

Port of **Mackay**

▶ Maintenance Dredging Environmental Management Plan



PORT OF BRISBANE Dredging Environmental Management Plan MACKAY

NOVEMBER 2020



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1 Introduction

The Port of Brisbane Pty Ltd (PBPL) has been contracted by North Queensland Bulk Ports (NQBP) to undertake maintenance dredging at the Port of Mackay. These dredging works will be conducted by the PBPL's dredger, the Trailer Suction Hopper Dredge (TSHD) *Brisbane*. Works are scheduled for a period of approximately 14 days commencing on, or about, 6 December and finishing on or around 20 December 2020.

This Environmental Management Plan (EMP) forms the operational control document for the *TSHD Brisbane* while undertaking the maintenance dredging works and is intended to ensure all site-specific environmental issues that are the responsibility of PBPL, under the contractual arrangements, are adequately addressed. Approval conditions (Appendix B) and the operational controls detailed in the NQBP Port of Mackay Long Term Dredge Management Plan (Appendix E [NQBP Long Term Dredge Management Plan and Supplementary Report August 2020](#))

Appendix), have been considered in the preparation of this EMP.

The EMP also forms part of the PBPL Environmental Management System to ensure the environmental management practices on the *TSHD Brisbane*, are consistent with the PBPL's ISO 14001 accreditation. As such, consideration has also been given to the Environmental Aspects and Impacts (as defined under the PBPL Environmental Management Program) to ensure all impacting processes are addressed through clearly defined performance indicators.

The dredging schedule for the *TSHD Brisbane's* operations at all of the Queensland ports has been developed in accordance with PBPL and NQBP's contractual requirements; DTMR's *Maintenance Dredging Strategy for Great Barrier Reef World Heritage Area Ports* (November 2016); and the QPA *Procedure for scheduling and reporting the annual state-wide maintenance dredging program by TSHD Brisbane* (2016).

2 Description of Dredging Plant

The *TSHD Brisbane* is a twin-arm Trailer Suction Hopper Dredge (TSHD) commissioned in November 2000. The vessel is 84m long with a displacement tonnage of approximately 3,500 tonnes. During operations, it has a crew of 13, operating in two shifts, 24 hours per day.

Dredging activity is determined by comparison of required or design depths of a site with pre-dredging hydrographic survey. Specialised vessels independent of the dredge undertake all survey work.

The hydrographic survey information is digitally uploaded to the *TSHD Brisbane's* on-board computer system allowing the dredge master to display the depth information for a site with dredge target areas clearly highlighted.

The vessel can operate in either automatic, where onboard computers control vessel dredge systems, or manual mode for dredging operations. Further, the onboard computers assist the positioning of the vessel by displaying a differentially corrected GPS position of the vessel track against intended dredge areas. A Dredge Pipe Operator and Dredging Manager are present on the bridge during all operations regardless of dredging mode, and all vessel movements are directed by the Dredging Manager.

The vessel extracts material by lowering two suction heads (one on either side of the vessel) to the seafloor whilst steaming slowly (1-3 knots) ahead. Large pumps onboard then draw water through the heads entraining sediments from the seafloor in a similar fashion to a household vacuum cleaner, depositing a mixture of water and sediments into the vessel's central hopper.

The dredge heads are not fitted with any mechanical agitation equipment and rely solely on the suction head provided by the onboard pumps. Whilst the vessel has the ability to pump high-pressure water to the dredge head to agitate sediments, this is generally not required unless operating in compacted sands.

The concentration of sediments delivered to the hopper is dependent on a number of factors, such as sediment type and dredging conditions, but is generally in the order of 10-30% solids. That is, 70-90% of the material pumped to the hopper is water and must be discharged to achieve effective loading.

The *TSHD Brisbane* has been constructed with a central column weir to control water discharge. This weir consists of six rings stacked vertically. The position of the rings and hence the depth to which water in the hopper must be before overflowing to discharge, is controlled automatically by the draft of the vessel. This controls the residence time of the water in the hopper, providing maximum time for suspended material to settle and reducing discharge suspended sediment concentration.

Discharge from the weir is through the bottom of the vessel's hull below the keel on the centreline. As such, discharge of waters during dredging is 4-6m below the water's surface, depositing sediments near the bed and reducing settlement time.

The effective capacity of the hopper is dependent upon the type of material being dredged. While the volume of the hopper is 2900m³, effective capacities range from 2100 m³ for sands, to 2900 m³ for fine silts.

This variation in effective hopper capacity is due to both the maximum load carrying capacity of the vessel and the differences in settling time for the material dredged. Material with a high silt content (<0.075mm) takes a relatively long time to settle

from suspension in the water. As the hopper residence time¹ is reduced, insufficient material settles in the hopper per cubic metre dredged to make the works economically viable.

Once the hopper has reached optimum capacity for the type of material being dredged, the vessel steams to the relocation site. The material may be bottom dumped (as is generally undertaken for placement at sea) by opening large valves in the floor of the hopper to allow the material to fall out through the hull.

Alternately, the material can be pumped out via a bow discharge pipe (generally used for onshore placement). A floating pipeline is connected to the bow coupling and material within the hopper agitated with high-pressure water jets to achieve the correct consistency for pumping. Material is then delivered via the pipeline to detention basins onshore. No onshore placement will occur in this campaign.

¹ Hopper residence time is the time taken for water pumped to the hopper to flow out the discharge weir. As the hopper fills with sediment the residence time, and hence the potential for settling of suspended sediment, decreases. A compensation point is reached as the load curve (a plot of sediment load Vs total dredging time) asymptotes. That is, the amount of material retained in the hopper per unit of dredging time decreases.

3 Location of Operations

The Port of Mackay is located on Harbour Beach, north of the mouth of the Pioneer River. The current key export trade through the Port of Mackay is sugar (raw and refined) and the dominant import is fuel for agriculture and the coal mining industry. The onshore port area contains major bulk storage facilities for raw sugar, refined sugar, grain, molasses, petroleum, industrial alcohol, fertiliser and other products such as sulphuric acid, tallow, magnetite and scrap steel. Figure 1 shows the general layout of the Port of Mackay.



Figure 1: Port of Mackay general layout

4 Description of Site

The Port of Mackay consists of an artificial harbour enclosed by northern and southern breakwaters, and facilities for handling of ships and their associated cargo. There are four operational berths and associated loading/unloading facilities, ranging between -8.6 and -13.5m LAT. Some shipping movements along the channel are tidally dependant. The harbour has an interior turning basin of 500m in diameter with a bed level of -8.5m at lowest astronomical tide (LAT). The entrance width through the breakwaters is 183m. Refer to Section 1 of the NQBP LTDMP (Appendix E

[NQBP Long Term Dredge Management Plan and Supplementary Report August 2020](#)

Appendix) for a further detailed description of the Site.

The Port is an important component of the transport chain for sugar and agriculture, servicing Australia's largest sugar growing region. It also handles key imports, such as fuel, for mining and other activities in Central Queensland. The Port, together with coal exports Ports (Hay Point, Dalrymple Bay, Abbot Point and Gladstone) is also a major sea hub of the mineral rich Bowen Basin. Key trade commodities include sugar (raw and refined), fuel, grain, fertiliser and magnetite. The onshore port area contains major bulk storage facilities for raw sugar, refined sugar, grain, molasses, petroleum, industrial alcohol, fertiliser and other products such as sulphuric acid, tallow, magnetite and scrap steel.

