Environmental Impact Statement Guidelines

Huon Aquaculture Company Pty Ltd
Whale Point Nursery Facility Expansion and Intensification, Port Huon, Tasmania

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epa TASMANIA
ENVIRONMENT PROTECTION AUTHORITY

1.1 Table of Contents

Glossary and abbreviations

Term	Definition
Board	Board of the Environment Protection Authority
Case for assessment	Information required for environmental impact assessment, prepared according to the Board's requirements.
Director	Means the Director, Environment Protection Authority holding office under Section 18 of *Environmental Management and Pollution Control Act 1994* and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.
EIS	Environmental Impact Statement
EMPCA	*Environmental Management and Pollution Control Act 1994*
EMPCS	Environmental Management and Pollution Control System. Objectives found in Schedule 1 of EMPCA.
Environmentally hazardous material	Means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.
EPA	Environment Protection Authority. Tasmania's independent principal environmental regulator which administers EMPCA and consists of a Board and a Director.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
JAMBA/CAMBA	Japan-Australia and China-Australia Migratory Bird Agreements
LUPAA	*Land Use Planning and Approvals Act 1993*
MNES	Matters of National Environmental Significance
NCA	*Nature Conservation Act 2002*
Noise sensitive premises	Residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.
Planning Authority	Council for relevant local government area
RMPS	Resource Management and Planning System, Tasmania. Objectives found in Schedule 1 of EMPCA.
Suitably qualified person	Means suitably qualified person in the opinion of the Director
RFA	*Tasmanian Regional Forest Agreement*
TSPA	*Threatened Species Protection Act 1995*

Part A. Introduction

These Guidelines provide instructions for proponents on how to prepare an Environmental Impact Statement (EIS) for an activity being assessed in Tasmania by the Board of the Environment Protection Authority (the Board). The Board uses an EIS as a 'case for assessment', to assess the environmental impact of an activity, as required under the *Environmental Management and Pollution Control Act 1994* (EMPCA).

The role of the EIS

An EIS is generally required for larger scale developments, classed as requiring 2B or 2C assessments under EMPCA. It is a document that provides information about a proposal, its potential impacts and proposed mitigation measures. As a publicly available document, an EIS should facilitate public consultation and informed comment and should contain sufficient information to establish the conditions of approval by authorities, if approved.

The EIS should demonstrate that the proposal is consistent with the objectives of relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS). These systems are designed to facilitate sustainable development.

Further information on the EPA Assessment Process is available at Home | EPA Tasmania.[1]

Refer also to Appendix A *General principles for assessing environmental impacts*, for further information on EIS principles.

How the Board uses the EIS

The Board uses the EIS to inform decision making as part of the environmental impact assessment process. The EIS must be prepared in accordance with guidance provided by the Board under section 74(4) of EMPCA. The staff of the EPA support the Board during the assessment process.

The EIS will be advertised publicly to allow for public consultation. The proponent may then be required to supply additional information in response to public and government agency submissions. This information is generally supplied in the form of a supplement to the EIS.

The Board considers the EIS as well as other relevant information in the context of the objectives of the RMPS and EMPCS. These objectives aim to sustain the environment and avoid or mitigate adverse effects, while considering the economic and social needs of people now and in the future. The Board will endeavour to make the decision which best furthers the objectives of the RMPS and EMPCS. It may approve the proposal with conditions, or in some cases may decide to reject the proposal if the objectives cannot be upheld.

The Environmental Impact Statement Guidelines are adapted for each specific proposal. In general, more detailed studies and information will be required where issues are considered by the Board to involve a higher level of environmental risk.

Other significant matters may emerge while preparing the EIS, from environmental studies, public comments, or other sources. These must also be considered in the EIS. Information collected or generated during the assessment process may also change the understanding of the level of risk associated with some issues. This must also be reflected in the EIS.

[1] See https://epa.tas.gov.au/Pages/Assessment-Process.aspx

Planning information

The relevant Planning Authority (local Council) will assess planning information if the *Land Use Planning and Approvals Act 1993* (LUPAA) applies. Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under section 54 of LUPAA where the planning application has started the environmental assessment process; or
- as a combined planning and environmental report where it is intended to submit an EIS (draft or final) with the planning application. Where this option is selected, the information required for the Board's assessment must be clearly distinguished from that supplied for the purposes of LUPAA.

Australian Government environmental assessment

The Australian Government (Commonwealth) may have a role in the environmental assessment and approval of the proposal in addition to Tasmanian requirements. Approval under the Australian *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for an action which has, will have, or is likely to have, a significant impact on a Matter of National Environmental Significance (MNES).

The nine MNES are:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

Information on the EPBC Act can be obtained from the Australian Government, Department of Climate Change, Energy, the Environment and Water (DCCEEW) website,[2] or by calling 1800 803 772.

The Australian and Tasmanian Governments have signed a bilateral agreement for environmental impact assessment under section 45 of the EPBC Act, which accredits the Tasmanian assessment process. This allows a proposal that has been determined to be a controlled action under the EPBC Act to be assessed by the Board on behalf of the Australian Government.

If a proponent elects to have their proposal assessed under the bilateral agreement, the EIS should specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. It must also contain a summary table showing that it addresses the matters specified in Schedule 4 of the *Commonwealth Environment Protection and Biodiversity Conservation Regulations 2000*.[3]

[2] See https://www.dcceew.gov.au/environment/epbc
[3] See http://www8.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol_reg/epabcr2000697/sch4.html

Part B. Instructions

The EIS must present information in a way that can be easily understood. It should provide summaries in non-technical language to give readers a general understanding of the proposal. It must also provide technical detail to allow analysis and understanding of impacts and mitigation measures by technical specialists, regulatory bodies, and people with an interest in specific matters arising from the proposal.

Section C of these Guidelines sets out the structure and **minimum** content requirements of the EIS.

Proponents are advised to consult the EPA during preparation of the EIS, including in the case of any uncertainty in relation to the requirements set out in these Guidelines.

General requirements

- Avoid technical terminology where possible in the main body of the EIS. It should be able to be read as an independent document which provides a general understanding of the proposal.
- Include any detailed technical data or supplementary reports as appendices.
- Consider document accessibility. The Australian Government Style Manual provides information about inclusion and accessibility.
- Use cross-referencing to prevent unnecessary duplication between sections.
- Reference all sources of information using a consistent style.
- Define all key terms and words used.
- Information in the EIS must be relevant.
    - Show reasoning for arguments. Support conclusions with referenced evidence.
    - Indicate how current information is, how reliability has been tested, and the degree of confidence attached to any predictions.
    - Sufficient technical detail must be provided to allow for environmental impact assessment, even when details are not final at the time of preparation.
    - If information is currently unavailable, estimates and alternative options should be provided, however the limitations of available information must be evaluated.
- Provide any sensitive commercial or corporate information in a confidential appendix. Provide a comment in the EIS if this has been done.

The EIS must not include information that is known to be false or misleading, and nothing should be omitted if it is known that without it the EIS would be false or misleading (section 43A of EMPCA).

Spatial and visual information requirements

- Present information in maps, plans, diagrams, and photographs where necessary, to enhance understanding.
- Images must be high quality and reproducible in monochrome, with all text and relevant features clearly visible.
- Maps and plans should include a north arrow and scale.

- Use a consistent base plan throughout the EIS where appropriate, to allow elements to be overlaid and compared. Ensure that detailed information is clear and visible, particularly when using satellite images as background layers. This is best achieved using a geographical information system (GIS).
- Specify the coordinate reference system when providing or referring to spatial information, including maps, plans, grid coordinates and heights. Further information on coordinate reference systems used in Tasmania can be found on the Land Tasmania website[4].

