

# SCHEDULE EM1

<b>Permit, licence or approval taken to have been issued</b>	Environment Protection Notice for the activity  (Wastewater Pipeline – offshore section)
<b>Act pursuant to which the permit, licence or other approval is taken to have been issued in relation to the conditions contained in this schedule</b>	<i>Environmental Management and Pollution Control Act 1994</i>
<b>Person, body or State Service Agency responsible for the enforcement of the conditions contained in this schedule</b>	Director of Environmental Management

## Part 1 – Definitions

Unless the contrary intention is expressed, words and expressions used in these conditions have the meaning given to them in this part, in the *Environmental Management and Pollution Control Act 1994*. If there is any inconsistency between a definition in these conditions and the Act, then the definition in these conditions prevails to the extent of the inconsistency.

**activity** means the establishment and operation of a subsea wastewater pipeline and diffuser from a location at the low water mark between Four Mile Bluff and Five Mile Bluff and extending to a point approximately 2950 metres to the north into Bass Strait at approximate grid reference E488345, N5460968, as identified in Attachment 2 (Effluent Outfall Diffuser Location) of Tab 15, Book E (Supplementary Information) of the DIIS;

**AOX** or **Adsorbable Organic Halogens** means the equivalent amount of halogen (fluorine, chlorine, bromine, or iodine) contained in organic compounds, expressed as chloride, as determined by measurement of adsorption of a sample on activated charcoal;

**Bass Strait outfall** means outfall for the discharge of treated wastewater to Bass Strait;

**BOD** means biochemical oxygen demand;

**CEMP** means an Environmental Management Plan prepared for the construction phase of the activity;

**cetacean alert area** means an area of two kilometre radius from underwater construction activities;

**cetacean monitoring zone** means an area of three kilometre radius from underwater construction activities;

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**cetacean exclusion area** means an area of one kilometre radius from underwater construction activities;

**COD** means Chemical Oxygen Demand, a measure of the oxygen demand measured in mg/L of the organic compounds in a sample;

**colour** means colour as measured by Spectrophotometric Method;

**decommissioning** means the dismantling and removal of structures and equipment and the removal or control of pollutants or processes that may cause environmental harm undertaken subsequent to the termination or abandonment of any activity;

**DIIS and further information** means the DIIS as well as the documents submitted to the Tasmanian Government identified in Annex D1;

**Dioxins and Furans** means chemical compounds including polychlorinated dibenzo-p-dioxins (PCDD), and polychlorinated dibenzofurans (PCDF) having chlorine atoms in the 2,3,7,8 positions on the molecule and certain polychlorinated biphenyls specified by the World Health Organisation;

**Director** means the Director of Environmental Management holding office under section 18 of the EMPCA and includes a person authorised in writing by the Director to exercise the relevant power or function on the Directors behalf;

**disturbance** means a change from the pre-construction condition of vegetation, soil, water or ecosystems arising from the activity;

**EMPCA** means the *Environmental Management and Pollution Control Act 1994*;

**incident** means the unplanned release of a pollutant as a result of the activity, including as a result of an emergency, accident or malfunction, being a release which causes or may cause material environmental harm;

**listed cetacean species** means cetacean species of specially protected wildlife and cetacean species of protected wildlife listed under the NCA, and/or cetacean species listed under the TSPA;

**listed pinniped and turtle species** means pinniped and turtle species of specially protected wildlife and pinniped and turtle species of protected wildlife listed under the NCA, and/or pinniped or turtle species listed under the TSPA;

**mixing zone** has the meaning given to that expression in the *State Policy on Water Quality Management 1997*;

**NATA** means National Association of Testing Authorities, Australia;

**NCA** means the *Nature Conservation Act 2002*;

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**NOEC** means no observable effects concentration, that is the concentration of the water sample tested using a toxicity bioassay for which the effect is not different from controls;

**NO<sub>x</sub>** means nitrogen oxides;

**offshore** means on land below the low water mark and includes the marine environment;

**pinniped and turtle alert area** means an area of one kilometre radius from underwater construction activities;

**pinniped and turtle monitoring zone** means an area of one and a half kilometre radius from underwater construction activities;

**pinniped and turtle exclusion area** means an area of five hundred metre radius from underwater construction activities;

**publicly available** means the document, excluding any commercial-in-confidence material, is available for review and download from a publicly accessible website, and that the document, excluding any commercial-in-confidence material, will be made available to a member of the public in printed or electronic format upon request;

**Pulp Mill Environmental Monitoring Program** means the document entitled *Gunns Limited Bell Bay Pulp Mill Environmental Monitoring Program Summary Tables (Draft for Approval)* submitted by Gunns Limited to the Director and received on 26 July 2007;

**rehabilitation** means activities associated with restoring sites cleared or disturbed during construction or operation of the activity to state as close as reasonably practicable to their pre-construction condition and includes both post-construction rehabilitation around operating areas and rehabilitation undertaken as part of decommissioning;

**soft start procedure** refers to the progressive raising of noise levels from construction activities associated with the construction of the marine components of the wharf and wastewater pipeline activity, commencing with low (similar to background) noise levels then progressively ramping up to the full level of noise associated with the construction activity;

**State waters** has the meaning given in Section 5 of the *Living Marine Resources Management Act 1995*;

**TSPA** means *Threatened Species Protection Act 1995*;

**wastewater** means all liquid waste and process effluent generated by the pulp mill activity and includes first flush stormwater but does not include non first flush stormwater.

