at Macquarie Heads known as Hells Gates (Koehnken, 2001).

It is proposed that the discharge of treated effluent occurs on the western entrance of the Kelly Channel. In most cases, the waters are characterised by high water flows on ebb tides. There is a complex interplay of variables that determine water inflows and outflows from Macquarie Harbour. Under high freshwater flow conditions, inflow of oceanic water is temporarily blocked from entering the mouth of the harbour, therefore allowing the exit of large volumes of water over more than half the tidal cycle (Koehnken, 2001; Hearn, 2000). Oceanic recharge occurs when a combination of sustained north westerly winds, low pressure systems and spring tides result in a net forcing of marine waters into the harbour.

This site is approxiamtely 12 km from the township of Strahan (population of approximately 700 people; LocalStats, 2011).

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

The proposed discharge zone (footprint) occupies an area of approximately 7.5 hectares within estuarine waters.

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Kelly Channel, inside the entrance to Macquarie Harbour

1.8 Primary Jurisdiction.



Tasmania

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 11/2017

End date 05/2018

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

The Environmental Protection Authority (Tasmania) is responsible for the environmental regulation of the proposed discharge of treated supernatant into the receiving environment.

The *Environmental Management and Pollution Control Act* (EMPCA) 1994 provides the legislative basis for managing the prevention of environmental harm from pollution and waste.

Subordinate to this Act, the *Environmental Management and Pollution Control (Waste Management) Regulations 2010* provide the authority for the Tasmanian EPA to issue generally applicable approved management methods for the disposal of controlled waste products (such as the treated supernatant).

Tassal has consulted with the Tasmanian EPA regarding this proposed action and is in the process of submitting an Environmental Management Plan (EMP) that outlines detailed project specific information (i.e. chemical properties of effluent, treatment and disinfection processes), risk management protocols associated with proposed emissions (i.e. ecosystem and biosecurity management), assessment of potential impacts, environmental monitoring requirements, reporting and consultation with key stakeholders.

This action approval of Tassal's EMP, including environmental monitoring strategies and other studies will confirm only a low level of environmental disturbance will result within the proposed mixing zone and surrounding waters.



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1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

On 30 June 2017, after extensive review and assessment, the Tasmanian EPA provided Tassal with the authority to implement a WCS in Macquarie Harbour. This enabled the proponent to determine the performance and ability to safely capture waste derived from underneath salmon pens.

Due to the success of the initial results from the waste capture program, and after further environmental investigations, consultation with the community and the Tasmanian EPA, Tassal has reconfigured a range of options for treatment and disposal of extracted waste from beneath salmon cages. The WCS has evolved as a successful environmental initiative. The net benefit of the adoption of WCSs in Macquarie Harbour includes improved benthic condition - which has been the subject of considerable intensive scientific research over the last 3 years. Tassal has engaged key stakeholders and community groups throughout the development of the WCS design, installation and environmental monitoring stages.

Tassal undertook a community forum meeting on 27 July 2017 at Strahan to provide an overview of the WCS and initial results from trials and monitoring activities. Consultation with the local community, including representatives from tourism, council, local business and industry is on-going, with further community briefings scheduled for September 27 at Strahan. Additional information on the range of options for treating extracted waste (including the discharge of treated supernatant at Kelly Channel) will be a focus for the meeting.

Tassal has engaged with the Tasmanian Institute of Marine and Antarctic Studies (IMAS) regarding a range of monitoring activities associated with WCS development in Macquarie Harbour and has developed a range of environmental monitoring strategies closely aligned with the broader environmental studies being undertaken by IMAS within the Harbour.

Tassal has conducted an Aboriginal Heritage Assessment through Aboriginal Heritage Tasmania (AHT). The assessment report shows there are no Aboriginal Heritage Sites recorded within or close to the proposed discharge location, and it is highly unlikely Aboriginal Heritage would be present.



1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

In 2012, Tassal was one of three finfish aquaculture companies that prepared a comprehensive Environmental Impact Statement (EIS) as part of an amendment to the Macquarie Harbour Marine Farming Development Plan October 2005. This EIS detailed the environmental conditions of Macquarie Harbour, including descriptions of hydrology, bathymetry, water quality, meteorological influences, substrates, benthic fauna, marine vegetation, World Heritage values, fish and threatened species. Although this EIS informed on the potential impacts associated with finfish aquaculture in Macquarie Harbour, it is relevant in terms of the proposed action because it provides context to the environmental conditions and natural values (i.e. Matters of National Environmental Significance) which have been considered as part of this referral.

