



PORT INFORMATION

Terminal
SANTOS

1st edition





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INTRODUCTION

This publication is prepared by Petrobras Transporte S.A. (Transpetro), which operates the Marine Terminal of Santos (Alemoa Tanker Terminal) at the Port of Santos. It provides essential information to ships operating at the Terminal. This document is also distributed internally within the organization, and to interested parties at the port, local and national authorities, in two versions – Portuguese and English.

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

The Terminal reserves itself the right to change any of its operational features herein presented, with no advance notice.

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

Management of the Marine Terminal of Santos – SP

Phone: [55 13] 3296-3670

Fax: [55 13] 3230-4999

Rua Albert Schweitzer, 197

Zip Code: 11095-530 – Santos – SP – Brazil

Petrobras Transporte S.A. – Transpetro

Av. Presidente Vargas, nº 328 / 9º andar – Centro
ZIP Code: 20091-060 – Rio de Janeiro – RJ – Brazil
Phone: (55 21) 3211-9085
Fax: (55 21) 3211-9067

The most recent version of this publication and those for other Transpetro Terminals may be obtained on the website: www.transpetro.com.br.

DEFINITIONS

AIS – Automatic Identification System – Automatic ship identification system.

BP – Bollard pull – Static traction.

COW – Crude oil washing – Cargo tank cleaning with crude oil.

CRE – Emergency Response Center.

Displacement – Total ship weight with cargo, fuel, supplies, spares, etc."

Dry tide – A condition in which the tide reaches the minimum level in a given period of the year.

DWT – Deadweight tonnage – Cargo weight, plus fuel, supplies, water, lubricants, etc."

Free board – Vertical distance from the water surface to the ship's deck.

Giaont – Safety Surveyor Staff.

IMO – International Maritime Organization.

IRPCS – International Regulations for Preventing Collisions at Sea.

Isgott – International Safety Guide for Oil Tankers and Terminals.

ISM Code – International Safety Management Code.

ISPS Code – International Ship's and Port Facilities Security Code.

LCP – Local Contingency Plan.

Marpol – Marine Pollution Convention.

NTPS – Traffic and Stopover Procedures in Santos.

Solas – Safety of Life at Sea – International Convention for Safety of Life at Sea.

Sopep – Shipboard Oil Pollution Emergency Plan.

Squat effect – Increase in a ship's draft due to the increase in the displacement speed.

Syzygy tide – A condition in which the tide reaches the maximum level in a given period of the year.

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

UTC – Universal Time Control.

VTS – Vessel Traffic Service – Traffic Service to the Ship.

CHARTS AND REFERENCE DOCUMENTS

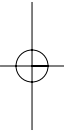
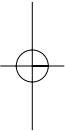
Information on the Terminal may be obtained in the following publications.

Charts

Area	Brazil (DHN)	British Admiralty
Anchorage and Port approach	1700/1701/1711	19
Mouth of the bar and channels	1701	19
Terminal and approach area	1701	1465

Others publications

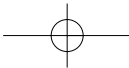
Type/subject	Brazil (DHN)	British Admiralty
Pilotage or navigation instructions book	South Coast Route	Pilot Books Sailing Directions for South America
Rules and procedures	NTPS	X



PORT INFORMATION



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DOCUMENTS AND INFORMATION EXCHANGE

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

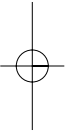
Information	Prepared by:			Delivered to			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
Before Arrival							
Estimated Time of Arrival (ETA) and ship information		X		X			As per Appendix E
Essential Terminal information	X				X		As per Appendix D
Before Cargo or Bunker Transfer							
Details about on-board cargo/slop/ballast		X		X			As per Appendix F
Essential operating information (fill in locally)	X				X		As per Appendix F
Ship/Shore Safety Checklist			X			X	As per Isgott Appendix A

continue

Information	Prepared by:			Delivered to			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
During Cargo or Bunker Transfer							
Repeat Ship/Shore Safety Checklist			X			X	As per Isgott Appendix A
After Cargo or Bunker Transfer, before Departure							
Information required for unberthing the ship			X			X	Amount of fuel and water onboard
After Unberthing, on Leaving Port							
Information concerning port departure data		X		X			Pilot disembarkation time and port departure time



DESCRIPTION OF THE PORT AND ANCHORAGE AREA



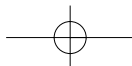
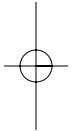
5.1 General Description

The Port of Santos, located on the State of São Paulo coastland, is public and managed by the Companhia Docas do Estado de São Paulo (Codesp). It is the largest Brazilian port and handles 60 million tonnes of miscellaneous cargoes annually. The port has 12 km of mooring berths, distributed on the two banks of the Santos estuary.

The Port of Santos interacts with the urban environment of two cities: Santos, on the right bank, and Guarujá, on the left bank. On the Santos side, especially in the old quarter, there is no physical, traffic or any other type of segregation between the community and the port.

On the other bank, there is close proximity to disorganized housing estates, set up on lowlands and with no basic infrastructure and sanitation.

Under these circumstances, it is easy to see that the deliberate, negligent or accidental spillage of oil or other harmful substances may generate a serious source of pollution, harmful to an immense population, whether or not dependent on the port activities. In other words, pollution must be prevented at all costs.



5.2 Location

Coordinates

The Terminal coordinates are:

→ Latitude: 23° 55.3' S

→ Longitude: 046° 21.9' W

General geographical location

The Marine Terminal of Santos is located at the Port of Santos, on the right bank of the Piaçaguera channel, on the northern coast of the State of São Paulo, on the southeastern coast of Brazil.

5.3 Approaches to the Terminal

5.3.1 General description

The Santos bay, where the access channel to the Port of Santos begins, is formed by the estuary of several rivers, on which two large islands, São Vicente and Santo Amaro, are located, both separated from the continent, and from each other, by narrow channels. Its eastern limit is Ponta Munduba, with Ponta Itaipu on the western limit.

On São Vicente Island, one can find the cities of Santos and São Vicente and the Port of Santos, one of Brazil's most important ports. On the Santo Amaro Island, is the city of Guarujá and a number of specialized Terminals of the Port of Santos.

The channel bordering the port and its Terminals runs between the two Islands.

5.3.2 Recognition and demand on approach

The navigator proceeding from an easterly direction must first recognize Alcatrazes Island, and then the islands of Laje de Santos and Moela, and be on the look out for possible difficulties in identifying the latter, which is confused with the coast when seen from certain sectors. Proceeding from the south, the first recognizable points are Queimada Grande and Laje de Santos islands.