  Recommended systems are:

  - Horizontal – Geocentric Datum of Australia 1994[5] Map Grid of Australia Zone 55 (GDA94 MGA55)
  - Vertical – Australian Height Datum (Tasmania) (AHD83).

Independent Review

For large proposals, such as Class 2C activities, prior to submission to the EPA, the draft EIS should be independently reviewed by a suitably qualified person to confirm that it meets the requirements detailed in Guidelines issued for the proposal.

Submission

It is strongly recommended that proponents submit a draft EIS to the EPA for review prior to formal lodgement of the EIS with the Board.

The EIS (and any drafts submitted for review) may be submitted via email to assessments@epa.tas.gov.au and your nominated contact officer. Proponents should contact the EPA if alternative submission methods are deemed necessary.

[4] See https://nre.tas.gov.au/land-tasmania/geospatial-infrastructure-surveying/geodetic-survey/coordinate-height-and-tide-datums-tasmania

[5] Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, but is not yet fully implemented in Tasmania.

Part C. EIS structure and content

The EIS must follow the structure set out below and must address all requirements unless otherwise agreed following consultation with the EPA. For clarity, organise content with further headings and subheadings as appropriate.

Title page

The title page must include:

- Name of proponent (legal entity)
- Name of proposal (include "expansion" or "upgrade" where appropriate)
- Proposal address or location
- EIS version number
- Month and year of submission

Executive summary

The executive summary must provide a clear and concise overview of the proposal, its environmental implications, and the function of the EIS in the context of the assessment process. For a larger EIS, the executive summary must be written as a stand-alone document for people who may not wish to read or acquire the full EIS.

Table of contents

The EIS must include a table of contents and a list of figures and tables to allow the reader to easily locate information. The table of contents should include hyperlinks to allow documents to be navigated easily.

Glossary and abbreviations

Provide a list of abbreviations and acronyms and a glossary which clearly defines any technical terms used in the EIS.

Proponent information

Proponent details:

- Name of proponent (legal entity)
- Name of proponent (trading name)
- Registered address of proponent
- Postal address of proponent
- ABN
- ACN (where relevant)

Contact person's details:

- Name
- Telephone
- Email address

Activity Operator details must be provided if the operator will be a different entity to the proponent.

1. Introduction

The introduction should provide:

- General background information on the proponent, including relevant development and operational experience.
- General background information on the proposal, including:
    - current status of the proposal;
    - an overview of the principal components of the proposal;
    - the proposal location;
    - likely markets for the product; and
    - possibilities for future expansion.
- If the proposal is associated with an existing activity, information on current permits, regulatory approvals and/or licences.
- A discussion about how the proposal relates to any other proposals that have been or are being developed in the same region as the proposal.
- Environmental legislation, standards and guidelines that will be applicable, such as policies, regulations, and industry codes of practice.
- Other relevant Commonwealth, State and Local Government policies, strategies, and management plans with which the proposal would be expected to comply.

2. Proposal description

The scope of the proposal must be clearly described, and must include:

- A summary table,
- A detailed description of proposal,
- Definition of the Land,
- Maps, plans and visual information,
- A summary of planning aspects,
- Socio-economic context, and
- Off-site infrastructure.

Where a proposal will require a permit application under LUPAA, the proposal description and specification of the site must be consistent with the intended or current permit application.

2.1 Summary table

The summary table provides an overview of the proposal and identifies the key characteristics, including:

- Location and planning context;
- Existing site information, including topography, local climate, geology, geomorphology, soils (e.g. erodibility and acid sulphate soils), vegetation, fauna, groundwater, and surface drainage (e.g. waterways, lakes, wetlands, coastal areas);
- Proposed infrastructure;
- Proposed timeline; and
- Inputs (e.g. water, materials, energy) and outputs (e.g. products, wastes and emissions).

Refer to *Appendix C* for an example of a project description summary table.

2.2 Definition of the Land

Provide a definition of the Land on which the activity will take place. The boundary must be consistent with any intended or current permit application under LUPAA. Information requirements will vary depending on how the Land is defined. Refer to Part B for spatial and visual information requirements for detailed mapping instructions.

2.2.1 Existing defined boundary

If the Land is delineated by an existing defined boundary, the definition of the Land may be indicated by:

- Cadastral boundaries (Title Reference, Property ID), e.g. Title Reference 136529/1; or
- Lease boundaries (Mining Lease, Crown Lease, Marine Farming Lease), e.g. Mining Lease 9011P/M.

2.2.2 Other boundary

If the Land is not delineated by an existing defined boundary, it may be necessary to define a new boundary by reference to specific topographic features and/or surveyed grid coordinates. A boundary survey may be requested during the assessment process if required to adequately identify the Land. If this is the case:

- Provide a plan which clearly shows the boundary of the Land in relation to topographic features or surveyed grid coordinates; and
- Provide the boundary of the Land in a geospatial vector format (shapefile or DXF).

2.3 Detailed description of proposal

This section should include information that has not been included in the summary table, or that requires further explanation. Provide detail on the proposed construction, commissioning and operation of the activity, including any ancillary works that are for the purpose of the proposal (e.g. access works).

2.3.1 Project Components

- Describe the physical components required for the proposal to function up to closure.
- Describe the major items of equipment (including pollution control equipment) and onsite facilities. Include detailed technical information on major items of equipment as appendices.
- Detail the total footprint of the proposal.

2.3.2 Construction

- Provide a step-by-step description of significant activities that will occur during the construction phase of the proposal.
- Provide an indicative timetable for completing major stages of construction.
- Detail the total construction footprint.
- Define the proposed hours within which construction activities will take place (hours per day and specific days per week).
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) during construction. Specify what proportion of road usage and vehicle movements will involve over-dimension and heavy road vehicles. Compare the proposed vehicle movements with existing usage of relevant routes.

2.3.3 Commissioning

- Provide a step-by-step description of significant commissioning activities that will occur following installation of equipment.
- Provide an indicative timetable for completing major stages of commissioning. Describe the point at which commissioning will be considered complete.

2.3.4 Operation

- Describe the process(es) of operation in a step-by-step manner, using explanatory diagrams and flow charts where appropriate.
- Outline all raw materials (including water) required for operation. Detail sources, quantities, and characteristics.
- Identify and quantify all products, emissions and/or wastes produced.
- Outline all energy requirements for operation. Describe how energy demands will be met.
- Define the production capacity and rate for relevant processes. Include peak rates, daily average rates and annual production rates where applicable.
- Define the proposed hours of operation (hours per day and specific days per week). Specify any seasonal variations.
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) likely to occur during operation, including timing of traffic flows. Specify what proportion of road usage and vehicle movements will involve over-dimension and heavy road vehicles. Compare the proposed vehicle movements with existing usage of relevant routes.
- If the proposal is associated with an existing activity, describe any current approvals or regulatory conditions.

2.4 Maps, plans and figures

Provide maps and plans that detail the location of the proposal in relation to the local and wider region. Refer to Part B for spatial and visual information requirements.

2.4.1 General location maps

Provide general location maps of the existing environment and surrounding area (1:25,000 scale or better, as appropriate) which identify:

- The location of the proposal site;
- Boundaries of the property on which the proposal is located;
- Road access to and from the site;
- The distance(s) to any nearby sensitive uses[6];
- Topographical features, aspect, and direction of drainage;
- Location of waterways and drains (including ephemeral waterbodies and water courses);
- Electricity transmission lines;
- Surrounding land tenure;
- Surrounding land use (including areas of conservation or recreational significance); and
- Surrounding land zoning in the local government planning scheme.

