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Wheatstone Marine Terminal - Cyclone Procedure

Wheatstone Marine Operations

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1.0 Introduction

The Wheatstone Marine Terminal Cyclone Procedure is to facilitate a timely preparation of the Wheatstone Marine Terminal (WMT) in readiness for cyclonic systems threatening to affect the WMT and mitigate any associated risks to personnel, property, and the environment.

This document is to be used in conjunction with the Pilbara Ports West – Cyclone Response Plan. This document acknowledges the Pilbara Port's function under the Port Authorities Act 1999 to be responsible for the safe and efficient operation of the Port of Ashburton, over which it has jurisdiction.

This document also recognises the authority of the Western Australian Department of Transport (WA DoT) for the Port of Onslow waters, immediately adjacent to the Port of Ashburton, and any requirement to ensure the necessary cyclone measures are enacted as directed by the relevant WA DoT Harbour Master.

1.1 Purpose

The purpose of this document is to ensure that:

- The Wheatstone Marine Terminal supports Pilbara Ports in discharging its' "duty of care" responsibility to all Port users, vessels, and mariners within the port waters of the Port of Ashburton.
- All vessels associated with the Wheatstone Marine Terminal put to sea or proceed to designated cyclone rated berth or moorings and, where applicable have adequate time to clear the port and adjacent coast to avoid the impact of any approaching system.
- All vessels associated with the Wheatstone Marine Terminal have sufficient time to take the necessary steps to implement their cyclone response plans before the onset of adverse weather.
- In consultation and conjunction with Pilbara Ports, the Wheatstone Marine Terminal can provide guidance on the decision process under which marine operations can continue after cyclone warnings have been issued.

1.2 Scope

The scope of this document includes:

- Cyclone contingency plan requirements for Wheatstone Marine Terminal users
- Wheatstone Marine Terminal cyclone response stages
- Resumption of operations following a cyclone response

1.3 Objectives

The objectives of this document are:

- To provide a clear understanding of the role and responsibility of Pilbara Ports during a cyclone response
- Provide clarity on the various stages that the Wheatstone Marine Terminal will utilise for cyclone response planning
- Advise stakeholders of what actions will be taken at each stage of cyclone response
- Detail what actions are required by the Wheatstone Marine Terminal post cyclone event prior to recommencing operations

1.4 Target Audience

This document is intended for use by:

- Pilbara Ports (PP)
- West Australian Department of Transport (WA DoT)
- Chevron Australia Emergency/Cyclone Management personnel
- ABU Marine Operations team
- Wheatstone Lifting Coordination team
- Wheatstone Lifters
- Wheatstone Production Operations
- LNG and Condensate tanker operators and Masters calling at the Wheatstone Marine Terminal
- Svitzer Australia Pty Ltd (Wheatstone Towage and Pilot boat operators)
- Other Port users (e.g, Mineral Resources)
- Other associated Marine Service Providers (e.g., maintenance or survey vessels)

1.5 Management System Expectations

The following Management System Expectations are associated with this document:

- Recognise the importance of having a comprehensive and cohesive planned response in the event of cyclonic systems affecting the Wheatstone Marine Terminal.
- Provide guidance to the Wheatstone Marine Operations team and Chevron Australia Emergency / Cyclone Management personnel to help manage and alleviate the impacts caused to the Wheatstone Marine Terminal, marine assets and vessels by cyclone activity.
- Protect people associated with marine activities and the marine environment during times of cyclonic activity.

2.0 Procedure Overview

2.1 Cyclone Threat Monitoring

The Wheatstone Marine Terminal receives daily weather forecasts from the Bureau of Meteorology (BOM) – Special Services Unit (SSU). The forecasts are distributed via electronic mail to relevant personnel engaged with operations at the Wheatstone Marine Terminal. During the cyclone season, cyclone and tropical low development forecasts are received daily. When there is potential for a system to develop, forecasts are broadcast at six hourly intervals. The forecast frequency is increased to three hourly updates following the development of an approaching tropical low or tropical cyclone system. Additionally, the BOM initiates an online weekly conference, moving to twice daily when necessary, to keep stakeholders informed of cyclonic activity and progress in the region.

2.2 The Cyclone Coordination Group (CCG)

Once a forecast has been issued that indicates the potential for an approaching system to develop, the CCG will convene to resolve any potential factors that may be required in the cyclone threat assessment. The CCG includes the Wheatstone Production Team Lead (PTL), Wheatstone Marine Superintendent and Wheatstone Emergency Management personnel along with key operational personnel. Several factors will influence the movement of vessels including channel and berth operating criteria, berth survivability, tug operability, pilotage restrictions, plant operational requirements and forecast localised weather conditions.