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## Part 2 – Conditions

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### General

- GN 1.1 A copy of these conditions and any associated documents referred to in these conditions must always be held in a location that is known and accessible to the person responsible for the activity. The person responsible for the activity must take all reasonable steps to ensure that all persons who are responsible for undertaking the activity, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.
- GN 2.1 The following changes, if they may cause or increase the emission of a pollutant that is not authorised by these conditions or otherwise result in material environmental harm, must only take place in relation to the activity if the prior written approval of the Director has been obtained:
- (a) a change to a process used in the course of carrying out the activity; or
  - (b) the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or
  - (c) a change in the nature of materials used in the course of carrying out the activity.
- GN 3.1 If the person who is or was responsible for the activity will cease or ceases to be responsible for the activity, then, as soon as practicable, but no later than 30 days after that cessation, that person must:
- (a) notify the Director in writing of that fact;
  - (b) provide the Director with full particulars in writing of any person succeeding him or her as the person responsible; and
  - (c) notify any such person of the requirements of any relevant permit, environment protection notice or other environmental management obligations.

### *Notification of incidents*

- GN 4.1 If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all practicable actions to minimise any adverse environmental effects from the incident.

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## *Compliance with DIIS*

- GN 5.1 The activity must be undertaken in accordance with the DIIS and further information, unless otherwise specified in these conditions or unless otherwise approved in writing by the Director.

## *Commitments*

- GN 6.1 The activity must be carried out in accordance with the commitments contained in the DIIS and further information unless otherwise specified in these conditions or unless otherwise approved in writing by the Director.

## *Response to public complaints*

- GN 7.1 Prior to the commencement of construction activities, or by a date specified in writing by the Director, a Public Complaint Response Protocol must be submitted to the Director for approval. The protocol must include, but is not limited to, the following:

- (a) the establishment of a 24 hour public complaints telephone hotline;
- (b) a public communications process in relation to the hotline;
- (c) a procedure for responding to public complaints received which includes investigation, mitigation (if necessary), feedback and documentation steps; and
- (d) the establishment of a public complaints register.

- GN 8.1 A public complaints register must be maintained and made available for inspection by an authorized officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

- (a) the time at which the complaint was received;
- (b) contact details for the complainant;
- (c) the subject matter of the complaint;
- (d) any investigations undertaken with regard to the complaint; and
- (e) the manner in which the complaint was resolved, including any mitigation measures implemented.

- 8.2 Complaint records must be maintained for a period of at least 3 years.

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## Construction

### *Construction methodology report*

- CN 1.1 Prior to the commencement of construction activities, or by a date specified in writing by the Director, a Construction Methodology Report must be submitted to the Director. The report must be prepared in accordance with any guidelines provided by the Director, and must include details of the proposed construction methodology for the activity.
- 1.2 Construction activities must not commence unless the report has been accepted in writing by the Director. Notwithstanding the above, some construction activities may take place prior to the approval of the report provided that the sections of the report relevant to those activities are considered satisfactory by the Director, and provided that the Director has given written authority for those construction activities to take place.
- 1.3 Construction activities must be undertaken in accordance with the report and any written requirements of the Director.
- 1.4 The Director must be notified of any change to the construction methodology from that specified in the approved report that has the potential to significantly change the predicted environmental effects of the activity. Any such change must not proceed unless it has been approved in writing by the Director.
- 1.5 The plan must be made publicly available.

### *Construction timetable*

- CN 2.1 Prior to the commencement of construction activities, or by a date specified in writing by the Director, a construction timetable must be submitted to the Director. The timetable must identify the key construction activities and dates for commencement and completion of each key construction activity. The Director must be notified in advance of any significant changes to the construction timetable.

### *Notification*

- CN 3.1 The person responsible must notify the Director in writing of the following:
- (a) the date of commencement of construction activities, within 24 hours of the commencement;
  - (b) the date of commencement of commissioning activities, within 24 hours of the commencement; and

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- (c) the date of completion of commissioning activities, within 48 hours of the completion.

### *Construction Environmental Management Plan*

- CN 4.1 Prior to the commencement of construction activities, or by a date specified in writing by the Director, a detailed timetable for the preparation of an Environmental Management Plan for the construction phase of the activity (CEMP) must be prepared and submitted to the Director for approval.
- 4.2 The CEMP must be prepared and submitted in accordance with the approved timetable and any written requirements of the Director, unless otherwise approved in writing by the Director. The objective of the CEMP is to describe the measures and processes by which compliance with the requirements of the conditions, contained in this Schedule, relating to the construction phase of the activity, will be achieved.
- 4.3 The CEMP must be prepared in accordance with any guidelines provided by the Director, and must be prepared in consultation with relevant Government agencies.
- 4.4 The CEMP must place particular emphasis on the following:
- (a) proposed management measures to minimise potential environmental impacts in State waters;
  - (b) chemical and hydrocarbon spill management;
  - (c) marine pest management; and
  - (d) marine mammal and turtle management.
- 4.5 The submitted CEMP must be accompanied by an independent audit report of the CEMP prepared by an appropriately qualified external auditor. The auditor must be approved in writing by the Director prior to undertaking the audit. The audit report must assess the measures and processes contained in the CEMP and must include, but is not limited to, the auditor's findings, recommendations and conclusion as to whether or not the CEMP satisfies the objective for the CEMP specified above.
- 4.6 Construction activities must not take place unless the CEMP and audit report have been submitted to the Director. Notwithstanding the above, some construction activities may take place prior to the approval of the CEMP provided that the sections of the CEMP relevant to those activities are considered satisfactory by the Director, and provided that the Director has given written authority for those construction activities to take place.
- 4.7 The activity must be undertaken in accordance with the CEMP, as amended from time to time.