Once the landing points are identified, positioning the ship is facilitated by the lighthouses existing on all the islands, and the approach to the bay can be easily carried out, only avoiding navigation near Alcatrazes, Laje de Santos, Parcel dos Reis and Laje Pedro II islands. Attention must also be given to the large number of fishing boats operating in the area, especially between the Queimada Grande and Laje da Conceição islands, and between Moela and Laje de Santos islands.

The elevations of the Munduba (to the east) and Itaipu (to the west) points, and the sinuous contour of the bay, as well as the nearby islands, also facilitate radar-guided landing. When approaching from the open sea, Moela radio lighthouse is an important aid, and the DGPS reference station, which uses this radio lighthouse carrier, increases the landing accuracy for those navigating via GPS.

The approach to the external anchorage areas and the pilot's point of embarkation poses no difficulties, provided the rules on traffic and staying in port are complied with, and as long as special attention is paid to the large number of moving and anchored vessels.

The Port of Santos and its Terminals are accessed through a channel, which has dredged stretches called sections A, B, C and D, whose major features are:

Section A – from the Ponta Munduba parallel to Ponta da Praia, with 4.85 miles in length, minimum width of 150 meters, and dredged to a depth of 12.80 meters. The axis of this section is defined by three luminous alignments A, B and C; on the stretch between Palmas Island and Ponta da Praia; its banks are beacon signaled by numbered lighting buoys, on the starboard and port sides.

Section B – from Barnabé Island Terminal to Marine Terminal of Santos (Piaçagüera channel), 2 miles in length, minimum width of 100 meters, and dredged to a depth of 11 meters. It is beacon signaled by numbered lighting buoys, on the starboard and port sides.

Section C – in front of the Marine Terminal of Santos, to the north of Section B, dredged to a depth of 6 m (1991). Its north bank is beacon signaled by numbered lighting buoy to starboard.

Section D – from the Marine Terminal of Santos to the Cosipa Terminal (Piaçagüera channel), 2.4 miles long, minimum width of 100 meters, and dredged to a depth of 12 meters. Its entire extension is beacon signaled by numbered lighting buoys, on the starboard and the port sides, not represented on the chart, and whose changes are not disclosed via Warnings to Navigators.

Since the depths of the channel sections change, it is important to pay attention to the information on these changes, disclosed via temporary (T) or preliminary (P) notice, in the fortnightly "Advices to Navigators" brochure, published by DHN.

5.3.3 Hazards

In the Santos Bay, navigation hazards are located at distances of less than 0.3 mile from the bay shore, with numerous submerged or exposed slabs and stones.

Along the access channel to the Port and its Terminals, special attention must be given to:

→ Pedra de Teffé (Teffé Stone), at a depth of 9.4 meters, near the Port docks, between the warehouses 25 and 26, beacon signaled by a lighting buoy on the port side;

→ the Ais Giorgis sunken wreck, located at $23^{\circ} 56.59' S - 046^{\circ} 18.65' W$, beacon signaled by the western cardinal lighting buoy; and the depths of the dredged Piaçagüera channel banks, which are less than 2 meters.

5.3.4 Anchorage areas

The anchorage areas are separate as a function of the ship's schedule and situation, and are numbered from 1 to 8, and demarcated on the charts by the limit line of the anchorage area.

External anchorage areas

Anchorage area No. 1 – for warships. Its area takes in the following geographical coordinates.

- a) Lat. $23^{\circ} 59' 24'' S - \text{Long. } 46^{\circ} 20' 12'' W$
- b) Lat. $23^{\circ} 59' 24'' S - \text{Long. } 46^{\circ} 20' 48'' W$
- c) Lat. $24^{\circ} 00' 00'' S - \text{Long. } 46^{\circ} 20' 48'' W$
- d) Lat. $24^{\circ} 00' 00'' S - \text{Long. } 46^{\circ} 20' 24'' W$

Anchorage area No. 2 – for ships requiring sanitary or clearance inspection (crew disembarkation and embarkation, workshop services, and movement of materials), with stopover time not exceeding 3 hours.

- a) Lat. $24^{\circ} 00' 45'' S - \text{Long. } 46^{\circ} 20' 10'' W$
- b) Lat. $24^{\circ} 00' 45'' S - \text{Long. } 46^{\circ} 19' 42'' W$
- c) Lat. $24^{\circ} 01' 30'' S - \text{Long. } 46^{\circ} 20' 30'' W$
- d) Lat. $24^{\circ} 01' 30'' S - \text{Long. } 46^{\circ} 19' 42'' W$

Anchorage area No. 3 – for ships with berthing schedule defined for the next 24 hours.

- a) Lat. $24^{\circ} 03' 00'' S - \text{Long. } 46^{\circ} 20' 48'' W$
- b) Lat. $24^{\circ} 06' 00'' S - \text{Long. } 46^{\circ} 22' 09'' W$
- c) Lat. $24^{\circ} 06' 00'' S - \text{Long. } 46^{\circ} 18' 36'' W$
- d) Lat. $24^{\circ} 05' 18'' S - \text{Long. } 46^{\circ} 18' 36'' W$

Anchorage area No. 4 – for ships with berthing schedule, but with day and time undefined.

- a) Lat. $24^{\circ} 06' 00'' S - \text{Long. } 46^{\circ} 22' 06'' W$
- b) Lat. $24^{\circ} 06' 00'' S - \text{Long. } 46^{\circ} 18' 36'' W$
- c) Lat. $24^{\circ} 10' 00'' S - \text{Long. } 46^{\circ} 23' 51'' W$
- d) Lat. $24^{\circ} 05' 18'' S - \text{Long. } 46^{\circ} 18' 36'' W$
- e) Lat. $24^{\circ} 05' 18'' S - \text{Long. } 46^{\circ} 15' 00'' W$
- f) Lat. $24^{\circ} 10' 00'' S - \text{Long. } 46^{\circ} 15' 00'' W$

Anchorage area No. 5 – for ships still with no berthing schedule.

- a) Lat. 24° 10' 00" S – Long. 46° 20' 00" 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° 05' 18" S – Long. 46° 15' 00" W
- e) Lat. 24° 05' 18" S – Long. 46° 10' 00" W

Anchorage area No. 6 – for ships in quarantine and vessels with suspected damage to packaging and/or leakage of radioactive material.

