



PORT INFORMATION

Terminal Information Booklet (TIB)

WATERWAY TERMINAL OF
SANTOS

WATERWAY TERMINAL OF SANTOS

Address: Rue Albert Schweitzer, 197-Santos-SP

ZIP CODE: 11.095-520

Contacts

ORGANIZATION	Hours of operation	TELEPHONE (+55)	MOBILE (+55)	VHF CALL	Vhf/UHF Conversation
Manages the Waterway Terminal of Santos	07 h às 16 h	(13) 3014-6491	---	16	---
Control Room (Pier)	24 horas	(13) 3014-6027 3014-6014	---	06	06
Terminal Control Room (CEMOV)	24 horas	(13) 3014-6009	---	06	06
Operation	07 h às 16 h	(13) 3014-6027	---	---	---

INTRODUÇÃO

This Port Information was prepared by **Petrobras Transporte S.A. (TRANSPETRO)** which operates the Waterway Terminal of Santos (Alemoa Terminal) in the Porto de Santos. It provides essential information for the Ships that operate in the Terminal. This document is also distributed internally in the organization, to the interested parties of the Port Authorities, national and local.

The operation of ships at the Santos must be in accordance with the recommendations of the International Safety Guide for Oil Tankers Terminals (ISGOTT) and the convention of International Maritime Organization (IMO) and must follow the operation guidelines of the terminal.

It presents essential information for ships that require operating at the terminal. It is distributed to the interested parties of the Organized Port and National Authorities. Port Information is presented in Portuguese and English versions.

The information contained in this publication is intended to supplement, never supersede or alter any type of laws, instructions, guidelines or official publications, national or international.

The Terminal reserves the right to change any operational information presented here without prior notice.

TRANSPETRO will analyze any suggestions, recommendations or corrections to the topics covered here, aiming to improve the content. If you find erroneous information that needs to be corrected, please contact:

WATERWAY TERMINAL OF SANTOS - SP

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<https://transpetro.com.br>

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REVISIONS

Revision	Changes	Date	Preparation	Approval
V.0	Initial version	08/20/26	Assessor Náutico: CMT Rahman Deck Officer: Jacqueline Ferreira Vieira Ives Marcelo Xavier	Assessor Náutico: CMT Rahman

1. SAFETY PROCEDURES

1.1 General

EMERGENCY CONTACTS

Organização	Horário de Funcionamento	Telefone	Fax	VHF / UHF Chamada	VHF / UHF Conversação
Port Authority	24 horas	(5513) 3221-3456 3224-9900	(5513) 3222-3188	16	12 / 17 / 77
Tug Company SAAM SMIT	24 horas	(5513) 3324-6233	(5513) 3324-6233	16	13
Tug Company Wilson Sons	24 horas	(5513) 3211-2300 3211-2345	(5513) 3211-2358	16	13
Tug Company "Sulnorte"	24 horas	(5513) 3211-5046	--	16	13
Pilot Station	24 horas	(5513) 3269-4043 3269-4045	Fax: (5513) 3261-5098	16	11
Fireman	24 horas	(5513) 3289-9509	--	--	--
Civil Defense	24 horas	(5513) 3208-1015	(5513) 3208-1000	--	--
City Hall	08 as 17 h	(5513) 3226-8080	(5513) 3226-8106	--	--

Table 1

1.2 Sensitive areas for the environment

The areas most sensitive to environmental impact can be verified in the LCP, by means of environmental sensitivity maps, which, according to the area selected, indicate those locations subject to the greatest impact should this kind of event happen at the Terminal.

1.3 General description of the Organization to combat Emergencies

The entities responsible for handling possible emergencies involving the vessels arriving at the Terminal are listed below.

Incidents within the area of the port of Santos

Type of Incident	Organisation Responsible	Other Organizations Involved			
Collision in the channel	Port Authority	Civil Defense	TRANSPETRO	CETESB	
Ship Stranding	Port Authority	Civil Defense	TRANSPETRO	CETESB	IBAMA
Collision against Pier	Port Authority	TRANSPETRO	Civil Defense		
Boat Sinking	Port Authority	Civil Defense	Fire Department	TRANSPETRO	CETESB
Vessel fire	Ship	TRANSPETRO	Fire Department	Civil Defense	Port Authority
Fire in the Pier	TRANSPETRO	Fire Department	Civil Defense	Capitania dos Portos	
Pollution	TRANSPETRO or Ship	Capitania dos Portos	CETESB	IBAMA	
Ship Stranding	Port Authority	Civil Defense	TRANSPETRO	CETESB	IBAMA
Pollution	TRANSPETRO or Ship	Capitania dos Portos	CETESB	IBAMA	

Table 2

Contingency Plans

The LCP (Local Contingency Plan) is the emergency fighting plan of the Santos Terminal and all its facilities. Explanatory charts on emergency procedures are distributed at strategic locations at the Terminal, for ready reference.

Berthed ships must maintain their emergency tow lines 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 mooring side.

The emergency and firefighting 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 load 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 adopted aimed at preventing seawater pollution by oil.

The Terminal has an Emergency Response Center (CRE), equipped with modern equipment and facilities to be used in accidental pollution incidents, and is strategically located near the piers.

The CRE has various boats, floating booms, absorption rolls and blankets, skimmers, suction pumps, generators, portable tanks, etc., and provides a specialized team 24 hours a day, on 12-hour shifts, which can be called into action at any time.

Piers P-1A and P-2A are equipped with fixed floating booms, which will be used by surrounding the ships operating in the area, depending on the product being moved.

1.4 Public Resources for Combating Emergencies

Port Administrator

SPA, as the port authority, will be always called into action, and will provide resources for intervening in combating any emergency.

For emergencies involving environmental damage, SPA has an agreement with the Fire Department, Transpetro, Cetesb and other companies, to activate an Emergency Control Plan (ECP).

Maritime Authority

The Harbor Master of the State of São Paulo is the maritime authority at the Port of Santos and must be called into action when emergencies occur

Local emergency services

Medical and dental assistance for the crew aboard the ships berthed at the Terminal must be coordinated with the maritime agencies.

Mutual Assistance Plans

The Port of Santos has a Mutual Assistance Plan (PAM), which includes companies involved in the port activities. The port authority (SPA) is in charge of maintaining it by integrating the entire port.

1.5 Combating Oil and Chemical Product Spills

The following items describe the resources available for combating pollution at the Terminal areas and its surroundings

Pollution-combat capacity of the Terminal

The resources available at the Terminal for combating oil spillage situations consist of immediately calling the Emergency Response Center (CRE) into action, whose resources are described in the item **Contingency Plans**

The procedures are listed in the Local Contingency Plan (LCP), available at all the administrative, operational and maintenance areas of the Terminal of Santos.

Pollution-combat capacity of the environmental agency

Cetesb (Companhia de Tecnologia de Saneamento Ambiental de São Paulo), an agency subordinated to the State Environment Secretariat, is in charge of controlling, inspecting, monitoring and licensing the pollution-generation activities, with the fundamental concern of preserving water, air and soil quality in the State.

Cetesb does not have resources for combating oil spillage at the sea.

Resources available in the Mutual Support Plans of other Terminals

The resources available at other Transpetro Terminals for combating pollution emergencies at the Terminal surroundings are listed in the LCP.

EMERGENCY CLASSIFICATION	ACTIVATION OF RESOURCES
Local Response Level	Includes organization, operational response procedures and resources of the facility, activity or service that relies on its own and external resources available in local institutions and companies or other resources, including corporate resources, made available through specific protocols established for emergency response;
Regional Response Level	When local resources are not sufficient to combat the emergency. Include external resources available from organizational units in the same region, institutions and companies in the region and other corporate resources located in the region;
National or International Response Level	When regional resources are not sufficient to combat the emergency. Includes external resources available in any organizational units of the company, national or international institutions and companies and corporate resources located in more than one region.

Table 3

Combating Large-Scale Incidents

The LCP at the Santos Terminal lists the actions and the entities responsible for every type of event that may occur within its units, pipelines or vessels, involving third parties. For events not included in this document, Petrobras/Transpetro will provide all the national or international resources available.

1.6 Emergencies alarms

Emergency alarms conventions are established as shown below:

Description	Rings
Weekly Test	01 ring for 15 sec
Start Emergency	01 ring – 60 sec

Finish Emergency	02 rings – 15 sec
Abandono de Área	01 ring for 180 sec.

Table 4

Figure 1

1.7 FIRE AND EXPLOSION

Procedures to be adopted are found in the Emergency Response Plan (PRE) and Individual



Emergency Plan (PEI) of the Terminal of Santos.

1.8 EVACUATIONS (EVACUATION ROUTE AND MAP OF ASSEMBLY POINTS)

If you need to know what resources are available at the Terminal, your representative will ask for a copy of the document containing instructions for combating a particular emergency.

1.9 BERTH COLLISION / DAMAGE

In case of collision or damage to the berths, Masters must inform the Safety Inspector, the Brazilian Navy and the Protective Agency.

1.10 MEDICAL EMERGENCY

The Terminal has an outpatient clinic with a doctor, nurse and nursing technician for assistance during administrative hours. The Terminal also has a contract with an ambulance company for first aid, available for call-out 24 hours a day. The most serious emergency cases will be triaged to hospitals in the region in accordance with the regulations of the medical team responsible for the care and may be referred to hospitals with health insurance or public hospitals.

1.11 MAN OVERBOARD

Masters must IMMEDIATELY raise the Man Overboard emergency on VHF channel 16, inform the Brazilian Navy, the Terminal Safety Inspector and the vessel's Protecting Agent.

1.12 REMOVAL OF BERTHED VESSEL

If it is necessary to know what resources are available at the Terminal, its representative shall request a copy of the document containing instructions for combating a particular emergency.

1.13 EMERGENCY SHUTDOWN (ESD)

The emergency shutdown will be negotiated with the vessel at the time of initial release. Transpetro encourages crews to **"When in doubt, STOP"**.

1.14 INCIDENT NOTIFICATION POLICY

The instructions for notification of incidents must be followed by the captains according to:

➤ Pollution Incident

It should be recorded in a specific document, to be sent to the Terminal shift coordinator, as soon as possible. This document may be prepared in phases (initial alert, update of incident alert and final incident report).

➤ Security Incident

Similar action as for pollution incident.

➤ Protection Incident

Generate a report as recommended in the ISPs Code.

2. Health, Safety and Environment Policies

2.1 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Crew members in areas outside the superstructures must remain wearing their PPE. Crew members in transit "going to" or "coming from" the Terminal gate will be exempt from using PPE, however, the use of shorts and/or open footwear, such as flip-flops, is not permitted on Terminal premises.

2.2 ACCESS TO TERMINAL (CREW ASHORE AND VISITORS TO VESSEL)

For more information, contact the Terminal's Port Facility Security Officer, who is trained in accordance with the requirements set out by IMO.

When disembarking, the crew members must use leather footwear, long pants, shirts with sleeves, and may circulate only within the demarcated area until the exit gate

2.3 DECLARATION OF SECURITY (ISPS CODE)

The Terminal have implemented corporate security protection measures applicable to vessels and port facilities, in accordance with the requirements of the International Maritime Organization – IMO, through adoption of the ISPS Code – International Ship and Port Facility Security Code.

If necessary, these protection measures may be activated by the vessel through the Terminal's Port Facility Security Officer (PFSO) or via VHF radio, calling channel 16 or via UHF radio provided by the Terminal.

The Terminal normally operates at protection level 1.

2.4 ALCOHOL AND OTHER DRUGS

According to ISGOTT, item 13.4, for personnel safety and health reasons, the use of alcohol and drugs has a dangerous effect on performance, behavior and creates an unsafe workplace. Thus, the consumption of alcohol or use of illicit drugs in Transpetro Terminals is not allowed.

