

Environmental Assessment Report

Pilot Scale Lobster Hatchery

*31 Nubeena Crescent,
Taroona*

Ornatas Pty Ltd

December 2020



ENVIRONMENT PROTECTION AUTHORITY

Environmental Assessment Report

Proponent	<i>Ornatas Pty Ltd</i>
Proposal	<i>Pilot scale lobster hatchery</i>
Location	<i>31 Nubeena Crescent, Tarooma</i>
NELMS no.	<i>PCE No. 10363</i>
Permit Application No.	DA-2020-209 (Kingborough Council)
Electronic Folder No.	EN-EM-EV-DE-259942
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Class of Assessment	2A

Assessment Process Milestones

12 December 2019	Notice of Intent lodged
17 January 2020	Guidelines Issued
8 April 2020	Permit Application submitted to Council
30 April 2020	Application/Referral received by the Board
14 October 2020	Start of public consultation period* (re-advertised)
27 October 2020	End of public consultation period
20 November 2020	Date draft conditions issued to proponent
6 December 2020	Statutory period for assessment ends

* *Originally advertised on 19 September 2020.*

Re-advertised to incorporate EPA Board requirements on 23 September 2020.

Re-advertised again on 14 October 2020 after Council's advertising requirements were not fully met. All representations were received by 2 November 2020.

Acronyms

Board	Board of the Environment Protection Authority
CAS	Conservation Assessment Section (DPIPWE)
EER	Environmental Effects Report
DPIPWE	Department of Primary Industries, Parks, Water and Environment
EIA	Environmental impact assessment
EMPC Act	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental management and pollution control system
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
IMAS	Institute for Marine and Antarctic Studies
LUPA Act	<i>Land Use Planning and Approvals Act 1993</i>
RAS	Recirculating Aquaculture System
RMPS	Resource management and planning system
SD	Sustainable development
TSP Act	<i>Threatened Species Protection Act 1995</i>
UTAS	The University of Tasmania

Report Summary

This report provides an environmental assessment of a pilot scale lobster hatchery proposed by Ornatas Pty Ltd.

The proposal involves the establishment of a small-scale research and development experimental recirculating aquaculture facility for the purposes of testing the breeding and hatching of the tropical rock lobster. The site is located within the University of Tasmania's IMAS Tarooma complex, at 31 Nubeena Crescent, Tarooma.

This report has been prepared based on information provided in the permit application and Environmental Effects Report (EER). Relevant government agencies and the public were consulted, and their submissions, representations and comments considered as part of the assessment.

Further details of the assessment process are presented in section 1 of this report. Section 2 describes the statutory objectives and principles underpinning the assessment. Details of the proposal are provided in section 3. Section 4 reviews the need for the proposal and considers the alternatives. Section 5 summarises the public and agency consultation process and the key issues raised in that process. The detailed evaluation of environmental issues is contained in section 6. Other issues are discussed in section 7. The report conclusions are contained in section 8.

Appendix 1 details matters raised by the public and referral agencies during the consultation process. Appendix 2 contains a list of commitments made by the proponent. Appendix 3 contains the environmental permit conditions for the proposal.

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I Approval Process

A Notice of Intent in relation to the proposal was received by the Board of the Environment Protection Authority (the Board) on 12 December 2019.

An application for a permit under the *Land Use Planning and Approvals Act 1993* (LUPA Act) in relation to the proposal was submitted to Kingborough Council on 8 April 2020.

The proposal is defined as a 'level 2 activity' under clause 3(a), schedule 2 of the *Environmental Management and Pollution Control Act 1994* (EMPC Act), being a wastewater treatment facility capable of treating more than 100 kilolitres of water per day. The maximum quantity of water exchanged through the facility will be 240 kilolitres per day. The maximum standing biomass within the hatchery at any one time (broodstock and puerulus) of Tropical Rock Lobster will be 100 kilograms.

Section 25(1) of the EMPC Act required Council to refer the application to the Board of the Environment Protection Authority (the Board) for assessment. The application was received by the Board on 30 April 2020.

The Board required that information to support the proposal be provided in the form of an Environmental Effects Report (EER) prepared in accordance with guidelines issued on 17 January 2020.

A draft of the EER was submitted to EPA Tasmania for review against the guidelines before it was finalised. The EER was first released for public inspection for a 14-day period commencing on 19 September 2020. Re-advertising was subsequently undertaken on 23 September 2020 and again on 14 October 2020, due to oversights in the advertising processes. An advertisement was placed in *The Mercury* and on the EPA website. The EER was also referred to relevant government agencies for comment. Seven representations were received in total.

A planning scheme amendment approved in 2019, under Section 33 of the former provisions of the LUPA Act, allowed site-specific qualifications for 31 Nubeena Crescent, notably allowing the proposed use 'Resource Development' and subclass of 'pilot plant' to be considered discretionary. The Tasmanian Planning Commission defined a 'pilot plant' as 'a small-scale research and development experimental plant in which processes planned for full-scale operation are tested and developed'. A planning application for use and development under Section 57 of the LUPA Act was required for the pilot-scale hatchery at 31 Nubeena Crescent, and the development must meet several provisions which protect the amenity of the neighbouring uses, as well as other requirements of the planning scheme.

2 SD Objectives and EIA Principles

The proposal must be considered by the Board in the context of the objectives of the Resource Management and Planning System of Tasmania (RMPS), and in the context of the objectives of the Environmental Management and Pollution Control System (EMPCS) (both sets of objectives are specified in Schedule 1 the EMPC Act). The functions of the Board are to administer and enforce the provisions of the Act, and in particular to use its best endeavours to further the RMPS and EMPCS objectives.

The Board must assess the proposal in accordance with the Environmental Impact Assessment Principles defined in Section 74 of the EMPC Act.

3 The Proposal

The proposal is for the establishment of an experimental aquaculture facility for the purposes of testing the breeding and hatching of the Tropical Rock Lobster (*Panulirus ornatus*). This will be the first pilot-scale trial of the commercialisation of the species. The facility is proposed to be a recirculating aquaculture system and shares many characteristics with the neighbouring University of Tasmania/Institute of Marine and Antarctic Studies (UTAS/IMAS) research laboratories. The proposed activity intends to utilise staff and resources from UTAS/IMAS as processes are tested and refined.

The hatchery facility includes dedicated office and amenities spaces, areas for broodstock quarantine, housing of broodstock, live-feed production, growth of larval and puerulus phases, a recirculating aquaculture system (RAS), saltwater waste treatment plant, and freezer room. The building will comprise two distinct areas – a biosecure area (stock, feed, RAS) and a non-biosecure area (offices, amenities).

It was determined that the facility constituted a level 2 activity, being a wastewater treatment plant capable of treating more than 100 kilolitres of wastewater per day. Up to 240 kL per day will be exchanged within the hatchery and treated before discharge of treated water into the existing neighbouring UTAS/IMAS saltwater waste stream.

The hatchery will have a production capacity of 500,000 puerulus per year and will support a combined puerulus/broodstock biomass of up to approximately 100 kg per year. Lobsters for grow-out are to be transported to northern Queensland where it is more feasible to maintain water temperatures at the required 28 degrees Celsius over long time periods.

The proponent estimates that the maximum standing biomass at any one time is likely to be approximately 40 kilograms.

The main characteristics of the proposal are summarised in Table 1. A detailed description of the proposal is provided in Part B of the EER.

Table 1: Summary of the proposal’s main characteristics

Activity	
Establishment of a pilot scale experimental aquaculture facility for breeding and hatching tropical rock lobster. The system is proposed to be a recirculating aquaculture system capable of discharging up to 240 kilolitres of treated saltwater per day and with a maximum standing biomass of Tropical Rock Lobster (broodstock and puerulus) at any one point in time of 100 kilograms.	
Location and planning context	
Location	31 Nubeena Crescent, Taroom 7053 (See Figures 1, 2 and 3 below). Property ID: 3584531 Title reference: 171435/2
Land zoning	Community Purpose (as per the neighbouring IMAS/UTAS site), <i>Kingborough Interim Planning Scheme 2015</i>
Land tenure	Owner: The University of Tasmania, to be leased to Ornatas. Subdivision and transfer of the southern section of the site to Kingborough Council has been approved (land titles information is not yet updated in LISTMap). Refer to Figure 3 below for correct land parcel boundaries.