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- 4.8 If requested to do so by the Director, the person responsible must revise the CEMP and submit the revised CEMP to the Director, doing so by such a date as may be specified in the Director's request.
- 4.9 The person responsible must prepare a publicly available document which summarises the CEMP structure and content.

## *Construction corridor*

- CN 5.1 The offshore wastewater pipeline must be installed at the location shown in Attachment 2 (Effluent Outfall Diffuser Location) of Tab 15, Book E (Supplementary Information) of the DIIS unless otherwise approved in writing by the Director.
- CN 6.1 The offshore construction corridor must not exceed 25 metres either side of the offshore wastewater pipeline, unless otherwise approved in writing by the Director.
- CN 7.1 Disturbance of the seafloor, sites of temporary spoil storage and the placement of any other infrastructure, equipment or materials, either temporarily or permanently (excluding anchoring infrastructure) must not occur outside the offshore construction corridor.
- CN 8.1 All offshore trenching must be undertaken using a pontoon-mounted hydraulic backhoe dredge excavator, as described in section 9.9.5 (Offshore Four Mile Beach) of volume 3A of the DIIS, unless otherwise approved in writing by the Director.

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## **Maintenance**

### *Maintenance activities*

- MT 1.1 Unless the Director has specified in writing that notification is not required, the person responsible must notify the Director at least 72 hours prior to the commencement of any maintenance activities in State waters (excluding activities associated with the initial response to an emergency event) which have the potential to breach these conditions or result in material environmental harm. Such notification must include:
- (a) details of the proposed maintenance activity;
  - (b) the reason for the proposed maintenance activity;
  - (c) details of any additional environmental surveys undertaken or proposed to be undertaken in relation to the proposed maintenance activity;
  - (d) details of any environmental impact which is expected due to, or which may arise from, the proposed maintenance activity, and
  - (e) details of any proposed management measures to avoid or mitigate environmental impacts.

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- 1.2 Maintenance activities in State waters which have the potential to breach these conditions or result in material environmental harm must not commence without the written approval of the Director.
- 1.3 If requested to do so by the Director, the person responsible for maintenance activities must submit an Environmental Management Plan with respect to that particular maintenance activity to the Director for approval. The plan must be prepared in accordance with any requirements and by such date as the Director may specify in writing.
- 1.4 The maintenance activity must be undertaken in accordance with any approved Environmental Management Plan prepared with respect to that maintenance activity, and any amendment to the plan approved in writing by the Director.
- 1.5 The plan must be made publicly available.

### *Wastewater pipeline integrity testing*

- MT 2.1 The integrity of the wastewater pipeline must be tested prior to commissioning and at least annually thereafter, unless otherwise approved in writing by the Director.
- MT 3.1 At least 30 days prior to the commencement of commissioning activities, or by a date specified in writing by the Director, a Wastewater Pipeline Integrity Testing Management Plan must be submitted to the Director.
- 3.2 The plan must include, but is not limited to, details of the following:
    - (a) the proposed testing method;
    - (b) actions that will be taken if leaks are observed; and
    - (c) the manner in which results will be reported.
  - 3.3 Integrity testing of the wastewater pipeline must be undertaken in accordance with the plan, as amended from time to time.
  - 3.4 The plan must be made publicly available.

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## Monitoring

### *Baseline and Operational Monitoring Plan*

- MN 1.1 Within three months of the date of issue of this permit, or by a date specified in writing by the Director, a Baseline and Operational Monitoring Plan must be submitted to the Director for approval.

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- 1.2 The plan must be prepared in accordance with any guidelines provided by the Director, and must be prepared in consultation with relevant Government agencies.
- 1.3 Unless otherwise approved in writing by the Director, the plan must be consistent with the requirements of these conditions and the commitments provided in summary tables 3.2.1.1, 3.2.2.1, 3.2.2.2 and 3.2.2.3 of the Pulp Mill Environmental Monitoring Program.
- 1.4 The plan must include, but is not limited to, details of the following:
  - (a) a one-off program to characterise toxicity within the mixing zone based on results of the operational spatial water quality subprogram of the Pulp Mill Environmental Monitoring Program. Toxicity must be assessed using samples collected within and distal to the plume;
  - (b) a table containing all of the major commitments made in the plan;
  - (c) an implementation timetable for key aspects of the plan;
  - (d) a reporting program to regularly advise the Director of the results of the plan; and
  - (e) a review program for regularly updating the plan.
- 1.5 Commissioning activities must not commence unless the plan has been approved in writing by the Director. Notwithstanding the above, some construction activities may take place prior to the approval of the plan provided that the sections of the plan relevant to those activities are considered satisfactory by the Director, and provided that the Director has given written authority for those construction activities to take place.
- 1.6 The approved plan, as amended from time to time with the approval of the Director, must be implemented to the satisfaction of the Director.
- 1.7 The plan must be made publicly available.

