SOUTHERN PORTS

ALBANY BUNBURY ESPERANCE

MARINE ENVIRONMENTAL MANAGEMENT PLAN

DOCUMENT CONTROL

Version Number	Description	Reviewed by	Approved by	Revision Date	Issue Date
01	New SPA PoB Document – General updates to reflect current practice	Environmental Officer	HSE Manager	02/03/2016	02/03/2016
02	Document update – New Record Number	Environmental Officer	HSE Manager	21/08/2018	21/08/2018
03	Scheduled review - General updates to reflect current practice	Environmental Officer	Environment Manager	19/08/2021	19/08/2021

AUDIT

This plan shall be reviewed / revised

- Where a Risk Assessment / Audit identifies a need to review;
- Following a significant incident involving this plan; or
- At least every 3 years.

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DEFINITIONS

SPA-Bun	Southern Ports – Bunbury
DWER	Department of Water and Environment Regulation

1. INTRODUCTION

1.1. Background

The present Southern Ports - Bunbury (SPA-Bun) operations consist of 2 Outer Harbour berths and 5 Inner Harbour berths (see Figure 1-1).

At the Outer Harbour, there are two berths both owned and operated by the SPA-Bun (see http://www.southernports.com.au/):

- Berth 1 – Has limited use due to draught restrictions but can accommodate vessels for scrap metal loading, vessels for ship cleaning and potentially cruise vessels.
- Berth 2 - A general purpose berth equipped for discharging Methanol from tankers and for the mooring of tugs.

At the Inner Harbour there are five berths:

- Berth 3 - a fixed woodchip ship loader owned by WAPRES situated on a dolphin berth for loading woodchip and for the loading of grain.
- Berth 4 - A specialised bulk alumina loading berth. Bulk caustic soda is also discharged at this berth. The berth and all associated infrastructure is owned and operated by Alcoa.
- Berth 5 - A general purpose berth for the loading and unloading of bulk materials and break-bulk cargo owned and operated by the SPA-Bun.
- Berth 6 - A specialised bulk alumina loading, bulk caustic soda is also discharged at this berth. The berth and all associated infrastructure is owned and operated by South32 (Worsley Alumina).

Berth 8 - A common user berth owned and operated by the SPA-Bun for the loading of bulk materials including mineral sands, silica sands, spodumene, copper sulphide concentrate, alumina hydrate and woodchips. Other operations at the Inner Harbour are:

- Two wood-chipping, screening and stockpiling operations.
- The Tronox Mineral Separation Plant located at the northwestern end of the Inner Harbour.
- Bulk caustic storage facilities located to the east of the South32 Worsley Alumina and Alcoa operations.
- Bulk refined waste oil and bitumen storage facilities located on the southeastern edge of the IH. This facility is owned and managed by Wren Oil.

1.2. Environmental setting

The port of Bunbury is situated in the southwest corner of Western Australia, 170 road kilometres south of the state capital, Perth.

The eastern side of the Inner Harbour is bordered by the Leschenault Estuary (Vittoria Bay) and the Preston River delta system. The western side of the Inner Harbour is bordered by the Leschenault Inlet.

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2. SCOPE AND OBJECTIVES

2.1. Scope

To facilitate the effective management of marine waters and potential pollution related issues associated with port activities which may impact on port waters and associated marine life. This management program identifies marine management requirements, quantifies port emissions and impacts, sets objectives and targets, and monitors ongoing performance to achieving these objectives.

In addition to this overarching program, individual plans will be produced to mitigate specific potential marine pollution issues inherent in development scenarios and new development proposals.

2.2. Objectives

The Southern Ports - Bunbury's objectives with regards to its marine environment are as described in the ISO 14001 - 2015 accredited SPA-Bun Environmental Management System Objectives and Targets:

Objectives	Targets	Key Performance Indicators
Marine Waters - Maintain quality and integrity of marine harbour waters.	No deterioration year on year in marine water quality directly related to SPA-Bun controlled operations.	No net increase in marine water nutrients or metals.
Harbour sediments – Maintain quality and integrity of harbour sediments	Minimise spillage, storm and wash water runoff into the marine environment from SPA-Bun controlled operations	No net increase in sediment metals year on year.