Existing site	
Land Use	<p>The site has historically been used as one of two animal quarantine stations in Tasmania. Since the 1970s the site has been used by DPIPW (and its predecessors) for its endangered species program. It was purchased by UTAS/IMAS in 2018.</p> <p>There are several buildings on the site, which is 2.1 hectares in size (after subdivision), including the original caretaker's cottage for the Tarooma quarantine station, boat/dive sheds to the south, and various other structures used previously by DPIPW (e.g. aviary).</p>
Topography	Gently sloping, south east-facing. Built-up bank on the northern edge of the site.
Geology	Cenozoic paleogene-neogene red sandy silty clay with rare quartz pebbles and dolerite boulders in places; some areas with abundant surficial dolerite boulders indicated.
Soils	<p>The site is characterised by some filling over natural clay and dolerite rock.</p> <p>Black soils on dolerite; Moderately well drained black soils developed on Jurassic dolerite bedrock and colluvium on low undulating (3-10%) land.</p>
Hydrology	The site has no watercourses, however, is located approximately 120 metres from the River Derwent.
Natural Values	<p>There are no threatened flora species or threatened communities found on site. Small patches of <i>Bursaria Acacia</i> are located to the north of the site, and some remnant native trees are found in the central portion of the site.</p> <p>The Natural Values Atlas shows the Swift Parrot (<i>Lathamus discolor</i>) has previously been recorded on site.</p>
Local region	
Climate	Mean annual rainfall is approximately 612 mm per annum (Hobart Ellerslie Road Station). Winds are dominant from the north west at 9am, and equally dominant from the north west and south east at 3pm. Strongest winds are typically from the north west.
Surrounding land zoning, tenure and uses	<p>The site is located within the residential suburb of Tarooma.</p> <p>To the north west is established low density residential suburb. The closest residence to the main proposed building is approximately 100 metres north of the site.</p> <p>To the south of the site, the land at 31 Nubeena Crescent has been subdivided into an Environmental Management area between the site and foreshore, which has been handed over to Kingborough Council.</p> <p>To the east is the UTAS/IMAS experimental aquaculture facility, where there are many established buildings and indoor and outdoor aquaculture facilities (see Figure 2 below).</p> <p>There are Council-owned recreational facilities to the north east (Kelvedon sports ground) and to the west (Tarooma Park, including bowls club, Apex park, tennis club).</p>
Species of conservation significance	The remnant native forest to the south of the site and extending further west, is a Threatened Native Vegetation Community (<i>Eucalyptus globulus</i> dry forest and woodland) under the <i>Nature Conservation Act 2002</i> and is known Swift Parrot habitat.
Proposed infrastructure	
Major equipment	<p>The hatchery building has external mechanical plant on the eastern side, roof top vents associated with two large air handling units, circulation exhaust fans on the southern façade, and an emergency diesel generator.</p> <p>Seawater will be pumped into the site to provide water to various culture tanks and six RAS plants. A saltwater waste treatment plant will treat water before discharge. Freezers will be used for storing quarantine waste.</p>
Other infrastructure	The office/amenities building adjoins the hatchery building to the north. The site also incorporates car parking.

Inputs	
Water	Seawater is currently pumped from the River Derwent to supply the UTAS/IMAS facility. Up to 240 kL per day of this water will be allocated to the Ornatas hatchery.
Energy	Electricity. Diesel generators for back-up.
Other raw materials	Feed for the puerulus will be produced on site, with approximately 2.5 kg of <i>Artemia spp.</i> (brine shrimp) required per day. Broodstock will be fed on a diet of mussels, squid, and pilchards (purchased frozen).
Wastes and emissions	
Liquid	Treated waste saltwater from the hatchery, to discharge into the existing UTAS/IMAS wastewater stream and then into the Derwent, east of the UTAS/IMAS site. Stormwater will also connect to existing pipework and be discharged directly into the Derwent via an existing stormwater outlet to the south of the UTAS/IMAS site. Sewage/domestic wastewater from the office/amenities block. Pipework will be required across the boundary to 41 Nubeena Crescent (see Figure 4 below).
Atmospheric	Odours from wastewater, filtered solid wastes from wastewater treatment, biohazard solid wastes, chlorine disinfectants, dry feed/food components/empty feed bags, disused equipment. Dust from vehicular movements, demolition and construction activities, diesel fumes (on-site vehicles, and/or back-up emergency generator use).
Solid	Potential biohazard solid wastes from the biosecure area (e.g. waste from bag filters used in wastewater treatment, which will contain material such as excess feed, mortalities, phyllosoma wastes, spent filter bags, broodstock mortalities, laboratory waste, packaging and maintenance by-products associated with use in the biosecure area). General refuse from the office, kitchen, ablutions areas, and non-quarantine packaging.
Controlled wastes	Waste from the biosecure area associated with lobster growth and production is considered a controlled waste as an animal effluent/residue.
Noise	Noise will be generated by heat pumps, air handling units (inlets and outlets in the roof), exhaust fans, and the backup diesel generator. Vehicles travelling to and from the site may generate noise (deliveries, waste collection, and normal staff vehicles).
Greenhouse gases	Transport of materials to, and waste from, the facility will generate emissions associated with transport carriers (petrol/diesel), as will occasional use of the diesel generator during power outages. The facility will use mains electricity and may consume considerable amounts of energy, particularly due to the requirement to maintain warm temperatures. A large solar photovoltaic array will be installed to offset mains electricity use. Use of air handling and seawater heat recovery systems will increase the efficiency of electricity consumed.

Construction, commissioning and operations	
Proposal timetable	<p>Construction to begin immediately on approval/granting of the permit.</p> <p>Stage 1 – Years 1 to 5 – focus on research and feasibility assessment.</p> <p>Stage 2 – Years 5 to 9 – development of full-scale commercial farming.</p> <p>The facility is intended to be operated for up to 10 years, before the entire operation will move to facilities in Queensland. It is being designed for a 30-year lifespan. On cessation of the proposed activity, UTAS will purchase and use the building for research purposes.</p>
Operating hours (ongoing)	<p>Processes within the facility will run continuously. The hours of operation will generally be normal office hours (9am – 5pm Monday – Friday), however some nights of the year will require 24-hour observation. 24-hour observation will likely occur 4 – 6 times per year.</p>



Figure 1. Proposal location – Tarooma (Source: EER, Figure 2)



Figure 2. Site location, showing nearby residential and recreational areas (Source: EER, Figure 6)

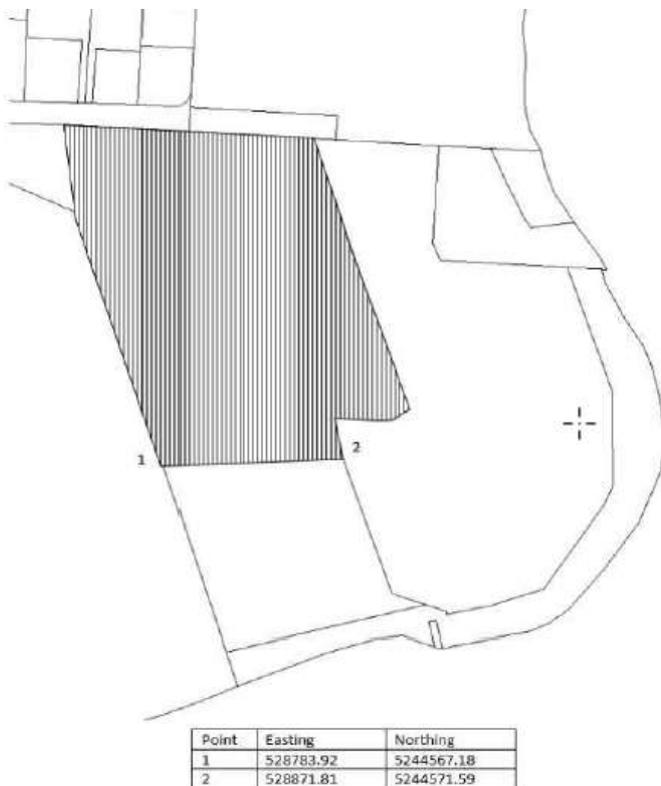


Figure 3. Land parcel at 31 Nubeena Crescent, as defined in the Kingborough Planning Scheme, Fig. 17.2.2 (Source: EER, Figure 9)



Figure 4. Proposed Ornatas building (red) at 31 Nubeena Crescent, relative to existing UTAS/IMAS lobster research facility and experimental aquaculture facility (dark and light blue, respectively), and wildfish research facility (green), and showing pipework in and out of the Ornatas site (Source: EER, Figure 16).

4 Need for the Proposal and Alternatives

The proponent, Ornatas Pty Ltd ('Ornatas'), is a Tasmanian-owned company, formed by one of the major shareholders of PFG Group Pty Ltd (a Tasmanian-based aquaculture and marine equipment service company and supplier) to develop lobster aquaculture in Australia. Details on company structure are provided in Section 1.5 of the EER.

Ornatas is aiming to establish a new aquaculture industry by commercialising lobster larval breeding technology which has been in development by the University of Tasmania for the last 17 years. Ornatas has been a key industry partner in the Australian Research Council (ARC) Research Hub for Commercial Development of Rock Lobster Culture Systems based at IMAS. Collaboration between expert scientists and industry has seen the development of technology needed for sustainable farming of lobsters.