Transpetro, with a view to supporting national and international authorities in combating drug trafficking and alcohol use in prohibited locations, complies with relevant preventive measures regarding the use, possession or criminal distribution of these substances.

2.5 SMOKING

The terminal doesn't have safe and marked areas for smoking, so smoking is not allowed inside the terminal's premises.

2.6 PORTABLE ELECTRONIC EQUIPMENT AND NAKED LIGHTS

The use of explosion-proof electrical lighting on deck shall be permitted during the operation of the vessel.

Portable lanterns in use must be intrinsically safe, certified for use in explosion risk environments.

Radio transceivers to be used on deck, during loading and unloading operations, shall be shielded, intrinsically safe.

It is forbidden to take photos of any area, equipment or people within the Terminal facilities without prior authorization from the Terminal management.

2.7 MAINTENANCE ON BOARD WHILE BERTHED

No repairs or maintenance work, where risk of sparks or other forms of ignition is involved, may be carried out depending on the flash point of the cargo handled, while the ship is berthed at the Terminal piers. In extreme cases, all the safety rules shall be complied with and fulfilled. Repairs involving the pier facilities, or that imply any restriction on the ship during laytime, must have prior authorization of the Terminal.

2.8 MATERIAL HANDLING

Agreed with the Terminal.

2.9 SAFETY DATA SHEET (SDS)

For the storage, transport or use of chemicals classified as hazardous or whose intended or recommended uses give rise to risks to the safety and health of workers, the SDS is mandatory (NBR 14725/2023) and must be available at the storage and/or use location.

2.10 BENZENE AND H₂S

The risks associated with toxic substances present in the cargo handled must be properly identified and understood.

2.11 STATIC ELECTRICITY

Attention must be paid to precautions for preventing ignition risks from static electricity sparks during measurements, sampling, connections and cargo/discharge operations.

3. General Information

3.1 REFERENCE LETTERS AND DOCUMENTS

Information about the Terminal can be obtained from the publications listed below.

Nautical Charts

Areas	Chart Number	
	Brazil (DHN)	British Admiralty
Anchor & port Approach	1700	BA 3980
	1711	BA 29
	1712	BA 191
	1713	
Entrance to the port and canals	1712	BA 29
	1713	
Terminal and approach Area	1713	BA 29

Table 5

Other Publications

Type/Subject	Brazil (DHN)	International
Book/Pilotage or navigation instructions	South Coast Script	Pilot Books Sailing Directions for South America- British Admiralty Publication
Guide/Port Information	X	Guide to Port Entry-Shipping Guide Ltd
Standards and procedures	NPCP	X

Table 6

3.2 SHIP/TERMINAL COMMUNICATION POLICY

See items below.

3.3 DOCUMENTS AND INFORMATION EXCHANGE

The items listed below must be provided by the Terminal or by ship, as indicated in the table

Information	Prepared by:			Delivered to:			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
Prior to arrival							
List of ship/shore safety check.			X			X	As Appendix A of ISGOTT.
During the transfer of the cargo or Bunker							
Repeat the list of ship/shore safety check.			X			X	As Appendix A of ISGOTT

Table 7

3.4 OPERATING HOURS

See item 4.4.12 **Restrictions and times for maneuvers**

3.5 LOCAL TIME

Brasília Time in UTC-03:00

3.6 COMMUNICATION LANGUAGES

The communication of the Vessel/Terminal must be made in Portuguese or English.

4. Description Of the Port and Anchorage

4.1 GENERAL DESCRIPTION

Terminal of Santos is situated in the port of Santos, located on the coast of the State of São Paulo, is public and managed by Santos Port Authority (SPA). It is Brazil's largest port and moves a year more than 146,6 million tons (2020) of various loads. The port has 17,2 km of Pier distributed on both sides of the estuary of Santos.

The port of Santos interacts with the urban areas of two cities: Santos, on the right margin and Guarujá in the left margin. In Santos, especially in its older sections, there is no physical segregation, road or otherwise, between the community and the port.

On the other side, housing disorganized cores deployed in lowlands with no infrastructure and sanitation, are very close.

In these circumstances, it appears that the spill of oil or other harmful substances occurring deliberately, negligently or accidentally, you can generate a serious source of pollution harmful to

an immense population dependent on the port activities. In other words, pollution should be avoided at all costs.

4.2 LOCATION OF ANCHORAGES

Coordinates

- ✓ Latitude: 23° 55,3' S
- ✓ Longitude: 046° 21,9' W

4.3 General geographic location

The port of Santos, on the right bank of the Canal of Piaçaguera, northern coast of São Paulo State, southeastern coast of Brazil.

4.4 Approximations of the Terminal

4.4.1 General Description

The bay of Santos, where the access channel to the port of Santos begins, is formed by the estuary of several rivers in which two large islands are located, São Vicente and Santo Amaro, both separated from the continent and from each other by narrow channels. Its eastern limit is Ponta Munduba and its western limit is Ponta Itaipu. On the island of São Vicente are located the cities of Santos and São Vicente and the port of Santos, one of the most important in Brazil. On the island of Santo Amaro is the city of Guarujá and some specialized terminals of the port of Santos. Between the two islands runs the channel in front of the port and its terminals.

4.4.2 Recognition and demand

The navigator coming from East should recognize the Alcatrazes island after the Laje of Santos and the Moela Island, having attention to possible difficulty to identify the latter Island, which is intertwined with the coast when viewed from certain sectors. Coming from the South, the first points to recognize are the Queimada Grande Island and the Laje of Santos. Identified the landing points, positioning of the ship is facilitated by lighthouse that exist in all the Islands, and the demand of the Bay can be made with easily, avoiding only the navigation in the vicinity of the Alcatrazes Island, Santos, of parcel of Reis and of the Laje of Pedro II. Attention should be given also to the large number of fishing boats operating in the area, in particular between the Queimada Grande Island and the Laje of Conceição and between the Moela Island and Laje of Santos.

The elevations of the tips Munduba, to the East, and Itaipu, the West, and the sinuous contour of the Bay, in addition to the nearby islands also facilitate landing by the radar. Coming from the high seas, the Moela beacon is an important aid and the DGPS reference station which uses the bearer of this beacon increases the accuracy of landing, who navigates by GPS.

The demand of the anchorages and the external loading of practical difficulties not respected the rules of traffic and permanence in the port and given special attention to the large number of ships on the move and at anchor.

Access to the port of Santos and its terminals is made by a channel where there are dredged, snippets named sections I, II, III, IV, whose main characteristics are the following:

Section I – of the bar until the fishing

Warehouse the parallel Munduba tip until the end of the beach, with 4.85 miles in length, minimum width of 150 meters and dredged the 13.50 meters **(01/28/2025 - REVISION NO. 257)**. The axis of this section is defined by 3 bright alignments A, B and C; in the passage between the island of palms and the end of the beach its banks are buoyed by light buoys, starboard and port, numbered.

Section II – of the fishing Warehouse to the big Tower in Barnabé Island terminal to Terminal of Alemoa (Piaçaguera channel), with 2-mile-long, 100 meters wide and dredged of 13.50 meters **(01/28/2025 - REVISION NO. 257)**. Is marked by light buoys, starboard and port, numbered.

Section III -The big Tower until 06 Warehouse in front of the terminal of Alemoa and North of Section B, dragado 13,50 metros **(28/01/2025 - REVISÃO Nº 257)**. Its northern edge is marked by light-buoy, starboard numbered. 13.50 meters **(28/01/2025 - REVISÃO Nº 257)**.

Section IV- From the Alemoa Terminal to the end of section IV, dredged to 12.70 meters **(01/28/2025 - REVISION Nº 257)**. It's marked in all its extension by starboard and port side light buoys numbered, not represented in the letter and whose changes are not disclosed by notices to Mariners.

4.4.3 Hazards

In Santos Bay, navigation hazards are located at distances of less than 0.3 miles from the bay shores, with numerous submerged or uncovered slabs and rocks.

Along the access channel to the port and terminals, special attention should be paid to:

- The Tefte rock, with two bollards at depths of 10.0 m and 13.9 m, close to the port pier, between warehouses 25 and 26, marked by a portside light buoy.
- The sunken hull Ais Giorgis, at position 23° 56.54'S – 046° 18.59'W, marked by a west cardinal light buoy; and the depths of the banks of the dredged Piaçaguera channel, which are less than 2 m;
- The sunken hull, which poses a danger to navigation, at position 23°57.06 South and 046°18.43 West, next to the right bank of the canal.
- The Itapema rock, at an unknown depth, at position 23°56.32 South and 046°18.63 West, marked by a luminous buoy on the starboard side, and,
- At depths near the banks of the dredged Piaçaguera canal, which are below 2.0 meters.

4.4.4 Anchorages Areas

The anchorage is separated depending on the programming and the situation of the ship, being numbered from 1 to 8 and delimited in the cards for area boundary line of anchors.

4.4.5 External Anchorages:

Anchorage Nr. 1 – for the warships and their area between the following geographical

coordinates.

- a) Lat. 23° 59' 24" S – Long. 46° 20' 12" W
- b) Lat. 23° 59' 24" S – Long. 46° 20' 48" W
- c) Lat. 24° 00' 00" S – Long. 46° 20' 48" W
- d) Lat. 24° 00' 00" S – Long. 46° 20' 24" W

Anchorage Nr. 2 – intended for ships that need to make health inspection or clearance (landing and embarkation of crew, and workshop services material handling), with residence not exceeding 3:0.

- a) Lat. 24° 00' 45" S – Long. 46° 20' 10" W
- b) Lat. 24° 00' 45" S – Long. 46° 19' 42" W
- c) Lat. 24° 01' 30" S – Long. 46° 20' 30" W
- d) Lat. 24° 01' 30" S – Long. 46° 19' 42" W

Anchorage Nr.3 for ships with programming set of mooring for the next 12:0 am.

- a) Lat. 24° 03' 00" S – Long. 46° 20' 48" W
- b) Lat. 24° 06' 00" S – Long. 46° 22' 09" W
- c) Lat. 24° 06' 00" S – Long. 46° 18' 36" W
- d) Lat. 24° 05' 18" S – Long. 46° 18' 36" W

Anchorage Nr. 4 for ships with programming of mooring, but without definition of day and time.

- a) Lat. 24° 06' 00" S – Long. 46° 22' 06" W
- b) Lat. 24° 06' 00" S – Long. 46° 18' 36" W
- c) Lat. 24° 10' 00" S – Long. 46° 19' 24" W
- d) Lat. 24° 05' 18" S – Long. 46° 18' 36" W
- e) Lat. 24° 05' 18" S – Long. 46° 15' 00" W
- f) Lat. 24° 10' 00" S – Long. 46° 15' 00" W

Anchorage Nr. 5 - for ships still without programming of mooring.

- a) Lat. 24° 10' 00" S – Long. 46° 19' 24" W
- b) Lat. 24° 15' 00" S – Long. 46° 20' 00" W
- c) Lat. 24° 10' 00" S – Long. 46° 15' 00" W
- d) Lat. 24° 15' 00" S – Long. 46° 00' 00" W
- e) Lat. 24° 15' 00" S – Long. 46° 19' 24" W

Anchorage Nr. 6 - to quarantine ships and vessels with suspected malfunction in the packed and/or leakage of radioactive material.

