

Environment Protection and Biodiversity Conservation Act 1999

Referral Form

Important Note:

Please read the Referral Guide and associated Fact Sheets (available at <http://www.deh.gov.au/epbc>) carefully. The guide and Fact Sheets will help you to complete the form correctly and ensure that your referral is in a form that can be processed. The completed form, together with the required maps and any other information you may wish to submit, should be sent to the EPBC Act Referrals Section, Approvals and Wildlife Division, Department of the Environment and Heritage, GPO Box 787, Canberra, ACT, 2601 and/or by email to epbc.referrals@deh.gov.au (see Referral Guide for allowable electronic formats).

1. Contacts and proponent

1.1 Person making the referral

(Note: The term "person" can refer to an individual or a corporation)

The person making the referral can be either the person proposing to take the action, an agent acting on their behalf (eg. a consultant), or a government agency making the referral in relation to an action to be taken by another person. (Include name, postal address, telephone, fax, email.)

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1.2 Person(s) proposing to take the action

This is the person who proposes to carry out the action, or who is otherwise responsible for the action. If approval is necessary, this is the person to whom the approval will be granted, and they will be responsible for meeting any conditions of approval. (Include name postal address, telephone, fax, email – if same as person making the referral, write "as above".)

As above

If a corporation is proposing to take the action, please ensure you provide the name of a contact officer for this matter.

1.3 Person(s) who will be the proponent for the action

The proponent is responsible for preparing all documentation for the assessment process, if the action requires approval. If the proponent is the same as the person proposing to take the action, write 'as above'. If the proponent is different from the person proposing to take the action, the signature of both is required (at Section 7.3). (Include name(s), postal address, telephone, fax, email)

As above

If a corporation is the proponent for the action, please also provide the name of a contact officer for this matter.

2. Description of the proposal

2.1 Provide a *summary description of the action* (two or three sentences)

Gunns Limited (Gunns) proposes to establish a bleached Kraft pulp mill at Bell Bay in northern Tasmania. The proposed mill may produce between 700,000 and 1,100,000ADT pulp per annum from wood sourced from forest managed in accordance with the Tasmanian Regional Forest Agreement. The Kraft pulp method will be used to produce high quality pulp. The bleaching process will be Elemental Chlorine Free (ECF) in accordance with the *Recommended environmental emission limit guidelines for any new bleached eucalypt Kraft pulp mill in Tasmania* adopted by the Tasmanian Government in October 2004.

2.2 Details of the *location of the project area*

Where the project is of less than 1 km² in size, provide the location as a single pair of latitude and longitude references. Latitude and longitude references should be used instead of AMG and/or digital coordinates.

Locality: Bell Bay

Latitude: 41 Degrees: 09 minutes: 32 seconds:

Longitude: 146 Degrees: 55 minutes: 21 seconds:

Where the project area is greater than 1 km² or any dimension is greater than 1 km, provide additional coordinates to enable accurate identification of the location of the project area.

Please provide a brief physical description of the project area, including the size of the development footprint or work area in hectares (a more detailed description is required at Part 3 of this form).

The site of the proposed pulp mill is located between an existing electricity transmission line and the River Tamar, south of Bell Bay. The site is currently vegetated and dominated by *Eucalyptus amygdalina* forest. The site slopes towards the River Tamar, and is backed by the Tippogoree Hills to the east. While the project area depicted on the attached plan will be up to 650ha to accommodate vegetated buffers and screening and possible future expansion of operations or a paper mill (neither of which form part of this referral), the proposed footprint of the pulp mill is less than 100ha.

An effluent disposal pipeline is proposed to be constructed from the pulp mill to an area near Five Mile Bluff, north of George Town, to deliver effluent to an ocean outfall located up to 4km offshore.

A water supply pipeline and associated infrastructure is proposed to be constructed between Lake Trevallyn, near Launceston, and the pulp mill. This system may further link to the existing water supply from Curries River dam with the construction of a water supply pipeline from the mill to the Esk Water treatment plant located approximately 6km to the north east of the mill. The Curries River dam supply could serve as an emergency backup when Trevallyn dam water was unavailable.

Attach an A4/A3 size map(s) showing the location and approximate boundaries of the area in which the project is to occur (this map, or a second attached map, should also show features mentioned in responses to questions in Part 3 of this referral, for example, conservation reserves, areas of remnant native vegetation, streams and roads).

2.3 Provide the *timeframe* in which the action is proposed to occur. Include start and finish dates where applicable.

Gunns plans to commence construction of the pulp mill shortly after Commonwealth and Tasmanian approvals have been obtained. Commissioning of the mill is anticipated to occur in late 2008 or early 2009.

It is very difficult at this early stage of the assessment process to predict the anticipated operating life of the pulp mill. We propose to describe the proposed timeframe for which approval is sought to operate the pulp mill in the integrated impact statement for the project, which will be placed on public exhibition and subject to public comment. However, at this stage we anticipate the timeframe for operating the pulp mill will be at least 30 years.

2.4 Provide a *description* of the action, including *all activities* proposed to be carried out as part of the proposed action.

The two major phases of the action are the construction and operation of the pulp mill.

Construction phase

The construction phase will include the following activities, not all of which are confined only to the pulp mill site:

- clearance of native vegetation
- site works to create a level site
- construction of the pulp mill buildings and installation of processing equipment and associated infrastructure, both at the project site and at other locations, including infrastructure for water supply, power and natural gas
- construction of a pipeline to discharge effluent to an ocean outfall
- construction of a warehouse for pulp storage
- construction of a new shipping berth facility adjacent to the pulp mill site in the River Tamar
- construction of infrastructure for solid waste disposal
- construction of other infrastructure to be used in conjunction with the pulp mill, including water supply water pipelines
- possible construction or upgrade of existing road and rail infrastructure
- possible temporary accommodation for construction workers
- possible construction of housing for workers

Operation phase

1. Mill Technology

The mill will be designed so it can be operated according to best practice environmental management and the objectives of the resource management and planning system of Tasmania.

