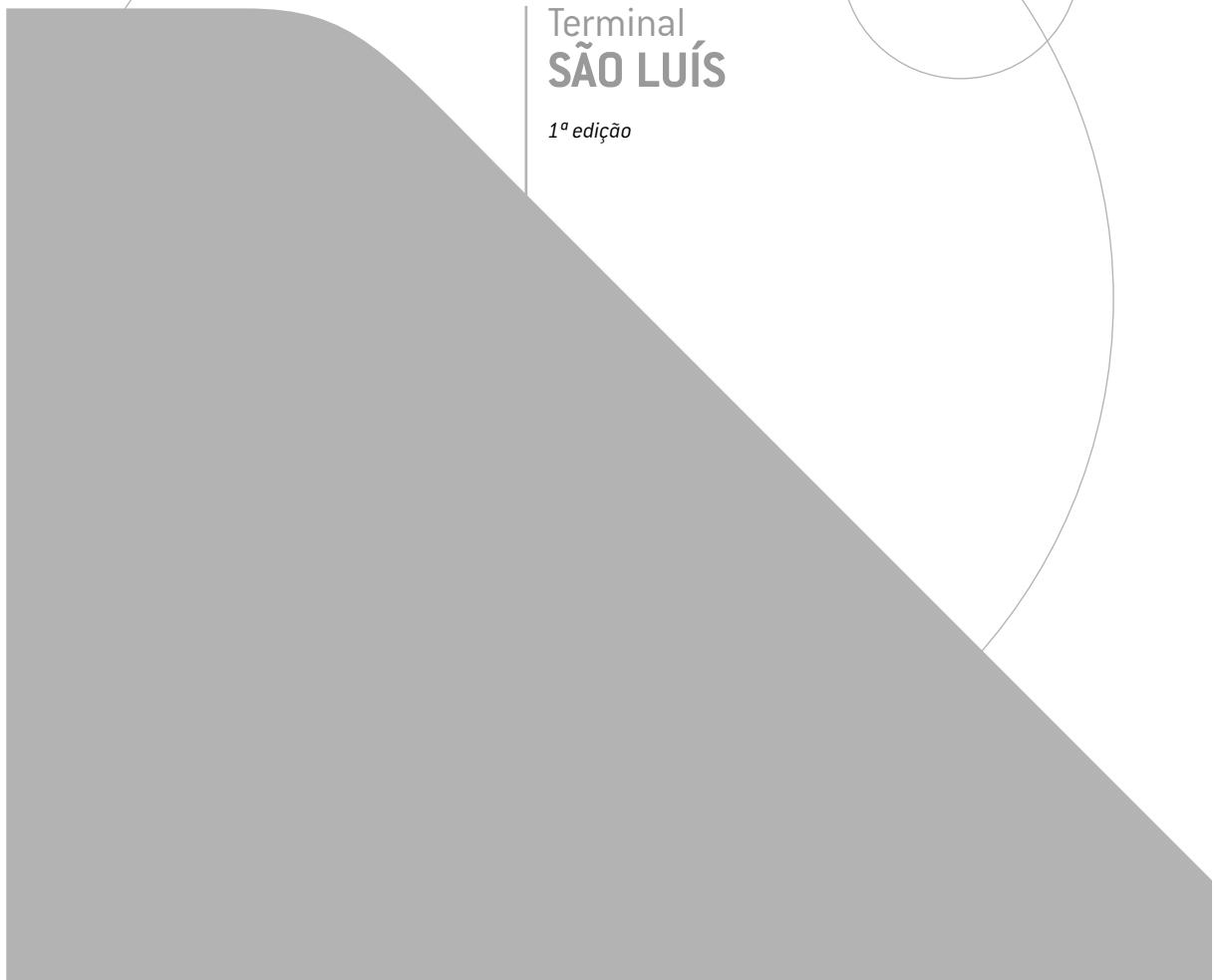




# PORT INFORMATION

Terminal  
**SÃO LUÍS**

*1ª edição*





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## INTRODUCTION

This Port Information is prepared by Petrobras Transporte S.A. (Transpetro), which operates the Marine Terminal of São Luis (DT/TA-NE/SLU) at Itaqui Port. It provides essential information to the ships operating at the terminal. This document is also distributed internally in the organization, and to the interested port parties, local and national authorities.

The Port Information is available in Portuguese and English language versions .

The information contained herein serves to supplement, but never to supersede or alter, any legislation, instructions, guidance or official publications, either national or international. Therefore, anything that conflicts with any of the aforementioned documents must be ignored.

The Terminal has the right to change any of its operational features herein presented, with no advance notification.

Where any information is found to be incorrect and requiring updating, please contact:

**Terminal de São Luís**

Porto de Itaqui s/n – Itaqui

ZIP Code: 65085-370 – São Luís – MA – Brazil

Phone: (55 98) 3217-3380

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**Petrobras Transporte S.A. – Transpetro**

Av. Presidente Vargas, 328 / 9º andar – Centro

Zip Code: 20091-060 – Rio de Janeiro – RJ – Brazil

Phone: (55 21) 3211-9085

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The most recent version of this Port Information can be obtained at the following address: **[www.transpetro.com.br](http://www.transpetro.com.br)** .

## DEFINITIONS

**BM** – Low or falling tide.

**BP** – “Bollard Pull” – Ship’s longitudinal Static Traction.

**CAP** – Harbor Master of Maranhão.

**CBR** – Companhia Brasileira de Rebocadores.

**CDA** – Environment Defense Center.

**COW** – Crude Oil Washing (cargo tank cleaning with crude oil).

**CRE** – Emergency Response Center.

**DHN** – Diretoria de Hidrografia e Navegação.

**Dry tide** – A condition in which the tide reaches the minimum amplitude at a certain time of the year.

**DWT** – Dead Weight Tonnage.

**Emap** – Empresa Maranhense de Administração Portuária.

**ETA** – Estimated time of arrival.

**GEC** – Grupo Especial de Contingências.

**Giaont** – Safety Surveyor Staff.

**Ibama** – Instituto Brasileiro de Meio Ambiente.

**IMO** – “International Maritime Organization”.

**Isgott** – International Safety Guide for Oil Tankers and Terminals.

**LCP** – Local Contingency Plan.

**LPG** – Liquefied Petroleum Gas.

**MA** – State of Maranhão.

**MBL** – Minimum brake loading (minimum breaking strain).

**MF** – Marine Fuel.

**MGO** – Marine Gasoil.

**Petrobras** – Petróleo Brasileiro S.A.

**PM** – Flood tide or tide rising.

**POB** – Pilot aboard.

**SEMA** – Secretaria de Meio Ambiente.

**Sinpep** – Sistema Integrado de Padronização Eletrônica da Petrobras (Integrated System for Electronic Standardization at Petrobras).

**Siscope** – “Sistema de Controle de Operações e Estadias” (Operation and Laytime Control System).

**SMS** – Segurança, Meio Ambiente e Saúde (Safety, Environment and Health).

**Squat effect** – Increase of ship’s draft as a result of an increase in the displacement speed, especially in restricted waters.

**Syzygy tide** – A condition in which the tide reaches the maximum amplitude at a certain time of the year.

**TA-NE/SLU** – Marine Terminal of São Luis.

**Transpetro** – Petrobras Transporte S.A.

**UN-Bunker** – Petrobras department that trades the bunker stored in the Transpetro Terminals.

**UTC** – Universal time control.

**VTS** – Vessel Traffic Service.



# CHARTS AND REFERENCE DOCUMENTS

Information on the Itaqui terminal may be obtained in the following publications.

## Charts

Area	Chart Number
	Brazil (DHN)
From Gurupi Cape to Santana Island	400
Vicinities of the São Marcos Bay	410
São Marcos Bay	411
Vicinities of São Luis and Itaqui ports	412
Port of Itaqui	413

## Other Publications

Type/Subject	Publisher or Source		
	Brazil (DHN)	US Hydrographic Office	British Admiralty
Normas e Procedimentos da Capitania dos Portos	NPCP	–	–
Navigation support on the East coast	East coast route	–	–
List of Lighthouses – Brazil	(DHN)	–	–
From Oiapoque Bay to Parnaíba River	–	24,020	–

*continue*

Type/Subject	Publisher or Source		
	Brazil (DHN)	US Hydrographic Office	British Admiralty
From Santana Island to Camocim	–	24,260	–
From Gurupi Cape to Santana Island	–	24,270	–
São Marcos Bay	–	24,271	–
British Admiralty's Chart	–	–	3,958
British Admiralty's Chart	–	–	535

# DOCUMENTS AND INFORMATION EXCHANGE

The items listed below must be provided by the Terminal or the Ship, as indicated on the table.

Information	Prepared by:			Delivered to			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
<b>Before arrival</b>							
Estimated Time of Arrival (ETA) and ship information		X		X			The ship's agent receives and passes to the terminal
Essential Terminal information	X				X		Syscope initial chart
<b>Before cargo or Bunker transfer</b>							
Details about on-board cargo/slop/ballast		X		X			During initial release
Essential operating information.	X				X		During initial release
Ship/Shore Safety Checklist			X			X	As per Isgott Appendix A

continue

Information	Prepared by:			Delivered to			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
<b>During cargo or Bunker transfer</b>							
Repeat Ship/Shore Safety Checklist			X			X	As per Isgott Appendix A
<b>After cargo or Bunker transfer, before departure</b>							
Information required for unberthing the ship			X			X	Fuel and water quantity aboard
<b>After unberthing, on leaving port</b>							
Information concerning departure from port		X		X			Pilot disembarkation and port leaving times

# DESCRIPTION OF THE PORT AND ANCHORAGE AREA

## 5.1 General Description

TA-NE/SLU is located at Itaqui Port, near the city of São Luís (MA) and is operated by Petrobras Transporte S.A. – Transpetro.

Its activities include Oil by-product and LPG receiving, storage and delivery operations, service provisioning (labor force) for Storing and Transferring Oil By-Products to the dealers installed at the Port, and Bunker provisioning to the ships berthed at the Port of Itaqui. The transportation of national oil by-products makes the terminal an export and cabotage entrepôt for smaller terminals. Its influence area encompasses the states of Maranhão, Piauí, Tocantins, southeast of Pará, north of Goiás and north-east of Mato Grosso.

## 5.2 Location

### 5.2.1 Coordinates

The terminal facilities are located at the following coordinates: 02°35'12"S and 044° 23' 30" W.

## 5.2.2 General Geographical Location

The Marine Terminal of São Luis – TA-NE/SLU is located near São Marcos Bay, State of Maranhão, on the North/Northeast coast of Brazil. It is located 11 km to west of the city of São Luis, and is linked to it by road.

## 5.3 Approaching the Terminal

### 5.3.1 General Description

The Port of São Luis is located on an entrance in the coast, at NW of São Luis Island, which is formed by the estuary of the Anil and Bacanga rivers, with geographical position 02° 35' 00" S 044° 22' 00" W.

The approach to São Luis port can only be made in daylight and during flood tide.

The navigators proceeding from W and E must approach the Port of São Luis by steering the ship to São Marcos de Fora lighthouse-boat (01° 35' S – 043° 50' W). Near the lighthouse-boat, turn 180°, by steering the ship to buoys One and Two, which form the first by nine pairs of green and red buoys, three green buoys and one red buoy (chart 140). After the pair formed by the buoys 17 and 22, change to the route 180° until marking Medo Island lighthouse, at 224°

From this point, turn to the route 225°, by keeping the ship in this lighthouse mark until reaching the pilotage's anchorage area, to NW of Ponta de Areia.

Navigators proceeding from E must see Pirajuba and Araçagi lighthouses and navigate until marking Pirajuba at 258°, when they will turn to the route 212°, which will guide them to the main channel. From this point on, the route is the same as for the navigator proceeding from W, until reaching the pilotage's anchorage area

The approach to the Port of Itaqui is made exactly as that for the Port of São Luis, until reaching the buoys 17 and 22.