The link to this EIS is http://dpipwe.tas.gov.au/Documents/Addendum%20to%20EIS%20of%20 Draft%20Amendment%201%20to%20Macquarie%20Harbour%20MFDP.pdf

Due to unforseen environmental responses from a range of natural and anthropogenic impacts (including finfish aquaculture) in the waters of Macquarie Harbour over the least 2-3 years, significant work has been undertaken by IMAS to synthesise all of the available studies and research conducted in recent times. This work has resulted in the development of more targeted research to enable industry, scientists and regulators to better predict when environmental conditions become naturally constrained, taking account of sustainable finfish production within the harbour.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No



Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The <u>interactive map</u> tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• <u>Profiles of relevant species/communities</u> (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• <u>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;</u>

• <u>Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and</u> <u>Actions by Commonwealth Agencies</u>.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No



2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

Yes

2.6.1 Is the proposed action likely to have ANY direct or indirect impact on the Commonwealth marine environment?

No

2.6.2 Describe the nature and extent of the likely impact on the whole of the environment.

The discharge of treated supernatant into suface waters at Kelly Channel (Macquarie Harbour) will cause an immediate and localised impact to water quality. A preliminary mixing zone model has been undertaken by Consulting Environmental Engineers (CEE) (see Attachment 8) and demonstrated that the mixing zone at the proposed discharge location is small. Discharge events will occur in a high current flow environment that is likely to dilute and disperse the supernatant rapidly (CEE, 2017), resulting in a low likelihood of impact to sediments, surrounding waters and the coastal environment (including flora and fauna). One discharge event (300m3) represents approximately 12% of the volume held by an olympic swimming pool.

The modelling conducted by CEE was calculated using supernatant characteristics that have since been retested. A mechanical separator (centrifuge) will be installed on-board the 'Wallaby' and the supernatant chemical properties will be re-tested to comply with the Tasmanian EPA requirements. In addition, prior to any approved release of emissions at the proposed discharge location, the modelled mixing zone and plume will be verified using dye tracer studies.

The initial dilution modelled for Kelly Channel as effluent is discharged from the 'Wallaby' will be 15:1 and full dilution is predicted to occur as the plume travels down-current through Macquarie Heads. Within 500 m from discharge, a high total dilution of at least 500:1 is predicted. The treated supernatant density characteristics will result in a submerged plume that will not report to the surface. The resulting midwater plume will be advected from the harbour. Dye tracer studies will be undertaken prior to any approval of discharge activities to confirm the extent of the plume in the water column.

There is very little risk of cumulative environmental or ecological impacts occurring. This is based on the long duration between discharge events (1-2 weeks or longer between discharge events, weather and ebb-tide dependent), this activity will be occurring over a relatively short



time frame (between November 2017 and May 2018) and it will be discharging into waters with high dilution properties.

The proposed option of discharging treated effluent at Kelly Channel represents an overall beneficial outcome in terms of the removal of a waste product into waters where the dilution and dispersal characteristics of the receiving environment provide for a more effective waste treatment option than would otherwise be the case (i.e. such as disposal of emissions through existing sewage treatment plant (STP) outfall near Strahan)

An Environmental Risk Assessment (see Attachment 4) has been undertaken on potential impacts of the proposed action on Matters of National Environmental Significance.

2.6.3 Do you consider this impact to be significant?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?



No

2.13 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No



Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The marine flora and fauna relevant to the project area include a range of bird species, soft sediment estuarine fish, marine mammals (present at times) and invertebrate communities. Seagrass and macroalgal assemblages within the harbour are generally poor due to the tannins released into the harbour from freshwater inflows from the Gordon and King Rivers and Birchs Inlet. The project area is characteristic of estuarine environments off Tasmania's west coast, where low nutrient waters support limited biodiversity. A range of threatened (such as the Maugean Skate) and introduced species can be found within Macquarie Harbour (see http://dpi pwe.tas.gov.au/Documents/Addendum%20to%20EIS%20of%20Draft%20Amendment%201%2 Oto%20Macquarie%20Harbour%20MFDP.pdf). A synthesis of environmental research undertaken by IMAS (Ross and MacLeod (2017) is attached.

3.2 Describe the hydrology relevant to the project area (including water flows).

Kelly Channel is a highly constrictive entrance to Macquarie Harbour and heavily dampens marine tidal effects (wave propagation and mixing) while still allowing a salt flux into the body of the harbour (Tong and Williamson, 1998). The hydrology within the project area is influenced by bathymetry of the harbour entrance, which includes a deep (up to 16 m) main channel on the western side and a shallow basin bordering the eastern side of Kelly Channel (CEE, 2017). Incoming and outgoing tidal velocities are most likely greatest in the main channel that borders the western bank of Kelly Channel.

Water inflow and outflow in Macquarie Harbour is dependent on a complex set of environmental variables, including wind strength and direction, barometric pressure, and west coast tidal cycles (Koehnken, 2005). The high quantities of freshwater input from Birch's Inlet, King River and Gordon River result in a bulk flow of water out of Macquarie Harbour (and can last for up to four days). Under high freshwater flow conditions, inflow of oceanic water is temporarily blocked from entering the mouth of the harbour, therefore allowing the exit of large volumes of water over more than half the tidal cycle (Koehnken, 2001; Hearn, 2000). Oceanic recharge occurs when a combination of sustained north westerly winds, low pressure systems and spring tides result in a net forcing of marine waters into the harbour. Tassal proposes that the discharge of treated effluent only occurs when the net flow of water is exiting the harbour (i.e. on an ebb tide).



The hydrology of the relevant project area has been significant modified by anthropogenic activity due to the addition of a training wall on the western side of Kelly Channel.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

Sediments in Kelly Channel are likely to comprise coarse reworked marine sediments. Fringing reef hasbeen identified along the western bank of the training wall and around The Cap. Silt sediments have accumulated on the western sides of the training wall within Kelly Channel (Lucieer et al., 2009).