It is proposed to use the Kraft process for producing pulp. The pulp will be bleached, dried and then baled into standard sizes for sale to local and export markets. The Kraft process is considered a very efficient process, as the wood residues removed from the wood fibres are burnt in a recovery boiler to generate the mill's steam and power requirements. This process also regenerates the chemicals used in the pulping process so they can be reused. As a result, the mill only requires small quantities of make-up pulping chemicals.

Included as part of the project is an electricity co-generation facility. With the exception of mill start-ups, the mill is proposed to be self-sufficient in electricity, and will be capable of generating excess power that can be sold on the National Electricity Market.

A raw water treatment plant is proposed to be installed to treat water to the standards required for the bleaching process. Significant quantities of water will be recirculated within the mill to minimise water consumption, and an effluent treatment plant will be used to treat the final effluent to the standards prescribed by the mill's environmental approvals. The treated waste water is then proposed to be discharged to an ocean outfall in accordance with environmental approvals for the project.

2. Pulping process

A modern Kraft process is Gunns' preferred pulping method, as it is a well developed and proven technology and produces high quality pulp in an efficient manner.

Other pulping processes were considered by Gunns, including soda and sulphite processes and thermo-mechanical pulp technology. However, Gunns does not propose either method because the soda and sulphite methods produce pulp of a lower strength and are less efficient than the Kraft process, and the thermo-mechanical process produces a lower quality pulp which is traded on a smaller world market than Kraft bleached pulp.

3. Bleaching process

The bleaching process will be Elemental Chlorine Free (ECF) in accordance with the *Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*. The bleaching chemicals being considered include, but are not limited to, oxygen, ozone, chlorine dioxide, enzymes and hydrogen peroxide. Further information about the bleaching sequence, and an explanation of Gunns' preferred sequence and its benefits and impacts, will be set out in the Integrated Impact Statement for the project.

4. Effluent processing and disposal

The mill is proposed to be designed to minimise effluent discharge and maximise the use of recycled water. Significant sections of the bleach plant water system will be partially closed, with bleach plant filtrate from various bleaching stages recycled back through the fibre line and the recovery process. This will reduce the volume of water that will be required to operate the plant, and impurities carried in these streams will be burnt in the recovery boiler. However, some effluent will be discharged, and the mill will be designed so that treated effluent will be discharged to the ocean up to 4km off-shore, near Five Mile Bluff.

The location and impacts of the proposed effluent outfall pipeline will be described in the Integrated Impact Statement.

Gunns considers that a completely closed cycle Kraft mill, and even a closed cycle bleach plant, are not yet technically proven or economically viable technologies.

5. Mill capacity

The mill will have to be of world scale for it to be financially viable, so the output of the mill will be in the range of 700,000 to 1,100,000 ADT of pulp per annum, depending on pulping efficiencies and the fibre yield of the wood used in the mill. The output can be achieved based on the existing volume of export woodchips.

6. Wood Supply

Gunns currently anticipates that between 2.6 to 4.0 million tonnes of woodchips will be processed by the pulp mill per annum. The annual quantity of wood required for the mill will be less than the 5 million tonnes exported by Gunns annually. A mixture of wood from native forests, pine and eucalypt plantations will be used. The quantities of plantation wood used in the mill is likely to increase over time as plantations become available for harvesting. It is likely that wood will be sourced from Forestry Tasmania, private forest owners, and Gunns' freehold land.

The wood will be sourced from forest managed in accordance with the Tasmanian Regional Forest Agreement (for so long as that Agreement or any renewed, extended or replacement Agreement remains in force) and the Tasmanian *Forest Practices Act 1985* (or any amending or replacement Act

that regulates the forestry industry in Tasmania). The majority of wood will be sourced from forests managed in accordance with the Australian Forestry Standard and the international forest certification system PEFC (Program for Endorsement of Forest Certification Schemes).

Most of the logs will be processed into woodchips at Gunns' existing Tamar woodchip export facility. The Tamar woodchip export facility will need to be upgraded to accommodate the increased volume of log processing.

7. Use of raw materials

The raw materials for the proposed pulping process will be used, manufactured or purchased for the mill and include:

- natural gas or oil to supplement the firing of boilers and the lime kiln.
- approximately 500,000 green tonnes of bark, fines, sawdust, wood waste and other forest residues, which may be burnt to supply steam and power for the pulp mill. Any excess power may be sold to the National Electricity Market;
- pulping make-up chemicals such as:
 - sodium hydroxide - up to 38,000 t/a may be used. Based on a 48% concentration, this would translate to approximately 79,000 t/a of sodium hydroxide liquid.
 - sodium sulphate (salt cake) - up to 20,000 t/a of the powder form will be used;
 - calcium carbonate (limestone) - up to 30,000 t/a of limestone will be sourced either from within Tasmania, or imported;
 - the bleaching chemicals which may include, but are not limited to, oxygen, hydrogen peroxide, sulphuric acid, ozone and chlorine dioxide. Each of these chemicals could be manufactured on site, or imported. The quantities of bleaching chemicals necessary will depend on the bleaching sequence adopted; and
- other operating materials, maintenance materials and office supplies, which will be sourced locally where available.

8. Water supply

Water is proposed to be supplied to the pulp mill site through a water supply pipeline from Lake Trevallyn near Launceston. The water will mostly be supplied by Hydro Tasmania from the South Esk, Great Lake System. This proposed water supply regime will require the construction and operation of:

- a raw water pump station near Lake Trevallyn;
- pipelines from the pump station to the pulp mill site.

Most of the water supply pipeline will be located within road reserves, though the pipeline will need to cross the River Tamar near Ti Tree bend and a number of other creeks and road intersections.

Gunns also proposes to construct a water storage dam to the east of the pulp mill site, across a valley in the Tippogoree Hills, with sufficient capacity to store at least three days' water supply. A backup water supply from Curries River Dam may also be developed, which could involve the construction and use of a water supply pipeline from the mill to the Esk Water treatment plant located approximately 6km to the north west.