From this buoy pair on, proceed by the beacon-signaled channel until reaching the last buoy pair, numbers 21 and 26, when the route must be changed to 180°, and navigate to the pilot embarking/disembarking location, by marking Medo Island lighthouse at 090° and at the distance of 1.2 mile.

Ponta da Madeira terminal is located at north of Itaqui Port. Alumar Terminal is located 7 miles to south, in the Coqueiros Strait.

The signaling for channel and outstanding points', geographic accidents and hazards found when approaching the Port of Itaqui are described in the section 5.3.8 (source: East Coast route).

### 5.3.2 Anchorage areas

In almost the entire São Marcos Bay, ship berthing is very difficult due to the improper seabed nature, almost always in bad conditions. In addition, in the entire São Marcos Bay, the strong flood or falling tide currents, which may reach 6 knots, have caused loss of anchor of anchored ships, with high run aground risk on the numerous sandbanks and rocky ledges in the bay. The Harbor Master recommends that, when anchoring their ships, the captains keep the crew in "Travel Regime", for the purpose of having enough qualified personnel on board for emergency maneuvers.

Caution must be taken when approaching the anchorage areas, due to the strong currents existing at that area. The most suitable period for reaching these anchorage areas is about four (4) hours before flood tide.

At first, ships with single (1) anchor, or with defective engine(s), must use the anchorage areas Three, Two or One.

It is expressly prohibited anchoring any vessel in the maneuvering area and along the entire extension of the port access channel.

Ships using the terminals and the port in São Marcos Bay must use the specific anchorage areas indicated in the 400-series charts from Diretoria de Hidrografia e Navegação.

The anchorage areas designated by the Harbor Master for Itaqui Port are:

#### Recommended or Designated Anchorage Areas

Area Name	Latitude and longitude			Anchorage Area Radius [miles]	Minimum Depth in meters	Notes
	Points	Lat. S	Long. W			
One	A	01° 58' 5	044° 07,0'	12.2 x 3.6	19 x 31	Ships in dispute
	B	01° 55,5	044° 09,0'	12.2 x 3.6	19 x 31	Ships under big repairs For ships over 80,000 DWT and draft over 11 m
	C	01° 49,2'	043° 58,4'	12.2 x 3.6	19 x 31	
	D	01° 51,8'	043° 56,5	12.2 x 3.6	19 x 31	
Two	A	02° 02,9'	044° 03,4'	4.37 x 2.2	31 x 34	For ships with draft over 20 m. In this area, the navigator must pay attention on the underwater ropes existing in the West sector of the area
	B	02° 05,4'	044° 03,4'	4.37 x 2.2	31 x 34	
	C	02° 06,0'	044° 07,2	4.37 x 2.2	31 x 34	
	D	02° 04,4'	044° 06,1'	4.37 x 2.2	31 x 34	

*continue*

Area Name	Latitude and longitude			Anchorage Area Radius (miles)	Minimum Depth in meters	Notes
	Points	Lat. S	Long. W			
Three	A	02° 08,3'	044° 08,7'	4.40 x 1.10	26 x 33	
	B	02° 10,9'	044° 09,'	4.40 x 1.10	26 x 33	
	C	02° 12,1'	044° 10,0'	4.40 x 1.10	26 x 33	
	D	02° 12,1'	044° 11,0'	4.40 x 1.10	26 x 33	
Four	A	02° 19,2'	044° 12,2'	2.18 x 1.15	15 x 38	Ships with DWT less than 80,000 tonnes and/or 11-m draft
	B	02° 21,4'	044° 09,8'	2.18 x 1.15	15 x 38	
	C	02° 24,4'	044° 12,8'	2.18 x 1.15	15 x 8	
	D	02° 27,4'	044° 17,2'	2.18 x 1.15	15 x 38	
	E	02° 26,6'	044° 19,4'	2.18 x 1.15	15 x 38	
Five	A	02° 22,2'	044° 20,3'	4.90 x 1	14 x 32	Ships with DWT less than 80,000 tonnes and/or 11-m draft
	B	02° 25,0'	044° 21,3'	4.90 x 1	14 x 32	
	C	02° 24,4'	044° 22,2'	4.90 x 1	14 x 32	
	D	02° 20,1'	044° 20,4'	4.90 x 1	14 x 32	
Six	A	02° 28,6'	044° 24,5'	-	-	The anchorage in this area requires explicit authorization from the Harbor Master and additional precautions, which will be determined upon request
	B	02° 29,2'	044° 24,0'	-	-	Ships with displacement up to 80,000 DWT and draft less than 11 meters
	C	02° 30,6'	044° 25,4'	-	-	
	D	02° 29,6'	044° 26,0'	-	-	
Seven	A	02° 33,6'	044° 25,0'	-	-	Ships with displacement up to 80,000 DWT and/or maximum draft of 11 meters
	B	02° 34,0'	044° 23,6'	-	-	The anchorage in this area requires explicit authorization from the Harbor Master and additional precautions, which will be determined upon request
	C	02° 35,5'	044° 24,3'	-	-	
	D	02° 34,8'	044° 25,7'	-	-	
Eight	A	02° 35,4'	044° 26,0'	-	-	Fuel and explosives' loading and discharging
	B	02° 34,8'	044° 25,7'	-	-	
	C	02° 35,5'	044° 24,3'	-	-	
	D	02° 36,8'	044° 24,8'	-	-	

**Note:** The use of other areas in the channel will only be possible when authorized by the Harbor Master.

The Navigation and pilotage agencies keep the Harbor Master informed about the areas where such ships are anchored.



### 5.3.3 Navigational aids

The nautical signaling for the Port of Itaqui and adjacent terminals, Ponta da Madeira and Alumar is made by lighthouses (conventional and radio), and light buoys.

#### 5.3.3.1 Radio lighthouses

The following radio lighthouses are operating in the area:

- São João – RC 320 KHZ – continuous AI (01° 17' S; 044° 54' W)
- São Marcos – RC 300 KHZ – continuous Modulation A 2A and A 3E SM (02° 29' S; 044° 18' W)
- São Luis Airport – RC 280 KHZ – continuous SLI (02° 35' S; 044° 14' W)

For ship approaching, São Marcos radio lighthouse must be used.

#### 5.3.3.2 Lighthouses

The following lighthouses are operating in São Marcos Bay and its vicinities: Apeú, São João, Mangunça, Pirajuba, Pirarema, Alcântara, Ilha do Medo, Ponta da Areia, São Marcos, Araçagi and Santana.

#### 5.3.3.3 Light buoys

The access channel, evolution basin and anchorage areas are delimited with light buoys, with six of them equipped with radar reflector.

The Brazilian Navy publishes the nautical signaling characteristics at Itaqui area, in its List of Lighthouses – (DHN).

### 5.3.4 Port limits

The Organized Port of Itaqui area is defined in the Administrative Rule No. 238, of 05/05/94, from the Ministry of Transportation, and is constituted by the:

- a) Onshore port facilities delimited by the polygonal line defined by the A, F, G, H, J, L and C vertices, UTM Coordinates, as follows:

Point	X-Coordinate	Y-Coordinate
A	569,463.723	9,716,244.655
F	570,804.613	9,716,841.685
G	571,43.291	9,715,973.294
6	570,689.926	9,715,165.913
H	571,460.874	9,710,563.814
J	570,859.257	9,710,463.028
L	570,034.806	9,715,384.435
C	569,719.675	9,715,669.811

The polygonal line includes the entire dock, berthing and mooring pier, warehouses, buildings in general and internal ways for road and railway circulation, and also the lands along these areas and their vicinities belonging to the Federal Government, incorporated or not as assets of the Port of Itaqui, or under its trust and responsibility.

- b) Maritime infrastructure, included into the ABCD polygonal line and defined by the geographical coordinate vertices indicated below:

Point	Latitude	Longitude
A	02° 37' 00" S	44° 23' 00" W
B	02° 34' 15" S	44° 23' 00" W
C	02° 34' 15" S	44° 22' 00" W
D	02° 37' 00" S	44° 22' 00" W

The polygonal line includes the waterside accesses, anchorage areas, evolution basin, main access channel and its surrounding areas, until the onshore facilities' banks of the Organized Port of Itaqui.

### 5.3.5 Port control or VTS

Port control is performed by the Empresa Maranhense de Administração Portuária (Emap) – Phone PABX: (55 98) 3216-6000, fax: (55 98) 3232-4758 and ZIP Code 65085-370 – and the Harbor Master.

VTS – Vessel Traffic System – not available for the area of São Luis.

### 5.3.6 Pilotage

Inside or outside the port area, pilotage is mandatory for all ships heading to the Port of Itaqui. The pilots for the Port of Itaqui can be requested via ship's agent, 4 hours before the arrival. They can also be requested via channel 16 in VHF radio phone call. On unberthing, pilotage is requested via estimated time for concluding the operation (supplied by the ship) and time for releasing the cargo.

#### 5.3.6.1 Pilot embarkation

The pilot embarking and disembarking location is defined as the point located at 1.2 mile to W of Medo Island lighthouse, or other designated point included in the nautical chart DHN 412.

#### 5.3.6.2 Responsibility for maneuvering

Each captain is solely responsible for the maneuvers and is in charge of all the information to be provided to the pilot about any peculiarity, specific conditions or existing dif-

facilities, such as: engine or boiler problems, problems or damage to navigation aid instruments, mooring lines or any element that may offer risks for mooring, rope release, loading/discharging the ship.

After they are berthed, the ships must remain in conditions deemed satisfactory by the pilot and terminal operators.

If the Captain does not accept the pilot's instructions, and so as to ensure that the ship maneuvers safely, the Port Captain shall be notified in writing by the ship's agency. This fact will be reported to TA/SLU by the ship's agency.

### 5.3.7 Tugs and port services

The tug services available are provided by the pilotage for berthing and unberthing, based on the vessel size. The rules concerning the number of tugs to be used are described in the section 6.3.

Tugs and towing services targeted to ship berthing, unberthing and evolution maneuvers at the Port of Itaquí are provided by specialized companies.

The standards/rules for employing tugs are established by the document "Normas e Procedimentos da Capitania dos Portos do Maranhão", which may be acquired in the Harbor Master or directly with the Agent.

The ships must have towropes of good quality, since the tugs do not provide this item.

The tugs available in São Luis are equipped with fire combat system.

The available tugs are listed in the item 8.4.1

The communication form between tugs and ships during berthing and unberthing maneuvers is made via VHF radio. This equipment remains permanently turned on in order to answer any call from ships berthed on the pier, or from the terminal's operating personnel. In case of failure of the equipment aboard the ship or tug during the maneuver, the ships will use the international whistle signals for this purpose:

#### 5.3.7.1 Boat services

- a) **Personnel transportation boats** – The service is usually provided by the pilot's boat. If necessary, such service may be requested to the ship's agent with the proper advance.
- b) **Pilotage boat** – The pilot uses the pilotage boat provided by the Port of Itaquí.
- c) **Boats for delivering supplies** – General supplies for docks, machine and navigation, as well as supplies for the crew, may be requested beforehand by the ship agent. There is a wide variety of suppliers for ships berthed in São Luís. Petrobras may sus-

pend these works, in certain periods, based on safety aspects. The supply of provisions to the ship must occur when it is berthed, in daylight, by the external board of the vessel. Contracted boats must be priorly approved by the terminal before approaching the ship; the loading/discharging equipment must be in good conditions and the procedures must be fulfilled.

### 5.3.7.2 Mooring service

Emap has its own team for ship mooring and putting off works.

### 5.3.8 Navigation risks

The environmental conditions and seabed characteristics, as well as the dimensions of the access channel and maneuvering area, do not offer restrictions to navigation. However, special attention must be paid to the speeds of the currents caused by large tide variations.

The major risks for the vessels operating at the Terminal are:

#### → CHART 440

Long and close rocky ledges, bearing 038° to 066°, at a distance of 24.7 to 52 miles from Pirajuba lighthouse, sounding at least 10 meters.

Long and close rocky ledges, bearing 016° to 046°, at a maximum distance of 43.1 miles from Araçagi lighthouse, bearing 039°, sounding at least 8.9 meters.