- a) Lat. 24° 10' 00" S – Long. 46° 20' 00" 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° 05' 18" S – Long. 46° 15' 00" W
- e) Lat. 24° 05' 18" S – Long. 46° 10' 00" W
- f) Lat. 24° 15' 00" S – Long. 46° 10' 00" W

Notes:

The coordinates above refer to the nautical charts 1701 and 1711.

When the ships arrive at the bar of the Port of Santos, or when they move for whatever reason, they must contact the Santos Pilot Station, by VHF, channels 11 and 16, informing position and anchoring time.

Internal anchorage areas

Anchorage area No. 7 – for ships with maximum draft of 9 meters, during daylight only, located in the area included within the following geographical coordinates:

- 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 area No. 8 – for small vessels and leisure boats.

Forbidden anchorage

It is forbidden to anchor:

- ships outside demarcation areas on the chart, without the prior authorization from the port authority (CODESP) and the Harbor Master;
- any vessel in the cable areas and submarine channels marked on the chart; at distances of less than 100 meters in daylight, and 200 meters at night, around the

slopes of the Munduba and Itaipu points, where the Andradas and Itaipu fortresses respectively are located; and at distances of less than 100 meters from each side of the floater heads or ferryboat terminals in Santos and on Santo Amaro Island.

5.3.5 Navigation aids

The following characteristic points, described from east to west, facilitate navigation and anchorage in Santos Bay:

Morro da Barra (24° 00.9' S – 046° 18.9' W) – On the extreme west of Santo Amaro Island, with dark vegetation and an altitude of 330 meters.

Palmas Island – Near the west coast of Santo Amaro Island, rocky, whitish in color, and with buildings on its upper section. Here the Ilha das Palmas lighthouse is to be found, a cylindrical reinforced concrete tower constructed on the slab of a scarlet colored house, 4 meters tall and with a red flashing light at 18 meters' altitude with a range of 5 miles.

Porchat Island – Elevated point at east of the São Vicente bar with an altitude of 110 meters. Entirely urbanized, it characterizes the extreme western beaches in the city of Santos.

Itaipu Hill – 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.

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. The Boqueirão No. 2 lighthouse (posterior) is equipped with racon Morse code N, with a range of 19 miles.

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.

5.3.6 Port limits

The official port limits start at the alignment of the coordinates Latitude 24° 02' 03" S and Longitude 046° 24' 00" W (Ponta Itaipu) and end at Latitude 24° 02' 42" S and Longitude 046° 17' 24" W (Ponta Munduba).

5.3.7 Port control

The Port of Santos does not provide VTS system, and the following procedures, in addition to Ripeam, must be complied with:

- 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:
 - 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.
- Navigating in the channel must be carried out at a reduced speed, with a maximum of 8 knots, except for the boats belonging to the Harbor Master and Fire Department, when required;
- at night, the berthing and unberthing, casting off and the towing of vessels without their own propulsion and/or control systems, are not permitted;
- when moving, the anchor must be kept above the floating line (by the bollards);

- The maneuvers required for berthing may be carried out away from the berthing place, as long as the restrictions indicated on the chart are complied with;
- only small boats, authorized by the Harbor Master may navigate among the anchored ships, while the embarkation and disembarkation of personnel and material must be restricted to the customs areas;
- berthed ships may not keep the gangway and pilot ladders lowered from the sea side. The sea side gangway and pilot ladder must remain retracted in its cradle, while the dock side gangway must have a safety net;
- anchored ships are allowed to lower a gangway during the period from dawn to dusk. Outside of this period, the gangway may only be lowered when required;
- anchored or berthed ships must deposit on-board garbage into proper containers with lids, until it is removed. It is forbidden to use garbage dumps, plastic bags or other containers suspended over the side of the ship;
- it is prohibited to discharge into the sea any kind of sewage from the hold or from tanks containing chemical products, oil or pollutants;
- treating and painting the hull and deck treatment is permitted, while wharf ladder may be used in compliance with occupational safety rules;
- lifeboats may be lowered for crew training without prior approval from the Harbor Master;
- ships anchored and berthed must keep the hull adequately illuminated. Barges or supply boats berthed alongside the ship must also remain properly illuminated;
- any occurrences defined as on-board navigational facts or accidents during the lay-time, must be communicated by the ship's captain or his legal representative to the Harbor Master before the ship is cleared.

5.3.8 Impracticability of the Port of Santos

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.

Where the sea conditions prevent the pilot from coming on board, or where 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 or ship.

Where the pilot cannot safely disembark on leaving port, he may disembark, if necessary, at the next port.

5.3.9 Piaçagüera Channel

The traffic through the Piaçaguera channel, to Cosipa and Ultrafértil 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;
- nocturnal navigation is not permitted for ships over 228 meters long or whose draft is equal to or greater than 10.36 meters (34 feet);
- maximum permitted speed is 6 knots.

5.3.10 Pilotage

The 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 tonnes, provided they are commanded by a Brazilian maritime professional, ranking equal to or higher than 2nd officer

The mandatory pilotage zone is limited by the parallel 24° 00.55' S, at Santos Bay, and any berthing or unberthing location.

Ships with mandatory pilotage must receive and disembark the pilot:

- at the point whose coordinates are 24° 00.55' S – 046° 20.20' W, indicated on the chart;
- at the beacon signaled channel, near the 24° 00.55' S parallel, when required by the pilot and with the ship moving; or
- in the anchorage area, when pilot embarkation is requested with the ship at anchor.

In any situation, even under bad weather conditions, no vessel may navigate within the beacon-signaled channel without a pilot, at the north of the mandatory pilot embarkation and disembarkation location. If on leaving port it is impossible for the pilot to disembark, he must continue his journey until the next port.

The request for a pilot must be made at least 2 hours in advance of the arrival or berthing time, by Santos Radio (PPS) coastal station, or directly to the pilotage, via channel 16/11 VHF, or via telephone.

When using the services of a pilot, the ship's captain must comply with the following procedures established by the port authority:

- inform the pilot about the maneuvering conditions of his ship;
- provide the pilot with all material elements and information required for him to carry out his service;
- dismiss the pilot's support when convinced that the latter is assisting the maneuver in a hazardous way, request an immediate replacement, and formally communicate to the Captancy the technical reasons that led him to take this decision;
- do not dismiss the pilot before the point determined by the maritime authority for this purpose.