Gunns currently anticipates that the pulp mill will require approximately 26GL of water per annum.

The exact location and impacts of the water supply pipeline and pump station will be described in the Integrated Impact Statement.

9. Wharf facilities

Pulp is proposed to be shipped from a new berth facility to be constructed adjacent to the pulp mill site (see attached plan of the project site). The berth will have a depth of approximately 12 metres.

The berth is likely to stand on a dolerite bund as the current preferred method of construction. The dolerite is intended to be sourced from the material excavated during the pulp mill construction. Piling will be necessary in the River Tamar for part of the wharf structure.

The wharf facility will be designed to accommodate the full mill output as well as use for the possible importation of raw materials.

10. Solid waste disposal

Any solid waste which cannot be reused will be disposed of at a controlled disposal site. A new waste disposal site is proposed as part of the pulp mill project. The approximate location of the proposed waste disposal site is depicted on the attached site plan.

11. Gas supply

Gas may be supplied to the mill through a pipeline linked to the Bell Bay power station located approx. 2km to the north west.

If gas supply is not available, Gunns will secure energy from an alternative source such as oil to supplement the firing of boilers and the lime kiln.

2.5 Provide an explanation of the context in which the action is proposed to take place, including any relevant planning framework (for example, relevant management plans or State or Local Government approvals). Indicate whether, and in what way, the action is related to other actions or proposals that may have already occurred, are occurring, or are likely to occur, at a future date. You should also provide the name(s) of the Local Council and/or Local Government Area the action will take place in, if relevant.

All aspects of Gunns' current proposal to construct and operate a pulp mill at Bell Bay have been included in this referral.

As mentioned above, the project site (see attached plan) is larger than required for the pulp mill because of boundary adjustments with Comalco (the vendor), the provision of buffer areas, and the possible future expansion of Gunns' operations. For example, Gunns may in the future seek to develop a paper mill at the pulp mill site, or expand the pulp mill. However, any future paper mill or expansion of the pulp mill would be the subject of a separate environmental assessment approval process.

The Bell Bay pulp mill site is within the municipality of Georgetown and is subject to the *Georgetown Planning Scheme 1991*. The site is zoned IN3 (Bell Bay Major Industrial).

The pulp mill project was declared by the Administrator on 22 November 2004 to be a project of state significance under section 18(2) of the *State Policies and Projects Act 1993* (Tas) (*SPP Act*). This was followed up by a direction made by the Premier and Minister administering Part 3 of the *SPP Act* to the Resource Planning and Development Commission (RPDC) pursuant to section 20 of the *SPP Act* (the Minister's Direction). The Minister's Direction directs the RPDC to undertake an integrated assessment of the proposed action in accordance with seven requirements. The integrated assessment is to address the environmental, social, economic and community issues relevant to the project. Requirement number 5 of the Minister's Direction includes requirements relating to the assessment of matters related to the *Environment Protection Biodiversity Conservation Act 1999* (Commonwealth).

Attached to this form are the Administrator's declaration of project of state significance and the Minister's Direction.

2.6 If you are considering making a referral of a stage or component of a larger action, you must provide information about the larger action and details of any interdependency between the stages/components and the larger action. If appropriate, you may also provide justification as to

why you believe it is reasonable for the proposed action, that is the subject of this referral, to be considered separately from the larger proposal (see the Referral Guide).

Section 74A of the EPBC Act provides that the Environment Minister may not accept a referred action that is a component of a larger action. If the Environment Minister does not accept the referral, he or she is not permitted to make a decision on whether the action is a controlled action. The Environment Minister may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (see also Fact Sheet).

This project represents the entire works proposed.

3. Description of the project area and the affected area

Note: You must include a *map(s)* clearly showing the location of the action, and any relevant features referred to in 3.1. (A general location map (eg, 1:250 000 scale) and a more detailed map showing the elements of the proposal may be appropriate. If available, an aerial photograph or other photograph of the site can be included.)

3.1 Describe the affected area, referring, as appropriate, to attached maps. In particular, indicate on the map the location of any of the following features: World Heritage properties, Ramsar wetlands, listed threatened species or communities and/or known habitat for these species or communities, listed migratory species and/or known habitat for these species, Commonwealth marine areas and Commonwealth land, conservation reserves/parks, and areas of remnant native vegetation.

The site of the proposed pulp mill is located to the south of Bell Bay, between the Tippogoree Hills and the River Tamar (see attached maps). It is adjacent to Gunns' Tamar wood chip facility. The Bell Bay Power Station, Temco Smelter, Comalco Aluminium Plant, Starwood MDF plant, FEA sawmill and two woodchip mills are all located at Bell Bay, to the north west of the pulp mill site. The towns of Bell Bay and George Town are situated further to the north west of the pulp mill site.

The project area will be up to 650ha, but the proposed footprint of the pulp mill will be approximately 100ha. The project area is vegetated and dominated by *Eucalyptus amygdalina* forest.

1. World heritage properties

The pulp mill site is approximately 55km from the nearest boundary of the Tasmanian Wilderness World Heritage Area.

2. RAMSAR wetlands

Two RAMSAR wetlands occur near the northern coast of Tasmania: the Flood Plain Lower Ringarooma River and the Little Waterhouse Lake.

The Flood Plain Lower Ringarooma River covers a significant area, approximately 9km north west of Gladstone. It incorporates a series of freshwater lagoons and a freshwater marsh area. Its catchment area is the Ringarooma River catchment. It is located approximately 85km from the pulp mill site.

Little Waterhouse Lake is located within the Waterhouse Conservation Area and is a coastal freshwater lagoon, with a relatively small catchment in the immediate area. It is located more than 60km from the pulp mill site.

The site is not within the catchment of either wetland and no impacts are anticipated.

3. Listed threatened species or communities and/or known habitat for these species or communities. Suitable habitat for 33 threatened species occurred within the vicinity of the pulp mill site or associated infrastructure.