Rocky ledge, bearing 015° to 020°, at 20.7 and 23.2 miles from Araçagi lighthouse, sounding at least 8.1 meters

Long rocky ledge, bearing 027° to 031°, at 24.5 and 26.9 miles from Araçagi lighthouse, sounding at least 7,6 meters

Submerged rocky ledge, bearing 317° and lying 6 miles from Santana lighthouse, sounding 5.9 meters.

Long rocky ledge, bearing 006.5° to 060°, at 11.5 and 16.8 miles from Santana lighthouse, sounding at least 11.8 meters

Submerged rocky ledge, bearing 068° and lying 13.4 miles from Santana lighthouse, sounding 9.9 meters.

Submerged rocky ledge, bearing 075° and lying 12.4 miles from Santana lighthouse, sounding 8.8 meters.

→ **CHART 411**

**Coroa dos Ovos** – Long rocky ledge, with SE limit bearing 352° and lying 5.6 miles from Pirajuba lighthouse, with extensive area that submerges and emerges in low tide.

**Pedras de Itacolomi** – Rocky ledge with ENE limit bearing 342° and lying 3.7 miles from Pirajuba lighthouse, which submerges and emerges in low tide.

**Banco de Itacolomi** – With N border bearing 028° and lying 5.4 miles from Pirajuba lighthouse, sounding at least 2.9 meters.

**Banco das Almas** – Long rocky ledge with fine sand, along the NE direction, with NE and SW limits bearing 065° and 127°, and lying 11.1 and 7.3 miles from Pirajuba lighthouse, sounding at least 3.9 meters.

**Casco soçobrado** – Sunken wreck bearing 320° at a distance of 8,8 miles from Araçagi lighthouse, dangerous to navigation.

**Banco do Meio** – Long rocky ledge with sand, along the NE and SW directions, bearing 010° and 311°, and lying 13.9 and 8.8 miles from Araçagi lighthouse, sounding at least 2.1 meters, and breaking in low tide.

**Banco Darlan** – Long rocky ledge with fine sand, bearing 358° to 342°, lying 9.2 and 7.9 miles from Araçagi lighthouse, and sounding at least 3.7 meters.

**Bancos Coral do Norte and Coral do Meio** – Long rocky ledges with fine sand, with SW limit bearing 352° and lying 5.4 miles from Araçagi lighthouse, sounding at least 0.2 meter, and breaking in low tide.

**Banco Coral do Sul** – With SW limit bearing 330° and lying 3.9 miles from Aracagi lighthouse, with bollards exposed and breaking in low tide.

→ **CHART 412**

**Banco da Cerca** – Long rocky ledge, with SW and NE limits bearing 007° and 038°, and lying 1.7 to 5.2 miles from Medo Island lighthouse, sounding at least 0.2 meter, breaking in low tide.

**Banco de São Marcos** (bollards) – Bearing 030° to 054° and lying 0.9 to 1.8 mile from São Marcos lighthouse; discovers and breaks in low tide.

Long rocky ledge, bearing 050° to 055°, at 3.4 to 3.8 miles from São Marcos lighthouse, sounding at least 3 meters.

Submerged rocky ledge, bearing 060° and lying 3.7 miles from São Marcos lighthouse, sounding 4.5 meters.

Submerged rocky ledges, bearing 072° and lying 3.7 miles from São Marcos lighthouse, sounding 4.5 meters.

Submerged rocky ledge, bearing 152° and lying 2.7 miles from Alcântara lighthouse, sounding 5 meters..

#### → CHART 413

Submerged rocky ledge, bearing 018° and lying 1 mile from Medo Island lighthouse, sounding 8.6 meters.

**Pedra do Severino** – Rocky ledge, bearing 033° and lying 1 mile from Medo Island lighthouse, sounding 2.4 meters.

Long rocky ledge, bearing 054° to 062°, at 1.1 to 1.6 mile from Medo Island lighthouse, sounding at least 1.4 meter.

**Medo Island Reefs** – Involving the island and extending towards NE up to 0.58 mile from the lighthouse, emerging and submerging.

Sunken wreck (“Hyunday New World”), bearing 262° and lying 3.3 miles from Medo Island lighthouse, sounding 2.5 to 8 meters.

**Cabeço Mearim** – Long rocky ledge, bearing 213° to 218°, at 1 to 1.3 mile from Medo Island lighthouse, sounding at least 4.4 meters. Identified by light buoy for isolated danger.

Rocky ledge, involving Guarapirá Island, sounding 3.4 to 10 meters. Its NNW, NE and SE ends are signaled with starboard light buoys.

Rock bearing 172° and lying 0.43 mile from Guarapirá Island lighthouse, sounding 12 meters.

**Banco dos Lanzudos** – Long rocky ledge with sand, which suffers periodic changes. Its N section is formed by two ends, sounding 10 meters, from which the depths gradually decrease until the area that emerges with half falling tide. The north end of the far east point bears 257° and lies 0.55 mile from Guarapirá Island lighthouse, and is signaled by a cardinal North light buoy.

#### 5.3.9 General restrictions

There are no restrictions for maneuvering ships at night, except under specific conditions, such as: absence of light beacons, occurrence of cyclic events, whether natural or not, or other joint decisions taken between the pilotage and the involved companies, which may require time restrictions.

The maximum speed recommended for ships at the mandatory pilotage area must be 8 (eight) knots.

The ship captains and pilots decide on the current and wind conditions, case by case, and there is no minimum or maximum value stipulated as general or specific rule.

**Restrictions on maneuvers:** Specific cases for maneuvering at Itaqui:

→ Unberthing of ships at the same time, bow with stern:

The downstream ship delays 15 minutes, except on Dock 101 (depends on the pilot).

→ In case of conflict with the maneuvers on adjacent docks: the 1<sup>st</sup> pilot distributes the schedules.

→ For berthing maneuver purposes, the Emap guidance (via agent) will prevail.

→ More than 2 maneuvers at the same time, each pilot will decide aboard on the responsibility of his maneuver.

→ When berthing and unberthing maneuvers occur on the same dock, the POB of the incoming ship must not occur before the POB of the leaving ship, except for PIER II, berth 101, 106 at BM.

Verificar tradução com o português

**Berth 101**

Draft (m)	Board	Maneuvering Period
<b>Berthing</b>		
-	Starboard	Port side and 3 to 2 hours before flood tide (PM)
+11	Starboard	2h30min before PM (written authorization from Emap is required)
Up to 9	Port Side	1 hour before PM and 1 hour before low tide (BM)
+9	Port Side	1 hour before PM
<b>Deberthing</b>		
-	Starboard	30 min after BM to 1 hour before PM – only with azimuthal tugs
-	Starboard	30 min after BM and 2 to 1 hour(s) before PM – when CBR tugs are used
Up to 8	Port Side	BM and 1 hour before PM to 1 hour after PM
+8	Port Side	BM and 1 hour before PM to PM

**Berth 102**

Draft (m)	Board	Maneuvering Period
<b>Berthing</b>		
Up to 9	Starboard	BM to 2 hours before PM
+ 9	Starboard	3 to 2 hours before PM.
Up to 7	Port Side	1 hour before BM and 1 hour before PM
+ 7	Port Side	1 hour before PM
<b>Deberthing</b>		
Up to 8	Starboard	BM to 2 hours before PM
+ 8	Starboard	3 to 1 hour(s) before PM
Up to 8.6	Port Side	BM and 1 hour before PM to 1 hour after PM
+ de 8.6	Port Side	1 hour before PM to 1 hour after PM

**Berths 103 e 104**

Draft (m)	Board	Maneuvering Period
<b>Berthing</b>		
Up to 9	Starboard	BM to 2 hours before PM
> 9 to 11.50	Starboard	2.5 hours before PM to 2 hours before PM
Up to 8 + tide height	Port Side	1 hour before BM and 1 hour before PM
+ 8	Port Side	1 hour before PM
<b>Deberthing</b>		
Up to 9	Starboard	30 min after BM to 1 hour before PM
+ 9	Starboard	3 to 1 hour(s) before PM (only for 103)
Up to 8 + tide height	Port Side	BM and 1 hour before PM to PM
+ 8	Port Side	1 hour before PM to PM

Note: There is no draft restriction for unberthing by starboard at 104, and unberthing at 301 may occur from BM until before PM.

**Berth 106**

Draft (m)	DWT	Board	Maneuvering Period
<b>Berthing</b>			
Up to 9	Up to 155,000	Starboard	30 min before BM to BM, and 2h30min before PM
Up to 10.5	Up to 155,000	Starboard	2h30min before PM
Up to 13.7	Up to 155,000	Port Side	1 hour before PM and 30 minutes before BM
Over 13.7	Up to 155,000	Port Side	1 hour before PM
<b>Deberthing</b>			
-	Up to 50,000	Starboard	30 min after BM up to 1 hour before PM
Up to 13,7 + Alt. BM height	+ 50,000	Starboard	30 min after BM and 2 hours before PM
Over 13,7 + Alt. BM height	-	Starboard	2 hours before PM
Up to 13.7	-	Port Side	BM and 1 hour before PM to PM
Over 13.7	-	Port Side	1 hour before PM to PM



## 5.4 Maneuver Areas

The evolution basin is located between Ponta da Madeira terminal (chart 413) at east, parallel 02° 34' 5 S, and the buoys No. 23 and 25 at west. The depth ranges from 23 m on the pier's berthing line to 35 m near buoy No. 25. The basin width is 0.8 nautical mile and the extension is near 2 miles.

Anchoring any vessel in this area is forbidden, except with authorization from the Harbor Master.

### 5.4.1 Navigational and berthing aids

The Terminal does not have navigational aid equipment. However, tugs are used during the ship berthing/unberthing maneuvers. The terminal operator assists the ship when it is berthing so as to position it in such a way that the hoses can be connected.

### 5.4.2 Depth control

The points that limit the maximum draft for berthing and unberthing in the organized Port of Itaqui are located in the access channel, and are described on the nautical charts, as per sections 5.3.8 and 5.3.9.

Emap and CAP provide periodical bathymetric records about the depths and drafts along the access channel, evolution basin and mooring berths at the organized Port of Itaqui.

### 5.4.3 Maximum dimensions

The maximum vessel size for berthing at TA-NE/SLU is of 150,000 DWT for Berth 106 (oil pier).

The section 6.2 lists the vessel length, beam and displacement allowed at every berth.

The access channel provides minimum natural depth of 27 m and approximate width of 1.8 km.

## 5.5 Environmental Factors

### Weather conditions

Maranhão exhibits many weather patterns, all of them tropical, but with different rainfall volumes and varied vegetal coverage, with tropical and semi-humid climate, and average temperatures ranging from 23.4° C (winter) to 31° C (summer) in the capital – São Luís – and seacoast; thus the weather conditions are good at the Port of Itaqui and surrounding areas.

### Air Temperature – Port of Itaqui

Months	Average Maximum (°C)	Average Minimum (°C)	Monthly Average (°C)
January	30.6	23.7	26.8
February	30.2	23.3	26.4
March	30.2	23.3	26.3
April	30.4	23.3	26.3
May	30.9	23.2	26.3
June	31.2	23.0	26.4
July	30.9	22.7	26.2
August	31.4	22.9	26.6
September	31.5	23.7	27.0
October	31.5	24.0	27.2
November	31.4	24.0	27.3
December	31.3	24.1	27.2

Source: DHN.

#### Atmospheric pressure

The annual average pressure is around 1,012 mb.

Relative air humidity throughout the year is of approximately 82%.

#### Silting-up rate

The silting-up rate at the Port of Itaqui is considered inexpressive, requiring dredging and maintenance activities only along the berths, and every 5 (five) years.

Other meteorological information about that area is described in the sub-items below:

##### 5.5.1 Prevailing winds

In the maritime region, the winds proceed from East, with annual average frequency of 54.25% and Beaufort forces 3 and 4; and from Northeast, with annual average frequency of 19.41% and Beaufort forces 3 and 4.

##### 5.5.2 Waves and swells

Due to its location, the Port of Itaqui is protected by the waves generated offshore. The local existing waves, with 1.10 m and 6-sec period, are formed at São Marcos Bay itself, and caused by local winds.