For unberthing at the Santos Terminal, the captain must request a pilot directly to the Santos Pilot, or via the maritime agency. The scheduled time shall be confirmed by the ship at least one hour and a half in advance, via radio VHF channel 16/11.

Pilotage is carried out by the company Práticos-Serviços de Praticagem do Porto de Santos e Baixada Santista, located at Avenida Almirante Saldanha da Gama, 64, Ponta da Praia, Santos, telephones (55 13) 3269-4050 or 3261-6340, and VHF radio-telephone permanent watch, call via channel 16, and operation via channel 11 (<http://www.santospilots.com.br>).

5.3.11 Tugs and port services

Employing tugs is mandatory for berthing, unberthing and moving maneuvers at the Port of Santos or its Terminals.

Application

- The maneuvers of ships, when mandatorily executed using the assistance of tug-boat(s), 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.

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 (when ever 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 line thrown from the forecastle towards the deck of the tug, thus preventing excessive tug/ship approach, and reducing the hydrodynamic interaction effects between the vessels;
- 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) Cosipa and Ultrafértil S.A.
- g) Sugar terminals: Copersucar and Teaçu
- 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-type 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 effect this replacement.
- When approaching the Saboó/Cosipa stretch of the Piaçaguera channel, ships equipped with bow thruster and/or stern thruster may use the assistance of only one azimuthal-type 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.

5.3.12 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.

5.3.13 General restrictions at the Port of Santos

A Codesp, the port authority and administrator, is in charge of dredging and maintaining the depths at the Port of Santos, including the Terminals located thereat. After the last dredging carried out in May 2002, the maximum operating drafts, referenced to the DHN standard, were defined as follows:

Navigation location	Meters	Feet
Bar to Warehouse 29	12.80	42'00"
From Warehouse 29 to Warehouse 12	12.00	39'04"
From Warehouse 12 to Marine Terminal of Santos	11.00	36'01"

When navigating through the channel, the squat effect is disregarded by the pilotage at Santos, because the Harbor Master limits maximum ship speed to 8 knots.

Maneuvering restrictions at the Marine Terminal of Santos (P-1A and P-2A)

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

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 tides – the ship may leave as from the 2nd hour after low tide, when this is less than 0.3 meter; when equal to or greater than 0.3 meter, no restrictions;
- ships longer than 200 meters and scheduled to leave with draft exceeding 34 feet (10.36 meters) must preferably berth by starboard.

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.

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.

Concerning length and beam at berthing (maximum)

- Daytime maneuvers: length of 250 meters and beam of 45 meters.
- Night-time maneuvers: length of 228 meters and beam of 45 meters.

Concerning crossing in the channel

- Ships are forbidden to cross in the Piaçaguera Channel.

Concerning operational limits

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

Berth	DWT/Displacement	Max, Length	Min, Length	Max, Draft	Max, Free Board	Min, Free Board
P-1A	60,000 / 80,000	250 m	110 m	11 m	12.10 m	3.00 m
P-2A	60,000 / 80,000	250 m	110 m	11 m	12.10 m	3.00 m

- the maximum limit for berthing is 60,000 tonnes deadweight, or 80,000 tonnes of total displacement;
- maximum length is 250 meters;
- minimum length is 110 meters, and the berthing of smaller vessels is subject to prior analysis by the Port Authority (Codesp), in order to check that the construction characteristics and hull configuration are compliant with the fenders;
- the draft is subject to change by Codesp, depending on the results from the bathymetry carried out;
- except for LPG, the loading arms must be connected to ships with maximum free board of 12.10 meters; this free board may exceptionally be increased, after the

Terminal has analyzed the tide and loading conditions, in order to prevent the possibility of the loading arm tilting over 90°;

→ the minimum free board is 3 meters.

5.4 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 effect their maneuver.

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

5.4.1 Navigation and berthing aids

The Terminal of Santos provides ship maneuver monitoring resources at P-1A and P-2A. This monitoring includes information and logging of speed, distance and the approach angle of the ships, as well as information on the direction and intensity of winds and tides, and is exhibited on a luminous display installed on a panel located between the two piers. Codesp owns the equipment, and is in charge of maintaining and operating it, while the control room is located at the P-2A head.

5.5 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.

5.5.1 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.

5.5.2 Temperature

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

5.5.3 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.

5.5.4 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.

5.5.5 Tidal currents

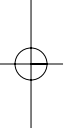
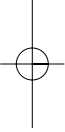
The average tidal range is 1.6 m, and its intensity is very sensitive at the syzygy tides, producing currents of up to 1 knot when the tide is rising, and near 1.4 knot at falling tide.

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.

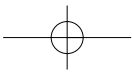
On rainy days, several affluents that discharge into the estuary substantially increase the tidal current velocity at falling tide.



PORT INFORMATION



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DESCRIPTION OF THE TERMINAL

6.1 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:

- União Terminais
- Stolthaven
- Transultra
- Tequimar
- Vopak

6.2 Physical Details of the Berths

See table on the next page.

6.3 Berthing and Mooring Arrangements

The mooring scheme must comply with the following conditions:

- use at least three spring lines (forward) and (aft) for any size of ship;
- maintain this mooring tight during the entire operation, so as to prevent longitudinal displacement by the ship along the docks while other ships are transiting through the Piaçagüera channel.

When the ship is equipped with wire spring lines, only two (forward) and (aft) may be accepted, at the Terminal's discretion.

Although coordinated by the Port Authority (Codesp), the berthing and mooring maneuvers are also monitored by the Terminal as to the correct positioning of the loading arms, and so as to monitor the technical performance of the pilot and the tugs, and to register any maneuver abnormalities.

See table on the next page.

