SMITH BAY WHARF

DRAFT ENVIRONMENTAL IMPACT STATEMENT

APPENDIX U

PREPARED FOR KANGAROO ISLAND PLANTATION TIMBERS BY ENVIRONMENTAL PROJECTS

JANUARY 2019

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APPENDIX **U**

APPENDIX U – ENVIRONMENTAL MANAGEMENT

Appendix U1 – Draft CEMP

Kangaroo Island Plantation Timbers

Management Plan No SP-E0-00

Draft Construction Environmental Management Plan

KANGAROO ISLAND PLANTATION TIMBERS

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1. INTRODUCTION

KIPT proposes to establish and operate the KI Seaport using an environmental management framework (EMF) that is consistent with Australian Standards (i.e. AS/NZS ISO 14001:2015 *Environmental Management Systems*).

The framework described in Chapter 26 of the Draft EIS provides an overarching strategy to manage potential environmental impacts during the construction of KI Seaport. Construction activities at Smith Bay will ultimately be managed through the development and implementation of Environmental Management Plans (EMP) incorporating all relevant construction activities.

The overall goal of this Draft Construction Environmental Management Plan (CEMP) would be to avoid, mitigate, manage and/or control any potential adverse impacts of the construction activities associated with the development on the biological, physical, social or economic environment. The CEMP would also give effect to any approval conditions imposed, and all commitments made by KIPT.

1.1 Scope

Timber product (logs and woodchips) would be transported to Smith Bay and stored before loading on to vessels for export. The KI Seaport would consist of a deep-water port and associated on-shore facilities to handle and load these products into Panamax size vessels, with the option of using smaller Handymax vessels as requirements dictate.

The CEMP would apply to the construction of the following components of the KI Seaport:

- Port/off-shore components
  - dredged berth pocket and dredged approach areas
  - navigation aids
  - floating pontoon wharf with wharf furniture (fenders, bollards, kerbs etc)
  - restraint dolphins for restraint of pontoon
  - mooring dolphin at either end of wharf for vessel head and stern lines
  - linkspan bridge
  - approach (causeway and suspended deck)
  - tug mooring facility/pen.
- On-shore components
  - storage areas for logs and woodchips
  - materials handling infrastructure
  - internal access roads
  - site access road to North Coast Road
  - stormwater drainage and retention system
  - site security fencing and lighting
  - site offices, product testing room and crib/lunchroom
  - generator, diesel tanks and associated spill bunding.

The CEMP would apply to all contractors and sub-contractors involved in the construction of the facility. The CEMP and relevant plans would be included in contractor documentation.

The CEMP would be finalised after the public consultation period and when the approvals process is completed. Comments and submissions from the public, agencies and government's may be incorporated

into the CEMP. The CEMP would then be submitted to the relevant government regulators for approval before construction activities begin.

The practical implementation of the CEMP is structured around environmental aspects and key construction activities that have a potential risk for environmental impact. The implementation of the management controls to lower risks to acceptable levels is therefore required.

1.2 Roles and responsibilities

All personnel involved in the project including KI Seaport employees, contractors and sub-contractors, are required to work in accordance with this CEMP, and in accordance with all relevant Acts, Policies and Regulations.

Table 1-1 outlines the roles and responsibilities for the implementation of the CEMP. Throughout detailed planning and construction phases, names would be allocated to the roles prescribed in the CEMP.

Table 1-1: Roles and responsibilities

Role	Responsibility
KIPT	Responsible for implementing requirements set for the development in legislation, regulation, codes of practice, and industry standards and implementing its environmental policy to minimise impacts and demonstrate commitment to sustainable practices. Ultimately responsible for compliance.
KI Seaport general manager	Promoting the culture of environment protection and providing clear expectations and guidelines. Overseeing the involvement of all internal and external stakeholders and addressing issues raised. Supporting the Project Manager in resourcing project teams. Ensuring resources are provided to implement the EMF. Intervening, if required, to ensure any deviation from EMF requirements is corrected. Reporting to the KIPT Board.
KI Seaport project manager/s	Ensuring that CEMP requirements are communicated to all relevant contractors and consultants involved in construction at Smith Bay. Overseeing the development and implementation of the CEMP. Ensuring that sufficient funds are available to implement the CEMP. Ensuring that all environmental management requirements in the CEMP are understood. Ensuring that environmental management requirements are clearly communicated to all relevant contractors via appropriate inductions. Providing contractors with written instructions/protocols/methods regarding environmental management requirements. Monitoring performance and report on progress against CEMP objectives Intervening, if required, to ensure any deviation from CEMP requirements is corrected. Reviewing and updating the CEMP as required.
KI Seaport construction manager/s	Ensuring that all environmental management requirements in the CEMP are clearly communicated to all relevant contractors via appropriate inductions. Providing contractors with written instructions/protocols/methods regarding environmental management requirements and responsibilities. Ensuring all necessary environmental approvals and licences are secured before work begins.

Role	Responsibility
	Ensuring and monitoring compliance of construction activities with conditions of relevant licences, permits and the CEMP. Liaising with EPA and other regulatory authorities as required. Intervening, if required, to ensure any deviation from CEMP requirements is corrected. Notifying any legislative breaches or environmental incidents to authorities. Responding to any complaints received.
KI Seaport contractors	All contractors must taking their environmental responsibilities seriously and diligently following all environmental procedures communicated to them by their supervisors. Undertaking all required inductions and/or environmental awareness training before starting work on site. Reporting any environmental incidents to the Construction Manager immediately.
KIPT Environment Manager	Ensure the CEMP is implemented, and update documentation as required to reflect environmental legislation, design or operational changes. Coordinate monitoring programs and reporting to authorities. Manage environmental incidents and responses. Ensure KIPT environmental policy is reviewed annually. Manage environmental matters in relation to stakeholder engagement. Coordinate environmental awareness training and implement sustainability initiatives.

1.3 Training

All KI Seaport staff and contractors would be required to undertake training in environmental management as part of their induction to the site and its activities before any construction activities could begin. Induction training would address:

- background to the KI Seaport project
- approval conditions, and the role of the EMF
- legislative requirements of the company and individuals
- key personnel and roles
- KI Seaport EMPs
- environmental issues at the site and relevant management plans and procedures
- community issues related to the project and relevant management plans and procedures
- penalties for non-compliance with required plans and procedures
- hazard and incident reporting and management procedure
- emergency response plan.

Job-specific training would also be required. The KI Seaport project manager/s would be responsible for overseeing training, through the relevant functional (e.g. environment) and area managers.

1.4 Environmental legislation, regulations and guidelines

The following environmental legislation, regulations and guidelines provide the regulatory framework around which the CEMP is based:

- *Environmental Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- Environment Protection (Air Quality) Policy 1994

- Environment Protection (Noise) Policy 2007
- National Environment Protection (Ambient Air Quality) Measure
- National Environment Protection (National Pollutant Inventory) Measure
- Guideline for Air Quality Impact Assessment Using Design Ground Level Pollutant Concentrations (EPA South Australia 2006)
- Guideline for the use of the Environment Protection (Noise) Policy (EPA South Australia 2007)
- Guidelines for the Assessment and Remediation of Groundwater Contamination (EPA South Australia, 2009)
- Code of Practice for Materials Handling on Wharves (EPA Couth Australia, May 2017)
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia 2017
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ 2000).

KIPT would also ensure that its employees have relevant permits and that contractors provide copies of their permits and licences to KIPT. Contractors would also be required to be responsible for ensuring their staff had relevant permits and licences before they commence work on the development.

The CEMP would adhere to the conditions of these licences, ensuring that all onsite works are compliant.

1.5 Environmental aspects

The environmental aspects are defined as elements of an organisation's activities, products or services that could interact with the environment. A significant environmental aspect has, or could have, a significant environmental impact (AS/NZS ISO 14001:2015). The significant environmental aspects for the proposal were identified from the environmental assessment and are shown in Table 1-2.

Table 1-2: Environmental aspects, objectives and potential impacts to be managed during construction

Environmental aspect	Objectives	Activity	Potential impacts
Marine disturbance • dredging • seagrass clearance • silt plumes • interruption of coastal processes • mobilisation of potentially contaminated material in sediments.	No increase in turbidity (above background levels) at the intake for the abalone farm. Minimise the impact on seagrass communities and offset impacts. No significant adverse impacts to specified marine environmental values of Smith Bay.	Construction of berth pocket (dredging). Pile-driving. Causeway construction.	• poor water quality (turbidity) at intake for abalone farm • direct loss of 10 ha of mixed habitat (seagrass and associated invertebrate communities) • temporary decline in productivity of seagrass within 500 m of dredging site due to sediment deposition • visible silt plume around construction site in Smith Bay • potential impacts on marine heritage items (shipwrecks) • loss of small area of pipefish habitat and some individuals of ring-backed pipefish.
Interaction with marine mammals • underwater noise and vibration generation.	To minimise the disturbance to marine mammals.	Construction of berth pocket (dredging). Pile-driving. Construction shipping activity.	• potential collisions with whales • hearing damage, changes to migration, breeding or social behaviour of whales and dolphins due to excessive underwater noise and vibration.
Biosecurity • ballast water discharge • biofouling (including in-water and dry dock vessel cleaning) • stowaways on shipping vessels • introduction or spread of pest plants, pest animals and/or diseases.	To minimise the risks to the biosecurity status of Kangaroo Island. To minimise the risk of the development adversely impacting the biosecurity status of locations other than Kangaroo Island and its waters.	Construction shipping activity.	• introduction of pest species and/or diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) that could harm industry • introduction of vertebrate or invertebrate pest species and/or diseases that could have native fauna, flora, ecosystems and industry.
Land disturbance • native vegetation clearance • soil disturbance • excavation • spread of pest plants and animals.	No introduction of new weeds or pests, nor material increase in the abundance or area of existing weed or pest species. No loss of abundance or diversity of native vegetation. No loss of native fauna.	On-shore construction activities. Upgrading of unnamed access road.	• loss of 2.93 ha of remnant native vegetation (very poor to moderate condition) including 0.48 ha of remnant Kangaroo Island Narrow-leaf mallee • loss of fauna habitat • potential displacement of fauna • fauna mortalities

Environmental aspect	Objectives	Activity	Potential impacts
	No disturbance to Aboriginal or European heritage items (unless prior approval obtained from relevant legislation).		• potential impacts on Aboriginal or European heritage items • unanticipated disturbance of contaminated soil • potential for introduction of phytophthora (soil-borne parasitic fungus) through contaminated soil on vehicles, construction equipment and landscaping materials, including plants.
Interaction with terrestrial fauna • traffic movements • noise generation.	To minimise the disturbance to terrestrial fauna. No significant adverse impacts to listed threatened species (South Australia and Commonwealth) populations in the development area.	Construction traffic.	• impacts on echidnas that occasionally forage on site • road kills of native fauna (particularly echidnas) • disturbance to fauna, particularly the hooded plover.
Community interaction • changes to visual amenity • light emissions • noise emissions • socio-economic values.	To ensure that impacts to amenity are reduced to as low as reasonably practicable No adverse public nuisance impact from noise or light emissions from the site To maintain or improve the existing social and economic values of the region	On-shore and offshore construction activities.	• temporary disturbance to abalone farm/neighbouring farms (from light and noise) • effects on visual amenity of Smith Bay • increase in employment for the region.
Generation of waste and discharges • stormwater runoff • waste generation • accidental release/spill of chemicals/fuels/diesel • ballast water discharge.	To ensure that the quality and quantity of discharged surface water and stormwater affected by site activities meets required standards and objectives. No adverse effects on marine water quality. No introduction of marine pests. No significant contamination of soils as a result of storage and/or use of hazardous materials. To minimise the generation of general wastes, maximise their reuse and recycling, and ensure safe and lawful disposal of waste.	Off-shore construction activities. On-shore construction activities. On-site diesel storage and use. On-site fuel/chemical storage and use.	• accidental release/spill of chemicals/fuels/diesel resulting in soil contamination • generation of wastes requiring disposal • marine pollution and effects on marine communities • potential introduction of pest species and diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*).
Emissions from plant and equipment • noise and vibration generation • fugitive dust.	No adverse public nuisance impact from noise/vibration or dust generation from the site.	On-shore construction activities.	• temporary disturbance to neighbouring farms/abalone farm (from noise and fugitive dust).

1.6 Marine disturbance

The construction of KI Seaport has the potential to cause marine disturbance in the waters within the development area. The aspects of the development related to marine disturbance include:

- dredging of the seafloor to deepen the berthing basin and approaches
- silt plumes resulting from dredging operations, causeway construction and shipping movements
- the construction of a causeway approximately 250 metres into Smith Bay
- the mobilisation of potentially contaminated sediments during dredging.

Potential impacts associated with these aspects include:

- direct loss of 10 ha of mixed habitat (seagrass and associated invertebrate communities)
- temporary decline in productivity of seagrass within 500 metres of dredging site due to sediment deposition
- poor water quality (turbidity) at intake for abalone farm
- visible silt plume around construction site in Smith Bay
- loss of small area of pipefish habitat and some individuals of ring-backed pipefish
- potential impacts on marine heritage items (shipwrecks).

1.6.1 Legal and other guidance

- *Environmental Protection Act 1993*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environment Protection (Sea Dumping) Act 1981*
- *Historic Shipwrecks Act 1976*
- *Native Vegetation Act 1991* (SA)
- *Natural Resources Management Act 2004*
- *Fisheries Management Act 2007*
- Environment Protection (Water Quality) Policy 2015
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ 2000).
- National Assessment Guidelines for Dredging (DEWHA 2009)
- Dredging and Earthworks Drainage Guideline (SA EPA)
- SA EPA Waste Fill Criteria

1.6.2 Values

The environmental values to be protected include:

- seagrass communities
- marine water quality
- local economy (industry)
- marine heritage items
- marine ecosystems.

1.6.3 Objectives

- no increase in turbidity (above background levels) at the intake for the abalone farm
- to minimise the impact on seagrass communities and offset impacts
- no significant adverse impacts to specified marine environmental values of Smith Bay.

1.6.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-3.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in marine disturbance. These include:

- Dredge Management Plan
- Water Quality Management Plan
- Marine Pest Management Plan
- Biosecurity Management Plan (which includes a Biosecurity Response Procedure)
- Fuel and Chemical Storage and Handling Plan.

Table 1-3: Management measures for marine disturbance

Management measure	Responsibility	Identifier
Heritage		
A discovery protocol would be established in case unexpected heritage material were to be discovered during dredging works. Contractors would be inducted in the use of this discovery protocol. Potential discoveries would be reported to the Australian Department of the Environment and Energy (DOEE).	KI Seaport construction manager	H9
If a potential maritime heritage item was discovered the following steps would be taken: • all activity in the area would stop • the area would be clearly identified and secured • no material would be removed from the suspected site • the construction site manager would be informed about the discovery and contact the relevant government department to report the potential site • the site would be assessed by a suitably qualified and experienced expert • if the area was not deemed to be a heritage site, works would resume • if the area was deemed a heritage site: – the construction site manager would liaise with the relevant government department and other relevant stakeholders to determine how to manage it appropriately – a permit or authorisation form, or notification to, the relevant government department may be required before site works could resume.	KI Seaport construction manager, KI Seaport contractors	H10
Marine ecosystems		
Best construction techniques on land will be adopted to prevent silt from being discharged to Smith Bay from the construction site during rain storms. These will include the use of silt fences where appropriate, and the establishment of a suitably sized stormwater retention basin where storm water run-off will be stored to remove sediment prior to discharge.		ME8
The Dredge Management Plan will prescribe environmental management and monitoring procedures during dredging operations.	KI Seaport project manager	ME18
A maximum daily dredging rate of 2,600 m^3 per day will be set.	KI Seaport construction manager	ME11

Management measure	Responsibility	Identifier
Turbidity levels in Smith Bay will be closely monitored during dredging to ensure that turbidity limits are not being exceeded at key prescribed locations in Smith Bay. Turbidity limits will be set in terms of maximum allowable exceedance (in %) above the best estimates of natural ambient turbidity.	KI Seaport project manager and construction manager	ME12, ME13
If such levels are exceeded, a management response will be triggered (e.g. temporary cessation or modification of dredging or disposal works or further restrictions on dredging rates and/or methods).	KI Seaport construction manager	ME14
Dredge spoil will be pumped ashore to a series of onshore settling dams of sufficient size and design to enable de-watering to occur according to the EPA (2010) guidelines.	KI Seaport construction manager	ME15
Supernatant seawater will be retained for sufficient time and treated to bring suspended solids and potential dissolved pollutants below guideline concentrations at the point where the water is discharged into Smith Bay.	KI Seaport construction manager	ME16
The CEMP would prescribe measures that would be adopted to control and minimise silt runoff from the site during construction of the facility.		ME19
All vessels utilising the wharf will be required to comply with the most recent policies and guidelines relevant to the management of biofouling and ballast water disposal.		ME25
Groundwater and surface water		
Dredge spoil will be managed to allow separation of the coarse fraction for the causeway construction continuously during dredge spoil dewatering. Additional sampling and analysis as part of dredge spoil management would provide validation that dredge spoil meets SA EPA Waste Fill criteria and that it is suitable for use onsite. Dredge spoil sampling will be incorporated into a Contamination Management Contingency Plan as part of the CEMP (see Appendix U1).		GSW4
Dredging activities would comply with the South Australian Environment Protection Authority's Dredging and Earthworks Drainage Guideline (June 2010).	KIPT	GSW5
No untreated dredge water would be discharged directly into the marine environment or into the adjoining Smith Creek.	KI Seaport construction manager	GSW6
The site would be designed to contain and manage all stormwater runoff during construction and operation as to eliminate uncontrolled water channeling and concentrated runoff streams - no site stormwater would discharge to surface water bodies untreated.	KI Seaport Construction Manager	GSW8
Determining the size of surface water catchments, including sedimentation ponds and drainage/diversion infrastructure, by considering the likely worst-case changes in the magnitude and duration of rainfall events, to prevent below-quality water being discharged to the environment.		CCS10

Matters of National Environmental Significance		
Biosecurity controls would be developed for the KI Seaport and implemented to reduce the risk of introducing aquatic diseases to the marine environment		MNES9
Any marine spill and pollution incidents would be reported to the Australian Maritime Safety Authority (AMSA).		MNES13
Standard vehicle hygiene protocols would be followed to reduce the risk of introducing or spreading pest plants, pest animals and/or pathogens.		MNES26
The CEMP would include measures to prevent oil and chemical spills from dredging equipment, including spill response plans to protect the marine environment.		MNES35
Any spill and pollution incidents (marine and terrestrial) and any trends in their occurrence would be monitored.		MNES39
Marine water quality		
The plume impacts to the east of the dredge footprint are minimised in summer, which is also likely to be the preferred season for operational efficiency reasons.		MWQ1
It is recommended that the Dredge Management Plan (DMP) consider measures to predict and cease dredging during potential high connectivity conditions. With sufficient notice, these periods may be used for routine dredge maintenance operations, minimising delays to the dredge program and the associated loss of overall productivity.		MWQ2
Dredging only during westerly current periods would be the most effective means of mitigating plume impacts to the east of the dredge footprint, including the Yumbah seawater intake locations. However, this would increase the dredge plume impacts to the west of the footprint. This would also double the overall duration of the dredging project, which would have substantial cost implications. Tidal dredging may be considered as a last resort management option in a tiered DMP.		MWQ3
Realtime monitoring and reactive management (detailed in the Dredge Management Plan) will provide protection against acute plume impacts at key sensitive receptors including: • Monitoring water quality at the Yumbah seawater intakes and at a location halfway between the dredge and the seawater intakes; • Water quality monitoring sensors that provide 'real time' data on water quality via telemetry; • Assessing monitoring data in 'real time' against threshold triggers; • Providing the monitoring data in 'real time' to the dredge operator, KIPT environmental management personnel and the EPA; • Triggering audible stop work alarms on the dredge if thresholds are exceeded;	KIPT project manager	MWQ4

Matters of National Environmental Significance		
• dredge work ceases until turbidity levels return to acceptable levels and have stabilised (these levels to be defined in the DMP). Due to the relatively close proximity of key receptors and the dredge plume source (i.e. approximately 500 metres), turbidity trigger exceedances would need to be closely monitored and the timescale for management response actions would need to be short (~30 minutes) in order to be of practical benefit in mitigating acute plume impacts.		
Minimising the fines content of material used in the causeway core.		MWQ5
Minimising the length of exposed causeway core before geotextile and armour placement.		MWQ6
A CEMP would be developed and implemented. It would include established management procedures covering vessel maintenance, reporting of leaks and use of spill kits in the event of a spill.	KIPT construction manager	MWQ7
A DMP would be developed and implemented. This document would be kept on-board dredge equipment and be readily accessible to dredge staff. It would clearly describe management measures to be followed by dredge staff.		MWQ8
A hydrocarbon spill kit would be located on the dredge and transport barges. This spill kit would contain absorbent material for spills on deck and also floating booms to contain hydrocarbon slicks if spills enter the water. This spill kit would be maintained regularly to ensure contents are fully stocked and in good condition.		MWQ9
First strike spill response equipment and appropriately trained staff would be on stand-by and able to respond to events and have access to more spill response resources if the event escalates.		MWQ10
All fuel and chemical supplies on the dredge and transport barges would be stored in bunded areas as per the requirements of AS1940:2004 (the storage and handling of flammable and combustible liquids 2004), and applicable statutory requirements.		MWQ11
A Fuel and Chemical Storage and Handling Plan will be prepared and implemented.		MWQ13
The dredge management plan should include the use of an in situ, real-time, turbidity monitoring system, at an appropriate location between the dredging operations and the Yumbah intakes, which would strengthen management controls and allow timely management interventions (e.g. slowing or ceasing dredge operations) should the suspended sediment levels exceed pre-defined criteria. Placement of such a system at an appropriate location between the dredging operations and the Yumbah intakes will highlight potential problems in water quality and thereby allow timely management interventions before any effects reach the nearest Yumbah intakes.		AC1

1.6.5 Assessment Criteria and Monitoring

Table 1-4: Assessment criteria and monitoring for marine disturbance

Assessment criteria	Monitoring
No increase in turbidity levels above that specified in the Dredge Management Plan.	Realtime water quality monitoring during dredging activities as per the Dredge Management Plan.
No introduction of new marine pest species.	Ongoing monitoring for the detection of new marine species as per the Marine Pest Management Plan.
No disturbance to marine heritage items as per the Heritage Management Plan.	Completion of inductions prior to working on site will be regularly monitored.