- a) Lat. 24°05' 00" S – Long. 46° 24' 27" W
- b) Lat. 24° 05' 00" S – Long. 46° 22' 45" W
- c) Lat. 24° 07' 12" S – Long. 46° 23' 42" W
- d) Lat. 24° 07' 12" S – Long. 46° 25' 27" W

Comments:

- The coordinates above refer at nautical charts. 1701 and 1711.
- The ships arriving at the port of Santos or to move for any reason, should contact the control center of the Pilotage service, via VHF channel 11, and 16, stating the position and time of anchor.

4.4.6 Internal Anchorage

Anchorage Nr 7 - the internal anchorage is designed for ships with maximum draught of 9 meters, only in case of emergency:

- a) Lat. 23° 55 ' 48 "S-Long. 046° 19 ' 00 "W
- b) Lat. 23° 55 ' 40 "S-Long. 046° 19 ' 00 "W
- c) Lat. 23° 55 ' 39 "S-Long. 046° 19 ' 24 "W
- d) Lat. 23° 55 ' 34 "S-Long. 046° 19 ' 24 "W

Anchorage Nr 8 – Intended for small and recreational boats.

4.4.7 Anchoring prohibited

Anchorage is prohibited:

- Ships outside the demarcated areas in the Charter without the prior authorization of the port authority and the ports of the captaincy.
- Of any vessel, in the areas of submarine pipelines and cables in the Chart enclosed; at distances less than 100 m and 200 m at night, around the slopes of the Munduba tips and Itaipu, where are located the forts of Andradas and Itaipu, respectively; and at distances less than 100 m on each side of the headwaters of the ferry terminals or floating in Santos and in the island of Santo Amaro.

4.4.8 Navigation Aid

The following characteristic points, described from East to West, facilitate navigation and the anchor in the Bay of Santos:

Morro da Barra (24th-00.9 046° 18.9 ' W) – in the far west of the island of Santo Amaro, with dark vegetation and 330 m of altitude.

Ilha das Palmas -Along the West coast of the island of Santo Amaro, Rocky, whitish in color and with buildings on its top. It is located the Ilha das Palmas (3292) spotlight, a cylindrical tower of reinforced concrete on the slab of a Red House, with 4 m tall and red flashing light at the altitude of 18 m with 5-mile range.

Ilha Porchat -High End East of barra de São Vicente, with 110 m of altitude. Is all urbanized and characterizes the far west of the city of Santos beaches.

Morro de Itaipu -At Itaipu Point, at the extreme west of the bay, 184 meters in height. It is urbanized and a tower stands out on its summit.

The Alignment "A" of the access channel – comprises the lighthouses at Boqueirão Beach No. 1 (anterior), with a round reinforced concrete tower, isolated on the sea surface. It is white with a horizontal red stripe, is 7 meters tall, with a fast white light at an altitude of 8 meters, and a range of 10 miles; and Boqueirão Beach No. 2 (posterior), a square reinforced

concrete tower, with horizontal red and white stripes, at Boqueirão Beach, 17

meters in height, with an isophase white light at an altitude of 17 meters, with a range of 11 miles. This alignment defines the initial axis of channel Section A, up to alignment B; at night, its use is impaired by the lights from the buildings located in the background.

Alignment B of the access channel – Formed by the lighthouses Ponta da Praia No. 3 (anterior) and Ponta da Praia No. 4 (posterior), two square reinforced concrete towers, with black and white stripes. The front lighthouse overlooks the sea, with a rapid red light at an altitude of 8 meters, with range of 6 miles; the rear lighthouse is located at Boqueirão Beach, with 12 meters of height and isophase red light, at an altitude of 13 meters, with a range of 7 miles. This alignment defines the channel inflexion axis, until reaching the alignment C; also, at night, its utilization is impaired by the lights from the buildings located in the background.

Alignment C of the access channel – Comprises the Rio do Meio No. 5 (anterior) and Rio do Meio No. 6 (posterior) lighthouses, two square reinforced concrete towers, with horizontal red and white stripes. Both lighthouses are located on the Santo Amaro Island, near the mouth of the Meio River; the front one is 7 meters tall, with a fast white light at an altitude of 8 meters, and a range of 10 miles; the one at the rear is 13 meters tall, with an isophase white light at an altitude of 13 meters, and a range of 11 miles. This alignment defines the final portion of channel Section A.

4.4.9 Port Limits

The official boundaries of the port limits from alignment of Latitude 24° 02 ' 03 "S and Longitude 046° 24 ' 00" W (Itaipu) and Latitude 24° 02 ' 42 "S and Longitude 046° 17 ' 24" W (Munduba).

4.4.10 Port Control

Port of Santos does not provide with VTS system and should be observed the following procedures, complementary to the COLREG-72:

When approaching the anchorage areas, and when arriving at and leaving the bay, navigators must pay attention to the large number of moving or anchored ships; the high number of sailboats and leisure boats that navigate in the Santos Bay and its surroundings; and the frequent nautical sports events that are held.

When navigating from the anchorage areas to the port or its Terminals, and vice versa, special attention must be given to the large number of small boats moving in the entire estuary, day and night.

All vessels with gross tonnage equal to or greater than 20, except fishing, sports and leisure boats and those that ply the port, must obligatorily provide their identification data to the radio station PWS-88, in the following situations (this contact may be made by the Pilotage, when requested by the captain):

- immediately on anchoring or casting off from any anchorage area.
- with the Palmas Island athwart, when approaching the port.
- soon after berthing or changing the berthing area.
- when initiating or suspending unberthing maneuver.
- when leaving the port.

4.4.11 Speed Limits

Navigation in the channels of the ports of Baixada Santista must be done at reduced speed. The maximum speed allowed for ships in the channel of the Port of Santos and in the Canal de São Sebastião is **9 knots**.

Commercial vessels up to 20 AB and sports and recreational vessels, when transiting in the middle of the navigation channel of the Port of Santos, must navigate their vessels with caution and at a speed compatible with the needs of navigation. The maximum speed allowed in the Bertioga channel is **6 knots**. The **6-knot** limit must be observed for all vessels in the following areas:

- 1) in the area delimited between the “Pedra do Corvo” lighthouse and the FEPASA bridge, located near the Santos Air Base (Bertioga Channel);
- 2) in the Piaçaguera Channel; and
- 3) in the Itanhaém River, Branco River and Preto River.

The speed limit of **5 knots** must be observed near the berths of nautical clubs, marinas and fishing terminals located outside the banks of the access channel to the Port of Santos. When on duty or responding to incidents, vessels belonging to the Customs, Federal Police (NEPOM), Environmental Police of the State of São Paulo, Fire Department of the State of São Paulo, ANVISA (National Health Surveillance Agency) and Pilotage are permitted to travel above the recommended speed limits.

4.4.12 Restrictions and times for maneuvers

- 1) Vessels with engine and rudder restrictions may only be maneuvered during daylight hours and with the authorization of the Harbor Master's Office.
- 2) At the Alemoa Terminal, during spring tides, berthing and unberthing maneuvers shall preferably occur during periods of flood or slack tide, with the exception of berth no. 04, where docking and undocking maneuvers shall preferably occur during periods of ebb or slack tide, taking into account the draft and/or size of the vessel.

- 3) During movements, the anchor must be kept above the waterline (by the hair); 4) maneuvers necessary for berthing may be performed off the docking site, observing the restrictions indicated in the chart;
- 5) only small vessels authorized by the Harbor Master's Office may travel between anchored vessels and land points, with the embarkation and disembarkation of personnel and material restricted to customs areas;
- 6) docked vessels may not keep the gangway and seaward ladders lowered. The gangway ladder on the seaward side must remain folded in its cradle and the dockside ladder must have a safety net;
- 7) anchored vessels may keep a gangway ladder lowered between sunrise and sunset. Outside this period, the ladder may only be lowered when necessary;
- 8) anchored or docked vessels must collect garbage in suitable containers with lids until it is removed from the ship. The use of garbage containers, plastic bags or other containers hanging overboard is not permitted;
- 9) Sewage from holds or tanks containing chemicals, oil or pollutants is prohibited;
- 10) Treatment and painting of the side and deck is permitted, including the use of planks, in compliance with occupational safety standards;
- 11) Lifeboats may be lowered for crew training without prior authorization from the Harbor Master's Office;
- 12) Anchored and moored ships must maintain their sides with adequate lighting. Barges or barges moored alongside must also remain properly lit; and
- 13) occurrences defined as a navigational event or accident, verified on board during the stay, must be reported to the Harbor Master's Office by the captain or his legal representative, before the ship is dispatched.

4.4.13 Impracticability of the Harbor Port

The maritime authority (São Paulo Harbor Master) is the competent authority for declaring the port movement impracticable. Where unfavorable sea, wind, visibility conditions etc., are verified, the pilotage contacts the Harbor Master, using any means of communication, so that the impracticability can be declared.

When the sea conditions prevent the pilot from coming on board, or when the ship's safety conditions do not recommend that the pilot await the proper moment to embark, the ship's captain, under his exclusive responsibility, may be authorized by the port captain to guide the vessel into port, while complying with the signals and instructions transmitted by the pilot from the shore to the ship.

When leaving the port, if it is not safe for the Pilot to disembark, disembarkation, if necessary, will take place at the next port.

4.4.14 Pilotage will be suspended in the following circumstances:

- a) Total – when all three or one of the following three situations occur:
 - l) waves > 3.0 meters;

II) wind - sustained intensity > 30 knots or gusts > 35 knots; and

III) visibility - range < 0.5 nautical miles.

b) Partial – when all three or one of the following three situations occur:

I) waves > 1.5 meters, partial suspension, for ships LOA > 306 meters;

II) wind - sustained intensity > 17 knots or gusts > 25 knots, partial suspension for ships LOA > 306 meters and ships with large sail area, such as Ro-Ro ships or ships in ballast; and

III) visibility - range < 1 nautical mile, partial suspension for ships LOA > 306 meters and for ships that have any obstructions to the line of sight between the bridge/bow of the ship.

4.4.15 Piaçagüera Channel

The traffic through the Piaçaguera channel to TIPLAM and Ultrafértel Terminals, will comply with the following specific rules:

- only one ship at a time is allowed to pass;
- ships with draft of less than 10.36 meters (34 feet) must be accompanied by two tugs, one of them with the rope fast during the entire run;
- ships with draft equal to or greater than 10.36 meters (34 feet) must be accompanied by three tugs;
- For vessels with a length greater than 180 m and/or a draft greater than 34 feet, the stern tugboat should preferably be an azimuth tugboat (which can operate with the same forward and/or aft thrust capacity). In the absence of this means, it will be up to the Ship's Captain, assisted by the Pilot, to decide on the number of tugboats required to replace it. Vessels with a bow thruster and/or stern thruster, when making their way through the Piaçaguera channel, on the SABOÓ/USIMINAS stretch, may be assisted by only one azimuth tugboat, with the cable passed through the stern, until docking. If this means is not available, the Ship's Captain, assisted by the Pilot, will decide how many and which tugboats should be used, in order to provide a replacement for the safety of that means;
- Night navigation of vessels exceeding 228m in length or with a draught equal to or greater than 10.36m (34 feet) is not permitted;
- The maximum permitted speed is **6 knots**.

4.5 Maneuvering Area

The channel area comprising B section, as indicated on the chart 1701, and which is located near the Marine Terminal of Santos pier, is the only possibility ships using the Terminal have to affect their maneuver.

It is mandatory for the evolution to be accompanied by the pilot and carried out with the support of tugs.