6.4 Berth Features for Loading, Discharging and Bunker

Berth	Arm No,	Diameter/ Length m	Product Type	Class Pressure/ Work Pressure kgf/cm ²	Temperature °C	Envelope (range) m
P-1A	1	12"/22.04	LPG	300#/ L=25.0 V=25.0	- 45.0/ 40.0	20.40
	2	12"/12.50	Light	150# / 19.4	40.0	15.80
	3	12"/12.87	Light	150# / 19.4	40.0	15.20
	4	12"/12.87	Light	150# / 19.4	40.0	15.20
	5	12"/12.87	Dark	150# / 19.4	80.0	15.20
	6	12"/12.87	Dark	150# / 19.4	80.0	15.20
	8	12"/12.50	Light	150# / 19.4	40.0	15.80

continue

Physical Details of the Berths

Berth No,	Berth length (meters)	Depth (meters)	Tide (meters)		Beam (max.)	Ship length (max.)	Products Moved	DWT (max.)	Note
			Syzygy	Dry					
P-1A	250	12	1,70	-0,10	not applicable	250	Fuel oil, diesel, gasoline, LPG, bunker	80,000 tonnes	Equipped with instruments that record ship approach speed and distance in relation to the longitudinal axis of the pier
P-2A	250	12	1,70	-0,10	not applicable	250	Fuel oil, diesel, gasoline, LPG, bunker	80,000 tonnes	Equipped with instruments that record ship approach speed and distance in relation to the longitudinal

Berthing and Mooring Arrangements

Berth No,	Requires Pilot for Maneuvering	Ship Size example: DWT (max.)	No. and DWT of Tugs				Approach (Max.)			Mooring Points			Mooring Lines (bow and stern)		
			Berthing		Unberthing		Speed (cm/s)	Angle	Bollards	Hooks	Line	Breast Line	Spring Line		
			No,	DWT	No,	DWT									
P-1A	Yes	Up to 20,000	2	21	2	21	10	10°	8	-	3	2	-		
		Over 20,000	2	46	2	46	10	10°	8	-	4	3	3		
P-2A	Yes	Up to 20,000	2	21	2	21	10	10°	8	-	3	2	-		
		Over 20,000	2	46	2	46	10	10°	8	-	4	3	3		

Berth	Arm No,	Diameter/ Length m	Product Type	Class Pressure/ Work Pressure kgf/cm ²	Temperature °C	Envelope (range) m
P-2A	1	12"/8"/ 18.00	LPG	300 #/150# L=50.0 V=20.0	-50.0 / 50.0	16.0
	2	12"/12.50	Light	150# / 19.4	40.0	15.80
	3	12"/12.87	Light	150# / 19.4	40.0	15.20
	4	12"/12.87	Light	150# / 19.4	40.0	15.20
	5	12"/12.87	Dark	150# / 19.4	80.0	15.20
	6	12"/12.87	Dark	150# / 19.4	80.0	15.20

6.5 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.

6.6 Major Risks

The navigation conditions at the Piaçagüera channel, with ships heading to or returning from the Cosipa 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:

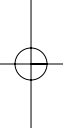
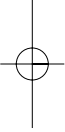
→ ship moored in nonconformity with the recommendations of the Terminal;

- 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.

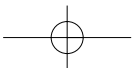
To prevent or minimize problems with any fortuitous displacement, the Terminal recommends the mooring described in the item 6.3.

The Terminal, at its discretion, may interrupt the operations of ships under the following circumstances, among others:

- fire or a fire starting onboard or ashore;
- passage of another ship, considered as critical;
- wind gusts at 40 knots or over;
- atmospheric electrical discharges in the surrounding area;
- at the request of the ship in operation.



PORT INFORMATION



PROCEDURES

During the ship's laytime at the port, a series of actions are taken so as to enable safe operations and to manage risks in such a way as to minimize them. At all stages, and as described in the items and sub-items below, steps are taken with a view to facilitating the operations and planning them properly.

7.1 Before Arrival

7.1.1 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's 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.

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.

7.1.3 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.

7.2 Arrival

7.2.1 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.

Documents required for ship clearance

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).

7.2.2 Bunkering requests must be forwarded to Petrobras (UN-Bunker) via 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 via 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.

7.2.3 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.

7.2.4 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.

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.

7.2.5 The Port Authority (Codesp) 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 sea side, 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.

7.2.6 The information from the Terminal to ship, and vice-versa, are described in the appendices D and E, respectively.

7.2.7 The list of important addresses and telephones in the port is shown below:

Delegacia de Polícia Federal (Federal Police)

Praça da República, 73/76 – Centro
ZIP Code: 11.013-905 – Santos – SP
Phone: (55 13) 3224-2731 / (55 13) 3233-3418

Delegacia da Receita Federal (Customs Service at the Port of Santos)

Praça da República, s/n – Centro
ZIP Code: 11.013-905 – Santos – SP
Phone: (55 13) 3234-1405

Inspetoria da Receita Federal (Internal Revenue Service)

Praça da República, s/n – Centro
ZIP Code: 11.013-905 – Santos – SP
Phone: (55 13) 3233-2410

Capitania dos Portos (Harbor Master)

Av. Conselheiro Nébias, 488 – Encruzilhada
ZIP Code: 11.045-000 – Santos – SP
Phone: (55 13) 3221-3454 / (55 13) 3227-8766

Núcleo de Polícia de Migração

Praça da República, 73/76 – 1º andar – Centro
ZIP Code: 11.013-905 – Santos – SP
Phone: (55 13) 3233-3418

Praticagem de Santos (Pilotage)

Av. Almirante Saldanha da Gama, 64 – Ponta da Praia
ZIP Code: 11.030-400 – Santos – SP
Phone: (55 13) 3269-4050 / (55 13) 3261-5098

Polícia Portuária (Port Police)

Phone: (55 13) 3234-3450

Saúde dos Portos (Port Health)

– Inspeção de Saúde dos Portos, Aeroportos e Fronteiras

Rua Frei Gaspar, 22 – 1º andar – Cj 11 e 12 – Centro

ZIP Code: 11.010-090 – Santos – SP

Phone: (55 13) 3219-5634

Medical Station (Unidade de Saúde do Porto)

Rua: João Otávio, 40 – Centro

ZIP Code: 11.013-120 – Santos – SP

Phone: (55 13) 3233-3228

Subdelegacia Regional do Trabalho (Labor Ministry Office)

Pça José Bonifácio, 53 – Centro

ZIP Code: 11.013-190 – Santos – SP

Phone: (55 13) 3224-8533

MARITIME AGENCIES

SAAM – Sudamericana Agência Marítima do Brasil

Rua Otávio Correa, 170 – Estuário

ZIP Code: 11.010-000 – Santos – SP

Telefone: (55 13) 3238-8157

Agência Marítima Conesul

Rua Martim Afonso, 34 – 1º andar – Centro

ZIP Code: 11.013-120 – Santos – SP

Phone: (55 13) 3222-7444 / (55 13) 3222-2805

Agência Marítima Brasileira Ltda.