The proposed hatchery is of a similar design to the existing research facility at neighbouring UTAS/IMAS. Locating the pilot scale commercial lobster hatchery adjacent to the UTAS/IMAS experimental hatchery will allow Ornatas access to the resources of IMAS and expert staff who have worked on the development of the technology during the commercialisation phase of the hatchery.

Associated with the project is a hatchery and grow-out facility in northern Queensland. Years 1 to 5 of the development plan are intended to focus on research and feasibility assessment in Tasmania and Queensland, with scale-up to full-scale commercial farming in Queensland during years 5 to 9, subject to successful pilot operations at Taroom. After 10 years it is intended that the entire operation will move to northern Australia.

5 Public and Agency Consultation

A summary of the public representations and government agency/body submissions is contained in Appendix I of this report.

Seven public representations were received. The main issues raised in the representations included:

- Concerns regarding removal of trees of conservation significance, especially in relation to the Swift Parrot and potential habitat and food sources for the Swift Parrot.
- Traffic volume increases and safety concerns.

The EER was referred to a number of government agencies/bodies with an interest in the proposal.

The following Divisions/areas of the Department of Primary Industries, Parks, Water and Environment also provided advice on the EER:

- Regulatory Officer, EPA Tasmania
- Noise Specialist, EPA Tasmania
- Conservation Assessment Section, Natural and Cultural Heritage

A planning scheme amendment was approved in 2019 to allow an application to be made for a pilot-scale tropical rock lobster hatchery at this location. Leading up to the planning scheme amendment, the EER reports that there was a significant level of dialogue between the University and residents of Tarooma. This ultimately led to the subdivision of the site so that the southern portion could be gifted to Kingborough Council to ensure the preservation of high conservation values, including Swift Parrot habitat, within that area of land.

Feedback received from the community during the planning scheme amendment process also allowed for changes to be made to the original proposal to ensure protection of residential and recreational amenity. Odour was a significant concern, particularly as nuisance odour emissions were associated with the early stages of the neighbouring UTAS/IMAS Experimental Aquaculture Facility, thought to be due to the relatively high levels of biomass (approximately 6.5 tonnes) held at that facility.

Ornatas stated that they are committed to ensuring ongoing engagement with the public, including providing a website with details of the proposal, and the issuing of fact sheets to the Tarooma Community Association, and ultimately providing site visits, should COVID-19 restrictions allow.

6 Evaluation of Environmental Issues

EPA Tasmania has evaluated environmental issues considered relevant to the proposal. Details of this evaluation, along with the permit conditions required by the Board, are discussed below:

The following issues are discussed:

1. Air emissions
2. Water inputs and outputs
3. Noise emissions
4. Solid waste
5. Natural values
6. Environmentally hazardous substances/dangerous goods
7. Decommissioning and rehabilitation

General conditions

The following general conditions will be imposed on the activity:

- | | |
|-----------|--|
| Q1 | Regulatory limits |
| G1 | Access to and awareness of conditions and associated documents |
| G2 | Incident response |
| G3 | No changes without approval |
| G4 | Change of responsibility |
| G5 | Change of ownership |
| G6 | Complaints register |
| G7 | Annual Environmental Review for hatchery |

<p>Issue 1: Air emissions</p>
<p>Description of potential impacts</p>
<p>Odour and dust from hatchery operations may cause nuisance for nearby residents (the nearest being approximately 100 metres from the hatchery building) and users of neighbouring recreational facilities.</p> <p>Potential odour sources include wastewater being held before treatment, filtered solid wastes from wastewater treatment, biohazard solid wastes (e.g. morts), chlorine used in disinfecting, feed, and disused equipment.</p> <p>Dust may be generated by demolition and construction activities, vehicular movements, and diesel fumes from occasional back-up generator use.</p>
<p>Management measures proposed in EER</p>
<p>The EER (Part D) proposes six specific management measures in relation to air quality, specifically pertaining to wastewater management to prevent odours and use of the back-up diesel generator.</p> <p>The proposed facility design is being modelled on the neighbouring UTAS/IMAS lobster research facility, which has not received any community complaints regarding odour in its 10 years of operation.</p> <p>All potential odour-generating activities occur within the building envelope. The building is being purpose designed for energy efficiency and is fully enclosed and insulated to prevent undesirable temperature variations, as the hatchery room and water temperature must be maintained at around 28 degrees Celsius. The design of the building to minimise heat loss is expected to also minimise escape of any potential nuisance odours.</p> <p>The main odour source is expected to be solid wastes from the hatchery. These will be bagged and frozen immediately.</p> <p>Wastewater will be held for treatment in batches of up to 8 kilolitres for a maximum of one hour before treatment. Filtration, ozonation, and UV light exposure will occur before discharge via the IMAS effluent pipes. The low residence time of the wastewater and treatment will reduce the risk of odour nuisance.</p> <p>Nine exhaust vents on the roof will be designed to remove moisture from discharging air flows, using panel and bag filters, which will cool the air and are expected to remove any potential odours. These filters could be replaced with carbon filters in the future if odours were found to be problematic.</p> <p>Access to the site is sealed and dust is unlikely to be an issue once construction has been completed. Specific dust management actions are proposed to be detailed in a construction management plan.</p>
<p>Public and agency comment</p>
<p>n/a</p>

Evaluation

Odour nuisance has occurred in the past affecting local residents, particularly during the early operation of the neighbouring UTAS/IMAS experimental aquaculture facility (the causes of which have since been rectified) and odour was raised as a concern during the recent rezoning proposal. Odour was not, however, raised in the public representations received for the current proposal.

The quantity of lobsters held in the facility at any one time (standing biomass) is considered to be very low at approximately 40 kilograms (particularly when compared to the 6.5 tonnes of salmon held in the neighbouring experimental facility) and it is expected that the quantities of biological material and wastes generated which may create odour will be relatively small. An ancillary regulatory limit of 100 kilograms of standing biomass for the maximum amount of lobster broodstock and puerulus to be held within the hatchery at any one time has been included in the Maximum Quantities condition (**Q1**, 1.2). This limit ensures that the facility can reasonably grow the amounts of lobster puerulus required to determine whether commercial breeding is possible, which is the purpose of this proposed facility, but also ensures the facility operates for the appropriate 'pilot scale' quantities of production only.

An indicative air dispersion model was run (Appendix B of the EER) using maximum air flow output (worst case), at both 10 degrees Celsius ambient temperature and at 35 degrees Celsius. Maximum flow rates from the facility are only expected to occur during hot and humid weather conditions, when mostly north-westerly, northerly, and some south-easterly wind conditions occur, which will mostly direct air emissions away from nearest residences. Predicted air pollutant concentrations dropped by around two-thirds within 100 metres of the building (approximately the boundary of The Land), and by around 90% within 200 metres. The low overall risk of odours being generated and released from the building (due to the low biomass levels, proposed management of wastes, and the construction of the facility so that there is almost complete enclosure of the building), mean that there is a low likelihood of nuisance odours being experienced by nearby residents. Standard condition **AI** relating to the prevention of odour nuisance is contained within the permit.

A basic dispersion model was also run for the use of the back-up diesel generator. The generator is expected to be used during power outages only (power stability is 99.9% in Taroona). Use of diesel generators during power outages will mean that freezers holding solid waste, and wastewater treatment processes, can continue to operate, which will avoid potential generation of odours from thawing wastes and standing wastewater, respectively. The model showed very rapid dispersion in the first 100 to 300 metres from the source. Combined with the very low probability of use of the generator, and winds directed towards residences occurring only 10 to 15% of the time, this makes for a low likelihood of nuisance occurring.

The sealed surfaces on site means that dust is unlikely to be an ongoing issue at the facility, however, a condition (**CN3**) has been included requiring dust management during construction.

Conclusion

The proponent will be required to comply with the following conditions:

- Q1** Regulatory limits
- AI** Odour management
- CN3** Control of dust emissions during construction

Issue 2: Water inputs and outputs

Description of potential impacts

Water input to the site will be seawater, which is currently pumped into the UTAS/IMAS site via the new pump station constructed by UTAS/IMAS at 47 Nubeena Crescent, filtered, and utilised in the existing facilities. A maximum flow of 240 kL/day of this seawater intake is proposed to be diverted from existing UTAS/IMAS supplies via underground pipework directly to the Ornatas facility. This represents ten percent of the maximum intake capacity of this pump station at present, although a new pump station at this site will have a greater intake capacity.

Wastewater (average of 150 kL/day, up to a maximum of 240 kL/day) from the hatchery activities will be discharged into existing UTAS/IMAS wastewater pipework, where it will be combined with saltwater discharge from UTAS/IMAS research facilities, and discharged to the intertidal zone of the Derwent east of the UTAS/IMAS site.