2.4.2 Site Plan

Provide a site plan that includes existing and proposed conditions and features of the site. This may include:

- Elevation contours and levels;
- The position of topographic features including roads, tracks, waterways, and drains;
- The position of facilities, buildings, structures, major items of equipment, storage areas and loading or unloading areas; and/or
- A construction layout plan.

Geospatial data included on the plan(s) should also be provided to the Board in a geospatial vector format (shapefile or DXF). If the site plan is not based on a feature and level survey and the Board determines that

[6] Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

this information is needed to adequately assess the proposal, such a survey may be requested during the assessment process.

2.4.3 Figures and flowcharts

Present figures such as process flowcharts and images where they are likely to improve readers' understanding of the site and proposal. Any images and photos used must be high-quality, with an accurate description and date.

2.5 Planning aspects

The planning aspects description should include any additional planning information and data not included in the summary table.

- If a permit is required under LUPAA provide Use Class and Permissibility of the proposed activity under the applicable Planning Scheme.
- Detail land tenure and property boundaries of the proposed site, with certificate of title details.
- Detail land zonings for the proposed site and surrounding areas.
- Describe any rights of way, easements and covenants affecting the site.
- Discuss land use and planning history of the site, including the potential for site contamination[7], present use and any existing buildings and significant structures.
- Describe land use and ownership in the vicinity of the site and those areas which may be affected by the proposal.
- Provide the location and nature of industrial facilities.
- Detail sensitive uses[8] and residential zones within applicable attenuation distances including the location of individual residences, schools, hospitals, caravan parks and similar sensitive uses, and the location of any tourist or recreation facilities or routes (such as camping areas, picnic areas, walking tracks, historic routes).
- Consider any proposed or potentially sensitive uses within applicable attenuation distances from the proposal site, which have been or are likely to be granted approval under the local planning scheme.

2.6 Socio-economic context

Briefly describe the existing social and economic environment that may be affected by the proposal. This may include:

- A summary of the social or demographic characteristics of the population living in the vicinity of the proposal site, identifying any special characteristics which may make people more sensitive to impacts from the proposal than might otherwise be expected.
- A summary of the characteristics of the local and regional economy.

[7] Information on potentially contaminating activities and contaminated site assessment can be found online at https://epa.tas.gov.au/Pages/Land.aspx

[8] Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

2.7 Offsite infrastructure

- Identify all existing and proposed offsite components required to enable the proposal to proceed, e.g. water off-take, storage net-liners, electricity supply, roads, relevant aspects of utility boats (vessels), loading operations, marine farm lease areas and any fish bathing equipment.
- Describe in detail the attributes and application of storage net-liners, with reference to any technology, engineering or procedural precautions that will minimise the risk of catastrophic failure of the net-liner's ability to contain the fish-bathing water.

3. Project Alternatives

Proponents should provide the rationale for the proposal. Alternatives should consider best practice environmental management, including measures listed under section 4(2) of EMPCA.[9] The rationale should:

- Describe the site selection process and criteria.
- Evaluate any alternative sites considered. Justify the choice of the proposed site in terms of clearly defined environmental, social, economic, and technical considerations.
- Describe the effect of any community consultation on the selection process.
- Identify and provide an assessment of other available technologies, materials, design options or management practices, where relevant. Evaluate the environmental performance of identified alternatives and provide justification for the preferred option.

4. Public Consultation

Describe any public consultation that has taken place during project planning and preparation of the EIS, and summarise the results of this consultation. Describe any proposed future public consultation that will take place during project implementation and operation. The Board encourages early community engagement, as it often leads to better outcomes for all parties. Guidance on effective community engagement is available on the EPA website. [10]

5. Potential Impacts and Management

Identify all potential environmental impacts and describe the proposed measures to avoid, mitigate or offset adverse consequences. The detail provided on each issue should reflect its significance. While key issues are identified for the proposal, other issues that emerge as significant while preparing the EIS, through environmental studies, public comments or otherwise, must be considered and addressed.

Address each discrete issue separately, using headings and subheadings where necessary to organise and separate discussions.

Use scientific data to support predictions and evaluate impacts and provide references to the data used. Where specialist reports have been required for key issues, summarise them within the body of the EIS where relevant, and attach the reports as appendices. Detail the qualifications of the authors of any specialist reports. Make sure that the information in the body of the EIS is consistent with the information in the appendices.

General information requirements for each potential impact are described below, and are in addition to any specific information requirements detailed later in this section.

[9] See: https://www.legislation.tas.gov.au/view/html/inforce/current/act-1994-044#GS4@EN
[10] See https://epa.tas.gov.au/Documents/Guidance on Community Engagement.pdf

Existing Environment

- Describe the existing environment in relation to the impact, including the vulnerability of the potentially affected environment.
- Analyse the issue in relation to the existing environment.

Methodology

- Describe how the assessment of the impact has been undertaken, such as by survey or desktop study.
- Identify any relevant guidelines and standards used.
- Discuss any choice of methodology over alternatives where relevant.

Assessment

- Clearly articulate potential impacts, using tables and figures to aid communication where possible.
- Support assertions and assumptions with adequate argument and/or evidence.
- Identify plausible worst-case scenarios and the reversibility of the impact.
- Summarise the proposal's contribution to any cumulative impacts, where appropriate.

Avoidance and Mitigation Measures

- Describe the measures proposed to avoid, mitigate or offset potential adverse impacts.
- Detail any specialist recommendations which have been/will be implemented. Where specialist recommendations are not to be implemented, justify why. All recommendations made in specialist reports should be addressed.
- Analyse the effectiveness of the mitigation measures. Describe how and to what degree the impacts will have been avoided, minimised or offset.
- Discuss any residual impacts, referring to relevant guidelines or standards.
- Discuss any contingency measures related to pollution control equipment.

Refer to *Appendix A: General principles for assessing environmental impacts*.

Components of the EIS

Where possible, the EIS must consider the environmental impacts of the existing activity as well as the proposed expansion; the existing activity being defined as the increase in maximum standing biomass from 500 tonnes at any point in time approved under Environmental Licence No 10296/2, to 786 tonnes at any point in time, which reflects the current tonnage at the site, and, the proposed expansion being the addition of a new recirculating aquaculture system (RAS) and waste water treatment plant. Reference to 'the proposal' below is intended to include both components, where relevant. The total tonnes of maximum standing biomass at any point in time at the facility must be clearly identified.

Key issues

The key issues identified for this proposal, which should be the focus of the EIS, are:

1. Potential impacts on water quality associated with the operation of the proposal.
2. Potential noise impacts on sensitive receptors associated with the construction and operation of the proposal.
3. Potential impacts on air quality associated with the operation of the proposal.

5.1 Water quality

Discuss potential impacts of the proposal on surface water during construction and operation, including methodology where appropriate.

5.1.1 Existing Environment

- Provide a description and map of the activity site with respect to topography and preferential surface water flow, existing surface water and stormwater drainage. Identify nearby water bodies and watercourses potentially impacted by the proposal.
- Describe the water supply sources and volumes required for the operational stage of the proposal.
- Provide an overview of the aquatic environment in the vicinity of the net-liners. Identify all relevant Protected Environmental Values (PEVs)[11], including:
  - sensitive uses and associated water quality considerations;
  - seasonal water quality, hydrological characteristics and biological conditions;
- Describe the environmental aspects of Port Huon relevant to fish bathing water storage and loading operations. Focus on the potential effects of a sudden release of fish bathing water due to storage-net failure or spill, or ongoing release due to liner leakage. The description should include water quality, hydrodynamic aspects, depths at sites, biota, ecosystem quality and identification of any significant environmental values.
- Provide sufficient description of the marine environment in potential fish bathing-water disposal areas to demonstrate disposal of effluent from the proposal site is sustainable using this method. The description should focus on mass loads of nutrients, predicted dispersion, dilution rates and dilution management, and the location of any nearby receptors (e.g. marine farms in other ownership).