### *Construction Monitoring Plan*

- MN 2.1 Prior to the commencement of construction activities, or by a date specified in writing by the Director, a Construction Monitoring Plan must be submitted to the Director for approval.
- 2.2 The plan must be prepared in accordance with any guidelines provided by the Director, and must be prepared in consultation with relevant Government agencies.
- 2.3 The plan must be consistent with the requirements of these conditions and include the following programs:
  - (a) a Marine Water Quality Monitoring Program;
  - (b) a Marine Sediment Monitoring Program; and

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- (c) a Marine Ecological Monitoring Program, which must be consistent with, but not limited to, the monitoring design described in Section 5 (Effluent Pipeline Sub Sea Interval) of the Aquenal Pty Ltd December 2006 report titled *Ecological Monitoring Program for Marine and Estuarine Habitats during the construction and operation phases of Gunns Limited's proposed pulp mill*. The final frequency of post-installation monitoring surveys will be determined by the Director in consultation with relevant Government agencies.
- 2.4 The plan must include, but is not limited to, details of the following:
- (a) a table containing all of the major commitments made in the plan;
  - (b) an implementation timetable for key aspects of the plan; and
  - (c) a reporting program to regularly advise the Director of the results of the plan.
- 2.5 Construction activities must not commence unless the plan has been approved in writing by the Director. Notwithstanding the above, some construction activities may take place prior to the approval of the plan provided that the sections of the plan relevant to those activities are considered satisfactory by the Director, and provided that the Director has given written authority for those construction activities to take place.
- 2.6 The approved plan, as amended from time to time with the approval of the Director, must be implemented to the satisfaction of the Director.
- 2.7 The plan must be made publicly available.
- MN 3.1 Prior to the commencement of construction activities, five equally spaced sediment grab samples must be taken from within the sub tidal section of the offshore construction corridor.
- 3.2 Samples must be analysed for the parameters and tests specified in Column 1 of Annex M1 to these conditions, and for any other parameters specified in writing by the Director.
- MN 4.1 In situ profile monitoring of pH, turbidity, temperature and dissolved oxygen must be undertaken daily in one location directly up-current and one location directly down-current of construction activities during periods where construction disturbance is occurring below the high water mark.
- MN 5.1 Where a substantial suspended solids plume is generated by the construction activity, water samples must be collected from within the turbid plume, and as near as is practicable to the source of the plume.
- 5.2 Where substantial turbid plumes are being generated on a daily basis, water samples must be collected from within the turbid plume as a minimum every second day.

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- 5.3 Samples must be analysed for the parameters and tests specified in Column 2 of Annex M1 to these conditions, and any other parameters specified in writing by the Director.

### *Marine mammals and marine birds monitoring*

- MN 6.1 The Baseline and Operational Monitoring Plan must include a monitoring program for marine mammals (Australian Fur Seals) and marine birds (Little Penguins). The program must include a baseline monitoring program for the collection of relevant baseline biological and toxicological data and a long-term program for evaluating bioaccumulation and/or biomagnification of pollutants in the above species.
- 6.2 The plan must be prepared in accordance with any guidelines provided by the Director, and must be prepared in consultation with relevant Government agencies.
- 6.3 The plan must include, but is not limited to, details of the following:
- (a) The methodology and sampling techniques and procedures to be used for the extraction, collection or derivation of any material or substance from the body of marine mammals (Australian Fur Seals); and
  - (b) The methodology and sampling techniques and procedures to be used for the extraction, collection or derivation of any material or substance from the body or eggs of marine birds (Little Penguins).
- 6.4 A report outlining the findings of the baseline biological and toxicological monitoring must be submitted to the Director within six months of the completion of the baseline component of the monitoring program, or by a date specified in writing by the Director.
- 6.5 A report outlining the findings of the first sampling phase of the long-term monitoring program must be submitted to the Director within six months of the completion of the first sampling phase, or by a date specified in writing by the Director.
- 6.6 Subsequent reports outlining the findings of the long-term monitoring program must be submitted to the Director in accordance with the approved program.

### *Sampling and analysis requirements*

- MN 7.1 Any sample required to be obtained by these conditions must be subject to the following:
- (a) the sample must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA), or a

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laboratory approved in writing by the Director, for the specified test;

- (b) the sample must be collected and analysed in accordance with the relevant Australian Standards, NATA approved methods, the *American Public Health Association Standard Methods for the Analysis of Water and Waste Water*, or other standard(s) approved by the Director;
- (c) details relating to the collecting and analysis of the sample must be retained for at least three years after the date of measurement and be made available on request by an authorized officer; and
- (d) the sample must be taken and transported by a person with appropriate training and experience.

MN 8.1 Marine fauna (excluding marine mammals and seabirds) or flora collected as part of any monitoring programs associated with State waters must be identified to the lowest possible taxonomic level, which as a minimum must be at least down to family level or in the case of introduced species and molluscs down to species level.

MN 9.1 All marine fauna (excluding marine mammals and seabirds) and flora collected must be appropriately preserved and placed in storage jars that must be labelled (inside and outside) with details of date of collection, site location, collection method, and collector's and identifier's name. These jars must be stored for at least 5 years in a safe place so that confirmation of species identification can be investigated at a later date, if required.

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### Mixing zone and ambient water quality

MZ 1.1 Unless otherwise specified in writing by the Director, the mixing zone is defined as being the water volume contained between the ocean surface and bottom whose horizontal cross section is the area enclosed by the boundary at 500 metres from the closest point to the length of pipe between the first and last diffuser outlets of the offshore wastewater pipeline.