Untreated or poorly treated wastewater released into the environment may impact on water quality in the Derwent Estuary, affecting aquatic flora and fauna and recreational use of the waterway, and may be a biosecurity risk. Nutrients and suspended solids are expected to be the primary emission types from the hatchery's activities prior to treatment.

Stormwater originating from the site's roof and carparking surfaces is to be discharged into existing UTAS/IMAS pipework and discharged via an existing stormwater outfall to the south. Contaminated stormwater may pollute the Derwent with hydrocarbons, litter, and/or excessive nutrients.

Management measures proposed in EER

Part D of the EER summarises the management measures in relation to stormwater management and wastewater.

Large volumes of seawater are required to service various culture tanks and a Recirculating Aquaculture System (RAS), which will provide conditions conducive to supporting the sensitive early life stages of lobsters. Seawater that has passed through aquaria at the proposed hatchery will be treated through two processes:

- Six RAS systems which each involve culture tanks, mechanical filtration to remove solids, biofilter (convert ammonia to nitrate), foam fractionation, UV disinfection, ozone treatment, degassers, activated carbon, and pH (to pH 8.2) and water temperature (to 28°C) regulation.
- Water being discharged from the six RAS plants will be diverted to a dedicated saltwater treatment plant, treating water using physical filtration (multicyclone and then bag filter to 100 microns), heat recovery (water discharged at 10°C), primary ozone treatment, secondary ozone treatment, and UV sterilisation.

The proposed Ornatas treatment system mirrors the UTAS/IMAS lobster research facility treatment systems but will involve greater biological and mechanical filtration and is likely to be more effective at removing waste.

Under an agreement between the proponents and UTAS (see Appendix A of the EER), treated wastewater from the proposed hatchery will be combined with the saltwater discharge from the UTAS/IMAS facilities (combining output from the lobster, wildfish, and salmonid research facilities), and the combined saltwater stream will enter the Derwent at the existing saltwater discharge site in the intertidal zone east of the UTAS/IMAS site. This discharge is regulated and monitored via an EPN (No. 38 issued by Kingborough Council) issued for the IMAS Experimental Aquaculture Facility, which was constructed in 2015 to support salmonid industry research.

Section 2.2 of the EER provides more details of monitoring results and estimated nutrient loads for the proposed hatchery. It shows that intake water has, at times, actually exceeded the UTAS/IMAS EPN wastewater discharge limits, and in some cases, nitrate and phosphorus loads in water returned to the Derwent Estuary were lower than the intake waters received. The suspended solids and nutrient concentration emissions from the Ornatas hatchery are a very small proportion of the total emissions already discharged from the existing pipeline and are not expected to impact on compliance by the combined discharge with EPN maximum limits. Ornatas proposes to undertake monitoring at the point of discharge from the saltwater treatment plant, in line with the frequency and analytes currently monitored by UTAS/IMAS and to share data with UTAS/IMAS to ensure regulatory requirements are met. Water flow data will also be recorded.

Stormwater runoff will be collected via a series of stormwater pits and then piped underground to a mechanical treatment system ('EnviroProtector', a specialist stormwater filter) which will remove gross pollutants and a portion of P, N, suspended solids and other pollutants in line with planning scheme requirements. Fine sediment filters (Protector 'Trap-it') will also be installed within stormwater pits to provide further treatment. From the treatment system, stormwater pipework will, subject to approval from UTAS/IMAS, connect directly to the Derwent Estuary via the existing stormwater outlet on the southern side of Crayfish Point which currently services the neighbouring UTAS/IMAS facilities. A Construction Management Plan is proposed to be developed for management of stormwater throughout the construction phase.

Public and agency comment

DPIPWE's Conservation Assessment Section (CAS) noted that the EER contained information on previous Spotted Handfish surveys and on seafloor habitat. CAS recommended EPA Tasmania ensure appropriate wastewater limits are set to avoid potential impacts to the Spotted Handfish.

The EPA's Water Specialist provided feedback regarding the wastewater discharge. The proposed hatchery operations and effluent management are considered minor in scale, with likely negligible water quality impact. As long as there are limits to the biomass held in the facility, a significant ongoing monitoring program (or potentially any routine monitoring) would not be merited, and that potential impacts are not commensurate with those of municipal wastewater treatment plants of similar flow-through capacity.

Evaluation

The discharge of treated wastewater and stormwater from the proposed hatchery will be managed between the proponent and the entity responsible for the ultimate discharge of the waste (UTAS/IMAS, as the recipient of EPN No. 38 regulating discharge into the Derwent Estuary). Correspondence from the University, contained within Appendix A of the EER, confirms that UTAS will supply intake water, and receive treated wastewater and stormwater from the proposed Ornatas hatchery. Wastewater must either be reused in the RAS or discharged to the wastewater treatment system on site (**E1**). A condition (**E2**) has also been included in the permit requiring the proponent to have approval to discharge to existing systems from the owner/operator of the wastewater and stormwater discharge systems (i.e. UTAS). This approval may be in the form of a legal agreement between the parties (much like a Trade Waste Agreement).

It is considered unnecessary to place specific water quality requirements on the discharge from the proposed hatchery, as the discharged wastewater will be mixed with an existing wastewater system receiving wastewaters from three other aquaculture research facilities, and then ultimately discharged under existing EPN requirements. As the proponents will be treating wastewater to a particularly high standard due to biosecurity requirements, and as there are relatively high volumes of water passing through the saltwater treatment system for the low standing biomass levels of the hatchery, it is considered that the risk of poor quality wastewater emanating from the hatchery is low, and is unlikely to impact upon UTAS/IMAS discharge quality. Ornatas's proposal to undertake monitoring from the saltwater treatment plant and to record flow information is supported and a condition has been included requiring these data to be provided through annual reporting to EPA Tasmania (**G7**).

Control of stormwater contamination during construction has been included as a condition (**CN4**) to ensure dust and sediments generated during construction do not contaminate waterways prior to stormwater infrastructure being constructed. A condition (**SWI**) has also been included requiring collection and treatment of stormwater prior to discharge.

A future review and possible revision (in conjunction with Kingborough Council) of discharge limits from the UTAS/IMAS facility may be appropriate. However, for the purposes of this proposed rock lobster hatchery, the basic conditions included in the permit relate solely to restricting wastewater to be reused on site (in the RAS) or to be discharged to the UTAS/IMAS pipelines.

Impacts on aquatic flora/fauna (e.g. Spotted Handfish) from discharges associated with this proposed lobster hatchery are considered unlikely to change greatly from the existing situation.

Conclusion

The proponent will be required to comply with the following conditions:

- G7** Annual Environmental Review for hatchery
- CN4** Retention of sediment during construction
- E1** Wastewater Management
- E2** Discharge to existing wastewater and stormwater systems
- SWI** Stormwater

Issue 3: Noise emissions
Description of potential impacts
<p>Construction of the facility may create nuisance (temporarily) for nearby residents.</p> <p>During operation of the facility, noise from the facility’s heat pumps, roof top vents associated with air handling units (AHUs), circulation exhaust fans on the southern façade of the hatchery building, and external mechanical plant and an emergency diesel generator on the eastern side of the hatchery building may create nuisance for nearby residents. Plant will be running continuously (24 hours, 7 days per week). Noise from traffic to and from the site (29 vehicles per day estimated with a peak of 10 vehicles per hour, mainly staff cars) may also create nuisance.</p>
Management measures proposed in EER
<p>The nearest residences are approximately 100 metres from the hatchery in Nubeena Crescent, to the north and north-west. Existing noise levels measured in the front yard of 26 Nubeena Crescent were 47 dBA(L_{eq}) in the daytime (0700 to 1900 hours), and 36 dBA(L_{eq}) at night (1900 to 0700 hours). Noise predictions at 28 Nubeena Crescent for combined noise sources at the hatchery all operating simultaneously were less than 22 dBA, and at the Bowls Club to the west, 30 dBA.</p> <p>The hatchery’s administration building is expected to provide some acoustic screening between the hatchery building and the nearest residences to the north and north-west. Locating external mechanical plant on the eastern side of the hatchery building within a cut-out will also provide additional screening from residences.</p> <p>The AHUs are to be located within the ceiling space of the hatchery, with fresh air inlets and exhausts passing through the roof to vents. Ductwork from the AHU to the vent comprises two internally lined elbows and 3 metres of internally lined duct, which are expected to provide significant sound attenuation.</p> <p>The diesel generator is to be housed within an acoustic enclosure and will be used rarely.</p> <p>Existing UTAS/IMAS delivery and waste collection services will be utilised which will decrease the number of potential larger vehicle (light truck and van) movements associated with the development. Most traffic generated will be associated with staff cars (10 staff on weekdays, and 4 staff on weekends) and are considered an insignificant source of noise.</p> <p>The EER (Part D) proposes three specific management measures in relation to noise; specifically pertaining to updating noise predictions once mechanical plant design is finalised, enclosing the diesel generator, and AHU construction in the ceiling space.</p>
Public and agency comment
<p>The EPA’s Noise Specialist advised that noise emission limits should be imposed on the proposed activity, consistent with pre-existing noise levels.</p>