As well as major trade items, the Port provides access to a small craft harbour with tourist terminal, marina amenities and public access. The marina is operated by Port Binnli Pty Ltd. NQBP has no direct operational or planning role over the onshore marina areas. However, the marina seabed does come under the control of NQBP. Other services provided by private operators include ship's agency, stevedoring, towage and ship supplies. Government agencies that undertake port related activities include Queensland Transport / Maritime Safety Queensland (MSQ), the Australian Customs Service, the Australian Maritime Safety Authority, and the Australian Quarantine and Inspection Service.

5 Description of Activity

The scope of the maintenance dredging works is to remove up to 140,000 m³ of maintenance dredge material from within the swing basin and berth pockets for NQBP. Material from the inner harbour is typically unconsolidated fines.

All material generated by the maintenance dredging will be relocated to the existing dredge material placement area (DMPA) located approximately 2km west of Slade Islet which has been used for previous dredging campaigns. The DMPA is located within the following coordinates (consistent with Sea Dumping Permit and Environmental Authority conditions):

- 21°05'20.4" South and 149°16'25.7" East
- 21°05'51.7" South and 149°16'15.7" East
- 21°05'38.1" South and 149°15'33" East
- 21°05'07.9" South and 149°15'42.5" East

Note – material must be distributed evenly within the DMPA.

Works are scheduled to commence on, or about, 6 December and conclude around 20 December 2020 removing up to 140,000 m³ of maintenance dredge material. It is proposed that the *TSHD Brisbane* will operate 24 hours per day, during the contract period, unless regulatory restrictions or operational constraints are imposed.

It should be noted that the level of dredge material within the DMPA must not exceed a maximum of 10 metres below Lowest Astronomical Tide, in accordance with the Environmental Authority to undertaken ERA 16 -dredging (Appendix B). Section 8.3 of the NQBP LTDMP (Appendix E

[NQBP Long Term Dredge Management Plan and Supplementary Report August 2020](#)

Appendix) states that “When currents are present, deposition will occur in arcs in the up-current portion of the spoil ground to take into account drift of sediment as it settles”.

6 Environmental Legislation and Approvals

The primary environmental legislation relevant to this dredging project is briefly discussed below. Should specific legislative matters arise during the project these should be addressed to the PBPL Environment Manager, who will provide advice. If applicable, this advice will be developed in consultation with the NQBP Principal Environmental Advisor.

6.1 State Legislation

There are several pieces of state legislation that relate directly to the management of dredging activities.

6.1.1 Environmental Protection Act 1994

The objective of the *Environmental Protection Act 1994* is to protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends consistent with “ecologically sustainable development”.

The protection of Queensland’s environment is to be achieved by an integrated management program that is consistent with ecologically sustainable development.

The program is cyclical and involves the following phases –

- Establishing the state of the environment and defining environmental objectives;
- Developing effective environmental strategies;
- Implementing environmental strategies and integrating them into efficient resource management; and
- Ensuring accountability of environmental strategies.

Under the provisions of the *Environmental Protection Regulation 2019*, Dredging (extractive and screening activities) is classified as an Environmentally Relevant Activity (ERA) and an Environmental Authority is required to undertake this ERA. Specifically the Act states:

“Extractive and screening activities (the relevant activity) consists of any of the following-

- a) dredging of a total of 1000t or more of material from the bed of naturally occurring surface waters, in a year;*
- b) extracting, other than by dredging, a total of 5000t or more of material, in a year, from an area;*
- c) screening 5000t or more of material in a year.*

NQBP currently holds an Environmental Authority for ERA 16 to undertake maintenance dredging within the Port of Mackay including the placement of dredge material to the DMPA.

NQBP and PBPL have a general responsibility under the EP Act to ensure that no environmental harm (serious or material) or environmental nuisance occurs as a result of its activities. This EMP has been prepared to encompass the components of the works to be undertaken by PBPL, to the extent to which it has control, and will be enacted by the PBPL staff as the working document.

PBPL is a Suitable Operator (No. 647472) registered by the Department of Environment and Science as being suitable to carry out the environmentally relevant activity (ERA). This is required under the *Environmental Protection Act 1994*.

6.1.2 Coastal Protection and Management Act 1995 and Planning Act 2016

The objective of the *Coastal Protection and Management Act 1995* (CPM Act) is to:

- (a) provide for the protection, conservation, rehabilitation and management of the coast, including its resources and biological diversity; and*
- (b) have regard to the goal, core objectives and guiding principles of the National Strategy for Ecologically Sustainable Development in the use of the coastal zone; and*
- (c) ensure decisions about land use and development safeguard life and property from the threat of coastal hazards; and*

- (d) *encourage the enhancement of knowledge of coastal resources and the effect of human activities on the coastal zone.*"

Tidal works is defined in the CPM Act and includes work in, on or above land under tidal water, or land that will or may be under tidal water because of development on or near the land. A tidal work approval essentially approves the engineering design and location of structures (e.g. channels, swing basins, wharves etc).

Tidal work or works within a coastal management district (declared under the CPM Act) requires a development approval now regulated under the *Planning Act 2016*. NQBP have an Operational Work approval for Tidal Work associated with the existing structures within the Port of Mackay and for the Disposal of Dredged Material in Tidal Waters associated with maintenance dredging activities.

6.1.3 Fisheries Act 1994

The purpose of the *Fisheries Act 1994* is to provide for the use, conservation and enhancement of the community's fisheries resources and fish habitats in a way that seeks to:

- (a) apply and balance the principles of ecologically sustainable development; and
- (b) Promote ecologically sustainable development.

Works within a declared Fish Habitat Area or that require disturbance/removal of protected marine plants, may require a development approval under the *Planning Act 2016*. NQBP have an Operational Work approval for the removal, destruction, or damage of marine plants within the DMPA.

6.2 The removal, destruction, or damage of marine plants within the Port of Mackay as a result of maintenance dredging activities, will be undertaken and notified in accordance Section 5.1 of the Department of Agriculture and Fisheries Accepted Development Requirements, if required. Federal Legislation

6.2.1 Environment Protection (Sea Dumping) Act 1981

The *Environment Protection (Sea Dumping) Act 1981* is Commonwealth legislation providing for the protection of the environment by regulating dumping into the sea, incineration at sea and artificial reef placements, and for related purposes.

NQBP hold a Sea Dumping Approval allowing for the disposal of the maintenance dredge material at sea within an approved area, referred to as the DMPA.

6.3 Approvals

NQBP hold the following approvals for the 2020 maintenance dredging works:

- Environmental Authority EPPR01382413.
- Sea Dumping Permit SD2010/1642
- Operational Work for disposal of dredge spoil in tidal waters (2009-18704 SPD)
- Operational Work (Tidal Works) for Port of Mackay infrastructure (PL/04/02/00016 and 2009-18806 SPD)
- Operational Work for Disturbance of Marine Plants within DMPA (2007MA0189).

Copies of all approvals are included in Appendix B of this EMP and will be onboard the dredge at all times.

NQBP will ensure that its dredging operations comply with those conditions of the above approvals for which it is responsible, in accordance with the dredging contractual arrangements. NQBP, as the proponent, is responsible for supplying all relevant information regarding the environmental approvals and associated conditions to the PBPL. NQBP have also reviewed and approved this EMP.