MZ 2.1 If the ambient water quality, when measured at and beyond the edge of the mixing zone, exceeds the water quality objectives specified in Annex W1 to these conditions, or any revised version thereof specified in writing by the Director, then the person responsible must:

- (a) notify the Director of the exceedence as soon as practicable but not later than 24 hours, after becoming aware of the exceedence;
- (b) provide a report within 5 days of the notification describing the reasons for the exceedence, the measures taken to reduce ambient levels to below the investigation levels specified above, and proposed future actions arising as a result of the exceedence; and
- (c) comply with any requirements of the Director in relation to rectifying the exceedence or preventing a future exceedence.

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- MZ 3.1 Wastewater discharged from the Bass Strait outfall must be discharged so as not to cause the following:
- (a) objectionable odours which adversely affect the use of the surrounding environment; or
  - (b) objectionable discolouration at the surface, which could adversely affect the use of the surrounding environment; or
  - (c) visible floating foam, oils, grease, scum, litter or other objectionable matter; or
  - (d) mortality of fish or other aquatic vertebrates; or
  - (e) fish or other aquatic organisms used for human consumption to become unacceptable for such use as determined by Tasmanian health standards.
- 3.2 Prior to the commencement of commissioning, the person responsible must provide information to the satisfaction of the Director that the discharge of wastewater from the Bass Strait outfall will:
- (a) comply with the requirements of this condition; and
  - (b) will not cause the reflectance of water at the edge of the mixing zone to vary by more than 50% in comparison to unimpacted water outside the mixing zone.

### *Hydrodynamic modelling*

- MZ 4.1 Within six months of the issue of this permit, or by a date specified in writing by the Director, a Hydrodynamic Modelling Review Report must be submitted to the Director for approval. The report must include, but is not limited to, details of the following:
- (a) an external review of the final model system set up details, data and study approach, including post-processing philosophy and methods. The external review must be undertaken by a person approved in writing by the Director;
  - (b) verification between the modelled and measured currents in the 50 metre cells area in the vicinity of the outfall in terms of 3D current structure, to determine whether or not the driving boundary conditions and model set up are able to describe the vertical variation of horizontal speeds;
  - (c) more detailed information on the calibration data used, including information supporting the adopted coefficients for turbulence parameterisation (horizontal and vertical dispersion (diffusion)) and commentary on the order of numerical diffusion in the local D-grid (3D model area), together with detailed information for bottom roughness, formulation of the wind stress parameterisation and adopted wind friction factors, and justification of the time step chosen for computation. Details of the basis for the density stratification adopted for model verification and 3D simulations must be provided;
  - (d) an analysis of the effect of wind on plume development versus calm periods;

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- (e) demonstration that model simulations achieved dynamic equilibrium (a far field quasi steady-state condition), and that results were drawn from a period of results when this state had been achieved;
  - (f) an additional simulation for September – October 2007;
  - (g) verification that the adopted vertical grid resolution was sufficient to avoid exaggerated numerical dispersion through use of a sensitivity analysis. An analytical model may be required for comparisons with simplified numerical model simulations; and
  - (h) if appropriate, a proposed revised mixing zone at and beyond which the water quality objectives are likely to be achieved, together with details of background concentrations.
- 4.2 Construction activities must not commence unless the report has been approved in writing by the Director. Notwithstanding the above, some construction activities may take place prior to the approval of the report provided that the Director has given written authority for those construction activities to take place.
- 4.3 The approved report, as amended from time to time with the approval of the Director, must be implemented to the satisfaction of the Director.
- 4.4 The report must be made publicly available.

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### Marine fauna management

- FN 1.1 The CEMP must include details of proposed measures and procedures for the management of marine mammals and turtles.
- 1.2 The CEMP must include, but is not limited to, details of the following:
- (a) proposed management measures to avoid and/or minimise impacts to marine mammals and turtles due to construction activities;
  - (b) methods and procedures to be used for the visual assessment of the water within the prescribed cetacean monitoring zone and pinniped and turtle monitoring zone to detect the presence of marine mammals and turtles prior to the commencement and for the duration of construction activities;
  - (c) proposed procedures for vessels encountering marine mammals and turtles once they are within a monitoring, alert or exclusion zone or when the vessel is close enough to affect the mammals or turtles; and
  - (d) mitigation measures for construction activities to prevent acoustic disturbance to marine mammals and turtles.

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## *Marine mammal and turtle surveillance*

- FN 2.1 When construction activities are occurring within State waters, regular visual surveillance at 10 to 15 minute intervals within the cetacean monitoring zone must be conducted in accordance with the CEMP.
- FN 3.1 When construction activities are occurring within State waters, continual visual surveillance must occur within the cetacean alert area when listed cetacean species are known to be present in accordance with the CEMP.
- FN 4.1 Construction activities within State waters must not occur or must cease if any listed cetacean species is known to be present within the cetacean exclusion area.
- FN 5.1 When construction activities are occurring within State waters visual surveillance at 10 to 15 minute intervals within the pinniped and turtle monitoring zone must be conducted in accordance with the CEMP.
- FN 6.1 When construction activities are occurring within State waters continual visual surveillance must occur within the pinniped and turtle alert area when listed pinniped and/or turtle species are known to be present in accordance with the CEMP.
- FN 7.1 Construction activities within State waters must not occur or must cease if any listed pinniped and/or turtle species is known to be present within the pinniped and turtle exclusion area.
- FN 8.1 Visual surveillance and assessments within the cetacean monitoring zone or the pinniped and turtle monitoring zone must be conducted by appropriately qualified person(s).
- FN 9.1 Vessels must avoid where practicable the listed cetacean, pinniped and/or turtle species.
- FN 10.1 Soft start procedures must be adopted when undertaking construction activities.