5.1.2 Assessment

- Identify and characterise all liquid emissions that could arise from the proposal, including from industrial processes, waste treatment processes, fuelling, domestic/office facilities, stormwater or other sources.

[11] See https://epa.tas.gov.au/environment/water/pevs-for-tasmanian-surface-waters

- Describe any existing wastewater and/or stormwater treatment on the site. Provide an analysis of wastewater and/or stormwater quality as discharged from the existing activity.
- Describe any proposed changes to wastewater and/or stormwater treatment for the development. Describe the selected treatment technology, the likely volume and quality of effluent/water that will be produced including seasonal variation and longer-term trends associated with production levels, and its fate in the environment. Include the estimated proportion of wastewater used for fish bathing versus the volume directly released.
- Describe proposed stormwater management, including during reasonably foreseeable flood events. Include an assessment of the potential for pollutants to become entrained in stormwater and details of drainage control measures such as cut-off drains and sediment settling ponds.
- Provide details of the discharge to the net-liner, including:
  - a description of the discharge pathway, detailing the proposed and existing infrastructure.
  - a description of the proposed discharge regime, including consideration of frequency, continuity and rate of discharge to the net-liners. Where flow rate varies relevant patterns and statistics should be provided.
- Provide details of, and a map depicting existing and proposed:
  - wastewater discharge locations.
  - preferential flow of stormwater arising from rainfall on the proposal site.
  - location of stormwater collection system.
- Specify target values for key parameters of treated-wastewater quality at end-of-pipe (from Land) and within the storage net-liners as well as post fish-bathing and prior to discharge, under all typical operational circumstances. This evaluation should focus on nutrient loads that may be discharged to the marine environment and dilution requirements for any contaminants to achieve background water quality[12].
- Propose effluent quality limits, including expected median, 90th percentile and maximum values for biochemical oxygen demand (BOD), non-filterable residue (NFR), thermotolerant coliforms, total and dissolved nitrogen, total ammonia nitrogen, total and dissolved reactive phosphorus, conductivity and pH[13] and any other identified contaminants of concern.
- Provide a detailed description of site water management and treatment, from inflow, through recirculation management, to effluent treatment and disposal. The description should be sufficiently detailed to demonstrate the proposed effluent quality will be achieved and that contingency measures can be put in place to manage risks related to the proposed effluent quality. Include a schematic/conceptual model of the proposed wastewater treatment system, including information on the system design, technology, function, and performance.

5.1.3 Avoidance and mitigation measures

- Identify and assess available options for improved effluent management and minimisation of wastewater discharge, according to the hierarchy set out in the *State Policy on Water Quality Management 1997, Division 2: 'Management of Point Sources of Pollution'*.[14] Viable reduction or reuse options must be implemented. The assessment must include:
  - details of any investigations undertaken to identify options for beneficial reuse of effluent.
  - justification for any proposed emission of contaminants to surface water in accordance with the principles outlined in the *State Policy on Water Quality Management 1997*.
- Discuss contingency measures for unforeseen circumstances, such as oversupply of wastewater, and other incidents that may compromise the quality of water intended for reuse. Identify alternative disposal options (temporary or otherwise) or discuss the ability to reprocess any treated wastewater that remains unsuitable for reuse. Contingency measures for managing poor

[12] Refer to the *State Policy On Water Quality Management 1997*
[13] For pH, specify expected minimum and maximum values only.
[14] See https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997

quality effluent, incidents (e.g. translocation of pests and pathogens), accidents, equipment malfunction or natural events (e.g. storms) should be provided.

- Describe measures to maintain the quality of the water contained in the proposed retention pond and storage net-liners, e.g. exclusion of water-birds, wildlife and other sources of contaminants.
- Discuss the differences between the proposed disposal program and that associated with the existing fish-bathing operations. Include the assessment of any changes to risks posed to the marine environment. Review and refer to general information about environmental and anthropogenic nutrient enrichment of the receiving waters and discuss accordingly.

For information about water quality management framework and evaluation criteria in Tasmania refer to *Technical Guidance for Water Quality Objectives (WQOs) Setting for Tasmania, August 2020*.[15]

5.2 Groundwater

Discuss potential impacts of the proposal on groundwater (quality and quantity). Consider construction and operation phases and include methodology details where appropriate.

5.2.1 Existing Environment

- Where potential groundwater contamination could arise as a result of the activity or where groundwater extraction is proposed, provide a conceptual groundwater model for regional and local aquifer flows.
- Provide a map showing the location of existing groundwater extraction bores nearest to the area impacted by the activity. Refer to NRE's Groundwater Information Access Portal where relevant.[16]
- Identify any surface water and groundwater dependent ecosystems that may receive groundwater from areas impacted by the proposal.
- Provide details of any baseline groundwater quality monitoring undertaken.

5.2.2 Assessment

- Discuss the potential impact of the proposal on groundwater.
- Provide information relating to any proposed use of groundwater sourced from the area. As relevant to any proposed use of groundwater, provide the results of a groundwater assessment at the proposed development site, including values for key parameters of groundwater quality and other contaminants of concern.

5.2.3 Avoidance and mitigation measures

- Describe the measures proposed to avoid or mitigate potential adverse impacts to groundwater, including detailing any measures, to prevent potential mobilisation (e.g. by displacement) of any historically-contaminated groundwater from the Land.

For information about the water quality management framework and evaluation criteria in Tasmania refer to *Technical Guidance for Water Quality Objectives (WQOs) Setting for Tasmania, August 2020*.[17]

[15] See https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf
[16] See https://wrt.tas.gov.au/groundwater-info/
[17] See https://epa.tas.gov.au/Documents/Technical%20Guidance%20for%20Water%20Quality%20Objectives%20(WQOs)%20Setting%20for%20Tasmania.pdf

5.3 Marine and coastal

If not addressed in other sections, discuss impacts of the proposal on marine and coastal areas.

- Detail any identified potential impacts to the in-shore marine environment where wastewater is to be stored. Provide measures to avoid and mitigate any possible adverse impacts.
- Provide a brief overview of proposed disposal program in relation to wastewater and nutrient enrichment impacts to receiving marine environments.
- Demonstrate that the proposal is consistent with the objectives and requirements of all relevant marine and coastal policies and legislation, including the *Living Marine Resources Management Act 1995*[18], *State Policy on Water Quality Management 1997*[19] and the *Tasmanian State Coastal Policy 1996*[20].

5.4 Noise emissions

5.4.1 Existing Environment

- Provide a map showing:
  - the location of all major sources of noise (e.g. pumps, fans, alarms, loaders, trucks, vessels etc); and
  - the location of nearby identified noise sensitive premises[21] in the vicinity of the boundary of the activity.