The tannin stained water of Macquarie Harbour limits light penetration to the deeper zones of the harbor and consequently limits the growth of marine vegetation (Bell et al., 2016). Lucieer et al. (2009) undertook habitat mapping and identified that the region is depauperate of native vegetation on both the sandy and silty sediments.

The land south of Pilot Bay includes a geoconservation site, however no geoconservation sites are within 1000 m of the proposed discharge location.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The immediate project area is located in Kelly Channel. Water movement through the entrance of Macquarie Harbour is characterised by high kinetic energy flows and head loss (Tong and Williamson 1998). This rapid water movement facilitates scouring and removal of fine grained sediments and organic matter, leaving only sand and cobble (Lucieer et al., 2009). Consequently, there are limited natural features or important unique values in the benthic zone of the project area. However, the area (in particular, Macquarie Heads and Ocean Beach) supports a unique recreational fishery, being the only waterway in Tasmania where gillnetting is permitted at night (DPIPWE, 2017). The popular species caught in this area include, Australian salmon, Atlantic salmon, red cod, greenback flounder, whitespotted dogshark, brown trout, silver trevally, barracouta, morwong, mullet, bastard trumpeter, pink ling and blue grenadier (DPIPWE, 2017).

Dilution of the effluent plume was modelled by CEE (2017) and demonstrates rapid dilution within 500 m of the discharge location. It is likely that interactions with recreational species will be limited to only those occurrences during the proposed discharge operations (i.e. approximately once per week), and within a small zone of effect (mixing zone).



The Maugean skate is known to occur near the entrance to Macquarie Harbour – IMAS tagging studies detected two tagged individuals at Macquarie Heads . However, both skates were later detected back within the main harbour. There is no evidence of skates leaving Macquarie Harbour permanently. Discharge of the supernatant into Kelly Channel will only occur episodically (once per week) on the ebb tide, ensuring wastes flow out of the harbour into a higher energy marine environment (i.e. outside of Macquarie Harbour).

3.5 Describe the status of native vegetation relevant to the project area.

Habitat mapping conducted by Lucieer et al. (2009) suggested the proposed discharge location is depauperate of native vegetation on sandy sediments. The status of native vegetation on the fringing reef is unknown.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The project area is within Kelly Channel where the span of the channel is approximately 800 meters. The bathymetry of the area includes a deep (up to 16 m) main channel on the western side and a shallow basin (less than 3.5 m) bordering the eastern side of Kelly Channel.

3.7 Describe the current condition of the environment relevant to the project area.

The project area is on the cusp between a modified environment (inside Macquarie Harbour) and a high energy exposed coastline environment (Ocean Beach). The environment in Macquarie Harbour is highly modified, being influenced by multiple anthropogenic inputs including mining, forestry, agriculture and aquaculture. Mining operations began in the area in the 1890s and it is estimated that approximately 10 Mt of fine tailing were discharged to the harbour through the King River (Augustinus et al., 2010). This resulted in a lasting heavy metal signature in the sediments and water column on a gradient away from the mouth of King River which reduces to almost background levels towards the entrance to Macquarie Harbour (Augustinus et al., 2010, Koehnhen, 2005). For example, adjacent to Macquarie Heads the evidence of copper is greatly reduced (Koehnhen, 2005), indicating that concentrations would be low to moderate at Kelly Channel. Water quality at Kelly Channel is likely to good due to the strong currents and flushing through the area. The construction of the training wall has resulted in a buildup of silt behind the wall and would have resulted in modifications to the benthic environment.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

The nearest Commonwealth Heritage Place is the Cape Sorell Lighthouse which is



approximately 5 km from the proposed discharge location.

3.9 Describe any Indigenous heritage values relevant to the project area.

No indigenous heritage values were identified within the marine environment relevant to the proposed discharge location footprint.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The proposed discharge location is within the marine environment and located over Crown land.

3.11 Describe any existing or any proposed uses relevant to the project area.

The proposed discharge location is below the entrance to Macquarie Harbour. The beach to the east of Kelly Channel is popular with recreational fishers and 4WD enthusiasts. The harbour entrance is utilised by recreational and commercial fisherman, boat operators and tour operators. In excess of two large boats (primarily tour operators) transit the harbour mouth on a daily basis.



Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

The following measures will be undertaken to reduce the impact from the proposed action:

1. Treatment/disinfection of supernatant prior to discharge

The processing and release of treated supernatant into Kelly Channel will also include prcautionary decontamination under the direction of the Australian Aquatic Veterinary Emergency Plan (AQUAVETPLAN; http://www.agriculture.gov.au/animal/aquatic/aquavetplan). The AQUAVETPLAN provides a series of technical approaches to disease preparedness and proposes management responses and control strategies to reduce the risk of pathogens in the aquatic environment.

Disinfection methods for the treated supernatant will include the use of primary and secondary filtration and treatment using stabilised chlorine dioxide solutions to remove pathogens from the supernatant.