Evaluation
<p>The noise predictions provided in the EER indicate that the risk of noise nuisance occurring from the proposed activity for nearby residents is relatively low. Much of the activity is located within the hatchery building, and any potential noise sources located on the outside of the buildings is to be situated on the furthest sides of the building from residences, assisting in screening any noise from these sources.</p> <p>Nonetheless, the EPA’s Noise Specialist has determined that the close proximity of the proposed hatchery to residents and the necessary 24 hour operation of the hatchery justifies the inclusion of noise emission limits (N1) for daytime, evening, and night time which are consistent with the background noise levels, and conditions allowing the Director to require noise surveys be undertaken to verify these limits are being met, for example if significant changes to the activity occur and/or complaints occur in relation to the activity (N2, N3, and N4).</p> <p>Operating hours for the period of construction have been included in the permit condition to minimise disturbance to nearby residents during that period of time (CNI).</p>
Conclusion
<p>The proponent will be required to comply with the following conditions:</p> <ul style="list-style-type: none"> CNI Operating hours - Construction N1 Noise emission limits N2 Noise complaints N3 Noise survey requirements N4 Noise survey method and reporting requirements

<p>Issue 4: Solid waste</p>
<p>Description of potential impacts</p>
<p>Solid wastes potentially created by the proposal will either be biohazardous solid wastes (both organic and inorganic wastes generated within the biosecure area of the hatchery, including items such as filter by-products, spent filter bags, mortars, laboratory waste, feed waste, packaging waste generated within the biosecure area, biohazard waste bags, occasional spent equipment), or non-biohazardous general solid wastes from offices, kitchens, general ablutions, non-quarantine packaging etc.</p> <p>Potential impacts for inadequately managed solid wastes include biosecurity risks to surrounding and downstream ecosystems from exotic species (i.e. tropical rock lobster), odour, attracting of pests/vermin, resource wastage, and loss of amenity due to unsightly refuse areas.</p>
<p>Management measures proposed in EER</p>
<p>The EER (Part D) proposes six specific management measures, outlined as follows.</p> <p>The hatchery buildings will be divided into two distinct areas, the biosecure area, and the ‘normal’ non-biosecure (administration) area. All solid wastes (organic and inorganic) from the biosecure area will be considered biohazard solid waste.</p> <p>Biohazardous solid waste will be immediately bagged, placed into freezers within each area, transferred to the main freezer once frozen, and disposed of weekly via dedicated plastic-lined bins (estimated four 240L bins per week), taken by a quarantine transport contractor for disposal and deep burial to a licensed landfill (Richards and Sons Pty Ltd). Waste from other areas will be considered general/recyclable waste. The office is planned as a paperless office to help keep waste to a minimum. General wastes will be segregated into refuse and recycling.</p> <p>Lease arrangements between the proponent and UTAS/IMAS stipulate that the pilot hatchery will use the same waste disposal contractors already used by the UTAS/IMAS facilities, with bins (including quarantine/biohazard bins, general, and recycling) collected weekly.</p> <p>Quarantine wastes from the biosecure area of the research hatchery will be handled via a formal Solid Biohazard Waste Disposal Procedure. Management measures will be similar to those currently adopted within the existing UTAS/IMAS hatchery research facility, the proponent will develop Standard Operating Procedures to meet UTAS outcomes, and these will include procedures developed to comply with AS2243.3:2019 – <i>Safety in Laboratories – Microbiological Safety and Containment</i>, Biosecurity Tasmania permits, and the UTAS <i>Regulated and Hazardous Biological Materials Policy</i>. Procedures for biohazard solid waste management will be reviewed and then audited annually by a third party.</p> <p>Records of quantities and dates of quarantine wastes will be collected as part of the Solid Biohazard Waste Disposal Procedures and provided annually in an Annual Environmental Review Report.</p>
<p>Public and agency comment</p>
<p>n/a</p>

Evaluation

The proposed classification of waste material and management of wastes, particularly those wastes regarded as potentially presenting risks to biosecurity, are considered appropriate for management of biosecurity and odours. The proposed measures are reinforced by inclusion of permit conditions requiring freezing of waste (**WMI**), which has been produced by or has come into contact with biological material at the hatchery, and appropriate disposal of frozen waste (**WM2**).

Reporting of wastes produced is included as a requirement of the Annual Environmental Review (**G7**), with respect to controlled wastes.

Conclusion

The proponent will be required to comply with the following conditions:

G7 Annual Environmental Review for hatchery

WMI Lobster waste management

WM2 Removal of lobster waste and wastewater treatment sludge

Issue 5: Natural Values
Description of potential impacts
<p>Clearance of the site for construction may lead to loss of a small number of individual trees which may be important for maintaining ecological values. They may provide habitat for birds and small mammals or may be a foraging resource.</p> <p>No threatened flora species were identified on site by natural values surveys. The site is mapped as extra-urban miscellaneous and is highly modified (carparks, sheds, cages etc), with some remnant native trees and shrubs present. Seven individual trees - 5 <i>Eucalyptus viminalis</i> (white gum), one <i>E. ovata</i> (black gum) and one <i>E. pulchella</i> (white peppermint) – will be removed.</p> <p>The endangered (TSPA and EPBCA) Swift Parrot (<i>Lathamus discolor</i>) has been recorded on site. There is a risk of collision of birds with the windows or facades of the new buildings. Collision risk is recognised as a mortality factor for the species.</p> <p>Disposal of poor-quality wastewater into the Derwent may impact on the endangered Spotted Handfish (<i>Brachionichthys hirsutus</i>), which has been recorded in the vicinity of Crayfish Point.</p>
Management measures proposed in EER
<p>The EER (Part D) proposes a financial offset for removal of high conservation value trees, and to minimise collision impacts to birds such as the Swift Parrot, use of shade cloth on chain link fences over 1.2 metres high during construction, and use of low reflectivity glass for all glazing, at a minimum, on the east elevation.</p> <p>Other management measures proposed relate to siting of the building to avoid removal of established trees, and to maintain the existing ‘green corridor’ linking Tarooma Beach and the foreshore to the north.</p>
Public and agency comment
<p>Four representations raised concerns about removal of eucalypts from the development site, as they may be potential habitat or a foraging resource for threatened birds such as the Swift Parrot.</p> <p>DPIPWE’s Conservation Assessment Section (CAS) provided feedback supporting the EER Management Measures 32 and 33 regarding minimising tree removal and maintaining green corridors.</p> <p>CAS stated that while the Swift Parrot depends on flowering <i>E. globulus</i> and <i>E. ovata</i> for food, the removal of one <i>E. ovata</i> that is described as a stump with some coppice measuring 4 metres in height is considered by CAS to be unlikely to have a significant impact to the Swift Parrot.</p> <p>CAS is satisfied that their previous recommendations regarding potential Swift Parrot collision mitigation have been addressed. CAS supports Management Measure 30 regarding shade cloth being attached to fences for the duration of construction for fencing above 1.2 metres height. CAS also supports Management Measure 31 that low reflectivity glass be used for all glazing, at least for the eastern elevation.</p> <p>CAS also noted that the EER contained information on previous Spotted Handfish surveys and on seafloor habitat. CAS recommends EPA Tasmania ensure appropriate wastewater limits are set to avoid potential impacts to Handfish.</p>

Evaluation

Offsets relating to the removal of seven trees at the site will be determined by Kingborough Council when consideration is given to the Biodiversity Code under the *Kingborough Interim Planning Scheme 2015* and associated policies. This has been discussed with Kingborough Council planners and agreed that the planning scheme contains appropriate specific requirements in relation to offsets, which the existing legislation does not. There is currently no biodiversity offset policy in place in DPIPWE.

While careful siting and construction of the building is recommended, the removal of these trees is considered unlikely to result in a significant impact to the Swift Parrot or other species of conservation significance. Considerable detail regarding the design of the buildings to minimise collision risk to birds is contained within the EER, and the Management Measures proposed are supported. A condition relating to use of shade cloth on fences during construction has been included in the permit (**CN2**).

With regard to potential impacts on the Spotted Handfish, the regulation of wastewater quality from the proposed activity has been addressed above in Issue 2.