To assist in the decision-making process at this meeting, and prioritisation of vessel demobilisation, the Wheatstone Marine Superintendent will liaise closely with the following personnel:

- PP Harbour Master (or Deputy where assigned)
- WA DoT Harbour Master (or Deputy where assigned)
- Chevron Marine Pilot Loading Masters (PLM's), Chevron Loading Masters (LM's) and Shipping and Communication Officers (SMCO's)
- Export vessel Masters
- Wheatstone Lifting Manager (LC)
- Towage and Pilot vessel operator
- Information required from the above personnel will include:
    - Details of vessels that are scheduled at the Wheatstone Marine Terminal
    - Individual Export Vessel Cyclone Procedures
    - Any stated limitations for safe vessel operations (e.g., mooring integrity; export tanker loading restrictions (i.e., LNG sloshing limits); stability and stress conditions; machinery and/or propulsion limitations and associated considerations; and any other limiting factors)
    - Any associated bottlenecks around simultaneous operations (SIMOPS) in the Port.

2.3 Cyclone Contingency Plans

In accordance with the Wheatstone Marine Terminal Manual, all vessels (e.g., tugs, dedicated support craft, etc.) operating in support of the WMT within the Port of Ashburton, shall have in place aboard their vessels, a current and up-to-date Cyclone Contingency Plan. Such plan should ensure that vessels have an adequate response time to secure to a cyclone mooring / berth and where necessary evacuate crew or proceed to sea to avoid the impact of any approaching cyclonic event.

Prior to the commencement of cyclone season, all vessels regularly operating at the Wheatstone Marine Terminal shall confirm to the Wheatstone Marine Superintendent that they have reviewed their Cyclone Contingency Plans and provide a copy of any updated or revised plans.

All other vessels (e.g., trading vessels) calling at the Wheatstone Marine Terminal shall, as a minimum, have aboard their vessel and be guided by:

- This document (Wheatstone Marine Terminal - Cyclone Procedure), which is available on the Wheatstone Marine Terminal website (https://australia.chevron.com/our-businesses/wheatstone-project/wheatstone-marine-terminal); and
- PP's Pilbara Ports West – Cyclone Response Plan, which is available on the PP website (https://www.pilbaraports.com.au/about-pilbara-ports/publications/forms-and-publications/forms-and-publications/strategy-plan/2022/november/pilbara-ports-west-cyclone-response-)plan

2.4 Role of the PP Port of Ashburton Harbour Master

The Wheatstone Marine Terminal is in the port waters of the Port of Ashburton. Under the Port Authorities Act 1999 (The Act), the PP is responsible for the safe and efficient operation of the Ports under their jurisdiction. The PP has statutory authority within the gazetted port boundaries at the Port of Ashburton. The PP Cyclone Response Plan applies to all port users under The Act and associated Port Authority Regulations 2001. Directions given to Masters, Crew and Port Operators will be under the auspices of The Act, particularly Part 7 Division 3 Section 104 – 108.

The Port of Ashburton Harbour Master is appointed by the PP and is responsible for ensuring the Port is as safe, as is possible under cyclonic threat, and that the PP discharges its 'duty of care' to all mariners and their vessels, and to port users and their marine infrastructure within the Port.

2.5 PILBARA PORTS WEST – Cyclone Response Plan

The PP maintain the PILBARA PORTS WEST – Cyclone Response Plan. This plan is administered by the Port of Ashburton Harbour Master and any directives issued by the Harbour Master under the plan must be complied with by all Port users. The plan is available on the PPA website

https://www.pilbaraports.com.au/about-pilbara-ports/publications/forms-and-publications/forms-and-publications/strategy-plan/2022/november/pilbara-ports-west-cyclone-response-plan

2.6 Cyclone Season

The tropical cyclone season in the northwest region of Australia is between the 1st November and 30th April. There are no safe havens or cyclone rated mooring within the port limits other than the tug pens designed for use by the terminal tugs and pilot boat that support the Wheatstone Marine Terminal.

3.0 Cyclone Response

The Wheatstone Marine Terminal will employ a staged response to a cyclone threat. Each vessel operator will need to comply with these triggers and in accordance with their own cyclone contingency plans. In addition to this WMT response procedure, all vessels and operators will as a minimum, be required to follow the directions given by the Port of Ashburton Harbour Master.