2. Ebb tide discharge at Kelly Channal

The treated supernatant will only be discharged on an ebb tide, thereby ensuring waste is transported out of Macquarie Harbour. The effluent plume, being considerably denser (more saline) than the surface waters, will initially fall below the surface layer, and will become diluted rapidly within the proposed discharge zone. The supernatant is likely to become well diluted as it submerges beneath the surface layer. Dye tracer studies will be undertaken to verify the initial dilution model/mixing zone prior to any approval from the EPA to allow the discharge of supernatant at the proposed discharge location.



3. Sub-surface multi-port diffuser

Mixing zone models have been conducted with an estimation that the discharge of emissions into the receiving environment will occur at an acceptable rate. A multi-port diffuser will be installed onto the 'Wallaby' to improve the dilution of treated supernatant as it is being released. The diffuser design will discharge supernatant at high velocity to facilitate rapid initial dilution within surface waters.

4. Acoustic impacts

Marine mammals are particularly vulnerable to acoustic impacts. The acoustic disturbance generated by the proposed discharge operations is expected to be low. This development is not expected to impact marine mammal populations. As a measure of prudence, discharge will be paused if any cetaceans are seen within 1000m, and recommenced only when cetaceans have moved on from the area.

Refer to attachment 4 for Tassal's environmental risk assessment for measures to mitigate potential impacts to listed threatened species, communities and listed migratory species.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

Outcome 1. There will be no significant environmental impacts (direct or indirect) on any MNES

Outcome 2. The proposed action will not result in the population decrease in the size of an important population of a listed or migratory species.

Outcome 3. There will be no reduction in the area of occupancy of an important population within the proposed footprint (i.e. receiving environment and mixing zone)

Outcome 4. Treated effluent will be disinfected according to the AQUAVETPLAN prior to discharge into the receiving environment.

Outcome 5. A monitoring strategy (approved by the Tasmanian EPA) will be undertaken by



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Tassal to verify the mixing zone in the receiving environment, and ensure that the integrity of water quality and sediment condition is maintained at levels where the risk of significant impacts to the Maugean Skate population in Macquarie Harbour is considered to be low to negligable.

Outcome 6. The proposed action will not substantially modify, destroy or isolate an area of important habitat for listed or migratory species.

Outcome 7. Tassal will continue to work with key stakeholders, recognised experts and research institutions to ensure that improved environmental outcomes can be delivered through the development of novel and innovative waste capture systems in Macquarie Harbour.



5.1.1 World Heritage Properties

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

No
5.1.2 National Heritage Places
No
5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)
No
5.1.4 Listed threatened species or any threatened ecological community
No
5.1.5 Listed migratory species
No
5.1.6 Commonwealth marine environment
No
5.1.7 Protection of the environment from actions involving Commonwealth land
No
5.1.8 Great Barrier Reef Marine Park
No
5.1.9 A water resource, in relation to coal/gas/mining
No



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5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

Tassal has considered a range of options for the most appropriate disposal of the treated supernatant component extracted as part of the waste capture systems in Macquarie Harbour. Discharge of the treated effluent at Kelly Channel into approximately 2-3 m of water, on an ebb tide, is unlikely to pose a significant risk to MNES. The key reason for this is that the proposed action involves the removal of waste from beneath salmon cages, mechanically separating this waste into liquid and solid components, disinfecting the soluble 'supernatant', and discharging the soluble effluent into fast flowing waters moving through Kelly Channel.

The effluent will only be discharged on the ebb tide so the plume will be transported away from the harbour and into an area of high wave energy and exposed coastlines which will facilitate further rapid dilution. Dilution under worst case scenario has been modelled at 500:1 within 500 m of the discharge point.

It is unlikely that the effluent plume will be detected within the bottom waters of the proposed discharge zone or reach the substrate, the preferred habitat for the Maugean Skate. Therefore, it is unlikely that the preferred habitat of the Maugean Skate will be impacted from the proposed action.

The proposed action involves the episodic discharge of emissions into the receiving environment (approximately once per week), consisting of only moderate amounts of emissions per discharge event (approximately 300 m3 per event), and only occurring between the months of November 2017 to May 2018. The proposed action is unlikely to significantly impact upon any MNES within and around the proposed discharge location, or during the course of activities undertaken by the 'Wallaby'. The proposed action will result in net environmental benefit to Macquarie Harbour and improve benthic condition. Any effort to reduce benthic nutrient loading (and therefore dissolved oxygen consumption) in the harbour will only be beneficial for improving the benthic health of sediments.



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Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Tassal possesses a successful and distinguished record of salmonid aquaculture in Tasmania and is regarded as an international leader in sustainable seafood production. In 2014, Tassal was the first company to gain full Aquaculture Stewardship Council (ASC) certification across its entire area of operations. In 2016, Tassal was ranked as the number one salmonid company in the Seafood Intelligence global report measuring 150 key corporate, social and environmental performance indicators. In 2017, Tassal ranked as the number 2 benchmarked aquaculture business. This follows a position in the top three since 2012 which reinforces the high level of commitment to sustainable reporting and business practices

Tassal is currently maintaining 100% out-of-lease environmental compliance for all of its stocked marine leases.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Tassal is involved in litigation in both the Supreme Court of Tasmania and the Federal Court in relation to its operations. A competitor has instituted proceedings against the State and Federal regulators in relation to aquaculture operations in Macquarie Harbour. Tassal has joined these proceedings as a respondent alongside the State and Federal regulators. A third party has instituted proceedings against the Federal regulator in relation to aquaculture operations in Okehampton Bay. Tassal is involved in these proceedings as an interested party.