Praça Rio Branco, 14 – 9º andar

ZIP Code: 11.010-921 – Santos – SP

Phone: (55 13) 3219-7171

Fax: (55 13) 3219-6800

Agência Marítima Granel Ltda.

Rua General Câmara, 141/94 – Centro

ZIP Code: 11.010-906 – Santos – SP

Phone: (55 13) 3221-6622

Fax: (55 13) 3221-2333

Agência Vapores Grieg S/A.

Rua Augusto Severo, 7 – 4º andar

ZIP Code: 11.010-919 – Santos – SP

Phone: (55 13) 3201-1157

Agência Willians Serviços Marítimos Ltda.

Rua Brás Cubas, 37 – 8° andar
ZIP Code: 11.013-919 – Santos – SP
Phone: (55 13) 3222-9334

Agência Wilson Sons

Rua Duiute, 58 – Centro
ZIP Code: 11.010-090 – Santos – SP
Phone: (55 13) 3211-2300

Empresa de Navegação Aliança S/A.

Rua Frei Gaspar, 22 – 6° andar – Centro
ZIP Code: 11.010-090 – Santos – SP
Phone: (55 13) 3211-1351

Fertimport Sociedade Anônima.

Rua Frei Gaspar, 22 – 8° andar – Centro
ZIP Code: 11.010-090 – Santos – SP
Phone: (55 13) 3201-9091 / (55 13) 3201-9097

LABOR UNIONS

Sindicato dos Estivadores de Santos, São Vicente, Guarujá e Cubatão

Rua dos Estivadores, 101
ZIP Code: 11.015-907 – Santos – SP
Phone: (55 13) 3222-0679

Sindicato dos Conferentes de Carga e Descarga do Porto de Santos

Rua João Pessoa, 296 – Centro
ZIP Code: 11.013-002 – Santos – SP
Phone: (55 13) 3222-4121 / (55 13) 3222-9404 / (55 13) 3235-1643

Sindicato dos Vigias Portuários de Santos

Rua Almeida Moraes, 15
ZIP Code: 11.015-450 – Santos – SP
Phone: (55 13) 3223-0493

CONSULATES

Federal Republic of Germany

Rua Frei Gaspar, 22 sala 104 – 10° andar – Centro
ZIP Code: 11.010-090 – Santos – SP
Phone: (55 13) 3219-5092

Belgium

Av. Paulista, 2073 – 13º andar – Bela Vista
ZIP Code: 01311-200 – São Paulo – SP
Phone: (55 11) 3171-1596

Denmark

Rua Oscar Freire, 379 – Cj 31 – Cerqueira César
ZIP Code: 01.426-900 – São Paulo – SP
Phone: (55 11) 3061-3625

France

Av. Paulista, 1842 – 14º andar – Paraíso
ZIP Code: 01.311-200 – São Paulo – SP
Phone: (55 11) 3371-5400

United Kingdom

Rua Ferreira de Araújo, 741 – 2º andar – Pinheiro
ZIP Code: 05.428-002 – São Paulo – SP
Phone: (55 11) 3813-0522

Holland

Av. Brigadeiro Faria Lima, 1799 – 3º andar – Jardim Paulistano
ZIP Code: 01.452-001 – São Paulo – SP
Phone: (55 11) 3813-0522

Finland

Rua Machado Bittencourt, 190 – Vila Clementino
ZIP Code: 04.044-903 – São Paulo – SP
Phone: (55 11) 5087-9542

Spain

Av. Ana Costa, 286
ZIP Code: 11.060-000 – Santos – SP
Phone: (55 13) 3234-9788/ 3234-7559

Italy

Av: Higienópolis, 436 – Santa Cecília
ZIP Code: 01.238-905 – São Paulo – SP
Phone: (55 11) 3663-7800

Norway

Rua: Augusto Severo, 7 – 4º andar – Centro
ZIP Code: 11.010-919 – Santos – SP
Phone: (55 13) 3219-5498

Panama

Av. Senador Feijó, 154 – Cj 11 – Vila Mathias
ZIP Code: 11.015-502 – Santos – SP
Phone: (55 13) 3222-8247

Paraguai

Av. Bandeira Paulista, 600 – 15º andar – Cj 153
ZIP Code: 04.532-011 – São Paulo – SP
Phone: (55 11) 3167-0412 / 3167-0455

Portugal

Rua D. Pedro II, 77 – Centro
ZIP Code: 11.013-002 – Santos – SP
Phone: (55 13) 3219-4230

Sweden

Rua Oscar Freire, 379 – Pinheiros
ZIP Code: 01.426-900 – São Paulo – SP
Phone: (55 11) 3061-1741

Uruguay

Rua Estados Unidos, 1284 – Jardim América
ZIP Code: 01.427-001 – São Paulo – SP
Phone: (55 11) 3085-8428

Greece

Rua João Pessoa, 69 – 16º andar – Centro
ZIP Code: 11.013-002 – Santos – SP
Phone: (55 13) 3219-7393

7.3 Berthing

7.3.1 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°.

7.3.2 Ship/shore 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 effected 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.

7.4 Before Cargo Transfer

7.4.1 To increase the efficiency of the discharging process for ships carrying cooled LPG, we recommend that the on-board tank pressures remain between 30 to 60 gf/cm² before berthing at the Terminal, as the tank pressure limits at the Terminal are 80 gf/cm².

7.4.2 The ship will be electrically grounded using a ground cable connected to the terminal's structure, except when operating LPG ships, whose loading arms are equipped with insulating flange joints.

Connection/disconnection must be made with the electrical switch opened, and the claw must be fastened made on a non-painted surface for the best possible electrical conductivity. This electrical grounding is carried out by an employee from Codesp.

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

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.

7.4.4 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.

7.4.5 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 7.4.6.

7.4.6 The Ship/Terminal Operational Safety Checklist (Isgott, 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.

7.4.7 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.

7.4.8 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.

7.4.9 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.

7.5 Cargo Transfer

7.5.1 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.

7.5.2 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.

7.5.3 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.

7.5.4 Conventional tank cleaning operations are not normally accepted. However, COW operation is accepted, conditional on prior schedule authorization (for purposes of

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.

7.5.5 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 the prior authorization of the Terminal.

7.5.6 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 anytime while the ship is in operation at the Terminal.

7.5.7 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.

7.5.8 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 section 9.