Table 3-1: Wheatstone Marine Terminal Response Stages

Stage	Key Action	Description
1.	Monitor	Tropical low or cyclonic system has formed within 800 nm (1500 km) and is tracking towards the terminal.
2.	Prepare	System approaches or develops within 400 nm (750 km) and is tracking towards the terminal with potential for impact.
3.	Clear Terminal	System approaches or develops within 300 nm (550 km) and/or gale force winds or other limiting met-ocean conditions are forecast to affect the terminal within 24 hours.
4.	Close Terminal	System approaches or develops within 200 nm (370 km) and/or gale force winds or other limiting met-ocean conditions are forecast to affect the terminal within 12 hours.
5.	Open Terminal	Cyclone or threat of cyclone has passed – damage assessment and recovery.

IMPORTANT NOTICE:

The Master of a vessel at the Wheatstone Marine Terminal retains responsibility for ensuring the safety of the vessel and those on board. Notwithstanding the vessel operator's own cyclone procedures, the Master of a vessel operating within the port shall comply with PP cyclone procedures as a minimum, and in addition shall be guided by the WMT cyclone procedures accordingly, to ensure safe execution of all applicable procedures.

3.1 Stage 1 – Monitor

BOM - SSU warnings provide information about the formation or potential formation of cyclonic systems in the area. When the warnings state that the system has moved within 800 nm of the Port of Ashburton and tracking towards the WMT the following will occur:

- The Wheatstone Marine Terminal cyclone response procedure will be activated.
- The Wheatstone Marine Superintendent will continue to closely monitor the development of the system and any potential impact to the WMT will be shared with CCG as required.
- The Wheatstone Marine Superintendent will liaise with the Port of Ashburton Harbour Master about monitoring the system and any proposed action for vessels associated with the Wheatstone Marine Terminal. At this stage, it is anticipated that there will be no restrictions on vessel movements.
- The Wheatstone Marine Superintendent, in consultation with the Port of Ashburton Harbour Master, will promulgate warnings and advice to Wheatstone Marine Terminal users via electronic mail, VHF or telephone as required.

- The Wheatstone Marine Superintendent will commence making plans for potential escalation of the cyclonic situation and any resultant potential to close the Wheatstone Marine Terminal.

3.2 Stage 2 – Prepare

When the cyclonic system is tracking towards the Port of Ashburton, is within 400 nm and has the potential to affect the Port of Ashburton, the following will occur:

- The Wheatstone Marine Superintendent, in consultation with the Port of Ashburton Harbour Master, will promulgate warnings and advice to Wheatstone Marine Terminal users and support vessels, via electronic mail, VHF or telephone.
- The Wheatstone Marine Superintendent will commence preparations for a cyclone impact at the Wheatstone Marine Terminal and any relevant information will be shared with CCG as required.
- The Wheatstone Marine Superintendent will instruct Wheatstone Marine Terminal users to commence implementing their cyclone plan or procedure if they have not already done so.
- Preparations that require a significant lead-time (such as those associated with construction/maintenance activities) should be commenced promptly to ensure their completion before cyclonic conditions affect the Port of Ashburton.
- There are no restrictions on general vessel movements. Specific vessel considerations are detailed in sub paragraphs below.
- A minimum of two tugs are to be on standby. Off-duty tugs are to be alerted to possibility of an early departure scenario when a vessel is loading at the WMT.
- Vessel movements or loadings are subject to the forecast localised met-ocean conditions.
- Prepare tug moorings in pens, as per Svitzer Cyclone Contingency Plan.

3.2.1 Condensate Tanker

- Decisions to berth Condensate Tankers will be made by the in consultation with the Port of Ashburton Harbour Master and in liaison with the CCG, based on the localised weather/tidal conditions and the forecasted potential for a system to impact on the Port.
- Condensate Tankers may berth and/or continue loading provided the localised weather forecasts indicate a vessel can safely proceed to sea prior to the onset of Stage 4.
- Permission to berth will be subject to the approval of the Port of Ashburton Harbour Master.
- Masters are to be kept closely informed of the situation and any developments.

3.2.2 Moss LNG Carrier

- Decisions to berth Moss LNG Carriers will be made in consultation with the Port of Ashburton Harbour Master and in liaison with the CCG, based on the localised weather/tidal conditions and the forecasted potential for a system to impact on the Port.
- Carriers may berth and/or continue loading provided the localised weather forecasts indicate a vessel can safely proceed to sea within Stage 3 restrictions and prior to the onset of Stage 4 and after ongoing consultation with the Port of Ashburton Harbour Master.