## *Screw shell*

- FN 11.1 Prior to the commencement of construction activities, or by a date specified in writing by the Director, a pre-construction survey for Gunns Screw Shell (*Gazameda gunnii*) must be undertaken.
- 11.2 A report detailing the results of the survey must be submitted to the Director prior to commencing construction activities, and within 30 days of completion of the survey, or by a date specified in writing by the Director.

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## *Marine pest management*

- FN 12.1 The CEMP must include details of proposed measures and procedures for the management of marine pests.
- 12.2 The CEMP must, as a minimum, be consistent with the current International Ballast Water Management Arrangements implemented under the *Quarantine Act 1908* (Commonwealth). The CEMP must also contain appropriate measures to manage domestic ballast water and biofouling arrangements for all vessels associated with construction activities consistent with the *Draft Domestic Ballast Water Management Arrangements* and the *National Best Management Practice Guidelines for Commercial Non-Trading Vessels* (with respect to managing translocation of marine pests), that are currently being finalised by the National Introduced Marine Pest Coordination Group.
- 12.3 The CEMP must include, but is not limited to, details of the following:
- (a) the number and type of sea going vessels that will be involved in the construction activities and their history of movement for the last twelve months; and
  - (b) the manner in which all construction sea going vessels, plant, equipment and materials will be managed and treated to minimise the potential for translocating introduced marine pests prior to arrival at, and/or departure from, each construction site.

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## **Rehabilitation post-construction**

- RH 1.1 Backfilling of the offshore wastewater pipeline trench must be undertaken as soon as practicable upon completion of construction activities and must occur within 30 days of the pipeline being installed. The seafloor profile within the area disturbed during construction of the wastewater pipeline must be reinstated to match, as closely as practicably achievable, the seafloor topography prior to the commencement of construction activities. This must be demonstrated by supplying the Director, within 30 days of completion of the trench backfilling, or by a date specified in writing by the Director, with an underwater video survey of the trenched area.

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## **Underwater blasting**

- CN 1.1 No underwater blasting is permitted, unless an Underwater Blasting Plan has been prepared and submitted as prescribed below and the plan has been approved in writing by the Director.
- 1.2 The Underwater Blasting Plan must be submitted to the Director for approval prior to any blasting commencing.
- 1.3 The plan must include, but is not limited to, details of the following:
- (a) justification for why blasting is required;

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- (b) the number, locations, timing and magnitude of proposed underwater blasts;
  - (c) potential impacts that the blasting may produce;
  - (d) mitigation measures that will be put in place to avoid or mitigate potential impacts;
  - (e) a monitoring program to monitor impacts due to the blasting; and
  - (f) a reporting program to regularly advise the Director of the results of the plan.
- 1.4 The approved plan, as amended from time to time with the approval of the Director, must be implemented to the satisfaction of the Director.
- 1.5 The plan must be made publicly available.

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### **Waste and hazardous materials**

- WM 1.1 The generation of waste must be avoided as far as is practicable in accordance with best practice environmental management.
- 1.2 Wastes must be managed in accordance with the following hierarchy of waste management:
- (a) waste must be minimised, that is, the generation of waste must be reduced to the maximum extent that is practicable, having regard to best practice environmental management;
  - (b) waste must be re-used or recycled to the maximum extent that is practicable; and
  - (c) waste that cannot be re-used or recycled must be disposed of at a waste disposal site or treatment facility that has been approved in writing by the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

### ***Managing spills***

- WM 2.1 The CEMP must include details of proposed measures and procedures to avoid or minimise environmental impacts associated with any incident which involves, or has the potential to involve, the discharge of liquid chemicals or hydrocarbons into State waters.
- WM 3.1 Spill kits appropriate for the types and volumes of materials being handled must be kept in appropriate locations to assist with the containment of environmentally hazardous materials spilt into State waters.

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## Decommissioning and rehabilitation

- DR 1.1 The person responsible must notify the Director in writing of any event or decision which is likely to give rise to the permanent cessation of all or part of the activity within 14 days of becoming aware of that event or decision. The notice must specify the date upon which the activity is expected to cease.
- DR 2.1 A draft Decommissioning and Rehabilitation Plan (DRP) must be submitted for approval to the Director within 3 years of completion of commissioning of the activity. Unless otherwise approved in writing by the Director, a revised DRP must be submitted to the Director:
- (a) when required to reflect significant changes in rehabilitation and decommissioning obligations arising from changes to the activity; or
  - (b) within 30 days of the Director being notified of the planned cessation of operations; or
  - (c) by a date specified in writing by the Director.
- 2.2 The DRP must be prepared in accordance with guidelines issued by the Director. If no guidelines have been issued by the Director the measures described in this plan must include, but are not limited to, the following:
- (a) the removal of all equipment, structures and waste materials unless they are considered by the Director to be beneficial to a future use of the site;
  - (b) methods for stabilising the surface of disturbed areas;
  - (c) rehabilitation of the seabed where the wastewater pipeline has been removed;
  - (d) an itemised estimate of the costs of carrying out the works listed in the DRP and a statement of how these costs will be provided for; and
  - (e) any other detail requested in writing by the Director.
- DR 3.1 Following permanent cessation of the activity, rehabilitation of the land modified as a consequence of the activity must be carried out in accordance with the most recent Decommissioning and Rehabilitation Plan approved by the Director.
- 3.2 The plan must be made publicly available.