7 Roles and Responsibilities

The approvals for the dredging project include a range of conditions which must be complied with. Some of these conditions relate to operational activities while others relate to broader management issues, environmental monitoring and reporting. Contract negotiations between PBPL and NQBP have clarified responsibility for compliance with the various conditions.

Table 1 provides an outline of the roles and responsibilities of the staff involved in the Mackay maintenance dredging project. This also provides an outline of the Chain of Command and links between parties involved in the project.

Table 1: Roles and responsibilities of key employees associated with the 2020 Mackay maintenance dredging project

Position	Contact Numbers	Responsibility	Reporting to	Contact Numbers
PBPL Staff Onboard TSHD Brisbane				
Vessel Master	Vessel Master 0417 003 264	Responsible for all aspects of vessel shipboard management	Dredging Operations Manager	Michel Willemen 3258 4806 076 800 593 michel.willemen@portbris.com.au
Chief Engineer	Chief Engineer 0407 691 602	Responsible for operation and maintenance of onboard machinery	Vessel Master	Vessel Master 0417 003 264
PBPL Staff On-Shore				
Site Representative	Brendan Elliott 0425 261 586	Management of day to day operations of project	Dredging Operations Manager	Michel Willemen 3258 4806 076 800 593 michel.willemen@portbris.com.au
Dredging Operations Manager	Michel Willemen 3258 4806 0476 800 593 Michel.willemen@portbris.com.au	Management of overall operations of dredger.	Chief Operating Officer	Peter Keyte 3258 4620 0423783391 peter.keyte@portbris.com.au
Environment Manager	Craig Wilson 3258 4848 0467 768 899 craig.wilson@portbris.com.au	Responsible for undertaking monitoring of EMP implementation	Chief Development Officer	David Keir 3258 4626 0419 021 839 david.keir@portbris.com.au
Chief Operating Officer	Peter Keyte 3258 4620 0423783391 peter.keyte@portbris.com.au	Responsible for overall management of the Corporation's dredging activities	Chief Executive Officer	
NQBP Staff				
Principal Environmental Advisor	Odette Langham 07 4969 0761 0419 176 738 olangham@nqbp.com.au	Environmental Management	Director Environment	Kevin Kane 07 4969 0734 0409 898 022 kkane@nqbp.com.au
Project Coordinator	Spyros Gerontopoulos 07 4969 0715 0478 663 321 SGerontopoulos@nqbp.com.au	Clients Overall Project Management	Principal Asset Manager	John Hinschen 07 4955 8128 0437 541 673
MSQ Contacts				
Regional Harbour Master	Jason Britton 4944 3701 0418 872 478 Jason.d.britton@msq.qld.gov.au	Contact for hazardous spills and shipping safety issues		

8 Environmental Management Plan

The purpose of the Environmental Management Plan (EMP) is to:

- Identify the potential hazards associated with undertaking the dredging and dredge material placement works;
- Identify the appropriate mitigation measures for each potential environmental hazard; and
- Indicate the corrective actions to be undertaken if an undesirable impact or unforeseen level of impact occurs.

It should be noted that PBPL is operating as a contractor for NQBP to undertake the dredging works. Ultimate responsibility for the project lies with NQBP and this EMP provides a description of only those components within the control of the PBPL. Other compliance monitoring and reporting issues are to be addressed by NQBP.

Records will be maintained for all PBPL personnel instructed in the requirements of this EMP. This will include crew onboard the *TSHD Brisbane* and onsite shore support personnel.

The sections below provide an outline of the structure and details of the component management plans.

8.1 Structure

Each of the Management Plans within this document follows the structure outlined in Table 2 below.

Table 2: Management plan structure and components

Item	Content
Element	Aspect that requires management.
Objective	What is intended to be achieved.
Actions	Tasks that will be undertaken to ensure Objective is met.
Performance Indicators	Qualitative or quantitative measurement to gauge objective.
Monitoring	Details of measurement of performance indicators.
Reporting	Nature, timing and responsibility for reporting results.
Corrective Action	Action to be taken if monitoring indicates objective is not being met.
Term	Active term of management plan.
Responsibility	Delegation/nomination of responsibilities for overseeing management plan operation.

8.2 Management Plans

The following elements have been identified as issues requiring specific management to avoid unacceptable environmental impacts, and management plans have been developed accordingly.

All compliance monitoring is to be conducted by NQBP.

Waste – The general categories of waste have been defined as follows:

- General garbage (refuse generated from crew);
- Comingled recycled waste including paper, plastics, metals and glass;
- Paper and cardboard waste;
- Sewage waste (including both black and grey waters); and
- Oily water, oil wastes and other hazardous or regulated wastes such as greases, paints and chemicals.

Emissions (Noise / Vibration / Light / Air Quality) – The generation of emissions during vessel operation and potential impacts on sensitive receptors forms the basis of this management plan. Please note that issues of workplace noise and vibration are controlled and managed under existing occupational health and safety protocols within the vessel's safety management system.

Turbidity – Whilst this management plan aims to limit the generation of plumes as much as practical, the principal management response will be to ensure that dredging operations are only undertaken within approved areas and the vessels turbidity control/minimisation features are fully operational. Water quality monitoring of the dredging works (if required) will be undertaken by NQBP in accordance with relevant approval conditions.

Protected Marine Fauna – This management plan addresses the potential for the *TSHD Brisbane* to directly impact on protected marine fauna during dredging (e.g. capture of marine turtles in dredge head), transit (collision) or dredge material placement operations. Overarching issues of secondary impacts such as habitat disturbance are beyond the scope of this document and would have been addressed in impact assessments associated with the original capital works approvals, or site-specific considerations by regulatory authorities when issuing necessary licenses/permits.

Cultural Heritage – PBPL has not been made aware of the presence of items of known cultural significance within or adjacent to the dredging or disposal area that requires protection from potential impacts from dredging. As such, this management plan is generally in the scope of maintaining a watch on dredge material for unanticipated items of cultural significance.

Ballast Water – The *TSHD Brisbane* has relatively small ballast water tanks which are only discharged in special circumstances (e.g. light draft required for shallow water (<3m) work). Ballast water will be managed in accordance with the Commonwealth's *Biosecurity Act 2015*. To further minimise the risk of translocation of exotic organisms, fresh water is used to fill the ballast tanks when possible.

Vessel Washdown – This management plan is applicable to areas where wash waters may flow directly overboard, such as the deck and dredge head.

Bunkering of Fuel – Refuelling the *TSHD Brisbane* occurs by vessel-to-shore connection. There is the potential for fuel spill/leaks to enter the waterways however this risk is controlled by operating procedures and use of licensed contractors to perform the fuel transfer.

8.3 Waste Management

8.3.1 General and Recycling Wastes

The *TSHD Brisbane* is fitted with one 3m³ general waste bin, one 1.5m³ paper waste bin, 4 x 240L comingled recycling bins and 2 x container green bags for the collection of on-board wastes. These are fitted with secured lids to prevent material being blown overboard during either storage or handling. An approved contractor collects the bins fortnightly when the vessel is alongside port reception facilities during reprovisioning/crew-change operations.

Further details are contained within the Waste Management Plan (section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual).