Conclusion

The proponent will be required to comply with the following conditions:

CN2 Temporary fencing - shade cloth

Issue 6: Environmentally hazardous substances/dangerous goods
Description of potential impacts
The proposed facility will involve storage and use of small quantities of several substances, including dangerous goods. Most will be used as part of the cleaning process, including oxygen and ozone for wastewater treatment. Diesel will be stored in the back-up generator on the external eastern wall of the building. Release of any dangerous goods or environmentally hazardous substances may impact on surface and groundwaters, soils, and/or natural values.
Management measures proposed in EER
The risk of environmental impact from accidental release is considered minimal, as the volumes of substances are small and are to be held within the building (except for diesel, to be stored with the back-up generator outside). A number of management measures are proposed in Part D of the EER pertaining to storage, signage, handling, spill response, and monitoring of the various chemicals required on site.
Public and agency comment
n/a
Evaluation
The proposed management measures outlined in the EER, reinforced by standard permit conditions relating to hazardous substances (H1 and H2), are considered appropriate for the handling and management of environmentally hazardous substances/dangerous goods at the activity.
Conclusion
The proponent will be required to comply with the following conditions: H1 Storage and handling of hazardous materials H2 Spill kits

Issue 7: Decommissioning and rehabilitation
Description of potential impacts
<p>Inadequate planning for the closure and decommissioning of the activity can reduce opportunities for longer term future use of the land.</p> <p>The expected life of the activity is 30 years.</p>
Management measures proposed in EER
<p>EER Part D contains proposed Management Measures in relation to decommissioning and rehabilitation.</p> <p>At the cessation of the proposed activity (after an estimated 10 years), the building is intended to be purchased by UTAS for research purposes, which may also involve reuse of the internal equipment and facilities. The proponent may be required to demonstrate to UTAS that there is no change to the status of land contamination since construction of the facility (noted that there is no known contamination on site, nor do historical uses of the site indicate potential contamination could be present). The proponent will remove any wastes (maintaining quarantine procedures) from the facility on cessation and will decommission and dispose of any equipment not required by UTAS or the next operator of the building.</p> <p>Site disturbance after construction will be rehabilitated by contouring, removing waste, sealing surfaces, and landscaping.</p>
Public and agency comment
n/a
Evaluation
The proposed management measures are considered adequate and are supported by standard decommissioning and rehabilitation conditions appropriate for smaller industrial operations.
Conclusion
<p>The proponent will be required to comply with the following conditions:</p> <p>DC1 Notification of cessation</p> <p>DC2 DRP requirements</p> <p>DC3 Rehabilitation following cessation</p> <p>DC4 Temporary suspension of activity</p>

7 Other Issues

The following issues have been raised during the assessment process and are discussed briefly here. These are issues which are not the Board's responsibility under the EMPC Act, or issues which are more appropriately addressed by another regulatory agency.

1. Traffic

- A number of the representations received raised the issue of traffic and pedestrian safety in Nubeena Crescent. Concerns were generally around additional traffic to be generated by the proposal, in an area which already sees substantial traffic not associated with residents of the street, due to the existing UTAS/IMAS facility and the surrounding recreational facilities. Traffic calming/management measures are being requested by local residents.
- A Traffic Impact Assessment (TIA) was included with the planning application to Kingborough Council. Vehicles associated with the facility will mainly be associated with staff travelling to and from the facility each day. Ten staff members are estimated to be required on site during weekdays, and four on weekends. Total traffic generation associated with the proposed hatchery development is approximately 29 vehicles per day. According to the TIA, the traffic volumes currently utilising the IMAS site are in the order of 200 vehicles per day.
- The EER states that existing UTAS/IMAS delivery and waste removal services will be utilised as much as possible, meaning it is unlikely that larger vehicle movements will increase substantially as a result of the proposed facility.
- Traffic and road management issues will be a matter for Kingborough Council to consider as part of the assessment in accordance with planning scheme requirements.

2. Biosecurity

- As the Tropical Rock Lobster (*Panulirus ornatus*) is an introduced species to Tasmania, maintaining biosecurity integrity is an important aspect of the proposed activity. Biosecurity Tasmania are responsible for managing biosecurity.
- Section 1.2.1 of the EER provides an outline of the processes proposed for broodstock establishment and quarantine, such as a 6 month quarantine period for lobsters in a dedicated area of the hatchery with separate wastewater treatment systems, to ensure lobsters are disease-free before use in the hatchery.
- The EER states that consultation has been undertaken with Biosecurity Tasmania and a Biosecurity Management Plan for the operation will be developed, which will be consistent with existing UTAS procedures and will be audited annually by a third party. UTAS currently has an annual permit to import Tropical Rock Lobster and Moreton Bay Bug broodstock. The proponent will develop Standard Operating Procedures to meet UTAS outcomes and will include procedures developed to comply with the Australian Standard 2243.3:2019 – *Safety in Laboratories – Microbiological Safety and Containment*, Biosecurity Tasmania permits, and UTAS *Regulated and Hazardous Biological Materials Policy*.
- Wastewater treatment and solid waste management are the main areas of concern for biosecurity related to the proposal. These are discussed in more detail at Issue 2 and Issue 4 (respectively) in Section 6 of this report. The maintenance of a specific biosecure area for the hatchery and treatment of all wastes and by-products from this

biosecure area as quarantine waste is the key principle underpinning biosecurity at the facility.

- Other biosecurity measures described in the EER included in procedures include training of staff in biohazard management procedures, record keeping, and provision of facilities and equipment such as purpose built biosecure areas, worker change and shower rooms, dedicated boots/laboratory coats, clothes washing machines, and disposable gloves.
- Records of quantities and dates of quarantine wastes will be collected as part of the Solid Biohazard Waste Disposal Procedures and provided annually in an Annual Environmental Review Report.

3. Greenhouse gas emissions and sustainability

- Section 2.9 of the EER provides a consideration of greenhouse gas emission impacts of the proposed activity.
- Other than occasional use of the back-up diesel generator, the facility is not expected to be a source of direct additional greenhouse gas emissions. The biomass being grown is very small and not expected to generate measurable direct emissions.
- Transport-related emissions are expected to be minimised by the use of existing UTAS/IMAS transport carriers.
- Electricity usage at the facility will be considerable, mainly due to the need to maintain a constant 28 degrees Celsius temperature in certain parts of the hatchery, but also related to operation of pumps, freezers etc. A large photovoltaic solar array will be installed on the roof to generate as much of the facility's electricity as possible.
- Building plans have been made to minimise the impacts on existing green corridors, and the building is proposed to be designed to include various energy efficiency measures (e.g. double glazing, insulation, LED lighting, etc).
- Heat recovery systems will be used to extract as much heat as possible from exhaust air streams. As the treated water coming from the facility will need to be cooled, exchangers will be installed to capture as much heat as possible from the discharge water stream, to be used to pre-heat the intake water stream.

8 Report Conclusions

This assessment has been based on the information provided by the proponent, Ornatas Pty Ltd, in the permit application, the case for assessment (the EER).

This report incorporates specialist advice provided by EPA Tasmania scientific specialists and regulatory staff, other Divisions of DPIPWE, and has considered issues raised in public submissions.

It is concluded that:

1. the RMPS and EMPCS objectives have been duly and properly pursued in the assessment of the proposal;
2. the assessment of the proposed activity has been undertaken in accordance with the Environmental Impact Assessment Principles; and
3. the proposed activity is capable of being managed in an environmentally acceptable manner such that it is unlikely that the objectives of the *Environmental Management and Pollution Control Act 1994* (the RMPS and EMPCS objectives) would be compromised, provided that the Permit Conditions - Environmental No. 10363 appended to this report are imposed and duly complied with.

9 Report Approval

Environmental Assessment Report and conclusions, including environmental conditions, adopted:



Warren Jones

CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

Meeting date: 1 December 2020

10 References

EER (2020), Ornatas Pilot Scale Lobster Hatchery, 31 Nubeena Crescent, Tarooma, Environmental Effects Report Version 2, dated 1 September 2020, Author Poppy Scharkie, Ireneinc Planning & Urban Design.