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## ANNEX M1 – PARAMETERS AND ANALYSES FOR CONSTRUCTION MONITORING IN STATE WATERS

<b>Parameters/Analyses</b>	
<b>Column 1</b>	<b>Column 2</b>
<b>Sediment Quality</b>	<b>Water Quality</b>
Particle size	Dissolved oxygen
Weak acid extraction	Turbidity
Arsenic	pH
Cadmium*	Total suspended solids
Chromium	Total nitrogen
Cobalt*	Ammonia
Copper*	Kjeldahl nitrogen
Lead	Total phosphorous
Manganese	Reactive phosphorous
Nickel	Total organic carbon
Vanadium*	Dissolved organic carbon
Zinc	Arsenic
Total organic carbon	Barium*
Redox	Beryllium*
	Cadmium*
	Cobalt*
	Nickel*
	Chromium*
	Copper*
	Lead*
	Zinc*
	Manganese*
	Vanadium*
	Mercury*
Note: * Sediments must be analysed for total metals. Water samples must be analysed for both total and dissolved metals.	

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## ANNEX D1 – FURTHER INFORMATION

**Table 1 – Further information**

Number	Description	Details	Date received
RFI 001	Analyses of data from marine benthic monitoring around the proposed outfall of the Gunns Pulp Mill – Report prepared for Aquenal Pty Ltd Feb 2007	Report by Dr Leon Barmuta, University of Tasmania	20 July 2007
RFI 005	Updated details following design alterations to mill specifications based on the selection of equipment suppliers	Memo from Poyry to Gunns dated 11 May 2007 Ref 16B0104	14 May 2007
RFI 012	Response to request for clarification of the location and width of the water supply pipeline, the location of the balancing tank, the degree of revegetation proposed and the configuration of the above ground sections of the pipeline within the Trevallyn Reserve	Written information, Maps	18 May 2007
RFI 018	Response to request for confirmation of option for wharf design	Written information	26 May 2007
RFI 025	Elementary analysis of native and plantation eucalypt and pine	AST report  HSL report	30 May 2007
RFI 026(a)	Response to request for details of mill site preparation equipment, construction operating hours and construction noise	Written information	31 July 2007
RFI 026(b)	Revised site preparation/excavation plan	Plan	31 July 2007
RFI 027(a)	Revised proposed site layout plan	Plan	8 June 2007
RFI 027(b)	Details of proposed transmission line location	Map	8 June 2007
RFI 027(c)	Details of proposed vegetation clearance area	Map	8 June 2007
RFI 028	Response to request for information regarding chlorate production in the chemical plant and amount and composition of gaseous, liquid and solid emissions from the chemical plant	Written information	7 June 2007
RFI 029(a)	Response to request for information regarding conditions at the edge of the mixing zone in Bass Strait	EnviroGulf report to Gunns dated 5 June 2007, Ref Gunss/LH/05062007	4 June 2007
RFI 029(b)	Response to request for information regarding conditions at the edge of the mixing zone in Bass Strait	Poyry report to Gunns dated 7 June 2007, Ref 16B0104	4 June 2007
RFI 029(c)	Response to request for information regarding conditions at the edge of the	GHD memo to Gunns dated 7 June 2007,	4 June 2007

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	mixing zone in Bass Strait	Ref 41/16384/359359	
RFI 030	Additional information about the hydrodynamic model for Bass Strait	GHD report,  Patterson-Britton report	14 June 2007
RFI 031	Gunns response to concerns raised by Professor Andrew Wadsley	Toxikos report to Gunns dated 4 July 2007, Ref TR170607-RJF	6 July 2007
RFI 033(a)	Detailed plan for the location of and design of the landfill, reservoir, quarry and infrastructure connections	Plan	10 August 2007
RFI 033(b)	Detailed plan for the bale warehouse	Plan	10 August 2007
RFI 033(c)	Detailed plan for the wharf, office and wharf amenities	Plan	10 August 2007
RFI 033(d)	Response to request for details of amount of wood chips produced on site and amount imported from other chip mills	Written information.	10 August 2007
RFI 035	Response to request for information about chemical plant emission points and predicted emissions for base-case and merchant-base production levels	Written information	27 July 2007
RFI 036	Response to request for information about the chemical plant	Written information	31 July 2007
RFI 037(a)	Details of the effect of the reduced scale of earthworks on 24 hour construction	Written information.	10 August 2007
RFI 037(b)	Details of various chemical processes and emissions from the chemical plant	Written information,  Flow diagram	10 August 2007
	Information from Gunns regarding layout changes at the mill site for an improved environmental outcome	Written information,  Plan	8 May 2007
	Map from Gunns showing the areas for revocation and construction corridors in Trevallyn Reserve	Map L07131_TrevallyRevocationMap1_Rev04	17 June 2007
	Details of concurrency and use of data for calibration/verification of the hydrodynamic model	Written text	18 June 2007
	Map from Gunns showing the areas for revocation and construction corridors in Trevallyn Reserve.	Map L07131_TrevallyRevocationMap2_Rev04	27 June 2007