7.6 Cargo Measurement and Documentation

7.6.1 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.

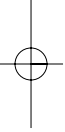
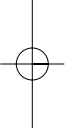
7.6.2 The final onboard measurements will be carried out by the ship's personnel and inspected by the Terminal representatives or other inspectors. The material used must be duly grounded and calibrated, and the measuring instruments must be explosion-

proof. The final release of the ship must occur after matching the quantities moved and complementing the laytime documentation.

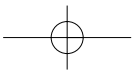
7.7 Unberthing and Leaving Port

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

7.7.2 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).



PORT INFORMATION





PORT AND ANCHORAGE AREA ORGANIZATION

8.1 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.

8.2 Maritime Authority

8.2.1 The maritime authority to which the Terminal is subordinated is the Harbor Master of São Paulo.

8.2.2 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.

8.2.3 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 5.3.4.

8.2.4 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.

8.3 Pilotage

8.3.1 It is compulsory to use pilotage in the Santos Terminal, and this complies with the rule established for the port as a whole (see item 5.3.9)

8.3.2 The Pilotage organization operating at the Port of Santos

Práticos – Serviços de Praticagem do Porto de Santos e Baixada Santista S/C Ltda.

Av. Almirante Saldanha da Gama, 64 – Ponta da Praia

ZIP Code: 11030-400 – Santos – São Paulo

Management telephones: (55 13) 3261-4050/3261-1806 – Fax (55 13) 3261-5098

Operational telephones: (55 13) 3269-4050/4051 – Fax (55 13) 3261-1990

8.3.3 In all situations, the pilotage service is set in motion by the ship's agent. In case of emergencies, and according to the availability, the pilot will board the ship at the earliest opportunity.

8.4 Tugs and Other Maritime Services

8.4.1 List of the tugs available at the Port of Santos

Tug Name	Construction Year	Power (HP)	Bollard Pull (tornage)	Company
Gemini	1976	1,680	20.2	Wilson Sons
Hydrus	1998	3,600	5.8	Wilson Sons
Orion	1991	2,250	27.8	Wilson Sons
Saturno	1928/1979	2,360	21.1	Wilson Sons
Inikis	1992	2,250	27.0	Wilson Sons
Pegasus	1981	2,170	30.7	Wilson Sons
Polares	1976	1,680	20.2	Wilson Sons
Hercules	1997	4,400	59.0	Wilson Sons
Arthur	1985	2,430	18.4	Metalnave
Merlin	1988	2,430	21.7	Metalnave
Caillean	1999	5,880	51.5	Metalnave
CNL Ametista	1999	3,470	40.0	CNL
Jaguaribe	1982	1,765	27.2	CNL
Lagoa Paranaense	1983	3,470	33.0	CNL
David	1998	4,000	50.0	Sulnorte
Pituba	1987	1,850	20.0	Sulnorte
Mossoró	1987	1,850	20.0	Sulnorte

The Santos Terminal does not have a specific vessel for helping to moor ships. This service is carried out by the pilotage boats.

When berthing ships with deadweight tonnage (DWT) over 60,000 tonnes, as well as LPG ships, two supporting boats will be available to help with the mooring.

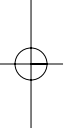
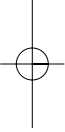
The Terminal provides boats that are used for installing and removing floating booms for the ships operating products with flash point over 60 °C, at the piers P-1A and P-2A.

8.4.2 Other maritime services at the Port of Santos

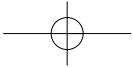
Several workshops provide naval maintenance and repair services, such as engine works, boiler works, electrical, electronic and cooling systems.

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.



PORT INFORMATION



EMERGENCY PLAN

9.1 Emergency Contacts

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

Organization	Operating Times	Identification Acronym	Telephone	Fax	VHF/UHF	
					Call	Conversation
Harbor Master	24 hours	CPSP	(55 13) 3221-3454	(55 13) 3222-3188	16	12 / 17 / 77
Tugs Wilson Sons	24 hours	-	(55 13) 3211-2300	(55 13) 3211-2345	16	13
Tugs CNL	24 hours	-	(55 13) 3219-5063	(55 13) 3219-5063	16	13
Tugs Metalnave	24 hours	-	(55 13) 3219-5681	(55 13) 3219-5020	16	13
Tugs Sulnorte	24 hours	-	(55 13) 3211-5040	(55 13) 3211-5041	16	13
Pilotage	24 hours	-	(55 13) 3261-4050	(55 13) 3261-5098	16	13

continue

Organization	Operating Times	Identification Acronym	Telephone	Fax	VHF/UHF	
					Call	Conversation
Control Room	24 hours	Captação	(55 13) 3014-6027	(55 13) 3014-6046	16	13
Terminal Control Room	24 hours	–	(55 13) 3014-6009	(55 13) 3014-6008	06	06
Operations (administrative)	7:00 am to 4:00 pm	–	(55 13) 3014-6027	(55 13) 3014-6046	–	–
Terminal Management	7:00 am to 4:00 pm	–	(55 13) 3014-6190	(55 13) 3014-6182	–	–
Fire Department	24 hours	–	(55 13) 3235-1626	(55 13) 3235-1626	–	–
Civil Defense	24 hours	–	(55 13) 3222-9563	(55 13) 3222-2308	–	–
Santos City Hall (Environment Secretariat)	8:00 am to 5:00 pm	PMS	(55 13) 3226-8080	(55 13) 3226-8106	–	–
Cetesb	24 hours	–	(55 13) 3232-9550	(55 13) 3232-9550	–	–
Ibama	24 hours	–	(55 13) 3227-5775	(55 13) 3227-4649	–	–

9.2 Environmentally Sensitive Areas

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.

9.3 General Description of the Organization for Combating Emergencies

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

Incidents within the Port of Santos Area

Incident type	Organization in Charge	Other Organizations Involved			
		Civil Defense	Transpetro	Cetesb	–
Collision in the channel	Harbor Master	Civil Defense	Transpetro	Cetesb	–
Vessel has run aground	Harbor Master	Civil Defense	Transpetro	Cetesb	Ibama
Collision at the berth	Harbor Master	Transpetro	Civil Defense	–	–

continue

Incident type	Organization in Charge	Other Organizations Involved			
		Civil Defense	Fire Department	Transpetro	Cetesb
Vessel is sinking	Harbor Master	Civil Defense	Fire Department	Transpetro	Cetesb
Fire onboard	Ship	Transpetro	Fire Department	Civil Defense	Harbor Master
Fire at the berth	Transpetro	Fire Department	Civil Defense	Harbor Master	–
Pollution	Transpetro or ship	Harbor Master	Cetesb	Ibama	–

9.4 Contingency Plans

9.4.1 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.