5.4.2 Assessment

- Identify and characterise (include sound power levels) potential noise sources and provide 1/3 octave source noise data (C-weighted and A-weighted) to assess for low frequency and tonal noise;
- For both the proposed and the existing activities:
  - outline the size and sound power level, noise attenuation and hours of operation for each main piece of equipment; and
  - detail the duration of the activities, separating the daytime, evening and night-time activities.
- Provide the local ambient and background noise measurement based on 7-day noise monitoring for daytime, evening and night-time periods, at locations representative of sensitive receptors.
- Describe the local environmental conditions that would influence noise impacts, including wind speed and direction, atmospheric conditions and topography.
- Provide a noise propagation map showing the 30, 35, 40 and 45 dB(A) noise level contours covering normal and reasonable worst-case scenarios for operating activities and meteorological conditions.
- All methods of measurements should be in accordance with the Tasmanian *Noise Measurement Procedure Manual*.[22]

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[18] See https://www.legislation.tas.gov.au/view/html/inforce/current/act-1995-025

[19] See https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/statutory-policies/state-policies-and-environment-protection-policies/state-policy-on-water-quality-management-1997

[20] See https://www.dpac.tas.gov.au/__data/assets/pdf_file/0010/11521/State_Coastal_Policy_1996.pdf

[21] 'Noise sensitive premise' is defined as: residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

[22] See https://epa.tas.gov.au/Documents/Noise_Measurement_Procedures_Manual_2008.pdf.

5.4.3 Avoidance and mitigation measures

- Describe the attenuation measures that will be implemented to avoid or mitigate impacts of noise emitted by the proposal.
- Demonstrate that cumulative noise emissions (LAeq) from the operation will not exceed the existing background noise levels (LA90) and that the proposal is consistent with environmental performance requirements, including any identified in the *Environment Protection Policy (Noise) 2009*.

5.5 Air quality

Detail the potential impacts of the proposal on the local and regional air environment during the construction and operational stages, including methodology where appropriate, and provide evidence demonstrating that the activity will not cause environmental nuisance or harm.

5.5.1 Existing Environment

- Provide a site map including the land boundary and the location of the nearest receptors that could potentially be affected by atmospheric emissions from the proposed activities.
- Describe the existing environment including climatic/meteorological conditions, terrain, land use and air quality in the vicinity of the proposal.
- Provide information about any odour complaints related to the operation of the existing facility from the last 5 years.

5.5.2 Assessment

- Provide a description of the expanded nursery facility activities from the arrival of parr to the discharge of the stock. Outline the stages of activities that contribute to the generation of air emissions and waste, and provide estimations for the amount and rate of each type of waste generated. This should include various types of sludge, waste feed, mortalities, and culls. Take into account seasonal variation in biomass production.
- Provide a detailed description of the proposed upgraded WWTP system (primary and secondary) and wastewater handling and storage. Identify specific components within the WWTP system that have the potential to be sources of air emissions.
- Provide a site map showing the locations and names of all potential sources of atmospheric emissions (i.e., the materials and their storage, equipment and activities, transport of materials to and from the facility, and waste storage and management) from the proposed nursery facility expansion, as well as the wastewater treatment plant. Sources such as wastewater, organic waste, sludges and mortalities should be considered.
- For each identified emission source (point and fugitive), describe the composition of the atmospheric emissions, including odour and dust, their quantities and rates of emission to the atmosphere that may arise from activities on the site, as well as from loading, unloading, and transport of materials.
- Provide an assessment of the potential atmospheric emissions from the demolition of the existing structures and the construction stage of the facility expansion.
- Describe and assess the potential impacts of the atmospheric emissions from the existing and proposed activity during different stages of the operation carried out at the facility (from receipt of parr to removal of smolt off-site and handling the waste material including wastewater) with respect to the likelihood of causing environmental nuisance or environmental harm. The assessment should cover a variety of conditions including worst case scenario and upset conditions. It should contain information about the time of day, duration, and frequency of the atmospheric emissions from the facility to establish suitable parameters for air dispersion modelling.

- Provide results of atmospheric dispersion modelling and an assessment of impacts of air emissions from all potential odour sources associated with the proposed facility (including those outside of the boundary of the land, if applicable) associated with the planned activity against the requirements of the *Tasmanian Environment Protection Policy (Air Quality) 2004*[23]. Modelling by a suitably qualified specialist must be conducted in accordance with EPA's *Atmospheric Dispersion Modelling Guidelines*.[24] The modelling should use conservative emission rates and should consider various possible scenarios of operation of the proposed facility. It is recommended that the scope and method of atmospheric dispersion modelling be discussed with the EPA's Air Modelling Officer prior to the commencement of any modelling work.
- Using publicly available information, describe how the future climate is projected to change in the facility's local government area. Outline how factors affecting generation and dispersion of air emissions may impact the local air quality at and beyond the site boundary.
- Demonstrate that the assessment is consistent with the requirements of the *Tasmanian Environment Protection Policy (Air Quality) 2004* and any supplementary documents (including the Air Pollutant Design Criteria - EPA Board Statement[25]).

5.5.3 Avoidance and Mitigation Measures

- Describe the management of all potential air emissions from sources, including wastewater and biosolids, such as sludge and mortalities. Discuss design features of the equipment, infrastructure and systems, and other processes, strategies, or procedures, which will mitigate atmospheric emissions.
- Describe measures to be implemented to mitigate all atmospheric emissions from the site that may cause environmental nuisance or harm at or beyond the site boundary. Include consideration of normal operations and maintenance conditions as well as potential impacts associated with any biological crisis and/or other periods when control and safety systems may not be fully functional. Management of potential impacts associated with the operation of the facility in adverse weather conditions should also be considered.
- Provide evidence of the application of Accepted Modern Technology, as defined in the *Environment Protection Policy (Air Quality) 2004*, to reduce unavoidable emissions to the greatest extent practicable.

5.6 Light emissions

Discuss the impacts of light pollution generated by the proposal during construction and operation.

5.6.1 Existing Environment

- Detail the existing and proposed lighting infrastructure, lighting regimes, positioning and lighting type during different stages of the proposal.

5.6.2 Assessment

- Identify potential sources of light pollution and sensitive human and wildlife receptors for both the construction and operational phases of the proposal.
- Consider the different types of light pollution and potential impacts on human and wildlife receptors, with reference to any relevant guidelines or standards, including *National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds*[26]

[23] See https://epa.tas.gov.au/Documents/EPP_Air_Quality_2004.pdf
[24] See https://epa.tas.gov.au/Documents/Atmospheric%20Dispersion%20Modelling%20Guidelines.pdf
[25] https://epa.tas.gov.au/Documents/Board%20Statement%20-%20Update%20to%20Air%20Pollutant%20Design%20Criteria%20used%20in%20the%20EIA%20Process%20-%20January%202022.pdf
[26] See https://www.environment.gov.au/biodiversity/publications/national-light-pollution-guidelines-wildlife.

5.6.3 Avoidance and mitigation measures

- Identify the need or otherwise for construction and operational mitigation measures and strategies to manage light pollution.

5.7 Waste management

Discuss the impacts of waste generated by the proposal, during construction and operation.

5.7.1 Existing Environment

- Describe the existing environment in relation to the impact of waste generated by the activity.

