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Terminal Handbook incorporated into Ringfence at request of Erin Commijs for Ops Documentum consolidation.

CONTROLLED DOCUMENT Terminal Handbook Withnell Bay	Woodside Energy

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PREFACE

This document is intended to acquaint owners, charterers, and masters of vessels with the general conditions, terminal facilities, and available services at the Withnell Bay Terminal.

It does not replace or modify official publications covering the waters, hazards, areas, or subjects to which it pertains, nor is it intended for such purposes. All operations are subject to terminal procedures and port regulations.

While the information herein is believed to be correct at the time of printing, the Terminal Operator makes no guarantee and assumes no responsibilities regarding it or any information that can appear in supplemental publications.

To the extent this document contains any forward-looking statements, these are subject to risk factors associated with the oil and gas business. The expectations reflected in these statements are reasonable, but they can be affected by a variety of variables and changes in underlying assumptions that could cause actual results or trends to differ materially, including, but not limited to, environmental risks, physical risks, legislative, fiscal, regulatory developments, and approvals.

Table of Contents

1 Port of Dampier

1.1 Location

The port is located on the northwest coast of Australia within the Dampier Archipelago. Legendre Island is positioned at $20^{0}21$'S $116^{0}51$'E and forms the north-eastern extremity of the Archipelago and Rosemary Island in position $20^{o}28$'S $116^{o}37$'E forms the north-western extremity. The expanse of water within these bounds is named "Mermaid Sound". A recommended approach track is indicated for the Port of Dampier in APPENDIX A.

1.2 Administration

The Pilbara Ports Authority (PPA), through the office of the Harbour Master, administers the port. The Western Australia (WA) Port Authorities Act 1999 and the WA Port Authorities Regulations 2001 govern conduct within the port.

The Port of Dampier services five major export operations:

1. Woodside Energy exporting North West Shelf Joint Venture (NWSJV) liquified natural gas (LNG), liquified petroleum gas (LPG), and condensate through their Withnell Bay Terminal.
2. Woodside Energy exporting Pluto LNG and condensate through their Pluto Terminal.
3. Rio Tinto Iron Ore Pty Ltd exporting iron ore through their Parker Point and East Intercourse Island terminals.
4. Dampier Salt Pty Ltd exporting solar salt through their Mistaken Island Terminal.
5. Burrup Fertilisers exporting liquid ammonia through the Pilbara Ports Authority Bulk Liquids Berth.

The five companies operate and maintain their own facilities. Pilotage services are company operated and compulsory for all vessels using the above facilities.

Woodside Energy Ltd provides pilotage services for the Woodside terminals.

Svitzer Australia Pty Ltd provides towage and pilot boat services for the Woodside Withnell Bay and Pluto terminals.

1.3 Environment

The islands and waters of the Dampier Archipelago were proclaimed a Marine Park in 2013 under the Australian Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) and was renamed Dampier Marine Park in 2017. The management plan and protection measures of the marine park came into effect in 2018. The use of dispersants for any oil spill clean-up is not permitted unless it has been authorised by the designated authority after receiving the advice of the Environmental Protection Authority (EPA).

Masters and owners should be aware of this sensitivity when using the port. Heavy fines will be levied should pollution of any kind occur or should any of the state or port environment regulations or company policies be infringed.

1.3.1 Quarantine

Plants and animals, including plant or animal products and other food items, are quarantine items, and transfer of these items from vessel to shore is controlled by the Australian Quarantine Inspection Service (AQIS). Woodside Pilots and Loadmasters are not authorised to approve transfer of these items. Where any such items are to be transferred ashore, the ship's Master must arrange for the proper transfer through the ship's Agent and AQIS.

1.4 Charts and Publications

Relevant paper charts and publications are:

- Australian Pilot Volume V
- Australian Chart No. 327 (Australia – NW Coast WA Port Walcott to Montebello Islands)
- Australian Chart No. 57 (Dampier Archipelago)
- Australian Chart No. 59 (Port of Dampier Northern Sheet)
- Australian Chart No. 60 (Port of Dampier Southern Sheet).

1.5 General Weather Information

The Port of Dampier is in a hot, tropical region subject to cyclonic activity.

1.5.1 Winds

The prevailing winds are easterly in winter (typically from May to August) and south westerly in summer (typically October to March). The winds can blow more than 20 knots for sustained periods. Diurnal variation is common for the area. During the winter, easterly winds tend to ease late afternoon, and during the summer, the south westerly winds tend to ease in the early morning for periods of two to three hours.

1.5.2 Cyclones

During the summer months, the area can be affected by tropical cyclones. They generally originate in the Timor Sea and follow an erratic south westerly path. The official season lasts from 1 November to 30 April with, on average, three cyclones each year passing close enough to the area to close the port.

1.6 Tides and Currents

1.6.1 Tides

Dampier is a standard port in the Australian National Tide Tables published by the Hydrographer of the Royal Australian Navy. The tides in Mermaid Sound are semi-diurnal with a daily inequality between successive tidal ranges. This inequality can be marked with a potential consequence on departure drafts of laden tankers.

Due to local environmental conditions, the actual and predicted tide readings can vary. A co-relation of the two must be made prior to and during any operations. During cyclonic conditions, this differential could become substantial.

All tidal and water depth information is referred to chart datum (LAT, or lowest astronomical tide). Table 1 details relevant tidal data for Mermaid Sound.

Table 1: Tidal Data

Tide data	Value
Maximum tidal range LAT to HAT	5.3 metres
Mean sea level	2.655 metres
MHWS	4.5 metres
MHWS	3.2 metres

1.6.2 Currents

The tidal streams in Mermaid Sound follow a semidiurnal tidal cycle, the flood being generally southerly and the ebb tending northerly. These streams can be affected by wind-generated movement, especially following the passage of a cyclone.

The tides at the berth run parallel to the shore and do not, except in cyclonic conditions, exceed 0.5 knots. In the channel area, the strength of the tidal stream will not normally reach above 1.0 knot, except in cyclonic conditions, where streams of up to 2.5 knots have been experienced. Local anomalies, such as late/early change in direction and rapid dissipation/intensification of flows, are experienced in this port.

1.7 Anchorages

There are three anchorage areas designated for large vessels: the Western Anchorage and the Inner Anchorage (both within port limits) and the Nichol Bay Anchorage (outside port limits). Vessels will be assigned an anchorage by the Dampier Vessel Traffic Service (VTS) prior to reaching port limits. A vessel cannot anchor within the Inner Anchorages without a Pilot on board unless permission is granted by the Port Authority to do so.

See the Pilbara Ports Authority (PPA) Port of Dampier Handbook.

1.8 Prohibited Areas

No vessel or craft, other than with the express permission of the Harbour Master, can enter the following prohibited areas:

- Within 700 metres of the Woodside jetties.
- Within 200 metres of the Woodside slugcatcher vent in Withnell Bay.
- Within 200 metres of the Dampier cargo wharf and bulk liquids berth.
- Within 50 metres of the Parker Point, East Intercourse, and Mistaken Island terminals.
- Within 50 metres of the wharves at King Bay and Mermaid Marine supply bases.

1.9 Gas Trunkline

Four high pressure subsea trunklines have been established on the seabed and are marked on charts and are protected by prohibited areas. Prohibited areas are declared for five cables either side of these pipelines.

2 Woodside Facilities in Port of Dampier

2.1 Withnell Bay Terminal

Woodside Energy Ltd operates the Withnell Bay Terminal on the eastern side of Mermaid Sound. This terminal receives natural gas through two subsea trunklines from fields approximately 130 km offshore. A portion of the gas is processed into LNG, LPG, and condensate for export, and the remainder is then piped to the south of Western Australia for industrial and domestic use. LNG is exported to Japan, Korea, and China. LPG and condensate are sold on both the domestic and overseas markets.

2.1.1 Loading Facilities

The Withnell Bay Terminal has three loading jetties:

1. Jetty 1 – Jetty for the export of LNG (see APPENDIX C for berth arrangement).
2. Jetty 2 – Jetty for the export of LNG (see APPENDIX D for berth arrangement).

3. Jetty 3 – Jetty for the export of LPG and Condensate (see APPENDIX E and APPENDIX F for berth arrangements).

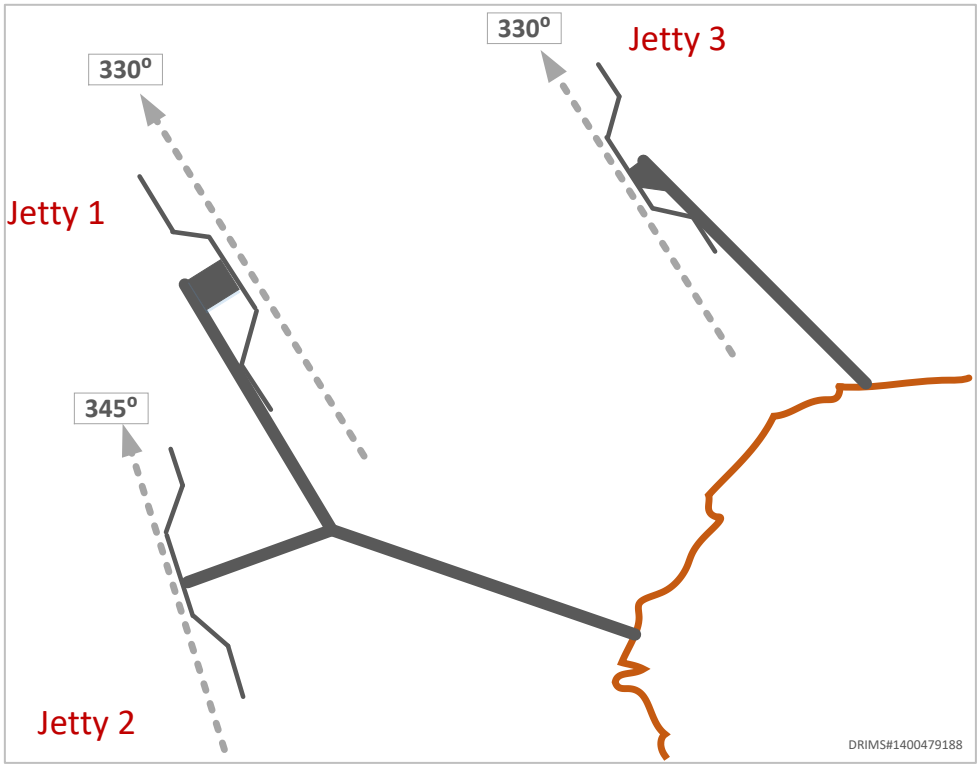


Figure 1: Withnell Bay jetty configuration

2.2 Pluto Terminal

The Pluto LNG Terminal lies in position: Latitude: 20 36 South Longitude: 116 45 East.

This terminal receives natural gas through a subsea trunkline from fields approximately 180 km offshore. Most of the gas is processed into LNG and condensate for export. LNG is primarily exported to Japan, and condensate is sold on both the domestic and overseas markets.

2.3 King Bay Supply Facility

King Bay Supply Facility (KBSF) services Woodside offshore facilities and is located at King Bay on the south-eastern side of Mermaid Sound in position 20^0 37.6' S 116^0 44.8' E. The entrance channel has a declared depth of 5.9 metres above LAT, and the berth pocket has a declared depth of 7.6 metres above LAT. There is another Woodside facility on the south-eastern side of KBSF known as the Burrup Materials Facility (BMF), which has a berth pocket with declared depth of 7.6 metres above LAT.

2.3.1 Declared Depths

All stated declared depths within this Terminal Handbook must be confirmed by referencing the current Australian Notices to Mariners and the Pilbara Ports Authority Port of Dampier Local Marine Notices (see Local Marine Notices - Pilbara Ports Authority).

2.3.2 Woodside and Pluto Channels

Woodside operates buoyed channels to allow safe passage for vessels using the Withnell Bay and Pluto terminals. The start of the Woodside Channel is marked by the Channel Buoy (FL Red 3 secs) in position 20° 26.2' S 116° 43.7' E. The first part of this channel between Channel Buoy and Woodside No.4 Buoy is shared with the Pluto Terminal. The Woodside Channel extends further south from Woodside No.4 Buoy and turns towards the Withnell Bay Terminal in the vicinity of Woodside No.9 leading beacons. The transit from No.9 to the Withnell Bay jetties is through a dredged channel, with turning basins marked by beacons and buoys.

2.3.3 Sea Buoy

The entrance to the port is marked by the Sea Buoy (Q (4) Y 6s) in position 20° 25.5' S 116° 42.9'. This is a yellow special purpose buoy equipped with a Racon (M) and AIS transmitter.

2.3.4 Rio Tinto Channel

The Rio Tinto Channel is located to the west of the Woodside and Pluto channels and is used by large bulk carriers sailing from Rio Tinto facilities. The Rio Tinto Channel terminates at Sea Buoy. Pilot Station B is designated solely for use by Rio Tinto Pilots boarding and disembarking vessels by boat or helicopter.

2.3.4.1 Pilot Boarding Grounds

Woodside terminals use Pilot Station A (20°21.0'S 116°44.0'E) for helicopter transfers and Pilot Station C (20°23.7'S 116°43.7'E) for pilot boat transfers. Inbound vessels must not proceed south of the respective pilot stations without a pilot on board.

The distance from Pilot Station C to the Woodside Channel Buoy is approximately 2.4 NM.

2.3.5 Woodside Channel

See the chartlet in APPENDIX B.

Declared depths vary from 13.7 metres to 12.1 metres above LAT (see Section 2.3.1)

The approach channel from Woodside Channel Buoy to the No.7 Buoy is 6.1 NM long. The inner channel from Woodside No.7 Buoy to the swing basin entrance is 3.4 NM long and 250 metres wide.

During Withnell Bay vessel change-outs and Pluto departures, inbound vessels generally transit to the east of the Woodside Channel at reduced speed or stopped until the outbound vessel is past and clear before entering the channel north of the No.7 Buoy.

2.3.5.1 Swing Basin Manoeuvring Areas

The swing basin manoeuvring areas for LNG1, LPG, and LNG2 jetties have declared depths 12.1 metres above LAT, with turning circles of approximately 600 metres in diameter.

2.3.5.2 Berth Pockets

The LNG1 and LNG2 Jetty berth pockets have declared depths of 12.9 metres and 13.1 metres above LAT respectively and the LPG/Condensate Jetty berth pocket has a declared depth of 13.6 metres above LAT.

2.3.5.3 Woodside Alternate Route

During periods of heavy weather and long period swell, Woodside can use their alternative route for tankers departing from the Pluto and Withnell Bay terminals. This entails standing out to the east of the Woodside channel north of the Woodside No.7 Buoy and then steaming north before turning onto 326° (T) to transit the Rio Tinto channel (with a declared depth of 15.8 metres above LAT) from Courtney Shoal Buoy to the Sea Buoy.

2.4 Jetty Facilities

The jetty facilities at Withnell Bay consist of:

- LNG Jetty 1
- LNG Jetty 2
- LPG/Condensate Jetty 3.

2.4.1 LNG Jetty 1

Position: Latitude: 20° 35.25' S, Longitude: 116° 45.8' E (see APPENDIX C).

LNG Jetty 1 is a single berth loading facility for LNG tankers port side to.

The loading platform is equipped with four 16" LNG loading/vapour return arms.

The berth can accommodate vessels from 190 to 300 metres length overall (LOA) in the following size range: 30,000 DWT – 150,000 DWT. The maximum berthing displacement is 110,000 tonnes.

A shore gangway that lands on the ship's deck is provided. It is manoeuvred on board by the berth crane. A clear landing area is required (see APPENDIX M).

Five breasting dolphins (from seaward D, E, F, H, and I) with single cylindrical rubber cell fenders and panels, extending from LAT +1.4 m to LAT +7.1 m, comprise the berth face. Dolphins D, E, H, and I are equipped with double release hooks and a capstan for spring line moorings.

Three mooring dolphins are located at each end of the berth (from seaward A, B, C and J, K, and L). These are equipped with triple release hooks and capstans for head/stern and breast lines.

All mooring hooks are connected to the Mooring Load and Environmental Monitoring System (MEMS) and have a safe working load of 125 tonnes. The capstans are two-speed. At a hauling speed of 40 m/min the working load is 20 kN. At 20 m/min the working load is 30 kN. A maximum load of 60 kN can be pulled for **one minute** at reduced speed.

2.4.2 LNG Jetty 2

Position: Latitude: 20° 35.4' S, Longitude: 116° 45.75' E (see APPENDIX D).

LNG Jetty 2 is a single berth loading facility for LNG tankers' starboard side to.

The loading platform is equipped with four 16" LNG loading/vapour return arms.

The berth will accommodate vessels from 270 metres to 310 metres LOA, in the following size range: 76,000 DWT – 115,000 DWT. The maximum berthing displacement is 110,000 tonnes.

A shore gangway that lands on the ship's strengthened rail is provided. It is manoeuvred on board hydraulically (see APPENDIX N).

Four breasting dolphins (from seaward C, D, E, and F) with single cylindrical cell rubber fenders and panels extending from LAT +3.1 m to LAT +8.8 m comprise the berth face. Each breasting dolphin is equipped with double release hooks and a capstan for spring line moorings.

Two mooring dolphins (from seaward A, B, G, and H) are located at each end of the berth. These are equipped with triple release hooks and a capstan for head/stern and breast lines.

All mooring hooks are connected to the Mooring Load Monitoring System (MEMS) and have a safe working load of 125 tonnes. The capstans are two-speed. At a hauling speed of 40 m/min the working load is 20 kN. At 20 m/min the working load is 30 kN. A maximum load of 60 kN can be pulled for one minute at reduced speed.

2.4.3 LPG/Condensate Jetty 3

Position: Latitude: 20° 35.1' South, Longitude: 116° 46.1' East (see APPENDIX E for condensate berth arrangement and APPENDIX F for LPG berth arrangement).

The LPG/Condensate Jetty is situated on the eastern edge of the manoeuvring basin at a point 500 metres from the LNG jetty fender line. The loading platform is equipped with two 12" LPG arms with 10"/12" liquid and 6"/8" vapour QC/DC connections and two 12" condensate arms with 10"/12"/16" ANSI 150 lb QC/DC connections.

Normal operations are 16" for condensate and 12" for LPG with an 8" vapour return line.

The berth can accommodate vessels from 180 to 300 metres LOA.

Note: Condensate tankers at the lower end of this range (LOAs 180 to 220 m), often known as medium range or MR tankers, require detailed compatibility analysis to be conducted before they can be considered for this berth.

Condensate tankers: 30,000 DWT to 150,000 DWT.

LPG carriers: 40,000 m^3 to 110,000 m^3.

It is important the vessel lies safely alongside the two inner fenders throughout their time alongside, with sufficient tolerance to accommodate changes in freeboard and tidal range.

The fenders on the innermost breasting dolphins have a spacing of 64 metres.

The minimum parallel body length, in the ballast condition, is 70 metres.

Aft spring winches on vessels are required to be at least 60 metres from the manifold connection to provide suitable length for the after springs.

A shore gangway that lands on the ship's deck is a hydraulically operated telescopic model.

The gangway landing position varies depending on the product being loaded (i.e. LPG/condensate) (see APPENDIX L).

The berth face consists of four breasting dolphins (from seaward C, D, E, and F) with single cylindrical rubber fenders and panels extending from LAT +1.3 m to LAT +7.0 m. The panels are each 5.7 m high by 3.8 m wide. Breasting dolphins C and F are equipped with double release hook units. Dolphin D has a quad release hook and dolphin E has a triple release hook assembly installed.

Two mooring dolphins are located at each end of the berth (A, B, G, and H). Each dolphin has a triple release hook assembly. A mooring capstan is located on each dolphin. In addition to the local manual release, all mooring hooks have a remote release capability. The mooring hook console is located on the jetty platform, providing the operator with a clear view of each dolphin.

All mooring hooks have been proof loaded to 120 tonnes, and support structures have been designed for a working load limit of 120 tonnes. All hooks are linked to the Mooring Load Monitoring System (MEMS). The hooks will accept wire rope of a 44 mm diameter and synthetic rope of up to a 110 mm diameter.

Each mooring hook assembly is fitted with an integral capstan and tugger winch. The breasting dolphins have single speed capstans with a 3-tonne capacity and a running pull of 30 metres each minute. The outer mooring dolphins have dual speed capstans with a 3-tonne pull at 20 metres each minute and a 1.5 tonne pull at 40 metres each minute.

All capstans have a brake holding capacity of four tonnes.

2.4.4 Actions to be Followed During Emergency Muster Either in Terminal or Onboard Tankers

When the muster signal sounds, Pilots and Loadmasters on board tankers must report their whereabouts to the relevant main gate security team so they can be included in the site muster. This is particularly the case when the Pilot has arrived on board the tanker at sea and will not appear on the site muster manifest.

The Pilot and Loadmaster on board the tanker is to account for any visitors embarked on board the tanker, such as agents, surveyors, buyers' representatives, and other visitors. The muster of such persons on board the tanker must be relayed to terminal security.

All visitors on board vessels are required to remain on board until the-all clear has sounded and follow instructions from the Terminal Representative (Loadmaster) or tanker Master.

If the Pilot or Loadmaster and tanker Master consider it unsafe for visitors to remain on board the tanker, actions to remove visitors from the vessel to a terminal muster point will be advised to the visitors, escort arranged, and security notified.

Pilots, Loadmasters, ship's crew, and visitors who are in transit through the terminal must proceed to, and report at, the nearest designated muster point and remain there as instructed.

Emergency muster points are located at FAR 13 and FAR 14 buildings or anywhere else where there is a green flag with a red border indicating a muster point.

In the event of the unavailability of the loading jetty or gangway for disembarkation of tanker personnel and visitors, the ship's lifeboats or the offside accommodation ladder can be used to remove personnel from the tanker. This should be conducted only in exceptional circumstances and will be covered by the tanker's muster and emergency evacuation procedures.

2.5 Mooring Load and Environmental Monitoring System (MEMS)

2.5.1 Mooring Load Monitoring

A mooring load monitoring system is provided for all mooring hooks. The information is transmitted to the tankers and displayed on a dedicated iPad supplied by the Pilot and Loadmaster. The mooring hook tensions are also displayed in the Woodside Pilot's office and the terminal central control room (CCR).

The system software allows for pre-tension parameters as well as high- and low-level alarm criteria to be displayed and monitored.

It is the vessel's responsibility to monitor and adjust mooring tensions while alongside and maintain position within parameters advised by Pilot and Loadmaster.

2.5.2 Environmental Monitoring

In addition to the mooring load information, the MEMS system provides environmental data as follows:

- Current speed and direction
- Wind speed and direction
- Air temperature and pressure
- Relative humidity
- Wave height and period
- Water temperature.

The system also accesses the Remote Offshore Warning System (ROWS), which monitors, predicts, and alarms limiting sea state trends for channel transits.

2.6 Jetty Rules

During loading, the Master is required to ensure all statutory and company regulations are observed (see the *Withnell Bay Terminal Conditions*).

2.6.1 Security Alongside

Vessels will only be accepted to load at the Withnell Bay Terminal if they have a valid International Ship Security Certificate (ISSC).

Vessels must follow the guidelines contained in their ship security plan to ensure an appropriate security level is always maintained on board. The port and terminal security level in force will be communicated to ships prior to their arrival and if necessary, additional security measures will be agreed in a declaration of security before the vessel's arrival.

The terminal has strict access controls in accordance with its facility security plan, and reference must be made to Sections 2.6.2 and 2.6.3 for details of requirements.

2.6.2 Security and Control of Tanker Personnel

Control of personnel access to the tanker will be through the security personnel at the Karratha Terminal main gate. See APPENDIX S for further details.

2.6.3 Access through the Terminal

Access to the tanker through the terminal is strictly controlled. Pedestrian traffic is prohibited between the jetty and the main gate. The jetty is deemed secure under Maritime Security legislation and is accessed through electronically operated gates.

Vehicle access to the jetties is strictly controlled and only approved vehicles are allowed to operate within the terminal. The Master is required to sign acceptance of the security arrangements for the ship's crew (see APPENDIX S) prior to berthing. The appointed shipping Agent will provide the Master with details of available transport services. Arrangements for alternative transport, such as an approved bus service, can be arranged through the Agent.

Masters of tankers are reminded intoxicated persons are not permitted access through the terminal. Random breath testing is in force at this terminal, and anyone producing a sample of 0.04 blood alcohol content (BAC) or above will not be allowed onto the site. The ship's Agent will be informed and will have to collect the person from the main gate.

2.6.4 Mooring Dolphin Access

Access to the lower jetty walkways, platforms, and mooring dolphins is strictly controlled. Permission can be granted for ship's crew to check drafts by the Pilot and Loadmaster who will assess and confirm the following:

- Visual assessment of the movement of the ship in relation to loads being absorbed by the mooring lines.
- The average hook line tensions are below 30 tonnes on the MEMs system, with the trends steady or decreasing.
- Access is done in pairs, with appropriate lifejackets and radio communications.
- No mooring lines are to be adjusted while personnel are on any of the dolphins.

2.6.5 Stores

Due to vehicle access restrictions and jetty configuration, only storing of hand-carried items is allowed. A reasonable quantity of goods that can be hand carried down the jetty is a single pallet that can be broken down and hand carried across the gangway.

Under certain circumstances, stores/mechanical spares can be arranged, by a vessel Agent, for delivery by boat. Terminal permission is required, delivery times are restricted, and cargo operations cannot be compromised by this operation. If permission is not granted, stores can be delivered at inner anchorage or outer anchorage by boat arranged by Agent.

Tankers visiting the Withnell Bay Terminal can take stores from stores boats on the outboard side while alongside, provided the following criteria are met:

- The storing operation should not compromise the loading schedule of the tanker. Storing will be permitted from time of “all fast alongside” until the tanker is ready to commence arm cooldown (LNG vessels) or loading (LPG and condensate vessels). If storing is not completed within this timeframe, the storing will be suspended until completion of loading (loading arms “liquid free” in the case of LNG vessels). The alternative is to complete stores at the outer anchorages prior to/post pilot embarkation/disembarkation.
- Small vessels and workboats used for alongside storing at any Woodside-operated terminal must be compliant and current with Woodside Marine Assurance vessel vetting process. No other third-party vessels will be permitted.
- The tanker and workboat must comply with all other relevant safety, security, and environmental regulations of the terminal, the port authority, and the respective vessel’s Safety Management System (SMS).
- No liability or protest will be accepted on behalf of the terminal operator or Woodside Marine for restrictions, damages, incidents, or other form of loss arising from the storing operation alongside.

2.6.6 Engine Repairs

No engine immobilisation is allowed alongside the berth. With the Harbour Master’s approval, limited repairs can be allowed at the anchorage. It is unlikely approval will be given during the cyclone season (November to April).

2.6.7 Hot Work on Vessels Berthed at Woodside Facilities

Hot work is prohibited on all vessels while alongside the terminal.

2.6.8 Fresh Water

Not available

2.6.9 Bunkers

Not available

2.6.10 Liquid Nitrogen

Not available

2.6.11 Gangway

Shore gangways are provided on all jetties. Ship’s personnel are required to assist with respect to safe placement and maintenance of the gangway on board.