6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Tassal will be undertaking this action in accordance with its Environmental Policy (see attachment).

The key aspects of the policy are to:

- Identify and assess environmental risk and act to eliminate or minimise environmental impacts that arise from Tassal products, services and operations.

- Establish measurable objectives and targets aimed at preventing pollution and improving environmental performance; and monitoring and reviewing these measures to ensure that Tassal continually improve.

- Encourage equivalent environmental commitment from Tassal suppliers and contractors.

- Consult with and engage internal and external stakeholders, including local communities and regulators on relevant environmental matters.

- Implement and maintain Aquaculture Stewardship Council (ASC) certification.

- Encourage a sense of environmental responsibility among all employees through training, education and communication.

- Provide information of Tassal's environmental initiatives to the public through the Tassal website and other forums of open communications.

- Ensure the long term sustainability of the aquaculture salmonid industry, the environment Tassal operate within and all community and commercial partnerships.

As mentioned above Tassal is committed to ASC certification across all its operations.

The relevant criteria under the ASC standard that will be applied to the action include:

- Criterion 1.1 compliance with all applicable local and national legal requirements and regulations (4 indicators);

- Criterion 2.1 benthic biodiversity and benthic effects (4 indicators);



- Criterion 2.2 water quality in and near the site of operation (5 indicators);

- Criterion 2.3 nutrient release from production (1 indicator);
- Criterion 2.4 interactions with critical or sensitive habitats (2 indicators);
- Criterion 2.5 interactions with wildlife, including predators (7 indicators);
- Criterion 4.5 non-biological waste from production (2 indicators); and
- Criterion 4.7 non-therapeutic chemical inputs (5 indicators).

Tassal and its employees work hard to maintain its compliance against the 152 individual compliance criteria within the ASC standard. Tassal is continually making improvements and preparation for each audit is ongoing throughout the business.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes

6.4.1 EPBC Act No and/or Name of Proposal.

Tassal was a proponent in an industry-wide (other proponents included Petuna Aquaculture and Huon Aquaculture) referral submission regarding the expansion of finfish farming in Macquarie Harbour.

Referral number/title - EPBC 2012/6406: The expansion of marine farming operations in Macquarie Harbour, on the west coast of Tasmania.

Tassal was also a proponent in the development of finfish farming in Okehampton Bay.

Referral number/title - EPBC 2017/7954: Aquaculture/Zone 4 (Okehampton Bay) of the Great Oyster Bay and Mercury Passage Marine Farming Development Plan



Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Augustinus, P., Barton, C.E., Zawadzki, A., Harle, K. (2010). Lithological and geochemical record of mining-induced changes in sediments from Macquarie Harbour, southwest Tasmania, Australia. Environmental Earth Sciences. 61: 625-639	High	N/A
Bell, J., Lyle, J., Semmens, J., Awruch, C., Moreno, D., Currie, S., Morash, A., Ross, J. and Barrett, N. (2016) Movement, habitat utilisation and population status of the endangered Maugean skate and implications for fishing and aquaculture operations in Macquarie Harbour.	High	N/A
Bureau of Meteorology (2016) Wind speed and direction rose: Cape Sorell, accessed 25/08/2017 <http: www.bom.go<br="">v.au/cgi-bin/climate/cgi_bin_scr pts/windrose_selector.cgi?perio d=Annual&type=3&location=97 000&Submit=Get+Rose></http:>	High o	N/A
Consulting Environmental Engineers (2017) Ebb tide discharge option – July 2017.	Medium-High	Verification of mixing zone using dye tracer studies
Department of Primary Industries, Parks, Water and Environment (2017) Sea fishing and aquaculture, accessed 1/09/2017 < http://dpipwe.tas.g	High	N/A

Australian Government



 Australian Government

 Department of the Environment and Energy

Reference Source	Reliability	Uncertainties
ov.au/sea-fishing-aquaculture/p ublications-and-products/hot-fis hing-spots/macquarie-		
harbour#LocalFishingSpots>		
Hearn C 2000 An	High	N/A
assessment of potential		
changes to the circulation and		
water column characteristics of		
Macquarie Harbour (Western		
Tasmania) as a result of the		
Basslink Cable project. A report		
to Hydro Tasmania for the		
Basslink IIAS		
Koehnken, L. (2001) Basslink	High	N/A
Integrated Impact Assessment		
Statement Potential Effects of		
Changes to Hydro Power		
Generation Appendix 26:		
Macquarie Harbour Water		
Quality Assessment, Hydro		
LocalState (2011) Strahan	High	NI/A
Population (Tas), accessed	rign	
25/08/2017 <http: strahan.local<="" td=""><td></td><td></td></http:>		
stats.com.au/population/tas/tas		
mania/west-coast/strahan>		
Lucieer, V, Lawler, M, Pender,	High	N/A
A, Morffew, M (2009) Seamap		
Tasmania – Mapping the Gaps,		
accessed 1/09/2017 <http: td="" tem<=""><td></td><td></td></http:>		
peratereefbase.imas.utas.edu.a	l	
u/portal/search>		
Tong, G.D., Williamson, B.	High	N/A
(1998). Modelling of the		
hydrodynamics and chemistry		
or Macquarie Harbour, western		
Pomodiation Possarch and		
Nemonstration Program		
Supervising Scientist Report		
136. Supervising Scientist		
Canberra.		
Koehnken, L. (2005) Overview	High	N/A
of water quality in Macquarie	-	
Harbour and assessment of		
risks due to copper levels, a		