3.2.3 Membrane LNG Carrier

- Decisions to berth Membrane Carriers will be made in consultation with the Port of Ashburton Harbour Master and in liaison with the CCG, based on the localised weather/tidal conditions and the forecasted potential for a system to impact the Port.
- A Membrane carrier alongside at the declaration of Stage 2 will not proceed to load past the lower sloshing limit (in each tank) unless it can load or transfer sufficient cargo to safely achieve the upper sloshing limit before the forecast time for the declaration of Stage 3.
- Approval to load/continue loading within sloshing limits, prior to declaration of Stage 3 must be granted by the Wheatstone Marine Superintendent in consultation with the vessel Master, the Port of Ashburton Harbour Master and in liaison with the CCG.
- Where a Membrane Carrier has loaded above sloshing limits, the above permission to continue loading is only given where the localised weather forecasts indicate a vessel can safely proceed to sea within Stage 3 restrictions and prior to the onset of Stage 4.

3.3 Stage 3 – Clear Terminal

When the cyclonic system continues tracking towards the Port of Ashburton, is within 300nm (550kms) with the potential to impact on the port and gale force winds or other limiting met-ocean conditions are expected to affect the Port of Ashburton within 24 hours, the following will occur:

- The Wheatstone Marine Superintendent, in consultation with the Port of Ashburton Harbour Master, will continue to promulgate warnings and advice to Wheatstone Marine Terminal users via electronic mail, VHF or telephone and update the CCG.

Vessels associated with the Wheatstone Marine Terminal shall make appropriate steps for completion and departure and shall advise the Wheatstone Marine Superintendent and Port of Ashburton Harbour Master once they have completed their cyclone preparations via electronic mail, VHF, or telephone. In preparing for short notice departure, LNG Carriers or Tankers need to factor in time with respect to transferring cargo or ballast and ensure adequate stability criteria are maintained throughout.

It is anticipated that all vessels will be clear of the Port of Ashburton port limits at least 12 hours prior to the forecast onset of limiting met-ocean conditions. This timeframe is to ensure that all vessels have adequate time to clear the coast and reach a safe location prior to the onset of cyclonic conditions.

3.3.1 Condensate Tanker and Moss LNG Carrier

If any cyclone approaches within 300nm of the Port of Ashburton, a tanker/MOSS carrier is to make all necessary preparations to be able to depart with 1 hour notice. In planning for departure, time must be allowed for channel transit, safe disembarkation of Pilot and return of support vessels to their safe haven. Readiness to sail must also take into consideration tidal heights, localised weather, and current/tide as well as the time required to disconnect any loading arms in a safe and controlled manner.

3.3.2 Membrane LNG Carrier

If any cyclone approaches within 300 miles of the Port of Ashburton, the carrier is to continue loading only sufficient cargo such that when combined with internal transfer the

vessel can achieve acceptable sloshing limits. When there is sufficient cargo on-board to achieve these sloshing limits, the carrier will stop loading, disconnect, and proceed to sea. Readiness to sail must consider the vessel's stability and stresses as well as localised weather and current/tide conditions and forecast. In planning for departure, time must be allowed for channel transit, safe disembarkation of Pilot and safe return of support vessels to their safe haven. Readiness to sail must also take into consideration tidal heights, localised weather, and current/tide as well as the time required to disconnect any loading arms in a safe and controlled manner.

3.4 Stage 4 – Terminal Closed

When a cyclonic system continues tracking towards the Port of Ashburton, is within 200nm (370kms) or is likely to impact on the Port of Ashburton with limiting met-ocean conditions within 12 hours, the following will occur:

- Where possible, the Wheatstone Marine Superintendent, in consultation with the Port of Ashburton Harbour Master, will continue to promulgate warnings and advice to Port users via electronic mail, VHF or telephone and update the CCG.
- The Wheatstone Marine Terminal will be closed to all vessels.
- The Wheatstone Marine Terminal will be closed to all operations, including construction/maintenance activities.

3.5 Stage 5 – Open Terminal

Once the cyclone or threat of cyclone has passed and where conditions permit, the Wheatstone Marine Terminal will be re-opened. The responsibility to open the Port of Ashburton rests solely with the Port of Ashburton Harbour Master. The re-opening of the Port of Ashburton, including the Wheatstone Marine Terminal, may be a phased process and will depend on met-ocean, damage assessment and recovery.

- The Wheatstone Marine Superintendent will notify users via electronic mail, VHF, or telephone when the Wheatstone Terminal has re-opened and update the CCG.
- Typically, winds are expected to be less than gale force (approx. 55km/h – 30kts) with commensurate sea and swell conditions before the Wheatstone Marine Terminal is re-opened.
- Opening of the Wheatstone Marine Terminal does not imply that met-ocean conditions are necessarily suitable for the resumption of normal operations.
- Operators and vessel Masters will need to make their own assessment as to the suitability of prevailing conditions for the safety of their operation and their vessels.
- Some restrictions on vessel berthing and movements may still be in force.