Five nationally listed Endangered species (Tasmanian Wedge-tailed eagle (*Aquila audax fleayi*), Swift Parrot (*Lathamus discolor*), South Esk Heath (*Epacris exserta*), Shiny Grass Tree (*Xanthorrhoea bracteata*) and Northern Leek Orchid (*Prasophyllum secutum*)) may occur within and adjacent to areas to be cleared or otherwise developed for the mill and associated infrastructure.

Five nationally listed Vulnerable species (Spotted-tailed Quoll (*Dasyurus maculatus maculatus*), Eastern Barred Bandicoot (*Perameles gunnii gunnii*), Green and Gold Frog (*Litoria raniformis*), Sand Grass Tree (*Xanthorrhoea arenaria*) and Tailed Spider Orchid (*Caladenia caudata*)) may occur in areas where works will occur.

A nationally listed freshwater Vulnerable species, the Australian Grayling (*Prototroctes maraena*) may occur in the vicinity of Lake Trevallyn. A further nationally listed Vulnerable species, the Fairy Prion Southern (*Pachyptila turtur subantarctica*), is recorded in the vicinity of George Town, and is unlikely to occur in areas where works will occur.

4. Listed migratory species and/or known habitat for these species

Suitable habitat for 27 migratory species occurs within the vicinity of the pulp mill site and associated infrastructure. The Swift Parrot, a nationally listed Endangered species, has been recorded within 5km of the pulp mill site.

5. Commonwealth marine areas

The Commonwealth marine area begins 3 nautical miles from the coastal baseline, and the discharge from ocean outfall will be up to 4 km (or 2 nautical miles) into Bass Strait from Five Mile Bluff.

6. Commonwealth land

No Commonwealth land has been located in the vicinity of the pulp mill site.

7. Other nationally significant features

The pulp mill site is within the Four Mile Creek Wildlife Sanctuary, which is listed on the Register of the National Estate. The Australian Heritage Database records that the place is assessed as no longer reaching the threshold for National Estate listing.

8. Conservation reserves/parks

The pulp mill site is in the vicinity of two Tasmanian reserves, the Long Reach Conservation Area and the Tippooree Hills Forest Reserve.

The Long Reach Conservation Area is within part of the development area. The State Forest area for a potential waste disposal area is an Informal Reserve.

9. Remnant native vegetation

Native vegetation (mostly *Eucalyptus amygdalina* forest) covers the pulp mill site and is contiguous with large patches of forest to the north of the East Tamar Highway. The native vegetation is not remnant native vegetation. Small areas of remnant vegetation may occur within and adjacent to the pipeline routes and ocean outfall area near Five Mile Bluff.

3.2 Provide a description of important features of the project area and the affected area and show these on the attached map, including (if relevant to the project area or affected area) information about:

- (a) soil and vegetation characteristics;
- (b) water flows, including rivers, creeks and impoundments;
- (c) the presence of outstanding natural features, including caves;
- (d) gradient;
- (e) any buildings or other infrastructure;

- (f) any marine areas;
- (g) kinds of fauna in the area; and
- (h) the current state of the environment in the area, including information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

1. Soil and vegetation characteristics

The site is dominated by *Eucalyptus amygdalina* forest on dolerite, with small patches of coastal *E. amygdalina* forest, coastal *E. amygdalina* woodland, *Allocasuarina verticillata* forest, lowland heath and *Melaleuca ericifolia* forest either on site or in the near vicinity. Field investigations have revealed that the *M. ericifolia* forest has been inaccurately mapped, and is not present. The area contains *Acacia dealbata* forest.

Two vegetation communities of conservation significance have been identified to the north of the site (north of the railway line). They are Shrubby *Eucalyptus ovata*-*Eucalyptus viminalis* forest (listed as endangered in Tasmania, and subject to an interim moratorium on conversion) and *Eucalyptus viminalis* grassy forest/woodland (not listed but a conservation priority in Tasmania). The *Eucalyptus viminalis* grassy forest/woodland is present only on the northern side of the East Tamar Highway and not within the footprint of the pulp mill. It may however occur in the vicinity of the solid waste disposal and water storage sites.

The proposed effluent pipeline for the pulp mill will follow road reserves where possible, and will enter the ocean near Five Mile Bluff. The vegetation in this area includes coastal *E. amygdalina* woodland, Shrubby coastal heath, Sand-dune vegetation and *M. Ericifolia* forest.

The Tailed-Spider Orchid and the South Esk Heath may occur on the pulp mill site, and along the effluent pipeline route. There are no known occurrences of any EPBC listed species other than Sand grass tree at Five Mile Bluff. The Northern leek orchid and Shiny grass tree have also been recorded within the region.

2. Water flows (rivers, creeks, impoundments)

The site is located on the bank of the River Tamar. Two small streams are located within and adjacent to the proposed pulp mill site. The wharf facilities will be constructed on the bank of the River Tamar, adjacent to the pulp mill site.

The primary water supply to the mill is proposed to be from Lake Trevallyn located near Launceston, with water drawn mostly from the South Esk, Great Lake System. A number of creeks and the River Tamar will need to be crossed by this water supply pipeline.

3. Outstanding natural features

Based on a desktop review, the outstanding natural features include the River Tamar, the Tippogoree Hills, Mount George and Five Mile Bluff. Although the project site is part of the Four Mile Creek Wildlife Sanctuary, which has been listed on the Register of the National Estate, the National Estate database record indicates that the former values of the Sanctuary have been modified to such an extent that it no longer reaches the threshold for National Estate listing.

4. Gradient

The site slopes to the River Tamar. The treated effluent pipeline will pass to the north through coastal plains and sand dunes prior to entering Bass Strait.

The water supply pipeline from Lake Trevallyn will pass to the south, mostly along road reserves. It is likely to cross some creeks and the River Tamar.

5. Buildings and infrastructure

There are no buildings currently on the pulp mill site other than the adjacent wood chip mill complex. The East Tamar Highway, a large electricity transmission easement, a water supply pipeline and a railway from the south traverse the site.