Element	Waste Management - General and Recycling Wastes
Objective/Target	To ensure that general refuse produced on-board the <i>TSHD Brisbane</i> is collected, retained and transferred to an appropriate facility without unintentional loss.
Actions	<p>During at-sea operations:</p> <ul style="list-style-type: none"> • Supply of appropriate collection bins in areas such as galley, crew quarters and mess. • Transfer of bins as required to large bins on-deck. • All on-deck bins secured in position to prevent movement whilst at sea. • Material placed in bin to be as compacted as possible to reduce space requirements. • Where facilities exist to recycle material, appropriate separation of refuse. • Bin lids to be chained down to prevent wind- blown material loss at all times. • All collection points to be emptied to on-deck bin when 75% capacity. • Visual check to ensure that on-deck bins have sufficient capacity to retain general waste until next scheduled on-shore transfer. <p>During transfer:</p> <ul style="list-style-type: none"> • Licensed collector to be used to collect general refuse for transfer to approved facility. • Bin lids to be chained in position during transfer to prevent material loss.
Performance Indicators	No loss of general refuse over-board during collection, storage or transfer.
Monitoring	Regular visual assessment of collection points. Visual inspection of on-deck bins.
Reporting	Reporting of material loss over-board to Vessel Master and NQBP in accordance with incident reporting protocol detailed in Section 9 of this EMP.
Corrective Action	If practicable, retrieve material that was lost. Review procedure causing material loss and rectify immediately.
Term	During all operations.
Responsibility	Vessel Master.

8.3.2 Sewage Treatment

The *TSHD Brisbane* is fitted with a modular sewage treatment system, which treats all onboard blackwater and greywater. Although this system is IMO approved and designed to meet the requirements of the *Queensland Transport Operations (Marine Pollution) Regulation (2018)* for Grade A treated sewage, current monitoring indicates that the system is not treating the effluent to the standard required to enable its discharge as 'treated sewerage'. The system is designed to either discharge treated effluent automatically, or divert the effluent to a holding tank for later discharge. Until such time as the effectiveness of the sewerage treatment system can be improved and is proven to meet the required treatment standards, all effluent produced by the system is considered to be 'untreated' and is diverted to the holding tank and only discharged in a location that is designated for untreated sewerage discharge.

Further sewerage treatment details are contained within the following documentation:

- Waste Management Plan (section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual) and AMSA waste logbook;
- Sewage Log Book (Includes effluent discharge locations, effluent discharge log, in-house sludge assessments and discharge log and independent effluent assessment); and
- Aquamar Bio-Unit type MSP I Sewage Treatment Plant - Complete Manual.

Element	Waste Management – Sewage Treatment
Objective/Target	To ensure sewage generated on-board is appropriately treated and releases are managed.
Actions	<p>During at-sea operations:</p> <ul style="list-style-type: none"> • All sewage effluent (including greywaters and blackwater) generated onboard shall be directed to the onboard treatment system. • Treated effluent shall be diverted to onboard holding tanks • Effluent from the treatment system and holding tank is to be discharged in appropriate locations to ensure compliance with relevant legislation (see Appendix A - Untreated sewage discharge- which includes a plan showing restricted locations for discharge of untreated sewerage for Mackay). • Sludge tank to be pumped out as required by Chief Engineer. Operation of the sewage treatment system is in accordance with the Waste Management Plan (section A20 of the TSHD Brisbane Operational and Administration Procedures Manual). Chief Engineer coordinates with Vessel Master as to when discharge occurs. • Pump-out of sludge tank to be managed as for untreated sewage discharges and, by way of appropriately licensed contractors where required. <p>Service records:</p> <ul style="list-style-type: none"> • The sewage treatment system is to be managed and maintained as described in the sewage treatment manual), operational procedures manual, sewage log book and MP2.
Performance Indicators	<p>No sewage discharge within an area that prohibits the discharge of untreated sewerage.</p> <p>All sea valves are Lloyds certified, and inspected and overhauled, during every out of water refit.</p>
Monitoring	Vessel Master to monitor vessel location during sewerage discharge events to ensure vessel is not within an area that prohibits the discharge of untreated sewage.
Reporting	Reporting of sewerage discharge location in Sewage Log Book.
Corrective Action	Review procedure resulting in sewerage discharge in prohibited location and rectify immediately.
Term	During all operations.
Responsibility	Management and operation of on-board system is by the Vessel's Chief Engineer. Ensuring sewerage discharge is not within a prohibited location is by the Vessel's Master.

8.3.3 Hazardous Waste

Hazardous waste includes waste oils, oily water, oil sludge, chemicals and paints. The vessel is fitted with two 240 L hazardous waste bins for oily rags and oil filters which are serviced by appropriately licensed contractors when required. Oily water is contained within the bilge water holding tank and is discharged onshore by a licensed contractor. Oils are recycled through the engine until the waste oil forms a sludge which is transferred to a holding tank for onshore pumpout by a licensed contractor. Any minor amounts of hazardous waste materials are contained in designated hazardous waste bins and stored in bunded areas until discharge onshore.

Further details are contained within the Waste Management Plan (section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual).

Element	Waste Management – Hazardous Waste
Objective/Target	To ensure hazardous waste generated on-board is appropriately managed.
Actions	<p>During at-sea operations:</p> <ul style="list-style-type: none"> All hazardous waste to be stored in appropriate manner and clearly marked in accordance with legislative requirements. <p>During transfer:</p> <ul style="list-style-type: none"> Hazardous waste to be collected by licensed contractor only, for disposal at approved facility. All procedures to minimise spills during transfer of hazardous waste to contractor shall be followed. Spill response equipment shall be easily identifiable and conveniently located. Disposal of all hazardous waste to be recorded in accordance with the requirements of section A20 of the <i>TSHD Brisbane</i> Operational and Administration Procedures Manual
Performance Indicators	No inappropriate storage, disposal or spill of hazardous wastes.
Monitoring	Reporting by all crew of any observations of inappropriate storage, handling or spill of hazardous wastes.
Reporting	Exception reports directly to Vessel Master.
Corrective Action	Vessel Master to assist with clean up of spill, review procedure breakdown and correct if required. This may include staff training.
Term	During all operations.
Responsibility	Management and operation of on-board system is by the Vessel Master, with input from Environment Manager PBPL as required.

8.4 Emissions

The *TSHD Brisbane* is fitted with modern and fully maintained emission reduction devices to limit emissions generated during works as much as possible. Further, the nature of the works is such that the potential for disruptive noise, vibration, light or air quality to sensitive places (e.g. residential areas) is limited by distance.

Element	Emissions Management
Objective/Target	To ensure emissions generated by operation of the <i>TSHD Brisbane</i> does not unduly impact adjacent areas.
Actions	<p>Noise</p> <ul style="list-style-type: none"> All noise reduction equipment to be maintained as per manufactures' specifications. Where the vessel is operating in an especially noise sensitive environment (e.g. close proximity to residential areas), crew are to be informed to minimise noise where possible. All noise from activities must not exceed the acoustic quality objectives specified in the <i>Environmental Protection (Noise) Policy 2019</i>. <p>Light</p> <ul style="list-style-type: none"> All lighting to be maintained as per manufacturers' specifications Where practicable, LED lighting will be used to provide more direct illumination of tasks and reduce light spill. Use of external vessel lighting will be minimised unless required for safety purposes <p>Air quality</p> <ul style="list-style-type: none"> All combustion plant particularly main and auxiliary engines to be maintained as per manufactures' specifications. Appropriate adjustment of trim and ballast to ensure effective operation. Exhaust stack to be visually monitored to ensure no visual dark emissions <p>Vibration</p> <ul style="list-style-type: none"> All equipment on board the <i>TSHD Brisbane</i> to be maintained as per manufacturers' specifications.
Performance Indicators	No emissions-based complaints regarding the operation of the vessel.
Monitoring	All complaints recorded in appropriate system and forwarded to Vessel Master and Environment Manager. If necessary (e.g. if requested by DES) noise shall be monitored to determine the level of impact.
Reporting	Any complaints to be reported to Vessel Master, PBPL Environment Manager and PBPL Manager Dredging Operations. NQBP will be advised in accordance with the Reporting protocol detailed in Section 9 of this EMP (refer also to Section 10.1) Annual review of all complaints received and follow-up action undertaken.
Corrective Action	Vessel Master to investigate source of complaint. If this relates to inappropriate work practices, inform crew of necessary changes and ensure these are undertaken. If complaints relates to plant, investigate effectiveness of emissions reduction equipment and review/replace as required.
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from Environment Manager as required.