4.6 MAXIMUM ALLOWABLE AIR DRAFT

a) **TRAFFIC IN THE BERTIOGA CHANNEL** Large vessels with a height greater than 5 meters (air draft greater than 5 meters) that, in order to navigate the Bertioiga Channel (near the Santos

Air Base), need to operate the PORTOFER railway drawbridge, must contact the CCO (Control and Operations Center) of this company, from Monday to Sunday, from 7 am to 11 am and 12 pm to 5 pm, by telephone: (13) 3224-4539. The width of the navigable span of this bridge is 40 meters.

b) TRANSMISSION LINES Large vessels with a height greater than 67.5 meters (air draft) may not travel to locations beyond the Transmission Towers (in front of Arm. 25) in the access channel to the Port of Santos.

4.7 Environmental Factors

Regarding the wind regime, the predominant coastal winds blow from the E, from

January to December, with a percentage of more than 30%, and with force 2 on the Beaufort Scale. Winds with percentage ranging from 11 to 20%, force 2, occur in the following periods: from November to March, from NE; in April, from SE; from May to October, from SW. Winds with percentages occurring between 8 and 11%, force 2: in January, May and June, from SE; in February, March and November, from SW; in April, July and October, from NE. In December, from SE, force 3.

Land breezes also occur in the area and can be felt up to 9 miles offshore.

From July to October, there is a slight probability of strong winds.

The winds that most influence the port blow from the Northwest and the Southwest. The Northwesterly wind makes maneuvering within the port difficult, especially when carried out at the following locations: Terminal of Santos, Saboó Docks as far as Warehouse 12, and Barnabé Island; Southwesterly winds make it difficult to carry out maneuvers at the sandbar and in the access channel as far as Warehouse 12-A. Winds of the quadrants S and can cause spots that affect vessels in the outer anchorage and may even hinder the practical boarding.

Visibility

Visibility is generally good during summer season and can surpass 4 miles. It can be reduced by dawn mists, which are frequent from July to September.

Temperature

Local temperatures during the year range from 15 °C in July to 39 °C in January.

Waves

Near the mouth of the bar at Santos Bay, the wave regime depends on local winds.

The winds from S and SE may cause billows that affect ships at the external anchorage area, which can make the pilot's embarkation difficult.

Lightning storms

Tropical storms with lightning are common, especially during summer season. The operation may be interrupted where these storms occur near the Terminal, and at its discretion.

Tidal currents

The average tidal range is 1.6 m, and its intensity is very sensitive at the syzygy tides, producing currents of up to 1 knot when the tide is rising, and near 1.4 knot at falling tide.

The exact values for tidal range and intensity may be obtained in the DHN publications (Tide Table and Pilot Chart for the Port of Santos). However, they are subject to sudden changes whenever the weather conditions change. At the syzygy (moon) tides, the variations almost always occur with Southwesterly and Northwesterly winds. On the other hand, at quarter tides (neaps), such variations are much more frequent, since they are influenced by winds and currents close to the coast.

With Northwesterly winds, tides remain low while the winds persist; when the wind

blows from the Southwest, the tide is retained for the duration thereof. The quarter tides are also influenced by currents occurring along the coast.

When the currents are running in a Southerly direction (waters to the south), the tidal behavior at the port is that of a retained half-tide.

On rainy days, several affluents that discharge into the estuary substantially increase the tidal current velocity at falling tide.

Density

Densities near the Terminal are 1014 (low tide) a 1017 (high tide).

5. Description of the Terminal

5.1 General Description

The piers operated by the Marine Terminal of Santos, that is, piers 1 and 2, are located at the Alemoa Terminal, on the right bank of the Piaçagüera channel, in the Santos estuary. Alemoa Terminal has four different piers for ships (P-1A, P-2A, P-3A and P-4A), and two for operations with barges (P-1 and P-2). The Marine Terminal of Santos uses only P-1A and P-2A, the former for exclusive use by Transpetro, and P-2A shared with other companies.

P-3A and P-4A are used by private chemical companies. The other two piers at

the inner side (P-1 and P-2) are operated exclusively by Transpetro and are used for loading barges with maritime fuel oil (bunker), for supplying ships at the Port of Santos.

The piers (P-1A and P-2A), where Transpetro's ship loading and discharging operations are carried out, are located to the west of the central raised access platform, from which the piers P-3A and P-4A begin to the east.

The piers P-1A and P-2A are used both for loading and discharging oil by-products and LPG.

In addition to Transpetro, the following companies also handle liquid bulk products at the Alemoa Terminal:

- Stolthaven
- Ultracargo
- Vopak
- Granel (will be able to operate in few months)

5.2 TERMINAL LOCATION



Figure 1

5.3 TERMINAL LAYOUT



Figure 2

5.4 VESSEL ACCEPTANCE CONDITIONS

During the vessel's stay at the Terminal, several actions are carried out to enable safe operations and manage risks in order to minimize them.

Vessels that have previous problems will not be accepted and will be denied permission to operate at the oil pier. Actions that do not respect the normal deadlines for this purpose will not be the responsibility of Petrobras/Transpetro.

At all stages, as described in the subitems below, measures are taken in order to facilitate operations and plan them appropriately.

See item 0.

5.5 MANAGEMENT & CONTROL

The Control Room of the Terminal is located at the LPG storage area, approximately 1 km from the pier. The shift supervisor works at this central unit, along with the operators responsible for controlling all Terminal operations, by means of a supervision system.

There is another control room at the pier, called "Captação", where dedicated operators prepare the documentation, control the communications, monitor loading and discharging operations and the positioning of ships at the piers, in addition to connecting arms and/or hoses for the operations.

Communication with ships is carried out via VHF radios, channel 06, or on another maritime frequency, previously agreed and registered. A secondary method using the telephone, is agreed upon in case the main system fails.

The Terminal has the SAFETY SURVEYOR STAFF (GIAONT), which proceeds with the initial inspection of the ships, and performs periodic inspections during the entire loading, discharging and COW operation. These inspectors also advise supervisors and operators on subjects related to the operational safety of ships and barges.

5.6 MAIN RISKS

The navigation conditions at the Piaçagüera channel, with ships heading to or returning from the TIPLAM and Ultrafértil Terminals, become critical near the Santos Terminal, due to the channel narrowing at that stretch. Longitudinal displacement of the ships operating in the piers is common when other ships are passing through the channel, especially when the following unfavorable conditions occur, on their own or together:

- ship moored in nonconformity with the recommendations of the Terminal;
- ship with slack mooring;
- passage of another ship at a speed exceeding that permitted;
- passage of another ship with large displacement;
- a ship operating with a draft near to 11 meters, when there is little clearance under the keel for the displaced water mass to flow away.

To prevent or minimize problems with any fortuitous displacement, the Terminal recommends the mooring described in the item **6.2FOR BERTHING AND MOORING ARRANGEMENTS – STEEL / WIRE LINE.**

The Terminal may interrupt the operations of ships under the following circumstances:

- fire or a fire starting onboard or ashore;
- passage of another ship, considered as critical;
- wind gusts at **30 knots** or over;
- atmospheric electrical discharges in the surrounding area;
- at the request of the Captain of the ship in operation.

5.7 NAVIGATION RISKS

The following hazards and geographical accidents are checked:

Laje submersa – Flat, submerged rock, bearing 289°, at a distance of 15 miles from the Ponta da Sela lighthouse, sounding 1.7 meters.

Baixo Grande – Bank bearing 287° at a distance of 16 miles from the Ponta da Sela lighthouse, awash at low tide, when breaking under southerly winds.

Laje do NE – Flat rock bearing 081° at a distance of 2.0 miles from the Alcatrazes lighthouse, sounding 2.5 meters.

Laje do SW – Flat rock bearing 236° at a distance of 1.9 mile from the Alcatrazes lighthouse, sounding 5.5 meters.

Laje – Flat Rock bearing 230° at a distance of 4.8 miles from the Alcatrazes lighthouse, sounding 7.6 meters.

Cabeças de Poço – Dead wells in the position Lat. 25° 15' S and long. 045° 15' W, sounding 118 meters and 131 meters.

Pedra que cobre e descobre – A Rock that submerges and emerges – bearing 196°, at a distance of 5.6 miles from the Pedra do Corvo lighthouse.

Laje do Bandolim – Flat Rock – bearing 359° at a distance of 2.5 miles from the Laje de Santos lighthouse, sounding 29 meters.

Parcel do Brilhante – a reef bearing 025° at a distance of 2.0 miles from Laje de Santos lighthouse, sounding 13.8 meters.

Parcel do Sul – A reef bearing 200° at a distance of 0.5 mile from Laje de Santos lighthouse, sounding 6,2 meters.

Parcel Novo – A reef bearing 162° at a distance of 1.4 mile from Laje de Santos lighthouse, sounding 24 meters.

Rochedos – Rocky outcrops bearing 119° at a distance of 1.2 mile from the Laje de Santos lighthouse, and 14m high.

Laje Pedro II – Flat Rock bearing 101°.5 at a distance of 8.4 miles within the red sector of the Laje da Conceição lighthouse, sounding 1.7 meters.

Parcel dos Reis – A reef bearing 143°, 5 at a distance of 7.9 miles from the Laje da Conceição lighthouse, sounding 13.2 meters.

Parcel de SE – A reef bearing 146°,5 at a distance of 0,7 mile from the Queimada Grande lighthouse, sounding 2.3 meters.

Parcel do João Ilhéu – A reef bearing 170° at a distance of 0.7mile from the Queimada Grande lighthouse, sounding 17 meters.

Laje de Piraquara – Flat Rock bearing 171° at a distance of 1.1 mile from the Ilha das Palmas lighthouse, sounding 4.6 meters.

Rochedos sempre descobertos – Permanently uncovered rocky outcrops – bearing 255° at a distance of 3.6 miles from the Ilha das Palmas lighthouse.

Parcel da Conceição – A reef bearing 235° at a distance of 6.4 miles from the Laje da Conceição lighthouse, sounding 4.0 meters.

Alto-fundo rochoso – Submerged rocky ledge – bearing 228° at a distance of 6.4 miles from the Laje da Conceição lighthouse, sounding 11 meters.

Laje Noite Escura – Flat Rock bearing 310° at a distance of 9.1 miles from the Queimada Grande lighthouse, sounding 11 meters.

Casco soçobrado – Sunken wreck bearing 238° at a distance of 29,5 miles from the Queimada Grande lighthouse, dangerous to navigation.

Pedra dos Moleques – Rock standing awash bearing 309° at a distance of 1.77 miles from the Bom Abrigo lighthouse.

5.8 General Restrictions – Port of Santos

The SPA, the port authority and the port administrator, is responsible for dredging and maintenance of the depths in the port of Santos, including the terminals located in the area. After the last dredging carried out in January 2025, the maximum operating drafts, referenced to the DHN standard, were defined as follows:

NAVIGATION SITE	METERS
To bar fishing Warehouse (excerpt I)	13,50
Fishing warehouse to the big Tower (excerpt II)	13,50
The big Tower until Warehouse 06 (excerpt III)	13,50
06 warehouse until the end of the BTP (Section IV)	13,50
BTP until Alemoa (Section IV)	12,70

Table 8 (SPA - Revision nº 257 – 28.01.2025)

When navigating through the channel, the squat effect is disregarded by the pilotage at Santos, because the Harbor Master limits maximum ship speed to 9 knots (NPCP Chapter 5).

5.9 Maneuvering restrictions at the Alemoa Terminal (P-1A and P-2A)

The following restrictions must be observed on the piers at Marine Terminal of Alemoa:

1 - Concerning draft:

up to 36' (10.97 meters): no channel restrictions.

from 36'01" to 37'00" (10.97 meters to 11.28 meters):

a) quarter tides – no restriction;

b) syzygy tide - berthing and unberthing maneuvers will preferably occur during periods of flood or slack tide; and

c) air draft - at the coordinates of 23°57.18' S and 046°18.42 W, the passage of overhead cables at a height of 67.5 m is observed. These cables are suspended by two metal towers at a height of 84 m (Chapter 6 of the Sailing Direction).