### 5.5.3 Rainfall

The period with the highest concentration of rain goes from January to May, designated in the region as winter, when short, sharp rains occur, with maximum rainfall of 472.6 mm/month (April). In the dry season, which goes from August to November, the rainfall level drops to the minimum of 10.5 mm/month in November. December is considered as a transition month.

### 5.5.4 Lightning storms

Lightning storms are rare, and may occur in the summer season, in the afternoon and evening periods. The elements contributing to their occurrence are the rare cold fronts and eventual high temperatures during the day.

### 5.5.5 Visibility

The visibility is considered as good, but may be reduced during the rain period. February, March and April are the months that present the highest percentage of cloudy sky, which matches the most intense rain period in that region. During this period of the year, the measurements exhibit variations around 77%. The average nebulosity rates at the Port of Itaqui are shown on the chart below (Source: DHN):

Average Nebulosity – Port of Itaqui

Months	Total Rate (0-10)	Months	Total Rate (0-10)
January	5	July	3
February	6	August	3
March	6	September	3
April	6	October	4
May	5	November	4
June	4	December	5

Source: DHN.

### 5.5.6 Tidal currents and other currents

The water circulation at São Marcos Bay is ruled by the tide variations.

The minimum current values occur near the slack water and the maximum ones occur 3 to 4 hours after the flood tide of fallings, and 2 to 3 hours after low tide of floods. The currents are reverse, North to Northeast direction during fallings, and after slack water, invert the direction towards South to Southwest, during floods.

At the Evolution basin, the flood currents range from 4.3 knots in syzygy to 3.7 knots in quarter; and in falling, they range from 5.1 knots in syzygy to 4.2 knots in quarter. The nautical chart 413 provides more information about the currents at the Port of Itaqui.

### 5.5.7 Variation on the tide levels

The maximum draft for berthing at TA-NE/SLU (18 meters), berth 106, has been calculated according to the worst tide condition.

The tide at the Port of Itaqui is of semi-daily type, with the following data gathered near the port and at Ponta da Madeira Terminal:

Higher astronomical tide (HAT)	7 m
Lower Astronomical Tide (LAT)	-0.20 m
Mean high water springs (MHWS)	6.27 m
Mean high water neaps (MHWN)	5.02 m
Mean low water springs (MLWS)	0.59 m
Mean low water neaps (MLWN)	1.84 m

Source: Cia. Vale do Rio Doce.

The tides change phase and amplitude along the access channel. The tides along the initial channel section, buoys No. 1 and 2, occur 75 minutes after, and with amplitude around 60% of those detected at the Port of Itaqui. Slack water is near 69% of the amplitude for the same tide.

Maximum tides reach 7.1m, and occur in March and September, with average tide variation of 3.4 m.

### 5.5.8 Measurements

There are no electronic facilities available to the vessels approaching for berthing, in order to determine and view currents and wind speed.

## DESCRIPTION OF THE TERMINAL

### 6.1 General Description

The port provides one mooring berth with 04 berths, which enables berthing up to 4 ships; it is designed for ships up to 60,000 DWT. It also provides an oil pier, which is 19 m deep and has capacity for receiving 150,000 DWT ships.



### 6.2 Physical Details of the Berths

Check table on the next page.

### 6.3 Recommended Berthing and Mooring Arrangements

Check table and mooring arrangement diagram per ship length on the following pages.

### 6.4 Berth Features for Loading, Discharging and Bunker

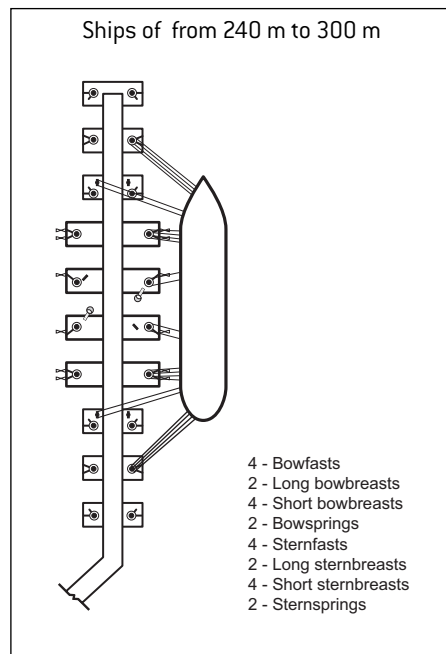
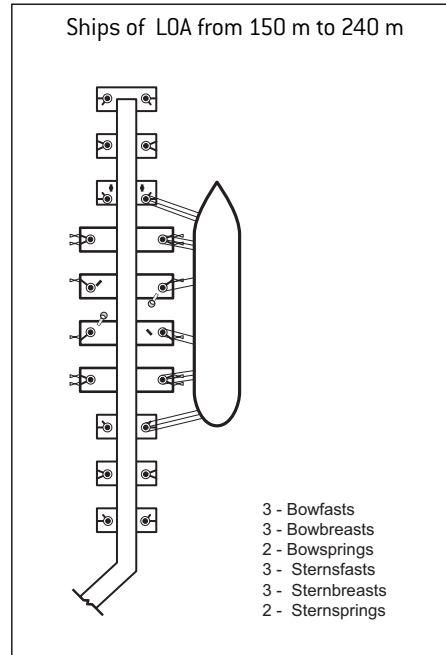
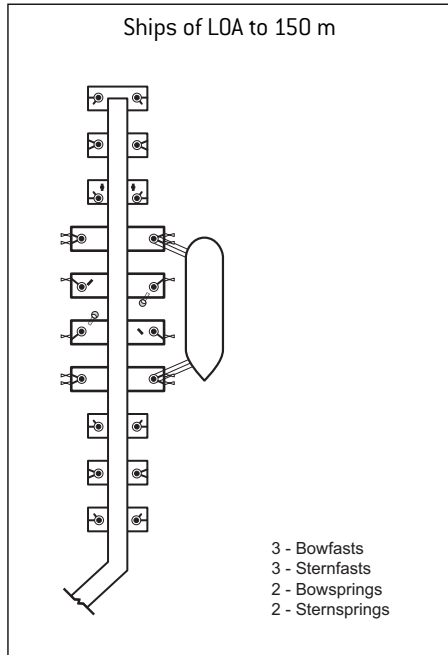
See table on the next page.

Physical Details of the Berths

Terminal: Transpetro/DT/TA-NE/SLU – Port of Itaquí – São Luis/MA

Berth No.	Type	Berth length (meters)	Depth (meters)	Tide (meters)		Beam (max.)	Ship length (max.)	Products Moved	DWT (max.)	Maximum Draft (m)
				Syzygy	Dry					
101	Docks	239	9.5	7.00	0.20	32	236	LPG, Light, Dark, Bunker	45,000	8.5
102	Docks	239	10.5	7.00	0.20	32	236	LPG Bunker	45,000	9.5
103	Docks	239	14	7.00	0.20	32	236	Light, Dark, Bunker	60,000	13
104	Docks	200	14	7.00	0.20	32	200	Light, Dark, Bunker	60,000	13
106	Pier	440	19	7.00	0.20	35	420	Light, Dark, Bunker	150,000	18

### Mooring Arrangement Diagram per Ship Length



Berthing and Mooring Arrangements

Berth No.	Requires Pilot for Maneuvering	Ship Size (max.) DWT	No. and DWT of tugs				Approach (Max.)		Mooring points		Mooring Lines (bow and stern)		
			Berthing		Unberthing		Speed (knots)	Angle	Bollards	Hooks	Line	Breast Line	Spring Line
			No.	DWT	No.	DWT							
101	Yes	Up to 45,000	2	40	2	40	20	10	12	NA	4	4	4
102	Yes	Up to 45,000	1	53	1	53	20	10	12	NA	4	4	4
103	Yes	Up to 45,000	2	40	2	40	20	10	12	NA	4	4	4
		>45,000	2	40	2	40							
		<60,000	2	53	2	53							
104	Yes	Up to 45,000	2	40	2	40	20	10	12	NA	4	4	4
		>45,000	1	53	1	53							
		<60,000	2	40	2	40							
106	Yes	Up to 45,000	2	53	2	53	20	10	NA	8	4	4	4
		>45,000	2	40	2	40							
		<75,000	2	53	2	53							
		>75,000	4 or 5	53	4 or 5	53	20	10	NA	8	6	6	6
		<150,000	4 or 5	53	4 or 5	53							



## Berth features for Loading, Discharging and Bunker

Berth No.	Products	Lines (DN)	Arm flanges /hoses	Receives and/or Sends	Temperature		Flow (max) m <sup>3</sup> /h	Pressure (max) 17 kgf/cm <sup>2</sup>	Notes
					Min.	Max.			
101	LPG	1 x 8" and 1 x 10"	2 x 6" API	Receives	+5	45	300	17	Discharge
	Light	1 x 12"	1 x 8" API	Rec and Sends	15	40	1,200	10	Load, discharge and transshipment
	Dark	1 x 14"	1 x 8" API	Rec and Sends	60	70	1,200	10	transshipment
	MGO	1 x 6"	1 x 4" or 1 x 8"	Sends	15	40	100	7	Bunker
	MF	1 x 10"	1 x 4" or 1 x 8"	Sends	35	60	200	7	
102	LPG	1 x 8" e 1 x 10"	2 x 6" API	Receives	+5	45	300	17	Discharge
	MGO	1 x 6"	1 x 4" API	Sends	15	40	100	7	Bunker
	MF	1 x 10"	1 x 4" API	Sends	40	60	200	7	
	Light	1 x 12" and 1 x 18"	2 x 8" API	Rec and Sends	15	40	1,200	10	Load, discharge and transshipment
	MGO	1 x 12" and 1 x 18"	1 x 4" or 1 x 8"	Sends	15	40	100	7	and bunker per line
103	Dark	1 x 12"	1 x 8" API	Rec and Sends	60	70	1,200	10	Load, discharge and transshipment
	MF	1 x 12"	1 x 4" or 1 x 8"	Sends	35	60	200	7	transshipment
	Light	1 x 12" and 1 x 18"	6 x 8" API	Rec and Sends	15	40	1,200	10	Load, discharge and transshipment
	MGO	1 x 12" and 1 x 18"	1 x 4" ou 1 x 8"	Sends	15	40	100	7	and bunker
	Dark	1 x 14"	2 x 8" API	Rec and Sends	60	70	1,200	10	
104	MF	1 x 14"	1 x 4" or 1 x 8"	Sends	35	60	200	7	
	Light	1 x 14" and 1 x 18"	6 x 8" API	Rec and Sends	15	40	1,200	10	Load, discharge and transshipment
	MGO	1 x 14" and 1 x 18"	1 x 4" ou 1 x 8"	Sends	15	40	100	7	and bunker
	Dark	1 x 14"	2 x 8" API	Rec and Sends	60	70	1,200	10	
	MF	1 x 14"	1 x 4" or 1 x 8"	Sends	35	60	200	7	
106	Light	1 x 14" and 1 x 18"	6 x 8" API	Rec and Sends	15	40	1,200	10	Load, discharge and transshipment
	MGO	1 x 14" and 1 x 18"	1 x 4" or 1 x 8"	Sends	15	40	100	7	and bunker
	Dark	1 x 10"	1 x 8" API	Rec and Sends	60	70	1,200	10	
	MF	1 x 10"	1 x 4" or 1 x 8"	Sends	35	60	200	7	

## 6.5 Management and Control

The control room of the Terminal is located at the oil storage area, approximately 1.5 km from the port. In this center, the operator and the operation support assistant, in charge of controlling all the terminal operations, work with a radar-based measurement system and mass balance system. Also in this room, the operators of that section prepare the documentation, handle the communications and monitor the berthing and positioning of ships. Inspections are carried out by the SAFETY INSPECTOR (Giaont) (every 2 hours) during the ship operations.

Communications with the ships are carried out via VHF radios in maritime frequency (channel 06), previously agreed and registered. A secondary mean, via cellular phone (55 98) 3217-3271, is established for faults in the main system.