5.7.2 Assessment

- Describe the source, nature and quantities of all general wastes likely to be generated by the proposal (liquid, gaseous, solid or other), including general refuse and by-products from the various stages of the process;
    - provide an estimate of expected volumes bio-waste (sludge and morts generated by the activity) per day, and describe the composition of the sludge. Describe proposed onsite storage arrangements as well as proposed end use destination and location(s);
    - include an assessment of key contaminants in the sludge which have potential to limit re-use; and
    - evaluate the potential for large scale fish mortality and describe management of bulk quantities of dead stock, including potential disposal options.
- Describe the methods and facilities proposed to collect, store, reuse, treat or dispose of each **general** waste stream. Describe collection or other maintenance requirements where relevant.
- Describe the source, nature, quantity, and method of treatment, storage and disposal for each **controlled** waste arising from the proposal.[27] Describe collection or other maintenance requirements where relevant.
- Demonstrate any off-site land spreading can comply with the *Guide to Land Spreading of Food Industry Waste - January 2019 (epa.tas.gov.au)*[28]

5.7.3 Avoidance and mitigation measures

- Demonstrate that any waste management measures follow the following hierarchy of waste management, arranged in decreasing order of desirability:
    - avoidance.
    - reuse.
    - treatment/stabilisation for reuse.
    - recycling.
    - energy recovery.
    - repository storage (for future treatment/recovery).
    - treatment/stabilisation for disposal.
    - disposal/permanent containment.

5.8 Dangerous goods and environmentally hazardous materials

Dangerous goods and environmentally hazardous materials are any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment. This includes fuels, oils, waste and chemicals. Discuss

[27] Controlled waste is defined in EMPCA and associated regulations. A non-exhaustive listing of categories of controlled waste can be found at https://epa.tas.gov.au/business-industry/regulation/waste-management/controlled-waste

[28] See https://epa.tas.gov.au/Documents/EPA%20Guide%20to%20Land%20Spreading%20of%20Food%20Industry%20Waste%2C%20January%202019.pdf

the potential impacts of dangerous goods and environmentally hazardous substances used in or generated by the proposal. The discussion should:

- Describe the nature, quantity and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the Australian Code for the Transport of Dangerous Goods by Road and Rail)[29] that will be used during the construction and operation of the proposal.
- Provide a map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- Detail measures to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials. Examples include bunding or spill trays.
- Provide contingency plans for when control measures fail, equipment breaks down or accidental releases to the environment otherwise occur. Include detail on proposed emergency and clean-up measures and notification procedures. Identify any safety management requirements for the protection of human health and safety where incidents may affect the community.

5.9 Biodiversity and natural values

Discuss impacts of the proposal on biodiversity and nature conservation values (terrestrial and aquatic). Include details on how information has been collected or generated where applicable.

5.9.1 Existing Environment

- Specify and map known records of fauna, flora, vegetation communities and habitat, including aquatic species as relevant, with reference to threatened species, communities and habitats, including those listed under the relevant Schedules of the Australian Government EPBC Act and the Tasmanian *Threatened Species Protection Act 1995* (TSPA)[30] and Tasmanian *Nature Conservation Act 2002* (NCA).[31]
- Specify and map known records of weeds, pests and diseases.
- Where there is the potential for threatened species or vegetation communities to be present, provide the results of terrestrial and/or aquatic (as relevant) natural values assessment surveys undertaken by a suitably qualified person(s), in accordance with the requirements of the *Guidelines for Natural Values Surveys*.[32]
- Biosecurity aspects of the proposal should be described, detailing biosecurity vectors and hazards.
- Identify areas or habitats of conservation significance, including designated conservation areas, areas relating to the requirements of international treaties (e.g. Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA) and Ramsar (wetlands) Convention), or wetlands listed in Directory of Important Wetlands in Australia.[33]
- Identify any freshwater ecosystems of high conservation management priority using the *Conservation of Freshwater Ecosystem Values (CFEV) database*,[34] including values in the vicinity of the proposal. The specific CFEV information should be Conservation Management Priority Potential.

[29] See https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code
[30] See https://www.legislation.tas.gov.au/view/html/inforce/current/act-1995-083
[31] See https://www.legislation.tas.gov.au/view/html/inforce/current/act-2002-063
[32] See https://nre.tas.gov.au/Documents/Guidelines%20for%20Natural%20Values%20Surveys%20related%20to%20Development%20Proposals.pdf
[33] See https://www.environment.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands.
[34] See https://nre.tas.gov.au/water/water-monitoring-and-assessment/cfev-program

- Specify and map known sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.
- Describe natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).

5.9.2 Assessment

Describe the potential impacts of both construction and operation of the proposed activity on:

- Flora, vegetation communities and habitat, with reference to threatened species, communities and habitats, including those listed under the relevant Schedules of the EPBC Act, TSPA and NCA, including consideration of:
    - direct impacts, such as disturbance (including encroachment), clearing, excavation or burning;
    - indirect impacts, such as changes in hydrogeological flows, fragmentation of populations or introduction of weeds, pests or diseases;
    - cumulative impacts with other human activities.
- Fauna, with reference to threatened species, communities and habitats, including those listed under the relevant Schedules of the EPBC Act, TSPA and NCA, including consideration of:
    - direct impacts, such as collision risks from both vehicles and infrastructure, clearing or other physical changes to breeding and hunting or foraging habitat;
    - indirect impacts, such as changes in disturbances to nesting, impacts of noise and light, changes in prey or food availability or introduction of pests or diseases;
    - cumulative impacts with other human activity.
- Existing conservation reserves that may be affected by the proposal, including the adjacent informal coastal reserve under the management of the Department of Natural Resources and Environment Tasmania (Property Services).
- Other species, sites or areas of special conservation significance, including areas of wilderness or scientific value.
- The reserve system identified as part of the *Tasmanian Regional Forest Agreement* (RFA).
- Maintenance of forest communities under the *Permanent Native Forest Estate Policy*.[35]
- Wildlife habitat strips under the *Tasmanian Forest Practices Code 2015*.[36]
- Non-forest communities.
- Sites of geoconservation significance or natural processes (such as fluvial or coastal features), including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.

5.9.3 Avoidance and Mitigation Measures

- Describe the management measures that will be implemented to avoid or mitigate adverse impacts to threatened fauna, flora and vegetation communities and other natural values (including the adjacent reserve where relevant).
- Detail the management of weeds, pests and diseases and any other biosecurity risk-management, mitigation, and contingency measures.

[35] See https://www.stategrowth.tas.gov.au/energy_and_resources/forestry/native-forest
[36] Available at https://fpa.tas.gov.au/

- Include any roadkill management measures as required in the *Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii)*[37].
- Where impacts cannot be avoided, present proposed measures to minimise and mitigate adverse impacts on biodiversity and nature conservation values.
- Identify potential residual impacts (refer to Appendix A for the definition of residual impacts).
- Discuss any offsets proposed for residual impacts, including likely benefits from such an offset.
- Discuss rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any proposed seed collection and progressive rehabilitation program.

5.10 Greenhouse gas emissions, ozone depleting substances and climate change

Discuss potential impacts of the proposal in relation to greenhouse gases, ozone-depleting substances and climate change. The discussion should be proportionate to the significance of the potential impacts.