2 - Concerning the berthing side - Large ships (> 200 meters in length), scheduled to leave with draft exceeding 34'00" (10.36 meters), must preferably berth by starboard. Gas Carrier should berth by portside.

3 - Concerning tidal currents - At syzygy tides, the berthing and unberthing maneuvers may only occur during flood or slack water periods.

For maneuvering at P-4A specifically, the maneuvers may only occur during the slack water period.

There are no restrictions for quarter tides.

4 - Concerning length and beam at berthing (maximum) - Daytime maneuvers: length of 250 meters and beam of 45 meters. Night-time maneuvers: length of 230 meters and beam of 45 meters.

5 - Concerning crossing in the channel - Ships are forbidden to cross in the Piaçaguera Channel.

6 - Concerning operational limits - Berthing on piers (P-1A and P-2A) is limited as per the chart below:

PIER	DISPLACEMENT	MAX. LPP	MIN. LPP	MAX DRAFT.	MANIFOLD HIGH *	MIN. FREE BOARD
P1A	75,000/95,000	250 m	110 m	12,40 m	16,20 m	3.00 m
P2A	60,000/80,000	250 m	110 m	12,40 m	16,20 m	3.00 m

Table 9 * Height from waterline to manifold, at low tide

- Maximum limit for berthing at P1A is 75,000 gross tonnage or 95,000 total displacement tons;
- Maximum length is: P1 = Max. LOA is **250 m**; P2 = Max. LOA is **250 m**;
- Minimum length is **110 m**, however, berthing of smaller vessels is subject to a prior analysis, carried out by SPA, of the construction characteristics and configuration of the vessel's hull to assess compatibility with the fenders;
- Draft is subject to change by SPA, depending on the results of the bathymetry performed;
- With the exception of the LPG loading arms, the light and dark arms must be connected to the vessels with a maximum manifold height of 16.20 meters, at low tide. This height may be changed, after analysis by the Terminal of the tide and loading conditions, in order to avoid excessive effort of the loading arm, above 90°;
- Minimum freeboard is 3 meters.

6. Description of Berths

6.1 PHYSICAL DETAILS OF MOORING BERTHING

Berth Characteristics:

Berth	Length of the Pier (m)	Depth (m)	Tide (m)		Mouth (maximum)	Length of ship (maximum)	Products Handled	Displacement (maximum)	Comments
			Syzygy	Dry					
P1A	250	12,4	1.70	0.10	N/A	250	The Diesel Fuel. Gasoline LPG Bunker	95,000 t	
P2A	250	12,4	1.70	0.10	N/A	250	The Diesel Fuel. Gasoline LPG Bunker	80,000 t	

Table 10

6.2 FOR BERTHING AND MOORING ARRANGEMENTS – STEEL / WIRE LINE

Berth	Requires Pilot for maneuvers	Size of Vessel (tpb)	Tugs: Number, BP & pusher				Approach speed		Anchorage points		Mooring cables (recommended, bow and stern) STEEL/WIRE		
			Mooring		Unmooring		Parallel body	Angle (maximum)	Bollards (maximum)	Hook	Head/aft lines	Breast lines	Spring lines
			Paragraph	BP	Paragraph	BP							
P1A	Yes	Up to 20,000	2	21	2	21	10 cm/sec	10°	8	-	3	2	2
		Above 20	2	46	2	46	10 cm/sec	10°	8	-	3	2	2
P2A	Yes	Up to 20,000	2	21	2	21	10 cm/sec	10°	8	-	3	2	2
		Above 20	2	46	2	46	10 cm/sec	10°	8	-	3	2	2

Table 11

The mooring scheme must meet the following conditions:

- Use at least three springs AV (forward) and AR (aft) for any size of ship;
- Keep the mooring tight throughout the operation in order to prevent the ship from moving longitudinally along the quay when other ships are passing through the Piaçaguera Channel.

If the ship has steel springs, only two AV (forward) and two AR (aft) may be accepted, at the Terminal's discretion.

The berthing and mooring maneuvers are monitored by the Terminal's GIAONT to assist in the correct approach of the ship, in order to avoid damage to the terminal and to monitor the technical performance of the pilot and tugboats and record any abnormalities in the maneuver.

Berth	Arm Number	Diameter/ Length	Type of Product	Pressure class/Work Pressure kgf/cm ²	Temp. ° C	Scope (Reach)
P1A	1	12 "/22.04 m	LPG	300 #/ L = 25.0 V = 25.0	-45.0/ 40.0	20,40 m (**)
	2	12 "/12.50 m	Clear	150 #/ 19.4	40.0	15,80 m
	3	12 "/12.87 m	Clear	150 #/ 19.4	40.0	15,20 m (*)
	4	12 "/12.87 m	Clear	150 #/ 19.4	40.0	15,20 m (*)
	5	12 "/12.87 m	Bunker/Crude Oil	150 #/ 19.4	80.0	15,20 m (*)
	6	12 "/12.87 m		150 #/	80.0	

P2A			Bunker/Crude Oil	19.4		15,20 m (*)
	8	12 "/12.50 m	Clear	150 #/ 19.4	40.0	15,80 m
	1	12 "/8"/18.00 m	LPG	300 #/ 150 # L = 50.0 V = 20.0	-50.0/ 50.0	16,00 m (**)
	2	12 "/12.50 m	Clear	150 #/ 19.4	40.0	15,80 m
	3	12 "/12.87 m	Clear	150 #/ 19.4	40.0	15,20 m
	4	12 "/12.87 m	Clear	150 #/ 19.4	40.0	15,20 m
	5	12 "/12.87 m	Bunker/Crude Oil	150 #/ 19.4	80.0	15,20 m
	6	12 "/12.87 m	Bunker/Crude Oil	150 #/ 19.4	80.0	15,20 m

Table 12

NOTE: (*) Height from the base of the terminal to the ship's manifold.

(**) The LPG arms at Pier P1A and P2A are out of operation.

7. Communication Before Arrival

Before the berthing maneuver, a lot of information is exchanged, such as: berthing board, number and diameter of the manifolds to be used, mooring layout, number of ropes to be used, etc. The Terminal reserves itself the right to refuse berthing to any ship considered inadequate, or not in compliance with safety or mooring conditions, or presenting any circumstances that may pose risks to its assets, which include personnel, equipment and environment.

After berthing, an operational safety inspection is carried out by the Safety Inspector (GIAONT), based on the ISGOTT Ship/Terminal Operational Safety Checklist. In case of any discrepancies directly affecting operational safety, which has not been solved by the crew, the ship will not receive authorization from the Terminal to start operating.

The ships must send their estimated time of arrival (ETA) directly to the respective agent, 24 hours in advance, in order to have them included in the schedule.

LPG ships must inform their ETA at least 48 hours in advance. The ETA information must specify whether the time informed is local or UTC.

On-board repairs that make the ship's engines unavailable, and the washing of cargo tanks, must preferably be carried out at the anchorage area. To carry out these services with the ship berthed, prior authorization from the Terminal will be required, after strict analysis of the risks involved.

7.1 TERMINAL INFORMATION FOR VESSEL

7.1.1 Arrival

Ships navigating to the Terminal at Santos will be visited, after berthing, by representatives of the Port Health, Customs and Maritime Police. The ship's agent must take steps to this end.

A specific message must be sent to the Port Health authority, via the agency, in order to obtain Free Practice, evidencing its good sanitary conditions.

Ships arriving from a foreign port, even where they have already called at a Brazilian port, will be inspected by the Customs Service, and the agent must request this inspection, providing all the required details. They also are subject to a visit from the Maritime Police after receiving the free practice, in order to check the papers of the crew and passengers.

7.1.2 DOCUMENTS REQUIRED FOR SHIP CLEARANCE

They must be sent to the agency

Maritime Police:

- Crew list (3 copies);
- General list (1 copy);
- List of passengers disembarking from the ship (3 copies);
- List of passengers in transit (3 copies).

Port Health Service:

- Maritime health declaration (1 copy) – the agent must issue in advance
- declaration to the effect that the entire crew are in good health;
- Deratting certificate (1 copy);
- Vaccination list (1 copy);
- List of drugs and narcotics (1 copy);
- List of passengers in transit (1 copy);
- Passenger list (1 copy).

Customs Authority:

- Crew list (1 copy);
- Spare parts list (3 copies);
- On-board store list (3 copies);
- On-board provisions list (3 copies);
- Cargo manifest (1 copy);
- Bill of lading (1 copy);
- List of passengers disembarking from the ship (2 copies);
- List of passengers in transit (2 copies);
- List of crew's personal effects (2 copies);
- Baggage declaration for passengers disembarking from the ship (3 copies).

7.1.3 BUNKERING REQUEST

The bunkering request must be forwarded to Petrobras (UN-Bunker) through the ship's agent.

This can be supplied in two ways: by pipeline or barge.

Supplying by pipeline is conditional on the availability of the loading arm, as well as the product to be supplied.

Bunkering through barge alongside the hull is possible, simultaneously or otherwise with loading, depending on the flash point of the product being operated.

The following fuel types may be supplied: MGO and MF-30 to MF-380 (fuel oil).

All connection and operation conditions valid for loading/discharging operations are applicable to bunkering.

The Ship/Terminal Operational Safety Checklist (ISGOTT, Appendix A, section "A" Bulk Liquids – General) must be filled out, in the same manner as for ship loading/discharging operations.

7.2 VESSEL INFORMATION FOR TERMINAL

Terminal Form (ISGOTT Chapter 22)

8. Operational Information

8.1 VESSEL / PORT ACCESS

The Terminal does not provide gangway ladder for serving the ships. Ship/shore access is via the ship's gangway or wharf ladder or scaffold, installed directly on the pier, or lowered onto the dock side and complemented by an aluminum wharf ladder supplied by the Terminal.

Where it is impossible to install a gangway or wharf ladder installation from the ship, access will be affected by a boat provided by the Terminal.

When disembarking, the crew members must use leather footwear, long pants, shirts with sleeves, and may circulate only within the demarcated area until the exit gate.

8.2 INITIAL LETTER

The operation will only begin after the initial letter has been filled out and

approval received from Safety Inspector (GIAONT), which will check the compliance with the relevant International Standards and Conventions (SOLAS, ISGOTT, Guidelines for Inert Gas Systems, etc.).

Concerning the Inert Gas Supply System, upon initial release, the Safety Inspector (GIAONT) will check the SGI conditions, according to the operational safety checklist, described in the item **8.3**

8.3 THE SHIP/TERMINAL OPERATIONAL SAFETY CHECKLIST

Right after docking and before the start of operations, to check its operational safety conditions, equipment, and procedures, GIAONT carries out a Safety Inspection, following the Operational Safety Checklist, based on the latest edition of ISGOTT, and in accordance with the type of ship.

At the end, this should reflect the ship's exact condition, when the GIAONT inspector will present the results to the ship's Captain or their legal representative. If any non-compliant item that could affect the safety of the operation is observed, the operation will only begin once the issue is resolved and the ship is considered safe to operate.

The Ship/Terminal Operational Safety Checklist (Isgett, Appendix A, section "A" Bulk Liquids – General) is checked and filled out by the Safety Inspector (GIAONT) and the ship's representative during the initial release.

8.4 BALLAST, DEBALLAST, SLOP AND GARBAGE REMOVAL

Ballast and deballast operations are only permitted for SBT-type ships.

Ballast and deballast piping and tanks must be designated for this purpose only 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.

the ship's port laytime), and from Safety Inspector (GIAONT) (for operational safety purposes), or so as to comply with the Marpol Convention; in this case, overtime will be for the ship's account.