8.5 Turbidity Control

PBPL will ensure that the dredging operation minimises turbidity production to reduce impacts to adjacent marine resources, such as seagrasses. The *TSHD Brisbane* is fitted with a range of best practice design features (e.g. central column weir anti-turbidity valve and below keel discharge) to minimise production of turbid waters.

Any turbidity monitoring (direct or indirect) of the dredging works will be undertaken by NQBP in accordance with their monitoring program detailed in their approved LTDMP and Supplementary Report August 2020.

Element	Turbidity Management
Objective/Target	To ensure turbid plumes generated by operation of the <i>TSHD Brisbane</i> are minimised.
Actions	<ul style="list-style-type: none"> • Within the practicalities of the vessel, minimise the generation of plumes by control of the discharge weir system. • Ensure dredging and dredge material placement is undertaken within the approved areas only by reference to electronic navigation aids and visual marks as required. • Observe all site-specific requirements, which may influence dredging times or the use of overflow dredging (e.g. tides, wind direction and velocity etc.).
Performance Indicators	No dredging or placement of material outside approved areas.
Monitoring	Review of vessel dredging and placement tracks against approved area boundaries.
Reporting	Reporting of turbidity incidents immediately to Vessel Master, Manager Dredging Operations and Environment Manager. NQBP will be advised in accordance incident reporting protocol detailed in Section 9 of this EMP. Reporting by NQBP of any turbidity issues identified by monitoring activities to Vessel Master.
Corrective Action	Vessel Master to investigate the reason for any release of dredged material outside the nominated DMPA and take appropriate action. NQBP to determine if corrective action to reduce turbidity production is required. Vessel Master to develop and implement appropriate corrective action in consultation with Marine Operations Manager (corrective actions may include reduction in load size, no overflow dredging, etc).
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from PBPL Marine Operations Manager and PBPL Environment Manager as required. NQBP is responsible for determining if turbidity levels from the dredging works are exceeding acceptable levels and determining if corrective action is required.

8.6 Protected Marine Fauna

The following procedure outlines the management to be put in place to minimise the risk of harming turtles, dugongs and cetaceans during maintenance dredging operations. In the event of an incident, contacts are to be followed as outlined in this document.

Element	Protected Marine Fauna
Objective/Target	To ensure the minimisation of the capture of, or harm to, protected marine fauna during maintenance dredging and dredge material placement process.
Actions	<ul style="list-style-type: none"> • Dredging and material placement only in approved areas. • Turtle excluders must be fitted during all operations. • Load to be inspected on an opportunistic basis for marine fauna remains. • Procedure for minimising turtle capture as set out in <i>Dredging and Dredged Material Management Plan – TSHD Brisbane</i> to be followed. Refer to extract below and marine fauna incident report kit (Appendix C). • Final suction at the dredge head will be minimised when not in contact with the sea bed. • Vessel watch personnel to maintain watch in high risk areas and take necessary action where risk of collision exists. • Before commencing dredging, transport of dredge material to the DMPA or placement of dredge material at the DMPA, the area within 300m from the vessel (the monitoring zone) shall be observed for the presence of marine species (e.g. whales or dugongs). • If marine species (e.g. whales, dolphins, dugongs and marine turtles) are observed within the monitoring zone, dredging, transport of dredge material to the DMPA or placement of dredge material at the DMPA may not commence for 20 minutes after the last marine species has been sighted within the monitoring zone, or the vessel has moved to another area of the disposal site where it can maintain a minimum distance of 300m between the vessel and any marine species. • Record of all marine species observed within the ‘monitoring zone’ (300m radius of the vessel) on every run, and during placement activity (recording date, time and approximate distance from the vessel),
Performance Indicators	No dredging or placement of material outside approved areas. No capture of, or harm to, protected marine fauna.
Monitoring	Review of vessel dredging and placement tracks against approved area boundaries. Load to be inspected on an opportunistic basis for marine fauna remains. Visual monitoring of ‘monitoring zone, in accordance with sea dumping permit conditions.
Reporting	Reporting of exceptions immediately to Vessel Master, PBPL Marine Operations Manager and Environment Manager (including time, nature of incident, species involved - for turtles refer to extract below for additional documentation requirements). This reporting requirement is irrespective of whether the fauna is dead or alive. NQBP to be urgently advised by PBPL (via Environment Manager), in accordance with incident reporting protocol detailed in Section 9 of this EMP. This will enable NQBP to notify the regulator(s) within 24 hours, in accordance with the conditions of the sea dumping approval and Environmental Authority.
Corrective Action	Vessel Master to investigate reason for exception and take appropriate action.
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from Environment Manager as required.

Extract from *Dredging and Dredged Material Management Plan (2016)*, regarding 'TSHD Brisbane - Procedure for Dredging with Regard to Marine Turtles'

1. *Dredge drag-heads are to be fitted with turtle deflectors during all operations.*
2. *Where dredging without turtle deflectors is intended, the prior written authority of the Manager Marine Operations must be obtained. This authority is to be developed in conjunction with the Environment Manager regarding a risk assessment of the potential of turtle capture.*
3. *A visual inspection of the deflectors will be made when the drag-heads are recovered after each load. The inspection shall note damage and/or excessive wear which may inhibit the effectiveness of the device.*
4. *The patterns of wear on the deflector shall be noted to provide a constant check that they are functioning efficiently, maximising both the use and life of the unit.*
5. *Notification to be provided to vessel master as soon as possible if the deflectors require repairs. Repairs to be made at the earliest opportunity.*
6. *Initial suction at the dredge head (start dredging) will be minimised when not in contact with bed. This shall include:*
 - *initiating dredge pumps as late as possible in descent of head;*
 - *running pumps at the slowest possible speed.*
7. *Final suction at the dredge head (end dredging) will be minimised when not in contact with bed. This shall include:*
 - *stopping dredge pumps as soon as possible in ascent of head;*
 - *running pumps at the slowest possible speed.*
8. *When lowering the drag heads, the trunnion should be lowered first. Once the drag heads are in the water, the jets pumps will be activated. These will remain in action until the swell compensator comes off indicating that the heads are in contact with the bed. The jets can then be turned off.*
9. *In raising the heads, the jet pumps should be turned on before the heads leave the bed. The procedure should then be followed as in 7 above. The jets will remain on until the head is at the water's surface.*
10. *The speed of the vessel will be minimised at all times when the heads are off the seabed. This shall include initial deployment and recovery at the end of a dredge run. At no time shall the speed of the vessel exceed normal dredging speed while the heads are in the water, whether clear of the bed or not. The vessel should maintain minimal headway to ensure the jet pump curtain protects the heads.*
11. *In the unfortunate event a turtle is caught in the drag-head, the on duty dredge master shall report this immediately on the prescribed form and advise the master as soon as possible.*
12. *Reports to be completed on the respective forms. Inspect animal for tags, especially on front flippers. If present, note details and if possible, retain tag for forwarding to Environment Manager.*

8.7 Cultural Heritage

Cultural heritage refers to both European and Indigenous heritage issues.