Australian Government

 Australian Government

 Department of the Environment and Energy

Reference Source	Reliability	Uncertainties
report to DPIWE.		
Department of the Environment	High	N/A
(2013). Significant Impact		
Guidelines 1.1 Environment		
Protection and Biodiversity		
Conservation Act 1999.		
Department of the Environment	,	
Canberra. Available from https:/	,	
/www.environment.gov.au/epbc		
/publications/significant-impact-		
guidelines-11-matters-national-		
environmental-significance.		
Edgar, G. J., Barrett, N. S. and	High	N/A
Last, P. R. (1999), The		
distribution of		
macroinvertebrates and fishes		
in Tasmanian estuaries. Journa	l	
of Biogeography,		
26: 1169–1189.		



Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

Two alternative options have been considered for the disposal of the supernatant, including:

Option 1) an additional harbour release option via existing TasWater sewage treatment plant (STP) outfall in Macquarie Harbour (1.5 km from Strahan)

Option 2) development of an ocean outfall off Ocean Beach

8.1 Select the relevant alternatives related to your proposed action.

Locations

8.3 What is the extent and location of your proposed alternative action?

Area	Point	Latitude	Longitude
TasWater STP	1	-42.166642082181	145.32619843105
Discharge Option			
TasWater STP	2	-42.166506895222	145.32721767048
Discharge Option			
TasWater STP	3	-42.167079449774	145.32738933185
Discharge Option			
TasWater STP	4	-42.167214635509	145.32638082126
Discharge Option			
TasWater STP	5	-42.167214635509	145.32638082126
Discharge Option			
TasWater STP	6	-42.166642082181	145.32619843105
Discharge Option			
Ocean Beach Outfall	1	-42.155167018089	145.17927260304
Option			
Öcean Beach Outfall	2	-42.155167018089	145.18596739674

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Point Latitude Area Longitude Option Ocean Beach Outfall 3 -42.159748130375 145.18562407398 Option Ocean Beach Outfall 4 -42.159748130375 145.17910094166 Option Ocean Beach Outfall 5 -42.155167018089 145.17927260304 Option

8.4 Provide a brief physical description of the property on which the alternative proposed action will take place and the project location (e.g. Proximity to major towns, or for off-shore projects, shortest distance to mainland.

Alternative 1. (Existing STP in Macquarie Harbour)

The existing TasWater outfall is located in northern Macquarie Harbour. The water at the outfall location is characteristic of an estuarine system that exhibits strong stratification between fresh, intermediate and marine layers. The outfall was surveyed in 2010 and found to be in good working order with no leaks or damage and all blocks and securing bands in place (CEE, 2017). The bed at the outfall location is fine silty sand, with no growth on the seabed (reflecting the negligible light conditions). There is debris, including trees and branches in the seabed which were cleared along the outfall (CEE, 2017). This alternative TasWater discharge location is approximately 1.5 km from the Strahan township.

Tassal continues to investigate the potential to discharge treated supernatant through alternative trade waste agreements via TasWater outfalls, including the outfall in Macquarie Harbour. The major challenge with trade wate agreements and discharge from existing outfalls continues to revolve around the high sodium content of the supernatant.

Alternative 2. Development of Ocean Outfall off Ocean Beach

This option would require significant public consultation and technical consideration. An ocean outfall would need to be established well offshore (approx 2 km) within marine waters considered to be some of the roughest in the world.

8.5 What is the size of the development footprint or work area of the alternative?

Alternative 1 = nil (existing facility). Alternative 2 = 70 Ha

8.6 Is the alternative proposal a street address or lot?

Lot

8.6.2 Describe the lot number associated with the alternative proposal.

Marine environment on Crown land for both alternatives

8.7 Is there a different local government area and council contact for the alternative?

No

8.8 Provide details of the context, planning framework and State/Local Government requirements.

For both options, regulatory approvals would be required from the Tasmanian EPA regarding the discharge of waste into the marine environment.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - the Tasmanian EPA regulates STPs (>100KI/day) in Tasmania under the Environmental *Management and Pollution Control Act* (EMPCA) 1994. The EPA's key activities in assessing and regulating STPs include:

- undertaking assessments under EMPCA in relation to proposals for new WWTPs or significant changes to existing WWTPs;

-developing legally binding environmental conditions for approved WWTPs through planning permits and / or Environment Protection Notices;

-applying the Tasmanian policy framework in relation to water quality management relevant to wastewater activities and updating environmental conditions where necessary;

-ensuring compliance with environmental conditions through collection and evaluation of discharge data and the impacts on the receiving environment

Local goverment is also a key regulator for smaller STPs (<100Kl/day).