## 6.6 Major Risks

The maximum tide variation (7 meters) is a vulnerability item for the ship docked at the berth. When low tide current occurs, there is the risk of moving the bow away from the defenses, regardless the board that is berthed.

When docking in berths 101 to 104, a higher attention on the mooring lines is requested from the crew of the ships, because the same bollard is usually used by two different ships docked in sequential berths, and an unintentional removal of the lines from the bollards may occur when maneuvering the ship docked in the next berth, as well as there could be risk of collision with other vessels passing nearby.

# PROCEDURES

During the ship laytime at the port, various steps are taken to make it possible to operate safely and manage the risks, in order to minimize them. At every stage, as described in the sub-items below, measures are taken so as to facilitate the operations and plan them adequately.

## 7.1 Before Arrival

**7.1.1** Operation refusal – Based on the Isgott's Checklist, when there are pending items not solved by the crew, the ship will not receive authorization for berthing at the Terminal.

**7.1.2** Onboard repairs (especially weld repairs) will not be allowed on the deck or surrounding areas, when they may impair the loading operation. To carry out these services with the ship berthed, prior authorization from the terminal will be necessary. Authorization will be given only in extreme cases, after all safety precautions have been taken. Any expenses resulting from the safety precautions will be for account of the Ship's Captain/Owner. Cleaning the cargo tanks on ships must be carried out, preferably, in the anchorage area, and may be performed with the ship berthed, when accepted by the terminal.

**7.1.3** The ships heading to the Port of Itaqui facilities must indicate the estimated time of arrival (ETA) 72 and 48 hours in advance, directly to the respective agent, via Renec – Rede Nacional de Estações Costeiras (National Network of Coast Stations), with

priority and in the frequencies below: No.1 – PPB (Belém) 8,12 and 16 MHz No.2 – PPO (Olinda) 8,12 and 16 MHz No.3 – PPR (Rio de Janeiro) 8,12,16 and 22 MHz. Change to or confirmation of the ship's arrival shall be communicated at least 24 hours in advance. The ETA information must specify whether the time mentioned is local or GMT.

## **7.2 Arrival**

**7.2.1** The port authorities are called to action by the ships' agents according to the arrival and berthing schedule. Usually, the visit is made after berthing.

**7.2.2** Bunkering requests must be forwarded to UN-Bunker via its agent.

**7.2.3** The information from terminal to ship and vice-versa are detailed during the initial release.

**7.2.4** The list of key addresses and telephone numbers at the port is provided in the item 9.1.

## **7.3 Berthing**

### **7.3.1 Ship mooring system**

The mooring to be effectively performed for each ship must be considered as satisfactory by the CAPTAIN, PILOT and TERMINAL.

The mooring lines must receive permanent care so that the ship is always berthed.

All the lines must be kept under adequate tension during the operation, with the winch brakes activated. The use of automatic tensioning winches is not permitted.

All the mooring lines shall be of same type, gauge and material (fiber or wire); whenever possible, they must have the same length, and mixing mooring lines is not permitted.

The mooring lines must be sufficiently long to reach the most distant dolphins or bollards.

The mooring lines must be arranged as symmetrically as possible in relation to the middle of the ship.

The breast lines must be deployed as perpendicularly as possible to the longitudinal axis of the ship, and passed far forward and aft as possible.

Spring lines must be set up in the most parallel position possible to the longitudinal axis of the ship.

The maximum tension applied on the ropes must be 55% of their MBL. When fiber tails are used on the wire lines, the tails shall be of the same type, with gauge 25% greater than the minimum breaking load of the wire, same material and length.

The horizontal angle of bow and stern lines relative to a breast line perpendicular to the ship's longitudinal axis must not exceed 45°.

The approach, berthing and unberthing maneuvers must be performed at low speed, preferably against the current.

One must be careful when passing the mooring lines from the ship stern to the mooring boats, so as to prevent accidents with the ship and the mooring vessel propellers.

The use of automatic tensioning winches is not permitted.

The mooring recommended takes into account that the ship ropes and winches are in good conditions

Extra care must be taken with breast lines and spring lines in the period from 1.5 to 4.5 hours of low tide. This must be done especially 1.5 hours after flood tide, when the largest falling currents start. If the ship does not have enough ropes, or the ropes are not preferably made of steel at all, or the ship's ropes and winches are in poor conditions, or the crew is in no condition to remain moored according to the recommendations, additional measures will be adopted by the terminal Operations area, such as:

- Do not start operations;
- Stop the operation, if it has already started;
- Keep tugs in stand-by or side-by-side position with the ship; and/or
- Unberth the ship, in last case.

The costs and time resulting from these additional safety measures will be the sole responsibility of the ship's Captain/Owner.

While berthed, the ships' engines must remain on stand-by , ready for startup.

Emap has personnel available and qualified for handling the ships' mooring lines, in berthing and unberthing maneuvers. The entire work during berthing, loading and unberthing, hatch opening and closing and deck cleaning must be performed by the ship crew.

### **7.3.2 Ship/shore access**

The Port does not have access ladder. Thus, the ship's gangway ladder or wharf ladder must be used.

## 7.4 Before Cargo Transfer

**7.4.1** An insulating joint and/or at least one discontinuous hose in the onshore vs. onboard connections is used at the Terminal. The hoses are equipped with hydrostatic, vacuum and electric discontinuity test valves.

**7.4.2** The resources required for the connection are established in the first contact between the ship and the terminal, during initial release.

The ship must provide the manifold diameters to enable the hoses to be connected.

After connecting the hoses, they will be tested for tightness, using the static terminal column pressure for this purpose.

An onboard representative must inspect the whole operation, and must be close to the ship's manifold.

During bunkering operations, the terminal will put one inspector aboard the ship to carry out a visual inspection on the deck and around the vessel.

**7.4.3** Onboard measurements will be executed by the ship's personnel, and inspected by the terminal's representatives and other inspectors. The material used must be properly grounded, and the measuring instruments must be explosion-proof.

**7.4.4** The operation can only start after the initial letter has been filled in by shore and onboard representatives. The Loading Plan and Sequence must be presented to the Operator at the terminal.

**7.4.5** The Ship/Shore Safety Checklist (Isgott, Appendix A) is checked and filled out by The Safety Inspector (Giaont) during the initial ship release.

**7.4.6** Boiler pipes must not be cleaned while the ship is berthed. Precautions must be taken so that sparks do not escape from the smokestack. The non-compliance with this regulation will result in one or more of the sanctions below:

- Immediate interruption of the operations;
- Ship owners being informed about the infraction;
- The ship being held responsible for the fines applied, demurrage and all other related expenses resulting from this fact.

**7.4.7** The prohibition on non-authorized small boats remaining alongside or near berthed ships shall be strictly observed. Only vessels authorized by the terminal can remain in the vicinity or alongside, provided that they meet all safety conditions. Any violation of this rule shall be communicated to the competent authority.

**7.4.8** Berthed ships must not turn their propeller(s) while connected to the hoses. The jacking gear may be used, once the terminal operator has been duly notified; however, the propeller must be turned slowly in order to ensure absolute safety. Ships will be held responsible for any damages resulting from these procedures.

## 7.5 Cargo Transfer

**7.5.1** Pressure and flow monitoring during cargo transfer is registered by the representatives aboard and ashore on an hourly basis. The terminal controls the internal pressure variables via centralized control system. The flow rates on both sides of the operation are measured hour by hour, and compared between the parties, and depending on the system used, there will be a limiting parameter for operational control. Any changes in the operating conditions must be communicated and documented between the parties. It is expressly forbidden to close the valves that cause system counter-pressure during the operation. Transshipment operations are carried out with the vessels berthed, by using the interconnection alignments of the terminal berths.

**7.5.2** Special requirements for LPG – The terminal will check its LPG system by keeping an adequate and aligned relief system.

The ship must not exceed pressure of 17 Kgf/cm<sup>2</sup> during the operation. Otherwise, the terminal will request the immediate pressure reduction or pumping interruption by the ship.

The communication, as well as the entire alignment, must be checked before starting the operation.

The hoses connected to the ship are inspected all the time during the entire operation.

Emergency stop will be negotiated with the ship. The volume moved at both ends of the duct is inspected. Preventive maintenance of lines, tanks and accessories is carried out, and corrective maintenance must be immediately provided for any defect detected in the equipment and accessories;

Inadequate loops, rope or steel wires will not be used for lifting the hoses.

**7.5.3** Ballast and deballast requirements – Ballast and deballast pipes and tanks on the ships must be used for this sole purpose, and remain isolated from other pipes aboard. The water ballast to be discharged into the sea shall be totally free of oil, any oily residues or other substances that may pollute the seawater.

**7.5.4** Slop – The terminal does not have slop discharge system.

**7.5.5** COW – Usually, the conventional tank cleaning operation is not accepted. But, COW operations are accepted, depending on prior authorization from the schedule as

regards ship laytime at the port, and from the SAFETY INSPECTOR (Giaont) as regards operational safety purposes.

**7.5.6** Restrictions/conditions for repairs – No repairs or maintenance works involving risk of sparks or other forms of ignition can be carried out while the ship is berthed on the terminal piers. In extreme cases, all the safety rules shall be complied with and fulfilled. Repairs involving the pier facilities, or that imply in any restriction on the ship during the laytime, must have prior authorization from the terminal.

**7.5.7** Intermediate inspections, according to appendix A of “Isgott”, will be performed by The Safety Inspector (Giaont) during the ship operation every six (6) hours, and registered in RDO.

**7.5.8** Loading or discharging must be interrupted in any situation that might offer risk, either to the ship or the terminal.

The operations may be temporarily suspended during lightning storms, thunderstorms and/or squalls.

The operating personnel at the terminal is authorized to interrupt/suspend the operation in case of non-compliance with any safety-related rules and standards globally accepted and adopted in the maritime oil transportation.

The ship's captain is entitled to interrupt the operation when there are reasons to believe that the operations ashore are not safe, provided he notifies the pier operators in advance.

**7.5.9** Emergency actions – In any emergency situation, the terminal may interrupt the operations in progress so that all available resources are focused on mitigating the disaster. The actions and contacts for every type of emergency are described in the management's LCP and the key telephones are listed in section 9.

## **7.6 Cargo Measurement and Documentation**

**7.6.1** When the operation is finished, the draining of the hoses used must commence. The terminal operators will provide the drainage to a closed system on the pier. The ship representative shall provide the drainage of the onboard section.

**7.6.2** The final onboard measurements will be carried out by the ship's personnel, and inspected by the terminal's representatives and other inspectors. The material used must be properly grounded, and the measuring instruments must be explosion-proof. The final release of the ship must occur after matching the quantities moved and complementing the laytime documentation.



## 7.7 Unberthing and Leaving Port

**7.7.1** During the unberthing and port leaving maneuvers, the channel limits and hazards, listed in the section 5.3 and its sub-items, must be observed.

**7.7.2** The pilot usually disembarks at the same embarking point described in section 5.3.6, where the pilotage boat will be waiting for him.

INFORMAÇÕES PORTUÁRIAS

# ORGANIZATION OF THE PORT AND ANCHORAGE AREA

## 8.1 Port Control or VTS

As per section 5.3.5.

## 8.2 Maritime Authority

**8.2.1** The maritime authority the terminal is subordinated to is the Harbor Master of Maranhão.

**8.2.2** The officer at the Harbor Master of Maranhão determines that the visit of authorities occurs after unberthing the ship at the port.

**8.2.3** The official port limits are described in the section 5.3.4.

The Harbor Master is the maritime authority within Itaqui port limits, and it is up to this authority to determine the actions and charge the people liable for any incident within the port limits.

## 8.3 Pilotage

**8.3.1** The pilotage is mandatory for all ship maneuvers as from the pilot's point of embarkation (section 5.3.6).

**8.3.2** Regardless of nationality, type of vessel and destinations, the minimum sizes for which the pilotage service becomes mandatory is from 2,000 DWT.