3.6 Resumption of Normal Terminal Operations

To ensure that facilities within the Wheatstone Marine Terminal are safe, prior to the resumption of operations, the Wheatstone Marine Superintendent in conjunction with the Port of Ashburton Harbour Master, the CCG, Production Operations and Maintenance and towage operator shall confirm that berths and any associated navigation aids and channels are serviceable and safe for operations. Of particular concern are:

- The ability to provide a safe berth
- Condition, operability and availability of towage vessels and Pilot Vessel
- Fendering and mooring arrangements

- Ship shore interface equipment
- Charted depth alongside jetty or tug pens
- Navigation aids location and illumination status verified
- Port of Ashburton Shipping Channel charted dimensions (depth and width)
- Tugs safe use of Ashburton Cargo Wharf Channel

Any damage to berth facilities, channels or navigation aids shall be reported to the Wheatstone Marine Superintendent and the Port of Ashburton Harbour Master as soon as possible.

The Port of Ashburton Harbour Master has sole responsibility to declare the resumption of normal Port operations.

4.0 Roles, Responsibilities and Competencies

The following table outlines the roles, responsibilities and competencies associated with this document.

Table 4-1: Roles, Responsibilities and Competencies

Role	Responsibilities
Wheatstone Marine Superintendent	• The Wheatstone Marine Superintendent (WMS) is responsible to the Wheatstone - LNG Plant Person in Charge (PIC) for the implementation of the Wheatstone Marine Terminal Cyclone Procedure. The WMS will consult with Terminal operations to ensure timely execution of these procedures to ensure that the Terminal is prepared for the onset of cyclonic conditions. • The WMS is to review these procedures annually, prior to commencement of cyclone season. The WMS is also to ensure any changes to these procedures are communicated to the relevant stakeholders (e.g., Port of Ashburton Harbour Master and Wheatstone Emergency Management Coordinator). • Consult with and support the Port of Ashburton Harbour Master when cyclonic systems affect upon the Wheatstone Marine Terminal.
Vessel Masters/Operators	• The Master of a vessel associated with the Wheatstone Marine Terminal retains responsibility for ensuring the safety of the vessel and the personnel on-board. Notwithstanding the vessel operator's own cyclone procedures, the Master of a vessel operating at the Wheatstone Marine Terminal shall also, where necessary comply with these cyclone procedures.
Port of Ashburton Harbour Master	• The Port of Ashburton Harbour Master is responsible to the Chief Executive Officer of the PP for the implementation of the Pilbara Ports West - Cyclone Response Plan. The Port of Ashburton Harbour Master will consult with Terminal users to ensure timely execution of these procedures to ensure that the Port is prepared for the onset of cyclonic conditions. • The Port of Ashburton Harbour Master will review the Pilbara Ports West - Cyclone Response Plan periodically. The Port of Ashburton Harbour Master will ensure any changes to the plan are communicated to the relevant stakeholders (e.g., Wheatstone Marine Superintendent and Svitzer) • Consult and support the Wheatstone Marine Superintendent when cyclonic systems affect the Wheatstone Marine Terminal.

5.0 Continual Improvement

This document is to be reviewed annually, prior to commencement of cyclone season and /or a period not exceeding three years.

6.0 Acronyms and Abbreviations

Table 6-1 defines the acronyms and abbreviations used in this document.

Table 6-1: Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ABU	Chevron Australia Business Unit
BoM	Bureau of Meteorology
CCP	Cyclone Contingency Plan
CCG	Cyclone Coordination Group
Nm	Nautical miles
PIC	Person in Charge
PP	Pilbara Ports
SSU	Special Services Unit
WA DoT	West Australian Department of Transport
WHS	Wheatstone
WMS	Wheatstone Marine Superintendent
WMT	Wheatstone Marine Terminal

7.0 References

The following documentation is either directly referenced in this document or is a recommended source of background information.

Table 7-1: References

Ref. No.	Description	Document ID
1.	Chevron ABU Marine Oil Pollution Plan	OE-11.01.101
2.	ABU - Cyclone Response Plan	OE-11.01.112
3.	ABU - Emergency Contact Directory	OE-11.01.142
4.	Wheatstone Marine Terminal Manual	WS1-COP-00352
5.	Port of Ashburton - Port Handbook	A951308
6.	Pilbara Ports West - Cyclone Response Plan	A184779
7.	Svitzer Cyclone Contingency Plan	WS1-COP-00330