1.6.6 Reporting

Environmental monitoring results would be reported on a regular basis to the KI Seaport construction and project manager/s.

The presence of marine pests would be reported immediately to the relevant authorities as per the Marine Pest Management Plan.

Should any marine heritage items or sites be discovered, findings will be reported and recorded as detailed in the Heritage Management Procedure, and relevant authorities notified.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.6.7 Non-conformance

Should turbidity thresholds be reached, dredging work would be stopped until turbidity levels return to acceptable levels (as defined in the Dredge Management Plan).

Should a new exotic organism be identified during construction, the Biosecurity Response Procedure would be implemented.

Should any marine heritage items or sites be discovered, relevant work activities would be reduced or ceased to stop the impacts in accordance with the Heritage Management Plan.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.6.8 Key Government Departments

- South Australian Environmental Protection Authority (SA EPA)
- Commonwealth Department of the Environment and Energy (DoEE)
- Commonwealth Department of Agriculture and Water Resources (DAWR)
- Department for Environment and Water (DEW)
  - South Australian Heritage Council
  - Native Vegetation Council (NVC)
  - Kangaroo Island Natural Resources Management Board
- Department of Planning, Transport and Infrastructure (DPTI)

- Department of Primary Industries and Regions South Australia (PIRSA)
  - Biosecurity SA
  - Fishwatch SA

1.7 Interaction with marine mammals

Off-shore activities relating to the construction of the KI Seaport may result in interaction with marine mammals. The aspects of the development related to interaction with marine mammals include:

- underwater noise and vibration from pile-driving operations during construction
- dredging operations, causeway construction and shipping movements.

Potential impacts associated with these aspects include:

- potential collisions with whales
- hearing damage, changes to migration, breeding or social behaviour of whales and dolphins due to excessive underwater noise and vibration.

1.7.1 Legal and other guidance

- *Environment Protection and Biodiversity Conservation Act 1999*
- *National Parks and Wildlife Act 1972*
- MNES Significant Impact Guidelines
- DPTI Underwater Piling Noise Guidelines
- NOAA Marine Mammal Acoustic Technical Guidance, 2018
- Sound Exposure Guidelines for Fishes and Sea Turtles (Popper et al. 2014)
- AMSA notice Marine Notice 15/2016 (Minimising the risk of collisions with cetaceans)

1.7.2 Values

The environmental values to be protected include:

- marine ecosystems
- marine mammals, including whales, great white shark, dolphin, seal or sea-lion.

1.7.3 Objectives

- to minimise the disturbance to marine mammals.

1.7.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-5.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in interaction with marine mammals. These include:

- Dredge Management Plan

Table 1-5: Management measures for Interaction with marine mammals

Management measure	Responsibility	Identifier
Marine ecosystems		
Should a whale approach within 1 km of the marine activity zone, construction operations at the wharf would cease.	KI Seaport construction manager	ME1
Should a great white shark, dolphin, seal or sea-lion approach within 500 m of the construction site, construction activities at the wharf would cease.	KI Seaport construction manager	ME6
Using a 'soft start' in which the piling impact energy would be gradually increased over 10 minutes to deter fauna from remaining close enough to risk injury after operations reached normal levels.		ME20
Establishing a 1 km shut-down zone around the site, equivalent to the most conservative distance threshold to prevent permanent hearing damage.		ME21
Matters of National Environmental Significance		
Measures to control the impact of vessel strikes on southern right whales will include vessel compliance with AMSA notice Marine Notice 15/2016 (Minimising the risk of collisions with cetaceans), which reminds shipowners, operators and seafarers of their reporting obligations and urges seafarers to maintain a look out for cetaceans, having regard to key times and locations and, in the event of sightings, warn other vessels and consider speed reductions and modest course alterations (AMSA 2016).		MNES1, ME2, ME3, ME4, ME5
Piling will only occur during daylight hours.		MNES2, ME23
Low noise impact techniques such as suction piling or vibro-piling should be used in preference to impact piling where possible.		NVL34
Implementing safety zones which comprise a shut-down zone and an observation zone: • the observation zone would be monitored for marine species to determine whether they are entering the shut-down zone • the shut-down zone would require cessation of piling, as soon as practicable, if a marine species was sighted within the shut-down zone.	KI Seaport construction manager	MNES5, NVL 40, NVL 41
Trained marine mammal observers (MMOs) should be used to monitor safety zones during, and prior to, all pile driving activities.		MNES6, ME22, NVL42
Sightings of whales during construction would be reported.	KI Seaport construction manager	MNES11

Management measure	Responsibility	Identifier
Noise, vibration and lighting		
In order to mitigate the impacts of piling, the following measures would be implemented: • soft starts procedure should be implemented when piling begins each day, if piling is stopped for a period longer than 3 hours, or if piling is stopped due to marine mammals or turtles entering the impact zone where the TTS criterion is exceeded • impact piling should be scheduled to minimise its total practicable duration, to reduce the likelihood that endangered species will be exposed to piling noise • impact piling should be avoided the night when marine mammals are difficult for observers (MMOs) to see. Also, this is the time of day when turtle movements are more likely to occur (Gitschlag & Herczeg 1994). • piling should be scheduled to occur outside the months when cetaceans may be in or near the development area.		NVL36, NVL37, NVL38, NVL39

1.7.5 Assessment Criteria and Monitoring

Table 1-6: Assessment criteria and monitoring for interaction with marine mammals

Assessment criteria	Monitoring
No significant impact to marine fauna.	Monitor for the presence of marine fauna within the observation and shut-down zones.

1.7.6 Reporting

Report sightings of marine mammal sightings within observation and shut-down zones.

Any interactions with marine mammals resulting in injury/harm to be reported to KI Seaport project manager/s and relevant authorities.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.7.7 Non-conformance

Any observed impacts to marine mammals to be reported to the KI Seaport project manager/s. Should marine fauna deaths be attributed to activity associated with construction of the development, work to cease immediately and KI Seaport construction manager/s and project manager/s to be notified. Appropriate corrective action would be undertaken in conjunction with guidance from relevant government departments and regulators.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.7.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DoEE)
- Department of Planning, Transport and Infrastructure (DPTI)

1.8 Biosecurity

Activities associated with the construction of the KI Seaport have the potential to introduce pest species and/or diseases that could affect the biosecurity status of Kangaroo Island and must be managed appropriately. The aspects of the development related to biosecurity risk include:

- ballast water discharge
- biofouling (including in-water and dry dock vessel cleaning)
- stowaways on shipping vessels.

Potential impacts associated with these aspects include:

- introduction of pest species and/or diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) that could harm industry
- introduction of vertebrate or invertebrate pest species and/or diseases that could have native fauna, flora, ecosystems and industry

1.8.1 Legal and other guidance

- *Biosecurity Act 2015*
- *Natural Resources Management Act 2004*
- *Plant Health Act 2009*
- *Environment Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia 2017
- Commonwealth Anti-fouling and in-Water Cleaning Guidelines (Commonwealth of Australia 2015)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia 2008)
- Australian Ballast Water Management Requirements, Version 7 (DAWR 2017)
- South Australian Biosecurity Policy 2017-2021 (PIRSA)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia 2009c)
- Anti-fouling and In Water Cleaning Guidelines (Commonwealth of Australia 2015)
- PPA Marine Pest Procedures (GHD 2015)
- Kangaroo Island Natural Resources Management Board's Biosecurity Strategy for Kangaroo Island (KINRMB 2017)
- Marine Pest Plan 2018-2023: National Strategic Plan for Marine Biosecurity

1.8.2 Values

The environmental values to be protected include:

- terrestrial ecosystems
- marine ecosystems
- industry.

1.8.3 Objectives

- to minimise risks to the biosecurity status of Kangaroo Island
- to minimise the risk of the development adversely impacting the biosecurity status of locations other than Kangaroo Island and its waters

1.8.4 Environmental Management Measures

The management measures to be implemented during construction are provided in stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in adverse impacts to biosecurity. These include:

- Marine Pest Management Plan
- Biosecurity Management Plan (which includes the Biosecurity Response Procedure)

Table 1-7: Management measures for biosecurity

Management measure	Responsibility	Identifier
Biosecurity		
Quarry certificates are to be provided for all materials imported onto the study area. Quarry records will also be audited.		BIOSEC57
Biosecurity signage would be installed at the site entry and exit and on site.		BIOSEC18
Induction training of construction personnel would include implementing the relevant biosecurity measures, such as the prohibition on imports of honey, apiary products and unwashed potatoes, and weed identification.		BIOSEC10
The risk of introducing and spreading weeds (including declared weeds) and pathogens during construction would be managed by implementing vehicle hygiene measures.		BIOSEC1
Equipment would be sourced locally wherever possible to minimise the likelihood of spreading weeds in the local area.		BIOSEC2
International and domestic vessels must meet the requirements of the *Biosecurity Act 2015*.		BIOSEC11
Equipment used during construction would be required to comply with the policies and guidelines relevant to the management of ballast water disposal, and with state policies relevant to the management of biofouling and pollution prevention ((SA EPA Code of Practice for vessel and facility maintenance (marine and inland waters) 2017)).		BIOSEC33, BIOSEC44
Local native species would be planted under a landscaping plan for the study area following construction. Where possible, materials such as seeds and tube stock would be sourced on Kangaroo Island to minimise potential biosecurity risks. A planting guide is available in Appendix J1.		BIOSEC3
Waste management practices would be implemented to minimise the possibility of scavenging fauna being attracted to the study area during construction activity. These would include secure storage of waste and regular collection of waste materials.		BIOSEC13
Induction programs for construction would include information on how to identify pest animal species, the potential damage they could cause and how to report sightings (National Pest Alert Hotline: 1800 084 881). Signage would also be erected to act as a constant reminder to act upon any animal sightings on the pontoon or causeway.		BIOSEC12
Induction sessions for construction staff would include biosecurity awareness as well as information on pest identification.		BIOSEC9
No in-water or dry dock cleaning would be permitted at the KI Seaport (during construction).		BIOSEC46
DAWR would be consulted to determine the most appropriate operating procedures for shipping to minimise the risk of introducing marine pests to Smith Bay. These procedures would focus on the appropriate disposal of ballast water, appropriate anti-biofouling protocols and records for ships' hulls and potentially refusing ships from ports where there are known novel diseases of abalone (to be implemented under the port operating agreement).		BIOSEC29

Management measure	Responsibility	Identifier
No abalone or oyster products would be allowed to enter the study area via Freeoak Road or via the KI Seaport.		BIOSEC49
Induction sessions for construction staff would include a component on aquatic diseases, including abalone and oyster diseases.		BIOSEC49
Implementation of dredging activity would require an EPA licence.		BIOSEC51
A detailed Marine Pest Management Plan that would be produced in consultation with DAWR, Biosecurity SA, SARDI and the Biosecurity Advisory Committee of the KINRMB. The Plan would be continually reviewed to ensure that any new marine pests or aquatic diseases were incorporated into the monitoring program.		BIOSEC30
A Dredge Management Plan (DMP) would be implemented during construction to manage the biofouling risk posed by dredging activity.		BIOSEC58
Other than in exceptional circumstances, vessels would discharge foreign-sourced ballast water on the high seas (that is, further than 200 nautical miles from the Australian shoreline) before entering the Australian EEZ, in conformance with the *Biosecurity Act 2015*.		BIOSEC60
The wharf would be required to complete vessel pre-arrival reporting using the Maritime Arrivals Reporting System (MARS) administered by DAWR (DAWR 2018c). The vessel would also be required to comply with all directives issued by DAWR relating to biosecurity during any inspections.		BIOSEC42
The pontoon (purchased in Korea as a barge) has been sandblasted and repainted with anti-fouling paint and would be inspected by Australian engineers before arrival at Smith Bay.		BIOSEC41
Ongoing monitoring (marine pest surveillance) would be undertaken for the detection of new marine species (including pests) allowing for an early response to the introduction of marine pests. This would be a key requirement of the Marine Pest Management Plans. Monitoring would include a combination of settlement plates or arrays, crab traps and shoreline searches.		BIOSEC35

1.9 Land disturbance

Numerous activities associated with the construction of KI Seaport have the potential to cause land disturbance. The aspects of the development related to land disturbance include:

- site clearance and excavation for timber storage and associated infrastructure
- upgrading of the access road.

Potential impacts associated with these aspects include:

- loss of 2.93 ha of remnant native vegetation (very poor to moderate condition) including 0.48 ha of remnant Kangaroo Island Narrow-leaf mallee
- loss of fauna habitat
- potential impacts on Aboriginal or non-Aboriginal heritage items
- unanticipated disturbance of contaminated soil
- potential for introduction of phytophthora (soil-borne parasitic fungus) through contaminated soil on vehicles, construction equipment and landscaping materials, including plants.

1.9.1 Legal and other guidance

- *Environmental Protection Act 1993*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Native Vegetation Act 1991*
- *Aboriginal Heritage Act 1988*
- *Biosecurity Act 2015*
- *Natural Resources Management Act 2004*
- *Plant Health Act 2009*
- *Livestock Act 1997*
- EPBC Environmental Offsets Policy 2012
- South Australian Biosecurity Policy 2017-2021 (PIRSA)
- National Environment Protection (Assessment of Site Contamination) Measure 1999
- Kangaroo Island Natural Resources Management Board's Biosecurity Strategy for Kangaroo Island (KINRMB 2017)

1.9.2 Values

The environmental values to be protected include:

- remnant vegetation
- terrestrial ecosystems
- Aboriginal and non-Aboriginal heritage
- soil quality.

1.9.3 Objectives

- no introduction of new weeds or pests, nor material increase in the abundance or area of existing weed or pest species
- no loss of abundance or diversity of native vegetation
- no disturbance to Aboriginal or non-Aboriginal heritage items (unless prior approval obtained from relevant government agency).

1.9.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-8.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in land disturbance. These include:

- Native Vegetation Management Plan
- Flora and Fauna Management Plan
- Offset Implementation Plan
- Planting Guide (see Appendix J1 of the Draft EIS)
- Coastal Acid Sulfate Soil (CASS) Management Contingency Plan
- Contamination Management Contingency Plan
- Stormwater Management Plan
- Heritage Management Plan

Table 1-8: Management measures for land disturbance

Management measure	Responsibility	Identifier
Terrestrial ecosystems		
The proposal footprint has been minimised where possible to limit the proposed extent of vegetation clearance.	KI Seaport project manager	TE1, MNES22
Under the *Native Vegetation Act 1991*, clearing a small amount of terrestrial native vegetation would require the preparation of an offset strategy developed in consultation with the Native Vegetation Council (see Chapter 26 – EMF). The offset package would likely include an on-ground SEB to protect an area of vegetation and provide fauna habitat.	KI Seaport project manager, KI Seaport construction manager	TE2
All reasonable precautions would be taken throughout construction to prevent bushfires resulting from human activity associated with the development.		TE6
Trenching guidelines would be set to ensure that uncovered trenches do not pose a risk to fauna during construction.		TE10
Feral animals would be controlled as required, depending on site-based monitoring.		TE12
Waste and rubbish would be minimised and managed to avoid attracting echidnas and echidna predators, and other predators and scavengers.		TE13, MNES25
Matters of National Environmental Significance		
Any marine spill and pollution incidents to the Australian Maritime Safety Authority (AMSA).		MNES13
Standard vehicle hygiene protocols would be followed to reduce the risk of introducing or spreading 'pest plants, pest animals and/or pathogens.		MNES26
Weeds would be managed, and herbicides and pesticides would be applied in consultation with NRKI and Dr Rismiller to minimise the risk of echidnas ingesting soil or invertebrates that have been treated.		MNES28
Any spill and pollution incidents (marine and terrestrial) and any trends in their occurrence would be monitored.		MNES39
Groundwater and surface water		
Although no site contamination has been detected, a Contamination Management Contingency Plan should be developed for the management of contamination should it be unexpectedly found during excavation work. The plan would be developed in accordance with EPA.		GSW1
A CASS Management Contingency Plan would be developed for deeper excavation work such as land-based pile driving. The Management Plan would provide contingent actions for minimising exposure of CASS, and any treatment if such soils were exposed.		GSW2

Management measure	Responsibility	Identifier
A Soil Management Contingency Plan will however be developed to guide specific sampling of surplus soil (either in situ or once stockpiled) to determine waste classification and disposal options, should surplus soil requiring offsite disposal be generated.		GSW3
Dredge spoil will be managed to allow separation of the coarse fraction for the causeway construction continuously during dredge spoil dewatering. Additional sampling and analysis as part of dredge spoil management would provide validation that dredge spoil meets SA EPA Waste Fill criteria and that it is suitable for use onsite. Dredge spoil sampling will be incorporated into a Contamination Management Contingency Plan.		GSW4
During the construction phase a Soil Erosion and Drainage management Plan (SEDMP) will be implemented in accordance with the *Environment Protection Act 1993*.		GSW7
Heritage		
A Heritage Management Plan (HMP) would be developed to minimise potential impacts on any unanticipated discovery of heritage items. Requirements of the plan would include: • an archaeologist would be present in the field during early works to monitor changes in soil profiles and assess the likelihood of encountering Aboriginal heritage sites • the engagement of Aboriginal monitors during earthworks, if required • an Aboriginal heritage induction procedure for the construction workforce • a site discovery protocol for construction activities.	KIPT project manager	H1, H2, H3, H4, H5
If a potential Aboriginal heritage site were discovered, the discovery would be reported to DPC-AAR.		H6
Although not a listed site, KIPT would protect the site known as the ruins of Harry Smith's house by designing the onshore components around the Easement which incorporates the ruin. Before construction, the site would be enclosed with fencing that incorporated suitable buffers and would remain fenced off throughout operations.	KIPT construction manager	H7
Under s.27(2) of the *Heritage Places Act 1993* the discovery of any non-Aboriginal 'archaeological artefact' of 'heritage significance' must be reported to the South Australian Heritage Council. The HMP would include a site discovery protocol that details the steps to be taken if a non-aboriginal artefact of potential significance was discovered. This protocol would include reporting the items to the South Australian Heritage Council.	KIPT project manager	H8
If a potential heritage item was discovered (Aboriginal and maritime) the following steps would be taken: • all activity in the area would stop • the area would be clearly identified and secured • no material would be removed from the suspected site	KIPT construction manager	H10

Management measure	Responsibility	Identifier
• the construction site manager would be informed about the discovery and contact the relevant government department to report the potential site • the site would be assessed by a suitably qualified and experienced expert • if the area was not deemed to be a heritage site, works would resume • if the area was deemed a heritage site: – the construction site manager would liaise with the relevant government department and other relevant stakeholders to determine how to manage it appropriately – a permit or authorisation form, or notification to, the relevant government department may be required before site works could resume.		

1.9.5 Assessment Criteria and Monitoring

Table 1-9: Assessment criteria and monitoring for land disturbance

Assessment criteria	Monitoring
All native vegetation clearance approved under the *Native Vegetation Act 1991.*	Post clearance audit of cleared areas versus approved clearance areas.
No evidence of increased pest animals in the development area.	Regular inspections of waste storage facilities and pest control devices.
No spread of existing weed species or introduction of new weed species to the development area.	Regular site inspection for declared weed species.
No unauthorised disturbance to Aboriginal or European heritage.	Archaeologist/Aboriginal observer to monitor earthworks.
No land contamination from leaks or spills of fuels or chemicals.	Regular inspection of fuel/chemical storage areas.

1.9.6 Reporting

Any suspected breaches of authorised clearance areas to be reported to DEW, with SEB offsets to be revised where required.

Any observed increases in weeds or pests to be reported to the KI Seaport project manager/s.

Should any heritage items or sites be discovered within the development area, findings will be reported and recorded as detailed in the Heritage Management Plan.

Any leaks/spills of fuels or chemicals >20 L to be reported to KI Seaport project manager/s and the relevant authorities.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.9.7 Non-conformance

Any unplanned disturbance or clearance that is beyond the extent described in the Draft EIS would result in an increase area under the SEB.

Should any heritage items or sites be discovered, relevant work activities would be reduced or ceased in accordance with the Heritage Management Plan.