Masters of tankers must be made aware shore gangways are to be considered as a ladder rather than a stairway. Arrangements must be made to ensure the safety of personnel is not compromised if the gangway is used in the transfer of stores or crew’s baggage.

2.6.12 Lifeboat Drills

While it is recognised there can be a need to conduct lifeboat drills, for reasons of terminal safety and security it is not permitted to put lifeboats into the water while alongside any of the jetties.

2.6.13 Tanker Emergency Equipment Testing

Lifeboat engines, emergency fire pumps, and emergency generators can be tested to allow for compliance with Port State control requirements. Testing should be planned, and a request submitted at least 72 hours prior to arrival. Any testing should occur prior to or after any hydrocarbon transfer to minimise any impact to the ship's loading schedule.

2.6.14 Australian Government Requirements

Prior to arrival at the terminal, the Master must ensure the vessel meets all Australian Government requirements, including compliance with the Australian Biosecurity Act 2015 and the Department of Agriculture, Fisheries and Forestry Australian Ballast Water Management Requirements. More information can be sought from approved Australian agents.

Pratique requirements must be confirmed by approved Australian agents, including any special customs and immigration requirements. Pratique requirements must be met and complied with before a vessel visits the terminal.

2.6.15 Ballast Water Discharge Management

All arriving tankers at Woodside terminal must comply with the Australian Biosecurity Act 2015 requirements for ballast water management for vessels arriving into Australian Economic Exclusive Zone (EEZ). This includes compliance with compulsory exchange of ballast water prior to arrival into Australian waters for those vessels not fitted with a class approved and operational Ballast Water Treatment System (BWTS). Those vessels fitted with a class approved BWTS will have submitted a copy of the Ballast Water Management Certificates as evidence, as part of the Woodside Assurance Process.

Note: Discharge of ballast tank sediment is an offence in Australian waters. A tanker can use ballast eduction to remove residual ballast water to an acceptable level, provided its use will not result in the increased risk of discharge of ballast tank sediment.

See the Department of Agriculture, Fisheries and Forestry Australian Ballast Water Management Requirements for more information.

2.6.16 Discharge of Open Loop Exhaust Gas Cleaning Systems

Withnell Bay LNG Terminal is in an environmentally sensitive area and, as such, the discharge of closed loop wash water is not permitted at this terminal. See AMSA Marine Notice 2022/12 – Requirements for the use of exhaust gas cleaning systems in Australian waters for further information.

3 Communications

Communication terminology for ship/shore communications is described in APPENDIX T.

Table 2 outlines the contact information that applies to the Withnell Bay Terminal.

Table 2: Withnell Bay Terminal Contact Details

Contact Method	Details
Email	pilotloadingmaster@woodside.com.au
Duty Pilot Mobile	+61 438 993 420
Phone	(08) 9158 7153 / 7154 / 7159 / 7076

Notes	Karratha Main Gate is manned on a 24-hour basis. Urgent, out-of-hours messages can be forwarded to (08) 9158 8171.

3.1 Communications Plan Dampier

Table 3 outlines the communications plan for Dampier.

Table 3: Communications Plan Dampier

Area	Communication Channels
Pilbara Ports Authority	• The Dampier VTS tower is manned 24 hours a day. Routine operational communications such as Pilot on board notification, intended movements, and planned routes or clarification between vessels are to be communicated directly from each vessel through the working channel. • Any port-related safety or emergency issues must be communicated directly to “Dampier VTS”, who are required to respond immediately. • VHF Channel 11 Calling • VHF Channel 11 Working
Woodside Radio	VHF Channel 82 – General working and calling channel
Pilotage (Woodside Terminal)	VHF Woodside “Port Ops” Channel (Duty Pilot Mobile: 0438 993 420)
Tug Standby Channel	Tug mobile phones
Port Emergency Frequency	VHF Channel 79
Cargo Loading	Dedicated UHF LNG and LPG/condensate loading channels

3.1.1 Pre-arrival Communication

Prior to a tanker’s arrival at a Woodside facility, pre-arrival documentation, along with any relevant pre-arrival information, will be sent to the tanker’s Master at least 72 hours before the scheduled pilot boarding time. The tanker’s Master is to sign and return the terminal conditions and safety declaration to pilotloadingmaster@woodside.com.au at least 24 hours prior to the scheduled pilot boarding time.

Note: This acknowledgement of terminal conditions must be met with no comments/restrictions or limitations and failure to comply accordingly can result in delays to berthing and loading the tanker.

To assist in terminal planning, and to satisfy port regulations, the following pre-arrival messages are to be sent to the tanker’s Agent.

3.1.2 Tanker Pre-arrival Messages

The following information is required by the Withnell Bay Terminal and is to be sent to the tanker’s Agent by all tankers using the facility.

The tanker’s Agent is to forward the information to the Pilot & Shipping Office.

Emails: pilotloadingmaster@woodside.com.au

??shippingofficeplant@woodside.com.au

To assist in terminal planning, and to satisfy port regulations, the following pre-arrival messages are to be sent to the Pilot/Loadmaster and the vessel’s Agent (see Table 4).

Table 4: Tanker Pre-arrival Messages

When	Action
On departure from last port of call (in any event no less than five days prior to arrival)	Answer the Withnell Bay Pre-arrival Questionnaire. For: • LNG carriers, see Section 3.2.1 • Condensate Carriers, see Section 3.2.2 • LPG carriers, see Section 3.2.3.
On departure from last port of call	Answer the Withnell Bay Questionnaire (see Sections 3.2.1, 3.2.2, and 3.2.3) in any event, no less than five days prior to arrival.
Seven days prior to arrival	Advise the estimated time of arrival (ETA) and arrival draft Dampier.
Three days prior to arrival	Advise the ETA.
Two days prior to arrival	• Advise the ETA, arrival, and departure drafts. • Confirm all cargo systems operational. • Any changes of more than six hours after 7-day ETA.
24 hours prior to arrival	Confirm the ETA.
Any changes of more than one hour in last 24 hours prior to arrival	

Note: Tanker Masters are requested to send the 24-hour ETA (item 6) and any changes of more than one hour within 24 hours of arrival (item 7) to the Pilot/Loadmaster directly, in addition to the Agent. Masters should also consult their Charterer's instructions in this regard.

3.1.3 Arrival Port of Dampier Limits

All vessels within VHF range of the Port of Dampier are required to monitor VHF channels 16 and 11 for information regarding the movement of other vessels arriving at, or departing from, the port.

Two hours prior to arriving at port limits, vessels must contact Dampier VTS and advise the ETA at port limits and any other relevant information such as intention to anchor, etc.

The Pilot will contact vessels one hour prior to Pilot boarding using VHF channel 11.

3.2 Withnell Bay Pre-arrival Questionnaires

3.2.1 Withnell Bay Pre-arrival Questionnaire (LNG Carriers)

If, at any stage of the ballast passage, it becomes apparent the vessel cannot be able to meet the ETA, as instructed by the Charterer, Woodside Marine must be informed as soon as possible, so any exposure to tank-tops can be evaluated.

If the vessel is unable to comply with the applicable requirements with respect to arrival tank temperatures and pressures, Woodside Marine must be advised as soon as possible. If Moss vessels arrival tank equator temperature shows warmer than -110^{o}C, or if Membrane vessels tank bottom temperatures show warmer than -130^{o}C (or other temperatures that might have been agreed), a partial tank cooldown will be required. Arrival cargo tank pressures must be controlled to be targeted at less than 14 kPa, but ideally around 10 – 11 kPa, if possible.

Any problems associated with cargo systems, navigation equipment, moorings, etc., must be advised to Woodside Marine as early as possible to allow for contingencies to be developed in an endeavour to avoid delays to LNG tanker schedules.

Table 5: Sequence of Messages

When	Information
On departure from the discharge (or repair) port	• The ship's name. • The date and time of full away on passage (FAOP) from their discharge port. • The date and time of arrival at the pilot boarding point in Dampier.
Seven days prior to arrival	• The date and time of arrival at the pilot boarding point in Dampier. • The estimated tank temperatures on arrival and tank cool down period required. • The expected arrival draft. • The earliest possible ETA at Dampier. North West Shelf Project ships might want to carry out boat drills. If so, they must include the request with the seven-day message. Pilot boarding time will be advanced by one hour and the ship brought to the inner anchorage. If requested, a tug can be provided to assist in making a lee.
Five days prior to arrival	• The date and time of arrival at the pilot boarding point in Dampier. • The estimated tank temperatures on arrival and tank cool down period required. • The earliest possible ETA at Dampier.
Three days prior to arrival	The ship's Agent is to provide an electronic copy of the 72 Hour Pre-arrival Questionnaire. See APPENDIX V for examples of questionnaires for LNG, LPG, and condensate vessels.
Two days prior to arrival	• The date and time of arrival at the pilot boarding point in Dampier. • The estimated quantity of LNG on board on arrival. • The volume of LNG cargo to load. • Any requirements that could extend the vessel's stay in port beyond what is required to load the cargo. Information, as required by AQIS, must be forwarded to the Agent with the two-day message.
One day prior to arrival	• The ship's name. • The date and time of arrival at the pilot boarding point in Dampier. • The estimated tank temperatures and cool down period required. Weather forecast for Mermaid Sound will be sent to the vessel approximately 24 hours prior to arrival.
Arrival at Port of Dampier limits	All tankers within the VHF range. Notice of readiness (NOR) must be tendered at the time the Pilot boards or, if the vessel having arrived off the port at the time instructed by the Charterer is unable to proceed to the berth, the time anchored at the outer anchorage. All NOR acceptances must be stamped for "Receipt Only". NOR must be advised verbally or in writing to the Pilot, who will enter this on the port timesheet.

3.2.2 Withnell Bay Pre-arrival Questionnaire (Condensate Tankers)

This questionnaire is to be answered by all tankers upon departure from the last port of call (in any event to be received at least three days prior to arrival).

See APPENDIX V for a sample.

3.2.3 Withnell Bay Pre-arrival Questionnaire (LPG Carriers)

This questionnaire is to be answered by all tankers upon departure from the last port of call (in any event to be received at least three days prior to arrival).

See APPENDIX V for a sample.

3.3 Port Health

Radio Pratique is in force for the Port of Dampier. Vessels must send a radio pratique message to their Agent not more than 48 hours or less than 24 hours before arrival, or as deemed by the Australian Quarantine and Inspection Service (AQIS).

3.3.1 Quarantine Anchorage

Should radio pratique not be granted, the Harbour Master will then advise an anchorage position if the vessel is not berthing on arrival.

3.4 Weather Reports

While at anchor, vessels must monitor weather reports. Urgent reports will be passed on request to the vessel by Dampier VTS (VHF 16 – 11). While alongside, reports of an urgent nature will be passed through the Pilot/Loadmaster.

4 Ship Compatibility and Assurance

All vessels scheduled to load at Withnell Bay terminals will be subject to a compatibility and assurance approval process which, if successful, will approve the vessel for a single, or multiple, terminal visits. The Compatibility and Assurance Process will review the suitability of the vessel prior to arrival in terms of management capability and performance and the physical attributes of the ship against the infrastructure of the terminal. Aspects under consideration will include, but are not limited to:

- vessel size and displacement
- compatibility with the jetty fender/mooring systems
- arrival and departure draft
- compatibility with gangway access, marine loading arms, and emergency shutdown systems
- total windage, vessel manoeuvring characteristics, and bridge visibility from the conning position
- suitability of towage fittings
- operator history
- class or flag state restrictions.

Terminal approval can be withdrawn should a vessel fail to meet the expectations of the terminal.

4.1 Sanctions Assessment Procedure

International and Australian sanctions can impact the ability of operator, lifting parties, and others to undertake or participate in product offtake activities at Woodside-operated facilities. When assisting an Operator to comply with these requirements, Marine Assurance undertakes a process (based on the information available to Marine Assurance) to assess whether any sanctions exist against a vessel or relevant person. In some circumstances, the Operator might require additional information

or explanation from the relevant lifting party. The Sanctions Assessment Procedure (see APPENDIX W) prescribes the form in which this further information or explanation can be sought (i.e. with completion of a pro-forma declaration). Lifting parties must also undertake their own process to ensure they comply with any international and Australian sanctions that can apply to their role in respect to product offtake activities at Woodside-operated facilities.

The Operator undertakes to give prior notice in writing of the requirement for a declaration to be completed by the lifting party (this will be driven by the Marine Assurance team's checks in respect of a vessel) and, in turn, requires any change in circumstances after submission of the declaration be communicated by re-submission of a new declaration.

The Operator can withhold, suspend, or terminate the provision of marine services in support of product offtake (including pilotage) and require removal of any vessel from a berth, considering responses in the declaration (or re-submitted declaration) or Operator's own and ongoing sanctions assessments.

5 Berthing Arrangements

5.1 Pilotage

Pilotage is provided by Woodside Marine Operations. Pre-arrival information will be forwarded by the Pilots to vessels, several days prior to arrival in Dampier.

5.1.1 Pilotage Requirements

Pilotage is compulsory for all tankers using the Woodside Withnell Bay Terminal.

Woodside terminals use Pilot Station A (20°21.0'S 116°44.0'E) for helicopter transfers and Pilot Station C (20°23.7'S 116°43.7'E) for pilot boat transfers. Inbound vessels must not proceed south of the respective pilot stations without a Pilot on board.

5.1.2 Pilot Boarding Requirements

Personnel transfer is a high-risk operation and Woodside expects strict adherence to the relevant international instruments, including:

- IMO Resolution A.1045(27)
- SOLAS Regulation 23
- Section 7 Pilot Transfer Arrangements
- the IMO/IMPA Pilot Ladder Poster (see APPENDIX F).

Relevant guidelines and directives contained in current AMSA Index of marine notices and the Pilbara Ports Authority Port of Dampier Local Marine Notices must also be strictly observed.

Woodside does not accept any pilot ladder arrangements of a trapdoor design for the transition between the rope ladder and combination gangway.

A Responsible Officer must inspect the pilot boarding arrangements and confirm the ladders are clean, of sound construction, are correctly rigged in accordance with the legislative instruments, and as directed by the Pilot. A Deck Officer must supervise the personnel transfer from the upper deck.

For the application of IMO Resolution A.1045(27) to existing ships (pre-2012):

- Woodside Port Operations' strong preference is for a physical load test of the securing points for pilot ladder and man ropes.
- ISO 799-3 (2022) should be consulted and applied when determining the strength of the deck securing points.

- Ships compliant with A.1045(27) or with a delivery date on or after 1 July 2012 should be deemed to meet requirements.

For all other ships, the strength of the pilot ladder and man ropes securing points should be demonstrated (in order of preference) by at least one of the following methods:

- Independent physical load test and certificate.
- Shipyard as built drawings clearly stating the SWL of the strong points.
- Classification Society statement specifying the pilot ladder securing points achieve the intended strength requirement of ISO 799-3 – Section 5.

Regardless of ship delivery date or compliance with resolution A.1045, it is recommended that the strong points are tested at Special Survey every five years.

All pilot ladders used to board or disembark a ship at Woodside terminals must be constructed and rigged in accordance with SOLAS regulations, including:

- being independently lashed to the rated strong points on deck (not handrails)
- the ladder and gangway being secured appropriately to the vessel's hull
- each ladder having a SOLAS compliance plate attached, with certification stating the ladder has been constructed to comply with SOLAS and ISO 799 regulations
- being no more than 30 months old (from date of manufacture)
- the ladder winch reel locking-off arrangement being engaged with supplementary lashings securing the pilot ladder to rated strong points on deck.

Note: Vessels rigging combination arrangements are exempted from Section 7.4.3 of IMO Resolution A.1045(27); the terminal will permit pilot ladders to be secured inboard at a horizontal distance of less than 915 mm when rigged as a combination ladder.

Ladders not stowed on pilot ladder reel arrangements must be secured to rated strong points on deck by two separate means, which can involve one or two pairs of ancillary lines secured by rolling hitches to each side rope of the ladder if the side rope termination thimbles cannot be shackled directly to the strong points on deck.

Manropes must not be used for Pilot transfers beyond 12 months from the date of manufacture. Other ancillary ropes, including independent upper deck lashings and shipside lashings, should also be certified and renewed no later than 12 months from the date of first use, as recorded in the ship's planned maintenance system (PMS).

Ensure corrosion-induced wear in stanchion fittings, collapsible side rails on gangways, and their platforms does not result in unstable handholds or instability underfoot.

The bottom of the ladder must be positioned 2.0 metres above water level with manropes available as required by the Pilot (SOLAS 7.1.1).

A suitable lee must be provided for the safe embarkation of personnel and equipment.

5.2 Terminal Representative

The Pilot/Loadmaster acts as both Pilot and Terminal Representative on all tankers. The Pilot/Loadmaster is responsible to the company for ensuring its requirements regarding the safe mooring and loading of the tanker are observed while the tanker is alongside the berth. The Pilot has a responsibility to the Harbour Master for ensuring the requirements of the Pilbara Ports Authority Regulations are observed. A Loadmaster is assigned to the vessel throughout the loading operations. Tankers are required to provide suitable accommodation for the Loadmaster (Pilot).

The Pilot/Loadmaster is required to ensure the good liaison and communications, essential for a safe and efficient operation, are maintained between the tanker's staff and the terminal. The Pilot/Loadmaster is to ensure any concerns, comments, or advice from either the tanker's Master and Officers or the terminal are followed through in an appropriate manner.

It is incumbent on the Master to ensure full cooperation with the Pilot/Loadmaster to ensure a safe and efficient operation.

5.3 Channel Transit

Tankers, unless for reasons of safety or as specified by the Harbour Master, must remain within the designated Woodside channel when proceeding to or from the terminal.

At all times while manoeuvring, the vessel must monitor VHF channels 11 and 82 in addition to the Woodside UHF Pilotage Channel.

5.3.1 PPU Berthing Aids

The Pilot will carry a portable global positioning system (GPS) unit as part of the service agreement. This equipment is used as a navigation and berthing aid, including jetty approach speeds.

5.3.2 Transit Procedures during Loading Operations at the Woodside Facility

During loading operations, an exclusion zone of 270 metres for LPG and 180 metres for LNG is enforced for vessel and tug manoeuvres.

To avoid any contravention of the exclusion zone by either a manoeuvring tanker or the tugs, loading operations will be suspended during the following pilotage movements:

- Loading at LNG Jetty 1 is not affected by any vessel berthing or sailing at or from any other jetty.
- Loading at LNG Jetty 2 is not affected by any vessel berthing or sailing at or from any other jetty.
- LPG loading at Jetty 3 must be suspended whenever an LNG tanker is berthing at LNG1.
- Condensate loading is not affected by any vessel berthing or sailing at or from any other jetty.

Whenever tankers can continue loading, both Pilots must satisfy themselves of the following:

- Before the manoeuvre, the Pilots on both vessels must agree to continue loading. The final decision will lie with the Pilot on the manoeuvring vessel who will consider the weather, tug availability, and handling characteristics of the vessel.
- The Pilot/Loadmaster on the loading vessel will fully brief the Master and Chief Officer on any special requirements necessary to continue loading while a second vessel is manoeuvring. The integrity of the mooring system and loading arms will be confirmed, and an enhanced deck watch and continual vessel CCR manning are to be maintained. The Pilot/Loadmaster will attend the vessel's CCR and monitor the operations until the other vessel is clear or alongside.
- At all times, the relevant restricted zones will be maintained.

5.4 Withnell Bay Transit and Tug Use Criteria

Transit criteria for maximum winds and minimum tug numbers are detailed in APPENDIX R, which defines the normal operational parameters for Withnell Bay Terminal tanker arrivals and departures. These are determined during the vetting process after considering relevant vessel characteristics.

Occasionally, vessels might be asked to adjust arrival ballast drafts, if possible.

The decision to berth or sail any vessel depends on many factors, which can only be assessed by the Pilot and vessel Master. In any event, no vessel will be berthed in wind speeds exceeding 30 knots (10 metre/ ten-minute average).

High windage LNG vessels are wind limited as defined by their cargo capacity, allocated jetty, and whether the vessel is in transit to or from the berth (see APPENDIX R).

The strength and direction of tidal streams, along with any unusual environmental factors, should also be considered when vessel movements are being planned.

Prior to inward or outward transits, the Pilot will confirm the sea state. Prior to any decision regarding loading, cognisance of the prevailing conditions and sea state must be taken to ensure the required UKC is correct and can be maintained.

5.4.1 Inward Transit Confirmation from Terminal

During the inward transit, the Pilot must ensure the terminal is ready to receive the ship and provide a mooring crew upon the ship's arrival. As part of the inward procedure, the Pilot must call the terminal prior to passing Woodside No.6 Buoy and provide an estimated time the vessel will be alongside. If the terminal is not ready to receive the ship, then inward transit will be delayed or suspended accordingly.

5.4.2 Outward Transit Through Woodside Alternate Route

When sea states exceed, or are predicted to exceed, the criteria for a reef crossing off the Woodside Channel Buoy, all vessels must depart through the Woodside alternative departure route.

The deviation to the east is necessary to avoid a shallow patch east off No.6 Beacon and must always be observed when transiting the alternative route.

The following track should be observed when the alternative departure channel is used:

- When clear of the No.7 Beacon, alter course to starboard to bring Legendre Is light dead ahead on about 035° T.
- Head north after clearing Woodside No.6 Buoy light, then alter course to port onto a course of 326° T to transit the Rio Tinto channel (declared depth 15.8 metres at LAT) from the Courtney Shoal Buoy to the Sea Buoy.

Occasionally alternative departure route transits will be undertaken to maintain Pilot familiarisation.

5.4.3 Transit Speeds

Transit speeds for the LNG tankers are based on the model and computed response characteristics of the LNG tankers with respect to squat and vertical motion as well as the other parameters used in determining a minimal Under Keel Clearance (UKC) for the entire tidal range.

Simulation results have shown speeds more than those in Table 6 and Table 7 degrade the ability to effectively respond to a loss of steering or engine failure. Should maximum sectional speeds be exceeded, a marine event report will be generated for analysis purposes.

Table 6: Maximum Transit Speed for Arrival Tankers (UKC ≥ 2.0m)

Passage Section Inwards	Description	Max. Sectional Speed
Approach Track	Sea Buoy to No.7 Buoy	Safe Speed
The Bend @ No. 9	No.7 Buoy to No.11 Buoy	10 knots
NWS Inner Channel	No.11 Buoy to No.13 Buoy	8 knots
NWS Swing Basins	No.13 Buoy to berths	5.5 knots

*Max sectional speed in the vicinity No.10 Buoy to No.11 Buoy can be exceeded by ½ a knot if required in the prevailing conditions.

Table 7: Maximum Transit Speed for Departure Tankers (UKC ≥ 1.5)

Passage Section Outwards	Description	Max. Sectional Speed
NWS Swing Basins	Berths to No.13 Buoy	5.5 knots
NWS Inner Channel	No.13 Buoy to No.11 Buoy	8 knots
The Bend @ No. 9	No.11 Buoy to No.7 Buoy	10 knots
Departure Tracks	No.8 Buoy to Sea Buoy	Safe Speed

5.5 Tanker Draughts

5.5.1.1 Inwards Drafts

Inbound tankers must operate at drafts within normal operating parameters and must maintain a minimum static UKC of 2.0 metres.

To provide for 24-hour non-tidal restricted berthing, condensate tankers arrival draft must not exceed 10.0 metres and vessel's trim must not exceed 3.0 metres.

5.5.1.2 Minimum UKC Alongside

A minimum UKC of 1.0 metre must be maintained at all berths.

5.5.1.3 Outwards Drafts

Outbound tankers must operate at drafts within normal operating parameters and must maintain a minimum static UKC of 1.5 metres.

5.6 Towage Services

All tankers berthing at the Withnell Bay Terminal will use the services of the tugs provided by Svitzer Australia Pty Ltd. This service is provided under the terms and conditions of the UK Standard Conditions for Towage and Other Services (UKSTC) (1986 as amended). Towage services will only be provided upon acknowledgement of this condition.

5.6.1 Tug Fleet

The tug fleet consists of 5 x 80 tonne bollard pull RAstar 2800 tugs.

5.6.2 Allocation of Tugs

The five-tug fleet is scheduled by Svitzer Australia Pty Ltd to meet the total shipping needs of both Withnell Bay and Pluto terminals.

Allocation of any tugs within this fleet will be based on good port practices to ensure the most efficient use of tugs and the port operation.

The Port Operations Superintendent (POS) will coordinate and have the final call for shipping movements for the two facilities considering the:

- proximity of cyclones, as described in the cyclone procedures
- size of the weather window at any time of the year
- proximity of squall and other high wind events, which can disrupt normal shipping activities
- workforce constraints
- tug constraints in the event of breakdowns, maintenance, or dockings.

5.6.3 Tug Requirements

For planning purposes, the minimum tug numbers prescribed in APPENDIX R must not be reduced unless extenuating circumstances arise. In the event, an operational risk assessment will be required for this during the planning phase.

If the Pilot and tanker Master consider an increase in tug numbers is appropriate, early advice is generally required to facilitate this without delays.

For more information, see APPENDIX R.

5.6.4 Tugs on Station

The securing and placement of tugs will always be dictated by logistical and environmental considerations. However, the following standard practice for arriving and departing tankers has been developed, with important safety considerations taken into account:

- For inbound tankers, one tug will meet the tanker before No.7 Buoy and make fast aft. Two muster tugs will meet the tanker before No.7 Buoy and escort until made fast in accordance with the Pilot's direction. The fourth (and, if required, fifth) tugs will generally meet the inbound tanker after passing No.10 Buoy and make fast in accordance with the Pilot's direction.
- For the outbound tankers, the tugs will escort the tanker to No.8 Buoy, with the tug aft made fast until the tanker is passing No.8 Buoy. However, the Pilot or tanker Master might require the escort tugs to be retained for longer.

5.6.5 Securing of Tugs

All tugs will be made fast using tug's lines with messenger lines attached. When letting go tugs, the towlines must be lowered down in a controlled manner. Tug towlines must **not** be dropped.

5.6.6 Standby Tug Duties

For tanker and terminal safety, at least one tug will remain on standby in the tug pens at the King Bay Supply Facility while a tanker is alongside any of the berths. Additional standby tugs might be required due to berth occupancy and environmental factors. Standby tugs might be called out to take up positions off berth exclusion zones or alongside the tankers.

5.7 Mooring Requirements

All vessels moored at this terminal must conform to the requirements contained in the OCIMF Mooring Equipment Guidelines 4th Edition (MEG4), particularly with respect to Section 3 – Mooring Forces and Environmental Criteria.

For LNG tankers, the mooring requirements will be assessed individually. Generally, these will be more conservative than for a condensate tanker of the equivalent size.

Mermaid Sound can experience long-period swells that impact berth operability. Studies have shown that 22 metre mooring tails improve mooring integrity during long-period swell events. For the date range, 1st May to 1st November, all LNG carriers are strongly recommended to fit 22 metre mooring tails for all lines except forward and aft backsprings. Should an LNG carrier not be able to fit 22 metre mooring tails, Woodside Port Operations must be notified as soon as possible. Outside of this date range, 22 metre tails may be requested by Port Operations or can be fitted at the ship's discretion in lieu of 11 metre mooring tails.