II Appendices

- Appendix 1 Summary of public and agency submissions
- Appendix 2 Table of proponent commitments
- Appendix 3 Permit conditions - Environmental

Appendix I – Summary of public representations and agency submissions

Ornatas Pty Ltd –Pilot Scale Lobster Hatchery, 31 Nubeena Crescent, Tarooona

In the following tables, EER means *Ornatas Pilot Scale Lobster Hatchery, 31 Nubeena Crescent, Tarooona, Environmental Effects Report (Version 2, dated 1 September 2020), Poppy Scharkie Ireneinc Planning & Urban Design.*

TABLE I: MATTERS RAISED DURING THE PUBLIC CONSULTATION PERIOD

Representation No./ Agency	EER section no.	EER Page no.	Comments and issues	Further Info requested	EPA Comments
Department of Primary Industries, Parks, Water and Environment (DPIPWE) Conservation Assessment Section (CAS)	-		<p><i>Threatened flora and native vegetation:</i></p> <p>It is noted that ecological surveys were undertaken by ECOtas, which found no threatened flora or threatened vegetation communities present.</p> <p>The EER provides details regarding the removal of:</p> <p>5 x <i>Eucalyptus viminalis</i> (white gum)</p> <p>1 x <i>E. ovata</i> (black gum)</p> <p>1 x <i>E. pulchella</i> (white peppermint)</p> <p>The EER states that none of the trees marked for removal are supporting obvious hollows.</p> <p>CAS supports the EER Management Measures 32 and 33 that the building footprint should avoid the removal of any established significant trees, and that the building should be sited to maintain the existing 'green' corridor, linking Tarooona Beach and the foreshore to the north.</p>	No	The provisions of the planning scheme in relation to removal of trees will be assessed by Kingborough Council.
	-		<p><i>Swift Parrot:</i></p> <p>The Swift Parrot (<i>Lathamus discolor</i>) is listed as endangered under the <i>Threatened Species Protection Act 1995</i> (TSPA) and critically endangered under the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> (EPBCA).</p> <p>The Swift Parrot depends on flowering <i>E. globulus</i> and <i>E. ovata</i> for food. <i>E. globulus</i> and <i>E. ovata</i> are considered important in any setting (including remnant vegetation), however the removal of one <i>E. ovata</i></p>	No	EPA to consider a condition requiring shade cloth on temporary fencing. Matters of building/construction (glazing) for the proposed facility may be considered by Kingborough Council.

Representation No./ Agency	EER section no.	EER Page no.	Comments and issues	Further Info requested	EPA Comments
			<p>that is described as a stump with some coppice measuring 4 metres in height is unlikely to have a significant impact to the Swift Parrot.</p> <p>CAS is satisfied that the EER has incorporated CAS's previous recommendations in regard to addressing the potential for Swift Parrot collisions, including mitigation strategies for potential collisions with windows as well as fencing.</p> <p>CAS supports the Management Measure 30 regarding shade cloth being attached to one side of the fence for the duration of construction works. This is relevant for fencing above 1.2 metres height.</p> <p>CAS also supports Management Measure 31 that low reflectivity glass be used for all glazing, at least for the eastern elevation.</p>		
	-		<p><i>Spotted Handfish:</i></p> <p>The Spotted Handfish (<i>Brachionichthys hirsutus</i>) is listed as endangered under the <i>Threatened Species Protection Act 1995</i> (TSPA) and critically endangered under the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> (EPBCA).</p> <p>The EER contains information on previous targeted Spotted Handfish surveys undertaken and provides information on seafloor habitat present.</p> <p>CAS notes that the survey document focuses on intake, rather than wastewater discharge, and notes that the second survey was undertaken outside of the breeding time when egg masses would not be present.</p> <p>The EER details that the Ornatas hatchery will contribute a very small percentage of nutrients and other pollutants discharged from the combined Ornatas/UTAS coastal outfall. Furthermore, it details that the habitat within 400 metres of the outfall has been described as unsuitable for the Spotted Handfish.</p> <p>CAS reiterates its support for water quality monitoring in relation to discharge and environmental conditions and recommends the</p>	No	<p>The hatchery proposes to discharge treated wastewater into the existing wastewater systems of IMAS/UTAS. UTAS received an Environment Protection Notice for discharge to the Derwent River, which is regulated by Kingborough Council. Ultimately, UTAS, as they accept the wastewater from the Ornatas hatchery and as the recipient of the existing EPN, will be responsible for ensuring that their discharge continues to meet the limits described in the EPN. Any update to the EPN which may be required is a matter between Kingborough Council and UTAS, at this point in time.</p> <p>EPA Tasmania is currently considering how to regulate the wastewater discharge from the hatchery, given that there is no direct discharge to waters or land, and that the ultimate discharge point is combined with the wastewater of another operation</p>

Representation No./ Agency	EER section no.	EER Page no.	Comments and issues	Further Info requested	EPA Comments
			EPA ensure appropriate limits are set to avoid potential impacts to handfish. CAS also reiterates its support for the development and implementation of a biosecurity procedure (Management Measure 16) and that it will be audited annually by a qualified and experienced third party.		which is not currently regulated by the EPA. Biosecurity issues will be a matter for Biosecurity Tasmania.
Public representation No. 1	-	-	Opposes development.	No	-
	2.6.2 2.6.3 2.6.4 Appendix E	67 72 73	Removal of vegetation – 7 Eucalypt trees – important habitat for endangered Swift Parrot that cohabit the Tarooma site, including nesting sites found adjacent to the Quarantine Station Site, Tarooma Beach foreshore, and Apex Park.	No	To be considered for permit conditions based on advice from DPIPWE/CAS, and for consideration by Kingborough Council when assessing against the planning scheme.
			Collision impact risk to Swift Parrots and other obstructions to bird life.	No	To be considered for permit conditions based on advice from DPIPWE/CAS.
Public representation No. 2			Opposes development – commercial operation in a quiet residential suburb.	No	It is a small-scale hatchery as a pilot trial of the commercialisation of the tropical rock lobster to determine the feasibility. The standing biomass of the facility is expected to be approximately 40 kg at any one time, and it is proposed to be limited in the regulatory limits of the permit. A similar research facility already exists at the neighbouring IMAS facility. The standing biomass at the adjacent existing IMAS salmonid research facility is 6.5 tonnes, in comparison.
	2.6.2 2.6.3 2.6.4 Appendix E	67 72 73	Removal of vegetation – opposed to removal of the trees as the eucalypt trees are an important food source for the critically endangered Swift Parrot.	No	See previous comments.

Representation No./ Agency	EER section no.	EER Page no.	Comments and issues	Further Info requested	EPA Comments
Public representation No. 3 and 7 (received additional representation during additional advertising period)	Traffic Impact Assessment [part of development application]		Poor sight lines around the entrance to driveway at 18 Nubeena Crescent, and junctions of Chiton Chase and Batchelor Way with Nubeena Crescent. Safety concerns regarding fast-moving traffic, usually with traffic travelling from the Channel Highway, but also in opposite direction. Young families and elderly living in the area needing safe crossings. Requesting traffic calming measures around these junctions and lower speed limits on Nubeena Crescent.	No	Traffic management and safety is a matter for Kingborough Council to consider.
Public representation No. 4			No complaint with the proposed development, as long as impacts on pedestrians from traffic are considered.	No	Traffic management and safety is a matter for Kingborough Council to consider.
	Traffic Impact Assessment [part of development application]		Concerns regarding the consideration of impacts on pedestrians in the Traffic Impact Assessment, particularly those crossing Nubeena Crescent to access the parks, neighbourhood garden, and beach, as well as those travelling through linking laneways towards the school. The speed of vehicles travelling on Nubeena Crescent is not always appropriate given the large number of pedestrians crossing the road. Object to the proposal being approved without a consideration of its impact on pedestrian networks and/or without a reduction in vehicle speeds on Nubeena Crescent and/or some measures being undertaken to slow vehicle movements in the vicinity of the crossing from the laneway to the park.	No	Traffic management and safety is a matter for Kingborough Council to consider.
Public representation No. 5	-		Generally supportive of the development.		
	Traffic Impact Assessment [part of development application]		<i>Increased traffic volumes and pedestrian safety</i> (note that this issue was also raised in a submission to the Planning Commission when the planning scheme changes were considered): The representation provides a detailed description of the varied facilities in and around Nubeena Crescent which attract traffic movements and describes the conflicts between traffic and pedestrians/cyclists/skateboarders in the area.	No	Traffic management and safety is a matter for Kingborough Council to consider.