- Describe the direct and indirect effects of the proposal on greenhouse gas production and ozone-depleting substances, as well as any associated benefits of the proposal.
- Provide an inventory of projected scope 1, scope 2 and total greenhouse gas emissions,[38] energy production, and energy consumption for a year of operation. Describe the methods used to develop the inventory[39]. Discuss potential annual variation that may occur.
- Demonstrate that the development will use cost-effective, best practice measures to minimise future greenhouse gas emissions.
- Detail measures proposed to minimise emissions and describe the anticipated effectiveness of these measures. Where less emissions-intensive options are not adopted, provide sufficient justification and/or mechanisms to offset greenhouse gas emissions.
- Estimate 'whole of life' greenhouse gas emissions for the proposed development. Include details of the methodology used.
- Describe the potential impacts of climate change upon the proposal. For example, it may be appropriate to plan for more intense storm events, more severe fire weather, and/or long-term sea level rise.
- Discuss impacts of the proposal in terms of the evolving national response to climate change and greenhouse gas emissions and the targets set in the *Climate Change (State Action) Act 2008* (Tas),[40] *Tasmania's Climate Change Action Plan 2023-25*[41] and the *Climate Change Act 2022* (Commonwealth).[42]

Note: Proponents must determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*.[43]

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[37] Devil Survey Guidelines and Advice.pdf (nre.tas.gov.au)
[38] More information on categorising emissions can be found at https://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy
[39] Calculators are available on the Australian Government Clean Energy Regulator website. See http://www.cleanenergyregulator.gov.au/NGER/Forms-and-resources/Calculators#Emissions-and-Energy-Threshold-Calculator-202021-and-user-guide
[40] See https://www.legislation.tas.gov.au/view/html/inforce/current/act-2008-036
[41] See https://recfit.tas.gov.au/climate/climate_change_action_plan
[42] See https://www.legislation.gov.au/Details/C2022A00037
[43] See https://www.legislation.gov.au/Details/C2007A00175

5.11 Socio-economic issues

Discuss the social and economic impacts of the proposal. This discussion may:

- Include an estimate of total capital investment for the proposal and where that capital will be expended (particularly in relation to the source of large capital items of processing equipment).
- Provide a summary of operational expenditures and revenues.
- Describe impacts on local and state labour markets for both the construction and operational phases of the proposal. The number and nature of direct and indirect jobs arising from the proposal must be detailed. Skills and training opportunities should also be discussed.
- Describe impacts on upstream/downstream industries, both locally and for the State.
- Detail the extent to which raw materials, equipment, goods and services will be sourced locally.
- Provide a qualitative assessment of impacts on local social amenity and community infrastructure, including recreational, cultural, health and sporting facilities and services. Any proposals to enhance or provide additional community services or facilities should be described.
- Describe community demographic impacts (changes to cultural background, occupation and incomes).
- Describe any potential impacts on land values, and demand for land and housing.
- Describe any potential impacts on the local, regional, state and national economies.
- Detail any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- Detail any impacts on local, state and federal government rate, taxation and royalty revenues.

The extent to which socio-economic considerations need to be described depends on the nature and extent of any negative impacts or risks to the environment from the proposal. Modest proposals with relatively low-level and localised environmental impacts or risks may be adequately supported by details of intended capital expenditure, operational expenditures, revenues and employment (distinguishing between direct and indirect employment) and a qualitative discussion of other socio-economic aspects of particular relevance.

Proposals with higher-level or broader-scale environmental impacts need more comprehensive analysis of economic and social benefits, to allow the Board to evaluate both the benefits and adverse impacts of the proposal. Methods used to model social and economic impacts should be described where relevant. A description of how the local community has been consulted to determine its needs and aspirations in relation to the proposal should also be included. A social impact assessment and/or economic impact assessment may be required.

5.12 Fire risk

Discuss the potential fire risk associated with the proposal, including:

- Consideration of fire within the site, fire escaping from the site and the impact of wildfire originating outside the development and the environmental impacts that could result from such an event.
- The objectives and management principles to be adopted to prevent and respond to potential fire events.
- Where a fire response plan is appropriate, it should be fully integrated with other relevant documents, such as a Tasmania Fire Service Local Area Fire Management Plan, a Sustainable Timber Tasmania Fire Management Plan and a Parks and Wildlife Service Fire Action Plan for relevant districts.

5.13 Infrastructure and off-site ancillary facilities

Discuss potential environmental impacts of the proposal on any significant off-site infrastructure or facilities (including increased use of existing infrastructure, such as roads, ports and quarries). Identify measures proposed to avoid and mitigate any possible adverse impacts. Assess the likely overall impacts after implementation of the proposed avoidance and mitigation measures.

Identify roads and other infrastructure to be used by vehicles for the proposal (during both construction and operation). Potential environmental impacts associated with construction and use of such infrastructure should be assessed. Cross-reference to other sections where relevant.

6. Monitoring and Review

Outline any proposed monitoring, review and reporting programs for the proposal. Include a table of proposed monitoring locations, parameters and frequencies, and a map showing the location of all monitoring sites.

Monitoring, review and reporting programs should be designed to:

- report on key water quality parameters for treated-wastewater (at end-of-pipe) and the fish bathing-water within the storage net-liners, post-reuse and prior to discharge;
- Specify reporting arrangements of monitoring data and observations;
- Assess compliance with the proposed management measures;
- Assess compliance with emission standards and other identified performance requirements;
- Assess the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives; and
- Assess the extent to which the potential impacts described in the EIS have eventuated.

7. Decommissioning and Rehabilitation

Describe any proposed rehabilitation of disturbed areas that will follow construction activities or occur upon cessation of the activity. Outline a preliminary Decommissioning and Rehabilitation Plan or Closure Plan for the proposal. If applicable, describe the stages of site decommissioning and rehabilitation, including any proposed seed collection and progressive rehabilitation.

8. Management Measures Table

Provide a summary table listing all management measures detailed throughout the EIS. Each measure must include a reference number, must be an unambiguous statement of intent, must specify when it is to be implemented (including whether it is to be implemented during construction, operation, maintenance or other phases) and must include a cross-reference to where the measure is described in the EIS.

9. Conclusion

Summarise the proposal and present a balanced overview of its net impacts. Draw together the critical environmental, social and economic impacts. Evaluate the extent to which negative impacts can be avoided, mitigated, remediated or compensated and positive impacts promoted and sustained.

Describe how the proposal meets and furthers the objectives of relevant legislation, policies, plans and strategies. Itemise the RMPS and EMPCS objectives and comment on how the proposal addresses each of the objectives.

10. References

Provide details of authorities consulted, reference documents and other information sources, using a consistent referencing style.

11. Appendices

Detailed technical information which supports the EIS should be included as appendices. The salient features of the appendices should be included in the main body of the EIS. Technical content of appendices must be consistent with information presented in the EIS itself, unless inconsistencies are carefully explained. The EIS may not be accepted where unexplained inconsistencies exist.

Appendix A: General principles for assessing environmental impacts

This Appendix summarises general principles for assessing environmental impacts in EIS documents prepared in accordance with EMPCA.

General Approach

When assessing environmental impacts in an EIS, the proponent should:

- Present information in a clear, well-structured manner appropriate to the audience of the EIS.
- Avoid duplication.
- Base assessments and evaluations on scientifically supportable, referenced data.
- Describe methodologies used and provide supporting research and information wherever relevant.
- State any scientific assumptions, simplifications, or judgements, and define uncertainties.
- Describe impacts and their mitigation to a level of detail that is proportionate to potential consequences and to what extent they can be controlled.

Impact assessment

Impact assessment involves the identification and characterization of the effects of a proposal. When undertaking impact assessment, the proponent should:

- Explain methodologies used to identify and characterise impacts.
- Clearly state the impacts that are expected to result from the development in terms of the aspect of the proposal involved and the environmental receptor affected.
- Characterise those impacts in terms of:
    - The magnitude of impacts, quantified where possible, including spatial extent and timeframe;
    - The vulnerability of the affected environmental receptors to harm or nuisance;
    - Sources of the impacts and pathways by which the impact may occur;
    - Probability of occurrence (if not 100%);
    - The range of scenarios in which the impact may occur, including plausible worst-case consequences;
    - Reversibility of impacts;
    - Any predicted indirect effects; and
    - Any aspects of other proposals examined cumulatively.
- With reference to the project description and alternatives described in the EIS, state what measures to avoid or reduce impacts have been considered as part of this assessment, and which of these have been incorporated into the proposal.