**8.3.3** Pilotage organizations operating at Itaqui port.

#### **Associação de Práticos da Baía de São Marcos**

##### **São Luís**

Rua Edmundo Calheiros, 699 / salas 6 e 7 – Bairro São Francisco

ZIP Code: 65075-000 – São Luís do Maranhão – MA – Brazil

Tel.: (55 98) 3233-6688 / 3233-6666

**8.3.4** In case of emergencies, and depending on the availability, the pilot will embark on the ship at the earliest opportunity, called by the ship's agent.

### **8.4 Tugs and other Maritime Services**

**8.4.1** List of the tugs available at the anchorage area and/or Port of Itaqui.

Name	Agency/Owner	Propulsion	Bollard Pull
Pindaré	CBR	Conventional	27.00
Mearim	CBR	Conventional	27.00
Alcântara	CBR	Azimuthal (Schotell)	55.00
Imperatriz	CBR	Azimuthal (Schotell)	55.00
Engenheiro Mascarenhas	Consortium	Azimuthal (Schotell)	41.00
São Luís	Consortium	Azimuthal (Schotell)	41.00
Itaqui	Consortium	Azimuthal (Schotell)	54.00
Rigel	Consortium	Azimuthal (Schotell)	54.00
Jaú	Consortium	Azimuthal (Schotell)	53.00
Iguaçu	Consortium	Azimuthal (Schotell)	53.00
Jurubatiba	Consortium	Azimuthal (Schotell)	53.00

Consórcio de Rebocadores da Baía de São Marcos (Consortium) is in charge of the tug operations at the Port of Itaqui facilities. The consortium may be called via telephones/fax (55 98) 3235.6646 / 3235.2876/3235.2646/3227.9489/3232.4397, E-mail:rebocadores@terra.com.br. Moreover, CBR (Companhia Brasileira de Rebocadores) is present at an area nearby the port, and may be called by the telephones (55 98) 3232-6935 and 3222-8764.

#### 8.4.2 Other relevant maritime services at the port:

→ **Divers:** According to table below

Company	Telephone Numbers (55 98)	Contact person	Capacity for Immediate mobilization
Fire Department Grupo de Bombeiros Marítimos – GBMAR	3212-1530/1531/1532 or On-duty phone 193	Cap. Reis	3 men on-duty 24hr. In case of more severe contingency (15 divers)

**Ship repairs:** Maintenance repairs or service that do not affect the operational safety can be carried out, provided that there is permission from Petrobras, and these works may be suspended at certain times due to safety aspects.

**Supporting boats:** The supporting boats for bunkering general supplies, mess, and removing garbage are called via ship agent.

### 8.5 Other Oil/Gas Terminals

At the port facilities there are two other ports. Ponta da Madeira port of CVRD (iron and copper ore, and soy), and Alumar port of the Billitton/Alcoa group (aluminum and bauxite), could carry oil by-products for bunkering.

### 8.6 Other Major Users

Other users operate ships at the Port of Itaqui and share the berths' utilization according to the interests of Petrobras, as follows:

- Granel Química: Caustic Soda (sodium hydroxide) and oil by-products in berths 103 and 104.
- Moinho de Trigo do Maranhão : wheat flour and grain in berths 102 and 104.
- CVRD – Companhia Vale do Rio Doce: iron ore in berth 101, with exclusive utilization of the berth 105.
- Alumar – aluminum in berths 102, 103 and 104.
- Emap – general cargo for the entire state in berths 101, 102, 103 and 104.

INFORMAÇÕES PORTUÁRIAS

# EMERGENCY PLAN

## 9.1 Emergency Contacts

The table below indicates the essential contacts, with telephone number, fax number, and radio channels/frequencies:

Organization	Operating Times	Identification Acronym	Telephone [55 98]	Fax [55 98]	Cell phone [55 98]	VHF/UHF	
						Call	Conversation
Harbor Master	24 hours	CPMA	3231-1022	-	-	16	-
Tugs	24 hours	-	3222-8764 3232-6935	-	-	16	6
Pilots	6 a.m. to 6 p.m.	-	3242-0044 3233-6688	-	-	16	6
Terminal Control Room	24 hours	-	3217-3271	3210-3251	-	-	6
Operations TA-NE/SLU (Administrative)	07:30 a.m. to 04:30 p.m.	OSLU	3217-3252	3217-3251	9114-8158	-	6
Manegement at TA-NE/SLU	07:30 a.m. to 04:30 p.m.	-	3217-3243	3217-3251	9112-3380	-	-

*continue*

Organization	Operating Times	Identification Acronym	Telephone (55 98)	Fax (55 98)	Cell phone (55 98)	VHF/UHF	
						Call	Conversation
Fire Department	24 hours	CBMMA	3228-2154	–	193	–	–
Fire Department personnel at CVRD	24 hours	CBMMA	3228-4151	–	193	–	–
Receita Federal (Internal Revenue Service)	8 a.m. to 5 p.m.	–	3231-6001	–	–	–	–
Military Police (GTA)	24 hours	PMMA	3235-2159 3235-8113	–	9112-5510 193	–	–
Civil Defense	24 hours	–	3212-1517	–	193	–	–
São Luis City Administration	8 a.m. to 5 p.m.	PMSL		–	–	–	–
Sema	24 hours	–	3218-8745	–	–	–	–
Ibama	24 hours	–	3231-3207 3231-3070 3231-3010		9991-1296 9971-5509 9991-2543	–	–

## 9.2 Environmentally Sensitive Areas

We may define as vulnerable the areas related to several economic activities, namely the port, fishing and naval industry activities, and important historic and touristic places, which can be affected in case of spillage of hydrocarbons and other hazardous products for the sea environment.

The vulnerable areas are:

- The access channel to the Port of Itaqui;
- The entire area of the Oil Pier;
- The entire mooring berthing area of Berths 101, 102, 103, 104 and 105;
- The Fishing Port of Porto Grande.

### Sensitive Areas

Within the influence area of the Port of Itaqui, the areas considered as sensitive are those with great biological activity or with special occurrence of seabirds, leisure beaches, marinas, which must be prioritized in terms of protection and cleaning in case of spillage of hydrocarbons and other products harmful for the sea environment.



The areas are considered as sensitive according to the Sensitivity map of the region:

- Mangrove area near the Port of Itaqui;
- Coqueiros Strait and Cachorros River.

**Environmental Sensitivity Map**

Those areas most sensitive to any environmental impact are listed in the LCP on sheets (Maps, Drawings and Annexes) that contain environmental sensitivity maps, highlighting, according to the selected area, the points subject to greater impact when this type of event happens in São Marcos Bay.

**9.3 General Description of the Emergency Combat Organization**

Responsibilities for handling eventual emergencies involving vessels arriving at the Terminal.

**Incidents within the TA-NE/SLU Port/Terminal area**

Incident type	Organization in charge	Other organizations involved			
Collision in the Channel	Harbor Master	Civil Defense	Transpetro	-	-
Vessel Running Aground	Harbor Master	Civil Defense	Transpetro	-	-
Collision at the Berth	Harbor Master	Transpetro	Civil Defense	Emap	-
Vessel Sinking	Harbor Master	Civil Defense	Fire Department	Transpetro	-
Fire Onboard	Ship	Transpetro	Fire Department	Civil Defense	Harbor Master
Fire in the Berth	Transpetro	Fire Department	Civil Defense	Harbor Master	Emap
Pollution	Transpetro or Ship	Harbor Master	Sema	Ibama	-

## 9.4 Emergency Plans

**9.4.1** The LCP (Local Contingency Plan) is the TA-NE/SLU plan for combating emergency situations at all its facilities. It is available in all the operational areas, affixed on notice boards located at the entrance to the operation rooms, maintenance and administrative buildings. The responsible for its update is the local SMS (health, environment and safety organization).

**9.4.2** Berthed ships must maintain their emergency tow ropes fast to the onboard bollards and hanging down to the waterline during the entire operation, by the bow and quarter on the side opposite to the berthing side.

The emergency and fire fighting equipment must be kept ready for use while the ship is berthed. The operational fire hoses must be extended, one forward and one aft on the manifolds.

A pollution fighting kit (sawdust, rags, shovels, buckets, squeegees, transfer pumps, etc.) must be kept ready for use in case of oil spillage. Supplementary precautions must be taken to prevent pollution of the seawater with oil.

The terminal has an Emergency Response Center (CRE) with modern equipment and various facilities for use in accidental pollution. Periodically, an intensive training program is carried out, which qualifies the terminal employees to act according to the LCP (Local Contingency Plan). Located at a strategic point, it can be called into action quickly when combating emergencies. Floating booms, oil collectors and other equipment and materials necessary to works are stored in its shed. Service and supporting boats, tanker and collecting vessels remain berthed at the tugs' pier, in a permanent state of readiness.

**9.4.3** The organized Port of Itaqui has an ambulance equipped for providing first aid in the port's Auxiliary Area (located near the pier). A hospital orderly works in a shift regime. Most severe cases will be forwarded to the General Hospital, located in the city of São Luis, near 11 km from the location, or to the hospital in which the patient is authorized to use.

## 9.5 Public Resources for Combating Emergencies

At the Port of Itaqui, only Transpetro, through the São Luis terminal and other operational units, called into action via local emergency plan, has resources that can be used to mitigate sea pollution events. For other emergencies, the public organizations offer resources for which they are designated.

### 9.5.1 Local Emergency Services

The fire department, civil defense, police and the hospital unit in São Luis have the proper resources and are called into action according to the table in section 9.1.

### 9.5.2 Mutual Assistance Plans

The institutions listed below participate in the PAM (Mutual Support Plan of the Port of Itaqui), and their resources are available as previously agreed upon in this plan:

- Fire Department (Military Police) of the State of Maranhão
- Transpetro/TA-NE/SLU
- São Luis City Administration (Civil Defense)
- Emap – Empresa Maranhense de Administração Portuária
- Petrobras Distribuidora S.A.
- Texaco do Brasil
- Shell S.A.
- Esso S.A.
- Moinho de Trigo do Maranhão S.A.
- Granel Química Ltda.
- Conab – Companhia Nacional de Abastecimento
- Companhia de Petróleo Ipiranga
- Petróleo Sabbá

## 9.6 Combating Oil Spillage

The sub-items below describe the resources available for combating pollution in the areas adjacent to the terminal.

### 9.6.1 Combat capacity of the Terminal

The resources available at the terminal for combating oil spillage situations are listed in the LCP, which is available in all the administrative, operational and maintenance areas of the terminal.

### **9.6.2 Combat capacity of the environment agency**

The Environmental Agency of the state of Maranhão does not have resources for combating oil spillage in the sea.

### **9.6.3 Resources available from the mutual support plans of other Terminals**

The resources available at other Transpetro terminals to support pollution emergencies occurring in the area bordering the terminal are listed in the local LCP.

### **9.6.4 Combating medium-size oil spillage**

Organization designated to combat significant pollution.

In such events, regional resources from Transpetro/Petrobras are requested. These resources, their readiness and how they are called into action are described in the LCP.

### **9.6.5 Combating large-scale oil spillage**

Organization designated to combat large-scale pollution.

In such events, national resources from Transpetro/Petrobras are requested. These resources, their readiness and how they are called into action are described in the LCP.

## **9.7 Combating Other Large Scale Emergencies**

Transpetro has a Special Contingency Group – GEC, which will provide support when called into action during large-size emergencies. The Individual Emergency Plan – PEI of the terminal lists the actions and the people in charge for every possible type of event that may occur within its unit, pipelines or vessels, and involving third parties.

For events not foreseen in this document, Transpetro/Petrobras will provide all the national or international resources within its reach.

# CONTACTS

The tables below indicate the organization, title, telephone, fax, e-mail and radio channel/frequencies.