Alternative 2 (Offshore outfall at Ocean Beach)- The environment in which this pipeline is proposed is extremely challenging and requires a significant level of research into local



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conditions and coastal processes to complete an accurate, detailed, engineered and failsafe design. This option may require consideration of potential impacts to EPBC listed and migratory species. In addition, this option would also require a Reserve Activity Assessment under the *Nature Conservation Act 2002*.

8.9 Describe any public consultation that has been, is being or will be undertaken (including with Indigenous stakeholders).

Tassal has consulted openly with the West Coast community regarding all aspects of the Waste Capture Program in Macquarie Harbour. Tassal undertook a community forum meeting on 27 July 2017 at Strahan to provide an overview of the porogram and initial results from extraction trials and monitoring activities. Consultation with local community, including representatives from tourism, council, local business and industry is on-going, with further community briefings scheduled for September 27 at Strahan. Additional information on the range of options for treating extracted waste (including the discharge of treated supernatant at Kelly Channel) will be a focus for the meeting.

Tassal has conducted an Aboriginal Heritage Assessment through Aboriginal Heritage Tasmania (AHT). The assessment report shows there are no Aboriginal Heritage Sites recorded within or close to the proposed discharge location, and it is highly unlikely Aboriginal Heritage would be present.

8.10 Describe any environmental impact assessments that have been, is being or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project for the alternative.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - this existing facility is operational and managed by TasWater under regulation through the Tasmanian EPA

Alternative 2 - (Offshore outfall at Ocean Beach) - initial technical assessment of potential impacts has been undertaken (see attachments 1 and 5).

8.11 Is the alternative activity part of a staged development or a component of a larger project?

No

8.12 Nominate any matters of National Environmental Significance that are likely to be impacted by this alternative proposal by ticking the relevant checkboxes.



8.13 Describe any impacts on the flora and fauna relevant to the alternative proposal.

Alternative 1 - existing STP outfall in Macquarie Harbour - the disposal of treated supernatant through TasWater's existing STP outfall in Macquarie Harbour is unlikely to contribute to any additional impacts to flora and fauna than would otherwise occur through the current operation of this facility. There may be elevated levels of sodium within the existing mixing zone.

Alternative 2 - (Offshore outfall at Ocean Beach) - the mixing zone of this alternative would be small. Environmental impacts to flora and fauna may occur during the development and construction stage, however, with appropriate mitigation measures identified and followed (i.e. such as the development of a shorebird habitat protection plan during breeding months), any impacts would be considered to be insignificant.

8.14 Describe the hydrology relevant to the alternative proposal (including water flows).

Alternative 1 - (existing STP outfall in Macquarie Harbour) - the King River and seawater inputs drive circulation within these alternative proposal areas (Koehnken, 2005). Based on broad-scale circulation models produced by Koehnken (2005), is can be assumed effluent will be retained within the north eastern section of Macquarie Harbour during incoming tides, and most likely move further into the harbour. The composition of water within Macquarie Harbour is controlled by riverine discharge, tides and wind (Koehnken, 2005). There is strong and consistent salinity stratification in Macquarie Harbour (Koehnken, 2005).

Alternative 2 - (Offshore outfall at Ocean Beach) - the receiving environment within this alternative footprint is microtidal (tides < 2 m), the mixing in this area will be driven by wave energy. Large waves buffet the coast and would likely result in well-mixed and uniform water quality throughout the water column. The intense wave action within these waters would also suggest that the seafloor would consist of mobile, re-worked sandy sediments. A mixing zone model was undertaken for this alternative by Consulting Environmental Engineers (CEE) and demonstrated that the mixing zone is small and driven by wave action.

8.15 Describe the soil and vegetation characteristics relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - Macquarie Harbour is typical of other esturine embayments on Tasmania's west coast that are characterised by silty organic



sediments and low abundance and production of benthic infauna. This low productivity is also affected by the low light penetration from the high levels of tannin-rich freshwater sources and limited input of nutrients (Edgar, 1999).

Alternative 2 - (Offshore outfall at Ocean Beach) - the outfall location would consist of sandy, unfegetated, unconsolidated sediments.

8.16 Describe any outstanding natural features and/or unique values relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - nil

Alternative 2 - (Offshore outfall at Ocean Beach) - nil

8.17 Describe the remnant native vegetation relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - nil

Alternative 2 - (Offshore outfall at Ocean Beach) - nil. However, a habitat assessment for an overland pipeline to Ocean Beach identified a range of native vegetation communities within the project area. No vegetation communities are listed as threatened on the *Tasmanian Nature Conservation Act 2002* or under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

8.18 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - the bathymetry at the existing TasWater outfall deepens from the shoreline, with the outfall located at 20 m depth and approximately 150 m from the shore. The bathymetry deepens to approximately 27 m in the centre of Long Bay.

Alternative 2 - (Offshore outfall at Ocean Beach) - an outfall established off Ocean Beach would be located within waters of a depth betwen 10-20 metres.



8.19 Describe the current state of the environment relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - highly modified

Alternative 2 - (Offshore outfall at Ocean Beach) - The west coast of Tasmania is extremely exposed and is subject to regular large swell. Between 2006 and 2016 the mean significant wave height (four times the standard deviation of the surface elevation) was between 2.8 ± 1.2 m and 3.2 ± 1.2 m. Every year, since 2006, maximum wave heights were in excess of 15 m at one or more times during the year.