Should an Emergency Plant Pest or suspected Emergency Plant Pest (declared under the *Plant Health Act 2009*) be detected in the development area, implement the Terrestrial Biosecurity Response Procedure and notify the relevant authorities.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.9.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DoEE)
- Commonwealth Department of Agriculture and Water Resources (DAWR)
- Department for Environment and Water (DEW)

  - Native Vegetation Council (NVC)
  - South Australian Heritage Council
  - Kangaroo Island Natural Resources Management Board

- Department of Primary Industries and Regions, South Australia (PIRSA)
  - Biosecurity SA
- Department of the Premier and Cabinet
  - Aboriginal Affairs and Reconciliation (DPC - AAR)
- Department of Planning, Transport and Infrastructure (DPTI)
- South Australian Environmental Protection Authority (SA EPA)

1.10 Interaction with terrestrial fauna

The on-shore construction of the KI Seaport will result in enhanced risks to terrestrial fauna around the study area. The aspects of the development related to interaction with terrestrial fauna include:

- traffic movements
- excavation and vegetation removal
- noise generation.

Potential impacts associated with these aspects include:

- impacts on Kangaroo Island echidnas that occasionally forage on site
- displacement of native fauna during construction
- road kills of native fauna (particularly echidnas)
- disturbance to fauna, particularly the hooded plover.

1.10.1 Legal and other guidance

- *Environment Protection and Biodiversity Conservation Act 1999*
- *National Parks and Wildlife Act 1972*
- MNES Significant Impact Guidelines
- Environment Protection (Noise) Policy 2007
- Guideline for the use of the Environment Protection (Noise) Policy (EPA South Australia 2007)

1.10.2 Values

The environmental values to be protected include:

- terrestrial ecosystems
- terrestrial fauna, particularly the Kangaroo Island echidna.

1.10.3 Objectives

- to minimise the disturbance to terrestrial fauna
- no significant adverse impacts to listed threatened species (South Australia and Commonwealth) populations in the development area.

1.10.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-10.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in interaction with terrestrial fauna. These include:

- Native Vegetation Management Plan
- Flora and Fauna Management Plan
- Offset Implementation Plan

Table 1-10: Management measures for interaction with terrestrial fauna

Management measure	Responsibility	Identifier
Terrestrial ecosystems		
Measures would be taken to avoid road-kills of fauna – particularly of echidnas – on Freeoak Road leading into the study area. These precautions are likely to include: • warning signs for truck drivers about the presence of echidnas and other fauna and the need to remain vigilant, especially during periods of low light • vehicle speed restrictions along the Freeoak road and within the site would be enforced • the induction program would include an echidna awareness talk • workers would be encouraged to download and use the Echidna CSI (Conservation Science Initiative) mobile app to report any vehicle strikes.		TE8, MNES17, MNES18, MNES19, MNES24, MNES30
Design and operation measures to minimise the potential impacts of lighting and noise as far as practicable would be employed.		TE9
Trenching guidelines would be set to ensure that uncovered trenches do not pose a risk to fauna during construction.		TE10, MNES23
Feral animals would be controlled as required, depending on site-based monitoring.		TE12
Waste and rubbish would be minimised and managed to avoid attracting echidnas and echidna predators, and other predators and scavengers.		TE13, MNES25
Matters of National Environmental Significance		
The transport route would be inspected regularly for roadkill. The roadkill would be removed and disposed of, which removes a food source for feral cats, which are a threat to native fauna.		MNES20
The general area would be inspected before construction activities began. If echidna individuals were observed, an authorised and suitably experienced professional would be engaged to determine the best possible management option for the individual, which may include relocation. Particular care would be taken not to relocate lactating females, as they may have young located in burrows that would therefore be abandoned.		MNES21
Review of incidences of vehicle strike and identification of any trends (location, seasonal, time of day etc.).		MNES31
Monitoring of vehicle speed on the Freeoak Road and the study area.		MNES32
If a hooded plover (eastern) nest was discovered in Smith Bay, either prior to or during construction activities, a protection zone (determined in consultation with DEW) would be imposed around the location for the entire breeding season.		MNES33
Inductions would include information to assist workers to identify hooded plovers (eastern) and their nests.		MNES34

Management measure	Responsibility	Identifier
Presence of hooded plover (eastern) nests in Smith Bay would be monitored.		MNES36
Deviation from identified access tracks to be used for construction activity would be monitored.		MNES37
Feral cat sightings would be reported via the Feral Cat Scan app.		MNES40
Bandicoot sightings would be monitored.		MNES41
Noise, vibration and lighting		
Processes and equipment that generate lower noise levels would be selected where feasible.		NVL2
Acoustic enclosures would be installed around above ground equipment where noise levels are predicted to exceed the relevant noise level targets at sensitive land uses, where safe and practical.		NVL5
Noise bunds (made from recycled dredge spoil) and/or noise attenuating fencing may be established around noise-generating equipment and/or at the site boundary.		NVL6
Truck movements on local roads would be limited as much as is practicable, and vehicles with a larger load capacity (therefore fewer total movements) chosen wherever possible.		NVL11
Truck movements along uneven surfaces will be restricted to minimum speed (less than 15 km/h) near sensitive receivers.		NVL14
Equipment that is used intermittently would be shut down or throttled down to a minimum during periods where it is not in use.		NVL15
Equipment would be well maintained and have mufflers and silencers installed that meet the manufacturer's specifications where relevant.		NVL16
Metal-to-metal contact would be avoided where feasible.		NVL18
Staff would be instructed to avoid dropping material from height into unlined truck trays and barges. Where materials are to be dropped into an empty truck tray, barge, or disposal bin and may cause a loud noise, the tray/bin would be lined, where feasible, with soil or an equivalent material to reduce impact noise.		NVL19
Respite periods would be considered for longer-term exposed sensitive receivers, such as by alternating the locations of noise-generating construction activities.		NVL22
Noise associated with packing up plant and equipment at the end of works will be minimised.		NVL23
For high-noise construction activities, the installation of temporary solid hoarding (e.g. plywood) or earth bunds would be considered where this was reasonable and where it could reduce noise noticeably, such as by blocking line-of-sight to sensitive receivers.		NVL26

1.10.5 Assessment Criteria and Monitoring

Table 1-11: Assessment criteria and monitoring for interaction with terrestrial fauna

Assessment criteria	Monitoring
No preventable death or serious injury to echidna or hooded plover during clearing or construction works.	Inspection of the development area prior to commencement of clearing or construction activities for echidna individuals or hooded plover nesting sites. Visual inspections of open trenches and excavations.
	Permit requirements (for any animal handling and/or relocation) to be monitored for compliance.

1.10.6 Reporting

Fauna encountered during pre-clearance checks to be reported to KI Seaport project manager/s.

Any fauna deaths that appear to be the direct result of construction activities to be reported to the KI Seaport construction and project manager/s immediately.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.10.7 Non-conformance

Unusual fauna injury/deaths to be investigated and appropriate corrective action undertaken.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.10.8 Key Government Departments

- Department of Planning, Transport and Infrastructure (DPTI)
- Department for Environment and Water (DEW) including Natural Resources Kangaroo Island (NRKI)
- Commonwealth Department of the Environment and Energy (DoEE)

1.11 Community interaction

The construction of KI Seaport will impact the Kangaroo Island community in a variety of ways. The aspects of the development related to community interaction include:

- dust emissions, noise, vibration and lighting during construction of KI Seaport
- effects on the Kangaroo Island economy, utilities and community.

Potential impacts associated with these aspects include:

- temporary disturbance to abalone farm/neighbouring farms (from light and noise)
- effects on visual amenity of Smith Bay
- increase in employment for the region.

1.11.1 Legal and other guidance

- *Environmental Protection Act 1993*
- Environment Protection (Air Quality) Policy 1994

- Environment Protection (Noise) Policy 2007
- National Environment Protection (Ambient Air Quality) Measure
- AS4282-1997: Control of the obtrusive effects of outdoor lighting

1.11.2 Values

The environmental values to be protected include:

- social amenity
- visual amenity
- local economy.

1.11.3 Objectives

- to ensure that impacts to amenity are reduced to as low as reasonably practicable
- no adverse public nuisance impact from dust, noise or light emissions from the site
- to maintain or improve the existing social and economic values of the region.

1.11.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-12.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in community interaction. These include:

- Dredge Management Plan
- Bushfire Hazard Management Plan (see Appendix U4 of the Draft EIS)
- Heritage Management Plan

Table 1-12: Management measures for community interaction

Management measure	Responsibility	Identifier
Traffic and transport		
A Marine Activity Zone (MAZ) would be prescribed for the construction period. The details of the zone would be provided to the DPTI, and KIPT would issue a Notice to Mariners advising other users of works that may affect the safe navigations of vessels in the vicinity.		TT11, TT12
Public Safety		
All reasonable precautions would be taken throughout construction to prevent bushfires resulting from human activity associated with the project.		TE6
Considering emergency response requirements (as per the Bushfire Hazard Management Plan) to acknowledge the predicted increase in the number of severe fire danger days, and the exposure of the workforce to work-induced heat stress.		CCS12
Aquaculture		
The application of measures to manage dredging (see Dredge Management Plan) and other construction activities consistent with standard industry practice in South Australia would be implemented to ensure there is no likelihood of any adverse impact on Yumbah's operation.		E1
The dredge management plan can include the use of an in-situ, real time, turbidity monitoring system, at an appropriate location between the dredging operations and the Yumbah intakes, which would strengthen management controls and allow timely management interventions (e.g. slowing or ceasing dredge operations) should the suspended sediment levels exceed pre-defined criteria. Placement of such a system at an appropriate location between the dredging operations and the Yumbah intakes will highlight potential problems in water quality and thereby allow timely management interventions.		AC1
Stormwater diversion channels, compacting proposed storage areas, construction of first-flush ponds and the use of closed conveyors and telescopic ship loaders, would reduce the potential impacts to negligible at the farm intake area.		AC2
Management strategies would be implemented to limit dust generation including the cessation of dust generating activities when there are strong westerly winds.		AC3
Dust suppression systems, including water damping, would be used to minimise dust mobilisation particularly around roads and access tracks.		AC5
Physical screening (e.g. shade mesh fences) and the use of strategic vegetation buffers would reduce dust suspension (from passive wind-blown sources) and assist with extraneous light transmission.		AC6

1.11.5 Assessment Criteria and Monitoring

Table 1-13: Assessment criteria and monitoring for community interaction

Assessment criteria	Monitoring
Respond proactively to issues or complaints raised by the adjacent landowners and the community.	Review of adherence to processes and timeframes in Complaints Management Procedure/Stakeholder Engagement Plan.

1.11.6 Reporting

Record and respond to complaints in accordance with the Complaints Management Procedure/Community Engagement Plan.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.11.7 Non-conformance

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.11.8 Key Government Departments

- Department of Planning, Transport and Infrastructure (DPTI)
- South Australian Environmental Protection Authority (SA EPA)

1.12 Generation of wastes and discharges

Activities associated with the construction of KI Seaport will result in the generation of wastes and discharges, which must be managed appropriately. The aspects of the development related to the generation of wastes and discharges include:

- stormwater runoff
- waste generation
- accidental release/spill of chemicals/fuels/diesel
- ballast water discharge.

Potential impacts associated with these aspects include:

- the mobilisation of potentially contaminated sediments during onshore construction activities
- silt plumes resulting from runoff from the site
- generation of wastes requiring disposal
- accidental release/spill of chemicals/fuels/diesel resulting in soil contamination
- biosecurity associated with construction operations
- marine pollution and effects on marine communities.

1.12.1 Legal and other guidance

- *Environment Protection Act 1993*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environment Protection (Sea Dumping) Act 1981*
- *Dangerous Substances Act 1979 (SA)*

- *Biosecurity Act 2015*
- *Fisheries Management Act 2007*
- Australian Ballast Water Management Requirements, version 6 (DAWR 2017a)
- EPA – Code of Practice for Vessel and Facility Management (Marine and Inland Waters)
- Environment Protection (Water Quality) Policy 2015.

1.12.2 Values

The environmental values to be protected include:

- marine water quality
- marine ecosystems
- terrestrial ecosystems
- seagrass communities
- local economy (abalone farm)
- soil quality.

1.12.3 Objectives

- no introduction of marine pests
- To ensure that the quality and quantity of discharged surface water and stormwater affected by site activities meets required standards and objectives
- no adverse effects on marine water quality
- to minimise the generation of general wastes, maximise their reuse and recycling and ensure safe and lawful disposal of waste
- no significant contamination of soils as a result of storage and/or use of hazardous materials.

1.12.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-14.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in the generation of wastes and discharges. These include:

- Stormwater Management Plan
- Dredge Management Plan
- Biosecurity Management Plan and Response Procedure
- Waste Management and Minimisation Plan (see Appendix U5 of the Draft EIS)
- Spill Response Plan
- Marine Pest Management Plan
- Water Quality Management Plan
- Emergency Response Management Plan (see Appendix U3 of the Draft EIS)
- Fuel and Chemical Storage and Handling Plan

Table 1-14: Management measures for generation of wastes and discharges

Management measure	Responsibility	Identifier
Marine ecosystems		
Best construction techniques on land will be adopted to prevent silt from being discharged to Smith Bay from the construction site during rain storms. These will include the use of silt fences where appropriate, and the establishment of a suitably sized stormwater retention basin (designed to retain a one-in-10-year rainfall event) where stormwater run-off will be stored to remove sediment prior to discharge.		ME8
Groundwater and surface water		
A Soil Management Contingency Plan will however be developed to guide specific sampling of surplus soil (either in situ or once stockpiled) to determine waste classification and disposal options, should surplus soil requiring offsite disposal be generated.		GSW3
Dredge spoil will be managed to allow separation of the coarse fraction for the causeway construction continuously during dredge spoil dewatering. Additional sampling and analysis as part of dredge spoil management would provide validation that dredge spoil meets SA EPA Waste Fill criteria and that it is suitable for use onsite. Dredge spoil sampling will be incorporated into a Contamination Management Contingency Plan.		GSW4
The dredge spoil dewatering system has been designed to discharge water with acceptable sediment levels. No untreated dredge water would be discharged directly into the marine environment or into the adjoining Smith Creek.		GSW6
The site would be designed to contain and manage all stormwater runoff during construction as to eliminate uncontrolled water channeling and concentrated runoff streams - no site stormwater would discharge to surface water bodies untreated.		GSW8
Timber log and wood chip storage yards will be established with bunding and impermeable base, to isolate runoff from the general stormwater system and from groundwater. Stormwater runoff (assumed to be leachate) will drain via a concrete forebay (in the bunded area) to intercept gross sediment and debris and to a retention basin (holding pond) designed to contain flows from storm events. There will be no discharge of leachate to surface water or groundwater. The pond will be lined to prevent infiltration. Leachate will be removed via evaporation or used for irrigation of adjacent landscape buffer (where contaminants will biodegrade) and for dust suppression (within wood storage areas).		GSW18
The proposed operational wetland pond, retention basin and swale system will be constructed during the early phase of construction to function as sediment capture basins during the major earthworks and civil works construction phases. No untreated stormwater would discharge to surface water bodies directly. All runoff except wood storage areas will be directed to this system during operation through engineered bunds and other structures.		GSW21
The storage of all chemicals will be in compliance with the appropriate standards. Any spills would be contained and cleaned-up.		GSW13, GSW12
As the captured stormwater will have low levels of contamination, the treatment system will allow infiltration of stormwater into groundwater. Infiltrated surface water will have been treated by the system and would not cause groundwater quality deterioration.		GSW22

Management measure	Responsibility	Identifier
The pontoon surface will be graded to prevent any runoff entering the ocean. Inlet pits will be fitted with a litter basket to trap debris and will discharge to a gross pollutant trap / oil water separator to intercept pollutants prior to discharge to the sea.		GSW23
Matters of National Environmental Significance		
Any marine spill and pollution incidents to the Australian Maritime Safety Authority (AMSA).		MNES13
Waste and rubbish would be minimised and managed to avoid attracting echidnas and echidna predators, and other predators and scavengers.		MNES25, TE13
Waste management practices (both marine and terrestrial) during construction would be monitored.		MNES38
Any spill and pollution incidents (marine and terrestrial) and any trends in their occurrence would be monitored.		MNES39
Marine Water Quality		
A CEMP would be developed and implemented. It would include established management procedures covering vessel maintenance, reporting of leaks and use of spill kits in the event of a spill.		MWQ7
A DMP would be developed and implemented. This document would be kept on-board dredge equipment and be readily accessible to dredge staff. It would clearly describe management measures to be followed by dredge staff.		MWQ8
A hydrocarbon spill kit would be located on the dredge and transport barges. This spill kit would contain absorbent material for spills on deck and also floating booms to contain hydrocarbon slicks if spills enter the water. This spill kit would be maintained regularly to ensure contents are fully stocked and in good condition.		MWQ9
First strike spill response equipment and appropriately trained staff would be on stand-by and able to respond to events and have access to more spill response resources if the event escalates.		MWQ10
All fuel and chemical supplies on the dredge and transport barges would be stored in bunded areas as per the requirements of AS1940:2004 (the storage and handling of flammable and combustible liquids 2004), and applicable statutory requirements.		MWQ11
A Fuel and Chemical Storage and Handling Plan will be prepared and implemented.		MWQ13

1.12.5 Assessment Criteria and Monitoring

Table 1-15: Assessment criteria and monitoring for generation of wastes and discharges

Assessment criteria	Monitoring
No direct stormwater discharge from the construction site to Smith Bay or the unnamed creek.	Regular inspection of stormwater detention basin.
Spills/accidental releases of fuel/chemicals are contained.	Containment and clean-up of accidental spills will be monitored against Spill Response Plan.
All waste material to be appropriately classified and segregated for reuse, recycling or offsite disposal as per the Waste Management and Minimisation Plan.	Implement a regular inspection program to monitor storage handling and disposal of wastes as per the Waste Management and Minimisation Plan.

1.12.6 Reporting

Results of inspections would be documented any uncontrolled releases or spills reported.

All waste disposed of off-site would be documented as per the Waste Management and Minimisation Plan.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.12.7 Non-conformance

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.12.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DOEE)
- Department of Primary Industries and Regions, South Australia (PIRSA)
  - Biosecurity SA
- Department for Environment and Water (DEW)
- South Australian Environmental Protection Authority (SA EPA)
- Australian Maritime Safety Authority

1.13 Emissions from plant and equipment

The employment of equipment used for the construction of KI Seaport will result in the generation emissions including noise, vibration and dust.

The aspects of the development related to emissions from plant and equipment include:

- dust emissions, noise, vibration and lighting during construction of KI Seaport.

Potential impacts associated with the release of such emissions include:

- temporary disturbance to neighbouring farms/abalone farm (from noise and fugitive dust).

1.13.1 Legal and other guidance

- *Environment Protection Act 1993*
- *Environmental Protection and Biodiversity Conservation Act 1999*
- Environment Protection (Noise) Policy 2007
- Environment Protection (Air Quality) Policy 2016
- Environment Protection (Water Quality) Policy 2015
- National Environment Protection (Ambient Air Quality) Measure
- Guidelines for the use of the Environment Protection (Noise) Policy (EPA South Australia 2007)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ 2000)
- National Assessment Guidelines for Dredging (DEWHA 2009)
- Workplace Exposure Standards for Airborne Contaminants (Safe Work Australia 2013).

1.13.2 Values

The environmental values to be protected include:

- social amenity
- air quality
- local economy.

1.13.3 Objectives

- no adverse public nuisance impact from noise/vibration or dust generation from the site.

1.13.4 Environmental Management Measures

The management measures to be implemented during construction activities are provided in Table 1-16.