Impact evaluation

Impact evaluation is the determination of the significance of impacts. Proponents should support conclusions about the significance of impacts using a structured argument that clearly describes the magnitude of the impact, the sensitivity of the affected receptors, and how they relate.

Mitigation and Monitoring

Mitigation (planning and design considerations, pollution control technology and management practices) and monitoring are measures additional to those considered during the impact assessment to reduce the impact of the proposal. In presenting mitigation and monitoring the proponent should:

- Describe the measures proposed;

- Describe how mitigation measures function to avoid or reduce the impacts;
- Explain how measures accord with existing guidance, accepted practice or best practice environmental management as defined in EMPCA;
- Discuss contingencies for the breakdown/malfunction of equipment or processes;
- Describe any anticipated impacts resulting from the mitigation actions and how these will be addressed; and
- Identify where control measures are to be carried out, operated and/or maintained by a third party, and how this will be achieved.

Residual impacts

Residual impacts are those that remain after all proposed avoidance and mitigation measures have been taken into account. When assessing residual impacts, the proponent should:

- Revisit the first evaluation of impact, taking into account the effects of the measures to reduce the magnitude of the impacts and present a revised statement of significance, and
- Where required, identify appropriate actions that will offset impacts , based on the relevant guidelines. Offset actions must present a measurable, relevant and ongoing net benefit which would not otherwise have been realised, and which is not accounted for by any other project or proposal.

Appendix B: Other issues and agency contacts

In addition to a permit under LUPAA and EMPCA, there may be other legal requirements to allow your proposal to proceed, including other permits, licences or landowner consent. You may also need to contact other Government agencies to obtain information for the purpose of assessment.

Your proposal may have been referred to other agencies by EPA. If assessments or approvals outside of the Board's responsibilities are required, you should engage with the respective agency to progress them. The following list identifies some of the agencies you may need to contact:

Conservation Assessments
Department of Natural Resources and Environment Tasmania
Telephone: (03) 6165 4396
Email: conservationassessments@nre.tas.gov.au
Website: www.nre.tas.gov.au/conservation

Purpose: Natural values including flora, fauna, and geoconservation values, or permits to deal with threatened species.

Heritage Tasmania
Department of Natural Resources and Environment Tasmania
Telephone: (03) 6165 3700
Email: enquiries@heritage.tas.gov.au
Website: www.heritage.tas.gov.au

Purpose: Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995. Where works are proposed in or near a heritage place entered on the Tasmanian Heritage Register or likely to be of heritage significance to the whole of Tasmania, and a permit is required under the Land Use Planning and Approvals Act 1993, the proposal will be referred to Heritage Tasmania by the planning authority. There may also be additional sites listed under local planning schemes, impacts on which are assessed by the relevant planning authority.

Aboriginal Heritage Tasmania
Department of Premier and Cabinet
Telephone: 1300 487 045
Email: aboriginalheritage@dpac.tas.gov.au
Website: www.aboriginalheritage.tas.gov.au

Purpose: Aboriginal heritage, including desktop assessment, artefact survey requirements, permits and advice.

Parks and Wildlife – Property Services
Department of Natural Resources and Environment Tasmania
Telephone: (03) 6169 9015
Email: PropertyServices@parks.tas.gov.au
Website: www.parks.tas.gov.au

Purpose: Impacts on parks and reserves managed by Parks and Wildlife, or Crown land.

Agriculture and Water
Department of Natural Resources and Environment Tasmania
Telephone: 1300 368 550
Email: Water.Enquiries@nre.tas.gov.au
Website: www.nre.tas.gov.au/water

Purpose: Water licences and works impacting natural waterway flow (e.g. dams or fords).

Transport Services
Department of State Growth
Telephone: (03) 6166 3369
Email: permits@stategrowth.tas.gov.au
Website: www.transport.tas.gov.au

Purpose: State roads, including where any proposal requires works on or access from a State-managed road.

Mineral Resources Tasmania
Department of State Growth
Telephone: (03) 6165 4800
Email: info@mrt.tas.gov.au
Website: www.mrt.tas.gov.au

Purpose: Mining Leases.

Appendix C: Example of project description summary table

Location and Planning Context

Location	State the address of the site, and CTs and PIDs (as applicable) for all titles on which the activity will take place.
Land zoning	Describe the land zoning of the site and surrounds. If rezoning of the site is required, provide details.
Land tenure	Provide the land tenure of the proposal.
Use Class and Permissibility	If a permit is required under LUPAA, provide the Use Class of the proposed activity and Permissibility of the activity with reference to the relevant Planning Scheme.

For extractive industries only, delete if not required

Mining lease	
Lease area	
Bond	State the amount of any bond required by MRT (for extractive industries)

Existing site

Land Use	Describe the existing land use of the site and surrounds.
Topography	Describe the topography of the site and surrounds.
Geology	Describe the geology of the site, including the likely presence of potentially acid forming (PAF) material. Describe any geoconservation values on or near the site, e.g. karst.
Soils	Describe the potential to encounter acid sulphate soils and or contaminated soil (from past activities, as relevant).
Hydrology	Describe groundwater and surface drainage (including waterways, lakes, wetlands and coastal areas) Describe the waterbodies and aquatic values on site and in the surrounding area. State the distance from the activity to the nearest waterbody.
Natural Values	List the threatened fauna, flora and vegetation communities, including potential habitat for any such species, that are known to occur on or near the site (use the Natural Values Atlas, TASVEG 4.0 or results of any relevant survey). State the vegetation types on and near the site.
Potential Hazards	Provide a brief assessment of the vulnerability of the site to natural hazards (e.g. flooding, seismic activity, fire, landslips or strong winds) or climate change.

Local Region

Climate	State the annual rainfall and predominant wind direction.
Surrounding land zoning, tenure and uses	Describe the surrounding land use, distance to the nearest residences in other ownership, note any conservation reserves or recreation areas in the area, and provide a coastal description if the coast is nearby.
Species, sites or areas of conservation significance	Provide information on species, sites or areas of landscape, aesthetic, wilderness, scientific or otherwise special conservation significance which may be affected by the proposal. Relevant information resources include the LIST (*www.thelist.tas.gov.au*) and the Natural Values Atlas (*https://www.naturalvaluesatlas.tas.gov.au*).

Proposed Infrastructure

Major equipment	List all existing and proposed plant, machinery, or other major equipment (distinguish between existing and proposed).
Other infrastructure	List the existing and proposed buildings, structures, access roads, internal haul roads (can refer to the Site Plan) (distinguish between existing and proposed).

Inputs

Water	Include quantities and characteristics.
Energy	Include quantities and characteristics.
Other raw materials	Include quantities and characteristics.

Wastes and Emissions

Liquid	Include quantities and characteristics.
Atmospheric	Include quantities and characteristics.
Solid	Include quantities and characteristics.
Controlled wastes	Include quantities and characteristics.
Noise	Include major sources of noise emissions.
Greenhouse gases	Provide a brief description of changes to greenhouse gas emissions that will be caused by the proposal.

Construction, Commissioning and Operations

Proposal timetable	Provide a brief timetable outlining the proposed timeframe(s) for construction, commissioning and commencement of operations. Include significant milestones if applicable.
Construction hours	e.g. xx-xx Monday to Friday xx-xx Saturday
Operating hours (ongoing)	e.g. xx-xx Monday to Friday xx-xx Saturday

Other Key Characteristics

Other	Describe any additional characteristics relevant to the proposal/environment that are likely to provide important context as part of this summary.

ENVIRONMENT PROTECTION AUTHORITY