8.20 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - nil

Alternative 2 - (Offshore outfall at Ocean Beach) - the nearest Commonwealth Heritage Place is Cape Sorell lighthouse which is approximately 5.5 km from the proposed outfall location The lighthouse is approximately 14 km west of Strahan.

8.21 Describe any Indigenous heritage values relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - nil

Alternative 2 - (Offshore outfall at Ocean Beach) - no Aboriginal heritage sites were identified during a field survey assessment of the pipeline corridor. A search of the Aboriginal Heritage Heritage Register shows that there no registered Aboriginal sites within or in the immediate vicinity of the corridor.

8.22 Describe any other important or unique values relevant to the alternative proposal.

The are no additional outstanding natural features and/or unique values relevant to the alternative locations.

8.23 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the alternative proposal.



Alternative 1 - (existing STP outfall in Macquarie Harbour) - the facility is operated by TasWater on Crown land

Alternative 2 - (Offshore outfall at Ocean Beach) - permitted use activity on Crown land and Conservation Reserve.

8.24 Describe the existing uses of the area relevant to the alternative proposal.

Alternative 1 - (existing STP outfall in Macquarie Harbour) - the facility is currently operational (approximately 650,000 L/day in peak season)

Alternative 2 - (Offshore outfall at Ocean Beach) - Ocean Beach is a popular tourist destination and important recreational area (fishing, camping and 4WD activities) for local residents on the West Coast.

8.25 Identify any proposed uses of the area relevant to the alternative proposal.

There are no known proposed uses for the area.

8.26 What are the proposed measures for any alternative action to avoid or reduce impact?

Under each alternative, waste will be captured and processed. There are several measures that can be taken to reduce impact impact to water quality, however the most important measure revolves around pathogen control and disinfection of any supernatant/emission. The processing and discharge of captured wastewater in all instances will require disinfection to remove the risk of introducing pathogens back into the harbour. Decontamination/disinfection will follow the procedures outlined in the Australian Aquatic Veterinary Emergency Plan (AQUAVETPLAN; http://www.agriculture.gov.au/animal/aquatic/aquavetplan). The AQUAVETPLAN provides a series of technical procedures to manage biosecurity risks and pathogen control in the aquatic environment.

Disinfection methods including the use of chlorine dioxide and ultraviolet treatment will be used to ensure pathogens are not released into the environment.



8.27 Do you have another alternative?

No



Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Chief Executive Officer (CEO)

9.2.2 First Name

Mark

9.2.3 Last Name

Ryan

9.2.4 E-mail

mark.ryan@tassal.com.au

9.2.5 Postal Address

GPO Box 1645

Hobart Tas TAS 7001 Australia

9.2.6 ABN/ACN

ACN

106324127 - TASSAL OPERATIONS PTY. LTD.

9.2.7 Organisation Telephone

Australian Government Department of the Environment and Energy

0429 134 768

9.2.8 Organisation E-mail

linda.sams@tassal.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date:

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, <u>MARK RYAN</u>, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

	the person proposing the action, consent to the
designation of	as the proponent of the purposes of
the action describe in this EPBC Act Referral.	

Signature:..... Date:

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9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

CEO

9.5.2 First Name

Mark

9.5.3 Last Name

Ryan

9.5.4 E-mail

mark.ryan@tassal.com.au

9.5.5 Postal Address

GPO Box 1645 Hobart TAS 7001 Australia

9.5.6 ABN/ACN

ACN

106324127 - TASSAL OPERATIONS PTY. LTD.

9.5.7 Organisation Telephone

0429 134 768

9.5.8 Organisation E-mail

tassal@tassal.ciom.au

Proposed designated proponent - Declaration

I, <u>MARK RYAN</u>, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this

Australian Government Department of the Environment and Energy EPBC Act referral - Kelly Channel Discharge, Macquarie Harbour, Tasmania

EPBC Act Referral.

Signature:...... Date: 27/9/2017

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Aquaculture

9.8.2 First Name

Tassal Operations Pty Ltd

9.8.3 Last Name

Tassal Operations Pty Ltd

9.8.4 E-mail

tassal@tassal.com.au

9.8.5 Postal Address

GPO Box 1645 Hobart TAS 7001 Australia

9.8.6 ABN/ACN

ACN

106324127 - TASSAL OPERATIONS PTY, LTD,

9.8.7 Organisation Telephone

0407 632 918

9.8.8 Organisation E-mail

linda.sams@tassal.com.au



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Department of the Environment and Energy

Referring Party - Declaration

I, <u>MARK RYAN</u>, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.



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Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

- 1. fauna_and_flora_effluent_pipeline_report_north_barker.pdf
- 2. frdc_maugean_skate_project_imas.pdf
- 3. imas_technical_report_on_macquarie_harbour_condition.pdf
- 4. kelly_channel_discharge_era_2017-26-09_v1.0.pdf
- 5. ocean_beach_pipeline_report_marine_solutions.pdf
- 6. proposed_discharge_location.jpg
- 7. proposed_footprint_-_kelly_channel.jpg
- 8. tassal_ebb_tide_discharge_option.pdf
- 9. tassal_environmental_policy.pdf