Stand-alone management plans and/or procedures would be developed prior to the commencement of construction to address specific activities that may result in emissions from plant and equipment. These include:

- Waste Management and Minimisation Plan (see Appendix U5 of the Draft EIS)
- Spill Response Plan
- Emergency Response Management Plan (see Appendix U3 of the Draft EIS)

Table 1-16: Management measures for emissions from plant and equipment

Management measure	Responsibility	Identifier
Noise, Vibration and Lighting		
Processes and equipment that generate lower noise levels would be selected where feasible.		NVL2, TE9
Noisy plant, site access roads and site compounds would be located as far away as from occupied premises as is practical to allow efficient and safe completion of the task.		NVL3
Equipment that emits noise predominantly in a particular direction would be sited such that noise is directed away from occupied premises where feasible.		NVL4
Acoustic enclosures would be installed around above ground equipment where noise levels are predicted to exceed the relevant noise level targets at sensitive land uses, where safe and practical.		NVL5
Noise bunds (made from recycled dredge spoil) and/or noise attenuating fencing may be established around noise-generating equipment and/or at the site boundary.		NVL6, TT8
Noisier construction works would be scheduled with due consideration to the nearest sensitive land uses.		NVL7
Induction would cover noise and vibration management and complaints, and this would be reiterated through onsite training such as toolbox talks or pre-starts.		NVL8
Effective stakeholder communication would be undertaken, advising of upcoming noise-generating activities or works.		NVL9
Works planning would consider preventing vehicles and equipment queuing, idling or reversing near occupied premises where practicable.		NVL10
Truck movements on local roads would be limited as much as is practicable, and vehicles with a larger load capacity (therefore fewer total movements) chosen wherever possible.		NVL11
Two-way radios would be set to the minimum effective volume where possible for safety reasons.		NVL12
Truck operators would ensure tailgates (or equivalent) are cleared and locked at the designated points.		NVL13
Trucks would be restricted to minimum speed (less than 15 km/h) along uneven surfaces near sensitive receivers.		NVL14
Equipment that is used intermittently would be shut down or throttled down to a minimum during periods where it is not in use.		NVL15
Equipment would be well maintained and have mufflers and silencers installed that meet the manufacturer's specifications where relevant.		NVL16

Management measure	Responsibility	Identifier
Works would be planned to minimise the noise from reversing signals from any vehicles that do not have broadband alarms fitted.		NVL17
Metal-to-metal contact would be avoided where feasible.		NVL18
Staff would be instructed to avoid dropping material from height into unlined truck trays and barges. Where materials are to be dropped into an empty truck tray, barge, or disposal bin and may cause a loud noise, the tray/bin would be lined, where feasible, with soil or an equivalent material to reduce impact noise.		NVL19
All reversing plant used at night would be fitted with broadband reversing alarms where practicable, although it may not be possible to do so when plant was called in at short notice to replace other plant requiring maintenance. All broadband reversing alarms would be installed and operated in accordance with all relevant Occupational Health and Safety requirements.		NVL20
Where it could not be guaranteed that all plant was fitted with broadband reversing alarms (such as on trucks that visit only occasionally), then the site would be set up as far as practicable, so those vehicles did not need to reverse.		NVL21
Respite periods would be considered for longer-term exposed sensitive receivers, such as by alternating the locations of noise-generating construction activities.		NVL22
Noise associated with packing up plant and equipment at the end of works would be minimised.		NVL23
Where noisy plant is to be fixed in a stationary location such that it may impact on sensitive receivers for a significant length of time, an acoustic enclosure would be installed where practical or an appropriately silenced generator or lighting tower used.		NVL24
Low-vibration plant alternatives, such as the smallest practicable vibratory compactor, would be used where feasible.		NVL25
For high noise construction activities, consider the installation of temporary solid hoarding (e.g. plywood) or earth bunds where reasonable and where it could reduce noise noticeably, such as by blocking line-of-sight to sensitive receivers.		NVL26
Plant with high and low vibration operation settings would be run on the lowest effective vibration setting.		NVL27
Where reasonable and practicable, construction works would be programmed such that noisier activities occur after 7 am and prior to 10 pm.		NVL28
Where reasonable and practicable, sensitive receivers would be given respite from night-time activities. For example, works occurring over several nights would be programmed, where possible, so they did not occur close to individual receivers on consecutive nights.		NVL29
Earthmoving plant would not shake buckets near sensitive receivers.		NVL30
Low-noise-impact techniques such as suction piling or vibro-piling should be used in preference to impact piling where possible.		NVL34

Air quality		
The impacts of dust generated from construction activities would be minimised by implementing the following measures: • unpaved roads would be watered • cleared areas during construction/land clearing activities would be watered • vehicle speed would be limited to 15kph • layout designed to minimise vehicle movements • scheduling construction works where practical to avoid dry, windy weather conditions where the wind is blowing towards sensitive receptors • water sprinklers may be used on cleared areas before infrastructure construction during periods of adverse (hot and windy) weather • internal tracks dampened down in periods of dry and windy weather or when dust escapes property boundaries.		AQ1, AQ3, AQ4, AQ5, AQ6, AQ10, AQ11
A series of gauges would be established on the boundaries of the site to monitor dust deposition rates. A number of these gauges would be established at locations considered to represent the background site air quality (i.e. not influenced by site operations).		AQ18
Aquaculture		
The dredge management plan can include the use of an in-situ, real time, turbidity monitoring system, at an appropriate location between the dredging operations and the Yumbah intakes, which would strengthen management controls and allow timely management interventions (e.g. slowing or ceasing dredge operations) should the suspended sediment levels exceed pre-defined criteria. Placement of such a system at an appropriate location between the dredging operations and the Yumbah intakes would highlight potential problems in water quality and thereby allow timely management interventions.		AC1
Stormwater diversion channels, compacting proposed storage areas, construction of first-flush ponds and the use of closed conveyors and telescopic ship loaders, would reduce the potential impacts to negligible at the farm intake area.		AC2
A variety of management strategies would be employed to limit dust generation including the cessation of dust generating activities when there are strong westerly winds.		AC3
Dust suppression systems, including water damping, can be used to minimise dust mobilisation particularly around roads and access tracks.		AC5
Physical screening (e.g. shade mesh fences) and strategic vegetation buffers could be used to reduce dust suspension (from passive wind-blown sources) and assist with extraneous light and noise transmission.		AC6, AC8

1.13.5 Assessment Criteria and Monitoring

Table 1-17: Assessment criteria and monitoring for emissions from plant and equipment

Assessment criteria	Monitoring
Investigation of air quality and/or noise complaints raised by the community indicates no exceedance of project air quality and/or noise criteria due to construction activities.	Daily visual monitoring and observation of dust/noise and implementation of adaptive management strategies as required.

1.13.6 Reporting

Record and respond to complaints in accordance with the Complaints Management Procedure/Community Engagement Plan.

Summary of monitoring results and any complaints received to be documented in monthly report.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.13.7 Non-conformance

Should an exceedance of nominated criteria occur (identified through monitoring or investigation of a complaint) alteration of site practices should occur which may include but is not limited to ceasing work in windy conditions, increased operational controls (e.g. additional watering, reducing level of exposed areas, relocation of noisy equipment) or more rigorous monitoring/observation.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.13.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DOEE)
- Commonwealth Department of Agriculture and Water Resources (DAWR)
- Department for Environment and Water (DEW)
- Department of Planning, Transport and Infrastructure (DPTI)
- South Australian Environmental Protection Authority (SA EPA)

Appendix U2 – Draft OEMP

Kangaroo Island Plantation Timbers

Management Plan No SP-E0-00

Draft Operational Environmental Management Plan

KANGAROO ISLAND PLANTATION TIMBERS

Table of Contents

1. INTRODUCTION

KIPT proposes to establish and operate the KI Seaport using an environmental management framework (EMF) that is consistent with Australian Standards (i.e. AS/NZS ISO 14001:2015 *Environmental Management Systems*).

The framework described in Chapter 26 of the Draft EIS provides an overarching strategy to manage potential environmental impacts during the operation of KI Seaport. Operational activities at Smith Bay would ultimately be managed through the development and implementation of Environmental Management Plans (EMP) incorporating all relevant operational activities.

The overall goal of this Draft Operational Environmental Management Plan (OEMP) would be to avoid, mitigate, manage and/or control any potentially adverse impacts of port operation activities associated with the development on the biological, physical, social or economic environment. The OEMP would also give effect to any approval conditions imposed, and all commitments made by KIPT.

1.1 Scope

Timber product (logs and woodchips) would be transported to Smith Bay and stored before loading on to vessels for export. The KI Seaport would consist of a deep-water port and associated onshore facilities to handle and load these products into Panamax size vessels, with the option of using smaller Handymax size vessels as requirements dictate.

The OEMP would apply to the operation of all components of the KI Seaport:

- Port/off-shore components
  - navigation aids
  - floating pontoon wharf with wharf furniture (fenders, bollards, kerbs etc)
  - restraint dolphins for restraint of pontoon
  - mooring dolphin at either end of wharf for vessel head and stern lines
  - linkspan bridge
  - approach (causeway and suspended deck)
  - tug mooring facility/pen.
- On-shore activities/components
  - storage areas for logs and woodchips
  - internal access roads
  - site access road to North Coast Road
  - stormwater drainage and retention system
  - site security fencing and lighting
  - site offices, product testing room and crib/lunchroom
  - generator, diesel tanks and associated spill bunding.
- Materials handling activities/components
  - receival, stockpile, reclaim and export conveyor system (including receival, screen and rechip facility, stockpile management system, reclaim hopper/s, export/causeway conveyor, shiploader feed conveyor, shiploader)
  - truck weighbridge
  - truck wash facilities (if required).

The OEMP would apply to all operators and users of the facility. With relevant plans, the OEMP would be included in contractor documentation and provided to future users of the KI Seaport.

The OEMP would be finalised after the public consultation period and when the approvals process is completed. Comments and submissions from the public, agencies and government's may be incorporated into the OEMP. The OEMP would be subsequently submitted to the relevant government regulators for approval before operational activities begin.

The practical implementation of the OEMP is structured around environmental aspects and key operational activities that have a potential risk for environmental impact. The implementation of the management controls to lower risks to acceptable levels is therefore required.

1.2 Roles and responsibilities

All personnel involved in the project including KI Seaport employees, contractors and sub-contractors, are required to work in accordance with this OEMP, and in accordance with all relevant Acts, Policies and Regulations.

Table 1-1 outlines the roles and responsibilities for the implementation of the OEMP. Throughout detailed planning and operation phases, names will be allocated to the roles prescribed in the OEMP.

Table 1-1: Roles and responsibilities

Role	Responsibility
KIPT	Responsible for implementing requirements set for the development in legislation, regulation, codes of practice, and industry standards and implementing its environmental policy to minimise impacts and demonstrate commitment to sustainable practices. Ultimately responsibility for compliance.
KI Seaport general manager	Promoting the culture of environment protection and providing clear expectations and guidelines. Overseeing the involvement of all internal and external stakeholders and addressing issues raised. Supporting the Project Manager in resourcing project teams. Ensuring resources are provided to implement the EMF. Intervening, if required, to ensure any deviation from EMF requirements is corrected Reporting to the KIPT Board.
KI Seaport project manager	Ensuring that OEMP requirements are communicated to all relevant contractors and consultants involved in operations at Smith Bay. Overseeing the development and implementation of the OEMP. Ensuring that sufficient funds are available to implement the OEMP. Monitoring performance and reporting on progress against OEMP objectives. Intervening, if required, to ensure any deviation from EMF requirements is corrected Reviewing and updating the OEMP as required.
KI Seaport operations manager/s	Ensuring that all environmental management requirements in the OEMP are clearly communicated to all relevant staff through appropriate inductions. Providing operations staff with written instructions/protocols/methods regarding environmental management requirements and responsibilities. Ensuring all necessary environmental approvals and licences are secured before operations begin. Ensuring and monitoring compliance of operational activities with conditions of relevant licences, permits and the OEMP. Liaising with the EPA and other regulatory authorities as required.

Role	Responsibility
	Intervening, if required, to ensure any deviation from EMF requirements is corrected Notifying any legislative breaches or environmental incidents to authorities. Responding to any complaints received.
KI Seaport contractors/operations staff	All contractors taking their environmental responsibilities seriously and diligently following all environmental procedures communicated to them by their supervisors Undertaking all required inductions and/or environmental awareness training before starting work on site. Reporting any environmental incidents to the Operations Manager immediately.
KIPT Environment Manager	Ensure the OEMP is implemented, and update documentation as required to reflect environmental legislation, design or operational changes. Coordinate monitoring programs and reporting to authorities. Manage environmental incidents and responses. Ensure KIPT environmental policy is reviewed annually. Manage environmental matters in relation to stakeholder engagement. Coordinate environmental awareness training and implement sustainability initiatives.

1.3 Training

All KI Seaport staff and contractors would be required to undertake training in environmental management as part of their induction to the site and its activities before any operational activities could begin. Induction training would address:

- background to the KI Seaport
- approval conditions, and the role of the EMF
- legislative requirements of the company and individuals
- key personnel and roles
- KI Seaport EMPs
- environmental issues at the site and relevant management plans and procedures
- community issues related to the project and relevant management plans and procedures
- penalties for non-compliance with required plans and procedures
- hazard and Incident reporting and management procedure
- emergency response plan.

Job-specific training would also be required. The KI Seaport Project Manager/s would be responsible for overseeing training, through the relevant functional (e.g. environment) and area managers.

1.4 Environmental legislation, regulations and guidelines

The following environmental legislation, regulations and guidelines provide the regulatory framework around which the OEMP is based:

- *Environmental Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- Environment Protection (Air Quality) Policy 1994
- Environment Protection (Noise) Policy 2007
- National Environment Protection (Ambient Air Quality) Measure
- National Environment Protection (National Pollutant Inventory) Measure

- Guideline for Air Quality Impact Assessment Using Design Ground Level Pollutant Concentrations (EPA South Australia 2006)
- Guideline for the use of the Environment Protection (Noise) Policy (EPA South Australia 2007)
- Guidelines for the Assessment and Remediation of Groundwater Contamination (EPA South Australia 2009)
- Code of Practice for Materials Handling on Wharves (EPA South Australia, 2007)
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia 2017
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, (ANZECC & ARMCANZ 2000).

KIPT would ensure that all its employees have relevant permits and that contractors provide copies of their permits and licences to KIPT. Contractors would also be required to be responsible for ensuring their staff had relevant permits and licences before they commence work on the site. The OEMP would adhere to the conditions of these licences, ensuring that all on-site works are compliant.

1.5 Environmental aspects

The environmental aspects are defined as elements of an organisation's activities, products or services that could interact with the environment. A significant environmental aspect has, or could have, a significant environmental impact (AS/NZS ISO 14001:2015). The significant environmental aspects for the development were identified from the environmental assessment and are shown in Table 26-2.

Table 1-2: Environmental aspects, objectives and potential impacts to be managed during operations

Environmental aspect	Objectives	Activity	Potential impacts
Interaction with marine mammals • cruising at sea.	To minimise the disturbance to marine mammals.	Shipping.	• potential collisions with whales.
Biosecurity • introduction or spread of pest plants, pest animals and/or diseases • ballast water discharge • biofouling (including in-water and dry dock vessel cleaning) • stowaways on shipping vessels.	No introduction of new pest plants or pest animals, nor material increase in the abundance or area of existing pest plant or pest animal. No introduction of plant or animal diseases.	Shipping activity – sea freight as a vector for pests and diseases. On-shore operational activities – importation of equipment, timber product and/or consumables as a vector for pests and diseases.	• adverse impacts (disease, predation, increased competition, reduction in habitat) on flora and fauna from pest plants, pest animals and/or diseases • financial impacts to industry as a result of new pest plants, pest animals and/or diseases on the Island.
Interaction with terrestrial fauna • traffic movements • noise generation.	To minimise the disturbance to terrestrial fauna. No significant adverse impacts to listed threatened species (South Australia and Commonwealth) populations in the development area.	Transport along unnamed access road. On-shore operational activities.	• impacts on echidnas that occasionally forage on site • road kills of native fauna (particularly echidnas) • disturbance to fauna, particularly the hooded plover.
Community interaction • changes to visual amenity • light emissions • dust • noise emissions • fire risk • socio-economic values.	To ensure that impacts to amenity are reduced to levels as low as reasonably practicable. No adverse public nuisance impact from dust, noise or light emissions from the site. To reduce the fire risk within the development area. To maintain or improve the existing social and economic values of the region.	Wharf operations. On-shore operational activities.	• temporary disturbance to abalone farm/neighbouring farms (from light and noise) • nuisance impacts from dust, noise or light on neighbours • possibility of timber stockpiles catching fire should a bushfire occur in the area • effects on visual amenity of Smith Bay • increase in employment for the region.
Generation of waste and discharges • stormwater runoff • waste generation • accidental release/spill of chemicals/fuels/diesel	To ensure that the quality and quantity of discharged surface water and stormwater affected by	On-shore activities. On-site diesel storage and use.	• accidental release/spill of chemicals/fuels/diesel resulting in soil contamination • generation of wastes requiring disposal

Environmental aspect	Objectives	Activity	Potential impacts
• ballast water discharge.	site activities meets required standards and objectives. No adverse effects on marine water quality. No introduction of marine pests. No significant contamination of soils as a result of storage and/or use of hazardous materials. To minimise the generation of general wastes, maximise their reuse and recycling, and ensure safe and lawful disposal of waste.	On-site fuel/chemical storage and use. Shipping – ballast water and biofouling. Woodchip storage.	• marine pollution and effects on marine communities • potential introduction of pest species and diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) • leachate from woodchip or log stockpiles entering groundwater or stormwater run-off.
Emissions from plant and equipment • noise and vibration generation • fugitive dust • winnowing of sediments and silt plumes (shipping) • greenhouse gas emissions.	No adverse public nuisance impact from noise/vibration or dust generation from the site. No adverse effects on marine water quality. To minimise greenhouse gases generated as a result of the development.	Wharf operations. Vehicle traffic. Shipping (vessel noise and winnowing of sediment). Overall development.	• disturbance to neighbouring farms/abalone farm (from noise and fugitive dust) • temporary loss of seagrass productivity due to light reduction and smothering from turbidity • poor water quality (turbidity) at intake for abalone farm • carbon footprint of the development and contribution to global warming • sea level rise potentially impacting coastal developments.

1.6 Interaction with marine mammals

The shipping operations will result in increased marine traffic and therefore an enhanced risk of interaction with marine mammals. The aspects of the development related to interaction with marine mammals include:

- cruising at sea
- accidental release/spill of chemicals/fuels/diesel.

Potential impacts associated with these aspects include:

- potential collisions with whales
- oil or fuel spills.

1.6.1 Legal and other guidance

- *Environment Protection and Biodiversity Conservation Act 1999*
- *National Parks and Wildlife Act 1972*
- MNES Significant Impact Guidelines
- AMSA notice Marine Notice 15/2016 (Minimising the risk of collisions with cetaceans).

1.6.2 Values

The environmental values to be protected include:

- marine mammals, in particular whales
- marine parks.

1.6.3 Objectives

- to minimise the disturbance to marine mammals
- to minimise impacts to marine parks.

1.6.4 Environmental Management Measures

The management measures to be implemented during operations are provided in Table 1-3.

Stand-alone management plans and/or procedures would be developed prior to the commencement of operations to address specific activities that may result in interaction with marine mammals. These include:

- Marine Pest Management Plan
- Biosecurity Management Plan (which includes the Biosecurity Response Procedure).

Table 1-3: Management measures for interaction with marine mammals

Management measure	Responsibility	Identifier
Matters of National Environmental Significance		
Measures to control the impact of vessel strike on southern right whales include vessel compliance with AMSA notice Marine Notice 15/2016 (Minimising the risk of collisions with cetaceans), which reminds shipowners, operators and seafarers of their reporting obligations and urges seafarers to maintain a look out for cetaceans, having regard to key times and locations and, in the event of sightings, warn other vessels and consider speed reductions and modest course alterations (AMSA 2016).		MNES1, ME2, ME3, ME4, ME5
Sightings of whales during shipping activity would be reported.		MNES11
Vessel strike of a whale in Australian waters by a vessel associated with KIPT's operations would be reported to the appropriate authorities, including DEW and DoEE.		MNES12
Appropriate management of waste on ships would minimise any potential increase in marine debris, that might harm southern right whales.		MNES8
Biosecurity controls would be developed for the KI Seaport to reduce the risk of introducing disease to the marine environment.		MNES9
Implementation of the marine pest monitoring plan as part of the Marine Pest Management Plan (see Chapter 15 Biosecurity).		MNES14
Spill response plans would be developed to respond to any oil and/or chemical spill from the pontoon to protect the marine environment.		MNES10
Any marine spill and pollution incidents would be reported to the Australian Maritime Safety Authority (AMSA).		MNES10, MNES13
Waste management practices (both marine and terrestrial) during operation would be monitored		MNES38
Any spill and pollution incidents and any trends in their occurrence would be monitored.		MNES39

1.6.5 Assessment Criteria and Monitoring

Table 1-4: Assessment criteria and monitoring for interaction with marine mammals

Assessment criteria	Monitoring
No significant impact to marine fauna due to KI Seaport operations.	Monitor for the presence of marine fauna particularly whales during shipping activity.

1.6.6 Reporting

Report sightings of marine mammal sightings during shipping activity.

Any interactions with marine mammals resulting in injury/harm to be reported to KI Seaport project manager/s and relevant authorities.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.6.7 Non-conformance

Any observed impacts to marine mammals to be reported to the KI Seaport project manager/s. Should marine fauna deaths be attributed to activity associated with operation of the KI Seaport, work to cease immediately and KI Seaport operation manager/s and project manager/s to be notified. Appropriate corrective action would be undertaken in conjunction with guidance from relevant government departments and regulators.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.6.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DoEE)
- Department of Planning, Transport and Infrastructure (DPTI)

1.7 Biosecurity

Activities associated with the operation of the KI Seaport have the potential to introduce pest species and/or diseases that could affect the biosecurity status of Kangaroo Island and must be managed appropriately. The aspects of the development related to biosecurity risk include:

- ballast water discharge
- biofouling (including in-water and dry dock vessel cleaning)
- stowaways on shipping vessels.

Potential impacts associated with these aspects include:

- introduction of pest species and diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) that could harm industry
- introduction of vertebrate or invertebrate pest species and/or diseases that could harm native fauna, flora, ecosystems and industry

1.7.1 Legal and other guidance

- *Biosecurity Act 2015*
- *Natural Resources Management Act 2004*
- *Plant Health Act 2009*
- *Environment Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia 2017
- Commonwealth Anti-fouling and in-Water Cleaning Guidelines (Commonwealth of Australia 2015)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia 2008)
- Australian Ballast Water Management Requirements, Version 7 (DAWR 2017)

1.7.2 Values

The environmental values to be protected include:

- terrestrial ecosystems
- marine ecosystems
- industry.

1.7.3 Objectives

- to minimise risks to the biosecurity status of Kangaroo Island
- to minimise the risk of the development adversely impacting the biosecurity status of locations other than Kangaroo Island and its waters.

1.7.4 Environmental Management Measures

The management measures to be implemented during operations are provided in Table 1-3.

Stand-alone management plans and/or procedures would be developed prior to the commencement of operations to address specific activities that may result in adverse impacts to biosecurity. These include:

- Marine Pest Management Plan
- Biosecurity Management Plan (which includes the Biosecurity Response Procedure).