## 10.1 Terminal

Location	Contact	Telephone (55 98)	Fax (55 98)	VHF/UHF Channels	
				Call	Conversation
Pier 106/Giaont	Operator	3217-3216	–	16	6
Control Center	Operator	3217-3271	3217-3251	16	6
Shift Supervisor	Supervisor	3217-3252	–	–	6
Industrial Security (SMS)	Supervisor	3217-3210	3217-3202	–	6

## 10.2 Port Services

Organization	Contact	Telephone (55 98)	Fax (55 98)	E-mail	VHF/UHF Channels	
					Call	Conversation
Harbor Master	Officer on duty	3231-1022	–	–	16	6
Pilot Association	Employee in service	3233-6688	–	–	16	11
Tugs	Agency	As per 10.3	Idem 10.3	–	16	11

### 10.3 Selected Navigation Agents and Suppliers

Company	Business	Telephone [55 98]	Fax [55 98]	E-mail	VHF/UHF Channels	
					Call	Conversation
N. Magioli	Agent	3226-6404	3226-4528	magioli@magioli.com	16	6
Wilson Sons	Agent	3235-2529	–	–	16	6
Harms	Agent	3232-7766	3221-2233	info@harms.com.br	16	6
Even Keel	Agent	3235-3094	–	evenkeel@evenkeel.com.br	16	6
Pedreiras	Agent	3232-3334	3232-3508	pedra@elo.com.br	16	6
Brazshipping	Agent	2106-6855	3216-6858	fred@brazshipping.com.br	16	6
Costa Norte	Agent	3242-0044	3242-0055	costanorte@cnorte.com.br	16	6
Arrow Ship	Agent	3226-3467	–	arrow@elo.com.br	16	6

### 10.4 Local Authorities, State and National Agencies

The table in section 9.1 has the list of these authorities and their respective contacts.