Element	Cultural Heritage
Objective/Target	To ensure maintenance dredging operations do not disturb/destroy items of European or non-European cultural significance.
Actions	Ensure dredging and dredge material placement is undertaken within the approved areas only by reference to electronic navigation aids and visual marks as required. Undertake opportunistic visual inspection of dredge load and dredge heads, reporting any items of suspected cultural significance. If items are found, retain and report to relevant authorities through Vessel Master, Environment Manager and NQBP. Observe all site-specific requirements which may influence dredge operations.
Performance Indicators	No disturbance of items of cultural significance.
Monitoring	Opportunistic inspection of the dredged material for evidence of items of cultural heritage significance. Monitoring of dredge movement through use of electronic aids to ensure it is within designated area.
Reporting	Reporting of exceptions to Vessel Master and Environment Manager. Any evidence of items of cultural heritage significance will be reported to NQBP in accordance the reporting protocol detailed in Section 9 of this EMP.
Corrective Action	Vessel Master to investigate reason for exception and take appropriate action.
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from Environment Manager as required.

8.8 Ballast Water Management

Ballast water from the *TSHD Brisbane* will be managed in accordance with the *Biosecurity Act 2015*. Given all dredging will occur within Port limits there is a low risk associated with the ballast water. The *TSHD Brisbane* operates under an approved Ballast Water Management Plan and utilises only low risk (i.e. freshwater) ballast at all times unless operational safety requirements require the uptake of seawater. The vessel also holds an exemption certificate from the requirements of the IMO Ballast Water Management Convention. In accordance with the exemption certificate, seawater will only ever be taken up (and therefore require discharge) if it is necessary to maintain vessel safety.

Element	Ballast Water Management
Objective/Target	To ensure that the risk of translocation of organisms in ballast water by the <i>TSHD Brisbane</i> is minimised.
Actions	<ul style="list-style-type: none"> • Potable water will be used for all ballasting. • High pressure washdown of all infrastructure (dredge head, hopper and associated dredging structures) prior to arriving at and departing the Port of Mackay
Performance Indicators	No release of high risk ballast water during operations.
Monitoring	Review of log of ballast/de-ballasting operations.
Reporting	Vessel Master to maintain record of operations and review for non-conformances.
Corrective Action	Review procedure causing release and rectify immediately.
Term	During all operations.
Responsibility	Vessel Master.

8.9 Vessel Washdown

This management plan relates to the washing of the dredge head (to remove compacted sediment) or the deck (to remove splashes from the hopper/drips from the dredge heads) of the *TSHD Brisbane*. Prior to washing, preference shall be given to sweeping the deck and/or equipment.

Element	Vessel Washdown
Objective/Target	To minimise the potential for contaminants to enter the environment.
Actions	Sweeping of deck in preference to washing where possible. Washdown of the deck and or dredge head shall only occur within the designated dredging or disposal areas. Only dredged material to be release as a result of vessel washing activities (i.e. no release of oil or other contaminants)
Performance Indicators	No inappropriate use of degreasers or washdown in undesignated areas. No release of contaminants to the receiving environment.
Monitoring	Reporting by crew of any observations of contamination to the waterway whilst washing the deck/equipment.
Reporting	Exception reports directly to Vessel Master.
Corrective Action	Vessel Master to assist in clean up spill, review procedure breakdown and correct if required. This may include staff training.
Term	During all operations.
Responsibility	Management and operation of on-board system is by the Vessel Master, with input from Environment team as required.

8.10 Hopper Management

This management plan relates to the washing of the dredge hopper of the *TSHD Brisbane*. The *TSHD Brisbane* hopper shall be washed to minimise the translocation of marine organisms prior to leaving the Port of Brisbane for other ports. Hopper washing activities shall only be conducted at the Dredge Material Placement Area and contained within this designated area by giving consideration to weather and current conditions. To minimise the discharge of materials from the hopper, washing will only be conducted subsequent to pump out at the approved Port of Brisbane reclamation area.

Element	Hopper Washing
Objective/Target	To minimise the release potential contaminants including the translocation of marine organisms to the environment. To perform hopper washing activities in an approved area and in such a way that the material be contained within the area.
Actions	<ul style="list-style-type: none"> • Washdown of hopper from time to time and when <i>TSHD Brisbane</i> leaves the Port of Brisbane port area for other destinations. • Washdown of the hopper within the designated placement area. • Washdown of the hopper subsequent to discharge of material to approved reclamation or placement area. • Consideration of weather and current conditions prior to discharge in Dredge Material Placement Area. • During discharge the <i>TSHD Brisbane</i> will move in such a way that the dislodging of material is assisted by the vessel movement.
Performance Indicators	No discharge of materials outside the designated hopper washing area (ie, dredge material placement area and PBPL reclamation area). No translocation of marine organisms to other Ports.
Monitoring	Reporting by crew of any observations of visual turbidity plumes outside the designated area. Reporting and/or observations of marine organisms foreign to the area of the current dredge location.
Reporting	Exception reports directly to Vessel Master.
Corrective Action	Vessel Master to review procedure for discharging hopper washing and correct if required. This may include staff training.
Term	During all operations.
Responsibility	Management and washing operations is by the Vessel Master, with input from Environment Team as required.

8.11 Bunkering of fuel

The *TSHD Brisbane* uses only ultra low sulfur fuel and regularly refuels by the use of a licensed contractor, typically during provisioning/crew change operations. While this plan is presented in this document to address bunkering operations, the *TSHD Brisbane* has an Australian Maritime Safety Authority (AMSA) approved Oil Spill Response Plan on board as part of the ISO 9004 accredited documentation.

Element	Bunkering of Fuel
Objective/Target	To ensure bunkering of fuel to the <i>TSHD Brisbane</i> is appropriately transferred and spillage is prevented.
Actions	During land transfer: <ul style="list-style-type: none"> • Licensed contractor is used to transfer fuels and levels shall be monitored. • All appropriate spill kit equipment will be on site and all personnel will be trained in the use of spill kits.
Performance Indicators	No spills or leaks during fuel transfer.
Monitoring	Visual inspections of fuel-dispensing equipment during fuel transfer.
Reporting	Reporting of spills/leaks to Vessel Master in the first instance, then PBPL Marine Operations Manager and Environment team.
Corrective Action	In the event of a major spill, call Emergency Spill Response team for corrective action in accordance with the <i>TSHD Brisbane</i> Emergency Management Manual. All minor spills will be cleaned up or contained until further assistance (if required). Vessel Master to investigate source and cause of spill or inappropriate work practices. Change to operating procedures and inform crew.
Term	During all operations.
Responsibility	Management and operation of bunkering of fuel is by the Vessel Master.

9 Incident Reporting

Reporting protocols for emergency incidents (e.g. major oil spill) are discussed in Section 10.