Table 1-5: Management measures for biosecurity

Management measure	Responsibility	Identifier
Biosecurity		
To minimise the introduction of pests and diseases that could impact Kangaroo Island's potato and apiary industries, compulsory induction training of operation personnel would include implementing the relevant biosecurity measures, such as the prohibition on imports of honey, apiary products and unwashed potatoes, and weed identification. Ship's crews would also be made aware of Kangaroo Island biosecurity requirements.		BIOSEC11
No plant material (excluding timber products) or food would be transferred from Smith Bay to the vessel during ship-loading at the KI Seaport.		BIOSEC21
Regular inspections along the causeway during ship-loading activities for any pest animals that may have hitch-hiked on the vessel.		BIOSEC17
Biosecurity signage would be installed along the causeway and pontoon.		BIOSEC18
Shipping vessels servicing the proposed KI Seaport should follow the Commonwealth Anti-fouling and in-Water Cleaning Guidelines (2015) and the (voluntary) National Biofouling Management Guidelines for Commercial Vessels. These guidelines will manage the risks posed by different biofouling management measures and will address both the environmental management of anti-fouling coatings and in-water cleaning and maintenance of vessels.		BIOSEC25
KI Seaport is not currently proposed to be a first point of entry. International vessels arriving there would need to have travelled via a first point of entry where biosecurity control measures would be undertaken.		BIOSEC27
Full de-barking of any logs that will ultimately be exported without fumigation.		BIOSEC20
If an Emergency Plant Pest or suspected Emergency Plant Pest (declared under the *Plant Health Act 2009*) was detected in the study area, the terrestrial biosecurity response procedure would be implemented and the relevant authorities notified via the National Pest Hotline. Operators would be trained in this procedure as part of the induction process for operation of the facility. Every possible assistance would be offered to relevant government agencies to prevent the spread of any plant pests.		BIOSEC5
To avoid attracting nuisance species to the study area the following measures will be implemented: • Secure storage of waste (lids on bins) • Regular collection of waste from the site • Dedicated crib facilities for employees and contractors to take meal breaks • Induction training for operators to help them identify pest animal species • Implementation of control measures for pest species that have been detected • Good housekeeping practices to minimise the number of areas that could harbour pest plants or animals.		BIOSEC14
In the event of a biosecurity event on Kangaroo Island, strict controls would be implemented at the KI Seaport in accordance with all directions given by regulatory authorities.		BIOSEC22

Management measure	Responsibility	Identifier
In the event of a vessel emergency any equipment or persons that were transferred to the vessel (either by air or sea) would be free of any soil, plant and animal material.		BIOSEC23
The operators (KIPT and the Port Management Officer) would maintain open communication channels with stakeholders, including NRKI and Biosecurity SA, to have access to current information on pest outbreaks on Kangaroo Island.		BIOSEC8
Induction programs for operation would include information on how to identify pest animal species, the potential damage they could cause and how to report sightings (National Pest Alert Hotline: 1800 084 881). Signage would also be erected to act as a constant reminder to act upon any animal sightings on the pontoon or causeway.		BIOSEC12
DAWR would be consulted to determine the most appropriate operating procedures for shipping to minimise the risk of introducing marine pests to Smith Bay. These procedures would focus on the appropriate disposal of ballast water, appropriate anti-biofouling protocols and records for ships' hulls and potentially refusing ships from ports where there are known novel diseases of abalone (to be implemented under the port operating agreement).		BIOSEC29
Shipping activities will comply with the Australian Ballast Water Management Guidelines.		BIOSEC28
No abalone or oyster products would be allowed to enter the study area via Freeoak Road or via the KI Seaport.		BIOSEC49
Induction sessions for operational staff would include a component on aquatic diseases, including abalone and oyster diseases.		BIOSEC49
The Marine Pest Management Plan would be developed in consultation with DAWR, Biosecurity SA, SARDI and Biosecurity Advisory Committee of KINRMB. The Plan would be continually reviewed to ensure that any new marine pests or aquatic diseases were incorporated into the monitoring program, after KINRMB.		BIOSEC31
Any marine surveillance equipment (boats and diving equipment) used during operation would be decontaminated in accordance with standard industry protocols to prevent the spread of any aquatic diseases.		BIOSEC49
Ongoing monitoring (marine pest surveillance) would be undertaken for the detection of new marine species (including pests) allowing for an early response to the introduction of marine pests. This would be a key requirement of the Marine Pest Management Plans. Monitoring would include a combination of settlement plates or arrays, crab traps and shoreline searches.		BIOSEC35
Logs and woodchips exported from Smith Bay to north Asia would be shipped on a relatively small number of nominated log and chip vessels.		BIOSEC43
Other than in exceptional circumstances, vessels would discharge foreign-sourced ballast water on the high seas (that is, further than 200 nautical miles from the Australian shoreline) before entering the Australian EEZ, in conformance with the *Biosecurity Act 2015*.		BIOSEC60

Management measure	Responsibility	Identifier
All vessels using the KI Seaport would be required to comply with state policies relevant to the management of biofouling and pollution prevention ((SA EPA Code of Practice for vessel and facility maintenance (marine and inland waters) 2017)).		BIOSEC44
The Port Management Officer would implement best practice for biofouling management at the KI Seaport in accordance with the International Maritime Organization's (IMO) Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species.		BIOSEC44
If a new (including suspected) exotic organism was identified during operation, the marine biosecurity response procedure would be implemented (see Appendix S2 – OEMP for further detail). The organism would be reported to the relevant authorities via the Fishwatch 24 hr hotline and all directions issued by PIRSA would be followed. If there was a biosecurity incident, PIRSA would take over the on-ground management of the incident, including any information that would be provided to the media.		BIOSEC54, BIOSEC55

1.7.5 Assessment Criteria and Monitoring

Table 1-6: Assessment criteria and monitoring for biosecurity

Assessment criteria	Monitoring
No significant impact to the biosecurity status of Kangaroo Island.	Monitor for presence of any marine pests and/or diseases. Monitor for presence of any terrestrial pests and/or diseases.

1.7.6 Reporting

Any sightings of suspected and/or confirmed pest species and/or diseases to be reported to KI Seaport project manager/s and relevant authorities.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.7.7 Non-conformance

Any observed impacts to the biosecurity status of Kangaroo Island are to be reported to the KI Seaport project manager/s. Should pests or diseases be attributed to activity associated with operation of the KI Seaport, work to cease immediately and KI Seaport operation manager/s and project manager/s to be notified. Appropriate corrective action would be undertaken in conjunction with guidance from relevant government departments and regulators.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.7.8 Key Government Departments

- Commonwealth Department of Agriculture and Water Resources (DAWR)
- Biosecurity SA (PIRSA)
- South Australian Research and Development Institute (SARDI)
- Environment Protection Authority (EPA)
- Kangaroo Island Natural Resources Management Board (KINRMB).

1.8 Interaction with terrestrial fauna

On-shore activities related to the operation of KI Seaport have the potential to result in interactions with terrestrial fauna. The aspects of the development related to interaction with terrestrial fauna include:

- traffic movements
- noise generation.

The major activity of concern is transport and the resulting traffic along the unnamed access road to and from the facility. Potential impacts associated with these aspects include:

- impacts on Kangaroo Island echidnas that occasionally forage on site
- road kills of native fauna (particularly the Kangaroo Island echidna)
- disturbance to fauna, particularly the hooded plover.

1.8.1 Legal and other guidance

- *Environment Protection and Biodiversity Conservation Act 1999*
- *National Parks and Wildlife Act 1972*
- MNES Significant Impact Guidelines
- Environment Protection (Noise) Policy 2007
- Guideline for the use of the Environment Protection (Noise) Policy (EPA South Australia 2007).

1.8.2 Values

The environmental values to be protected include:

- terrestrial fauna, particularly the Kangaroo Island echidna
- terrestrial ecosystems.

1.8.3 Objectives

- to minimise the disturbance to terrestrial fauna
- no significant adverse impacts to listed threatened species (South Australia and Commonwealth) populations in the development area.

1.8.4 Environmental Management Measures

The management measures to be implemented during operations are provided in Table 1-3.

Stand-alone management plans and/or procedures would be developed prior to the commencement of operations to address specific activities that may result in interaction with terrestrial fauna. These include:

- Flora and Fauna Management Plan
- Offset Implementation Plan.

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Table 1-7: Management measures for interaction with terrestrial fauna

Management measure	Responsibility	Identifier
Terrestrial ecosystems		
Species-specific weed management measures, where appropriate, would be undertaken as part of the landscaping program.		TE4
The risk of introduction and spread of weeds (including declared weeds) and pathogens during construction operation and decommissioning would be managed by implementing the CEMP and OEMP, which would include vehicle and marine vessel biosecurity hygiene measures (see EMF). Declared weeds within the study area would be managed as required.		TE5, MNES26
Design and operation measures would be implemented to minimise the potential impacts of lighting and noise as far as practicable.		TE9
Directional lighting would be used during ship-loading activities to minimise any light-spill off site.		TE11
Feral animals would be controlled as required, depending on site-based monitoring.		TE12
Waste and rubbish would be minimised and managed to avoid attracting echidnas and echidna predators, and other predators and scavengers.		TE13, MNES25
Matters of National Environmental Significance		
The marine pest monitoring plan would be implemented as part of the Marine Pest Management Plan (see Chapter 15 Biosecurity).		MNES14
The risk of vehicle strike to echidnas would be reduced by adopting the preferred route for forestry vehicles. This would minimise the time and distance travelled.		MNES15
The number of vehicles required to transport timber products would be minimised wherever possible by using high productivity vehicles such as B-doubles and A-doubles.		MNES16, TT2
Driver education and awareness training would be undertaken by all relevant staff and contractors.		MNES17
Measures would be taken to avoid road-kills of fauna – particularly of echidnas – on Freeoak Road leading into the study area. These precautions are likely to include: • the erection of warning signs for truck drivers about the presence of fauna and the need to remain vigilant • vehicle speed restrictions along the access track and within the site • the induction program would also include an echidna awareness talk • operators would be encouraged to download and use the Echidna CSI app to report any vehicle strikes.		MNES18, MNES24, MNES30, TE8
Drivers would be encouraged to report native fauna vehicle strikes during timber haulage.		MNES19
The transport route would be inspected regularly for roadkill. The roadkill would be removed and disposed of, which removes a food source for feral cats, which are a threat to native fauna.		MNES20

Management measure	Responsibility	Identifier
The base of woodchip piles would be inspected for echidnas during ship-loading activities in case any have been able to infiltrate physical or nuisance barriers (such as fencing) which would ordinarily perturb echidnas from migrating to the site.		MNES27
Weeds would be managed, and herbicides and pesticides would be applied in consultation with NRKI and Dr Rismiller to minimise the risk of echidnas ingesting soil or invertebrates that have been treated.		MNES28
Standard biosecurity controls would be in place during operation.		MNES29
Review of incidences of vehicle strike and identification of any trends (location, seasonal, time of day, etc.).		MNES31
Monitoring vehicle speed on Freeoak Road and the study area.		MNES32
If a hooded plover nest was discovered in Smith Bay during operations, a protection zone (determined in consultation with DEW) would be imposed around the location for the entire breeding season.		MNES33
Inductions would include information to assist operators to identify hooded plovers and their nests.		MNES34
The presence of hooded plover nests in Smith Bay would be monitored.		MNES36
Waste management practices during operations would be monitored.		MNES38
Feral cat sightings would be reported via the Feral Cat Scan app.		MNES40
Bandicoot sightings would be monitored.		MNES41
Noise, vibration and lighting		
Processes and equipment that generate lower noise levels would be selected where feasible.		NVL2
Acoustic enclosures would be installed around above ground equipment where noise levels are predicted to exceed the relevant noise level targets at sensitive land uses, where safe and practical.		NVL5
Noise bunds (made from recycled dredge spoil) and/or noise attenuating fencing may be established around noise-generating equipment and/or at the site boundary.		NVL6
Truck movements on local roads will be limited as much as is practicable, and vehicles with a larger load capacity (therefore fewer total movements) chosen wherever possible.		NVL11
Equipment that is used intermittently would be shut down or throttled down to a minimum during periods where it is not in use.		NVL15
Equipment would be well maintained and have mufflers and silencers installed that meet the manufacturer's specifications where relevant.		NVL16

Management measure	Responsibility	Identifier
Metal-to-metal contact would be avoided where feasible.		NVL18
Staff would be instructed to avoid dropping material from height into unlined truck trays and barges. Where materials are to be dropped into an empty truck tray, barge, or disposal bin and may cause a loud noise, the tray/bin would be lined, where feasible, with soil or an equivalent material to reduce impact noise.		NVL19
Where noisy plant is to be fixed in a stationary location such that it may impact on sensitive receivers for a significant length of time (i.e. generator located in a stockpile site for the duration of the Project), an acoustic enclosure will be installed where practical or an appropriately silenced generator or lighting tower used.		NVL24

1.8.5 Assessment Criteria and Monitoring

Table 1-8: Assessment criteria and monitoring for interaction with terrestrial fauna

Assessment criteria	Monitoring
No preventable death or serious injury to echidna or hooded plover during operation of the KI Seaport.	Regular inspection of the access route along Freeoak Road for evidence of echidna diggings.

1.8.6 Reporting

Any fauna deaths that appear to be the direct result of operation of KI Seaport to be reported to the KI Seaport operation and project manager/s immediately.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.8.7 Non-conformance

Unusual fauna injury/deaths to be investigated and appropriate corrective action undertaken.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.8.8 Key Government Departments

- Department of Planning, Transport and Infrastructure (DPTI)
- Department for Environment and Water (DEW) including Natural Resources Kangaroo Island (NRKI)
- Commonwealth Department of the Environment and Energy (DoEE).

1.9 Community interaction

The operation of the KI Seaport will impact the Kangaroo Island community in a variety of ways. The aspects of the development related to community interaction include:

- dust emissions, noise, vibration and lighting during operation of KI Seaport
- effects on the Kangaroo Island economy, utilities and community.

Potential impacts associated with these aspects include:

- nuisance impacts from dust, noise or light on neighbours
- effects on visual amenity of Smith Bay
- possibility of timber stockpiles catching fire should a bushfire occur in the area
- increase in employment for the region.

1.9.1 Legal and other guidance

- *Environmental Protection Act 1993*
- Environment Protection (Air Quality) Policy 1994
- Environment Protection (Noise) Policy 2007
- National Environment Protection (Ambient Air Quality) Measure
- AS4282-1997: Control of the obtrusive effects of outdoor lighting
- Management Plan for Housing on Kangaroo Island.

1.9.2 Values

The environmental values to be protected include:

- visual amenity
- social amenity
- human health
- local economy.

1.9.3 Objectives

- to ensure that impacts to amenity are reduced to levels as low as reasonably practicable.
- no adverse public nuisance impact from dust, noise or light emissions from the site.
- to reduce the fire risk within the development area.
- to maintain or improve the existing social and economic values of the region.

1.9.4 Environmental Management Measures

The management measures to be implemented during operations are provided in Table 1-9.

Stand-alone management plans and/or procedures would be developed prior to the commencement of operations to address specific activities that may result in community interaction. These include:

- Bushfire Hazard Management Plan
- Emergency Response Management Plan.

Table 1-9: Management measures for community interaction

Management measure	Responsibility	Identifier
Visual amenity		
Mitigation measures which target design features and finishes, considered design elevations of the site and the use of vegetation plantings to integrate the facility as much as possible and practicable into the existing environment, would assist in softening and minimising visual impacts. This includes measures such as: • grading any earthworks batters and establishing plantings to reduce the contrast of elevated landforms when viewed from various viewpoints • incorporation of sympathetic plantings and pedestrian linkages for visitors and personnel • establishing vegetation and plantings that integrate with existing land forms and revegetated areas • integration of structural elements with planting of appropriate scale to reduce the visual presence of structural elements from user and recreational trails • establishing buffer revegetation plantings to screen selected viewpoints • maintaining simplicity of form, colour and patterning in design to reduce the scale and mass of structural elements and visually integrate with landscape treatments • maintaining pre-development views through proposed structure, where possible • choosing colours to mitigate the impact on views and landscape character, such as using the darker grey colour of Yumbah operation to blend into the existing landscape • selecting materials to integrate into the surroundings, should be low in reflectivity, and complement the surrounding context through use of appropriate tone.	KIPT	VA1, VA2, VA3, VA4, VA5, VA6, VA7, VA8, VA9
Noise, vibration and lighting		
Truck deliveries of timber products to the KI Seaport would be restricted to between 7 am and 10 pm.		NVL32
Material haulage routes would be planned to minimise impacts to the community, where practicable.		NVL33
KIPT would design the lighting system to avoid or minimise the potential for the following impacts: • the illumination from spill light being obtrusive, particularly where the light enters rooms of dwellings that are normally dark, e.g. bedrooms. The illuminance on surfaces, particularly vertical surfaces, is an indicator of this effect. • the direct view of bright luminaires from normal viewing directions causing annoyance, distraction or even discomfort.	KIPT	NVL43, TE9
Directional lighting would be used during ship-loading activities to minimise any light-spill off site.		TE11

Traffic and transport		
The use of high productivity vehicles, specifically Performance Based Standard (PBS) Level 2A (B-double) and/or PBS Level 2B (short road train or A-double) vehicles.		TT2
The use of a 'defined transport route' through the upgrade of the defined transport route to allow all weather continuous access by heavy vehicles.		TT3
Social environment		
KIPT has engaged with Adelaide Training and Education Centre (ATEC), Finding Workable Solutions (FWS) and Workskil Australia representatives on Kangaroo Island about KIPT's future training requirements and job opportunities for the clients of these employment and training providers.		SE1
KIPT would assist with housing needs, where it can, and sees benefit to the company and the community in having a settled resident workforce, living and working permanently on Kangaroo Island. KIPT may be able to assist with these needs through the following: • There is scope to increase the size of Parndana township through residential subdivision. The Kangaroo Island Community Club (based in Parndana) has specific plans to subdivide and release housing allotments created from the scrubland immediately to the west of the township between Smith Street and Rowland Hill Highway. KIPT has committed to provide a seed loan of up to $100,000 to cover the initial project costs prior to the marketing and sale of housing lots • There is also potential for residential development on the western end of Kangaroo Island by re-establishing housing vacated during the farm consolidation and switch to forestry that occurred in the 1980s and 1990s. KIPT owns at least 30 potential residential allotments that could be created with a change to planning rules to allow the existing forestry estates to be subdivided. Thirty new homes would accommodate about 70 people. Every property has, at the very least, a house site with a dam, phone connection and electricity; some have habitable dwellings and others have dilapidated structures that could be replaced, or repaired and refurbished.		SE2, SE3, SE4
Measures to manage potential water quality, dust noise and light impacts on neighbours and adjacent businesses may include: • stormwater diversion channels, compacting proposed storage areas, construction of first-flush ponds and the use of closed conveyors and telescopic ship loaders, would reduce the potential impacts to negligible at the farm intake area • cessation of dust generating activities when there are strong westerly winds • standard dust guards could be engineered around chip conveyors, loaders etc • dust suppression systems, including water damping, could be used to minimise dust mobilisation particularly around roads and access tracks • physical screening could be used (e.g. shade mesh fences), and the use of strategic vegetation buffers would likely reduce dust suspension (from passive wind-blown sources) and assist with extraneous light transmission • potential light impacts from wharf operations could be mitigated with standard light baffles and strategically placed screening vegetation to minimize the effects of light spill on the abalone farm.		AC2, AC3 AC4, AC5, AC6, AC7, AC8, AC11, AC12

Traffic and transport		
• the use of screening vegetation (to minimise light and dust impacts) would likely help to minimise the transmission of noise to neighbouring properties • the risk of red tide algal blooms would be managed through the implementation of appropriate ballast water management systems (Chapter 15 – Biosecurity and Appendix I5). • the location of the causeway to the east of Smith Creek is likely to mitigate the potentially adverse effects that silt-laden discharges from Smith Creek may have on water quality at the abalone farm seawater intakes, during rainfall events. By diverting the bulk of this water offshore, and away from the Yumbah intakes, the potential for this land-based runoff to have an adverse impact on the farming system is substantially lessened.		
Public safety		
All reasonable precautions would be taken throughout operation to prevent bushfires resulting from human activity associated with the development.		TE6
Considering emergency response requirements to acknowledge the predicted increase in the number of severe fire danger days, and the exposure of the workforce to work-induced heat stress		CCS12
For the safety of members of the public, temporary exclusion zones would be established around the offshore infrastructure during times when vessels are berthed at the Smith Bay facility. These would require third-party vessels to remain at least 50 metres from the wharf face, and at least 25 metres forward and aft of the berthed vessel.		TT13
Aquaculture		
If considered necessary, an open bypass system could be installed in the near-shore section of the causeway to minimise the interruption to tidal currents. This could comprise either large culverts or a pier, the size of which would be determined by hydrodynamic modelling. Given the small predicted maximum increase such a measure is not considered essential and it needs to be recognised that the benefit of such a bypass system may be offset by compromising the protective barrier formed by the causeway in relation to effluent from the degraded Smith Creek during rainfall events.		AC9
It may be possible to engineer a gated culvert through the causeway that could fulfil a dual function by allowing through-flows during summer (thereby managing the risk of temperature increases) the gate could then be closed during other months and thereby facilitate the redirection of Smith Creek discharges further offshore during major flow events (particularly during autumn and winter) thus improving nearshore water quality.		AC10

1.9.5 Assessment Criteria and Monitoring

Table 1-10: Assessment criteria and monitoring for community interaction

Assessment criteria	Monitoring
Respond proactively to issues or complaints raised by the adjacent landowners and the community.	Review of adherence to processes and timeframes in Complaints Management Procedure/Stakeholder Engagement Plan.