6. Marine areas

The site is adjacent to the River Tamar Estuary. A benthic survey was conducted in 2003 and 2004 to assess the impact of the outfall from the wood-chipping facility on the benthic fauna community. The

results indicated that the macrobenthic communities in the vicinity of the outfall did not exhibit characteristics of a highly stressed community. Water quality measurements did not indicate a relationship between water quality and proximity to the outfall. However, large deposits of woodchips were observed on the riverbed, and the impacts of this were not directly tested.

The effluent pipeline will discharge into Bass Strait, west of Five Mile Bluff. A survey of marine flora and fauna, as well as seabed structure, was conducted as part of the Duke Energy International Tasmanian Natural Gas Pipeline (TNGP). No unique, rare or threatened species were detected during the biological survey.

The seabed to the north and west of Five Mile Bluff was mapped during the assessment of the TNGP. The areas to the west of Five Mile Bluff and close to the shore are reef. Further from the shore, sediment dominates the sea floor. In addition, impacts of construction for the Basslink cable on the seabed and habitats of marine benthic flora and invertebrates in the vicinity of Five Mile Bluff were assessed as being localised and transient and able to be mitigated to an acceptable level.

7. Fauna

Database records show that five nationally listed threatened fauna species have been found within a five kilometre radius of the pulp mill site, including the Tasmanian Wedge-Tailed Eagle, Spotted-Tailed Quoll, Swift Parrot, Green and Gold Frog and the Eastern Barred Bandicoot. The site has been assessed to contain suitable habitat only for the Spotted-Tailed Quoll and the Eastern Barred Bandicoot.

8. Current state of the environment

The site currently is vegetated predominantly by *E. amygdalina* forest. This forest is well tracked and disturbed. Further areas of disturbance are located to the north, east and south and include infrastructure (railway line, power line easement and roads) and industrial development (woodchip mill and power station).

The effluent pipeline will pass through disturbed land which is currently used for industrial, transport or rural purposes for most of its length. However, prior to entering the ocean at or near Five Mile Bluff, the pipeline will pass through coastal vegetation, including areas of shrubby coastal heath.

The majority of the length of the water supply pipelines will be located within road reserves along the East Tamar Highway with small areas of regrowth vegetation.

3.3 What is the *tenure* of the project area (for example is it freehold, leasehold or some other tenure)? If practicable, show on the attached map.

The pulp mill site is freehold land currently owned by Comalco. Effluent and water supply easements traverse mostly State road reserves, recreation reserves and some freehold land. Part of the solid waste disposal site could be located on State Forest administered by Forestry Tasmania.

3.4 What are the current and/or proposed *land uses* for the project area?

The pulp mill and waste disposal site is currently unused. The area is vegetated with largely disturbed eucalypt forest. The freehold land is zoned for industrial use, and the State Forest land is an Informal Reserve under the Tasmanian Regional Forest Agreement. The effluent pipeline will follow an existing gas pipeline easement and road reserves as far as possible to Five Mile Bluff. The water supply pipeline and pump station will essentially be located on crown road reserves.

4. Nature and extent of the likely impacts of the action

4.1 Describe, as relevant to your project, the nature and extent of *likely impacts* on the following matters protected by the EPBC Act:

- the world heritage values of a declared World Heritage property; or
- the ecological character of a declared Ramsar wetland; or

- the members of a listed threatened species (except a conservation-dependent species) or any threatened ecological community, or their habitat, or
- the members of a listed migratory species or their habitat; or
- the environment in part of the Commonwealth marine area; or
- the environment on Commonwealth land.

1. The World Heritage values of a declared World Heritage property

There are no likely impacts to the world heritage values of a World Heritage property. The nearest boundary of the Tasmanian Wilderness World Heritage Area is approximately 55km from the pulp mill site.

None of the associated water supply and waste/effluent disposal infrastructure will be located within or in close proximity to a declared World Heritage property.

2. The ecological character of a declared RAMSAR wetland

There are no likely impacts to the ecological character of a declared RAMSAR wetland. The two RAMSAR wetlands located near the northern coast of Tasmania are over 60km from the pulp mill site.

None of the associated water supply and waste/effluent disposal infrastructure will be located within or in close proximity to a declared RAMSAR wetland.

3. The members of a listed threatened species (except conservation-dependent species) or any threatened ecological community, or their habitat

Five nationally listed Endangered species (Tasmanian Wedge-tailed Eagle, Swift Parrot, Shiny Grass Tree, Northern Leek Orchid and South Esk Heath) have been recorded near the pulp mill site and the proposed location of associated infrastructure. The impacts of the pulp mill project described below have been assessed using the Commonwealth's Guidelines for Significance:

Criteria	Comment
Lead to long term decrease in the size of a population	There are no known populations of any of the five nationally endangered species on the pulp mill site. An active Wedge-tailed Eagle nest is located over 900 m north of the proposed waste disposal site. It is considered unlikely that the pulp mill project will affect population size if appropriate management strategies during the construction and operational phases of the project are implemented. The Sand Grass Tree has been identified on the proposed effluent pipeline route.
Reduce the area of occupancy of the species	Clearance of the native vegetation on the pulp mill site may reduce the area of occupancy of the Wedge-tailed Eagle (Tasmanian), as it may forage in the area. The clearance may also reduce the area of occupancy of the South Esk Heath.
Fragment an existing population into two or more populations	It is considered unlikely that the pulp mill project will fragment an existing population.
Adversely affect habitat critical to the survival of a species	It is considered unlikely that the pulp mill project will affect critical habitat for any of the endangered species.
Disrupt the breeding cycle of a population	Given implementation of appropriate management strategies and the stringent emission requirements set out in <i>Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania</i> , it is considered unlikely that the pulp mill project will disrupt the breeding cycle of a population of any of the endangered species.

Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	It is considered unlikely that the pulp mill project will cause a decline in any of the endangered species.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	It is considered unlikely that the pulp mill project will cause an invasive species harmful to any of the endangered species to become established.
Interfere with the recovery of the species	It is considered unlikely that the pulp mill project will interfere with the recovery of any of the endangered species (other than through a potential minor reduction in the area of occupancy).

Seven nationally listed Vulnerable species (Spotted-tailed Quoll, Eastern Barred Bandicoot, Green and Gold Frog, Sand Grass Tree, Australian Grayling, the Tailed Spider Orchid and the Fairy Prion¹) have been recorded near the pulp mill site or the proposed location of associated infrastructure. The impacts of the pulp mill project described below have been assessed using the Commonwealth's Guidelines for Significance:

¹Note records for this species have poor accuracy and it is extremely unlikely that any proposed developments will impact on this species. No known breeding sites for the Fairy Prion occur on mainland Tasmania.

Criteria	Comment
Lead to long term decrease in the size of a population	It is unknown whether a population of any of the seven nationally listed vulnerable species exists on the pulp mill site or associated infrastructure. However, it is considered unlikely that the pulp mill project will impact on an important population of any of the species.
Reduce the area of occupancy of an important population	Clearance of native vegetation may reduce the area of occupancy for the Spotted-tailed Quoll and Eastern Barred Bandicoot, as suitable habitat for these species has been identified within the area.
Fragment an existing important population into two or more populations	It is considered unlikely that the pulp mill project will fragment an existing important population.
Adversely affect habitat critical to the survival of a species	It is considered unlikely that the pulp mill project will affect critical habitat for any of the species.
Disrupt the breeding cycle of an important population	Given implementation of appropriate management strategies and the stringent emission requirements set out in <i>Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania</i> , it is considered unlikely that the pulp mill project will disrupt the breeding cycle of an important population of any of the species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed works will result in loss of habitat that is considered suitable for these species. However, it is considered the impact would be marginal and unlikely to result in a decline for any of the vulnerable species.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in	It is considered unlikely that the pulp mill project will cause an invasive species harmful to any of the endangered species to become established.

the endangered or critically endangered species' habitat	
Interfere with the recovery of the species	It is considered unlikely that the pulp mill project will interfere with the recovery of any of the endangered species (other than through a potential reduction in the area of occupancy).

4. The members of a listed migratory species or their habitat

It is considered unlikely that the pulp mill project will directly impact on a listed migratory species, with the possible exception of migratory marine species which is considered below.

Provided the emission limits in the *Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania* are complied with, it is considered unlikely that the atmospheric emissions from the pulp mill will significantly affect the habitat of any listed migratory species. Potential impacts on migratory species are considered to be restricted to effluent discharges to Bass Strait. Given the stringent emission limits referred to above, the impacts of these emissions on marine waters outside a defined mixing zone will be minimal. Any migratory species which comes in contact, either directly or indirectly, with the mixing zone will experience only short term exposure to the effluent discharge. Consequently, no significant impacts on listed migratory marine species are considered likely.

5. The environment in part of the Commonwealth marine area

Treated effluent will be disposed of through an ocean outfall pipeline that is proposed to extend up to 4km into Bass Strait. Construction and operation of the outfall may impact on the Commonwealth marine area. The impacts of the pulp mill project – and in particular the construction and use of the ocean outfall pipeline – described below have been assessed using the Commonwealth's Guidelines for Significance:

Criteria	Comment
Result in a known or potential pest species becoming established in the Commonwealth marine area	The pulp mill project should not result in the establishment of a pest species in the Commonwealth marine area, subject to appropriate mitigation actions being implemented during construction. The effluent discharge to Bass Strait will not directly result in the introduction of any introduced species into marine waters. Conditions within the mixing zone may be more favourable to some marine species that are not indigenous to the marine waters at the site of the proposed ocean outfall, but this will not directly result in the establishment of an introduced species.
Modify, destroy, fragment, isolate or disturb an important or substantial area of habitat such that an adverse impact on marine ecosystem function or integrity in a Commonwealth marine area results	The pulp mill project is not expected to result in an adverse impact on marine ecosystem functioning or integrity (subject to appropriate mitigation actions being implemented during construction).
Have a substantial adverse effect on a population of a marine species or cetacean including its life cycle (eg breeding, feeding, migration behaviour, and life expectancy) and spatial distribution	The pulp mill project is considered unlikely to have a substantial adverse effect on a population of a marine species, subject to compliance with the emission limits in the <i>Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania</i> .
Result in a substantial change in air quality or water quality (including temperature) which	The pulp mill project may result in a change in water quality in the immediate locality of the ocean outfall, although compliance with the emission limits in the <i>Recommended environmental emission</i>

may adversely impact on biodiversity, ecological integrity, social amenity or human health	<i>limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania</i> should avoid significant adverse impacts on biodiversity, ecological integrity, social amenity or human health.
Result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected.	The pulp mill project may result in a change in water quality, although compliance with the emission limits in the <i>Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania</i> should avoid significant adverse impacts on biodiversity, ecological integrity, social amenity or human health.

Consequently, a significant impact on Commonwealth marine areas is possible, but should be avoided through compliance with the emission limits in the *Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania*.

6. The environment on Commonwealth land

There is no Commonwealth land in the vicinity of the proposed pulp mill or its associated infrastructure.

4.2 Indicate if your action is:

- (a) a nuclear action; or
- (b) will be taken by the Commonwealth or by a Commonwealth agency; or
- (c) will be taken in a Commonwealth marine area; or
- (d) will be taken on Commonwealth land.

If your action falls into one of these categories, provide details about the impact of your action on the environment generally (ie, in addition to the specific matters addressed above in 4.1).

The action is not a nuclear action, will not be taken by the Commonwealth or by a Commonwealth agency, and will not be taken on Commonwealth land.

The construction of the ocean outfall may impact on Commonwealth marine areas, as the effluent pipeline is anticipated to extend approximately 4km offshore. This will be close to the boundary of the Commonwealth marine area.