Non-emergency reporting requirements for EMP non-conformances are outlined in the above tables. To ensure NQBP and PBPL are adequately informed of incidents, or non-conformances with this EMP:

- The PBPL internal reporting system will be maintained; and
- NQBP will be advised of all incidents via the following protocol:
 1. The Vessel Master will liaise directly with the PBPL Dredging Operations Manager (DOM) and/or the Environment Manager (EM).
 2. Following discussion, the appropriate PBPL staff member (either Vessel Master, DOM or EM) will verbally report the incident to the following NQBP locations/staff:
 - NQBP Principal Environmental Advisor (Odette Langham 07 4969 0761 or 0419 176 738)
 3. Written incident reporting will be communicated to NQBP using the forms contained in Appendix C within three working days. These will be completed by the Vessel Master and forwarded by the PBPL DOM and/or EM. The DOM or EM will forward to NQBP and maintain close liaison to ensure full information disclosure.

10 Environmental Monitoring

PBPL will be responsible for the following environmental monitoring components during the Port of Mackay maintenance dredging project. The remaining components of the monitoring will be managed by NQBP with input from PBPL as required.

10.1 Environmental Complaints

Any complaints received by PBPL staff relating to the operation of the *TSHD Brisbane* will be recorded as part of standard operating procedures of the PBPL's Integrated Management System. Complaints will be recorded on the appropriate form and forwarded to the Vessel Master. The Master will then initiate actions to resolve/investigate the complaint as required, with assistance from PBPL staff (e.g. Environment Manager) as necessary. Prior to a response the NQBP Principal Environmental Advisor will be contacted and the course of action will be discussed. A copy of all complaints will be forwarded to NQBP when the item has been closed.

Issues which are not directly related to the operation of the *TSHD Brisbane*, but are related to the Mackay dredging project will be forwarded to the NQBP Principal Environmental Advisor. Whilst feedback on the resolution of the issue will be sought for recording on PBPL systems, the management of the issue will be the responsibility of NQBP.

10.2 Dredging Activity and Observations

The crew of the *TSHD Brisbane* will keep a record of dredging activity which will be forwarded to NQBP upon completion of the dredging program and is available upon request throughout the campaign. Such information will include

- Times and dates of when each material placement run is commenced and finished;
- begin and end points of dredge runs;
- GPS track for each material placement run;
- GPS track for each dredge run;
- material type;
- volume of dredged material dumped;
- location of material disposal;
- the person(s) undertaking the marine species observation;
- volume of fuel used in the project; and
- other pertinent observations as part of the standard vessel operating procedures.

10.3 Turbidity

TSHD Brisbane crew will make all attempts to utilise the onboard features (e.g. flooded weir, submerged outlet) to minimise the generation of turbidity plumes as outlined in Section 8.4. Opportunistic visual observations of this discharge will be used by the crew to ensure all efforts made are effective.

The crew of the *TSHD Brisbane* will also undertake opportunistic visual observations of the dredge and disposal areas. Should significant residual turbidity, this will be reported to the PBPL Site Representative for communication to the NQBP Superintendents Representative.

10.4 Cultural Heritage

Opportunistic visual inspections of dredge load and dredge heads will be completed by vessel staff reporting any items of suspected cultural significance. If items are found they will be retained and reported as outlined in Section 8.7.

10.5 Protected Fauna

During loading and disposal operations observation and avoidance of marine species, including turtles, dugong and cetaceans (within the 300m 'monitoring zone' radius) will be made and any observations actioned as per Section 8.6. The observation records must include the name(s) of the person(s) undertaking the marine species observation for each run.

10.6 Introduced Marine Pests

As the vessel was recently interstate in Melbourne, an Introduced Marine Pest (IMP) survey was undertaken on the vessel on 29 April 2020 whilst in Cairns. Divers were instructed to pay particular attention to 'hard shelled' biofouling and look for mussels (since mussels are the primary species of concern with respect to potentially translocating invasive marine species from Melbourne to North Queensland).

Results of the survey indicate that there were no mussels on the vessel hull (i.e. no mussels visible to human eye on any hull areas accessible by divers). Hard shelled biofouling was predominantly (native) barnacles. No marine species that are on the marine pest 'watch list' for Queensland were identified.

The colonial sea squirt (*Didemnum perlucidum*) has been detected in the Mackay region. To prevent the translocation of this species outside the Port of Mackay, the *TDSH Brisbane* will use potable water for ballast and undertake high pressure washdown of dredging infrastructure prior to departing Port of Mackay.

11 Emergency Procedures

The *TSHD Brisbane* maintains a Shipboard Oil Pollution Emergency Plan, which outlines the role, responsibilities and actions to be followed should an uncontrolled release of oils/fuels occur. PBPL will also comply with the Emergency Response Section 8.4 of NQPB LTDMP (pg 95). Further, all crew are trained and accredited in accordance with the Australian Maritime Safety Authority (AMSA) requirements for Australian Coastal voyages.

The vessel is part of the PBPL's work site, which is accredited to AS4801 Safety Management System. As part of this system, all onboard procedures are available to all crew in a written format in the Operational Procedures Manual and Vessel Log, maintained by the Vessel Master.

The vessel has four lines of communication available at all times, including VHF and UHF radio, mobile satellite phones.

11.1 Emergency contact details

Table 3 below contains emergency contacts details applicable to operations at the Port of Mackay.

Table 3: Emergency contact details

Reporting to	Contact Numbers
AMSA Marine Incident Reporting	
Mobile	1800 641 792
Satellite	00612 6230 6811
Maritime Safety Queensland	
Office	13 74 68
Harbour Master (Mackay)	
Office	4944 3700
Mobile	0418 872 478
Port Control (Mackay)	
Office	4955 8147
Mobile	0417 761 086

Appendix A

Untreated Sewage Discharge Mackay

The discharge of untreated sewage, is required to comply with s47 of Transport Operations (Marine Pollution) Act 1995 (TOMPA), Schedule 4 of Transport Operations (Marine Pollution) Regulation 2008 (TOMPR) and section 93 of the Great Barrier Marine Park Regulation 1983 (GBMPR) as prescribed below.

Transport Operations (Marine Pollution) Act 1995 (TOMPA)

Section 47

Discharge of untreated sewage into nil discharge waters for untreated sewage prohibited

1. If untreated sewage is discharged from a ship into nil discharge waters for untreated sewage, each culpable person for the discharge commits an offence.

Maximum penalty—850 penalty units.

2. The nil discharge waters for untreated sewage are the coastal waters prescribed under a regulation for this section.

Transport Operations (Marine Pollution) Regulation 2008 (TOMPR)

Section 44

Nil discharge waters for untreated sewage

For section 47 of the Act, the nil discharge waters for untreated sewage are—

- a) on and from 1 September 2008 to 31 December 2009—the coastal waters stated in schedule 4, part 1; and
- b) on and from 1 January 2010—the coastal waters stated in schedule 4, part 2.

Schedule 4; Part 2

Nil discharge waters for untreated sewage

(On and from 1 January 2010)

1. Prohibited discharge waters.
2. Smooth waters.
3. If a ship has 16 or more persons on board – Hervey Bay waters, Northern Moreton Bay waters and open waters.
4. Hervey Bay waters and northern Moreton Bay waters, within 1852m of any of the following—
 - a) aquaculture fisheries resources;
 - b) a reef;
 - c) the mean low water mark of the mainland;
5. Open waters—
 - a) within 926m of a wharf or jetty other than a jetty that is a marina; or
 - b) within 1852m any of aquaculture fisheries resources; or
 - c) if a ship has 7 – 15 persons on board – within 1852m of any of the following—
 - (i) a reef;
 - (ii) the mean low water mark of an island or the mainland.