1.9.6 Reporting

Record and respond to complaints in accordance with the Complaints Management Procedure/Community Engagement Plan.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.9.7 Non-conformance

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.9.8 Key Government Departments

- Department of Planning, Transport and Infrastructure (DPTI)
- South Australian Environmental Protection Authority (SA EPA).

1.10 Generation of wastes and discharges

Activities associated with the operation of the KI Seaport will result in the generation of wastes and discharges, which must be managed appropriately. The aspects of the development related to the generation of wastes and discharges include:

- stormwater runoff
- waste generation
- accidental release/spill of chemicals/fuels/diesel
- ballast water discharge.

Potential impacts associated with these aspects include:

- accidental release/spill of chemicals/fuels/diesel resulting in soil contamination
- marine pollution and effects on marine communities
- potential introduction of pest species and diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*)
- generation of wastes requiring disposal
- leachate from woodchip or log stockpiles entering groundwaters or stormwater run-off.

1.10.1 Legal and other guidance

- *Environment Protection Act 1993*
- *Environment Protection and Biodiversity Conservation Act 1999*

- *Protection of Marine Waters (Prevention of Pollution from Ships) Act 1987*
- *Protection of the Sea (Prevention of Pollution by Ships) Act 1983*
- *Biosecurity Act 2015*
- *Fisheries Management Act 2007*
- *Dangerous Substances Act 1979*
- Australian Ballast Water Management Requirements, version 7 (DAWR 2017a)
- EPA – Code of Practice for Vessel and Facility Management (Marine and Inland Waters) (Ballantine 2017)
- Code of Practice for Materials Handling on Wharves (EPA South Australia 2007)
- National Environment Protection (National Pollutant Inventory) Measure.

1.10.2 Values

The environmental values to be protected include:

- marine ecosystems
- terrestrial ecosystems
- marine water quality
- soil quality
- seagrass communities
- local economy (abalone farm).

1.10.3 Objectives

- no introduction of marine pests and/or diseases
- no introduction of terrestrial pests and diseases
- To ensure that the quality and quantity of discharged surface water and stormwater affected by site activities meets required standards and objectives
- no adverse effects on marine water quality
- no significant contamination of soils as a result of storage and/or use of hazardous materials
- to minimise the generation of general wastes, maximise their reuse and recycling, and ensure safe and lawful disposal of waste.

1.10.4 Environmental Management Measures

The management measures to be implemented during operations are provided in Table 1-11.

Stand-alone management plans and/or procedures would be developed prior to the commencement of operations to address specific activities that may result in the generation of wastes and discharges. These include:

- Stormwater Management Plan
- Biosecurity Management Plan (which includes the Biosecurity Response Procedure)
- Waste Management Plan (see Appendix U5 of the Draft EIS)
- Spill Response Plan
- Marine Pest Management Plan
- Water Quality Management Plan
- Emergency Response Management Plan (see Appendix U3 of the Draft EIS)
- Contamination Management Contingency Plan.

Table 1-11: Management measures for generation of wastes and discharges

Management measure	Responsibility	Identifier
Biosecurity		
DAWR would be consulted to determine the most appropriate operating procedures for shipping to minimise the risk of introducing marine pests to Smith Bay. These procedures would focus on the appropriate disposal of ballast water, appropriate anti-biofouling protocols and records for ships' hulls and potentially refusing ships from ports where there are known novel diseases of abalone (to be implemented under the port operating agreement).		BIOSEC29
Shipping activities will comply with the Australian Ballast Water Management Guidelines.		BIOSEC28
Groundwater and surface water		
The site would be designed to contain and manage all stormwater runoff during operation as to eliminate uncontrolled water channelling and concentrated runoff streams - no site stormwater would discharge to surface water bodies untreated.		GSW8
The internal network of open drains, culvert, pipes and wetland will be designed to ensure sufficient carrying capacity with gradients and appropriate controls to prevent bed erosion and damage.		GSW9
Erosion at the outlet of the wetland system will be managed via a porous rock weir at the wetland outlet to distribute water flow over a wide area.		GSW10
All up gradient surface water flow will be redirected around the site.		GSW11
Measures for containment and clean-up of all spills on site would be included in the OEMP.		GSW12
The storage of all chemicals will be in compliance with the appropriate standards.		GSW13
A site stormwater management system would be developed - this will minimise potential flooding.		GSW14
Bunding of fuel storage areas and generators would be implemented.		GSW15
Untreated softwood and hardwood woodchips and logs would be stored on impervious pads.		GSW17
Timber log and wood chip storage yards will be established with bunding and impermeable base, to isolate runoff from the general stormwater system and from groundwater. Stormwater runoff (assumed to be leachate) will drain via a concrete forebay (in the bunded area) to intercept gross sediment and debris and to a retention basin (holding pond) designed to contain flows from storm events. There will be no discharge of leachate to surface water or groundwater. The pond will be lined to prevent infiltration. Leachate will be removed via evaporation or used for irrigation of adjacent landscape buffer (where contaminants will biodegrade) and for dust suppression (within wood storage areas).		GSW18
The OEMP would include a regular maintenance schedule for all equipment.		GSW19

Management measure	Responsibility	Identifier
The OEMP would include a requirement for refuelling of trucks off-site and procedures for minimising psills during refuelling of site equipment.		GSW20
The proposed operational wetland pond, retention basin and swale system will be constructed during the early phase of construction to function as sediment capture basins during the major earthworks and civil works construction phases. No untreated stormwater would discharge to surface water bodies directly. All runoff except wood storage areas will be directed to this system during operation through engineered bunds and other structures.		GSW21
As the captured stormwater will have low levels of contamination, the treatment system will allow infiltration of stormwater into groundwater. Infiltrated surface water will have been treated by the system and would not cause groundwater quality deterioration.		GSW22
The pontoon surface will be graded to prevent any runoff entering the ocean. Inlet pits will be fitted with a litter basket to trap debris and will discharge to a gross pollutant trap / oil water separator to intercept pollutants prior to discharge to the sea.		GSW23
In the operational phase, potential impact from surface water would be managed and will include monitoring of surface water and groundwater in the wetland and basin area.		GSW24
Matters of National Environmental Significance		
Appropriate management of waste on ships would minimise any potential increase in marine debris, that might harm southern right whales.		MNES8
Measures to prevent oil and chemical spills from the pontoon would be implemented, including developing spill response plans to protect the marine environment.		MNES10
Any marine spill and pollution incidents to the Australian Maritime Safety Authority (AMSA).		MNES13
Vessels would be monitored for any pests and diseases as per the Marine Pest Management Plan.		MNES14
Waste and rubbish would be minimised and managed to avoid attracting echidnas and echidna predators, and other predators and scavengers.		MNES25, TE13
Standard biosecurity controls would be in place during operation.		MNES29
Waste management practices (marine and terrestrial) would be monitored.		MNES38
Any spill and pollution incidents and any trends in their occurrence would be monitored.		MNES39
Coastal processes		
In the event of shoreline accretion of sediment occurring against the causeway, it may be necessary to occasionally mechanically transport the accumulated sediment to the other side of the causeway using an excavator and dump truck.		CP1

Management measure	Responsibility	Identifier
The accumulation of seagrass wrack against the causeway may occasionally require removal and relocation. Potential management measures, should they be required, would be determined in consultation with DEWNR and the EPA. This may include mechanically transporting the accumulated wrack to the other side of the causeway using an excavator and dump truck.		CP2
Marine ecosystems		
A stormwater retention basin would control storm water and sediment discharge from the site during the operational life of the facility.		ME9
Marine water quality		
Ships using the KI Seaport would be required to comply with all relevant maritime legislation as part of standard mitigation measures.		MWQ12
A Fuel and Chemical Storage and Handling Plan would be prepared and implemented: • containment bunds would be placed around fuel storage tanks and drums, and bunds would be lined with impervious material • any spills would be cleaned up in a timely manner • spill kits would be provided on site.		MWQ13, MWQ14, MWQ15, MWQ16
To reduce the potential risk to marine water quality at Smith Bay, ships would arrive at Smith Bay directly from a controlled port.		MWQ18
To reduce the potential risk to marine water quality at Smith Bay, a strict pest/disease control management plan would be prepared and implemented in consultation with Biosecurity SA.		MWQ19

1.10.5 Assessment Criteria and Monitoring

Table 1-12: Assessment criteria and monitoring for generation of wastes and discharges

Assessment criteria	Monitoring
No direct stormwater discharge from the onshore operations to Smith Bay or the unnamed creek.	Regular inspection of stormwater retention basin.
Spills/accidental releases of fuel/chemicals are contained.	Containment and clean-up of accidental spills will be monitored against Spill Response Plan.
All waste material to be appropriately classified and segregated for reuse, recycling or offsite disposal as per the Waste Management Plan.	Implement a regular inspection program to monitor storage handling and disposal of wastes as per the Waste Management Plan.
No introduction of new marine pests or diseases as a result of KI Seaport operations	Ongoing monitoring for the detection of new marine species as per the Marine Pest Management Plan.

1.10.6 Reporting

Results of inspections would be documented any uncontrolled releases or spills reported.

All waste disposed of off-site would be documented as per the Waste Management Plan.

The presence of marine pests would be reported immediately to the relevant authorities as per the Marine Pest Management Plan.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.10.7 Non-conformance

Should a new exotic organism be identified during construction, the Biosecurity Response Procedure would be implemented.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.10.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DOEE)
- Department of Primary Industries and Regions, South Australia (PIRSA)
  - Biosecurity SA
  - Fishwatch SA
- Department for Environment and Water (DEW)
- South Australian Environmental Protection Authority (SA EPA)
- Australian Maritime Safety Authority.

1.11 Emissions from plant and equipment

The operation of the KI Seaport will result in emissions from plant and equipment. The aspects of the development related to emissions from plant and equipment include:

- fugitive dust, noise, vibration and lighting
- winnowing of sediments and silt plumes (shipping)
- greenhouse gas emissions.

Potential impacts associated with these emissions include:

- nuisance to neighbours (from noise, light and fugitive dust)
- temporary loss of seagrass productivity due to light reduction and smothering from turbidity
- poor water quality at intake for abalone farm
- carbon footprint of the development and contribution to global warming
- sea level rise potentially impacting coastal developments.

1.11.1 Legal and other guidance

- *Environment Protection Act 1993*
- *Climate Change and Greenhouse Emissions Reduction Act 2007* (SA)
- *Coastal Protection Act 1972 (SA)*
- Environmental Protection (Noise) Policy 2007
- Environmental Protection (Air Quality) Policy 2016
- Environment Protection (Water Quality) Policy 2015
- National Environment Protection (Ambient Air Quality) Measure
- Guideline for the use of the Environment protection (Noise) Policy (EPA South Australia 2007)
- Guideline for Air Quality Impact Assessment Using Design Ground level Pollutant Concentrations
- Workplace Exposure Standards for Airborne Contaminants (Safe Work Australia 2013)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ 2000).

1.11.2 Values,

The environmental values to be protected include:

- social amenity
- marine ecosystems
- marine mammals
- terrestrial ecosystems
- air quality
- local economy (abalone farm)
- global climate
- marine water quality.

1.11.3 Objectives

- no adverse public nuisance impact from noise/vibration or dust generation from the site
- to minimise greenhouse gases generated as a result of the development
- no adverse effects on marine water quality.

1.11.4 Environmental Management Measures

The management measures to be implemented during operations are provided in Table 1-13.

Stand-alone management plans and/or procedures would be developed prior to the commencement of operations to address specific activities that may result in emissions from plant and equipment. These include:

- Stormwater Management Plan
- Biosecurity Management Plan (which includes a Biosecurity Response Procedure)
- Waste Management and Minimisation Plan (see Appendix U5 in the Draft EIS)
- Spill Response Plan
- Marine Pest Management Plan
- Water Quality Management Plan
- Emergency Response Management Plan (see Appendix U3 in the Draft EIS).

Table 1-13: Management measures for emissions from plant and equipment

Management measure	Responsibility	Identifier
Noise, vibration and lighting		
The potential shielding provided by site topography, woodchip and log stockpiles and intervening buildings would be taken into account in locating plant and equipment.		NVL1
Processes and equipment that generate lower noise levels would be selected where feasible.		NVL2
Noisy plant, site access roads and site compounds would be located as far away from occupied premises as is practical to allow efficient and safe completion of the task.		NVL3
Equipment that emits noise predominantly in a particular direction would be sited such that noise is directed away from occupied premises where feasible.		NVL4
Acoustic enclosures would be installed around above ground equipment where noise levels are predicted to exceed the relevant noise level targets at sensitive land uses, where safe and practical.		NVL5
Noise bunds (made from recycled dredge spoil) and/or noise attenuating fencing may be established around noise-generating equipment and/or at the site boundary.		NVL6
Noisier maintenance works would be scheduled with due consideration to the nearest sensitive land uses.		NVL7
Induction would cover noise and vibration management and complaints, and would be reiterated through onsite training such as toolbox talks or pre-starts.		NVL8
Effective stakeholder communication would be undertaken, advising of upcoming noise-generating activities or works.		NVL9
Works planning would consider preventing vehicles and equipment queuing, idling or reversing near occupied premises where practicable.		NVL10
Truck movements on local roads would be limited as much as is practicable, and vehicles with a larger load capacity (therefore fewer total movements) chosen wherever possible.		NVL11
Two-way radios would be set to the minimum effective volume where possible for safety reasons.		NVL12
Truck operators would ensure tailgates (or equivalent) are cleared and locked at the designated points.		NVL13
Truck movements along uneven surfaces would be restricted to minimum speed (less than 15 km/h) near sensitive receivers.		NVL14
Equipment that is used intermittently would be shut down or throttled down to a minimum during periods where it is not in use.		NVL15

Management measure	Responsibility	Identifier
Equipment would be well maintained and have mufflers and silencers installed that meet the manufacturer's specifications where relevant.		NVL16
Works would be planned to minimise the noise from reversing signals from any vehicles that do not have broadband alarms fitted.		NVL17
Metal-to-metal contact would be avoided where feasible.		NVL18
Staff would be instructed to avoid dropping material from height into unlined truck trays and barges. Where materials are to be dropped into an empty truck tray, barge, or disposal bin and may cause a loud noise, the tray/bin would be lined, where feasible, with soil or an equivalent material to reduce impact noise.		NVL19
All reversing plant used at night would be fitted with broadband reversing alarms where practicable, although it may not be possible to do so when plant was called in at short notice to replace other plant requiring maintenance. All broadband reversing alarms would be installed and operated in accordance with all relevant Occupational Health and Safety requirements.		NVL20
Where it cannot be guaranteed that plant is not to be fitted with broadband reversing alarms (e.g. trucks that only attend the site on occasion) then the site will be setup as far as practicable such that those items do not need to reverse.		NVL21
Limitation of truck deliveries of timber products to the SI Seaport to daylight (7am to 10pm) hours.		NVL23
Plan material haulage routes to minimise impacts to the community where practical.		NVL24
Low-noise-impact techniques such as suction piling or vibro-piling should be used in preference to impact piling where possible.		NVL25
Design and operation measures to minimise the potential impacts of lighting and noise as far as practicable would be employed.		TE9
Directional lighting would be used during ship-loading activities to minimise any light-spill off site.		TE11
Traffic and transport		
Upgrades to the road surface to prevent deterioration, up to and including the sealing of roads along the transport route.		TT5
The application of dust suppression water (and/or chemical binders) when required by prevailing meteorological conditions.		TT6
Road design considerations (where upgrades are proposed), including adjustment to the vertical and horizontal alignments, low noise pavement surfaces, road gradient modifications, speed limit reduction and traffic management measures, where these do not affect the function and safety of the road.		TT7
Noise barriers may be applied (fencing, bunding and barriers).		TT8
Property treatments may be applied (facade treatments including changes to glazing on windows and doors, etc and upgrades to building insulation).		TT9

Management measure	Responsibility	Identifier
Acoustic screening close to the building facade may be applied.		TT10
Air quality		
The impacts of dust generated from operations would be minimised by implementing the following measures: • unpaved roads would be watered • the woodchip shiploading conveyor would be covered • vehicle speed would be limited to 15kph • layout designed to minimise vehicle movements • sizing woodchips to minimise the risk of them becoming airborne (subject to commercial arrangements) • internal tracks dampened down in periods of dry and windy weather or when dust escapes property boundaries • covering loads • the woodchip stockpile may be located furthest from sensitive receptors and shielded from wind through the surrounding wharf infrastructure and log stockpiles • variable-height woodchip stackers and/or telescopic chutes may be used for shiploading.		AQ1, AQ2, AQ4, AQ5, AQ8, AQ9, AQ11, AQ13, AQ14
Ensuring vehicles and equipment are regularly maintained to minimise emissions.		AQ7
Water sprays may be used: • on woodchip stockpiles and bare stockpile pads during adverse weather • during shiploading • on the woodchip reclaim hopper during conveyor loading • during woodchip and log unloading.		AQ12, AQ15, AQ16, AQ17
A series of gauges would be established on the boundaries of the site to monitor dust deposition rates. A number of these gauges would be established at locations considered to represent the background site air quality (i.e. not influenced by site operations).		AQ18
Climate change and sustainability		
Minimising electricity consumption through the use of energy-efficient infrastructure such as low-friction conveyors, wood rechippers, lighting and air-conditioning.		CCS1
Investigating the installation of solar photovoltaic panels to supply electricity to site buildings and for site lighting, minimising the potential for downtime associated with power outages under peak load situations.		CCS2

Management measure	Responsibility	Identifier
Maintaining regular maintenance schedules for site vehicles and timber transport trucks to ensure they remain compliant with relevant legislation and operate as efficiently as possible.		CCS3
Seeking to use grid electricity wherever possible and increase the use of renewably-generated electricity, to reduce the reliance on diesel-powered site generation.		CCS4
Use of the most efficient permissible haulage vehicle configuration.		CCS5
Use of the most direct permissible haulage route.		CCS6
While outside of the scope of consideration, KIPT and its offtake partner Mitsui & Co would also seek to use the largest and most efficient seagoing timber vessels possible and to use ship-loading methods that achieve worlds'-best practice in hold compaction, to minimise the fossil fuel consumption associated with deliver of its timber products to market.		CCS7
The marine and coastal infrastructure would be designed to take into account the predicted worst-case sea level rise and sea temperature rise. This would prevent the flooding of infrastructure and ensure that construction materials were adequate for the predicted sea temperature and acidity changes. Consideration would also be given to the predicted increase in storm intensity and frequency.		CCS8
The causeway structure would be designed for a 1-in-500-year storm event (that is, a 10 per cent encounter probability over the 50-year life of the structure) on the basis that the wave modelling undertaken demonstrates that the additional engineering required to meet this standard is not significantly greater than for lesser storm event frequencies. Causeway maintenance (for example, replacement of a small percentage of armour rocks) would be required after major storm events.		CCS9
The size of surface water catchments) including sedimentation ponds and drainage/diversion infrastructure) would be determined by considering the likely worst-case changes in the magnitude and duration of rainfall events, to prevent below-quality water being discharged to the environment.		CCS10
Construction materials for on-shore infrastructure would be designed to cope with the expected change in surface temperatures and different wind conditions associated with increased storm intensity and frequency.		CCS11
Emergency response requirements would be considered to acknowledge the predicted increase in the number of severe fire danger days, and the exposure of the workforce to work-induced heat stress.		CCS12
Designing habitable buildings to promote passive cooling, thereby reducing energy demands and providing respite for the workforce during extreme heat days.		CCS13
Minimising on-site water requirements by investigating alternative sources of industrial water to meet needs such as for dust suppression. This would reduce the risk of supply shortages that may occur as a result of greater evaporation rates and/or higher consumption associated with warmer weather.		CCS14

Management measure	Responsibility	Identifier
Use of a floating pontoon for the berth face itself, to ensure that the wharf height above water is maintained at a constant level despite predicted changes in sea level.		CCS15
Aquaculture		
Measures to manage the potential impacts of the development on aspects of the environment including water quality, dust, noise and light and their impact on Yumbah's operations may include: • stormwater diversion channels, compacting proposed storage areas, construction of first-flush ponds and the use of closed conveyors and telescopic ship loaders, to reduce the potential impacts to negligible at the farm intake area • cessation of dust generating activities when there are strong westerly winds • standard dust guards can be engineered around chip conveyors, loaders etc • dust suppression systems, including water damping, can be used to minimise dust mobilisation particularly around roads and access tracks • physical screening (e.g. shade mesh fences) and the use of strategic vegetation buffers would reduce dust suspension (from passive wind-blown sources) and assist with extraneous light transmission • potential light impacts from wharf operations could be mitigated with standard light baffles and strategically placed screening vegetation to minimize the effects of light spill • the use of screening vegetation (to minimise light and dust impacts) would help to minimise the transmission of noise.		AC2, AC3 AC4, AC5, AC6, AC7, AC8

1.11.5 Assessment Criteria and Monitoring

Table 1-14: Assessment criteria and monitoring for emissions from plant and equipment

Assessment criteria	Monitoring
Investigation of air quality and/or noise complaints raised by the community indicates no exceedance of project air quality and/or noise criteria due to operation of KI Seaport.	Regular visual monitoring and observation of dust/noise and implementation of adaptive management strategies as required.

1.11.6 Reporting

Record and respond to complaints in accordance with the Complaints Management Procedure/Community Engagement Plan.

Summary of monitoring results and any complaints received to be documented in monthly report.

Compliance reporting would be undertaken in accordance with relevant licences/permits issued by government regulators.