Vessel operators may choose to provide mooring analysis for use of 22 metre tails, but this is not a requirement of the Terminal. Where the Vessel operator chooses to conduct and supply such analysis, that analysis should determine the limiting windspeed that results in movement on the berth of up to 1.0 metre (rather than limiting line tension) for the worst case whilst applying MEG 4 standard conditions of current.

5.7.1 Mooring Integrity

The tanker Master is responsible for providing adequate mooring lines and ensuring they are properly tended while the tanker is alongside. Swell induced movement can cause very high mooring loads. Minimum mooring requirements have been determined based on mooring studies associated with the berths at Withnell Bay.

The tanker Master and Pilot/Loadmaster must concur the tanker is effectively moored prior to the commencement of cargo operations.

Cargo operations must be stopped if there are any concerns about the mooring system integrity, including the failure or inability of the tanker to keep the moorings satisfactorily tensioned, with all lines bearing a suitable and even strain but not over-tensioned.

Dampier is essentially an open, unprotected port. Berth operability graphs are monitored on board tankers using an iPad supplied by the Pilot/Loadmaster, which also displays mooring line tensions. If predictions indicate the sea state will exceed berth operability curves, then this should be brought to the Pilot/Loadmaster's attention. This is most likely to occur during periods of long period swell, with Hs (wave height) exceeding 0.3 metres and Tp (wave period) exceeding 15 seconds.

5.7.2 Condensate/LPG Tanker Minimum Requirements

Tankers required to moor at this terminal will have to submit a detailed mooring plan during the vetting stage, which meets the requirements of OCIMF Mooring Equipment Guidelines to ensure the vessel can safely moor at the jetty.

In some circumstances, an OPTIMOOR study might be required to verify the mooring plan complies with OCIMF standards. This will be decided at the vetting stage.

All mooring lines must be on winches. No ropes on bitts will be allowed. All SWR and HMPE mooring lines must be fitted with suitable rope tails. No mixed moorings will be allowed.

5.7.3 Condensate and LPG Tanker Mooring Requirements

Table 8: Condensate Tanker Mooring Requirements

Tanker Size	Wire	Synthetic (HMPE)	Lines Required	
	MBL (tonne)	MBL (tonne)	Fore	Aft
90 – 150 (DWT x 1000 t)	80	89	2+2+2	2+2+2
LOA 240 – 250 m				

The recommended distance for the main deck aft spring fairlead is a minimum of 60 metres from the centre point of the manifolds in use.

Table 9: LPG Tanker Mooring Requirements

Tanker Size	Wire	Synthetic (HMPE)	Lines Required	
	MBL (tonne)	MBL (tonne)	Fore	Aft
50 – 80 (DWT x 1000 t)	70	77	2+2+2	2+2+2

Note: The foregoing minimum requirements are based on conservative environmental parameters. In particular, cyclonic induced swells dictate a high "spring" mooring integrity.

It might be possible a vessel that does not comply with these mooring requirements might be able to deploy additional mooring lines to maintain mooring integrity with moorings with a lesser Mean Breaking Load (MBL) (e.g. a 3+2+2 or 3+3+2 arrangement). This forms part of the initial vetting process where minimum moorings are determined prior vessel acceptance to load the nominated cargo.

The recommended distance of 60 m from the centre of the manifold and the aft main deck spring fairlead is based on the fact the centre of the condensate loading arms ashore to the inner breasting dolphin (E Dolphin) is 38 m and the maximum angle recommended by OCIMF is 25 degrees. This is calculated at HAT and a freeboard of 13 m.

Should a vessel not be able to comply with this requirement, other options for aft back spring moorings can be considered (e.g. springs from the poop deck or the feasibility of running springs to other dolphins) provided the integrity of the mooring system is maintained.

5.7.4 Mooring Lines

The following are the requirements for all mooring lines:

- All mooring lines used by vessels are to be in good condition, with no joins (splices, knots, bends, or shackles) in them.
- Mooring lines are to be kept tight and the ship kept firmly alongside and parallel to the fender line.
- During adjustment of mooring lines, it is essential that the ship's position alongside with respect to the spotting line is maintained.
- Ship mooring lines are to be properly tended 24 hours a day by a competent person while a vessel is moored alongside.
- Regular checks are to be made to ensure lines have an even tension.
- The use of wire mooring tails is prohibited.
- Under no circumstances is wire line to be made fast to a bollard.
- Standing lines and lines to winch drums must be deployed symmetrically fore and aft.

5.7.5 Running of Mooring Lines

On all jetties, vessels will only be allowed to run one mooring line at a time (see APPENDIX O and APPENDIX P).

Each of the spring lines (forward and aft) is to be run by passing a heaving line to the outer end breasting dolphin, to which the jetty mooring crew will attach a messenger rope. The messenger rope will be retrieved onto the ship and attached to mooring line tail rope, about a metre from the shore side eye of the tail. In the case of spring lines, heaving lines must not be passed back to the shore by re-attaching them to the mooring or messenger lines, as they often foul during the deployment process. This fouling significantly increases hazard levels on the mooring dolphins.

The **first breast line** at each end (forward and aft) will be retrieved onto the ship by a heaving line in a similar fashion to the retrieval of the spring lines (i.e. the ship's crew pass a heaving line to the outer end breasting dolphin to which the jetty mooring crew will attach a messenger rope, which is then taken to the poop deck). Heaving lines must remain attached to the messenger while running remaining mooring lines.

The **second breast line**, and all subsequent lines, can be retrieved in the process outlined in APPENDIX O and APPENDIX P.

The ship must never retrieve a messenger line, a heaving line, or a mooring line using the ships winches while jetty crew are on the dolphin. Ship's crews are requested to check the jetty mooring crews are standing well clear before retrieving any line using a winch. This is to avoid any potential

for a parted line to recoil and strike members of the jetty crew. Delays to mooring operations will occur if this process is not followed.

5.7.6 Excessive Mooring Line Tensions

All mooring hook loads are monitored in the terminal and tanker CCR's using an iPad supplied to the ship. All efforts must be made to keep average loads on each mooring line between 5 and 30 tonnes.

The shipboard monitor will indicate a pre-alarm condition if any mooring exceeds a load of 30 tonnes and a further alarm will be initiated if loads exceed 40 tonnes.

Instantaneous loads above 55 tonnes indicate efforts to maintain mooring line tensions below 30 tonnes have failed, and therefore the following actions are required (see Table 10).

Table 10: Actions to Manage Excessive Mooring Line Tensions

	Role	Action
1.	Tanker crew	Alert the Pilot/Loadmaster if line tension management is becoming difficult.
2.	Pilot/Loadmaster	Call standby tugs out to assist.
3.	Pilot/Loadmaster	Advise the Duty Pilot and request assistance with managing situation, particularly with hazard management, logistics, and notifications.
4.	Pilot/Loadmaster	Stop loading, liquid free the loading arms, and prepare the arms for disconnection. Disconnection of loading arms must proceed urgently if instantaneous mooring line tensions exceeding 60 tonnes are occurring.

Woodside Port Operations will continue to assess the situation in consultation with the terminal and the vessel's Master before deciding on further actions, which could include sailing the vessel.

5.7.7 Mooring Line Failure

The Pilot/Loadmaster must be called immediately upon failure of any component of the mooring system. The Pilot/Loadmaster will address the following issues:

- Cease liquid hydrocarbon transfer.
- Call out standby tugs to push up.
- Report the event to the terminal and Duty Pilot.
- Plan recovery action with the terminal and the tanker Master.
- Restore mooring integrity.
- Recover damaged mooring components on board, if possible.
- Investigate and report.

5.7.8 Limiting Conditions Alongside

During periods of long low waves or cyclonic activity, reference is to be made to the Woodside cyclone procedures, which might require the tanker to depart prior to the onset of operational limiting conditions affecting the berth. If limiting conditions become an issue while a vessel is alongside a berth, then Woodside Port Operations will assess the situation in consultation with the terminal and vessel's Master before deciding on further actions, which could include sailing the vessel.

5.7.9 Early Departure Guidance For Membrane LNG Tankers:

Unforeseen circumstances such as unfavourable environmental conditions, ship or shore-based emergencies or mechanical issues may require cargo to be stopped and the vessel depart the berth partly loaded. This may leave a membrane tanker at risk of cargo tank levels being outside the critical sloshing limits. These limits are commonly between 10% and 70% of cargo tank volumes.

In this case the vessel should follow the guidance in their operating manuals and/or computer-based systems to consolidate cargo by internal transfer to attain cargo levels within the sloshing limit parameters. The vessel's Master and terminal representative will liaise as to the best and most efficient process and establish the time frame required.

The vessel may have to consider cargo consolidation in sheltered waters if this cannot be completed before departing the berth.

5.7.10 Loading Arm Wind Limitations

If winds of over 35 knots (10-metre/10-minute average) are forecast, loading is to be stopped and the loading arms disconnected before this occurs. Normally, in squall conditions the vessel will remain alongside with arms connected.

5.7.11 Electrical Storms

When there is electrical storm activity in the vicinity, loading operations are to be stopped.

6 Safety Precautions

The Pilot/Loadmaster will remain on board during the vessel's stay in port and will liaise between the ship and shore in the event of an emergency.

6.1 Cargo Handling Philosophy

The Master is responsible for the operation of their tanker including the cargo handling operation. They are to ensure their staff, who are delegated the responsibility of conducting or overseeing cargo operations and related duties, are qualified and competent to do so. At all times, sufficient personnel must be available on board to keep an efficient deck and cargo watch. In general, a Responsible Officer must remain in the cargo control room to ensure the ship/shore liaison is continuously maintained.

6.1.1 Loss of Containment

The Terminal/Pilot/Loadmaster must be notified immediately of any loss of containment.

Any uncontrolled release/escape of liquid and or gas requires immediate remedial action, with steps taken dependent upon the circumstances and severity.

The Terminal/Pilot/Loadmaster will assess the leak and manage following Woodside's Health, Safety and Environment Event Reporting and Investigation Procedure.

6.2 Medical Advice

It is critical that anyone affected by a cryogenic burn must **immediately** contact the medics at the KGP front gate. They will then enact the protocols for treatment.

6.3 Ship/Shore Communications

All ship/shore communications **must** be closed loop to ensure concise communication. Only agreed terminology must be used (see APPENDIX T).

During critical periods of the operation, such as "start-up", "tank change", and "topping off'", the Pilot/Loadmaster will be in the tanker's CCR to monitor operations and will assist in communications, where necessary. The tanker is to inform the Pilot/Loadmaster of any circumstance that can affect normal loading operations.

6.3.1 Loss of Ship/Shore Communications

In the event of total loss of communications, with **no response** from UHF and VHF radio channels, hotline/PABX phone, or Pilot/Loadmasters mobile phones, an ESD must be activated either by the terminal or the vessel. Cargo transfer must remain stopped until communications are restored.

6.4 Emergency Documents

Before commencing operations, the Master or their Deputy must ensure copies of the following documents are placed ashore at the head of the gangway:

- Cargo handling plan
- List of characteristics of cargo on board and to be loaded, together with the position of stowage
- Crew list
- Vessel's general arrangement plan/vessel's fire safety plan.

6.4.1 Ship/Shore Safety Check List

The Ship/Shore Safety Check List (SSSCL) will be conducted jointly by the Pilot/Loadmaster on behalf of the terminal and the Chief Officer or their appointed representative on behalf of the tanker. The safety checklist, as contained in the port document, will be completed and signed by the parties prior to the opening of the tanker's manifold valves. Repetitive checks will be carried out as necessary, but at least every 12 hours by the Pilot/Loadmaster, more frequently by the tanker, and must be initialled with the time of the check to indicate continued compliance.

6.5 Vessel Readiness

There should be always sufficient crew members on board to deal with any emergency.

6.5.1 Main Engine Readiness

While alongside, the terminal the tanker's main engines and related auxiliaries must be kept in a state of readiness such that the tanker can leave under her own power in an emergency.

6.5.2 Minor Shipboard Repairs

While alongside the terminal, repairs and maintenance to tanker machinery and equipment must be limited to those items that do not impair or require the:

- fire detection or firefighting capability of the vessel
- safe and efficient handling of cargo
- propulsive power or manoeuvrability of the tanker
- safe operation and integrity of the mooring system
- safe operation of electrical equipment located in gas dangerous zones.

Note: "Hot work" is prohibited while vessel is alongside any Woodside facility.

6.6 Fire Prevention

Sources of ignition, inclusive of smoking, must be restricted to designated areas on board the tanker and ashore. Such areas must not have direct communication with hydrocarbon dangerous zones and be ventilated on the over pressurisation and total recirculation principal.

Smoking on board is only allowed in "public" rooms, as agreed between the Pilot/Loadmaster and the Master or their Deputy.

Certified safe type permanent electrical equipment must be in good order and maintained and operated in such condition that its original certification is not jeopardised.

All portable electrical equipment, including handheld torches, radios, and gas analysers, which are operated in gas dangerous zones, must be certified safe by a recognised authority for use in the flammable atmosphere concerned. All equipment must be in such a condition and operated in such a manner that its original certification is not jeopardised.

All doors, portholes, and openings from the outer deck to accommodation or machinery spaces (other than the pump room) must be kept closed except for entry and exit purposes. All ventilators through which gas can enter must be closed, and mechanical ventilation must be stopped if gas is being drawn into the system. Window type air conditioning units must not be used. Normal air conditioning or mechanical ventilation can be used on positive pressure mode only.

All main radio equipment must be isolated and earthed while berthed at the terminal.

Use of Satcom equipment using geostationary satellites is permitted but must be switched off in event of emergency, release of gas, or on the advice of the Pilot/Loadmaster.

Mobile phones are not to be used outside the confines of the accommodation at any time.

During cargo handling operations, no vessel will be allowed alongside the tanker unless authorised by the Pilot/Loadmaster and agreed to by the Master.

6.7 Static Electricity Precautions

Static electricity is controlled through insulating flanges in the terminal's loading arms. If these insulating flanges are suboptimal, the visiting vessel will be notified and must confirm whether they require a bonding cable. Irrespective, the vessel must confirm their cathodic protection has been turned off 24 hours prior to berthing.

If a bonding cable is required, it will be made available and installed by Woodside personnel on vessel's arrival at the berth.

6.8 Fire Fighting Equipment

6.8.1 Tanker

All firefighting equipment must be in good working order. Portable equipment must be correctly positioned and ready for immediate use. The fire main is to be pressurised while the vessel is alongside.

The ship/shore international connection must be prominently identified with the connecting flange and bolts ready for immediate use on both tanker (located at loading manifold) and shore.

6.8.2 Terminal

Prior to the tanker's arrival, the terminal will ensure all fixed firefighting installations are in good working order, portable equipment is in position, and all equipment is ready for use.

At least one tug will be on standby and available within approximately 20 minutes notice while a tanker is alongside any berth.

6.8.3 Avoidance of Pollution

Any pollution by the tanker must be reported immediately to the Pilot/Loadmaster and Terminal CCR. Dampier VTS must also be advised without delay.

Immediate steps to stop the cause and limit the extent must be taken.

Bunker transfers alongside the terminal are prohibited, except if required for hull stresses and trim purposes. Prior to any transfer, the approval of the Pilot/Loadmaster is required. Any transfer must

be adequately planned, and sufficient personnel deployed to guard against accidental overflows and spills.

Refuse, oily waste, or other matter likely to cause pollution must not be discharged into the sea.

Bilges and other spaces likely to be contaminated with oil residue, etc., must not be pumped into the sea. Contaminated ballast must not be discharged into the sea.

Loading arms must be drained before disconnecting. Drip pans are to be placed at manifolds to collect any drips or spillage. Suitable absorbent material must also be on hand.

During operations, the scuppers of all vessels must be effectively plugged and no leakage or spillage on board is to be swept or allowed to leak overboard. **Any leakage or spillage** must be reported immediately to the Terminal Operator, who will initiate the Terminal Oil Spill Contingency Plan.

When “topping off,” ensure the valves to the next tank to be filled are opened in good time and when filling the final tank make sure the loading rate is reduced and that shore personnel are on stand-by to shut off.

Never rely on a “shore stop.” It will not absolve the vessel from blame or any clean up expense if your cargo tanks overflow.

Always ensure the valves of a shut off tank are not leaking. Check the ullage of the “shut off” tank shortly after the valve has been closed. When topping off the final tank, make sure the loading rate is eased down, and the shore personnel are on standby to shut off.

All flanged joints required to connect loading arms to a vessel (e.g. reducing pieces/spools) must contain “full bolting” using the largest possible bolts to fit the flange holes.

All overboard discharge/sea valves part of, or connected to the cargo oil system, must be shut, lashed, and sealed during the loading operations.

To prevent any accidental discharge of oil through the pump room or engine room, prior to commencing any loading operations, the Loadmaster must confirm with both the vessel and the surveyors that all overboard discharge valves in the pump room and engine room not in use are closed and sealed.

6.9 Manifold Access

Normal port practice always limits manifold access when the loading arms are being manoeuvred and when product is being transferred through them.

Designated personnel aware of the specific hazards around the manifold area are always permitted entry for essential reasons associated with managing the cargo transfer operation and the connection and disconnection of the loading arms. Time spent at the manifold, when the arms are filling or are full of liquid, must be minimised under this requirement. This hazard, and the management of it, will be discussed specifically at the pre-load meeting on board the tanker prior to each cargo transfer.

All personnel attending the manifold must be made aware when line purging is about to occur, as this can produce very high noise levels that can damage hearing.

6.10 Accommodation Access

The Karratha Gas Plant (KGP) is a highly secure facility with strictly controlled jetty access in accordance with Australian Federal Government legislation.

Vessels at Maritime Security (MARSEC) Level 1 must keep accommodation block access doors closed but not locked. Pilots, Loadmasters, and Surveyors attending LNG vessels require access to the accommodation block through the main/upper deck entrance doors.

7 General Services

7.1 Fuel

Bunker fuel or diesel fuel is not available.

7.2 Refuse

No garbage, rubbish, or refuse can be thrown overboard while the vessel is within the berth limits. The Master can make special arrangements for removal and disposal during an extended stay with the Agent and government authorities.

7.3 Fresh Water

Not available

7.4 Stores and Provisions

Subject to prior approval a small amount (one pallet) of hand carried items might be allowed. For larger orders, Masters are recommended to cable their agents giving seven days' notice of their requirements (see Section 2.6.5).

7.5 Repairs

Minor ship repair work can be arranged through the ship's Agents. No repairs or engine immobilisation can be undertaken at the berth.

7.6 Customs

A sub collector of Customs and staff are resident in the area.

7.7 Police

There are police stations in Dampier and Karratha.

7.8 Security

All ships' personnel entering or leaving Woodside facilities must have security clearance arranged by the ship's Agent (see APPENDIX S).

7.9 Air Communications

The area is served by frequent daily air services to Perth and other northern towns. The service operates from Karratha airport situated approximately 15 kilometres from the Woodside facilities.

7.10 Medical Assistance

Doctors and dentists are available in Karratha and Dampier. A modern hospital is situated in Karratha. Very serious patients can be transferred to Perth by the Royal Flying Doctor Service.

8 General

8.1 Responsibilities

8.1.1 Pilotage

Woodside Pilots are expected to ensure any pilotage operation undertaken within the Port of Dampier and at offshore facilities are carried out in accordance with the requirements of the Port Operations Sub Process, local procedures, standards, and instructions, and with due regard to good seamanship.

8.1.2 Terminal Representative - Pilot/Loadmaster

Loadmasters are expected to act as the Terminal Representative and ensure any tankers conducting cargo operations carry out these activities in compliance with Port Operations Procedures, relevant terminal handbooks, and local facility procedures.

The Terminal Representative is to:

- act as emergency response focal point
- carry out joint safety rounds with the ship's crew
- coordinate the starting and finishing of cargo loading operations
- attend the vessel's cargo control room during critical activities
- coordinate with stakeholders the timings involved with the cargo operations, berthing, and sailing of the vessel
- liaise with the terminal over cargo matters
- coordinate commercial issues between the ship and the terminal.

The Terminal Representative's role is seen by many stakeholders as the focal point for the individual ship visit and thus the person to call for any issue with the vessel. However, while the Terminal Representative should endeavour to ensure a smooth visit for all stakeholders, the Pilot/Loadmaster is not expected to be on call to deal with the following:

- Ship Agent's communication with Master.
- Issues with the crew and access through the facility.
- Ship's stores.

Pilot/Loadmasters expect that after cargo loading has settled down, the ship's staff and the terminal must call them only on safety and cargo critical issues and not general ship-related activities. The coordination of commercial matters has the potential to interfere with the ability of the Pilot/Loadmaster to get quality rest to adhere to the plan for managing the ship's visit. Therefore, the Pilot/Loadmaster must call for relief if a commercial matter has disrupted the ship's visit plan in terms of the assigned Pilot's/Loadmaster's fatigue management.

Pilot/Loadmasters are encouraged to switch off their mobile phone to rest but leave instructions for the ship's crew to call them if required for Loadmaster responsibilities.

8.2 Woodside Contacts

Table 11: Woodside Contact Details

Entity	Contact Type	Details
Woodside Energy Limited	Address	PO Box 517 Karratha WA 6714
	Phone	(61) 8 9183 8118

	Main Gate Radio Room	(61) 8 9158 8171
Woodside Marine Pilotage Operations	Phone	(61) 8 9158 7076
	Duty Pilot mobile	(61) 438 993 420
	Email	pilotloadingmaster@woodside.com.au

8.3 Pilbara Ports Operations

Table 12: Pilbara Ports Operations Contact Details

Contact Type	Details
Contact	Harbour Master Pilbara Ports Authority
Address	PO Box 285 Dampier WA 6713
Phone	(61) 8 9158 6562 (Harbour Master)
Fax	(61) 8 9159 6558
Port Communications (VTS)	(61) 8 9158 6556

8.4 Shipping Agencies

Table 13: Shipping Agencies Contact Details

Entity	Contact Type	Details
GAC Australia, Dampier Office	Address	Unit 6, 18 Hedland Place Karratha, WA 6714 Australia
	Phone	+61 8 9183 8627
	Fax	+61 8 9185 1251
	Email	shipping.dampier@gac.com
	Website	www.gac.com
Five Star Bulk Shipping Pty Ltd	Address	PO Box 11 Karratha WA 6714 Australia
	Phone	+61 8 91838627
	Fax	+61 8 91851251
	Email	dampier@vstarcosco.com.au
Inchcape Shipping Services Pty Ltd	Address	Unit 7, Lot 6/20 Hedland Place 2nd Floor Building Society House Karratha WA 6714 Australia
	Phone	(61) 8 9185 6319
	Fax	(61) 8 9185 2971
	Email	dampier@iss-shipping.com
Monson Shipping Agency Pty Ltd.	Address	185/26 Sharpe Ave (PO BOX 939) Pegs Creek WA 6714 Australia
	Phone	+61 8 9197 2555

Entity	Contact Type	Details
	Fax	+61 8 6270 4450
	Email	karratha@monson.com.au
Wilhelmsen Port Services Pty Ltd	Address	Unit 4 and 5 Balmoral Centre Balmoral Road PO Box 1005 Karratha WA 6714 Australia
	Phone	+ 61 8 9144 2311
	Fax	+ 61 8 9144 2008
	Email	WSS.dampier@wilhelmsen.com

9 LNG Loading Facilities

9.1 LNG Carrier Particulars

As a general condition for all LNG carriers at the terminal, it is required the vessel complies with the following (see Table 14).

Table 14: LNG Carrier Particulars

Area	Description
Equipment	All equipment should be in a sound state of repair, with main engines, mooring winches, and windlasses all in proper working order. Mooring equipment, including mooring lines, must be in good condition.
Certification	All LNG carriers should be in possession of a complete and valid set of safety certificates.
Vessels	Vessels to be in all respects “In Class.”

9.2 LNG Communication System

The following communication systems should be used for operational requirements:

- Terminal supplied UHF (portable) link for cargo operations between the tanker and the terminal CCR.
- A VHF link as backup to the UHF.
- Hotline telephone direct to the terminal CCR through the fibre optic link.

The terminal will supply intrinsically safe portable handsets when required.

9.3 LNG Venting

Boil off gas must not be vented to atmosphere under normal cargo loading operations.

In the event of vapour return compressors being inoperative due to mechanical breakdown, the terminal CCR is to be informed and loading stopped immediately. Where this condition makes it imperative to vent boil-off gas to atmosphere, every endeavour should be made to heat the gas prior to its discharge to ensure its relative density is as low as possible.

Inhibition of tank pressure protection systems (designed to vent to atmosphere at 23 kPa through the forward most vent mast) is not permitted at Woodside LNG terminals.

The burning of gas for engine room requirements is permitted where international and statutory requirements are followed.

9.4 LNG Tanker ESD System

Cargo operations are safeguarded by an ESD system. This system operates through a fibre optic link and is backed up by a pneumatic system in case of breakdown.

To ensure continued reliability and operational familiarity with the pneumatic ESD backup, the terminal will request the first ship loading at each berth in each calendar month conducts a pneumatic ESD test prior to commencement of loading.

9.5 Pre-Loading Operations

9.5.1 Fitting of Gangway

On completion of mooring, the Pilot will advise the Terminal Operator the tanker is secure, and the gangway can be lifted aboard. The gangway is to be lifted aboard and positioned by shore crane at Berth 1 and will sit on the deck.

The gangway at Berth 2 is hydraulically operated and sits on the tanker's strengthened rail. In the presence of a long period (15 seconds or greater), this gangway can be removed and stored on the shore-side cradle. In this instance, an Operator will attend all times should the gangway be required.

A responsible member of the tanker's staff, nominated by the Master, must be standing by on board to assist in the placement of the gangway. The Terminal Operator, Pilot, and tanker's staff member are to inspect and agree the gangway and associated safety equipment are in place and secured prior to allowing personnel access to the gangway.

9.5.2 Pre-Loading Meeting

Prior to the commencement of liquid loading arm connection, a pre-loading meeting must take place. The meeting will include the tanker's Chief Officer and the Pilot.

The meeting agenda will include the items listed in the *LNG Tanker Port Document LNG Loading Plan* and the shore interface elements of the *Ship Shore Safety Checklist*. The final quantity to be loaded will be noted, with instruction coming from the latest *LNG Information Sheet* or LNG Offtake Coordinator (OTC).

The objective is to ensure operations are conducted in a safe, environmentally friendly, and efficient manner.

9.6 Configuration and Limits of Loading Arms

9.6.1 QC/DC

The loading arms are equipped with a quick connect/disconnect coupler (QC/DC).

9.6.2 Configuration

The terminal is fitted with four LNG loading arms on each jetty. The two outer arms, AA and DD, are LNG loading and the inner two arms, BB and CC, can be either LNG loading or vapour return arms (AA is closest to shore).

The normal loading arm configuration will be either arms AA/BB/CC, BB/CC/DD, AA/BB/DD, or AA/CC/DD.

The position of the "spotting line" will be determined by the terminal, depending on which vapour return (BB or CC) arm is to be used.