3. LEGISLATIVE REQUIREMENTS

- Environmental Protection and Biodiversity Conservation (EPBC) Act, 1999 - The principles of ecologically sustainable development are regarded in new proposals. Environmental approval is to be sought when development is likely to impact areas of national significance.
- Environmental Protection (Sea Dumping) Act, 1981 - Proponents must hold a permit to carry out dumping of waste or any matter from vessels in Australian waters.
- National Ocean Disposal Guidelines for Dredged Material, 2002 - Establishes guidelines and best practice for ocean disposal of dredged material
- National Assessment Guidelines for Dredging 2009 - The National Assessment Guidelines for Dredging set out the framework for the environmental impact assessment and permitting of the ocean disposal of dredged material. The framework includes:
  - evaluating alternatives to ocean disposal;
  - assessing loading and disposal sites;
  - assessing potential impacts on the marine environment and other users;
  - Determining management and monitoring requirements;
  - Australian Ballast Water Management Requirements;
  - Vessels must have permission to discharge ballast water in Australian waters and develop and implement management procedures. Vessels must report on ballast discharge activities Vessels with international itinerary must lodge Ballast Water Decision Support System (BWDSS).
- ANZECC Marine and Fresh Water Guidelines 2000
- Environmental Protection Act, 1986 - This act establishes the Environmental Protection Agency (EPA) and requires the approval through Environmental Impact Assessment (EIS) of new proposals. Also requires works approvals for constructions and licenses to operate on prescribed premises.
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983 - Establishes regulations regarding vessels, discharges, emissions, and other harmful substances emitted from ships
- Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 - Offence for any ship bearing harmful chemical compounds on their hulls or external parts or surfaces to enter an Australian Port, shipyard

or offshore terminal, unless the ship bears a coating to prevent such compounds leaching into the water. Act provides for the issuing of 'International Anti-fouling System Certificates'.

- Environmental Protection (Unauthorized Discharges) Regulations 2004 - This imposes penalties for unauthorized discharges to the environment. Exceptions such as pesticides and lower thresholds
- Management of Sewage Discharges from Vessels into the Environment - Any treated or non-treated sewage discharge by recreational and commercial vessels is prohibited in marinas, yacht clubs, boat harbours and ports.
- Pollution of Waters by Oil and Noxious Substances Act, 1987 - No discharges of oil or oil wastewater into the marine environment are allowed. Notification of 'prescribed incidents' – incidents which involve discharge of oily waste into the marine environment, is required.
- Waterways Conservation Act, 1976 - Enacts licence requirements for disposal of wastes into certain water bodies
- Western Australian Maine (Sea Dumping) Act 1981 - Established permit requirements for the dumping of waste from any vessel or aircraft into coastal waters or Port waters. Also covers incineration and loading of any prescribed matter.
- Western Australian Marine (Sea Dumping) Regulations, 1982 - Delineates specific requirements for sea dumping reports.
- Western Australian EPA Guidance Document No.29 – Benthic Primary Producer Habitat Protection - Gives advice and best practice guidelines regarding how to carry out development planning and work so as to protect benthic habitat.

4. POTENTIAL ENVIRONMENTAL IMPACTS TO THE MARINE ENVIRONMENT WITHIN PORT WATERS

4.1. Effects of dredging and disposal of the dredged material

- Dredging within the Bunbury port is undertaken due to a loss of pre-existing depths due to a build-up of sediment (maintenance dredging). Short-term turbidity can result from dredging activities.
- Under the Environment Protection (Sea Dumping) Act 1981 (the Sea Dumping Act), a Sea Dumping Permit is required to authorize the loading for the purposes of dumping dredged material at sea.
- The Port of Bunbury holds a sea dumping permit.

4.2. Effects of antifouling paints

- Another significant environmental issue is the use of organotins such as tributyltin (TBT) as biocides in antifouling paints used on vessels to prevent the build-up of organisms on ships' hulls. Its use has been of critical importance to efficient commerce and to impeding the spread of marine pests, parasites and diseases into ports, harbours and coastal waters. Due to contamination concerns, the use of TBT is in the process of being phased out world- wide for use on commercial vessels and is being replaced with copper based antifoulants.

4.3. Introduced marine species – see section 7 for further details

4.4. Ship waste discharge while in port

- In the course of normal operations, there is a risk of spills of oil, wastes from vessel maintenance, bilge water and sewage, and these could affect port water quality. The Port through the Harbour Master restricts intentional operational discharge of waste into the marine environment.

4.5. Risk of oil or hazardous cargo spills

- Oil and hazardous cargo spills can occur either in ports and harbours or in offshore waters. Spills can happen as a result of accidents, such as collisions or groundings on off-shore reefs. Their

environmental impacts depend on the nature and quantity of oil spilt and the habitat and species that are affected.

4.6. Other Hazards associated with shipping within port waters

- Underwater Noise.
- Ship strike on cetaceans and other marine life.
- Disturbance of sea floor due to anchorage activity – to minimise this environmental impact. designated anchorages are nominated.
- Accidental discharge of material into the sea during loading and unloading of ships.

5. IMPLEMENTATION STRATEGY AND MANAGEMENT ACTION

5.1. Strategy

SPA-Bun plans to mitigate, where practicable, Port associated impact risks through this program. The key strategic elements of this program are:

- Apply marine pollution management controls where practicable to do so.
- Monitor emissions and take necessary action where practicable to reduce pollution.
- Give due consideration to marine environmental impact potential in planning and port development proposals.

5.2. Management Action - Roles and Responsibility

- Port Management which includes the Harbour Master are collectively responsible for marine environmental management activities and efforts with the technical assistance and advice of the Environment Manager.
- The Environmental Officer who reports to the Environment Manager provides technical assistance and advice and carries out monitoring duties including reporting, field analysis and data analysis and maintains a database of all marine environmental monitoring and management activities.