1.11.7 Non-conformance

Should an exceedance of nominated criteria occur (identified through monitoring or investigation of a complaint) alteration of site practices should occur which may include but is not limited to ceasing work in windy conditions, increased operational controls (e.g. additional watering, reducing level of exposed areas, relocation of noisy equipment) or more rigorous monitoring/observation.

Non-conformances would be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

1.11.8 Key Government Departments

- Commonwealth Department of the Environment and Energy (DOEE)
- Commonwealth Department of Agriculture and Water Resources (DAWR)
- Department for Environment and Water (DEW)
- Department of Planning, Transport and Infrastructure (DPTI)
- South Australian Environmental Protection Authority (SA EPA)

Appendix U3 – Draft Emergency Response Management Plan

Kangaroo Island Plantation Timbers

Management Plan No SP-E0-00

Draft Emergency Response Management Plan

KANGAROO ISLAND PLANTATION TIMBERS

Table of Contents

1. INTRODUCTION

1.1 Scope

This draft emergency response management plan (ERMP) provides the framework for emergency response at KI Seaport, located at Smith Bay, Kangaroo Island, South Australia.

It is informed through a risk assessment workshop and provides the basic structure for further development and refinement as operational policies and procedures are developed for both onshore and offshore operations at KI Seaport.

It is limited in scope, in that it is only relevant for the KI Seaport operation at Smith Bay, Kangaroo Island. It covers the transport, stockpiling and shiploading activities proposed for the site and only provides a draft framework within which further development can occur, as the operation is refined.

1.2 Purpose

The purpose of this plan is to provide the framework, with which effective emergency response can be achieved. It summarises proposed strategies for mitigating the risks identified in an emergency response risk assessment workshop held in June 2018.

The ERMP is a draft framework outline, that facilitates the communication of key contact information necessary in the event of an incident or emergency, the roles and responsibilities of designated positions at KI Seaport, the framework for incident management along with training and review requirements. It outlines how emergency response will be determined, when escalation is required, who will be responsible and what measures need to be in place, to deal with the emergency incident or situation.

2. LEGISLATION, REGULATIONS AND SUPPORTING DOCUMENTS

2.1 Alignment with legislation

As a Person Conducting Business or Undertaking (PCBU), there is primary duty of care under the *Work Health and Safety Act 2012*. This outlines that so far as reasonably practicable, workers and other persons are not exposed to health and safety risks arising from the business or undertaking.

Applicable legislation, regulations and guidelines that are relevant to the formulation and implementation of the ERMP are as follows:

- *Development Act 1993 (Planning, Development and Infrastructure Act 2016* when enacted*)*
- *Fire and Emergency Services Act 2005*
- *Work Health and Safety Act 2012*
- Work Health and Safety Regulations 2012
- Fire and Emergency Services Regulations 2005
- First Aid in the Workplace Code of Practice
- AS3745 Planning for Emergencies in facilities.

2.2 Supporting documents

A range of evacuation diagrams will be developed, including:

- site-wide evacuation map incorporating all areas of operation, emergency alarm locations, equipment emergency shutdown locations, remote fire suppression locations and any firefighting equipment and first aid kits

- operation area specific evacuation maps, showing routes to primary and secondary evacuation points, emergency alarm locations, emergency shutdown locations, remote fire suppression locations, firefighting/hydrant equipment and supporting water supplies and first aid kits.

An Emergency Response Standard Operating Procedure (SOP) will be developed that links to operational SOP's and is included in all staff induction packs.

3. RESPONSIBILITIES

Responsibilities for development, implementation and training of emergency response related activities are outlined below.

3.1 Executive management

Executive level management will be responsible for overseeing the development of the draft Emergency Response Management Plan (ERMP) and the Bushfire Hazard Management Plan (BHMP) and the implementation of the final ERMP and BHMP. In addition, the Executive management team will provide for the allocation of necessary funds to:

- develop the plans;
- provide the required infrastructure and equipment necessary to support the plans;
- implement the plans;
- provide for the ongoing review and updating of the plans; and
- facilitate the training requirements for operational staff.

3.2 Operations management

Operations level management will be responsible for ensuring resources are allocated effectively to facilitate first aid and fire suppression training for staff, internal emergency drills are carried out and required records are managed in an effective and efficient manner.

3.3 Designated shift supervisor

Shift supervisors will be responsible for the delivery of internal training, provision of emergency drills and collecting of the required records.

3.4 Employees

Employees will be responsible for following all relevant policies, procedures and lawful directions of emergency response team members, and in the event of an incident will notify their direct supervisor immediately or sound the alarm, if appropriate.

All employees are required to follow SOP's and only to attempt management of any incident where they are trained and confident to do so.

4. MANAGEMENT PLAN OVERVIEW

4.1 Site information

Location and Name: KI Seaport, Smith Bay, Kangaroo Island
Owner: KI Seaport Pty Ltd
Occupier: *To be confirmed*
Site manager: *To be confirmed*
Building construction-ATCO style buildings will be used as administration offices and security gate office.

Area components/activities-

- offices
- log receivals and storage
- woodchip receivals and storage
- shiploading.

4.2 Emergency response team

This information will be extracted into the emergency response SOP and reviewed and updated as per internal systems schedules (to be finalised once operational) and as part of formal reviews, see section 6.4.

4.2.1 Emergency contacts information

Wardens: *To be confirmed*

Chief Warden:

Deputy Warden:

Deputy Warden:

First aid officers: *To be confirmed*

Local services:

- Fire (CFS): Emergency - 000, Springs Road Menzies, SA 5223
- Ambulance: Emergency - 000, 17 Murray St. Kingscote, SA 5223
- Police: Emergency - 000, 08 8553 2018, 31 Dauncey St. Kingscote, SA 5223
- SES: Flood and Storm Response - 132 500, 08 8553 2631, 16 Acacia Dr. Kingscote, SA 5223

4.3 Prescribed facilities on site

Prescribed emergency equipment required under legislation will be in place before operations commence. Additional emergency response infrastructure and equipment will be described in detail in the final version of this document.

4.4 Emergency assembly areas

Emergency assembly areas will be identified as required under relevant regulations and legislation.

Maps showing location and secondary locations, key evacuation routes from each building to primary and secondary locations will be displayed in all buildings and operational areas of the site:

Operational areas of the site will be broken up into designated areas of responsibility for deputy wardens, an example is provided below:

- offshore activity (pontoon)
- office and logistics area (offices, weighbridge area and security shack)
- operational area (woodchip storage area, conveyor system, re-chipper area, machinery operations).

Maps showing location and secondary locations, key evacuation routes from the operational area to primary and secondary assembly locations will be displayed in each operational area.

4.5 What denotes an emergency event?

An emergency event is causes concern for:

- Safety of life.
- Damage/loss to onsite assets, business integrity or continuity (vehicle collision with major infrastructure, catastrophic failure of equipment).
- Environmental incident-spill, contamination or degradation that could result in personal health risk.
- Approaching risk event- bushfire, major weather event-storm, flooding, earthquake.

4.5.1 Raising the alarm

In any incident/emergency the priority is notify someone as quickly as possible.

How the alarm should be raised by any or a combination of the following-

- radio
- alert alarms
- phone call
- reporting an event to a manager.

Further communication requirements will be managed by designated members of the emergency response team only, as per the identified responsibilities in Section 5.4.

4.5.2 Escalation protocol

Escalation of an incident/emergency will follow defined escalation protocols in Section 5.3.1 and will be at the direction of the Chief Warden, or in their absence, the Deputy Warden for the area.

4.5.3 Emergency scenario

Please refer to Appendix A for examples of emergency scenarios and case studies, to be used for training and emergency response procedure development. These will be reviewed and updated as part of the annual review process outlined in section 6.4.

4.6 Emergency training and exercises

Internal emergency response training will centre on scenario development, response procedures and risk mitigation.

Training requirements will be identified for the following positions and included in the final version of this document:

- operational staff
- administration staff
- first aider
- Emergency Response Team Member
- Deputy Warden
- Chief Warden.

Emergency response training programs will be developed and in place before operations commence.

Records of all external staff training, internal emergency response training and drill events will be stored on site.

4.6.1 Proposed training program

Employee inductions will cover all on-site emergency response procedures, policies and equipment and will include:

- standardised timeline for internal staff training will be developed, implemented and recorded in each employee's training register file
- quarterly internal emergency response training or drills will be held
- staff induction manual will include all relevant company policies and SOP training
- annual review of staff training registers to be conducted by the designated shift supervisor
- review of site wide training requirements will be conducted by senior management on an a biannual basis.

5. EMERGENCY RESPONSE STRUCTURE

5.1 Hazard identification

The following categories have been informed through the risk assessment process.

5.1.1 Incident

An incident is a localised event that has the potential to impact people, assets or the environment, without affecting the continuity of operations. It can be managed with on-site resources but may require the involvement of outside specialists/medical staff to resolve the incident.

5.1.2 Emergency

An emergency is an escalated incident, as determined by deputy or chief wardens, that affects the operational area or the entire site, will require the activation of the emergency response plan, overall incident management will fall under chief/deputy warden control and the emergency response team will be mobilised if required. External resources will be required to manage/resolve the incident. Emergencies may result in a serious injury, fatality, cessation of stockpiling/shiploading operations, environmental contamination, uncontained fire or notification of an approaching bush fire. Incident control will be handed to emergency services on arrival.

5.1.3 Crisis

A crisis is an emergency, determined only by the chief warden, that could result in multiple fatalities, serious environmental harm, potential loss of operation critical infrastructure or requires a site wide evacuation. A crisis will fall under chief warden management control until directed to relinquish control to emergency services or total evacuation of site is complete.

5.2 Coding of an incident

The use of colour codes for emergency announcements will follow the Australian standards (AS3745):

- Code Blue - medical emergency
- Code Yellow - internal emergency
- Code Orange - evacuation
- Code Red - fire/smoke
- Code Purple - bomb threat
- Code Black - personal threat
- Code Brown - external emergency.

5.3 Emergency escalation

In the event of an incident that requires escalation to either emergency or crisis, the Deputy Warden or Chief Warden will be responsible for determining the escalation and ensuring all procedures, records and actions are in line with policies.

5.3.1 Escalation protocols

Policies governing the escalation, actions and records of an incident to a higher level will be developed and adhered to. Only those whose responsibility the escalation falls to, can escalate the incident to a higher level.

5.3.2 Communication

The information and directives required to effectively manage an incident will be communicated through a variety of methods, chosen for suitability to the operation, the site and the incident type. Some of the methods that may be available are:

- in person
- loudspeaker
- personal radio
- mobile telephone
- email.

5.4 Emergency response team roles

An emergency response team (KI Seaport) will be established to provide first response capabilities on site, with the expectation that the team will need to manage the situation for approximately 60 minutes without external support.

The emergency response team will hand over control to attending emergency services personnel and will provide further aid where requested and able.

All emergency response team members shall be identified through this plan, emergency contact lists and visual cues whilst on site i.e. hard hat colour, uniform colour.

Emergency response team members will be trained to respond to a variety of situations expected to occur on site and would be made up of employees and shift supervisors.

The core KI Seaport team will be augmented by forestry operation team members during shiploading activities.

5.4.1 Chief Warden (Operations Manager)

In the event of an emergency the Chief Warden is responsible for:

- managing the emergency response
- contacting executive management in the event of an emergency or crisis
- escalating the event from an incident, to emergency or crisis
- coordinating with on route emergency services personnel.

The Chief Warden will maintain control/responsibility of the situation until relieved by emergency service responders.

5.4.2 Deputy Warden (Shift Supervisor)

In the event of an emergency, Deputy Wardens will be responsible for the following actions in their emergency area:

- the communication of details pertaining to the incident, emergency or crisis to the chief warden
- follow all directions given by the chief warden
- ensuring emergency response procedures are followed
- ensure all staff are evacuated from the area if necessary
- keeping accurate records of the event for post event review.

The Deputy Warden shall remain responsible for their area of responsibility until relieved by emergency service responders or directed to stand down by the Chief Warden.

5.4.3 First aiders

First aid officers will be required to deliver first aid where they are trained and confident to do so.

First aiders shall remain responsible for the provision of life preserving aid until relieved by emergency service responders or are unable to continue.

5.4.4 Staff and visitors

Staff and visitors will:

- adhere to all directions given by the Chief or Deputy Warden;
- adhere to all emergency response procedures
- notify a staff member or Deputy Warden immediately of an incident occurring or if a hazard is identified.

6. ACTION REVIEW PROCESS

6.1 Training and drill events: Annual

Training records will be reviewed annually to ensure compliance with internal control systems (reference to be inserted once operational systems finalised), any identified failures to comply will be recoded as an internal incident and entered into the hazard register, with close-out actions and timelines implemented.

6.2 Emergency events: Biannual

The emergency response team will convene and review all emergency event actions and outcomes on a biannual basis and provide recommendations for improvements to staff training programs, emergency procedures and site safety system infrastructure.

6.3 Crisis events: Immediately

The emergency response team will convene post crisis event debriefs to review the event details, actions leading up to and following the incident, update hazard/incident registers, review current control actions for effectiveness and provide recommendations to reduce the risk of, or improve the emergency response management of, a similar event in the future.

6.4 Emergency response management plan review

The emergency response management plan (this plan) will be reviewed on an annual basis, beginning from first shiploading operations. All contact details, evacuation diagrams, procedures and SOPs will be reviewed for currency, updated as necessary and signed off by the Chief Warden, before being distributed to the relevant operational areas.

7. RISK ASSESSMENT

A risk assessment workshop was held to identify risks associated with the operation, for the purpose of emergency management. The hazards and risks, documented during the workshop, will be reviewed on an annual basis, to ensure relevance with current operational activities.

A summary of the risk categories, the potential impacts and how they could be controlled is outlined in the following sections.

7.1 Transport activities

Potential impacts include:

- traffic congestion
- product unloading delay
- product shipping delay
- vehicle/vehicle interaction
- vehicle/infrastructure interaction
- vehicle/pedestrian interaction
- fuel spills.

Controls include:

- site design such as one-way traffic route, heavy/light vehicle separation
- development and implementation of policy and standard operational procedures
- establishment of exclusion zones for pedestrians
- mandatory use of high visibility clothing
- requirement for in-vehicle safety management systems, such as reversing buzzers, proximity sensors and cameras for fleet established
- staff inductions and training.

7.1.1 Equipment/infrastructure

Potential impacts include:

- equipment malfunction/failure
- external impact affects equipment/infrastructure availability ie. truck break down on weighbridge
- personnel injury/fatality
- product spill onshore/offshore
- Stockpiling/shiploading activities are delayed.

Controls include:

- equipment design, such as enclosed conveyor systems to contain woodchip spills
- quick response contracts for critical infrastructure such as the ship loader
- helicopter landing zone for MedStar medivac or quick transport of critical parts/specialists
- redundant systems/diversification such as solar photovoltaic (PV) incorporating batteries, mains supply and diesel generators
- establishment and implementation of equipment and infrastructure maintenance plans
- availability or storage of suitable spares for minor repairs
- critical components contracted for easy availability, that is on site or based in Adelaide.

7.1.2 Materials handling

Potential impacts include:

- delays to stockpiling or shiploading
- conveyor break down
- wood material spillage from handling infrastructure
- environmental contamination from spilled materials
- personal injury occuring during handling of materials (noise impacts, eye impacts, crushing injury).

Controls include:

- development and implementation of materials handling procedures
- established and implemented equipment maintenance plans
- quick response contracts for critical infrastructure such as for the ship loader and conveyor systems
- availability (on-site or locally) of suitable spares for minor repairs
- adequately trained staff for prompt minor repairs to equipment
- use of equipment designed to prevent spillage of materials, quick shutoff, noise suppression
- well-understood spill prevention and response procedures and implementation of adequate general spills training
- adherence to bunding guidelines to reduce risk potential
- implementation of condition monitoring for materials handling and storage infrastructure
- mandatory use of Personal Protective Equipment (PPE)
- restricting access.

7.1.3 Manual handling

Potential impacts include:

- personal injury (entrapment, engulfment, crushing, loss of consciousness, broken bones, severed limbs, eye impacts and drowning)
- fatality (loss of consciousness in confined space, drowning, engulfment)
- falling objects.

Controls include:

- mandatory use of PPE
- inductions prior to site access
- permitting systems
- access restrictions for working at height and confined spaces
- availability of location specific safety equipment
- on-site first aid trained staff available at all times
- helicopter landing zone for MedStar medivac, or equivalent
- equipment design includes machinery guards.

7.2 Environmental conditions

A range of environmental conditions can impact the site, key ones identified are outlined in the following sections.

7.2.1 Approaching hazard (storms with high winds and/or lightning strikes, king tides, tsunami)

Potential impacts include:

- damage to onshore/offshore access infrastructure (roads, pontoon, mooring dolphins)
- vessel berthing is restricted
- material transport infrastructure (such as conveyor system components) is damaged.

Controls include:

- implementation of policies and procedures for berthing
- adequate design parameters
- management of tasks taking weather forecast into consideration
- equipment (such as tug boats) availability at high risk times
- all access road construction
- adequately experienced and capable Port Manager
- wharf inspection prior to berthing.

7.2.2 Approaching hazard (bushfire)

Potential impacts include:

- multiple fatalities
- loss of critical infrastructure
- loss of product.

Controls include:

- established emergency response team
- established evacuation procedures
- undertaking of regular emergency drills
- clearly established communication protocols with CFS and emergency services
- implementation of bush fire hazard management plan
- effective communication methods and adequate supporting infrastructure in place
- adequate management of potential fuel load around perimeter to create a buffer zone of protection
- automatic fire suppression infrastructure
- bush fire training (industry brigade)
- office buildings will be built to relevant building standards.

7.3 Loss of power

Potential impacts include:

- operational impacts (leading to delays in stockpiling/shiploading)
- damage to power infrastructure (underground cables)
- unauthorised public access.

Controls include:

- diversification of power supply (grid, solar to battery, diesel generator)
- adequate on-site power generation capabilities
- mobile backup generator
- smaller generator for critical equipment (such as the weighbridge).

7.4 Land use – Security breach

Potential impacts include:

- intentional damage to infrastructure
- personal injury to public or staff
- delays to operational activities.

Controls include:

- installation and maintenance of security fencing around the entire site
- implementing Marine Security Identity Card (MSIC) requirement
- establishing exclusion zones around vessel and facility
- stakeholder liaison to develop positive relationships
- implementation of media and communication policy
- wharf inspection prior to vessel berthing.

7.5 Shipboard emergency

Emergency aid will be rendered as requested by the ship's captain or senior officer.

7.6 Third-party use

Third-party use of the site will rely on additional risk assessment, hierarchy of controls and all required approvals being obtained before third-party operations begins from the site.

8. REFERENCE DOCUMENTS

AS 3745-2010 Planning for emergencies in facilities.

Appendix A
Examples of emergency scenarios and case studies

Appendix U4 – Draft Bush Fire Hazard Management Plan

Kangaroo Island Plantation Timbers

Management Plan No SP-E0-00

Draft Bushfire Hazard Management Plan

KANGAROO ISLAND PLANTATION TIMBERS

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1. INTRODUCTION

1.1 Scope

This draft bushfire hazard management plan (BHMP) provides the framework for bushfire response at KI Seaport (the site), located at Smith Bay, Kangaroo Island, South Australia.

1.2 Purpose

It is informed through discussions held with Country Fire Service (CFS) members and a risk assessment workshop. The plan provides the basic structure for further development and refinement as site designs are finalised and construction operations begin.

It is limited in scope, in that it is only relevant for the KI Seaport operation at Smith Bay, Kangaroo Island. It covers the transport, stockpiling and ship loading activities proposed for the site and how the they will be managed during a potential bushfire event.

2. LEGISLATION, REGULATIONS AND SUPPORTING DOCUMENTS

2.1 Alignment with Legislation

Regulations and guidelines that are relevant to the formulation and implementation of the BHMP are as follows:

- *Development Act 1993 (Planning, Development and Infrastructure Act 2016* when enacted*)*
- *Fire and Emergency Services Act 2005*
- *Work Health and Safety Act 2012*
- Work Health and Safety Regulations 2012
- Fire and Emergency Services Regulations 2005
- First Aid in the Workplace Code of Practice
- AS3745-2010 Planning for Emergencies in facilities
- Building Code of Australia
- Minister's Code-Undertaking development in Bushfire Protection Areas 2012

The Kangaroo Island Council Development Plan classifies the site at Smith Bay as a Medium Bushfire risk (2015, DPTI), with property directly to the north, west and south classified as high risk. A medium bushfire risk classification requires consideration of a range of factors which will be incorporated in the final design of the proposed facility and subsequently outlined in the final version of this document.

2.2 Supporting Documents

To effectively manage bushfire risk at the site, a range of diagrams and Standard Operating Procedures (SOP's) will be developed, including:

- site wide evacuation map incorporating all areas of operation, emergency alarm locations
- equipment emergency shutdown locations, remote fire suppression locations and any firefighting equipment and first aid kits
- operation area specific evacuation maps, showing routes to primary and secondary evacuation points, emergency alarm locations, emergency shutdown locations, remote fire suppression locations, firefighting/hydrant equipment and supporting water supplies and first aid kits

- a range of SOP's that cover operational activities, including bushfire risk management outlining operational restrictions on days of low-moderate, high, very high, severe, extreme and catastrophic fire danger.

The Bushfire Risk Management SOP will be included in all staff induction packs.