Should an LNG loading arm become inoperable during loading (e.g. due to a valve malfunction or leak), an early decision as to whether to change the line-up could save considerable time. Such a malfunction is likely to be noticed at the start of loading, although a severe leak can occur at any time during loading.

It is possible to continue to load using one arm with a maximum rate of 5000 m^3/hr for the whole or balance of loading.

9.6.2.1 Loading Arm Limits

For information on loading arm limits, see:

- APPENDIX G and APPENDIX H for LNG Jetty 1
- APPENDIX I and APPENDIX J for LNG Jetty 2
- APPENDIX K for LPG Jetty 3.

9.6.2.2 Weather Limitations

The loading arms are designed to be manoeuvred in wind speeds of up to 38 knots at Berth 1 (operating 38.9 kts) and Berth 2 (operating 48.6 kts). Loading must be stopped, and arms disconnected, parked, and storm/cyclone locked in good time, if sustained wind speeds more than 35 knots (10-minute average) are anticipated.

Note: Terminal procedures state the Operators must not manoeuvre the arms above 39 knots, due to health, safety, and environment (HSE) issues. This must be taken into consideration, particularly during cyclonic events.

9.6.2.3 Fitting of Short Distance Pieces and Strainers to Ship's Loading and Vapour Lines

The vessel must present at the Withnell Bay Terminal with its "short distance pieces" fitted to its liquid loading and vapour return manifolds, as nominated by the terminal. A 60-mesh cargo manifold loading strainer (or dual flow strainer) is to be installed within each of the nominated loading lines, and a strainer in the range of 20 to 60 mesh (or dual flow strainer) installed within the nominated vapour return line. For avoidance of doubt, this applies every time the vessel connects to carry out either a gas up, cooldown, or loading operation at the Withnell Bay Terminal (see APPENDIX U for more detail).

The Jetty Operator will use a "Go/No Go" gauge to check the SDP presentation flanges conform to terminal requirements.

The Pilot must inspect the liquid loading strainers for cleanliness and condition, prior to the arms being connected.

Where a strainer is found to be damaged prior to arm connection, the loading is to be delayed until the strainer is replaced.

9.6.2.4 Connection of Loading Arms

While the loadings arms are unattached and being manoeuvred in the manifold area, all ships' staff are to remain clear of the arm by a radius of 1.5 m to avoid contact and the risk of crushing injury. Permission to enter this radius, including to approach ship's presentation flange, must be granted by the shore personnel.

The Pilot/Loadmaster will inspect the ship's strainer prior connection to confirm "free of debris".

The vapour return will be connected first, followed by the liquid arms.

The tanker will be responsible for arriving with the "short distance spool pieces" (if so equipped) and loading strainers in place (strainers must be 60 mesh) and removing the tanker's manifold blank flanges. No loading strainers will be loaned from the terminal.

Following connection, the loading arms will be pressure tested to 600 kPa and the vapour line to 200 kPa and inerted to <1% oxygen. This applies regardless of whether the tanker requires gas up, full, or partial cooldown, or normal loading.

The Pilot/Loadmaster will satisfy themselves the above tests have been satisfactorily completed.

9.6.3 Water Spray System

Prior to opening the tanker manifold valves, the tanker's side water curtain, in way of the manifold, must be brought into operation by tanker personnel.

All other required protection systems in way of tank domes, flanges, valves, and superstructure, as required, must be operable.

9.6.4 Measurement of Cargo Heel

Prior to the opening of the tanker's manifold valves, the quantity of cargo heel is to be measured. This applies in all cases, regardless of whether the tanker requires gas up, full, or partial cooldown, or normal loading.

The measurement is to be witnessed by the tanker's Designated Officer on behalf of the tanker, and by the Pilot/Loadmaster on behalf of the terminal. If an independent cargo Surveyor has been appointed, they must also witness the custody transfer measurement.

Heel measurement can be subject to special requirements (e.g. at completion of cooldown after refit (dry dock)) and is specified on the *LNG Information Sheet* or separate email, issued by the Shipping Office prior to the vessel berthing.

Pilots/Loadmasters do not have discretion to deviate from the CTMS instructions on the *LNG Cargo Information Sheet*.

9.6.5 Testing the Emergency Shut Down System

9.6.5.1 Routine Testing

Many of the emergency shut down (ESD) system checks are conducted by the terminal on a routine basis without a tanker in the berth. However, the ESD1 system will be tested for each loading as detailed in the following section.

9.6.5.2 Prior to Arm Cooldown

Table 15 shows the modes for prior to arm cooldown.

Table 15: Prior to Arm Cooldown

Mode	Description
Logic Test	After advising the terminal CCR, the tanker will initiate an ESD1 logic test from the tanker through the ESD Fibre Optic Ship Shore Link (FOSSL) or pneumatic system. For this test, ESD valves ashore and on board the tanker remains closed.
Warm ESD	When the terminal and tanker are ready to commence loading, ESD1 valves ashore and onboard the tanker are to be opened. The terminal will initiate an ESD1 from ashore. The total closure time of tanker's ESD valves is to be timed and witnessed for correct operation.

Mode	Description
Cold Stroke	• During the final stages of ship line cooldown and prior to ramping up the loading rate, the operation of the tanker's manifold ESD valves must be tested. This test will be conducted by ceasing liquid flow in one loading arm, while maintaining the liquid flow in the other loading arm. • When all parties are ready, the Pilot/Loadmaster will request the terminal to cease the liquid flow in the appropriate loading arm, and this will be confirmed by the terminal. When this is done, the tanker will manually close (stroke) the manifold ESD valve on that liquid line. This will be witnessed for correct operation and, when satisfied, the Pilot/Loadmaster will request the tanker to re-open the ESD valve and the terminal to resume liquid flow when the valve is opened. This will then be repeated for the other liquid line.
Cold ESD1 Test	• On occasions, it is necessary to carry out a cold ESD test. • After drydocking or interventive maintenance work has been completed on ESD valves, a cold ESD test of the connected liquid and ESD valves can be conducted at the tanker's request. Valves will be shut by activating an ESD1 from the shore as a test of the ESD1 system with valves cold. Both the tanker ESD1 valves and shore hydraulic ESD1 valves will be witnessed for correct operation. • Prior to the initiation of any test, the liquid flow through the loading arms will be stopped. • The Pilot/Loadmaster must ensure both the ship and terminal personnel are fully prepared and all personnel in the vicinity of the manifold move to a safe location. • When the Pilot/Loadmaster is completely satisfied all necessary precautions have been observed, and agreement has been obtained from both parties, the ESD1 test can proceed. • The ESD1 activation must be preceded by a countdown, which is to be undertaken by the party initiating the test.

9.7 Cargo Handling

The terminal operates under strict environmental emission conditions. Close cooperation between the loading vessel and the terminal is necessary to comply with these conditions.

The terminal must keep the tanker informed when loading pumps are stopped, started, or when a loading line up or rate is changed.

The tanker will keep the terminal informed of any changes in the tanker's gas up, cooldown, or loading cargo line up and the starting and stopping of return gas compressors. The tanker is to ensure liquid or vapour flows to the vessel are never blocked off by having insufficient tanks open and valves excessively choked.

9.7.1 Normal Loading

On completion of the loading arms purge, pressure and O_2 tests, the tanker's Designated Officer, the Pilot/Loadmaster, and the terminal CCR must agree all systems are correctly lined up and ready. After the terminal has opened the vapour motor operated valve (MOV), the tanker's vapour return manifold can then be opened, and tank pressure returned ashore through free flow or high duty compressor, as required.

9.7.2 Inerted Condition

When a tanker arrives in an inerted condition, the vapour return line is lined up to the shore flare until the gassing up of the tanker's tanks and pipeline systems has been completed. When inerted, the tanker will also fit a strainer at the vapour return manifold.

All efforts should be made to prevent generation of dark smoke at the storage and loading flare during gassing up. This can involve reduction of the LNG liquid flow to the ship's vaporiser (to reduce total vapour return rate to the terminal).

9.7.3 Cooldown and Gassing Up

9.7.3.1 Cooling of Loading Arms and Tanker's Pipeline System (Normal Operations)

Under normal loading operations, the tanker will arrive at the terminal with loading lines and manifold at ambient temperature.

The tanker and terminal CCR must confirm the:

- tanker is ready to accept liquid/vapour through the loading arms
- terminal is ready to commence cooldown of the loading arms.

When both parties have confirmed readiness, the tanker will request the terminal to commence cooldown. Both arms will be cooled down simultaneously by means of the cooldown controller valves.

Cooldown flow rate will be regulated to 15-20 m^3/h (LNG Jetty 1) and 7 m^3/h (LNG Jetty 2) on each arm until LNG liquid reaches the apex of the loading arms. The flow rate will be increased to 115 m^3/h on each arm from this point.

Note: Where, by prior agreement, a vessel has arrived with pre-cooled loading lines, shore arm cooldown will continue through the LNG carrier's cooldown valves and spray rail. When loading arm cooldown is completed, the ship's double shut valves are opened and the cooldown valves closed.

9.7.3.2 Gassing Up of Cargo Tanks

(Tanker arriving in an inerted condition)

The line-up and cooldown of the tanker's loading lines will be in accordance with the normal cooldown procedure, except that only one loading arm will be required to be cooled at this stage. The tanker will specify to the terminal the liquid flow required.

Gassing up of the tanker's tanks will be by displacement. LNG liquid is taken through the cooldown lines and through the LNG vaporiser to the vessel's tanks, as vapour, through the Vapour line into the top of the tanks. The inerted vapour is displaced through the liquid line, temporary elbow, and HD compressor to the shore flare. To reduce flaring ashore, each cargo tank is isolated when gassed up. Towards the end of the gassing up operation, there will be short periods where the makeup of the vapour return will rapidly change from inert gas to LNG vapour and back to inert gas as the tanker gasses up the pipeline system. Consistent LNG vapour return will not occur until the end of the operation.

The tanker will keep the terminal informed regarding the status of the gassing up operation, using onboard sampling (hydrocarbon content).

9.7.3.3 Cooldown of Tanker's Cargo Tanks

After gassing up the tanker's tanks and pipeline system, the elbow must be re-swung to return the ship's liquid and vapour pipework to normal loading conditions. After this has been completed (usually two hours), cooldown of the tanker's spray pipe work can commence. After this is completed, the tanker will further request adjustments of the liquid flow rate to cool down the cargo tanks.

Shortly before the completion of tank cooldown (usually 1 – 1.5 hours), the second loading arm will be cooled down. At the end of cooldown of both the tanker's tanks and the second loading arm, and prior to the commencement of loading, liquid flow will be stopped and a cold ESD1 test conducted.

From time to time, the terminal can require an adjustment in cooldown rate to meet environmental flaring requirements.

9.7.4 Loading

All loading activities will be at the discretion of the tanker. The terminal CCR might require stopping loading at any time due to terminal operational requirements.

The terminal is responsible for measuring the pressure differentials across the strainers fitted in the shore system. Any abnormal change in the differential pressure indicating a blockage or failure of any strainer is a potentially serious matter and loading is to be suspended through both arms until the cause is ascertained and rectified. Pressure comparisons between ship and shore commence at the start of ramp up, with every rate change, and continue hourly (when loading at full rate) until ramp down commences.

Every hour during the loading, the tanker is to inform the terminal of the quantity received, loading rate, expected ramp down time, and manifold pressures on liquid arms.

In the event of a trip of the loading pumps, the terminal must not resume loading until the tanker has confirmed loading can recommence.

Throughout the loading operation, the tanker must provide reasonable notice to the terminal for any changes or requirements that affect the loading operation. This is especially critical during topping off sequences. In the initial stages of loading, the tanker and shore will monitor the rate of loading such that the need to flare excess return gas is minimised.

9.7.4.1 Cargo Ramp-Up

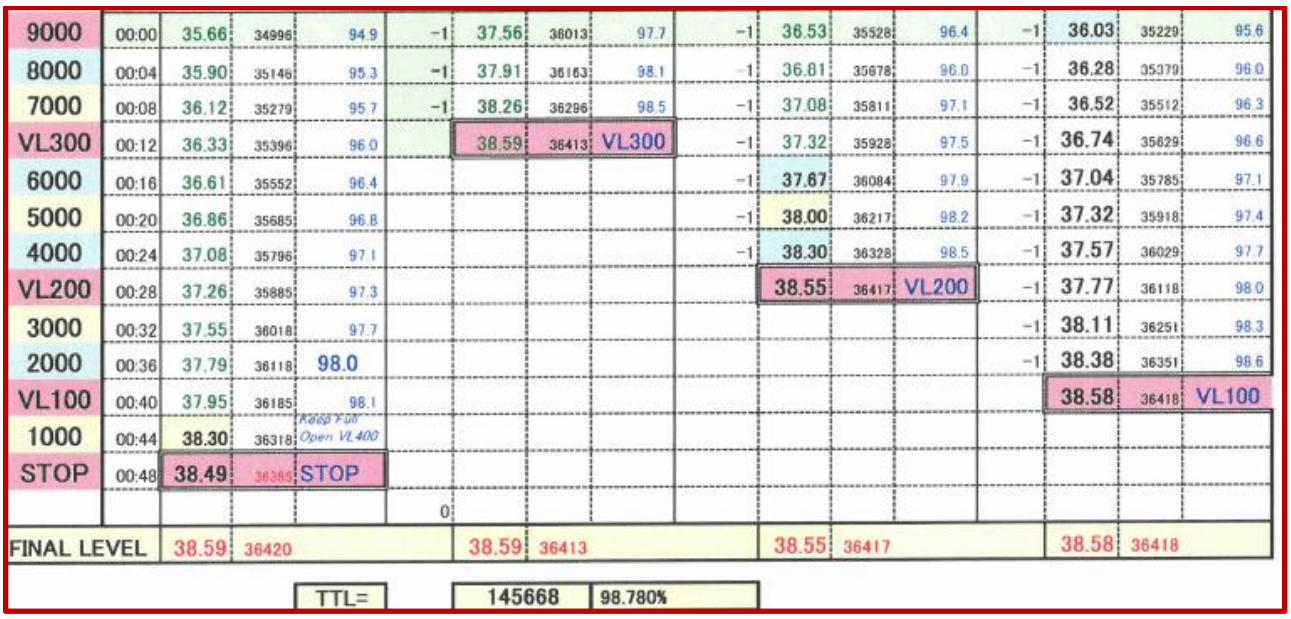
This will be at the tanker's request, at intervals of 1000 m^3/hr. Proper attention to communication procedure is essential for a smooth operation at this time.

9.7.4.2 Ramp-Down and Topping Off

Ramp down of shore cargo pumps is usually 60 minutes duration in 1,000 m^3/hr increments, with each decrease at the ship's request to a minimum 1000 m^3/hr, at which the stop loading order will be made. Topping off is to be arranged such that there is a stable period of at least five minutes' pumping at 1000 m^3/hr prior to calling for a stop.

It is critical communications between the tanker and the terminal are not compromised in any way during topping off of the cargo. If there is any defect in the communications systems, tank protection, custody transfer monitoring system (CTMS), Whessoe gauge system (as back up), or tank filling valves, the Loadmaster will direct the topping off operation to be stopped immediately.

Prepare and have a documented ramp down plan (for topping off tanks), like the example in Figure 2, available for review at the preload meeting to allow tanks to be closed in a planned, controlled sequence. **Loading will not commence until this plan is presented.**



9000	00:00	35.66	34996	94.9	-1	37.56	36013	97.7	-1	36.53	35528	96.4	-1	36.03	35229	95.6
8000	00:04	35.90	35146	95.3	-1	37.91	36163	98.1	-1	36.81	35678	96.0	-1	36.28	35379	96.0
7000	00:08	36.12	35279	95.7	-1	38.26	36296	98.5	-1	37.08	35811	97.1	-1	36.52	35512	96.3
VL300	00:12	36.33	35396	96.0		38.59	36413	VL300	-1	37.32	35928	97.5	-1	36.74	35629	96.6
6000	00:16	36.61	35552	96.4					-1	37.67	36084	97.9	-1	37.04	35785	97.1
5000	00:20	36.86	35685	96.8					-1	38.00	36217	98.2	-1	37.32	35918	97.4
4000	00:24	37.08	35796	97.1					-1	38.30	36328	98.5	-1	37.57	36029	97.7
VL200	00:28	37.26	35885	97.3						38.55	36417	VL200	-1	37.77	36118	98.0
3000	00:32	37.55	36018	97.7									-1	38.11	36251	98.3
2000	00:36	37.79	36118	98.0									-1	38.38	36351	98.6
VL100	00:40	37.95	36185	98.1										38.58	36418	VL100
1000	00:44	38.30	36318	Keep For Open VL400												
STOP	00:48	38.49	36383	STOP												
					0											
FINAL LEVEL		38.59	36420			38.59	36413			38.55	36417			38.58	36418	
				TTL=		145668	98.780%									

Figure 2: Ramp-down Table

9.7.4.3 Prevention of Free Flow of Liquid

To prevent free flow of liquid to the tanker at either the start or end of loading, the terminal will use the main loading control valves. These valves will be opened at the commencement of forward flow and closed when the tanker requests loading to stop.

9.8 Draining and Inerting of Loading Arms

On completion of loading, the terminal liquid loading valves and tanker's liquid loading double shut valves are to be closed.

Note: The tanker's valves must not be shut until the Loadmaster has confirmation the shore valves are shut.

The liquid loading arms must be drained and purged sequentially, using the following procedure:

1. The terminal will admit nitrogen and pressurise the loading arms to approximately 400 kPa and then the shore side section of the loading arm, together with associated systems drained back ashore.
2. The loading arm must be then re-pressurised to 400 kPa with nitrogen, and then the tanker will open the manifold cooldown valves, allowing the nitrogen to displace the liquid in the shipside section of the loading arm to the vessel's cargo tanks.
3. Upon completion of the draining of the loading arms, the arms must be purged with nitrogen until a hydrocarbon content of less than 2% by volume or less than 40% LEL is achieved.
4. The vapour return line will remain open to shore throughout the liquid arm draining. After the liquid arms have been drained and purged, and with the mutual agreement of both the tanker and the terminal, the vapour return valves can be closed, and the vapour return arm purged with nitrogen until a hydrocarbon content of <2% by volume or less than 40% LEL is achieved.

9.9 Completion of Operations

9.9.1 Disconnection of Loading Arms

On completion of draining and purging of the liquid and vapour loading arms, the arms must be disconnected by the Terminal Operator. While the loadings arms are unattached and being manoeuvred in the manifold area, all ships' staff are to remain clear of the arm by a radius of 1.5 m to prevent any crushing injury. Permission to enter that radius, including to approach the ship's presentation flange, must be granted by the shore personnel.

The terminal is responsible for fitting the blanks to the liquid loading and vapour return arm flanges.

The tanker is responsible for fitting blanks to the tanker's manifold. If terminal provided spool pieces have been used, these will be disconnected by the vessel and landed back on the jetty. The manifold crane can only be used after **all** shore arms are disconnected and stowed ashore.

The strainers must be inspected and recorded by the Pilot/Loadmaster or the Terminal Operator and confirmed clear of debris or damage. Any debris should be collected, and both parties given a sample for analysis.

9.10 Final Measurement of Cargo

The final quantity of cargo on board must be measured after all the tanker's manifold valves have been closed for the final time.

An independent surveyor can also determine cargo quantity and quality.

9.11 Documentation

To secure the Master's signature, it is desirable to receive signed documentation on board prior to the vessel sailing.

The Pilot/Loadmaster will receive documents on behalf of the Terminal.

Withnell Bay Terminal practices early departure procedures (EDP).

9.12 Removal of Gangway

The gangway will be removed on confirmation of all personnel ashore. A responsible member of the tanker's staff must be standing by on board to assist if any problems emerge that might require action from the tanker. The Fibre Optic Ship Shore Link (FOSSL) or pneumatic hose will be disconnected prior to sailing.

9.13 Main Engine Preparation for Sailing

Procedures for preparing main engines for sailing can only be implemented after the loading and vapour return arms have been disconnected.

Pre-sail testing of the main engine can only be carried out with the full agreement of the Pilot and when the gangway has been removed and tugs are in attendance.

10 Condensate Loading Facilities

10.1 Condition of Condensate Tankers

As a general condition for vessels at the terminal, it is required the vessel is acceptable to the Operator and complies with the following (see Table 16).

Table 16: Condition of Condensate Tankers

Area	Description
Equipment	All tankers must be in a sound state of repair, with main engines, mooring winches, and windlasses all in proper working order. Mooring equipment, including mooring lines, must be in good condition. Manifold equipment to comply with *Recommendations for Oil and Chemical Tanker Manifolds and Associated Equipment* (OCMIF 2017).
Certification	All tankers must be in possession of a complete and valid set of safety certificates.
Vessels	• Vessels to be in all respects “In Class”. • Vessels must be able to comply with the following minimum loading rates: - Vessels larger than 50,000 tonnes SDWT must be able to maintain a loading rate of the larger of 5% of vessels SDWT in TPH or 4000 TPH (approximately 5800 m^3 per hour). - Vessels less than 50,000 tonnes SDWT are required to turn around within a maximum period of 24 hours (No.8 Beacon inward to No.8 Beacon outwards). This provides a window of 18 hours from commencement to completion of loading.
P&I Club	Maintain a coverage with a P&I Club that is a member of the International Group of P&I Clubs, for legal liability of oil pollution damage up to the current maximum amount being offered by the International Group of P&I Clubs supplemental coverage available through such P&I Clubs.

10.2 Loading Rates

Maximum rate is 5800 m^3/hr (using six shore pumps) through two condensate loading arms.

10.3 Shore Tank Capacity

Total pumpable capacity: 268,000 m^3

Tanks 1 and 2 = 65,000 m^3 each (total volume)

Tanks 3 and 4 = 90,000 m^3 each (total volume)

10.4 Loading Arms

There are two 12” condensate loading arms for loading condensate on the LPG jetty.

10.4.1 Loading Arm Limits

- **Slewing range:** 4 metres forward of centre line, 4 metres aft of centre line
- **Horizontal range:** Maximum distance from fender face: 14.5 metres
- **Vertical range:** 5.8 to 26.8 metres above LAT.

The loading arms are designed to be manoeuvred in wind speeds of up to 39.9 knots (operating). They must, therefore, be disconnected, parked, and storm/cyclone-locked, in good time, if sustained wind speeds of over 35 knots (10-minute average) are anticipated.

Note: Shore Operators will not manoeuvre the arms in winds more than 38.9 knots due to HSE issues. Particular attention should be paid to this during cyclonic events.

10.4.2 Connection of Loading Arms

The connection at the tanker manifold is by Quick Connect/Disconnect Couplers (QC/DC) that have been designed to adapt to tanker flanges of 16” Class ANSI 150 lb. Tankers are required to present a clean 16” flange with a minimum flange thickness of 36.5 mm and maximum thickness of 39.0 mm.

Note: Although these areas are fitted with QC/DC couplers, the arms cannot be disconnected without operating the key interlock system. This system is not an emergency release system.

The Terminal Operator will connect the loading arms. While the loadings arms are unattached and being manoeuvred in the manifold area, all ships’ staff are to remain clear of the arm by a radius of 1.5 m to prevent any crushing injury. Permission to enter that radius, including to approach the ship’s presentation flange, must be granted by the shore personnel.

Prior to removing the blind flange, the 1” drain upstream of the coupler must be opened to release any possible over pressure in the arm.

The Terminal Operator will confirm with the Pilot/Loadmaster the tanker’s manifold is shut and the arm pressure (leak) test (at 200 kPa) can take place. The Pilot/Loadmaster will be advised when the loading arms have been connected, pressure tested satisfactorily, and vessel is ready to load. The loading arms will be depressurised after the tests have been satisfactorily completed.

10.5 QC/DC

The loading arms are equipped with a quick connect/disconnect coupler.

10.6 Emergency Shut Down System (ESD)

After the gangway is secure, the Terminal Operators will pass an ESD pendant (SIGTO LINK), which is placed near the manifold area.

10.6.1 Logic Test

After advising the terminal CCR, the Pilot/Loadmaster will conduct an ESD1 logic test to determine the integrity of the system.

10.6.2 Warm ESD 1

Prior to commencement of loading, and with at least one shore valve open and one loading pump in operation, the Pilot/Loadmaster will demonstrate and test the ESD system to the ship’s staff (ESD button to be pulled out, the green healthy light goes out, the red light comes on, and the audible alarm is activated; to reset, the ESD button is pressed in and system returns to normal).

A back up radio ESD transmitter is available for use should the primary system fail and is not intrinsically safe. It must be installed in the tanker’s cargo control room. Both logic test and ESD1 activation must be preceded with a countdown, which is to be undertaken by the party (usually the ship) initiating the test.

The system is a “fail safe” facility designed to activate loading pump shutdown **and** shore ESD valve closure when the shutdown button on the ESD pendent is pulled out.

10.7 Cargo Measurement

An independent surveyor will determine cargo quantity and quality.

Custody of product will take place at ship’s manifold.

Withnell Bay Terminal practices early departure procedures (EDP).

11 LPG Loading Facilities

11.1 Condition of LPG Carriers

As a general condition for vessels at the terminal, it is required the vessel is acceptable to the Operator and complies with the following (see Table 17).

Table 17: Condition of LPG Carriers

Area	Description
Equipment	• All tankers must be in a sound state of repair, with main engines, mooring winches, and windlass all in proper working order. Mooring equipment, including mooring lines, must be in good condition. • Manifold equipment to comply with OCIMF recommendations, except that tankers must be able to present its starboard manifold in the following configuration to accept connection to shore arms: from forward, propane vapour, propane liquid, butane liquid, butane vapour.
Certification	All tankers should be in possession of a complete and valid set of safety certificates.
Vessels	Vessels to be in all respects “In Class.”
P&I Club	Maintain coverage with a P&I Club, which is a member of the International Group of P&I Clubs, for legal liability for oil pollution damage up to the current maximum amount being offered by the International Group of P&I Clubs, plus any supplement coverage available through such P&I Clubs.

11.2 Configuration and Limits of Loading Arms

The jetty is fitted with two 12” LPG loading arms each equipped with a piggybacked 8” vapour return line. Each arm is dedicated to the loading of one product. Propane will be delivered through the western (seaward) arm and butane through the eastern arm.

There is no provision for cross manifolding the loading arms. If a vessel is unable to comply with the required manifold arrangements, the products will be loaded sequentially and, if necessary, the vessel moved between grades to align the manifold with the appropriate loading arm.

Both arms are equipped with hydraulic QC/DC couplings designed to fit the following ANSI 150 lb presentation flanges: Liquid 12” and Vapour 8”.

Vessels must prepare 8” vapour and 12” liquid flanges on the starboard side for loading. Terminal will provide 2 x 12” spools (SDP) for connection to liquid manifolds. The ship’s manifold crane and soft sling are required for use. Ships staff will fit and remove SDPs. The manifold crane can only be used when all loading arms are stowed ashore either before arm connection or after arm disconnection.

Dry break couplings for ESD2 activation are also fitted to both liquid and vapour lines.