6. MONITORING

Monitoring is required to enable an assessment of the effectiveness of the marine environmental management controls. Where monitoring is indicating the need for improvement to port practices or infrastructure, this will be brought to the attention of Senior Management for consideration.

- **Marine Pest Monitoring** – this monitoring is to identify any marine organisms that are not naturally occurring in the SW Region. This has been done since the mid 90's and in this time, no new introduced marine organisms have been identified which indicates that ship ballast water control protocols have been successful. In addition, IMS risk surveys are conducted on non-trading vessels including barges that may enter the Bunbury Port from time to time.
- **Water quality monitoring** - Water quality in the harbour waters has been conducted predominantly to monitor the potential impacts of bulk materials loading and the discharge of storm and wash water into the harbour. To date this monitoring has not shown bulk loading activities or water run-off into the harbour to have had a deleterious effect on water quality.

  Due to permitted the ship waste discharge while in port, the marine water at the IH is sampled for micro-organisms that could have an impact on human health at a concentration above the drinking water guideline.
- **Marine Sediment sampling** – As part of its Long Term Monitoring Management Plan and in association with its periodic maintenance dredging program, the SPA-Bun undertakes extensive sampling of the marine sediments and water quality in the Inner Harbour, Outer Harbour, Shipping Channel and Spoil Ground to monitor the condition of the sediments and waters to ensure that Port

activities are not negatively impacting the marine environment and that sediments continue to be suitable for unconfined sea disposal.

- **Underwater Noise Monitoring** – There have been no binding requirements identified pertaining to underwater noise impacts but SPA-Bun recognises the pertinence of recent research highlighting the effects of noise on marine ecological systems and thus aims to mitigate such effects where practicable to do so. Marine underwater noise will be monitored in events where significant underwater noise is likely to occur. Rock fracturing, capital dredging and certain construction activities will be required to model potential noise impacts and put in place mitigation strategies to reduce these impacts. Underwater noise monitoring will form part of the management plan.

7. MARINE IMPACT MITIGATION AND MANAGEMNT

- Use of rotaboxes for loading bulk material at the Inner harbour - The use of boxes has been shown to significantly reduce dust emissions and allow better control of spillage. This has the potential to significantly reduce the volume of water used for washing down of loading infrastructure.
- The Berth 8 WasteWater Capture system was commissioned in early 2011 to ensure that potentially contaminated washdown and stormwater water from the Berth 8 facility does not enter the marine environment.
- Enclosed loading infrastructure to contain bulk granular products to prevent dust and spillage. A truck wash-down bay was installed by the SPA-Bun in 2006 at the Inner Harbour to ensure that wash-down water from trucks was put through an oil separator to eliminate the risk of hydrocarbon contamination in the environment. This system has been well accepted by trucking contractors and was upgraded during 2020 with the installation of a more efficient oil separator.
- Use of the CCTV network at the Inner Harbour to monitor port operations and record potential and actual marine impact events.
- Spill containment equipment stored in a purpose-built shed south of Berth 5 for rapid deployment by appropriately trained personnel.
- Sampling equipment available to port operational and pilot boat personnel to collect potential marine pollutants for analysis.

8. FREQUENCY OF MONITORING AND REPORTING

- Marine Pest Monitoring – marine pest monitoring is conducted on a biennial basis. In addition, 10 yearly comprehensive baseline surveys will also be conducted.
- Water and sediment quality monitoring – this is conducted on a biennial basis. In addition, monitoring of water quality will also be carried out in conjunction with 12 monthly sediment metals surveys in the Inner Harbour relating to copper concentrate exports over Berth 8. The Inner Harbour is not included in the Port's Sea Dumping Permit.
- Micro-organism sampling of the IH twice yearly.
- Incident reporting - Minor and major accidental spillages into the marine environment must be reported immediately to the Environment Manager and Harbour Master.
- Complaint and Incident Handling - The Environment Manager is responsible for ensuring that community contacts and complaints regarding the quality of marine waters within the port boundary and any issues associated with maintenance dredging are properly documented and investigated. Details of community contacts and complaints will be captured in the Records Management System. Contacts or complaints regarding non- SPA-Bun controlled operations will be referred to that Port User for their action.

9. CONSULTATION AND INVOLVEMENT

SPA-Bun engages regularly with the local community through the Port Community Consultation Committee (PCCC) regarding environmental management issues including dredging campaigns. SPA-Bun also engages in regular consultation with the following stakeholders regarding marine water quality management strategies:

- Department of Water and Environmental Regulation (DWER) - as required
- City of Bunbury
- Port Users
- Dept of Agriculture Water and the Environment (DAWE)
- Department of Transport
- Department of Biodiversity Conservation and Attractions (DBCA) - Department of Fisheries

10. Review and Revision

This management plan will be reviewed and revised by SPA-Bun:

- On a 3 yearly basis or;
- If there are major changes to port operations;
- In response to issues raised by the DWER or any other statutory body;
- In response to issues raised through community feedback; and
- In response to any incident which results in a failure to meet any of the commitments of this Plan.

11. References

- Bunbury Port Development - Long Term Monitoring and Management Plan (LTMMP)