SLOP

Although it has tanks for receiving dirty ballast, the Terminal does not have the resources for treating it. Thus, it does not receive slop from ships.

However, on-board slop can be discharged to a barge especially adapted for this purpose. This operation must be coordinated between the ship's Captain and his maritime agency.

Discharge of waste (Slop) to barges is not permitted during ship operation.

The Terminal must be notified before this operation is carried out, and the ship is responsible of all the measures required for preventing sea pollution.

GARBAGE REMOVAL

The Port Authority (SPA) does not provide facilities for receiving on-board garbage from the ships anchored at the Terminal of Santos. This service is available from specialized companies, and the ship's Captain and his maritime agency are in charge of contracting this service.

Where garbage is to be removed on the seaside, the Terminal must be notified in advance, and the GIAONT (Safety Inspector) will evaluate the possibility of executing this operation simultaneously with the loading/discharging operation.

8.5 MOORING

8.5.1 SHIP MOORING SYSTEM

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 on. The use of automatic tensioning winches is not permitted.

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

Mixed mooring lines are those in which the lines executing the same function have different type, gauge and materials.

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 shall be deployed in the most parallel position possible to the longitudinal axis of the ship.

When tails are used on the wire lines, the tails must be of the same type, with gauge 25% greater than the minimum breaking strain of the wire, and of the same material and length.

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

8.6 BEFORE CARGO TRANSFER

To increase the efficiency of the discharging process for ships carrying cooled LPG, we recommend that the on-board tank pressures remain 60 gf/cm² before berthing at the Terminal.

Electrical insulation between the Vessel and the Terminal is provided by the insulating flange fixed to the loading arm at the Vessel/Terminal interface, except in the operation of LPG Vessels whose loading arms have insulating joints. When it is necessary to use hoses for the operation of LPG Vessels, hoses with electrical discontinuity are used.

The resources required for the connection are agreed to in the first contact from the ship to Terminal, as per the Appendices D and F.

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

The captain must ensure that all ship-shore load line connections have been inspected and considered in good condition.

One on-board representative must accompany the entire operation, and must be near the ship's load manifold.

All the connections for loading/discharging operations, or for bunkering, which are unused, must be fully bolted with blank flanges.

On-board measurements will be taken by the ship's personnel and inspected by the Terminal representatives and other inspectors, when required. The material used must be duly grounded, and the measuring instruments must be explosion-proof.

8.7 PROCEDURES

BEFORE THE LOAD TRANSFER

See item 8.3 THE SHIP/TERMINAL OPERATIONAL SAFETY CHECKLIST

8.8 CARGO TRANSFER

The Terminal issues an Operation Monitoring Letter upon initial release, establishing matching criteria for flows and quantities.

Pressure monitoring during cargo transfer is registered by the representatives aboard and ashore at the ship's manifold, hour by hour. The Terminal controls the internal pressure variables by means of a centralized control supervision system. The flows on both sides of the operation are measured hour by hour, and compared between the parties, and according to the system used, there will be a limiting parameter for operational control.

Any changes in the operation 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.

When operating LPG ships, the Ship/Terminal Operational Safety Checklist (ISGOTT, Appendix A, section "A", Bulk Liquids – General and section "C") is checked and filled out by the Safety Inspector (GIAONT) and the ship's representative, during the initial release.

When operating cooled LPG, a vapor return line must be used.

The LPG loading arms are equipped with an automatic uncoupling device in case of emergency or when the ship moves away from the pier.

Gas detection systems and an emergency stop device for the LPG system are installed on the piers, with automatic valve blockage.

CHIMNEY SWEEPING

Boiler pipes should not be cleaned while the ship berthed. Every precaution

must be taken so that sparks do not escape from the smokestack. The non-compliance with these determinations will lead to one or more of the sanctions below:

- Immediate interruption of the operations;
- A fine being applied by the competent authorities;
- Compulsory ship unberthing from the pier;
- Communication of the infraction to the ship owners;
- The ship being held responsible for the fines applied, demurrage and all other related expenses resulting from this fact.

RESTRICTION / CONDITION OF VESSEL ALONGSIDE

The prohibition on non-authorized small boats remaining alongside or near

berthed ships must be strictly observed. Only the Terminal service vessels may remain near or alongside the ships, provided they fulfil all the safety conditions (the flash point of the product being operated having been checked). The violation of this rule shall be communicated to the competent authority. In any situation, the Terminal should always be consulted.

PROPELLER MOVEMENT RESTRICTION

Berthed ships may not start their propellers while connected to the loading

lines, and where there are floating booms installed. The jacking gear may be used, once the Terminal operator has been properly notified, provided the propeller turns slowly enough to ensure absolute safety. Ships will be held responsible for any damages resulting from such procedures.

INTERMEDIATE INSPECTIONS

The Safety Inspector (Giaont) will carry out intermediate inspections, based on the Isgott recommendations, every six hours. Other inspections for the purposes of checking those items not included in Isgott, but which affect safety, may be carried out at any time while the ship is in operation at the terminal.

OPERATION INTERRUPTIONS

Loading/discharging must be interrupted in any situations considered dangerous both for the ship and the Terminal.

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

The operating personnel at the Terminal are 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 onshore operations are not safe, as long as he gives the pier operators advance notice.

In any emergency situation, the Terminal of Santos interrupts the operations

being carried out 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 Local Contingency Plan (LCP), and the key telephones are listed in the section 1 SAFETY PROCEDURES

8.9 OPERATION WITH VEC (VAPOUR EMISSION CONTROL)

The TRANSPETRO Santos Terminal has a closed vapor return system to reduce emissions during ship operations, in accordance with the company's Health, Safety and Environment values. This system does not accept the presence of liquids. Therefore, it is extremely important that the ship arrives with the lines that will operate with the VEC drained and dry. The vapors from the loading operation will be incinerated in the Vapor Combustion Unit (UCV) of the Santos Terminal, which operates between 30 gf/cm² (300 mmAq) and 250 gf/cm² (2500 mmAq), seeking to maintain the vapor phase pressure of the ship's tanks at positive values, but below the relief setting for the atmosphere. To ensure safe and efficient operation between ship and terminal, we ask that:

- The ship arrives with its lines drained and dry;
- The vessel must inform the settings of the pressure and vacuum relief valves of the cargo tank ventilation system.

For this operation, we use a 12-inch hose and, if necessary, the terminal will provide a reduction for use during the operation. The ship's crane will be required for connection. Please inform the terminal if it is necessary to block the ship's vapor phase valve.

8.10 CARGO MEASUREMENT AND DOCUMENTATION

When the operation is finished, draining of arms/hoses used in the operation

must begin. This operation will be carried out by the Terminal operators by displacing the product to the ship and to the Terminal using nitrogen. To prevent any abnormal occurrence, this operation must be previously agreed upon between ship and Terminal.

The final onboard measurements will be carried out by the ship's personnel and inspected by the Terminal representatives or other inspectors. The material used must be duly grounded and calibrated, 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

8.11 COW

Conventional tank cleaning operations are not normally accepted. However, COW operations are permitted, subject to prior authorization of the schedule, for the purpose of the Ship's stay in port and, of the GIAONT for operational safety purposes or to comply with the MARPOL Convention, in which case the extra time will be at the Ship's expense.

8.12 INERT GAS

In case of difficulties or problems with the ship's inert gas system, operations will be suspended until the system meets the minimum acceptable standards. Ships should have atmospheres in the tanks to be loaded that are inert to flammability and explosion.

8.13 BUNKERING

See 7.1.3 BUNKERING REQUEST

8.14 POLLUTION PREVENTION

The ship will send, in advance, a summary of its emergency plans (SOPEP).

8.15 FRESH WATER SUPPLY

The Terminal **does not have** available resources for supplying fresh water to the ships. The supplying of fresh water must be coordinated by the agent, and is possible from a barge alongside the ship, simultaneously with the loading/discharging operation or not, depending on the flash point of the product being operated.

8.16 UNBERTHING AND LEAVING PORT

During the unberthing and maneuvers for leaving port, the channel limits and hazards, listed in the section 4.4 **Approximations of the Terminal** and its sub-items, must be observed.

The pilot's disembarkation location will be in the channel, at the position below:

Latitude = 24° 00' 33" S and Longitude = 046° 20' 12" W, as per NTPS (Traffic and Stopover Procedures in Santos).

8.17 COMPLIANCE WITH ISPS CODE

In case of need (security incident), protective measures can be activated by the ship through the port terminal's security supervisor - PFSO - or via VHF radio. The terminal normally operates at security level 1.

See item: 2.3 DECLARATION OF SECURITY (ISPS CODE)

9. Port or Anchorage Organization

9.1 PORT CONTROL OR VTS

The Port of Santos does not provide "VTS" equipment, but the pilotage service has the "AIS" system for monitoring ships in the anchorage area, and during movement at the Port of Santos.

9.2 MARITIME AUTHORITY

The maritime authority to which the Terminal is subordinated is the Harbor

Master of São Paulo.

Since the anchorage areas are external to the bar, the visits of the authorities are carried out after the ship berths at the Santos Terminal.

The official port limits go from the alignment of the coordinates of Latitude 24° 02' 03" S and Longitude 046° 24' 00" W (Ponta Itaipu) to Latitude 24° 02' 42" S and Longitude 046° 17' 24" W (Ponta Munduba), as per the item 4.4.2 Recognition and demand.

The Harbor Master of São Paulo is the maritime authority within the limits of the Port of Santos, and it is responsible for determining what actions and penalties are to be taken/applied to those responsible for any incident within the port limits.

9.3 PILOTAGE

Pilotage at the Port of Santos is:

- ✓ **Mandatory** for foreign ships of any gross tonnage (except those mentioned below); oil tankers; ships carrying bulk hazardous chemical products, and those carrying bulk liquefied gases, as long as they have been loaded or discharged, but not degassed, Brazilian, with gross tonnage over 2,000; and other Brazilian ships with gross tonnage over 2,000;
- ✓ **Optional** for foreign ships leased to a company set up under Brazilian law, headquartered and managed in the country, with gross tonnage of less than 2,000 ton, provided they are commanded by a Brazilian maritime professional, ranking equal to or higher than 2nd officer.

The mandatory area is from the parallel 24°00'33" South, in Santos Bay, to the docking location, except for anchorage no. 4. Vessels whose Pilotage is mandatory must receive and disembark the pilot at the coordinate point, 24° 00'33" S 046° 20'20" W, marked on the chart.

In any situation, even in adverse weather conditions, no vessel may sail without a pilot within the marked channel, north of the mandatory pilot embarkation and disembarkation point. If the pilot cannot disembark upon departure of the vessel, he must continue his journey to the next port. The pilot request must be made at least 2 hours in advance of the time of arrival or docking through the ship's agency or directly to the Pilotage, on VHF channel 16/11 or by telephone.

The captain of the vessel, when using the Pilotage service, is responsible for: To undock from the Santos Terminal, the Pilot must be requested by the Captain directly to the Pilotage or through the Maritime Agency. The scheduled time must be confirmed by the vessel at least 1 hour and 30 minutes in advance on VHF channel 16/11. To cancel a maneuver, the Command must do so at least 1 hour in advance, otherwise an additional fee will be charged for the Pilot's absence at the station. Pilotage is provided by the firm Pilot Service, located at Avenida Almirante Saldanha da Gama 64, Ponta da Praia, Santos, telephones, Operations Center: (013) 3269-4050/3269-4051 or Administrative: (013) 3269-4043/3269-4045, and permanent listening on VHF radiotelephony, calling on channel 16 and operating on channel 11; website <http://www.sppilots.com.br> and e-mail co@santospilot.com.br

9.4 TUGS AND OTHER MARINE SERVICES

The use of tugboats is compulsory for the mooring, unmooring, shifting maneuvers and moving at the port or Terminal in Santos.