3. RESPONSIBILITIES

Responsibilities for development, implementation and training of bushfire risk management related activities are outlined below.

3.1 Executive Management

Executive level management will be responsible for overseeing the development of the draft BHMP and the implementation of the final version of the document. In addition, the executive management team will provide for the allocation of necessary funds to:

- facilitate the necessary design requirements for the proposed site
- develop the BHMP
- provide the required infrastructure and equipment necessary to support the plan
- implement the plan
- provide for the ongoing review and updating of the plan
- facilitate the training requirements for operational staff.

3.2 Operations Management

Operations level management will be responsible for ensuring resources are allocated effectively to facilitate fire suppression training for staff, internal emergency drills are carried out and required records are managed in an effective and efficient manner.

3.3 Designated Shift Supervisor

Shift supervisors will be responsible for the delivery of internal training, provision of emergency drills and collecting of the required records.

3.4 Employees

Employees will be responsible for following all relevant policies, procedures and lawful directions of emergency response team members, and in the event of an incident will notify their direct supervisor immediately or sound the alarm, if appropriate.

All employees are required to follow SOP's and only to attempt management of any incident where they are trained and confident to do so.

4. MANAGEMENT PLAN OVERVIEW

4.1 Site Information

- Location and Name: KI Seaport, Smith Bay, Kangaroo Island
- Owner: KI Seaport Pty Ltd
- Occupier: *To be confirmed*
- Site manager: *To be confirmed*

- Building construction-Atco style buildings will be used as administration offices and security gate office.
- Area components/activities-

  - offices
  - log receivals and storage
  - woodchip receivals and storage
  - ship loading.

4.2 Emergency Response Team

Emergency contacts information

- Wardens: *To be confirmed*

  - Chief Warden:
  - Deputy Warden:
  - Deputy Warden:

- First aid officers: *To be confirmed*
- Local services-

  - Fire (CFS): Emergency - 000, Springs Road Menzies, SA 5223
  - Ambulance: Emergency - 000, 17 Murray St. Kingscote, SA 5223
  - Police: Emergency - 000, 08 8553 2018, 31 Dauncey St. Kingscote, SA 5223
  - SES: Flood and Storm Response - 132 500, 08 8553 2631, 16 Acacia Dr. Kingscote, SA 5223

4.3 Prescribed Facilities on Site

Prescribed emergency equipment required under legislation will be in place before operations commence. Additional fire hazard response infrastructure and equipment will be described in detail in the final version of this document. Consideration will be given to the facilities required in the event that an invacuation is necessary to protect the lives of staff and visitors to the site.

5. EMERGENCY RESPONSE STRUCTURE

5.1 Hazard Identification

The use of colour codes for emergency announcements will follow the Australian guidelines (AS3745) as summarised below:

- Code Blue-medical emergency
- Code Yellow-internal emergency
- Code Orange-evacuation
- Code Red-fire/smoke
- Code Purple-bomb threat
- Code Black-personal threat
- Code Brown-external emergency

5.2 Emergency Response Team Roles

An emergency response team (KI Seaport) will be established to provide first response capabilities on site, with the expectation that the team will need to manage the situation for approximately 60 minutes without external support.

The emergency response team will hand over control to attending emergency services personnel and will provide further aid where requested and able.

All emergency response team members shall be identified through this plan, emergency contact lists and visual cues whilst on site ie. hard hat colour, uniform colour.

Emergency response team members will be trained to respond to a variety of situations expected to occur on site and would be made up of employees and shift supervisors.

The core KI Seaport team will be augmented by forestry operation team members during ship loading activities.

5.2.1 Chief Warden (operations manager)

In the event of an emergency the Chief Warden is responsible for:

- managing the emergency response
- contacting executive management in the event of an emergency or crisis
- escalating the event from an incident, to emergency or crisis
- coordinating with on route emergency services personnel.

The Chief Warden will maintain control/responsibility of the situation until relieved by emergency service responders.

5.2.2 Deputy Warden (shift supervisor)

In the event of an emergency, Deputy Wardens will be responsible for the following actions in their emergency area:

- the communication of details pertaining to the incident, emergency or crisis to the Chief Warden
- follow all directions given by the Chief Warden
- ensuring emergency response procedures are followed
- ensure all staff are evacuated from the area if necessary
- keeping accurate records of the event for post event review.

The Deputy Warden shall remain responsible for their area of responsibility until relieved by emergency service responders or directed to stand down by the Chief Warden.

5.2.3 First Aiders

First aid officers will be required to deliver first aid where they are trained and confident to do so.

First aiders shall remain responsible for the provision of life preserving aid until relieved by emergency service responders or are unable to continue.

5.2.4 Staff and Visitors

Staff and visitors will:

- follow all directions given by the Chief or Deputy Warden
- follow all emergency response procedures
- will notify a staff member or Deputy Warden immediately, of an incident occurring or a hazard is identified.

5.3 Action and Escalation Protocol

In October or November of each year, the South Australian CFS Chief Officer declares the upcoming fire danger season, with dates published in the Government Gazette and Public Notices section of *The Advertiser.*

Restrictions on activities are governed by the *Fire and Emergency Services Act 2005* and apply through the dates as notified each year.

Every day during the prescribed fire danger season, a fire danger rating forecast is issued at 5.00 pm, the day before by the CFS in conjunction with the Bureau of Meteorology.

Activities on site will be monitored and modified as necessary in response to the fire danger rating forecast, up to and including the decision to deberth a ship in port undertaking loading operations.

A summary of actions to be taken for the relevant fire danger ratings is outlined below:

5.3.1 Low to Moderate or High

- Deputy Wardens to monitor conditions daily
- supervisors to communicate the fire danger rating to staff and visitors on site.

5.3.2 Very High

- Deputy Wardens to monitor conditions every 3-4 hours
- Deputy Wardens to communicate the fire danger rating to staff and visitors on site
- supervisors to review daily activities for high risk activities.

5.3.3 Severe (total fire ban)

- Deputy Wardens to monitor conditions hourly
- Chief Warden to be alerted to fire danger rating
- Deputy Wardens to communicate the fire danger rating to staff and visitors on site
- Deputy Wardens to review daily activities for high risk activities
- Deputy Wardens to reschedule high risk activities that are not a priority
- Chief Warden to monitor CFS ongoing incidents (website)
  - forest fire
  - grass fire
  - grass and stubble fire
  - haystack fire
  - incinerator fire
  - investigate burn off/smoke
  - rubbish fire

- scrub and grass fire
- storage yard fire
- vehicle accident/fire
- any other incidents that may be of concern.

5.3.4 Extreme (total fire ban)

- Chief Warden to monitor conditions hourly
- Deputy Wardens to communicate the fire danger rating to staff on site and discuss evacuation routes and safe locations
- all non-essential visitors are asked to leave the site
- Chief Warden to review daily activities for high risk activities
- Deputy Wardens to reschedule high risk activities that are not a priority
- Chief Warden to monitor CFS ongoing incidents (as above)
- Chief Warden to make direct contact with the CFS, providing operational updates as necessary
- Chief Warden to remain in contact with site operations staff at all times
- Chief Warden to review next day forecast and enact ERMP evacuation plan if forecast to be catastrophic, fire danger rating.

5.3.5 Catastrophic (total fire ban)

- Chief Warden to enact ERMP evacuation SOP on announcement of catastrophic fire danger rating
- all staff to be evacuated to nearest point of safety, as identified in the ERMP Evacuation SOP
- operations centre to be set up in the KIPT Kingscote office
- ongoing monitoring of whole of operation is to be enacted and managed by the Chief Warden

5.4 Emergency and Evacuation Training

Emergency and evacuation training will follow that outlined in section 4.6, of the draft Emergency Response Management Plan (ERMP), appendix T3.

6. RISKS

A risk assessment workshop was held to identify the risks associated with the operation and inform the draft version of this plan. The hazards, risks and mitigation strategies, documented during the workshop will be reviewed on an annual basis, to ensure relevance with current operational activities. A summary of the risks and mitigation strategies is outlined in the following sections.

6.1 Summary of Identified Risks

Identified risks associated with fire or bushfire are summarised below:

Potential risks include:

- multiple fatalities due to approaching bushfire
- loss of critical infrastructure on the site
- operational impacts due to evacuation requirements
- operation activities start an uncontained fire that crosses the site boundary.

6.2 Risk Mitigation Strategies

To effectively manage risk associated with operational fires and bushfires, mitigation measures will be put in place, see summary examples below:

Controls include:

- bushfire hazard management plan is in place with clear escalation and evacuation protocols
- building design meets minimum requirements of Bushfire Attack Level (BAL) 40
- maintenance program for all operational vehicles and plant
- fire mitigation strategies such as land management policies to reduce potential fuel loads, operational restrictions in times of high/extreme fire danger
- firefighting equipment is operationally ready for deployment at all times
- trained firefighting staff (emergency response team)
- emergency drills incorporating site evacuation
- positive stakeholder relationships and communication policies
- ongoing liaison with local CFS units
- clear and effective communication protocols onsite, between internal operation teams and emergency services, including CFS.

7. ACTION REVIEW PROCESS

Incidents and actions related to fire and bushfires will be reviewed by the emergency response team as outlined in the ERMP, with key review periods summarised below:

- training, drill events and management plans-will be reviewed annually
- emergency events-will be reviewed biannually
- crisis events-will be reviewed immediately.

8. REFERENCE DOCUMENTS

Department of Planning, Transport and Infrastructure (DPTI) 2015, *Kangaroo Island Council Development Plan*, Government of South Australia.

Appendix U5 – Draft Waste and Waste Minimisation Management Plan

Kangaroo Island Plantation Timbers

Management Plan No SP-E0-00

Waste Management and Minimisation Plan (for demolition, construction and operation)

KANGAROO ISLAND PLANTATION TIMBERS

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1. BACKGROUND

Kangaroo Island Plantation Timber (KIPT) proposes to establish and operate a seaport facility (KI Seaport) at Smith Bay, Kangaroo Island for the export of timber products. The area for the proposed facility is located approximately 20 km west of Kingscote, between Cape Cassini and Emu Bay, and is separated from mainland South Australia by the Investigator Strait and Backstairs Passage.

1.1 Regulatory Framework

The following legislation is applicable to this Management Plan:

- *Environment Protection Act 1993*
- Environment Protection (Waste to Resources) Policy 2010
- *Green Industries SA Act 2004*

1.2 Purpose

The purpose of this document is to establish a system for the management of waste produced during the construction and operation of KI Seaport in accordance with relevant legislation and South Australia's Waste Strategy (Zero Waste SA, 2015). KIPT has sought to implement the waste management hierarchy in accordance with this strategy and will therefore aim to do the following, in order of preference, in relation to the management of waste:

1. Avoid
2. Reduce
3. Reuse
4. Recycle
5. Recover
6. Treat
7. Dispose

All wastes generated as a result of activities related to KI Seaport must be stored and disposed of in a safe and environmentally sound manner, as described in Section 2.

1.3 Scope

This plan will apply to all personnel involved in the construction and operation of KI Seaport. All personnel involved in the facility's on-site waste management must understand and adhere to the waste storage and disposal procedures outlined in this plan.

1.4 Waste management on Kangaroo Island

Waste disposal on Kangaroo Island is managed by the Fleurieu Regional Waste Authority (FRWA). The FRWA reserves the right to refuse to dispose of waste if it is not sorted appropriately and will apply additional charges of up to $200 per load for non-compliant loads. Therefore, all waste generated at the facility must be appropriately sorted in applicable categories, as outlined in Section 2.

Currently, no operational landfill facilities exist on Kangaroo Island. Therefore, all waste to be sent to landfill must be transported to the mainland for disposal. Recyclable wastes on Kangaroo Island are processed by the Kangaroo Island Resource Recovery Centre (KIRRC), located approximately 5 km from Kingscote on North Coast Road. The KIRRC accepts a wide range of materials including concrete, oil and batteries.

1.4.1 Service providers

Kerbside waste collection services on Kangaroo Island are provided by the FRWA. However, these services are only generally provided to residential properties and other properties which constitute a small business (Fleurieu Regional Waste Authority 2018).

The KI Seaport is not likely to constitute a small business, so it is unlikely that it will be eligible for kerbside collection. Two private contractors offering commercial waste collection services currently operate on Kangaroo Island (Kangaroo Island Council 2018). These are:

- KI Skip Bins
- Wheres Ya Bin?

2. KI SEAPORT WASTE MANAGEMENT

In order to meet FRWA waste management requirements and avoid additional charges, all waste generated at KI Seaport must be sorted into the following categories prior to collection by the selected waste management service provider:

- landfill (including soil, rocks, concrete and tiles)
- green waste
- timber
- metals
- soft plastics
- general waste
- paper and cardboard.

Due to EPA regulations, asbestos, medical waste, chemicals, flammable liquids, tyres and batteries and other liquid wastes must not be disposed of in regular bins with other waste. Specific procedures for these wastes and other wastes expected to be generated at the facility are described in the following sections where applicable.

A description of the wastes that will be generated during construction and operation of KI Seaport and how they will be managed is provided below. Table 1 provides a summary of the waste types and their management.

Table 1: Waste types and management at KI Seaport

Type	Method of storage	Bunding	Is this material reused/recycled?	Disposal method
Dredge spoil		No	Yes	Suitable dredge spoil will be used for construction of the causeway core Excess dredge spoil and material unsuitable for causeway construction will be used in on-site

Type	Method of storage	Bunding	Is this material reused/recycled?	Disposal method
				works and/or for construction of noise and aesthetic bunds
Wood fines	Wood fines present in the log and woodchip storage areas would be collected periodically and transported off site	No	Yes	Fines may be used as garden mulch, as a form of biofuel for processes and activities undertaken on Kangaroo Island or returned to plantations to compost
Vessel solid wastes	Vessels would be responsible for the storage of solid wastes generated while berthed at KI Seaport	No	No	Solid waste from vessels would not be discharged unless it meets relevant water quality standards and biosecurity requirements
Black and greywater	Vessels would be responsible for the storage of wastewater generated while berthed at KI Seaport	No	No	Black and greywater would not be discharged unless it meets relevant water quality standards and biosecurity requirements
Concrete		No	Yes	Collected and delivered to KIRRC
Inert construction and demolition wastes		No	No	Transported to mainland for disposal at licensed landfill facility
Recyclable construction materials (excess cabling, plastics, aluminium and other metals)	Collected and delivered to the Kangaroo Island Resource Recovery Centre for storage	No	Yes	Recycled at Kangaroo Island Resource Recovery Centre
Used equipment (such as motors and pumps)		No	Yes/No	Collected and delivered to the Kangaroo Island Resource Recovery Centre (KIRRC) for separation of recyclable materials Non-recyclable materials sent to mainland for disposal at licensed landfill facility
Equipment components		No	Yes/No	Collected and delivered to the Kangaroo Island Resource Recovery Centre (KIRRC) for separation of recyclable materials

Type	Method of storage	Bunding	Is this material reused/recycled?	Disposal method
				Non-recyclable materials sent to mainland for disposal at licensed landfill facility
Non-recyclable waste (from on-site workforce)	Garbage bins located at on-site offices	No	No	Collected and transported to mainland for disposal at licensed landfill facility
Recyclable waste (from on-site workforce)	Recycling bins located at on-site offices	No	Yes	Collected and delivered to KIRRC
Putrescible waste (from on-site workforce)	Green waste bins located at on-site offices	No	Yes	Collected and delivered to KIRRC
Waste oil and hydrocarbons	May be temporarily stored within an appropriate bunded area around site pending transportation	Yes	Yes	Collected by licensed contractor and disposed of off-site (KIRRC)
Oil rags and filters (listed waste)	May be temporarily stored within an appropriate bunded area around site pending transportation	Yes	Yes	Collected by licensed contractor and disposed of off-site (KIRRC)
Hazardous chemicals	May be temporarily stored within an appropriate bunded area around site pending transportation	Yes	Yes	Appropriately disposed of as per MSDS
Batteries	May be temporarily stored within an appropriate bunded area around site pending transportation	Yes	Yes	Waste services contractor to consolidate for periodic transport to KIRCC (lead acid batteries)
Medical waste (listed waste)		No	No	Disposed of to a licensed medical waste disposal facility
Sewerage	Septic tank with a working capacity of 16,500L will be used to capture effluent	No	No	Effluent would be collected for removal off-site by a licensed waste contractor Septic tank will require de-sludging ever 4 years

2.1 Dredge spoil

It is expected that approximately 100,000 m^3 of dredge spoil will be excavated during construction. It is expected that 65-70% of dredge spoil will be suitable for use as core material for the causeway. Material unsuitable for use in causeway construction, in addition to any material excess to this use, will be used in on-site construction works (as a supplement to cut-and-fill operations) and/or for the construction of noise and aesthetic bunds and landscaping around the proposed operation.

2.2 Wood fines

Wood fines will be generated at an anticipated rate of up to 700 tonnes a year and will be produced in three main areas of KI Seaport, these being at the screener, at the junctions of the chip conveyor systems and at either end of the ship loader. Design interventions including shrouding conveyor junctions and fines capture systems will also ensure that the mobilisation of fines is minimised and that material that is mobilised is able to be contained. The facility will also be designed in such a way that the creation of fines will be minimised. This will be achieved through optimising the performance and maintenance of the chippers and by using an automatic stacker reclaimer to create and manage woodchip stockpiles, thus avoiding the creation of fines that come from the use of bulldozers.

Wood fines generated at the facility will be periodically collected from the log and woodchip storage areas and transported offsite. Once they have been transported offsite, these fines may be used for a variety of purposes, including:

- garden mulch in landscaping projects
- a form of biofuel for local industrial processes and/or electricity generation activities
- being returned to timber plantations to compost as part of nutrient recycling.

2.3 Wastes from vessels

2.3.1 Solid wastes

Vessels will be responsible for the storage of all solid wastes that they may have been generated prior to entering or while at KI Seaport. It is not anticipated that any waste material generated by vessels will be brought on-shore.

2.3.2 Black and greywater

Vessels will be responsible for the storage of all wastewater that they may have been generated prior to entering or while at KI Seaport. There will not be any provision for disposal of wastewater from ships at KI Seaport. Black and grey water generated by ships should not be discharged to the surrounding environment unless it meets relevant water quality standards and biosecurity requirements.

2.4 General wastes

2.4.1 Recyclable waste

Recyclable waste materials generated during construction, such as excess cabling, plastics, aluminium and other metals will be collected and transported to the KIRRC for storage before recycling.

Wastes generated during the operation of KI Seaport, including used equipment such as motors and pumps, will be collected and delivered to the KIRRC, so recyclable materials can be separated and treated.

Recyclable wastes generated by the on-site workforce should be disposed of in the appropriate bins prior to transportation to the KIRRC for resource recovery and recycling.

2.4.2 Non-recyclable wastes

Non-recyclable wastes generated during construction, such as inert construction materials, will be transported to the mainland for disposal at an appropriately licensed landfill facility as no such facility currently exists on Kangaroo Island.

Only small volumes of waste are expected to be generated during the operation of KI Seaport. All non-recyclable waste should be disposed of in the appropriate on-site bins, to be collected and sent to the mainland for disposal at a licensed landfill facility.

2.5 Hazardous wastes

2.5.1 Waste oil and hydrocarbons

Only small volumes of waste oil and hydrocarbons are expected to be generated during construction and operation, consisting of leftover oils. These materials may be temporarily stored on-site within an appropriately bunded area prior to collection by a licensed contractor. The KIRRC currently accepts commercial quantities of waste oil.

2.5.2 Oil rags and filters

Leftover oil rags and filters from site processes will be periodically collected by a licensed contractor and disposed of off-site. The KIRRC currently accepts oil filters from commercial operations.

2.5.3 Hazardous chemicals

Any waste hazardous chemicals produced or left over from site processes will be appropriately managed and disposed of as per MSDS.

2.5.4 Batteries

Waste batteries left over from site processes will be stored in collection buckets in the site office and workshops. The waste services contractor will consolidate these for periodic transport to the KIRRC.

2.5.5 Tyres

Large mobile equipment and vehicles would not be serviced on site, therefore waste tyres would not be generated on site.

2.5.6 Equipment components

Fixed equipment on site would be serviced in situ, during preventative maintenance campaigns or breakdown. Waste streams as a result of equipment maintenance and repair include conveyor belts and scrap metals. Non-recyclable wastes generated will be transported to the mainland for disposal at an appropriately licensed landfill facility. Recyclable materials will be transported to KIRRC or to the mainland for recycling.

2.5.7 Medical waste

Small amounts of medical waste may be generated from drug and alcohol tests and first aid treatment. EPA guidelines require that all medical waste be stored in a secure location. All sharps should be collected

into an appropriate sharps container which clearly displays the universal biohazard label and transported to a licensed medical waste disposal facility. All medical waste other than sharps should be placed in a clearly labelled heavy duty yellow plastic bag or wet strength paper bag, which should be tied to prevent leakage during storage. This waste will be transported to a licensed medical waste disposal facility.

2.5.8 Wastewater

A septic tank with a working capacity of 16,500 litres will capture effluent. The septic tank would be de-sludged every four years by a licensed contractor and waste disposed of off-site, in order to meet Department of Health requirements.

3. REFERENCES

Fleurieu Regional Waste Authority (2018). Frequently Asked Questions – Fortnightly Kerbside Waste Collection – Kangaroo Island. Kangaroo Island Council.

Fleurieu Regional Waste Authority (2018). Kerbside Waste Collection Policy. Kangaroo Island Council.

Medical Waste - storage, transport and disposal (2003) SA EPA.