This emergency release system consists of two ball valves located on the outboard section of both the liquid and piggybacked vapour return line. Only after closure of the ball valves will the hydraulic clamp between the ball valves open, leaving one ball valve closing off the ship manifold and the other closing off the loading arm. When the ERS coupling has activated, the arm will swing back clear of the manifold area.

On hearing an ESD2 activation alarm (a horn and bell with a visual beacon), all personnel should immediately vacate the manifold area. Some LPG might be released to atmosphere as the arms separate.

An ESD activation can be initiated either manually from the ship, through the ESD pendant (SIGTO link), the shore, or automatically by the vessel moving out of the loading arm envelope.

11.3 Loading Rates

The maximum loading rate is 1500 m^3/hr for each grade (two pumps with each grade).

11.4 Loading Arm Limits

The LPG loading arms are designed with working envelopes as follows:

- **Slewing range:** 4 metres to seaside of centre line
- 4 metres to shore side of centre line
- **Horizontal range:** Maximum distance from fender face: 8.8 metres
- **Vertical range:** 6 to 24 metres above LAT.

The loading arms are designed to be manoeuvred in wind speeds of up to 38.9 knots (operating). Loading must be stopped, and arms disconnected, parked, and storm/cyclone locked in good time if sustained wind speeds of over 35 knots (10-minute average) are anticipated.

Note: Shore Operators will not manoeuvre the arms in winds more than 38.9 knots due to HSE issues. Particular attention should be paid to this during cyclonic events.

11.5 Connection of Loading Arms

The loading arms will be manoeuvred and connected by the Terminal Operator. While the loadings arms are unattached and being manoeuvred in the manifold area, all ships' staff are to remain clear of the arm by a radius of 1.5 m to prevent any crushing injury. Permission to enter that radius, including to approach the ship's presentation flange, must be granted by the shore personnel.

The normal procedure will be to connect the vapour return connections first. This consists of an 8" QC/DC coupling at the end of a flexible hose from the piggybacked line. A small pneumatic hoist is located on the arm to assist in presenting the vapour QC/DC. After the vapour return coupling is connected, the arm will be manoeuvred to align the 12" liquid QC/DC with the ship's liquid manifold connection.

The Terminal Operator will advise the Pilot/Loadmaster the arms are connected and will pressure test the connections with nitrogen to 200 kPa. When the connections have been satisfactorily tested, the loading and vapour arms will be de-pressurised to the atmosphere.

11.6 Cargo Measurement

The LPG jetty design basis does not assume the handling of vessels with inerted or contaminated cargo tanks or with tanks containing warm LPG vapour.

Vapour samples can be taken on arrival, and Masters should ensure a positive tank pressure for sampling. Tank atmospheres must not exceed the following specifications:

- < 0.3% vol oxygen
- < 0.5% vol non-condensable gas
- < 0.5% vol propylene
- < 0.1% vol butadiene
- < 0.1% vol nitrogen
- < 10 ppm ammonia
- < 10 ppm VCM
- < 5 ppm water vapour
- < 1 ppm H_2S
- < 50 ppm methanol

- < 100 ppm acetone.

11.7 Ship Tank Gauging

As the custody transfer for all LPG loadings is based on ship figures, it is essential the vessel's arrival heel is ascertained before any cargo operations commence.

Ship's tanks will be gauged on arrival, and the Loadmaster must be satisfied all survey requirements have been met before any manifold valves are opened.

An independent surveyor will determine cargo quantity and quality.

Withnell Bay Terminal practices early departure procedures (EDP).

11.8 Testing the ESD Systems

11.8.1 Shore ESD Link

After the gangway is secure, the Terminal Operators will pass an ESD pendant (SIGTO Link), which is placed in the vicinity of the manifold.

A **logic test** is conducted, initiated by the ship, to prove the integrity of the system.

11.8.2 Warm ESD 1

Prior to commencement of loading, and with at least one loading pump in operation, the Pilot/Loadmaster will demonstrate and test the ESD system to the ship staff (ESD button to be pulled out, the green healthy light goes out, the red light comes on, and audible alarm is activated; to reset, the ESD button is pressed in and system returns to normal). Prior to any ESD function test, the Pilot/Loadmaster must ensure both the ship and terminal personnel are fully prepared. All personnel in the vicinity of the manifold must move to a safe location.

When the Pilot/Loadmaster is completely satisfied all necessary precautions have been observed, and agreement has been obtained from both parties, the ESD1 test can proceed.

Both logic test and ESD1 activation must be preceded with a countdown, which is to be undertaken by the party (usually ship) initiating the test.

A back up radio ESD transmitter is available for use should the primary system fail and is not intrinsically safe. It must be installed in the tanker's cargo control room. For tankers not fitted with a cargo control room, the ESD transmitter is to be situated in a convenient and safe position within the accommodation, as close as possible to the cargo control room.

Both ESD systems are "fail safe" systems, designed to activate shore loading pump shutdown **and** shore ESD valve closure when the shutdown button on the ESD pendent is pulled out.

11.8.2.1 Ship's ESD System

A careful check of the ship's ESD system will be made prior to loading. The Master (or their Deputy) will be asked to operate the system to enable timing of the valves and might be requested to have valves adjusted according to the provisions of the International Maritime Organisation (IMO) codes for ships carrying liquefied gasses in bulk. The terminal reserves the right to restrict loading rates if valve closure times are not compatible with rates otherwise agreed.

In determining the maximum permissible loading rate, the terminal will consider the:

- actual closure time (stroke rate)
- type of metal used in construction of the manifold
- ESD valve diameter.

Excess loading times caused by such restrictions will be considered a ship's delay.

LPG carriers with ESD valves that are gate valves or that have a diameter of more than 14" will not be accepted for loading at Withnell Bay.

REFERENCES

Title	Reference
AMSA Index of marine notices	Link
AMSA Marine Notice 2022/12 – Requirements for the use of exhaust gas cleaning systems in Australian waters	Link
Australian Ballast Water Management Requirements	Link
Australian Biosecurity Act 2015	Link
Australian National Tide Tables	Link
GAC Australia website	Link
Health, Safety and Environment Event Reporting and Investigation Procedure	9905421
Pilbara Ports Authority Port of Dampier Local Marine Notices	Link
Port Authorities Act 1999	Link
Port of Dampier Handbook	Link
WA Port Authorities Regulations 2001	Link

DEFINITIONS

Term	Meaning
Cargo Surveyor	The nominated Cargo Surveyor assigned to the offtake tanker.
Company	Woodside Energy Ltd and associated companies.
Cyclone	Tropical revolving storm
Cyclone Season	Normally between November and April, but cyclones can occur any time of year.
Estimated Time of Arrival	The offtake tanker's estimated time of arrival at the Port of Dampier Pilot Boarding Area.
Exclusion Zone	An area of exclusion, subject to the Offshore Petroleum and Greenhouse Gas Storage (OPGGS) Act 2006 (Cth) and regulations within 500 metres of the terminal, including subsea flow lines and well heads.
Hot Work	Work involving sources of ignition or temperatures sufficiently high to cause the ignition of a flammable gas mixture. This includes any work requiring the use of: • welding, burning, or soldering equipment • blow torches • some power-driven tools • portable electrical equipment not intrinsically safe or contained within an approved explosion proof housing • internal combustion engines.

Term	Meaning
Master	The Master of the offtake tanker unless specifically expressed.
Nautical Mile	Equivalent to 1,852 metres.
Offtake Tanker	A tanker type vessel nominated to load at the terminal.
OPTIMOOR	A software programme for analysis of vessel moorings.
P&I Club	Protection and indemnity insurance provider.
Pilot	The Terminal Representative on board the offtake tanker responsible to the terminal for mooring and cargo operations.
Pilot Boarding Area	Nominated location within three nautical miles of the pilot boarding ground.
Responsible Officer	The person appointed by the employer or the Master of a ship and empowered to make all decisions relating to a specific task, having the necessary knowledge and experience for that purpose.
Terminal Representative	The representative on board officially assigned to represent the terminal's interests for the duration of the offtake operation from the commencement of the approach.

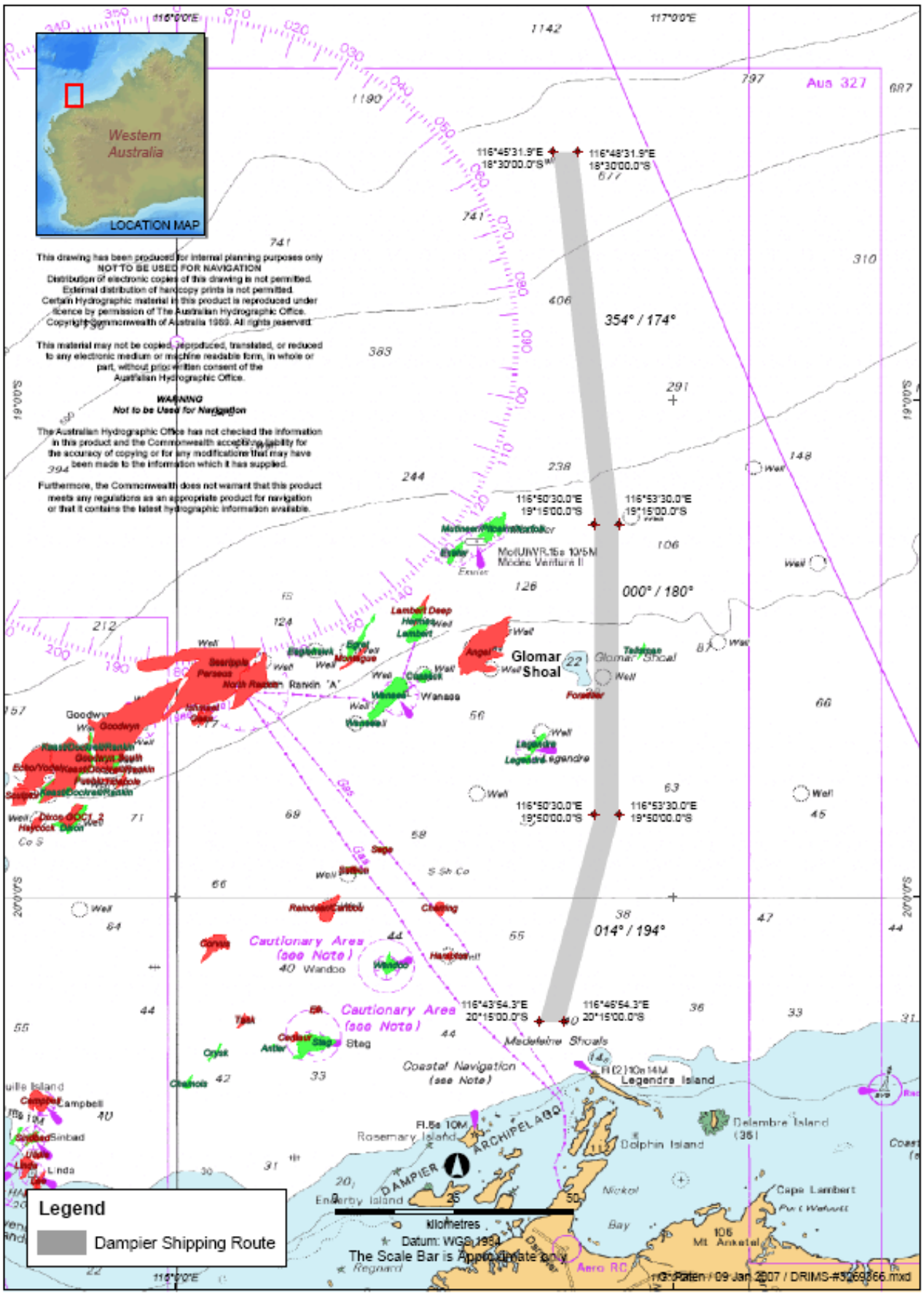
ABBREVIATIONS

Abbreviation	Term
ANTT	Australian National Tide Tables
AQIS	Australian Quarantine Inspection Service
BMF	Burrup Materials Facility
BWTS	Ballast Water Treatment System
CCR	Central Control Room
CTMS	Custody Transfer Monitoring System
EDP	Early Departure Procedures
EEZ	Australian Economic Exclusive Zone
EPA	Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation
ESD	Emergency Shut Down
ETA	Estimated Time of Arrival
FAOP	Full Away on Passage
FOSSL	Fibre Optic Ship Shore Link

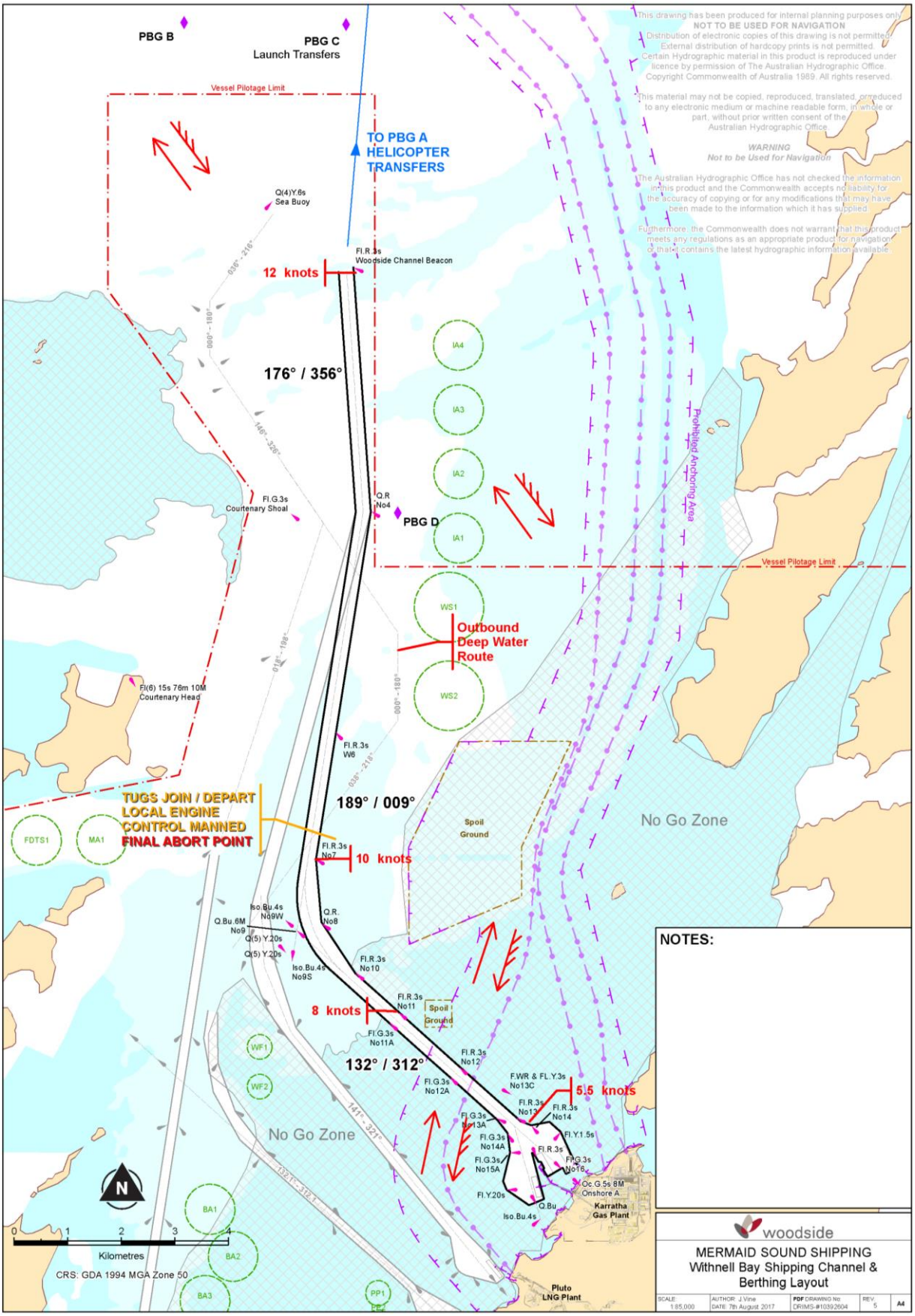
Abbreviation	Term
HAT	Highest Astronomical Tide
HMPE	High Modulus Polyethylene
HSE	Health, Safety and Environment
IMO	International Maritime Organisation
ISO	International Organisation for Standardisation
ISSC	International Ship Security Certificate
KBSF	King Bay Supply Facility
KGP	Karratha Gas Plant
kN	Kilonewtons
kPa	kilopascal
LAT	Lowest Astronomical Tide
LNG	Liquefied Natural Gas
LOA	Length Overall
LPG	Liquefied Petroleum Gas
MARSEC	Maritime Security
MBL	Mean Breaking Load
MEG	Mooring Equipment Guidelines
MEMS	Mooring Load and Environmental Monitoring System
MHWN	Mean High Water Neaps
MHWS	Mean High Water Springs
MOV	Motor Operated Valve
MR	Medium Range
NM	Nautical Mile
NOR	Notice of Readiness
NW	Northwest
NWS	North West Shelf
NWSJV	North West Shelf Joint Venture
OCIMF	Oil Companies International Marine Forum

Abbreviation	Term
PMS	Planned Maintenance System
POS	Port Operations Superintendent
PPA	Pilbara Ports Authority
PPE	Personal Protective Equipment
ROWS	Remote Offshore Warning System
SOLAS	Safety of Life at Sea
SSSCL	Ship/Shore Safety Check List
SWR	Steel Wire Rope
UHF	Ultra High Frequency
UKC	Under Keel Clearance
UKSTC	UK Standard Conditions for Towage and Other Services
VHF	Very High Frequency
VTS	Vessel Traffic Services
WA	Western Australia
WEL	Woodside Energy Ltd

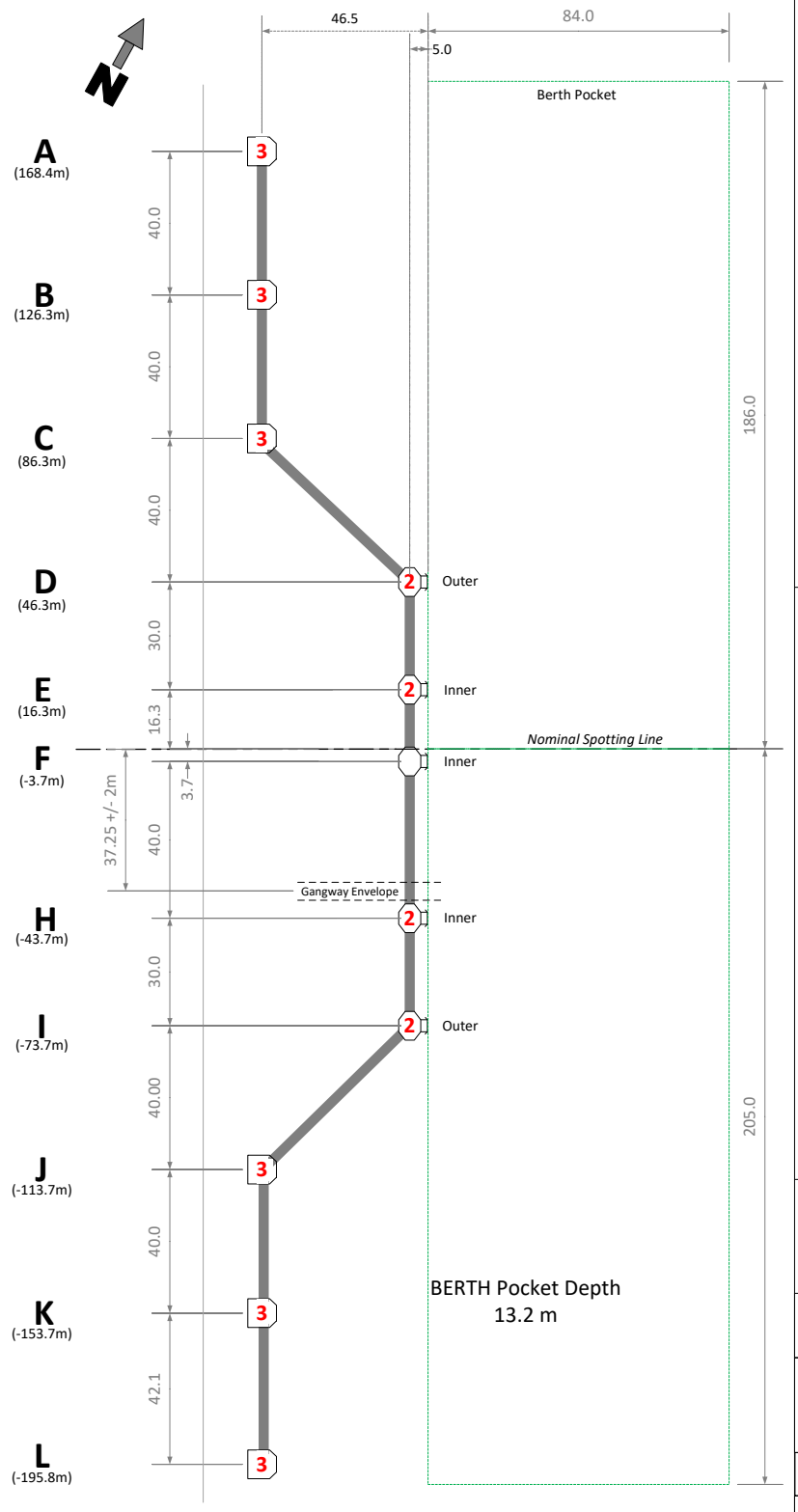
APPENDIX A Recommended Approach to the Port of Dampier

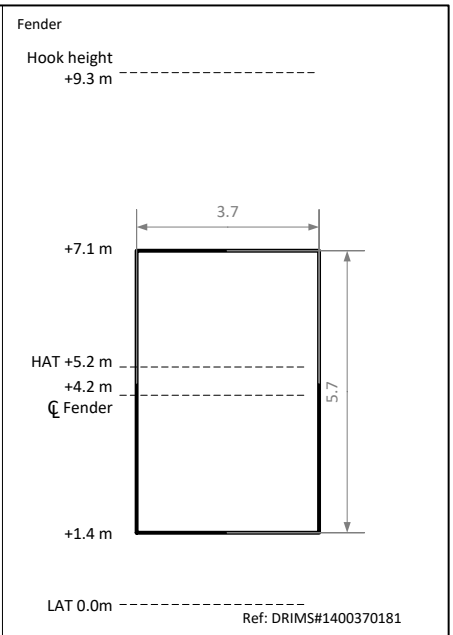


APPENDIX B Shipping Channel Navigation Aids and Withnell Bay Loading Terminal General Layout

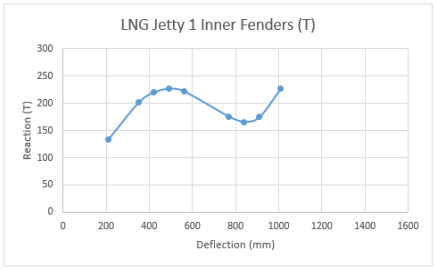


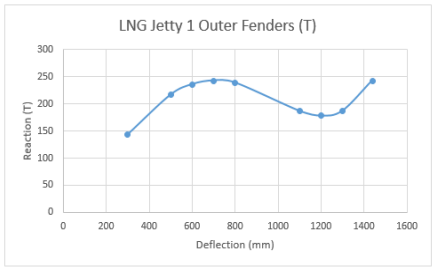
APPENDIX C LNG Jetty 1 Berth Arrangement





Fender Reaction Curves





Ref: DRIMS#1400366901

Other Details

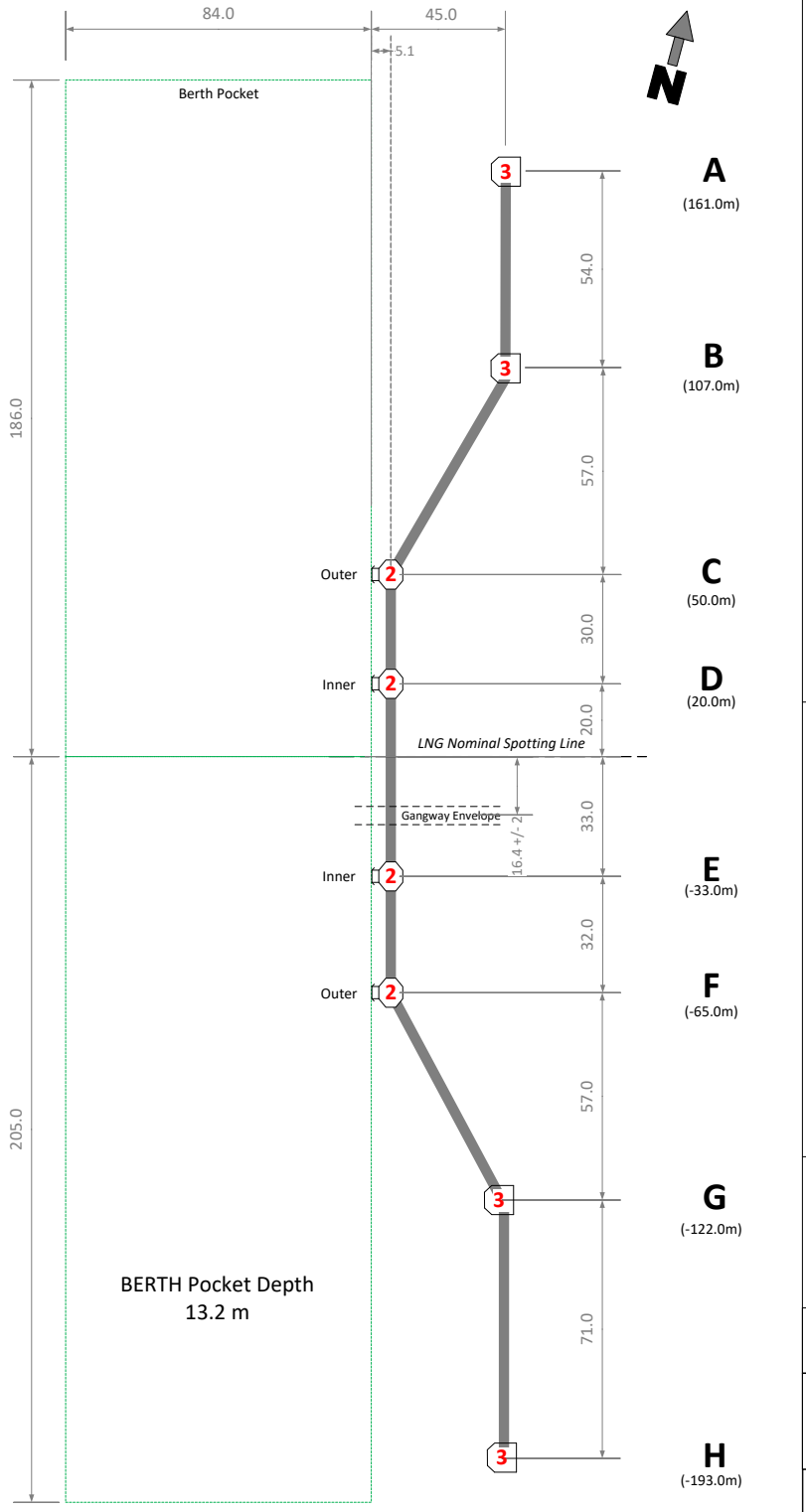
* Hook SWL 125t each
* Hook heights (above datum) + 9.3m