9.4.1 Application

The maneuvers of ships, when mandatorily executed using the assistance of tugboat, may, if the ship's Captain so decides, use the parameters in the Table of Annex 3-C of the Normas e Procedimentos da Capitania dos Portos de São Paulo (Rules and Procedures of the Harbor Master – São Paulo) (Appendix G). The referred table is only a minimum suggestion; complying with the correspondences and obligations contained therein is not mandatory;

Towing lines and other materials to be used in tug-assisted maneuvers must be adequate for maneuvering safety requirements. The provisioning thereof shall be agreed between the contracting party, ship owner or agent and the contractor, tug company;

The final decision on using materials and devices suitable for maneuvering rests with the ship's Captain;

Ships equipped with a bow thruster and/or stern thruster may use them in addition to the tugs used in the maneuver.

9.4.2 COMPLEMENTARY DISPOSITIONS

The maneuvers executed by the ship are the captain's responsibility and therefore require his intervention should navigation safety is jeopardized.

We recommend that the captain exchange prior information with the pilotage (whenever used) and/or the tug masters, about the maneuver to be executed, the evolution basin and the ship's own characteristics.

The ship's Captain is exclusively responsible for determining the device and the number of tugs required for the berthing and unberthing maneuvers;

When the tugs are maneuvering near the ships' bow, it is forbidden to pass the towing line by lowering it from the bow to be caught with boat hook by the tug's crew. The rope must be fast using a thrown line from the forecastle towards the deck of the tug, thus preventing excessive tug/ship approach, and reducing the hydrodynamic interaction effects between the vessels;

9.4.3 APPROACH MANEUVERS FOR BERTHING AT SPECIAL LOCATIONS:

For maneuvering at special locations, we recommend employing an additional tug to the minimum number of tugs defined in the Table of the Annex 3-C of the Rules and Procedures of the Harbor Master – São Paulo (Appendix G), with one of these tugs equipped with rope fast to the towing hook until berthing is completed.

Special locations are:

- a) Saboó and Corte Docks
- b) Private terminals on the left bank: Dow Química, Cutrale and Cargill
- c) Fertilizer Terminal (Tefer) – Conceiçãozinha
- d) Barnabé Island
- e) Marine Terminal of Santos
- f) TIPLAM and Ultrafertil S.A.

g) Sugar terminals: Copersucar and Teaçú

h) Piaçagüera Channel

Ship with a draft of less than 34 feet: it is recommended that at least two tugs accompany the crossing, one of them with a rope fast, until berthing is completed.

Ship with draft equal to or greater than 34 feet and/or length greater than 180 meters - it is recommended that at least two tugs accompany the crossing, with an azimuthal tug at the stern (which can perform with the same evolutionary capacity in forward and/or aft motion). In the absence of such means, it is up to the ship's Captain, under advice from the pilot, to decide the number of tugs required to affect this replacement.

When approaching the Saboó/TIPLAM stretch of the Piaçaguera channel, ships equipped with bow thruster and/or stern thruster may use the assistance of only one azimuthal type of tug, with the rope fast to the stern, until berthing is completed. Where such method is unavailable, the ship's Captain, under advice from the pilot, will decide how many and which tugs must be employed, so as to replace the safety objective of said method.

For berthing ships with gross tonnage over 10,000 at Santos Terminal, we recommend employing two tugs, and a third one as a pusher tug.

Ships equipped with bow thruster and/or stern thruster, in perfect working condition, may be authorized to use fewer tugs when berthing or unberthing, provided they are not executing maneuvers at special locations. With the captain's agreement, supported by the pilot, this waiver may only be given when there is more than one tug, and by withdrawing the tug which, in the Captain's view, with support from the pilot, is less important for that specific situation. Where the pilot judges that such waiver should not be effected, he shall send to the Harbor Master an Occurrence Report within 24 hours after the maneuver, using the specific model available at the Pilotage Station. Upon unberthing, the ships equipped with these systems should not use them at the locations determined by the Port Administration (port authority), in order to prevent wear to the lower sections of the dock.

10. Contacts

10.1 PILOTAGE

Pilotage organization operating in the port of Santos: Pilots - Pilotage Services of the Port of Santos and Baixada Santista S/C Ltda. Av.: Almirante Saldanha da Gama, 64 Neighborhood: Ponta da Praia - Santos - São Paulo - Zip Code: 11030-400 Administrative Telephone Numbers: (13) 3269-4045 / (13) 3269-4043 / Fax (13) 3261-5098 Operations Center: (13) 3269-4050 / (13) 3269-4051 / Fax (13) 3261-1990 Emergency: (13) 3261-6340.

The pilotage service may be activated by the Captain or the Ship's Agent. In case of emergency and depending on availability, the pilot will be placed on the ship as soon as possible. The Santos Terminal does not have a specific vessel to assist in mooring ships; this service is carried out by pilotage boats. When docking ships with a LOA greater than 150 m, two support boats are available to assist in mooring.

The Terminal has boats that are used to place and remove containment barriers from ships operating with products with a flash point above 60°C at piers P1A and P2A.

10.2 MARITIME SERVICES AT THE PORT OF SANTOS

Several workshops provide naval maintenance and repair services, such as engine works, boiler works, electrical, electronic and cooling systems.

Several specialized firms operating in Santos provide diving services.

Repair needs must be communicated to the ship's agency, which will meet these according to the local resources.

1.1. TERMINAL

Location	Contact	Phone	FAX	VHF/UHF channels	
				Call	Convrsation
Pier P1A and P2A	Operator	(13) 3014-6327	(13) 3014-6046	6	6
Control Center	Operator	(13) 3014-6309	(13)-3014-6008	16	6
Shift supervisor	Supervisor	(13) 3014-6445	(13)-3014-6008	- x -	01 terrestrial
Security (SMS)	Supervisor	(13) 3014-6264	(13)-3014-6160	- x -	01 terrestrial
CRE	Seaman service	(13)-3014-6189	(13)-3014-6160	01 terrestrial	6

Tabela 1

1.2. SERVIÇOS PORTUÁRIOS - REBOCADORES

Organização	Contact	Phone	E-mail	VHF/UHF channels	
				Call	Call
Port Authority	24 h	(13) 3221-3456 3224-9900	secon@csp.mar.mil.br	16	-
Tugs Company Svitzer	24 h	(21) 982372557	central.ops.br@svitzer.com	16 16	11 13
Tugs Company	24 h	(13)	filial.santos@saamtowage.com.br		

Saam Smit		997753224		16	13
Tugs Company Wilson Sons	24 h	(13) 3348-4839	operation.santos@wilsonsons.com.br	16	13
Tugs Company "Sulnorte"	24 h	(13) 3211-5040	santos@sulnorte.com.br	16	13

Tabela 2

11. DEFINITIONS

AIS- "Automatic Identification System" – Automatic Identification System for ships.

BP -"Bollard Pull"-Static Traction.

FREEBOARD- "Free Board - vertical distance from the surface of the water to the deck of the ship.

COW – Crude Oil Washing. Cleaning the cargo tanks with crude oil.

CRE- Emergency response center.

DISPLACEMENT- Is the total weight of the ship with cargo, fuel, food, spare parts, etc.

SQUAT EFFECT- Is the draught increases caused by movement of the Ship.

SQUAT EFFECT OR INTERACTION SIDE- Is the force of attraction between two ships when intersect. The force of attraction generated depends on the distance, size and speed,

GIAONT- Inspection and monitoring Operational Group of ships and terminals.

IMO- "International Marine Organization". The International Maritime Organization.

ISGOTT -"International Safety Guide for Oil Tankers and Terminals". International Safety Guide for ships and Tanks.

ISM CODE – " International Safety Management Code ". International Safety Management Code.

ISPS CODE – " International Ship and Port Facilities Security's Code "– International Code for the protection of ships and port facilities.

SPRING TIDE (SYZYGIAN TIDE) - Tides of new moon and Full, in which case the amplitude between low sea and morning tide is expressive.

NEAP TIDE -Tides of Crescent Moon and last quarter, in which the amplitude between low sea and morning tide is less pronounced.

MARPOL- " Marine Pollution Convention ".

International Convention for the prevention of pollution of the marine environment.

NPCP- Standard and procedure of the captaincy of the ports.

PCL- Local Contingency Plan.

COLREG- IRPCS " International Regulations for Preventing Collisions at Sea "- International regulations for preventing collisions at sea.

SOLAS- "Safety of Life at Sea". International Convention for safety of life at sea.

SOPEP – " Shipboard Oil Pollution Emergency Plan ". Emergency Plan to Ship oil pollution.

SPA – Santos Port Authority

TPB- Deadweight tonnage. Is the weight of the cargo ship plus fuel, food, water, lubricants, etc.

UTC- "Universal Time Control". Universal Standard Time.

UN-BUNKER- PETROBRAS ' Department that sells the bunker stocked TRANSPETRO's terminals.

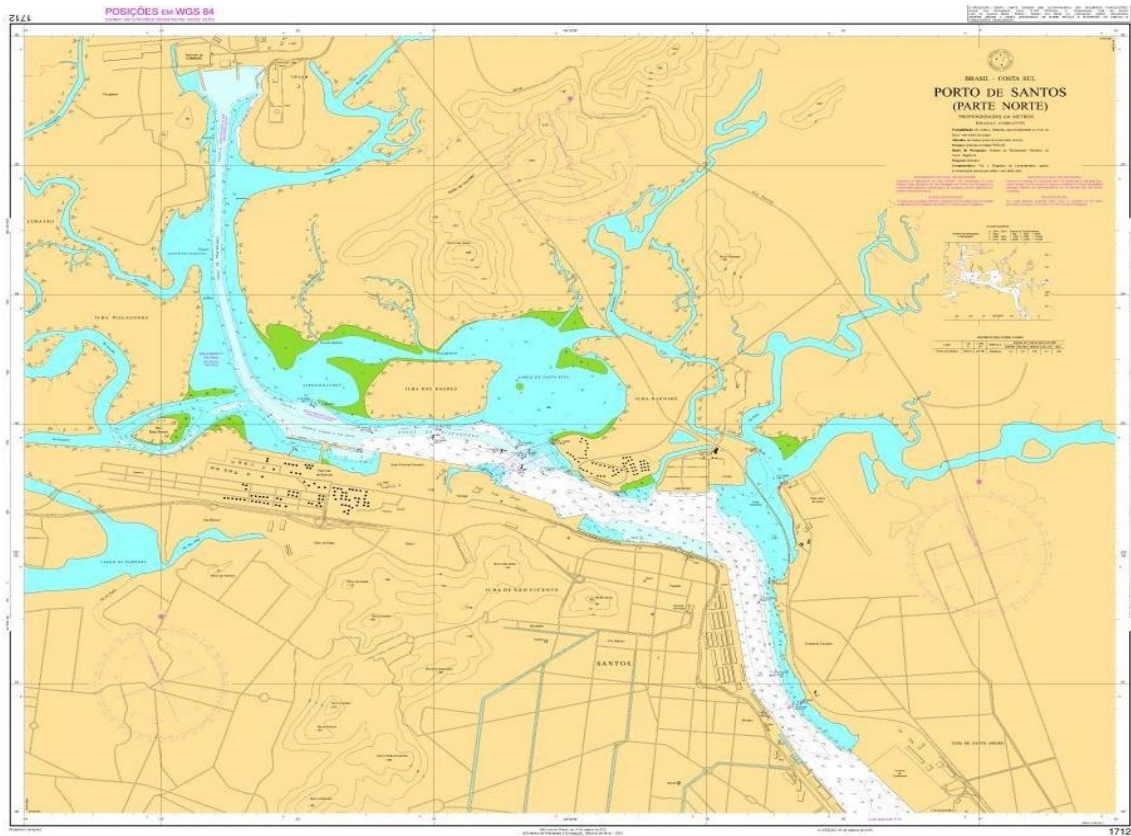
VEC – Vapor Emission Control

VTS- "Vessel Traffic Service" – Vessel traffic service.