The seabed to the west of Five Mile Bluff and close to the shore contains reef structures which may be impacted by construction of the pipeline, though these areas are also outside the Commonwealth marine area.

The effluent discharged from the pulp mill project may also impact on Commonwealth marine areas. Chlorinated organic compounds will form part of the effluent discharge, which may impact on the Commonwealth marine areas through a change in water quality, although compliance with the emission limits in the *Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania* should avoid significant adverse impacts on biodiversity, ecological integrity, social amenity or human health.

5. Measures aimed at avoiding or reducing significant impacts on matters protected under the EPBC Act

5.1 Describe any specific measures proposed as part of the action to avoid or lessen significant impacts on matters protected under the EPBC Act. Include a timeframe or workplan for implementation of any relevant measures.

Examples of relevant measures may include the timing of works to avoid critical periods for listed species, avoidance of habitat important for listed species from direct and indirect impacts, application of specific design measures to avoid or reduce impacts, or adoption of specific work practices to reduce or avoid impacts (see Referral Guide, Fact Sheet and 'Particular Manner' Guideline at <http://www.deh.gov.au/epbc>).

1. Listed threatened species

A comprehensive flora and fauna survey will be completed at the pulp mill site. If any listed threatened flora species are identified in the project area, mitigation measures along the lines proposed below and as required by Commonwealth and Tasmanian environmental approvals will be implemented. Where possible, habitat suitable for listed threatened species will be avoided during construction and operation of the pulp mill.

The mitigation measures for avoiding and minimising impacts on listed threatened species include:

- avoidance of native vegetation and habitat for listed threatened species where possible, to reduce loss and fragmentation of habitat;
- management of construction and operational activities to avoid sensitive biological periods such as breeding, migration, nesting etc.;
- developing construction methodologies to minimise impacts on species and species habitats;
- specific mitigation and restoration measures for each native vegetation community that will be impacted by the proposal, including measures to reduce weed invasion and to encourage natural regeneration;
- undertaking ongoing weed control where areas of native vegetation have been removed or areas close to native vegetation have been disturbed;
- all known areas of *Phytophthora cinnamomi* will be mapped prior to the commencement of works and appropriate hygiene methods (such as total vehicle washdown, no importation of soil to *Phytophthora*-free areas and minimal disturbance to soil) will be implemented throughout construction to limit the spread of the fungus;
- preparation of a detailed Environmental Management Plan to implement specific mitigation measures recommended during the Integrated Impact Assessment process.

2. Commonwealth marine area

Commonwealth marine areas may be affected directly or indirectly by the pulp mill. A marine survey will be completed for marine mammals, birds, fish and other aquatic wildlife and marine plants in the vicinity of the ocean outfall. Gunns will also model the dispersal characteristics of the possible effluent discharges in the area surrounding the ocean outfall discharge point.

The *Recommended environmental emission limit guidelines for any new bleached eucalypt kraft pulp mill in Tasmania* include five key elements:

- emission limits
- solid waste disposal guidelines
- site suitability criteria
- monitoring of emissions and effluent discharges
- implementation, quality assurance and review of the monitoring program

Gunns will meet the Emission Limit Guidelines requiring any new pulp mill to incorporate the technologies listed in the following table to reduce the emissions to the marine environment:

Topic or mill area	Description of accepted modern technology
Avoidance of synthetic dioxin precursors	<ul style="list-style-type: none"> • exclusion of wood chips produced from wood treated with polychlorinated phenols • exclusion of defoamers containing more than 10 ppb dibenzo-p-dioxin and 40 ppb dibenzofuran by weight • exclusion of polychlorinated phenols in paint, cutting oils and other inadvertent inputs to the process

Optimised wood handling	<ul style="list-style-type: none"> optimisation of raw material storage, seasoning period, chipping process, chip storage and chip dimensions
Pulping and brown stock processing	<ul style="list-style-type: none"> modified batch cooking or modified continuous cooking closed brown stock washing and screening (ie return of filtrates to chemical recovery) oxygen delignification followed by efficient washing (99% overall recovery of dissolved wood solids and pulping chemicals from the pulp)
Chemical recovery and handling of accidental discharges	<ul style="list-style-type: none"> effective control, containment, recovery and storage of all spills, leakages and releases of process liquids and solids and avoidance of any loss of these materials prior to their reintroduction to the process or their disposal in an approved manner adequate size of black liquor evaporation plant and recover boiler to handle additional liquor and dry solids loads due to collection of spills and possible recycle of selected bleach plant effluents stripping and appropriate reuse of foul condensates collection and reuse of clean cooling and sealing waters, including those from cooling towers efficient washing of lime mud
Bleaching	<ul style="list-style-type: none"> ECF bleaching extraction stage by either oxygen (EO) or hydrogen peroxide (EP) or both (EOP) high shear chemical mixing (ie with high power dissipation) partial bleach plant closure (ie increased recycle of filtrates within the bleach plant and possibly recycle of some bleach plant filtrate to the brown stock area and to chemical recovery) efficient washing of pulp
Bleaching chemical production	<ul style="list-style-type: none"> on-site generation of chlorine dioxide with low contamination of elemental chlorine
Effluent treatment	<ul style="list-style-type: none"> primary and secondary (biological) treatment of all process effluent, excluding uncontaminated cooling waters anoxic selector for chlorate reduction provision of containment basins to temporarily store, for subsequent treatment of untreated process effluent that has sufficiently high levels of contamination to adversely affect the operation of the effluent treatment plant
Cooling water	<ul style="list-style-type: none"> recirculation to a cooling tower and reuse of indirect cooling water

6. Information sources

6.1 List relevant references

You should also attach a copy of any relevant reports or documents that support the arguments and conclusions made in this referral. For example, any flora and fauna surveys or desktop investigations should be provided.