Definitions:

prohibited discharge waters means waters of any of the following—

- a) a boat harbour;
- b) a canal;
- c) a marina;
- d) a designated area.

a designated area means each of the following areas—

- a) the marine national park zone under the *Marine Parks (Moreton Bay) Zoning Plan 2008*;
- b) the Noosa River;
- c) the marine national park zone, under the *Marine Parks (Great Sandy) Zoning Plan 2006*, located near Burkitt's Reef, Hoffman's Rocks or Barolin Rock, adjacent to the Woongarra Coast;
- d) an area within the Great Barrier Reef Coast Marine Park mentioned in schedule 8.

smooth waters means the waters defined as smooth waters under the Transport Operations (Marine Safety) Regulation 2004, schedule 15, but not including—

- a) the waters described in schedule 12 of that regulation that are within 0.5n miles from land; and
- b) prohibited discharge waters.

Hervey Bay waters means the waters of Hervey Bay, other than prohibited discharge waters, within a boundary drawn—

- from Burrum Point on the mainland to the Fairway Beacon, Hervey Bay
- to Rooney Point, Fraser Island
- along the western shore of Fraser Island to latitude 25°22.90' south
- to latitude 25°24.90' south, longitude 152°58.06' east
- due west to the mainland at latitude 25°24.90' south.

Northern Moreton Bay waters means the waters of Moreton Bay, other than prohibited discharge waters, within a boundary drawn—

- from latitude 27°06' south on the mainland to South Point, Bribie Island
- along the southern shore of Bribie Island to Skirmish Point
- to Comboyuro Point, Moreton Island
- along the western shore of Moreton Island to Reeders Point
- to Amity Point, North Stradbroke Island
- to Cleveland Point on the mainland.

open waters means coastal waters, other than Hervey Bay waters, northern Moreton Bay waters, prohibited discharge waters and smooth waters.

Great Barrier Reef Marine Park Regulations 1983

Section 93D

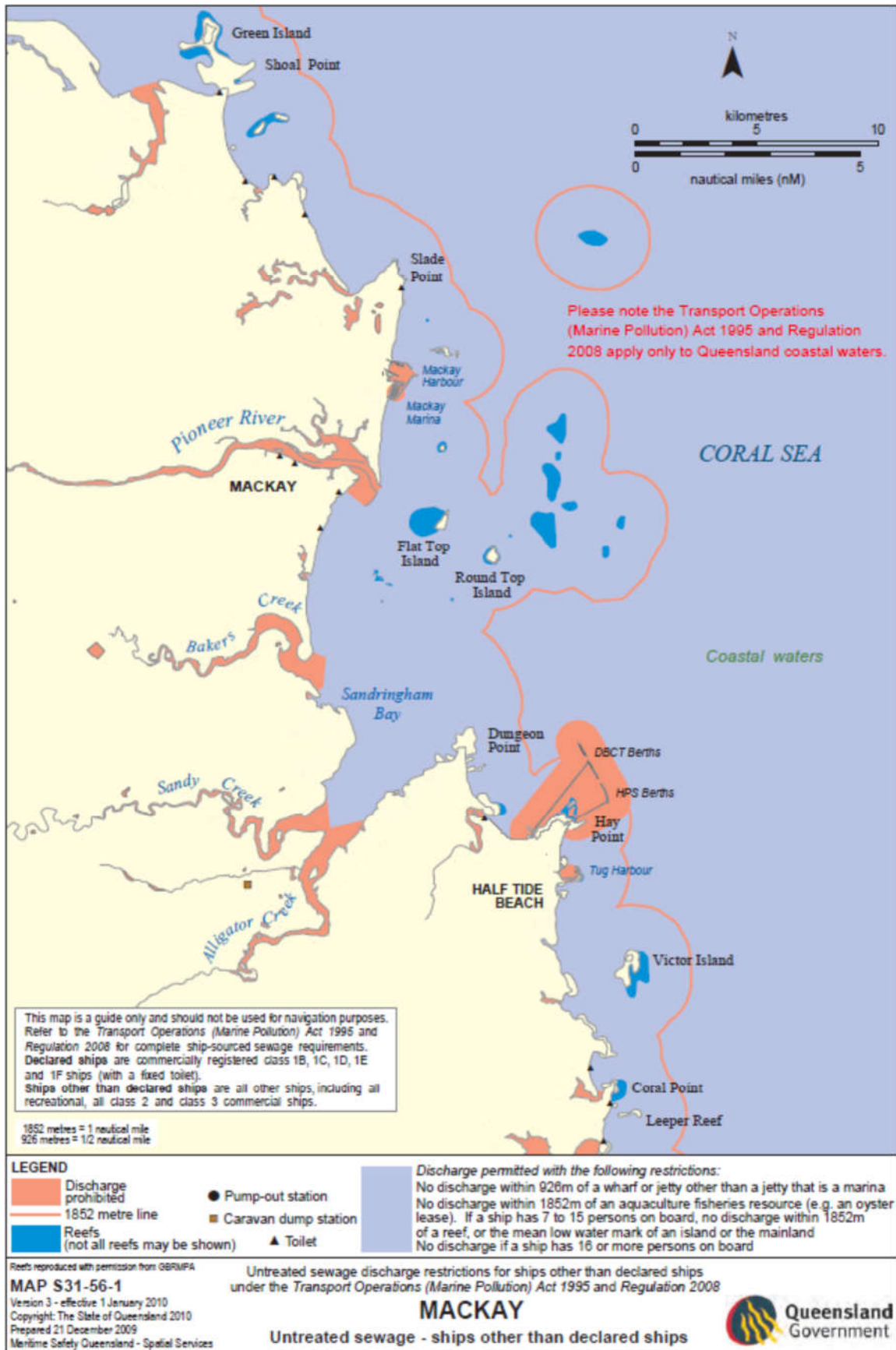
Discharge of untreated sewage from vessels

1. Subject to regulation 93F, the master of a vessel that has 15 or fewer persons on board may allow untreated sewage to be discharged from the vessel in the Marine Park if:
 - a. the vessel does not have a fixed toilet; or
 - b. where the vessel has a fixed toilet, the sewage has been reduced to a fine slurry.

Section 93F

Discharge of sewage from vessels generally

1. Regulation 93D and paragraphs 93E (b), (c) and (d) are not taken to authorise sewage to be discharged from a vessel in the Marine Park if the vessel is inside a boat harbour, canal or marina.
2. Regulation 93D is not taken to authorise untreated sewage to be discharged from a vessel in the Marine Park if the vessel is less than 1 nautical mile from the seaward edge of an aquaculture operation.



Discharge Locations for Untreated Sewage

Appendix B

Environmental Approvals

Appendix B1 – Environmental Authority EPPR01382413

Appendix B2 – Operational Work for disposal of dredge spoil to tidal waters (2009-18704 SPD)

Appendix B3 – Operational Work (Tidal Work) for Port of Mackay infrastructure (PL/04/02/00016)

Appendix B4 – Operational Work for Removal, destruction or damage of marine plants (2007MA0189)

Appendix B3 – Sea Dumping Permit SD2010-1642

Appendix C

NQBP Incident Report Form

Appendix D

Marine Fauna Incident Response Kit

Appendix E

NQBP Long Term Dredge Management Plan and Supplementary Report August 2020

Appendix F

NQBP Long Term Maintenance Dredging Management Plan