12. APPENDICES

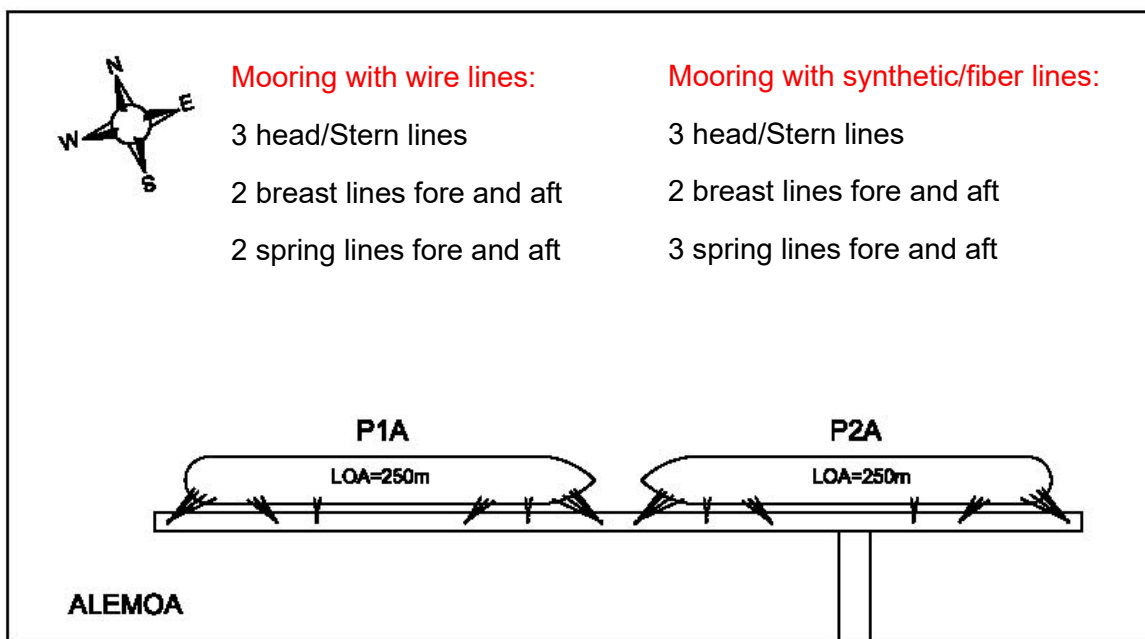
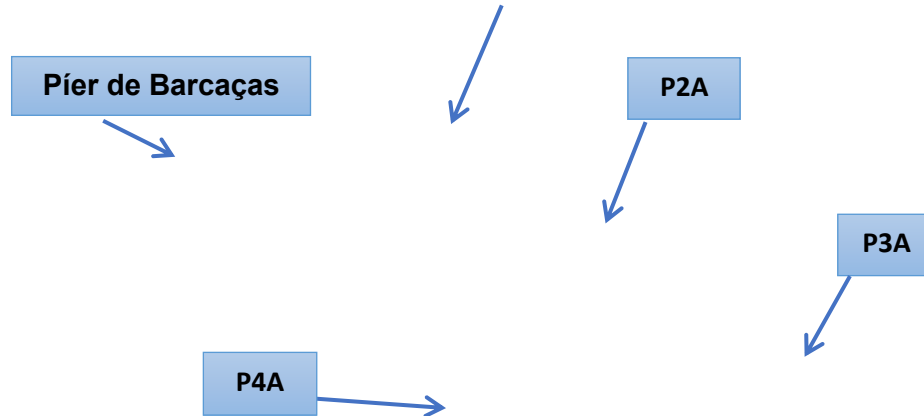
APÊNDICE A – Berths and approaches to the Santos Terminal.

WATERWAY TERMINAL OF SANTOS
PORT INFORMATION
TERMINAL INFORMATION BOOKLET (TIB)

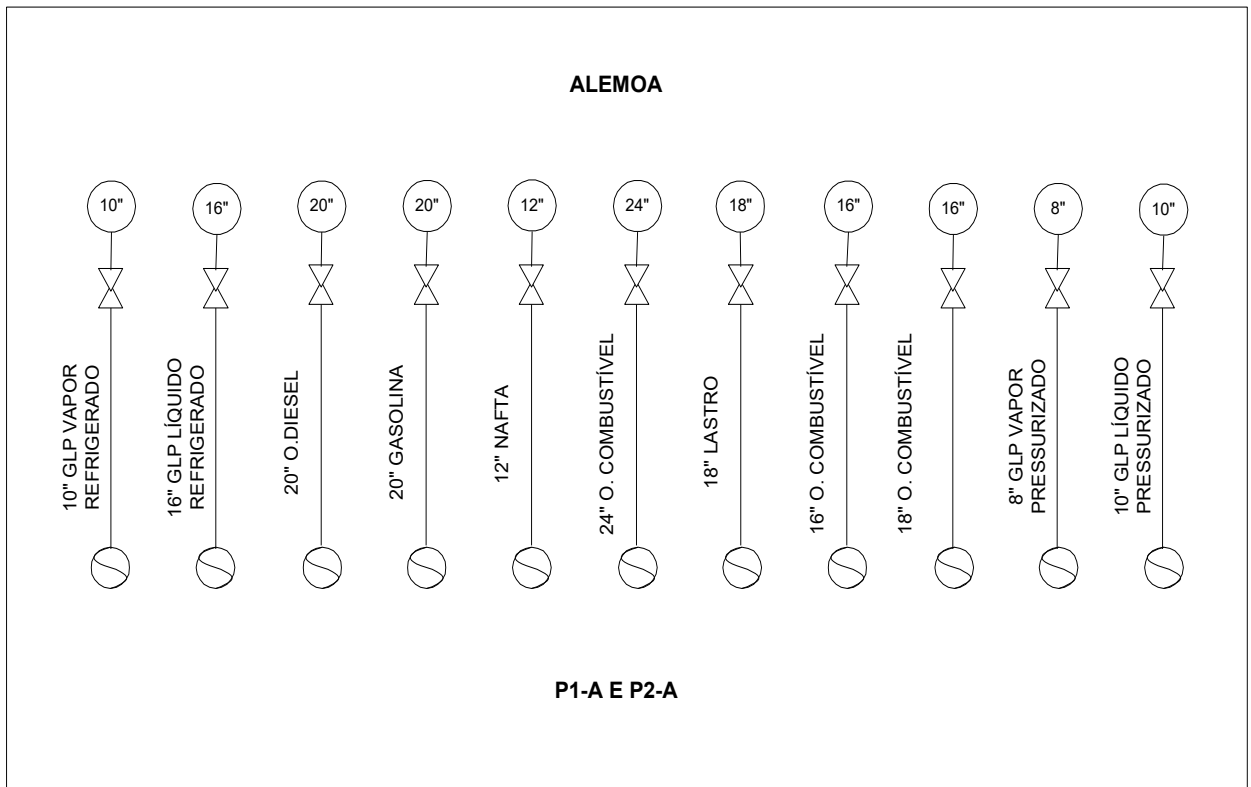


APÊNDICE B – Diagram of Berths





APÊNDICE C – Cargo Lines, dimensions and flange sizes



APÊNDICE G

Correspondence between the deadweight tonnage (DWT) of the vessel, longitudinal static traction force (bollard pull) required and minimum number of tugs to be used.

TPB (t)	(BOLLARD PULL) MT	Number of recomenden Tugs
De 2.000 até 2.500	3.0	1
De 2.501 até 3.000	5.0	1
De 3.001 até 4.500	6.0	1
De 4.501 até 5.000	7.0	1
De 5.001 até 7.500	9.0	1
De 7.501 até 10.000	11.0	1 a 2
De 10.001 até 12.500	14.0	1 a 2
De 12.501 até 15.000	17.0	1 a 2
De 15.001 até 17.500	19.0	1 a 2
De 17.501 até 20.000	21.0	1 a 2
De 20.001 até 25.000	25.0	1 a 2
De 25.001 até 30.000	28.0	1 a 2
De 30.001 até 35.000	32.0	2
De 35.001 até 40.000	36.0	2

De 40.001 até 45.000	39.0	2
De 45.001 até 50.000	42.0	2
De 50.001 até 60.000	46.0	2
De 60.001 até 70.000	51.0	2
De 70.001 até 80.000	53.0	2
De 80.001 até 90.000	55.0	2 a 3
De 90.001 até 100.000	56.0	2 a 3
De 100.001 até 110.000	58.0	2 a 3
De 110.001 até 120.000	60.0	2 a 3
De 120.001 até 130.000	62.0	2 a 3
De 130.001 até 140.000	64.0	2 a 3
De 140.001 até 150.000	66.0	2 a 3
De 150.001 até 160.000	81.0	2 a 3
De 160.001 até 170.000	83.0	2 a 3
De 170.001 até 180.000	86.0	2 a 3
De 180.001 até 190.000	87.0	2 a 3
De 190.001 até 200.000	89.0	2 a 3
De 200.001 até 210.000	90.0	4
De 210.001 até 220.000	91.0	4
De 220.001 até 230.000	93.0	4
De 230.001 até 240.000	95.0	4
De 240.001 até 250.000	96.0	4
De 250.001 até 270.000	98.0	4
De 270.001 até 290.000	101.0	4
De 290.001 até 310.000	106.0	4
De 310.001 até 330.000	110.0	4 a 6
De 330.001 até 350.000	114.0	4 a 6
De 350.001 até 370.000	118.0	4 a 6
De 370.001 até 390.000	121.0	4 a 6

Table 13

LIST OF IMPORTANT ADDRESSES AND PHONE NUMBERS IN THE PORT:

Delegacia de Polícia Federal.

Rua Riachuelo, 27

Centro - Santos - SP

Telefone: (13) 3213-1817, 3213-1800 ou 3213-1801(Plantão)

Delegacia da Receita Federal

Rua do Comércio, 86

Centro – Santos – SP

Telefone: (13) 4009-1203

Alfandega do Porto de Santos

Praça da República s/n°

Centro - Santos - SP
Telefone: (13) 3208-2000 ou 3208-2001

Capitania dos Portos.

Av. Perimetral, s/nr.
Zona Portuária - Santos - SP.
Telefone: (13) 3221-3456

Capitania dos Portos (Núcleo de Apoio)

Av. Conselheiro Nébias, 488
Encruzilhada
CEP 11045-000
Telefone: (13) 3224-9900

Praticagem de Santos.

Av. Almirante Saldanha da Gama nº 64
Ponta da Praia - Santos - SP.
Telefone: (13) 3269-4043 ou 3269-4045
Fax: (13) 3261-5098

Guarda Portuária (GPORT).

Av. Conselheiro Rodrigues Alves, s/nº
Bairro: Macuco
Telefone: (13) 3202-6565
Pça José Bonifácio, 53
Centro - Santos - SP.
Telefone: (13) 3224-8533, 3224-4983, 3224-5869

Agência Marítima Conesul

Rua Martim Afonso, 34 1º andar
Centro - Santos - SP.
Telefone: (13) 3222-7444 / (13) 7850-0106
Fax: (13) 3222-2805