Woodside

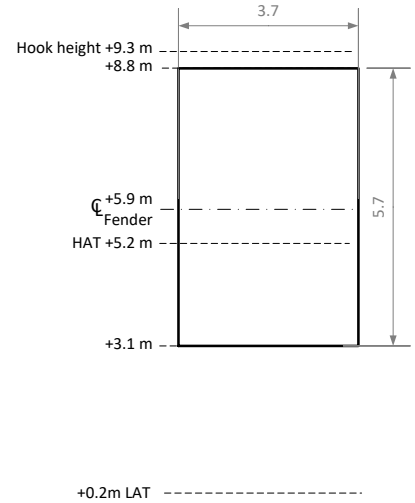
KARRATHA GAS FACILITY
BERTH ARRANGEMENT
LNG Jetty One

Ref: L7000DS101.002	Rev: 1B
DRIMS# 1400366936	Rev: 2

APPENDIX D LNG Jetty 2 Berth Arrangement



Fender



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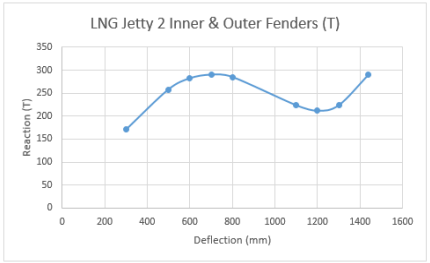


Ref: DRIMS#1400366901

Other Details

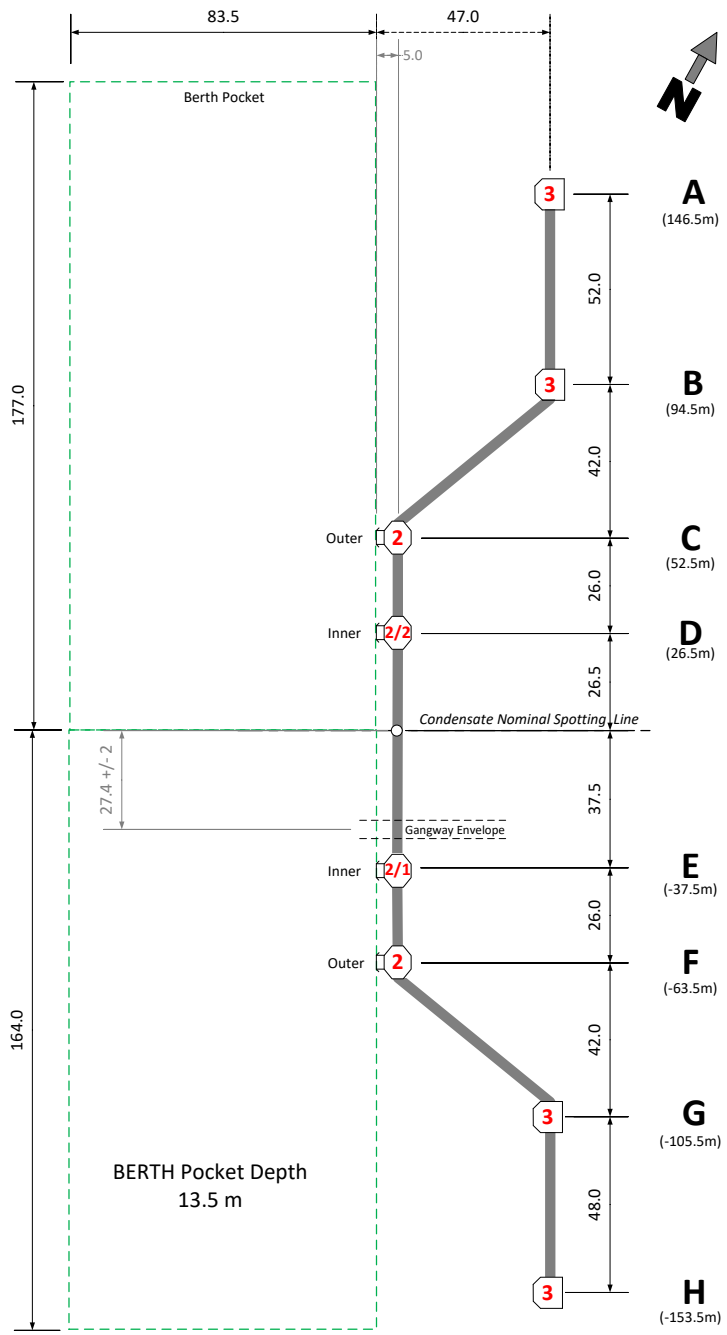
* Hook SWL 125t each
* Hook heights (above datum) +9.3 m

woodside

KARRATHA GAS FACILITY
BERTH ARRANGEMENT
LNG Jetty Two

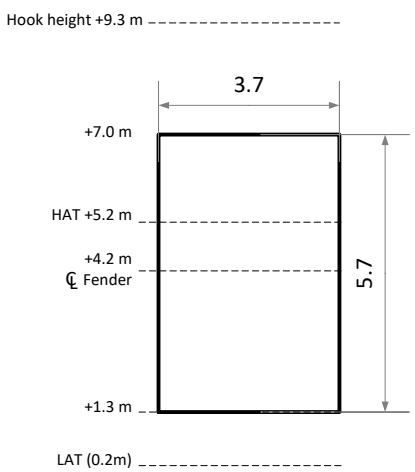
Ref: L7001DG010.0001	Rev: 2
DRIMS# 1400397718	Rev: 0

APPENDIX E Condensate Jetty 3 Berth Arrangement



Visio DRIMS# 1400367869 Not to scale

Fender



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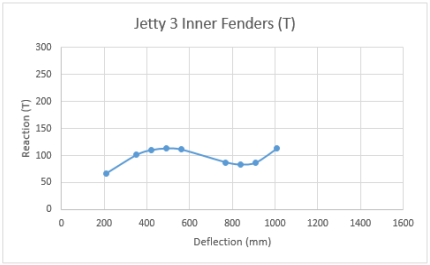
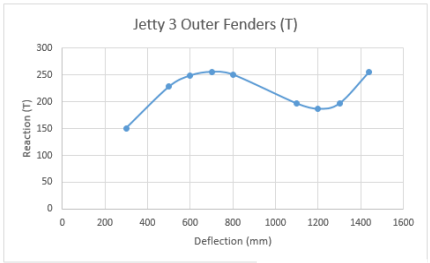




Ref: DRIMS#1400366901

Other Details

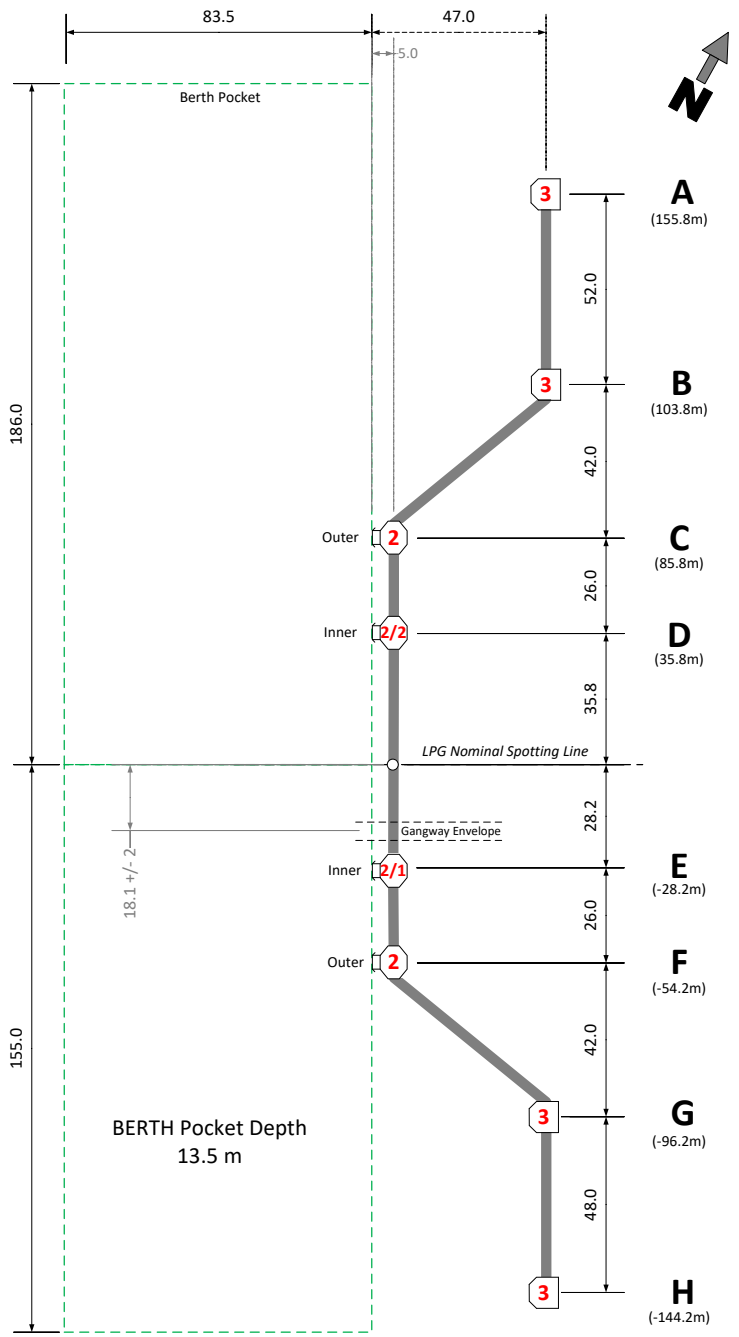
* Hook SWL 120t each
* Hook heights (above datum) +9.3m

woodside

KARRATHA GAS FACILITY
BERTH ARRANGEMENT
Condensate - Jetty Three

Ref: P7100-DS-002	Rev: 1
DRIMS# 1400397723	Rev: 0

APPENDIX F LPG Jetty 3 Berth Arrangement



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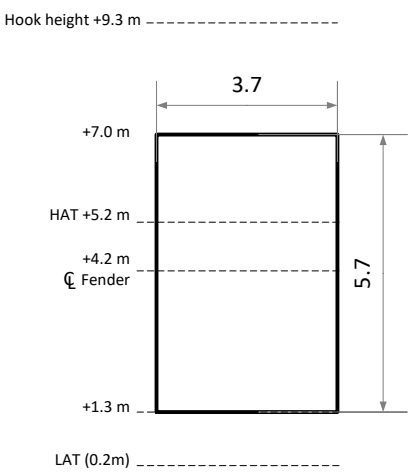

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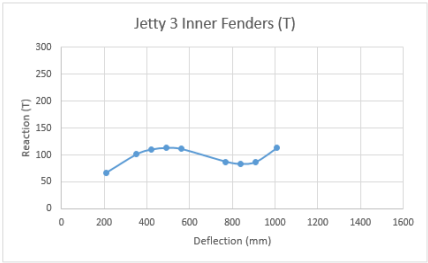
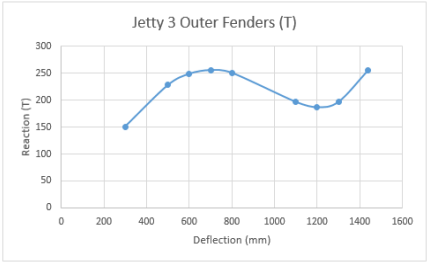
Fender Reaction Curves





Ref: DRIMS#1400366901

Other Details

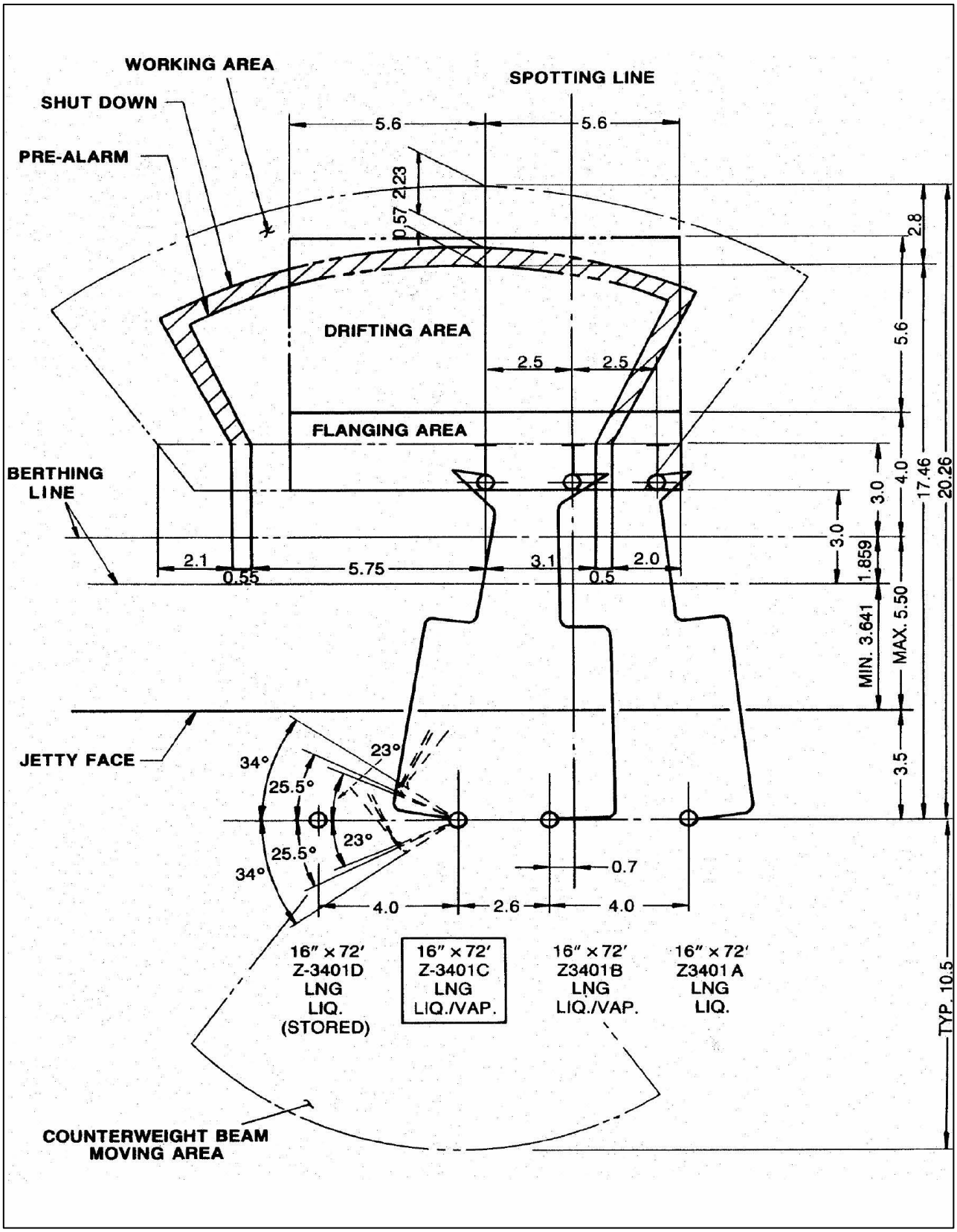
* Hook SWL 120t each
* Hook heights (above datum) +9.3m

woodside

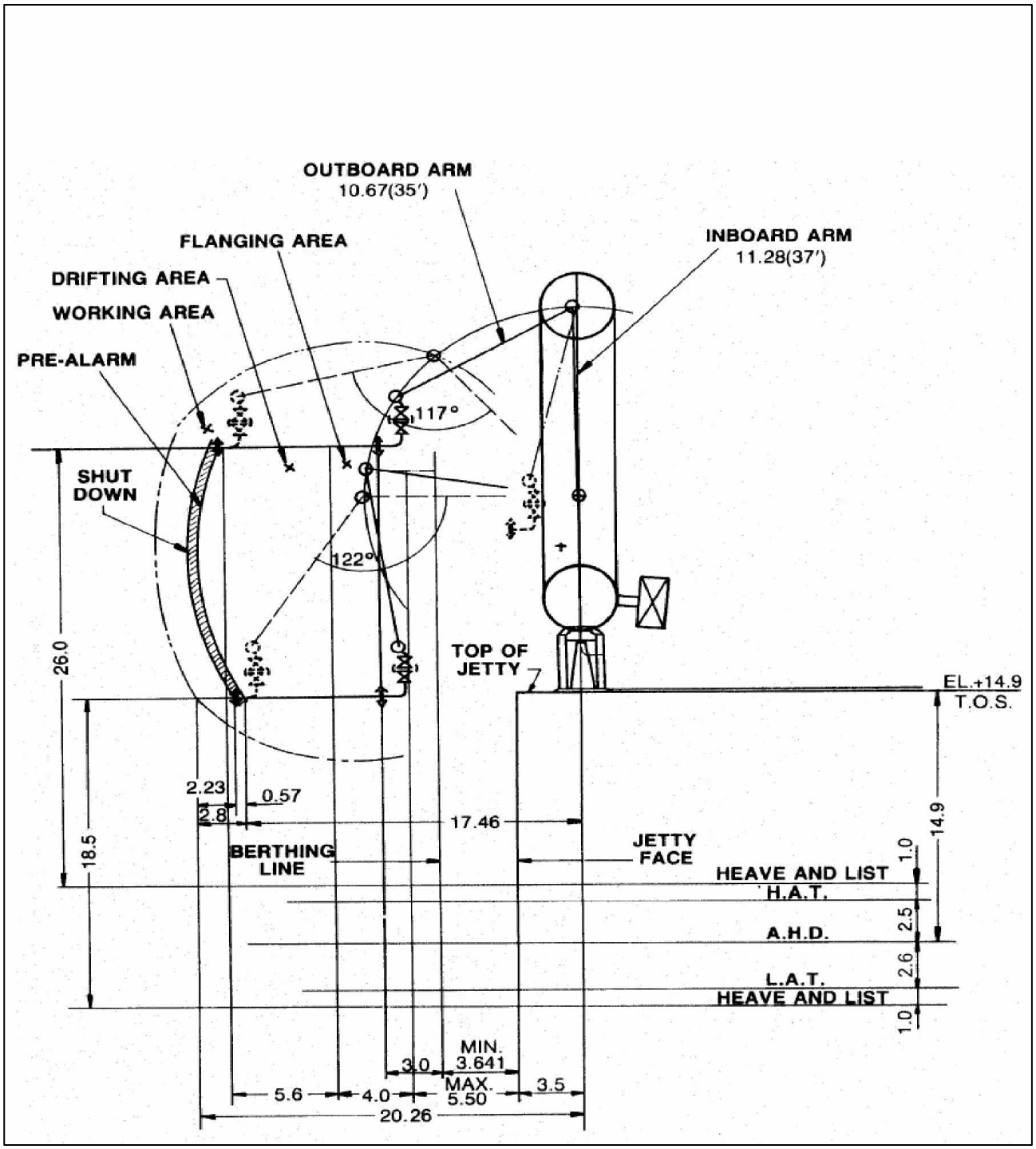
KARRATHA GAS FACILITY
BERTHING ARRANGEMENT
LPG - Jetty Three

Ref: P7100-DS-002	Rev: 1
DRIMS# 1400397719	Rev: 0

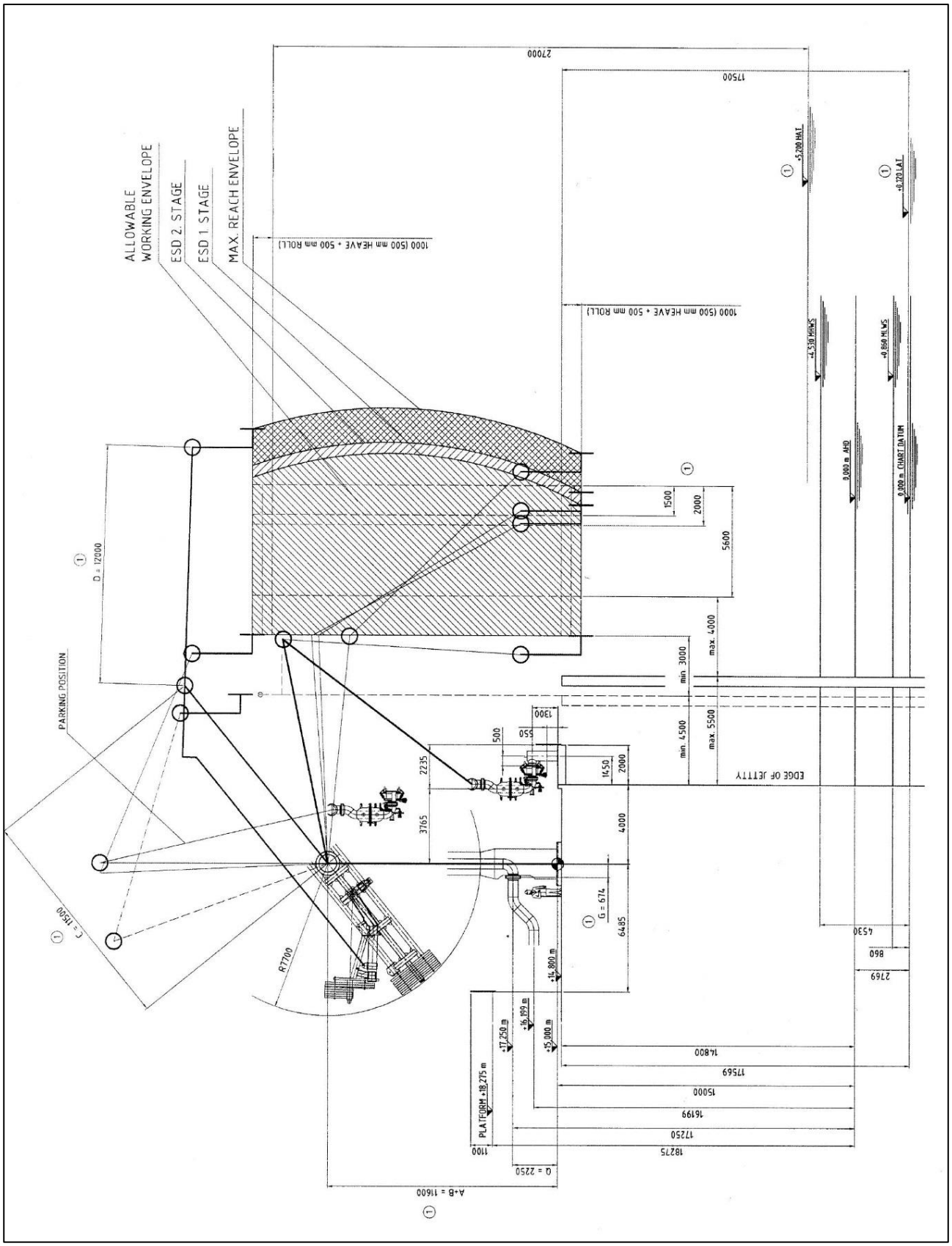
APPENDIX G LNG Jetty 1 Loading Arm Working Range (Plan)



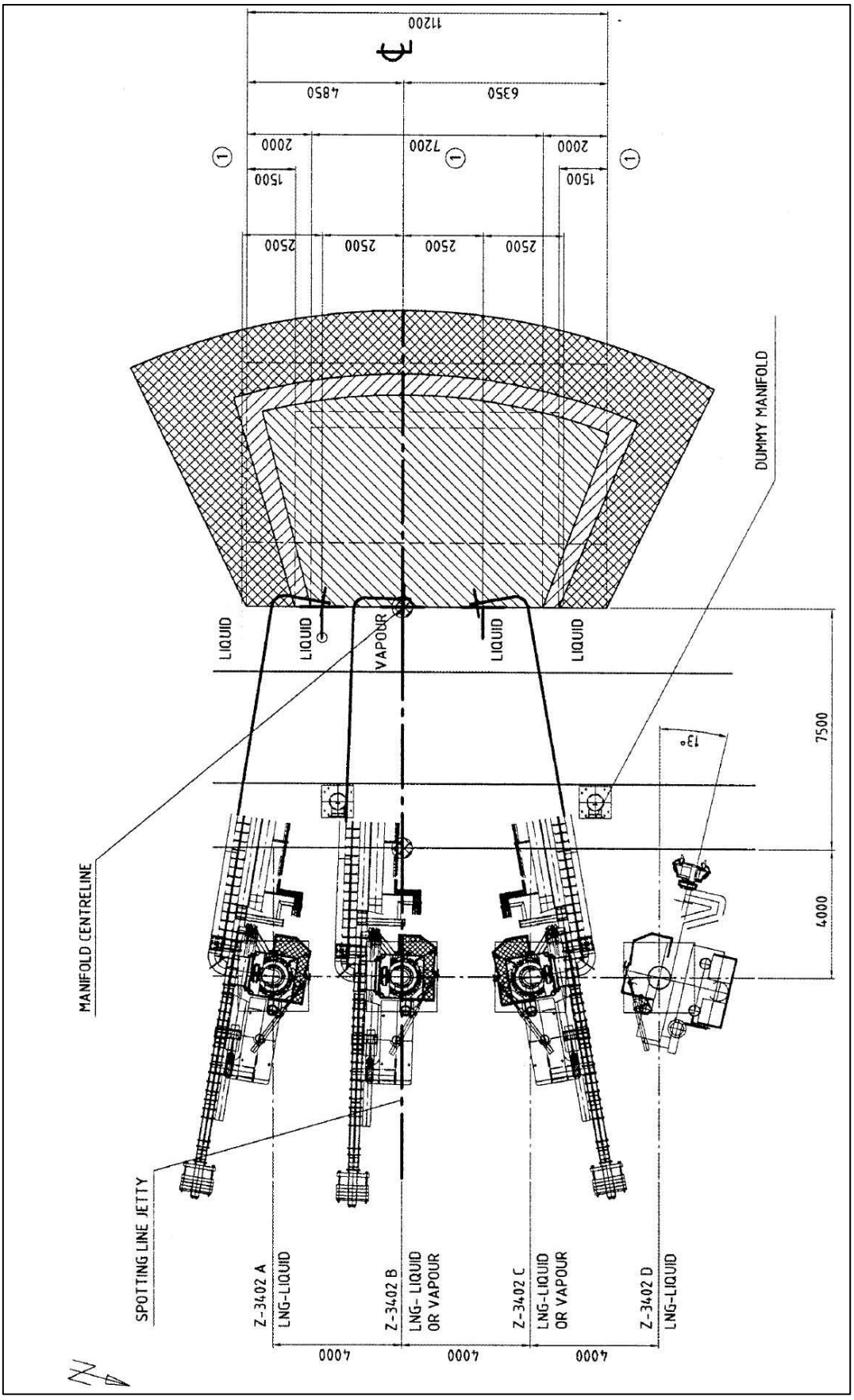
APPENDIX H LNG Jetty 1 Loading Arm Working Range (Elevation)