Representation No./ Agency	EER section no.	EER Page no.	Comments and issues	Further Info requested	EPA Comments
			<p>Request a reduction in speed limit and/or consideration of traffic calming measures and warning signs on Nubeena Crescent.</p> <p>Requests consideration of the intersection of the Channel Highway and Nubeena Crescent and poor sight lines from the south and a nearby pedestrian refuge.</p> <p>Request engagement with the Tarooma Soccer Club regarding players and spectators travelling safely on Nubeena Crescent, and the same for IMAS and Ornatas staff.</p>		
	2.6.2 2.6.3 2.6.4 Appendix E	67 72 73	<p><i>Tree removal:</i></p> <p>The most up to date ECOtas report (referenced in the EER as ECOtas, 2020) was not available as part of the DA documentation online.</p> <p>Concerns around removal of seven high conservation value trees and additional potential for services to damage other trees. A financial offset is recommended, with funds used for conservation works around the Tarooma foreshore, with input from the Tarooma Environment Network.</p> <p>Impacts on trees A to G from carpark and sewer connections – recommending redesign of services and carpark to protect the trees affected, and that strict tree protection measures during construction be put in place.</p>	No	The ECOtas (2020) report is a statement made in relation to the planning scheme requirements and was not included as an appendix to the EER. It has since been uploaded to the EPA’s website for completeness.
	-		<p><i>Advertising:</i></p> <p>Residents felt that advertising of the planning application was deficient and requested that the advertising requirements be checked, with only one statutory public notice erected by Council at the main entrance to IMAS from Nubeena Crescent, rather than at more visible locations where such as the entrance to the former Devil facility. Many Nubeena Crescent residents were unaware of the proposal.</p>	No	Kingborough Council found that an insufficient number of notices had been erected in Nubeena Crescent, and subsequently re-advertised the planning application for a further 14-day period to accept additional representations, in agreement with the proponent. One additional representation was received during this time from a resident who had provided a representation during the first advertising period (representation numbers 3 and 7). All representations received

Representation No./ Agency	EER section no.	EER Page no.	Comments and issues	Further Info requested	EPA Comments
					during either advertising period are considered valid. The development was ultimately advertised calling for submissions three times in <i>The Mercury</i> – on 19 September 2020, 23 September 2020, and 14 October 2020, and representations accepted at any time from 19 September 2020 through to 27 October 2020.
Public representation No. 6	-		General support for the hatchery facility.		
	Refers to planning scheme requirements – 17.4.8 Environmental Values		Concern for seven Eucalypts proposed for removal within the proposal site, which have high conservation value, including as foraging and/or breeding habitat for the threatened Swift Parrot and Forty-spotted Pardalote. Request financial offset for removed trees to go to Council to manage, and that any remaining trees are protected during construction to ensure no damage occurs, or that damage has a financial offset associated with it.		The planning scheme’s requirements are a matter for Kingborough Council to consider.
Public representation No. 7	-		(It is noted that these contributors also submitted Public representation No. 3). Against the establishment of the hatchery in Nubeena Crescent.		
	Traffic Impact Assessment [part of development application]		A residential street with already high traffic flows. Concerns that after the pilot program a larger permanent hatchery will be established in the same area. Traffic and safety issues are already serious in Nubeena Crescent; traffic calming and speed limit measures are required given the already busy nature of the street.		Traffic management and safety is a matter for Kingborough Council to consider.

Appendix 2 – Table of proponent commitments

3. PART D SUMMARY OF PROPOSED MANAGEMENT MEASURES

No.	Proposed Measure	Timeframe
Air Quality		
1.	Design wastewater treatment facility to minimize potential odour generation	During planning, design and construction
2.	Develop and implement a procedure for wastewater treatment similar to the one used at the lobster research facility	Before commissioning of the pilot hatchery
3.	The backup diesel generator will be new.	During construction
4.	The backup diesel generator will be maintained according to manufacturer's instructions and maintenance schedules.	During operations, frequency as per maintenance schedules
5.	The generator will only operate as a backup during power outages to the facility.	During operations, as required by lack of power supply
6.	If the backup generator stops operating during power outages, a generator will be hired immediately and plugged in to the available generator power board.	During operations, as required by lack of power supply
Water Quality		
7.	Install 'EnviroProtector' filter to remove gross pollutants and a portion of phosphorous, nitrogen, suspended solids and other pollutants from site stormwater	Planning and construction
8.	Install 1000 micropollutant traps within stormwater pits	Planning and Construction
9.	Ensure regular and ongoing maintenance and cleaning of stormwater system	During operations, frequency as per maintenance schedules
10.	Tertiary treatment of saltwater waste through the joint processes of the Recirculating Aquaculture System (RAS) and a dedicated Saltwater Waste Treatment Plant (SWTP)	Planning and Construction
11.	Water quality monitoring in relation to coastal outfall discharging treated seawater at four locations (one separate to the shared UTAS and Ormatas) and the sharing of data between UTAS and Ormatas to assist with meeting regulatory requirements	During operations, quarterly
Noise Emissions		
12.	Upon finalisation of mechanical plant design, noise predictions to be updated	Planning and construction
13.	Ensure backup diesel generation is housed in an acoustic enclosure	Prior to construction
14.	The ceiling space AHUs use internally lined ducts and bends (2 off), to connect to the roof vents.	construction
Solid Waste		

No.	Proposed Measure	Timeframe
15.	The hatchery operational area of the building will be designed, constructed and operated as a biosecure area.	Planning, construction, operation
16.	<p>Develop and implement biosecurity procedures to comply with:</p> <ul style="list-style-type: none"> AS2243.3:2019 Safety in Laboratories - Microbiological Safety and Containment; Any permit issued by Biosecurity Tasmania; and The UTAS Regulated and Hazardous Biological Materials Policy. <p>The procedures will include provisions for training and record keeping.</p> <p>The biosecurity procedures will be audited annually by a qualified and experienced third party.</p>	Planning, construction, operation
17.	All waste products generated within the biosecure area will be considered biohazard waste, and will be stored then disposed as quarantine wastes, transported by a licensed waste disposal contractor.	Operation, decommissioning
18.	The facility will aim to implement a paperless office environment.	Operation
19.	Reuse of packaging and equipment will be implemented where appropriate and practicable, with consideration for quarantine requirements.	Construction, operation, decommissioning
20.	The best available plant and equipment will be sourced for the proposed facility to ensure durability and to minimize maintenance, downtime and frequency of replacements and hence waste disposal.	Planning, construction
Hazardous Materials		
21.	The store will be located, designed and constructed in accordance with the requirements for minor storage of the specific Australian / New Zealand Standard applicable to the class of DG stored (i.e. AS 1940 and AS 3780).	Planning and construction
22.	In-use quantities of DG / HC in the Phyllosoma Room will be contained within portable bund trays to minimise the potential for leakages.	Prior to commissioning and during operation
23.	Appropriate DG / HC signage will be installed at the entry points to the store and Phyllosoma Room, and next to the back-up generator.	Prior to commissioning and during operation

No.	Proposed Measure	Timeframe
24.	Signage within the store will be provided to ensure adequate segregation between any potentially incompatible DG / HC.	Prior to commissioning and during operation
25.	Safety Data Sheets (SDS) specific to each DG / HC stored and handled on site will be obtained prior to receipt and hard copies kept at each storage location.	Prior to commissioning and during operation
26.	Labelling of DG / HC will comply with the requirements of the Globally Harmonized System of Classification and Labelling of Chemicals.	Prior to commissioning and during operation
27.	A spill response procedure will be developed, and spill response training, PPE and spill containment equipment will be provided and re-instigated as required.	Prior to commissioning and during operation
28.	Incident Reports will be completed in the event of a spill and recommended changes to prevent a recurrence will be implemented.	During operation
Natural Values		
29.	Financial offset for removal of high conservation value trees	planning
30.	where chain-link fence is proposed during construction, it is recommended that shade cloth (or similar) be attached to one side of the fence for the duration of the works. This is only relevant for higher fences - lower fences below the realistic flight-path of the birds (e.g. below 1.2 m) should not require mitigation	construction
31.	Low reflectivity glass be used for all glazing, at minimum the east elevation	Design and construction
Greenhouse Gases		
32.	The building footprint should avoid the removal of any established significant trees (with regards to the <i>Kingborough Interim Planning Scheme, 2015</i>).	Prior to and during construction
33.	The building should be sited to maintain the existing 'green' corridor, linking Tarooma Beach and the foreshore to the north.	Prior to and during construction
34.	Landscaping will be used to maximize outdoor green areas.	Planning and post construction
35.	Avoid use of the diesel generator except for back-up energy supply.	During operation
36.	Aim to generate a supply of energy on-site via roof-mounted PV array.	Planning, construction and operation
37.	Use of heat recovery technology for air and seawater transfer systems to minimise mains power use.	Planning, construction and operation

No.	Proposed Measure	Timeframe
38.	Design and construct the in accordance with the <i>National Construction Code 2019</i> , including all required energy efficiency measures such as insulation, double glazing, LED lighting and occupancy sensing, energy efficient HVAC systems including heat recovery, energy efficient hot water, etc.	Planning, construction and operation
39.	Avoid use of LPG or Natural Gas.	During operation
40.	Maximise the use of existing goods and waste transport trips to and from the UTAS property according to the agreement between UTAS and the proponent.	During operation
Decommissioning and Rehabilitation		
41.	If existing contamination is considered a risk, pre-occupation soil testing and potential contamination delineation will be carried out to inform the terms of relinquishment of the lease.	Prior to construction
42.	Construction land disturbance will be rehabilitated by contouring, waste removal, surface sealing and landscaping.	After construction
43.	On cessation of the operation, the proponent will remove any wastes from the facility and will decommission and dispose of any redundant equipment. Quarantine procedures will be applied to all biosecure wastes.	Upon cessation of operations

Appendix 3 – Permit conditions – Environmental No. 10363



ENVIRONMENT PROTECTION AUTHORITY