Reference	Comment
Gunns Limited (August 2005) <i>Proposed Bleached Kraft Pulp Mill in Northern Tasmania Revised Project Scope</i>	Document produced by Gunns Ltd (attached)
Gunns Limited (2004) <i>Proposed development site and Longreach - Preliminary threatened species issue summary report</i> ; internal memo prepared by S Weeding on 22 October 2004	Internal Gunns Ltd memo (attached)
Gunns Limited (2004) <i>Proposed development sites at Longreach and</i>	Internal Gunns Ltd memo

Hampshire – Preliminary issue summary report; internal memo prepared by S Weeding on 22 October 2004	(attached)
Aquenal (2004) <i>Marine Benthic Macroinvertebrate Survey, Tamar Estuary, Longreach, Winter 2004</i> ; report prepared for Gunns Ltd by Aquenal Pty Ltd, Hobart	External consultant report prepared for Gunns Ltd (attached)
Greening Australia (Tasmania) (2001) <i>Botanical Survey Stage 1: Five Mile Bluff to Bell Bay (Tasmania)</i> ; report prepared for Duke Energy International (Tasmanian Natural Gas Project)	Report prepared for Duke Energy International (attached)
CSIRO Marine Research (2000) <i>Pipeline route survey: Biological data report</i> ; report prepared for Duke Energy International (Tasmanian Natural Gas Project)	Report prepared for Duke Energy International (attached)
AMOG Consulting (2001) <i>Tasmanian Nearshore Survey</i> ; report prepared for Duke Energy International (Tasmanian Natural Gas Project)	Report prepared for Duke Energy International (attached)
RPDC (2004) <i>Recommended environmental emission limit guidelines for any new bleached kraft pulp mill in Tasmania: Volume 1 and 2</i> ; Resource Planning and Development Commission, Tasmania	Resource Planning and Development Commission document
George Town City Council (1991) <i>Municipality of George Town Planning Scheme 1991 Ordinance</i>	
EPBC Act Protected matters search tool search 4 July 2005	Department of Environment & Heritage
Australian Heritage Database search 3 July 2005	Department of Environment & Heritage
GHD Pty Ltd (2005) <i>Fauna surveys and habitat assessment undertaken for the Bell Bay Pulp Mill IIS</i>	Report not yet finalised. To be submitted with the Draft IIS
GHD Pty Ltd (2005) <i>Flora surveys undertaken for the Bell Bay Pulp Mill IIS</i>	Report not yet finalised. To be submitted with the Draft IIS

6.2 For information given in sections 3 and 4 of this referral, please indicate:

- (a) the source of the information; and
- (b) how recent the information is; and
- (c) how the reliability of the information was tested; and
- (d) any uncertainties in the information.

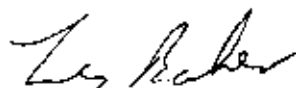
7. Signatures and Declarations

Section 489 of the EPBC Act states that the provision of false or misleading information is an offence punishable on conviction by imprisonment and fine.

7.1. Signature of person making the referral

I, LESLIE RALPH BAKER.....(full name), declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature



Date

10/8/05

7.2. Signature of person proposing to take the action

I, LESLIE RALPH BAKER (full name), declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature Les Baker

Date 11/8/05

7.3. Declaration of person nominated as proponent in Section 1.3, if different from person proposing to take the action

I, (full name), being (or agent acting on behalf of) the person nominated in Section 1.3 of this referral form as the nominated proponent agree to be designated as the proponent for the action described above if it is decided that the action requires approval under Part 9 of the EPBC Act.

Signature

Date

Signature of person proposing to take the action

Date

Fill in Section 7.4 if you believe that the proposal is not likely to have a significant impact on matters protected by the EPBC Act and that the proposal is therefore not a controlled action. Fill in Section 7.5 if you believe that the proposal is likely to have a significant impact on a protected matter and that the proposal is therefore a controlled action. (Note: This Section **must** be completed in *all cases* except where the referral is made by a State or Territory or a Commonwealth agency in relation to an action to be taken by another person.)

7.4. If you think your proposed action is not likely to have a significant impact on any of the matters listed in the table below, then you should select and complete the following statement and you should not mark any of the boxes in the table below.

I (full name), being the person making this referral and the person proposing to take the action (or agent acting on behalf of the person) believe that the action described in this referral is **not a controlled action**.

Briefly provide reasons why you believe your proposed action is not a controlled action:
(Note: For an explanation of the term "controlled action", see the Referral Guide.)

OR

7.5. If you think that your proposed action is likely to have a significant impact on any of the matters listed in the table below, then you should select and complete the following statement. You must then mark 'Yes' against those matters on which you think it will have a significant impact, in the table below.

I, LESLIE RALPH BAKER (full name), being the person making this referral and the person proposing to take the action (or agent acting on behalf of the person) believe that the action described in this referral is a controlled action because of the following provisions of the Act:

Significant Impact Likely	Controlling Provision
	World Heritage property (Sections 12 and 15A - significant impacts on the values of a World Heritage property)
	Ramsar Wetland (Sections 16 and 17B - significant impacts on the ecological character of a Ramsar wetland)
Yes	Threatened species or ecological communities (Section 18 and Section 18A - significant impacts on a listed threatened species or a listed threatened ecological community)
Yes	Migratory species (Sections 20 and 20A - significant impacts on a listed migratory species)
	Nuclear action (Sections 21 and 22A - nuclear actions)
Yes	Commonwealth marine area (Sections 23, 24 and 24A - actions relating to the Commonwealth marine area and fishing in coastal waters managed by the Commonwealth)
	Commonwealth land (Sections 26 and 27A - actions relating to Commonwealth land)
	Commonwealth action (Section 28 - actions by the Commonwealth having a significant impact on the environment)

Briefly provide reasons why you believe your proposed action is a controlled action:
(Note: For an explanation of the term "controlled action", see the Referral Guide.)

Gunns is still in the process of collecting much of the necessary information to determine whether there will be a possible significant impact on matters of national environmental significance. While Gunns will undertake mitigation measures to avoid or minimise impacts, due to the scale of the

project the possibility of impacts to listed threatened species and Commonwealth marine areas as a result of the project cannot be discounted at this stage.