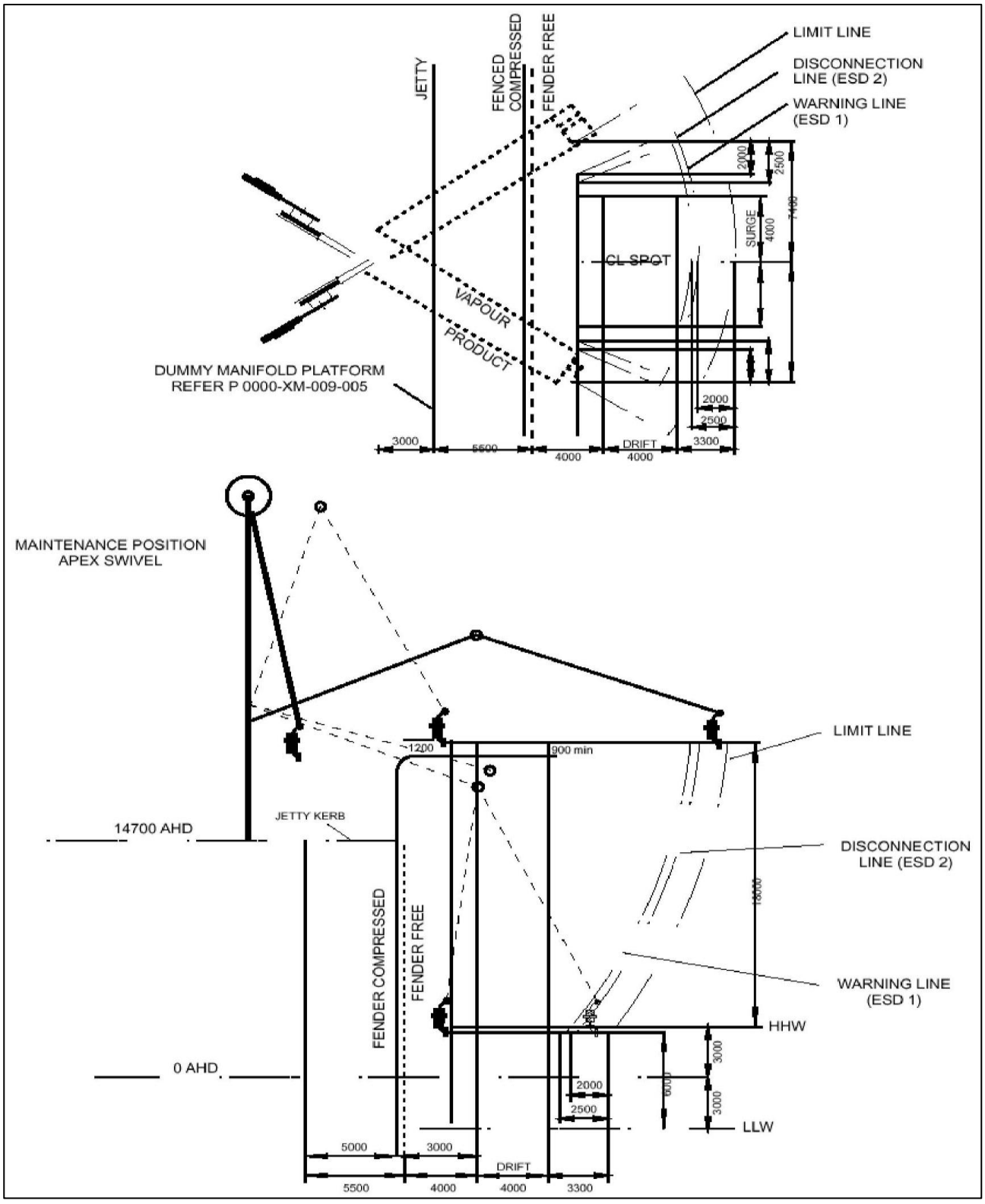
APPENDIX I LNG Jetty 2 Loading Arm Working Range (Plan)



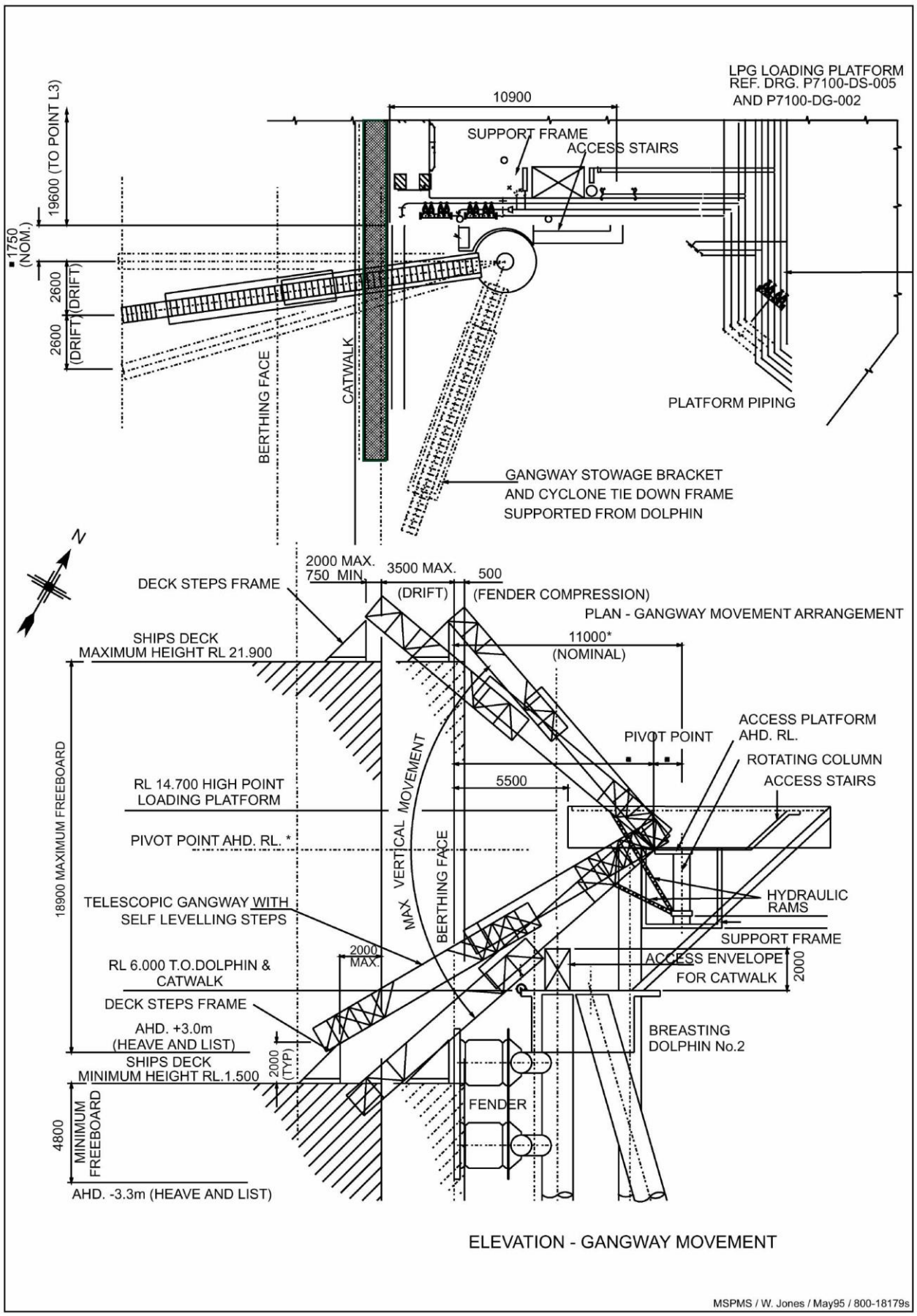
APPENDIX J LNG Jetty 2 Loading Arm Working Range (Elevation)



APPENDIX K LPG Jetty Loading Arm Working Range



APPENDIX L LPG Jetty Loading Platform – Gangway Arrangement



APPENDIX M LNG Jetty 1 Loading Platform – Gangway Arrangement

The gangway will land on the port side aft of the vapour manifold.

The preferred arrangement is a clear deck space (2.5 m x 2.5 m) from 36.0 m to 38.5 m from ship vapour manifold (see the preferred landing area (orange box) in Figure 3).

If there is an obstruction in the preferred area, **then two landing areas will be required** to satisfy the terminal requirement for the gangway to land on clear deck in all loading arm configurations. This will require a space of:

- 2.5 m x 2.5 m between 32.65 m and 37.85 m from the ship vapour manifold (i.e. within the red box area Figure 3) and
- 2.5 m x 2.5 m between 36.65 m and 41.85 m from the ship vapour manifold (i.e. within the blue box area Figure 3).

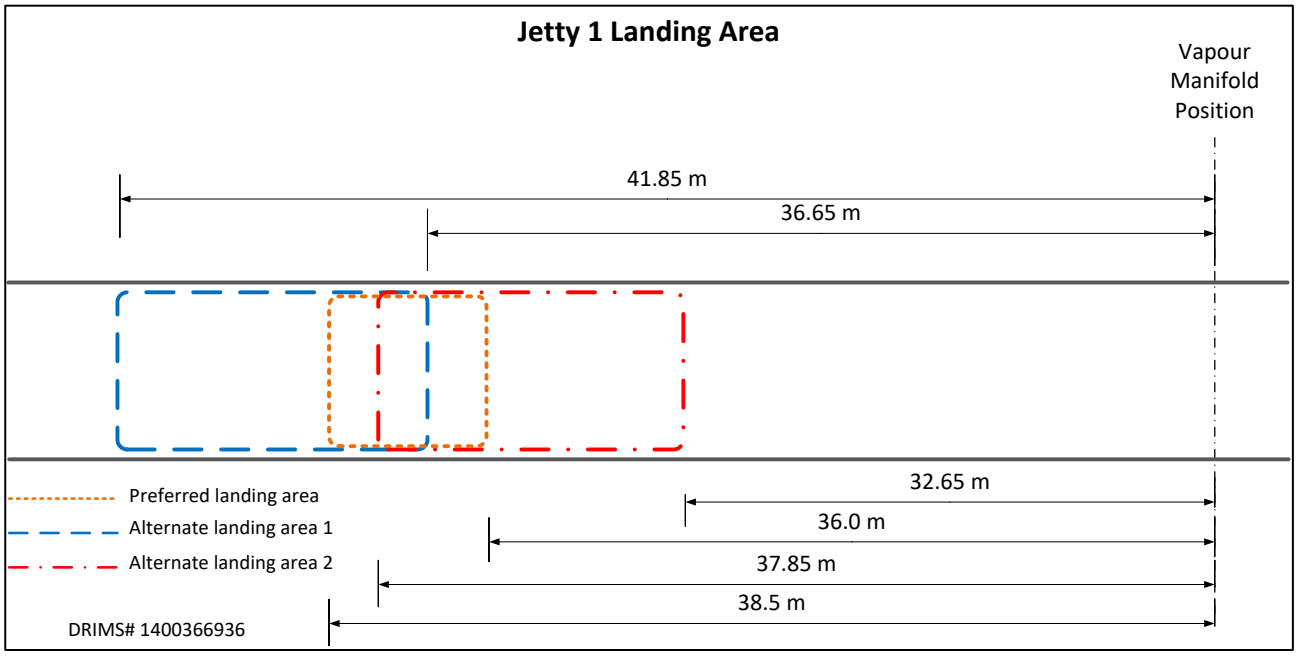
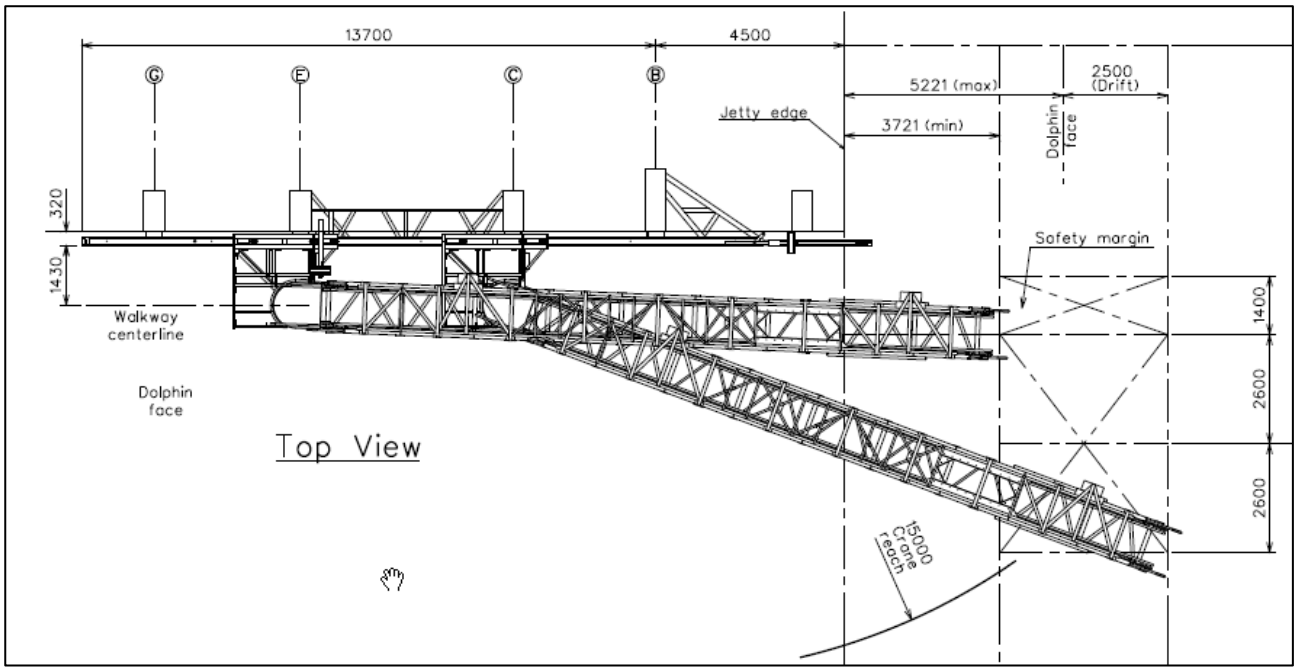
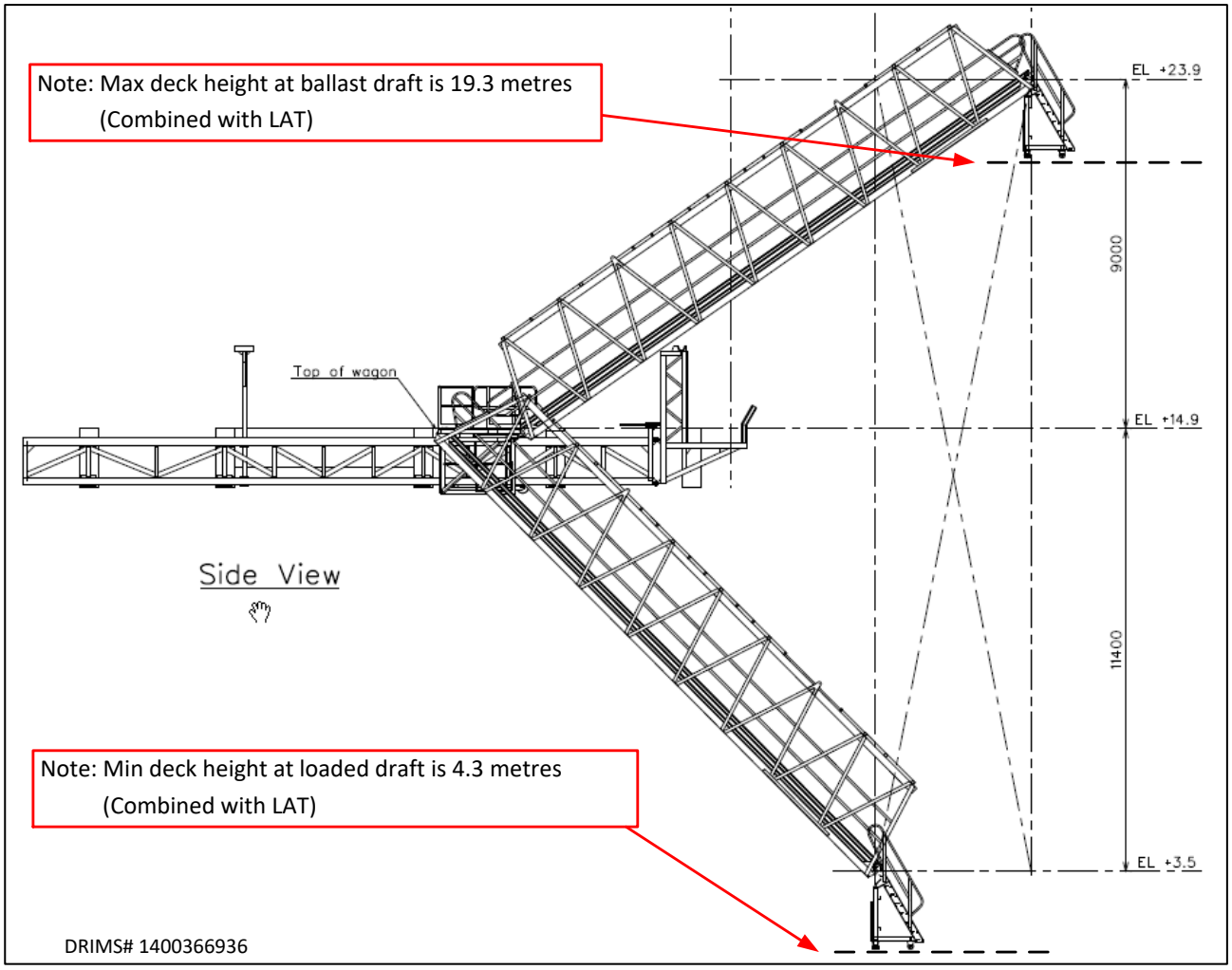


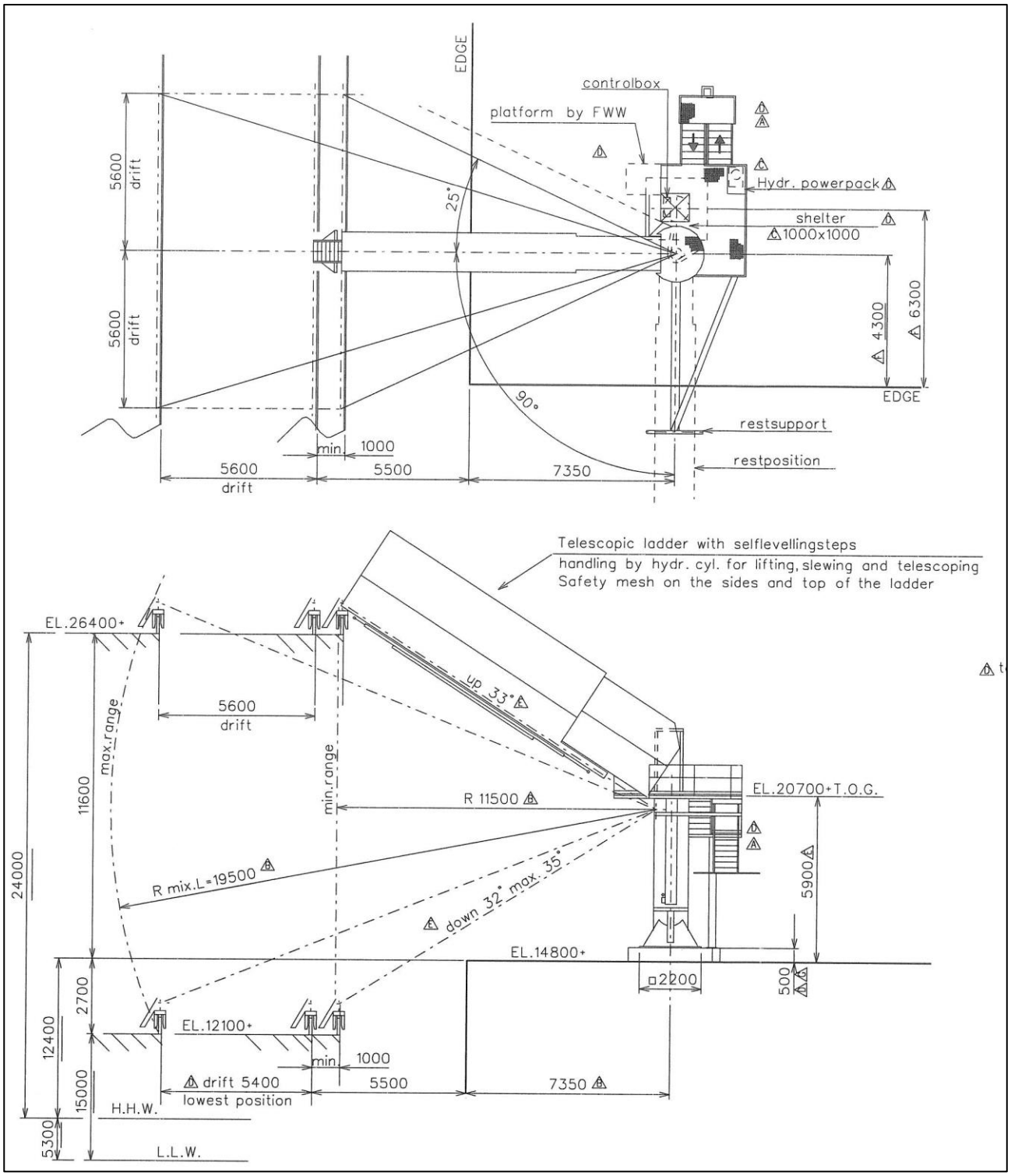
Figure 3: Jetty 1 Gangway Landing Area

The maximum deck height at ballast draft and at loaded draft is shown in Figure 3.





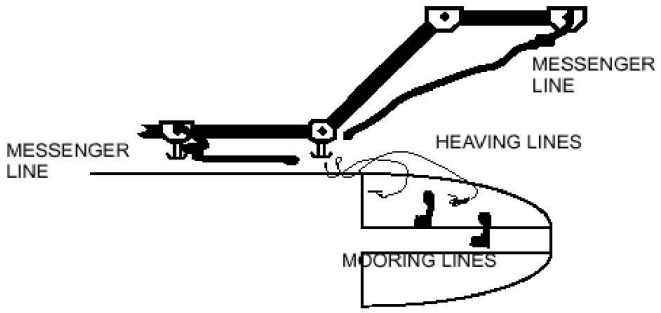
APPENDIX N LNG Jetty 2 Loading Platform – Gangway Arrangement



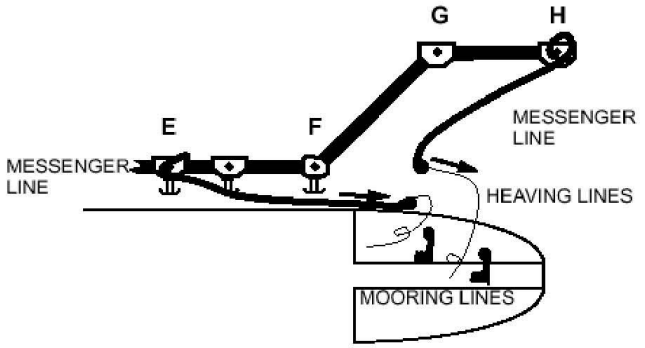
APPENDIX O Mooring Procedure for Jetty 1 and 2

See APPENDIX P for the LPG and condensate tankers.

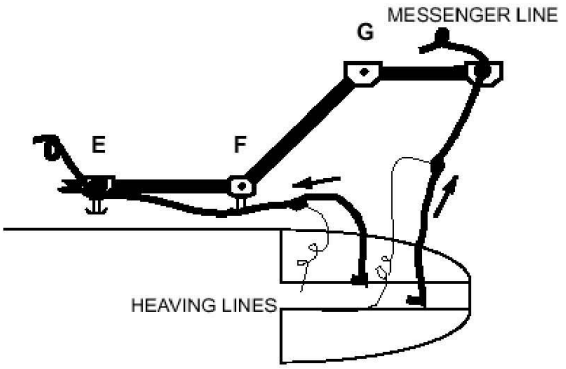
APPENDIX P Mooring Procedure for Jetty 3



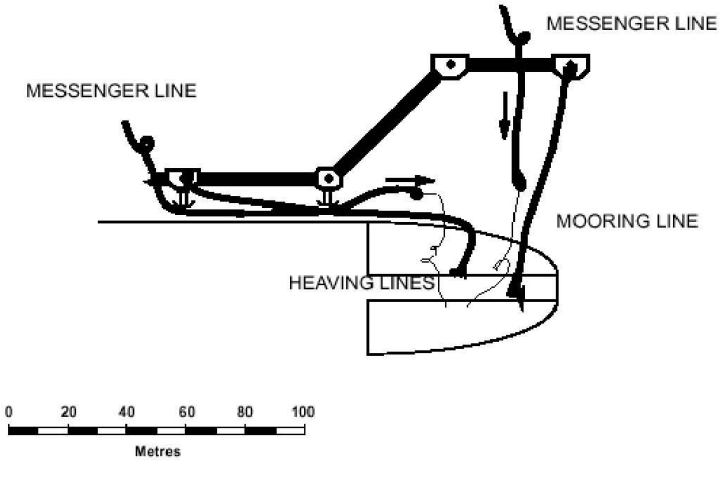
1. HEAVING LINES SET UP TO TAKE MESSENGERS FROM DOLPHIN D FOR'D AND I AFT.