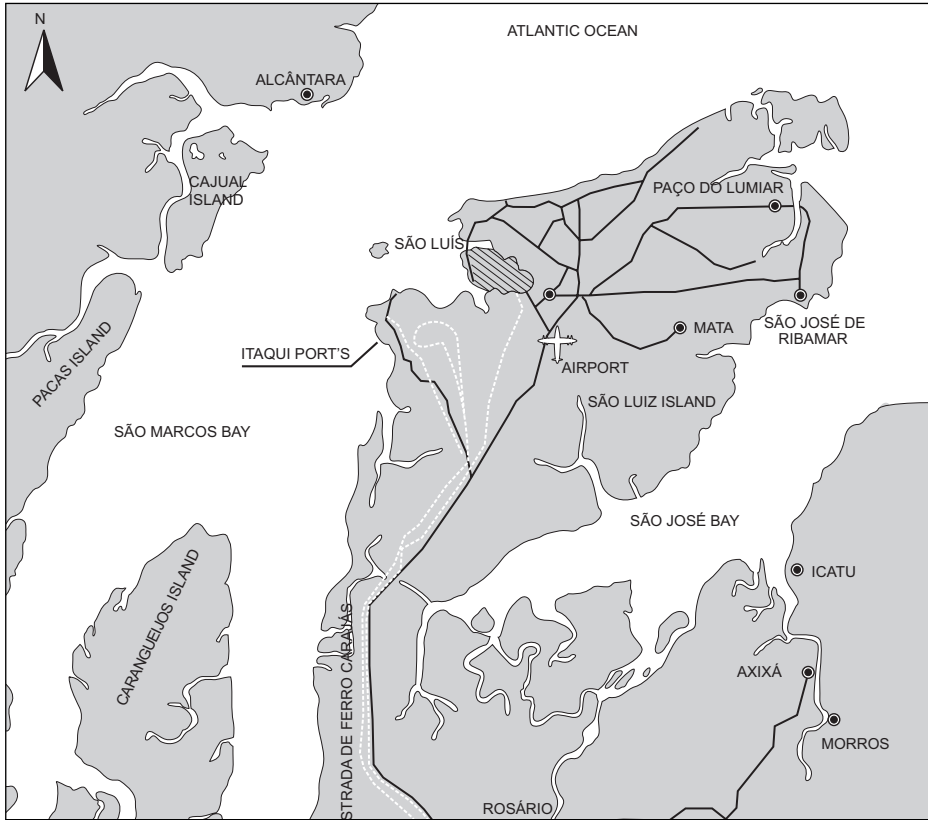
# APPENDICES

## A – Terminal Location

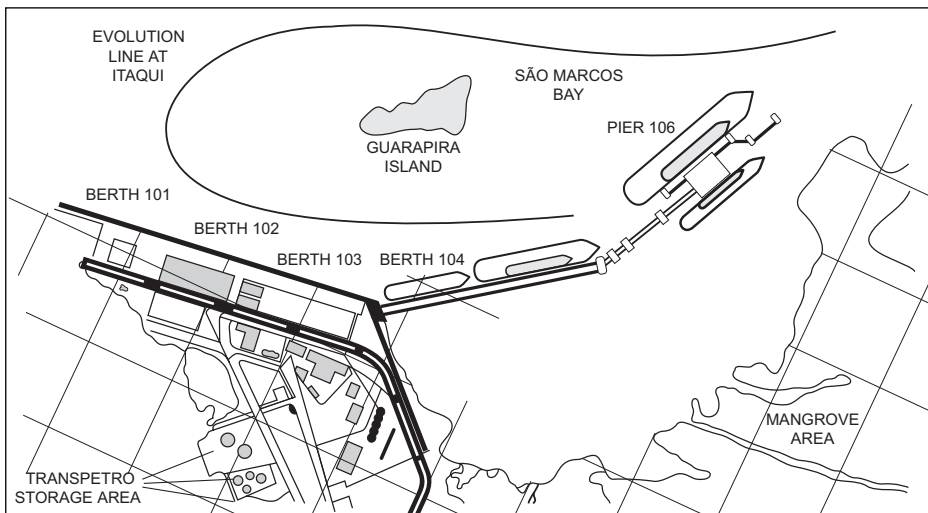
### Anchorage Area

Carta em alta

### Port location



### Evolution basin

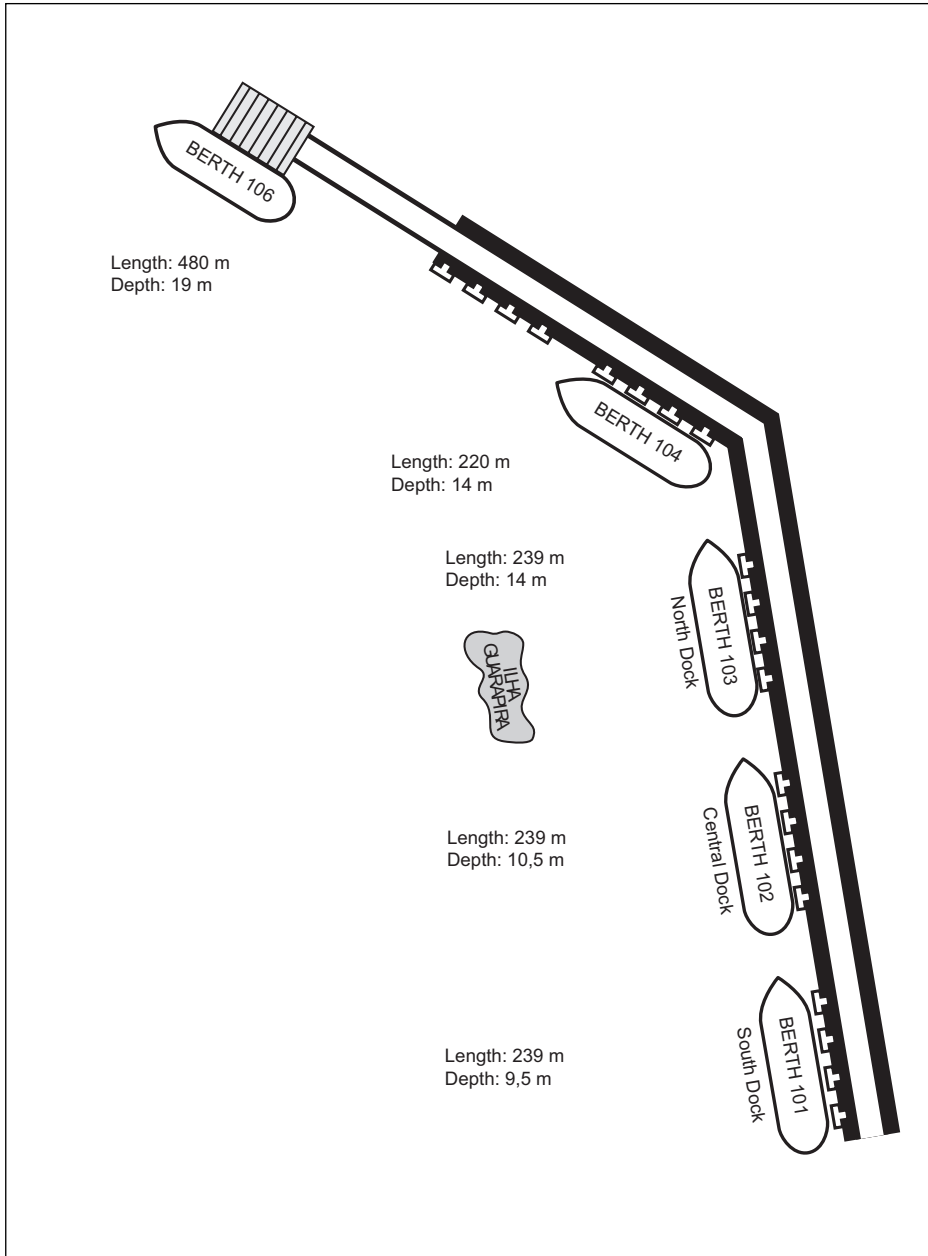




### Near the berth

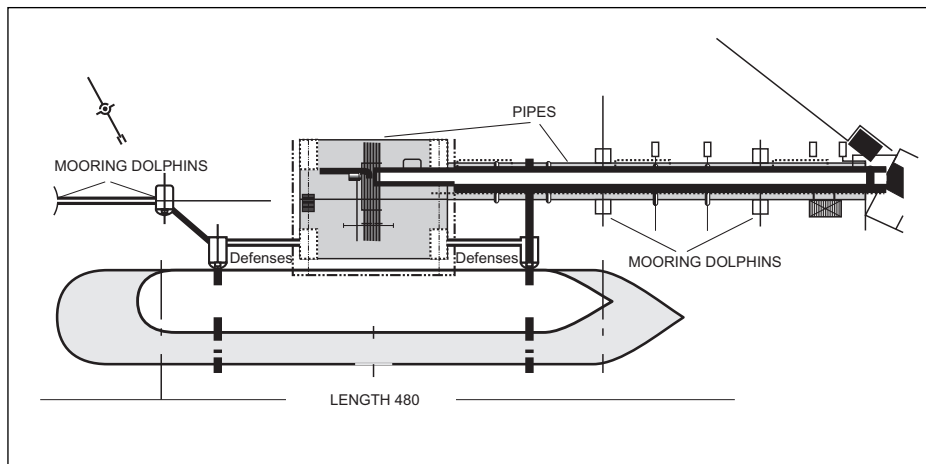


### B – Diagram of each berth with lengths and depths

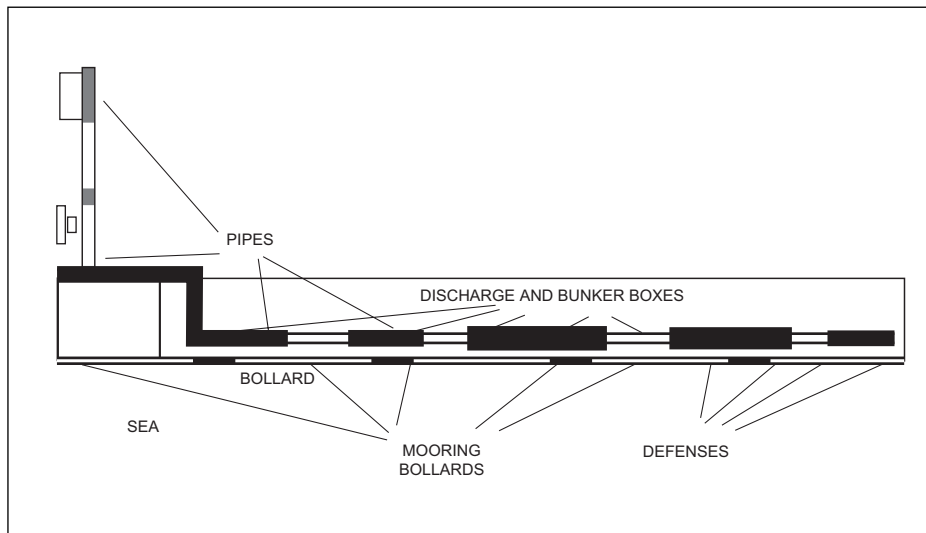


## Defenses, dolphins, mooring points and manifolds

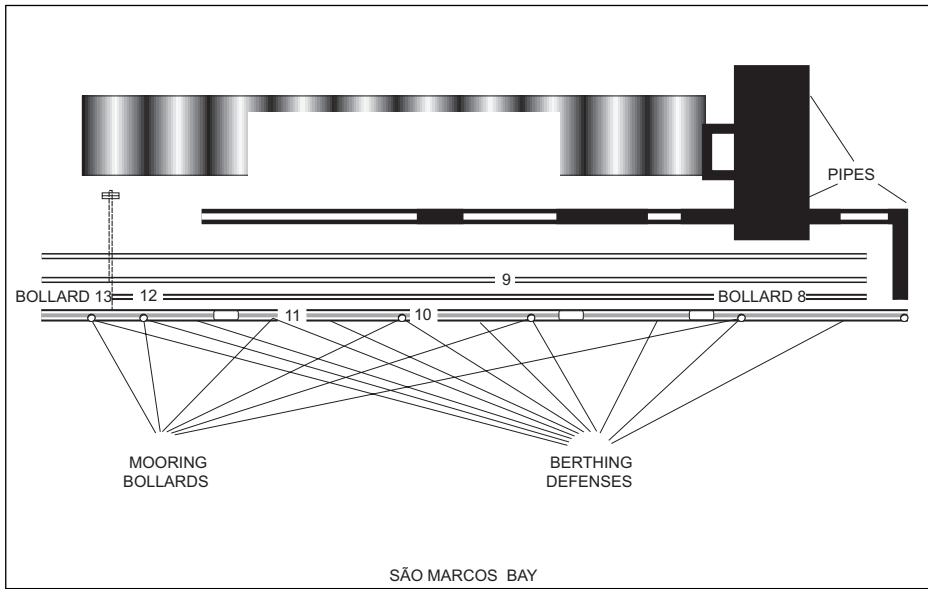
### Berth 106



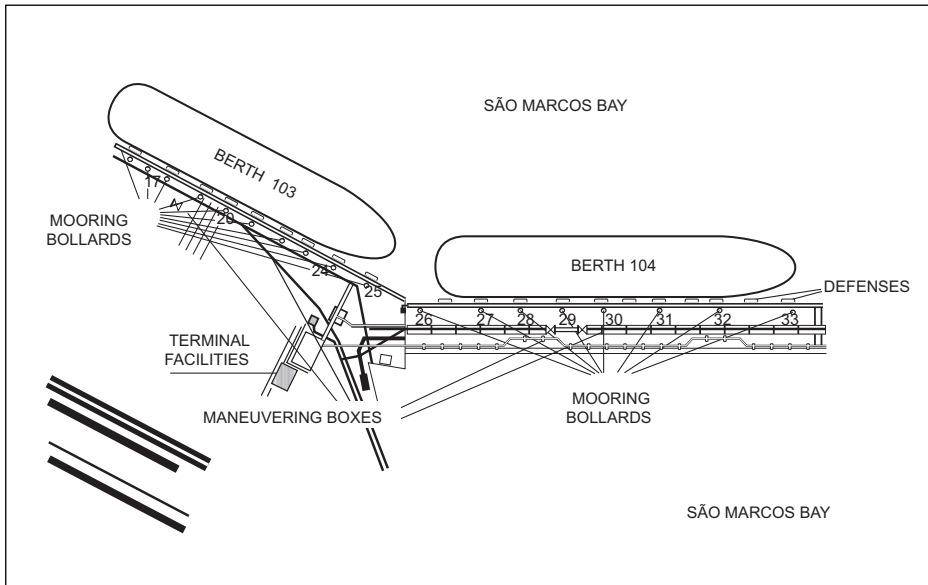
### Berth 101



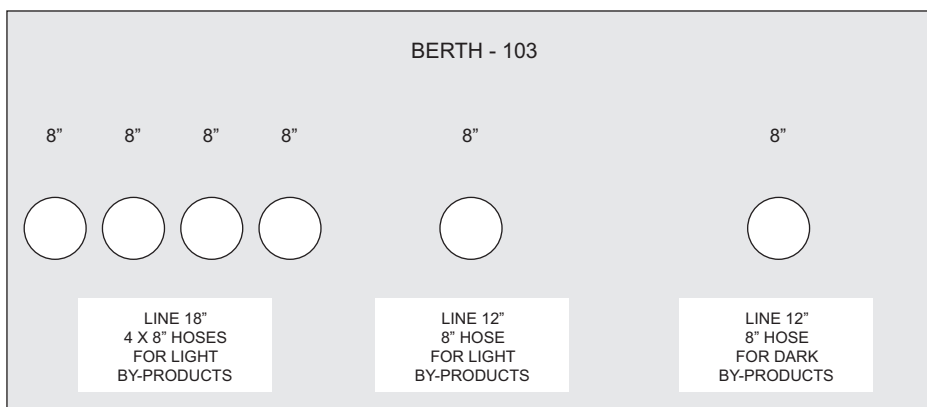
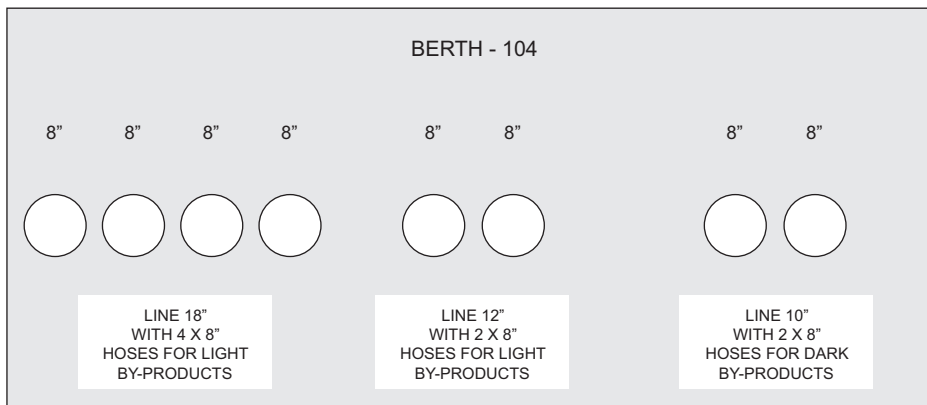
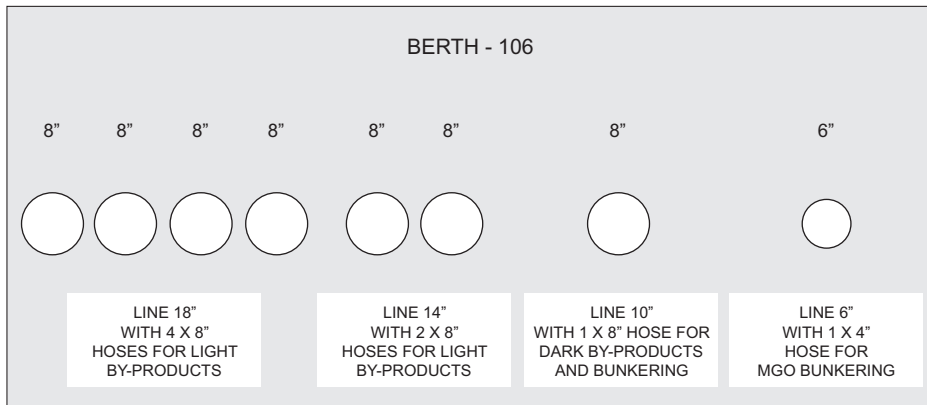
### Berth 106

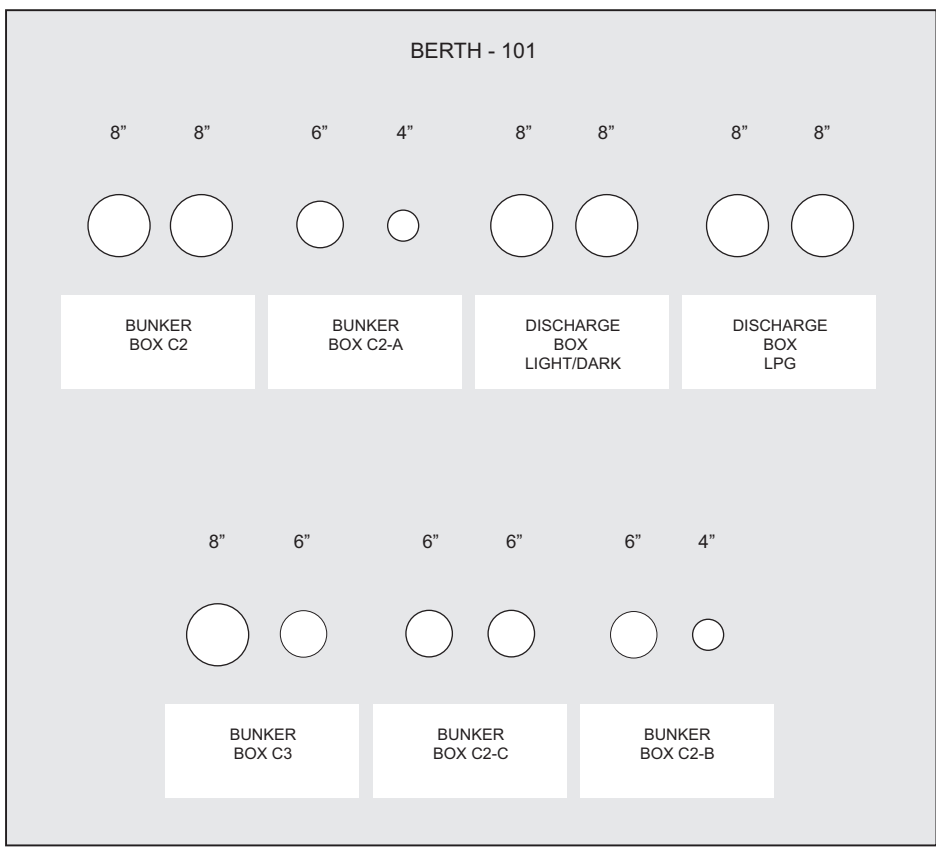
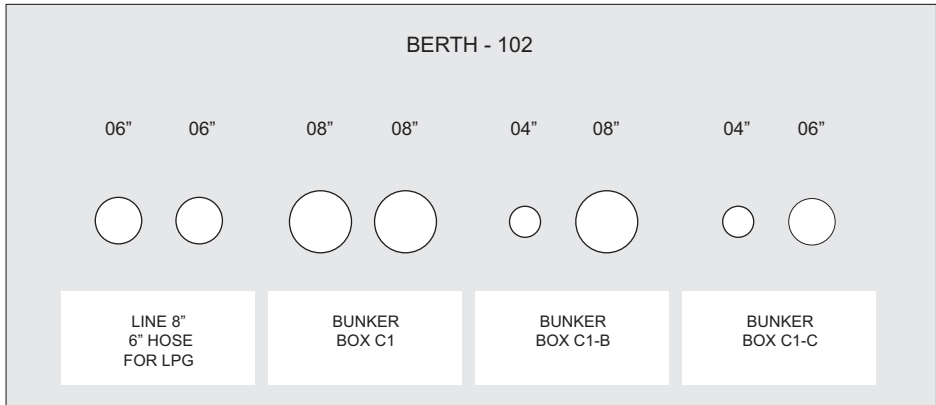


### Berth 101



**C – Diagram with loading connections, dimensions and sizes of flanges**





INFORMAÇÕES PORTUÁRIAS