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## ANNEX W1 – WATER QUALITY OBJECTIVES

	Units	Water Quality Objectives
<b>PHYSICO-CHEMICAL PARAMETERS</b>		
Colour	mg/LPt/L	2
Dissolved oxygen	mg/L	8.4-10.2
pH		8 - 8.4
Surface films (oil and petrochemicals)		Should not be visible nor detectable by odour
Temperature		< 2°C change
Total suspended solids	mg/L	7
Turbidity	NTU	2
Secchi disc depth	m	8.5
Salinity	ppt	36
AOX	µg/L	29
BOD	mg/L	2
Chlorophyll a	µg/L	1
COD	mg/L	1200
enterococci	CFU/100mL	40
Faecal coliform	CFU/100mL	14
Oil and Grease		No visible contamination
NOx	µg/L	5
Ammonia	µg/L	15
Total nitrogen	µg/L	140
Total phosphorus	µg/L	40
Filterable reactive phosphate	µg/L	10
<b>TOXICANTS</b>		
<b>Metals and metalloids</b>		
Aluminium	µg/L	6
Antimony	µg/L	270
Arsenic (III & v)	µg/L	2.3
Barium	µg/L	220
Beryllium	µg/L	0.13
Boron	µg/L	5100
Cadmium	µg/L	0.7
Chromium (Cr III &VI)	µg/L	4.4
Cobalt	µg/L	1
Copper	µg/L	1.3
Iron	µg/L	300
Lead	µg/L	4.4
Manganese	µg/L	80
Mercury (inorganic)	µg/L	0.1
Molybdenum	µg/L	23
Nickel	µg/L	7
Selenium	µg/L	3
Tin (inorganic, Sn IV)	µg/L	10
Vanadium	µg/L	100
Zinc	µg/L	15
<b>Non-metallic organics</b>		
Ammonia (at pH 8)	µg/L	910
Chlorate	µg/L	8
Hydrogen sulfide	µg/L	2
Nitrate -N	µg/L	700

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	Units	Water Quality Objectives
<b>Organic alcohols</b>		
Ethanol	µg/L	1400
<b>Halogenated alkanes</b>		
Trihalomethane	µg/L	ID
Bromoform	µg/L	10
<b>Chloromethanes</b>		
Dichloromethane	µg/L	4000
Chloroform	µg/L	370
<b>Chloropropanes</b>		
1,1-dichloropropane	µg/L	500
1,3-dichloropropane	µg/L	1100
<b>Chlorinated alkenes</b>		
Chloroethylene	µg/L	100
1,1-dichloroethylene	µg/L	700
1,2-dichloroethylene	µg/L	100
3-chloropropene	µg/L	3
1,3-dichloropropene	µg/L	0.8
<b>Anilines</b>		
Aniline	µg/L	8
<b>Aromatic hydrocarbons</b>		
Benzene	µg/L	500
Camphene	µg/L	2
Dioxins (pg/L)	pgTEQ/L	ID
2,3,7,8 TDDF (pg/L)	pg/L	ID
2,3,7,8-TCDD (pg/L)	pg/L	10
<b>Phenols</b>		
Phenol	µg/L	400
2,4-dimethylphenol	µg/L	2
<b>Chlorophenols</b>		
2-chlorophenol (2-monochlorophenol)	µg/L	0.1-15
3-chlorophenol (3-monochlorophenol)	µg/L	4
4-chlorophenol	µg/L	0.1
2,3-dichlorophenol	µg/L	31
2,4-dichlorophenol	µg/L	0.1-14
2,5-dichlorophenol	µg/L	3
2,6-dichlorophenol	µg/L	30
3,4-dichlorophenol	µg/L	0.3
3,5-dichlorophenol	µg/L	4
4-Chloro-3-methylphenol	µg/L	3
<b>Nitrophenols</b>		
2-nitrophenol	µg/L	2
<b>Organic sulphur compounds</b>		
Carbon disulfide	µg/L	20

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	Units	Water Quality Objectives
<b>GENERIC GROUPS OF CHEMICALS</b>		
<b>Surfactants</b>		
Surfactant (MBAS)	µg/L	200
Polyelectrolyte flocculants (OPF's)	µg/L	10
<b>Organic acids</b>		
Chloroacetic acids	µg/L	ID
Monochloroacetic acid	µg/L	0.58
Trichloroacetic acid	µg/L	3
<b>Resin acids</b>		
Resin Acid (other than dehydroabietic acid)	µg/L	52
Dehydroabietic acid	µg/L	13
<b>Fatty acids</b>		
	µg/L	ID
<b>Chlorinated natural phenols</b>		
4-chloroguaiacol	µg/L	1
3,4-dichloroguaiacol	µg/L	6
4,5-dichloroguaiacol	µg/L	6
4,6-dichloroguaiacol	µg/L	6
6 Chlorovanillin	µg/L	130
<b>Other aromatic compounds</b>		
Sterols	µg/L	ID
<b>MISCELLANEOUS</b>		
<b>Hydrocarbons</b>		
Methanol	µg/L	200
Limonene	µg/L	4
<b>Toxicity</b>		
Chronic toxicity		NOEC is not exceeded at the edge of the mixing zone
<b>Note:</b> ID = insufficient data		