2. MESSENGERS TAKEN ABOARD AND MADE FAST TO MOORING LINE EYE (1 METRE FROM APEX).



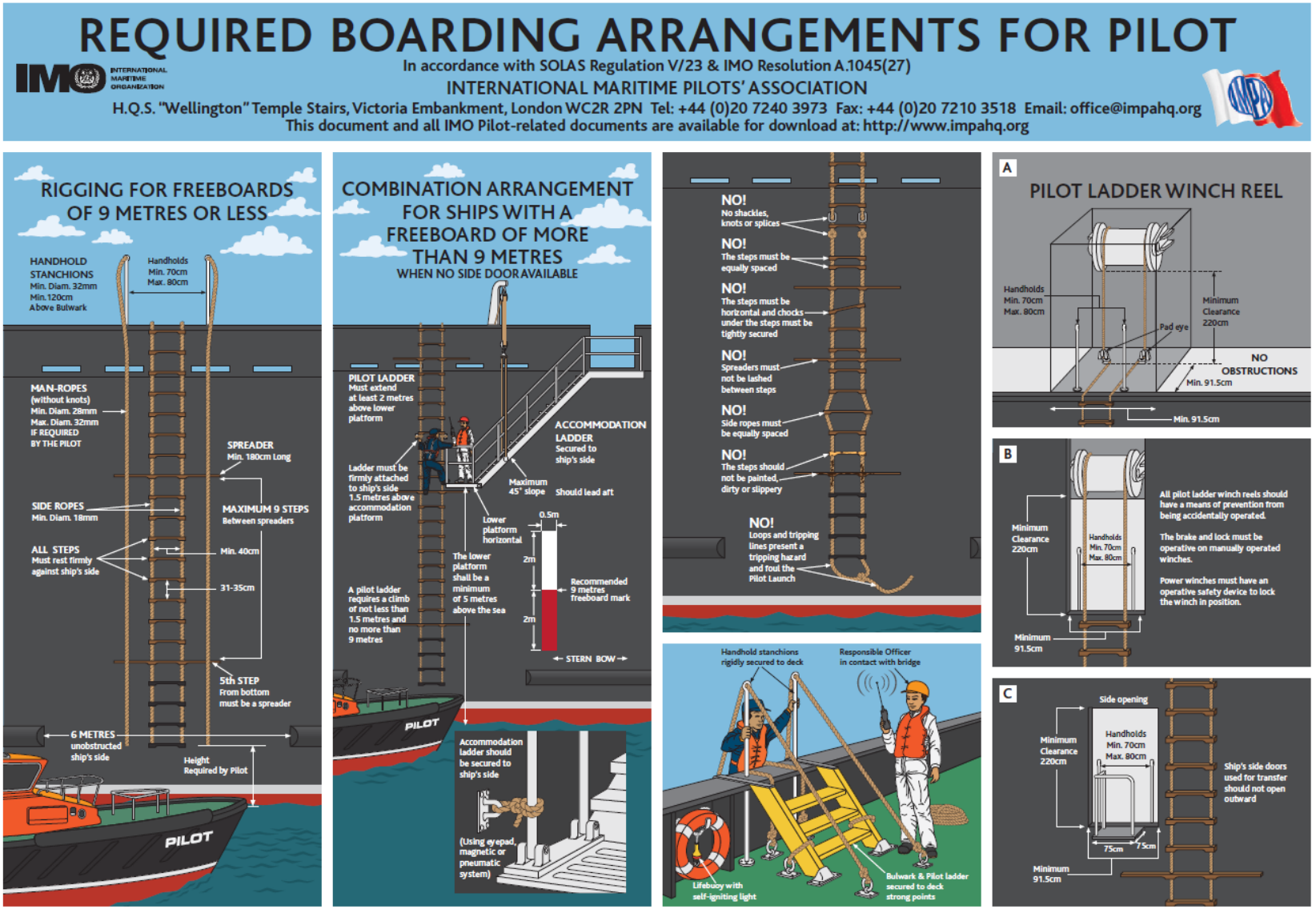
3. MOORING LINE HAULED ASHORE BY THE MESSENGER AND CAPSTAN TO REQUIRED DOLPHIN. HEAVING LINE REMAINS ATTACHED TO MESSENGER AND END REMAINS ON BOARD VESSEL.



4. AFTER MOORING LINE IS ATTACHED TO DOLPHIN HOOK, HEAVING LINE IS USED TO HAUL THE MESSENGER BACK ABOARD FOR THE NEXT MOORING LINE.

MSPMS / W. Jones / Mar95 / 800-18081s

APPENDIX Q Required Boarding Arrangements for Pilot



APPENDIX R Withnell Bay Transit and Tug Use Criteria Table

Berth		Jetty 1 & 2		Jetty 3		
Vessel Type		LNG		Condensate		LPG
Vessel Size		Arrival Displacement < 110,000 t		DWT < 80K	DWT >80K	
		Cargo Capacity < 170,000 m^3	Cargo Capacity ≥ 170,000 m^3			
Arrival	WIND LIMIT knots 10 metre/ 10-minute average	≤ 25	≤ 20	≤ 25	≤ 25	≤ 25
	Min Tugs	4	4	2	4	3
Departure	WIND LIMIT knots 10 metre/ 10-minute average	≤ 25	≤ 20	≤ 25	≤ 25	≤ 25
	Min Tugs	3	3	2	3	3
Notes	• Pilots and ship Masters are always empowered to request additional tugs. • When planning to conduct manoeuvres in winds approaching upper limits, particularly in combination with tidal streams flowing in similar directions, consideration should be given towards ordering an additional tug for the job. • If a 3-tug arrival for LNG or condensate tankers is required for any reason, then limiting winds shall be determined through an operational risk assessment. • Mitsubishi Sayaendo vessels (pea-pod tankers) are high windage vessels <170,000 m^3 that are subject to a 20 kt wind limit.					

APPENDIX S Security Arrangements for ship's crew

Security Arrangements for Ship's Crew

THE MASTER:

To ensure an adequate level of security with regard to the monitoring of Ship Crews and Visitors transiting the Onshore Gas Plant, all vessels are required to implement the following procedures:

Ship Crews Joining, leaving or proceeding on Shore Leave

- Other than under exceptional circumstances, ad hoc requests for transportation will not be accepted after the vessel has berthed and transportation requests confirmed.
- The following information must be provided to Security at the Plant Main Gate by Agent before vessel's arrival:
  - Current Crew List including family members and supernumeraries
  - Names of any crew members joining or leaving the ship at this port
  - Names of crew members required to go ashore for medical, dental or other treatment
  - List of visitors including name of Company and reason for visit
  - Scheduled times for all buses servicing the ship's visit. **No movements allowed between 1600 - 1715 daily.**
- Crew members and visitors are required to possess photographic identification in order to be allowed access to the Onshore Gas Plant and a Woodside Pass signed by the Master or his delegate.
- When going ashore or returning to their vessel all crew members will be checked against the Crew List by security. Any personnel not registered on a crew or visitors list will not be allowed access.
- Requests for emergency transportation of crew members from the ship must be made to the Pilot/Loadmaster on board the vessel, who will liaise with Security as required.

Requirements for Ship Crews Transiting Terminal

1. No matches or lighters are to be carried through the Gas Plant.
2. No mobile phones are to be taken from/to the vessel for transit through the Plant unless turned off and the battery separated from the phone. For mobile phones which cannot have their battery removed crews/visitors are to ensure these devices are switched off, locked and placed in bags provided by Security.
3. No ignition sources, namely battery powered equipment (laptops, PDAs, personal music devices, cameras, video games, torches, etc.) can be taken from/to the vessel for transit through the Plant unless the battery powered equipment is turned off and the batteries are separated from the device. For items which cannot have their battery removed such as iPod's, crews/visitors are to ensure these devices are switched off and locked. Crews/visitors must declare for inspection all mobile phones and battery powered equipment to Security staff while on the vessel. Equipment can then be stowed in luggage or placed in bags provided by Security.
4. Crew members are permitted to carry cigarettes through the Terminal. Cigarettes must be contained in a bag and not be accessed while transiting through the site.
5. Crew members are permitted to carry alcohol through the terminal, but it must be declared to Security prior to transiting through the site. All alcohol must be un-opened and contained in a bag.
6. Crew members and visitors proceeding ashore are to **remain on board inside the accommodation** until the terminal security escort arrives on board. Shore leavers are to

remain assembled in a common area/room until the gangway watch advises that the escorting security guard has boarded the vessel. Crew members are not permitted to walk in any area of the Plant or Jetty unaccompanied by a Maritime Security Guard.

PLEASE ENSURE SHORE LEAVERS DO NOT DISEMBARK THE VESSEL UNTIL A SECURITY GUARD ARRIVES AT THE GANGWAY TO ESCORT THEM TO THEIR TRANSPORT. SHORE LEAVERS TO REMAIN ASSEMBLED IN THE ACCOMMODATION UNTIL THE MARITIME SECURITY ESCORT ARRIVES ON BOARD.

7. Children under 15 years of age require special approval from Terminal Management to transit the Terminal (notification is required minimum 72 hours prior to arrival). Approval is at Terminal Management's discretion and will not be honoured during high risk or maintenance periods.
8. Crew members and visitors are to wear correct personal protection equipment (PPE) (enclosed footwear, long trousers, long sleeved shirt, glasses and helmet; PPE can be left with Security at the main gate and reclaimed before returning to ship). Children are to have an equivalent level of PPE dependent on their age and ability to wear PPE.
9. All crews transiting the facility must adhere to Western Australia road rules.
10. Ship's crew members can be subject to random drug and alcohol testing in conformity with the Onshore Gas Plant's Drug and Alcohol Policy. Ship's crew are permitted a BAC reading no higher than 0.04.

Third Party Personnel Visiting Vessels

The names of all visitors to the ship, together with their company and the reason for the visit must be provided to the Shipping Office for approval through the Agents. Personnel not registered as visitors will not be allowed access to the Jetty.

In the event of any infringement of these regulations, Woodside Energy Ltd reserves the right to prohibit shore access to ship crew members.

Signed		Accepted:	
Pilot/Loadmaster		Master	
Name:		Name:	

APPENDIX T Communications Terminology

This terminology applies to all ship/shore communications. The terminology is intended to ensure uniformity in calling and important message relays, such as loading rates, etc.

The Pilot will ensure the terminal CCR has the correct name of tanker when making first contact.

Message	Terminology
Tanker calling the terminal CCR	Terminal / Terminal / “Vessel Name”
Pilot calling the Mooring Party	Jetty / Jetty / Pilot
Tanker calling the Jetty Operator	Jetty / Jetty / “Vessel Name”
Terminal CCR calling the tanker	“Vessel Name” / “Vessel Name” / Terminal
Mooring Party calling the Pilot	Pilot / Pilot / Jetty
Jetty Operator calling the tanker	“Vessel Name” / “Vessel Name” / Jetty

Note: All loading rates will be in cubic metres each hour.

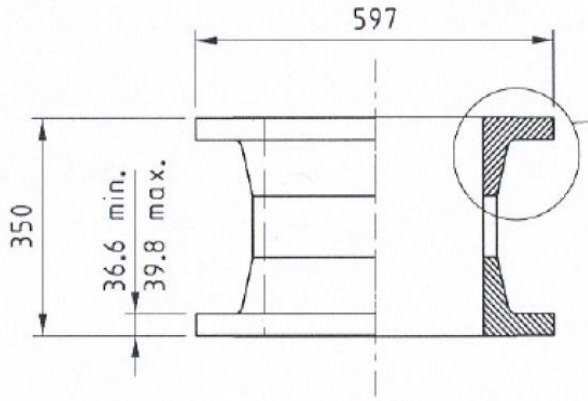
Note: Unless otherwise specifically stated, all pressures will be in kPa.

APPENDIX U Withnell Bay Spool Piece (Short Distance Piece)

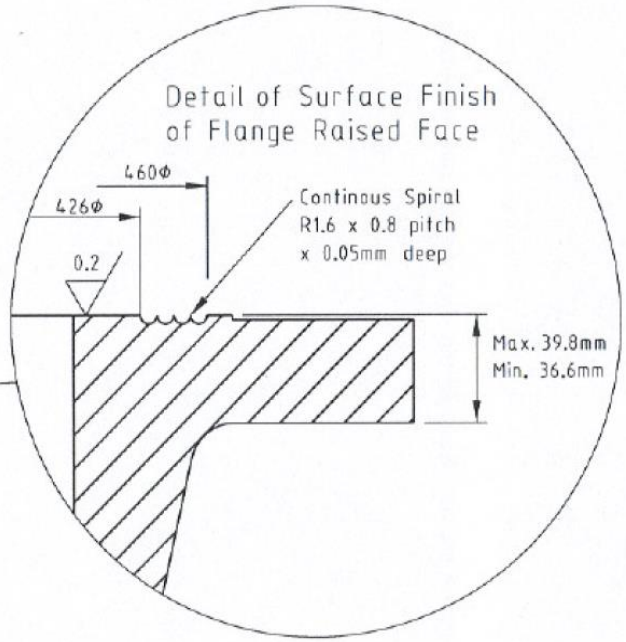
Notes.
This adaptor piece is suitable for 16" M.I.B. Quick Connect/Disconnect Couplers at Withnell Bay Terminal.
The dimensions of the adaptor and surface finish of the flange face are in accordance with the recommendations of M.I.B. International.
For correct operation and sealing it is important that.

1. The QC/DC is fitted with tapered guides which align the coupler to the outside of the ships flange. Therefore the diameter of the ships flange '597' must not exceed 598.5mm (Recommended minimum diameter=595.3)
2. There must be sufficient clear space at the back of the flange to ensure freedom of movement of the hooks. The recommended minimum dimension is 90mm but in any cases this distance must not be less than 75mm. In this regard, lifting eyes should not be fitted.
3. The QC/DC is designed to connect to a flange of thickness in the range 36.6 to 39.8mm.
4. The QC/DC has two seals, a CNAF gasket for normal sealing and a PTFE energised seal which acts during transient temperature conditions such as arm cooldown. The energised seal requires a surface finish of 0.2umRa. The flange should preferably be machine as shown in way of the CNAF gasket. This machined finish may be either continous spiral or concentric rings. Flat Face flanges are also acceptable. In order to provide future re-machining allowance, a flange thickness of (say) 39mm is preferred. Bolt holes in the connection flange are optional.

Material: ASTM A182 Gr F316L.
Flanges generally follow ASME/ANSI B16.5-1988 Class 150.
WEL Weld procedure SS2001



Standard 16" ANSI 150 RF SCH80 Flange
(Bolted to Ship's Flange)



APPENDIX V 72 Hour Pre-arrival Questionnaires

LNG Tankers

Pre-Arrival Questionaire for LNG Tankers

Due 3 Days Prior to Arrival

Vessel					
Date:					
Vessel Name:					
Masters Name:					
Port of Registry:					
Pilot Ladder					
1	Date of Manufacture:	Port Ladder		Stbd Ladder	
2	Are there any replacement steps?	Please Select		How many?	
3	Are there any replacement spreaders?	Please Select		How many?	
4	Date of last inspection (other than visual):				
Arrival					
5	Estimated Date/Time of Arrival:				
6	Estimated Arrival Drafts: Fwd:		m	Aft:	m
7	Arrival Displacement:		tonne		
8	Estimated Tank Temperatures on Arrival:		C		
9	Cooldown Period Required?		hrs		
Departure					
10	Estimated Departure Drafts? Fwd:		m	Aft:	m
11	Estimated Departure Displacement?		tonne		
12	Main engine warm through time required prior to departure from berth?		hrs		

Please confirm the following:		
13	Are the crew all healthy with no reported COVID symptoms?	Please Select
14	All Navigation, Mooring, Safety and Engine Systems are fully operational?	Please Select
15	Main Engine/s can attain the posted manoeuvring RPM's without additional delay? (For example: EEXI/EEDI Engine Power Limitations for manoeuvring RPM's can be overridden for	Please Select
16	No Tank Leakage?	Please Select
17	The following systems are operating correctly and have been inspected / tested?	
a	Cargo system and boil off control equiptment?	Please Select
b	Gas Detection Analysers?	Please Select
c	ESDS, alarms and interlocks?	Please Select
d	Tank high level alarms?	Please Select
e	Tank low / high pressure alarms?	Please Select
f	Remote operated valves	Please Select
g	ESD valves pressure tested and confirmed tight?	Please Select
18	Does the vessel have a vapour strainer fitted?	Please Select
19	Cargo tanks and lines free of oxygen?	Please Select
20	Stress calculations for cargo, ballast and bunker transfers made within recommended safety limits?	Please Select
21	Vessel has a valid International Ships Security Certificate?	Please Select
22	The current (MARSEC) Security Level under which the vessel is operating?	Please Select
23	Did the vessels previous port have a valid Maritime Security Plan?	Please Select
24	Are the vessel's mooring lines fitted with Jockey Ropes?	Please Select
25	If so, what is the overall condition of the Jockey Ropes?	Please Select
26	When were the Jockey Ropes last changed?	
27	Ballast Water:	
a.	Ballast quantity, type (SBT, CBT, DIRTY), origin?	
b.	Has the vessel complied with Biosecurity Act 2015 for Ballast Water Management?	Please Select
c.	If Ballast Water Treatment System (BWTS) is used, has the operator shared the BWTS certificate with Woodside Marine Assurance?	Please Select
d.	If ballast water exchange is used, has the vessel complied with Department of Agriculture Ballast Water Management Requirements for exchange of ballast water?	Please Select
Mooring Lines and Tails		
28	Vessels replacement policy of mooring line/wires and tails.	hrs/months/or other.
29	Does your vessel carry 22m tails to fit to all mooring lines except forward and aft spring lines that are fit	Please Select

Withnell Bay (KGP) Terminal Handbook 5.7: For the date range, 1st May to 1st November, all LNG carriers are strongly recommended to fit 22 metre mooring tails for all lines except forward and aft backsprings. Should an LNG carrier not be able to fit 22 metre mooring tails, Woodside Port Operations must be notified as soon as possible. Outside of this date range, 22 metre tails may be requested by Port Operations or can be fitted at the ship's discretion in lieu of 11 metre mooring tails.

Please fill out the attached worksheet with the below information regarding mooring lin

30	Age of each mooring line/wire and tails.
31	Last date of inspection of mooring lines/wires and tails.
32	Visual condition of each mooring line/wire and tail.

For your information the pilot will discuss mooring arrangements with the vessel prior to berthing.

Please have your mooring line certificates and inspection reports ready for inspection by a Terminal Representative.

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Condensate Tankers

Pre-Arrival Questionnaire for Oil Tankers								
Due 3 Days Prior to Arrival								
Vessel								
Date:								
Vessel Name:								
Masters Name:								
Port Of Registry:								
Pilot Ladder								
1	Date of Manufacture:	Port Ladder				Stbd Ladder		
2	Are there any replacement steps?		Please Select			How many?	N/A	
3	Are there any replacement spreaders?		Please Select			How many?	N/A	
4	Date of last inspection (other than visual):							
Arrival								
5	Estimated Date/Time of Arrival:							
6	Estimated Arrival Drafts:	Fwd:		m		Aft:		m
7	Estimated Arrival Displacement:			tonne				
Departure								
8	Estimated Departure Drafts?	Fwd:		m		Aft:		m
9	Estimated Departure Displacement?			tonne				
Please confirm the following:								
10	All Navigation, Mooring, Safety and Engine Systems are fully operational:						Please Select	
11	All cargo systems leak free and fully operational?						Please Select	
12	Inert gas system operational, tanks inerted to less than 8% O2.							
13	Any residue traces of H2S will be less than 5 ppm on arrival at terminal?						Please Select	
14	All cargo systems, transfer equipment inspected. Leak free and operating correctly?						Please Select	
15	Stress calculations for cargo, ballasting, bunkering transfers made and within recommended safety limits.						Please Select	
16	The maximum loading rate for the present loading operation?							cu m/hr
17	Maximum loading rate through one port 16" manifolds?							cu m/hr
18	Maximum loading rate through two starboard 16" manifolds?							cu m/hr
19	Does manifold arrangement comply with OCIMF standards.						Please Select	
20	Ballast Water:							
	a.	Ballast quantity, type (SBT, CBT, DIRTY), origin?						
	b.	Has the vessel complied with Biosecurity Act 2015 for Ballast Water Management?					YES	
	c.	If Ballast Water Treatment System (BWTS) is used, has the operator shared the BWTS certificate with Woodside Marine Assurance?					YES	
	d.	If ballast water exchange is used, has the vessel complied with Department of Agriculture Ballast Water Management Requirements for exchange of ballast water?					N/A	
21	Vessel has a valid International Ships Security Certificate?						YES	
22	The current (MARSEC) Security Level under which the vessel is operating?						Security Level 1	
23	Did the vessel's previous port have a valid Maritime Security Plan?						Please Select	
Mooring Lines and Tails								
24	Vessels replacement policy of mooring line/wires and tails.							
		Mooring lines:					hrs / months / or other.	
		Tails:					hrs / months / or other.	
For inshore terminals please fill out the attached Mooring Line & Tail Data worksheet with information regarding mooring lines/wires and tails.								
For your information the pilot will discuss mooring arrangements with the vessel prior to berthing.								
Please have your mooring line certificates and inspection reports ready for inspection by a Terminal Representative.							**Rev 5 03/04/2022**	

LPG Tankers

Pre-Arrival Questionnaire for LPG Tankers

Due 3 Days Prior to Arrival

Vessel							
	Date:						
	Vessel Name:						
	Masters Name:						
	Port Of Registry:						
Pilot Ladder							
1	Date of Manufacture:	Port Ladder			Stbd Ladder		
2	Are there any replacement steps?		Please Select		How many?		
3	Are there any replacement spreaders?		Please Select		How many?		
4	Date of last inspection (other than visual):						
Arrival							
5	Estimated Date/Time of Arrival:						
6	Estimated Arrival Drafts:	Fwd:		*m*	Aft:		*m*
7	Arrival Displacement:			*tonne*			
8	Nominated Quantity to Load?			*tonne*			
Departure							
9	Estimated Departure Drafts?	Fwd:		*m*	Aft:		*m*
10	Estimated Departure Displacement?			*tonne*			
Please confirm the following:							
11	All Navigation, Mooring, Safety and Engine Systems are fully operational:					Please Select	
12	All cargo systems leak free and fully operational?					Please Select	
13	Vessel fully cooled under LPG vapour?					Please Select	
	a Arrival Bottom Tank Temperatures:			°C			
				°C			
14	Composition of last three cargos?	Cargo 1					
		Cargo 2					
		Cargo 3					
15	Starboard manifold configuration:						
	a The order (fwd to aft), the size of the presentation flanges for loading? (eg. V 8" / L 12" / L 12" / V 8") and the longitudinal distance between the centre lines of the liquid presentation flanges.						
	b Which connection will be used for loading Propane and Butane? *(Note: The terminal can only provide Propane through the forward starboard connection and Butane through the aft starboard connection)*						
	c Flat faced presentation spools are fitted?					Please Select	
16	Advise maximum loading rate whether both grades can be loaded simultaneously and if not, the order of loading required?						
17	Gas detection system is operational and calibrated for the cargo to be loaded?					Please Select	
18	Cargo transfer emergency stops tested from all locations to ensure correct operations of valves, alarms and interlocks?					Please Select	
19	Are tank high level and pressure alarms and interlocks fully operational?					Please Select	
20	Where adjustable setting safety valves are installed, confirm they are correctly set?					Please Select	
21	Is the vessel subject to sloshing restrictions?					Please Select	
22	Vessel has a valid International Ships Security Certificate?					Please Select	
23	The current (MARSEC) Security Level under which the vessel is operating?					Please Select	
24	Did the vessels previous port have a valid Maritime Security Plan?					Please Select	
25	Does manifold arrangement comply with OCIMF standards?					Please Select	
26	Ballast Water:						
	a. Ballast quantity, type (SBT, CBT, DIRTY), origin?						
	b. Has the vessel complied with Biosecurity Act 2015 for Ballast Water Management?					Please Select	
	c. If Ballast Water Treatment System (BWTS) is used, has the operator shared the BWTS certificate with Woodside Marine Assurance?					Please Select	
	d. If ballast water exchange is used, has the vessel complied with Department of Agriculture Ballast Water Management Requirements for exchange of ballast water?					Please Select	
Mooring Lines and Tails							
27	Vessels replacement policy of mooring line/wires and tails.						
		Mooring lines:				*hrs / months / or other.*	
		Tails:				*hrs / months / or other.*	

Please fill out the attached Mooring Line & Tail Data worksheet with information regarding mooring lines/wires and tails.

For your information the pilot will discuss mooring arrangements with the vessel prior to berthing.

Please have your mooring line certificates and inspection reports ready for inspection by a Terminal Representative.

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APPENDIX W Sanctions Assessment Procedure For Vessels Visiting Woodside Terminals

1. **The Vessel Owners (and Vessel Personnel) are bound under:**
    a. **clause 3 (Conditions of Use) of the Withnell Bay Jetty Terminal Conditions; or**
    b. **clause 3 (Conditions of Use) of the Pluto Terminal Conditions,**
    as applicable (the 'Terminal Conditions').
2. **This Sanctions Assessment Procedure ('Procedure') forms part of the 'Terminal Handbook' applicable at the Terminal and is issued under the Terminal Conditions. Any defined terms in the Terminal Conditions carry the same meaning within this Procedure unless defined otherwise in this Procedure.**
3. **The Company undertakes Sanctions assessments prior to the provision of Jetty Services to Vessel Owners. As a result of these Sanctions assessments or otherwise, the Company may require a declaration to be submitted (refer to the following page) ('Declaration') prior to the relevant loading date at the Woodside terminal. The Company will give prior notice in writing of this to any Vessel Owner if required by the Company.**
4. **Must there be any change of circumstances that would affect the responses after submission of the Declaration (if required by the Company), immediate re-submission is required with updated information.**
5. **The Company may undertake ongoing Sanctions assessments and is not bound by a response in any Declaration submitted to the Company.**
6. **The Company may withhold, suspend, or terminate the provision of Jetty Services and require the removal of any Vessel from the Jetty, or take any other action the Company reasonably considers appropriate (and the Terminal Representative may give directions accordingly), taking into account the responses in the Declaration (or any re-submitted Declaration) or the Company's own and ongoing Sanctions assessments.**

WHERE REQUIRED, COMPLETED DECLARATIONS (REFER TO FOLLOWING PAGE) AND UPDATED INFORMATION TO BE SENT TO PilotLoadingMaster@woodside.com.au

NOTE: Completion of the Declaration is a Company requirement in the circumstances described above.

Definitions

'Sanctions' means any trade, political, economic, or financial sanctions laws, regulations, embargoes, or restrictive measures administered, enacted, or enforced by any Sanctioning Authority.

'Sanctioning Authority' means any government and their relevant emanations and official institutions including those of: Australia, New Zealand, the USA, the United Nations Security Council; the European Union (and each of its member states), the United Kingdom, Switzerland, and Japan.

'Sanctions List' means the Consolidated List maintained by the Australian Government Department of Foreign Affairs and Trade, or any list maintained by, or public announcement of a Sanctions designation made by, a Sanctioning Authority from time to time.

'Restricted Party' means any person or entity listed on a Sanctions List or any person or entity organised, located or resident in a country or territory that is, or whose government is, the target of Sanctions.

Sanctions Declaration

Date completing form:	Click here to enter a date	**Woodside Load Port Terminal:**	Click here to enter text
Vessel Name:	Click here to enter text	**Agent(s):**	Click here to enter text
Master's Name:	Click here to enter text	**Load Date:**	Click here to enter text

Questions answered “Yes” require detailed comments in remarks section below		
1.	Is the Vessel Owner or any Vessel Personnel a Restricted Party?	☐ Yes ☐ No
2.	Is the Vessel Owner or any Vessel Personnel directly or indirectly owned or controlled by a Restricted Party?	☐ Yes ☐ No
3.	Is the Vessel Owner or any Vessel Personnel engaging in or has engaged in any transaction or conduct that could result in it becoming a Restricted Party?	☐ Yes ☐ No
4.	Is or has the Vessel Owner or any Vessel Personnel been subject to any allegation, claim, proceeding, formal notice or investigation with respect to any Sanctions?	☐ Yes ☐ No
5.	Is the Vessel Owner or any Vessel Personnel engaging in, or has engaged in, directly or indirectly, any transaction or conduct which evades or avoids, or has the purpose of evading or avoiding, or breaches or attempts to breach any Sanctions applicable to it?	☐ Yes ☐ No
6.	Has the Vessel Owner or any Vessel Personnel engaged in, or is engaging in, directly or indirectly, any trade, business, or other activity with or for the benefit of any Restricted Party?	☐ Yes ☐ No

Question Number	**Remarks for questions answered "Yes"**
Master’s Name:	
Signature:	
Date:	

Ship STAMP:

(Source: SharePoint)