9.4.2 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 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 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 anytime.

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.

9.4.3 The Terminal has a medical station with a doctor and hospital orderly for patient care during office hours.

An ambulance equipped for first-aid care is also available 24 hours a day.

Serious emergency cases, or those occurring outside office hours, will be forwarded to municipal healthcare units.

9.5 Public Resources for Combating Emergencies

9.5.1 Port administrator

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

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

Codesp and the Empresa de Navegação São Miguel, a bunker supplier at the port, are developing a Mutual Cooperation Term for mitigating the effects from small accidental spills, in order to prevent and reduce the pollution within the organized port area.

The existing fire combat facilities at the Santos Terminal are owned by Codesp.

9.5.2 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.

9.5.3 Local emergency services

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

The ships anchored at the bar may request emergency medical assistance via Santos Rádio station, PPS prefix – which will retransmit the message to the Health authorities at the Port – or through the agency.

9.5.4 State and National Combat Organizations

The following plans may be called into action, depending on the emergency type, as established in the LCP/Santos:

- PCR – Regional Contingency Plan (Region V), which involves the regional bodies of Petrobras;
- PIE – Integrated Emergency Plan, which involves the Fire Department and companies in the region;
- CDA – Environmental Defense Plan of Petrobras, located in Guarulhos.

9.5.5 Mutual Assistance Plans

The Port of Santos has a Mutual Assistance Plan (PAM), which includes companies involved in the port activities. The port authority (Codesp) is in charge of maintaining it, by integrating the entire port, according to NR 29/97 (Occupational Safety and Health at the Port), and the laws No. 9605/98 (Environmental Crimes) and 9966/00 (Environmental Management/Port Facilities).

9.6 Combating Oil and Chemical Product Spills

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

9.6.1 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 9.4.2.

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

9.6.2 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.

9.6.3 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.

9.6.4 Tier-2 combat

Organization designated to combat a significant pollution incident.

In these events, regional Petrobras/Transpetro resources are requested. These resources, their readiness and activation mode are described in the LCP.

9.6.5 Tier-3 combat

Organization designated to combat a significant pollution incident.

In these events, national Petrobras/Transpetro resources are requested. These resources, their readiness and activation mode are described in the LCP.

9.7 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.

CONTACTS

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

10.1 Terminal

Location	Contact	Telephone	Fax	VHF/UHF Channels	
				Call	Conversation
Berth P-1A and P-2A	Operator	(55 13)-3014-6027	(55 13) 3014-6046	16	6
Control Center	Operator	(55 13)-3014-6009	(55 13)-3014-6008	16	6
Shift supervisor	Supervisor	(55 13)-3014-6145	(55 13)-3014-6008	–	Onshore 01
Security (SMS)	Supervisor	(55 13)-3014-6017	(55 13)-3014-6160	–	Onshore 01
CRE	Sailor on duty	(55 13)-3014-6189	(55 13)-3014-6160	16	6

10.2 Port Services

Organization	Contact	Telephone	Fax	E-mail	VHF/UHF Channels	
					Call	Conversation
Harbor Master	Official on duty	(55 13) 3221-3454 Extension 210	(55 13) 3222-3188	33-0@csp,mar,mil,br	16	–
Pilotage	Operator	(55 13) 3269-4050	(55 13) 3261-5098	práticos@bignet,com,br	16	13

continue

Organization	Contact	Telephone	Fax	E-mail	VHF/UHF Channels	
					Call	Conversation
Tugs Wilson Sons	Agency	(55 13) 3211-2300	(55 13) 3211-2345	Operation,santos@wilsonsons.com,br Agency,santos@wilsonsons.com,br	16	13
Tugs CNL	Agency	(55 13) 3219-5063	(55 13) 3219-5063	cnl@cnl.com,br	16	13
Tugs Metalnave	Agency	(55 13) 3219-5681	(55 13) 3219-5020	metalnavests@litoral.com,br mnavsp@litoral.com,br	16	13
Tugs Sulnorte	Agency	(55 13) 3211-5040	(55 13) 3211-5041	santos@sulnorte.com,br	16	13

10.3 Navigation Agents

Item 7.2.7 includes the major maritime agencies and their respective contacts.

10.4 Local Authorities, State and National Agencies

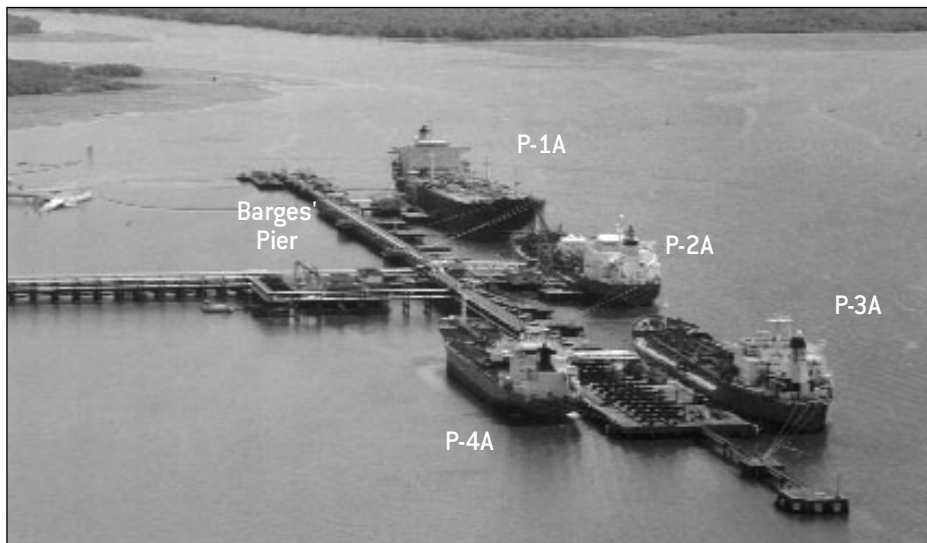
The table in item 9.1 lists these authorities and their respective contacts.

10.5 Emergency Combat Organizations

The emergency combat organizations available at the port are listed in the item 9.1.

APPENDICES

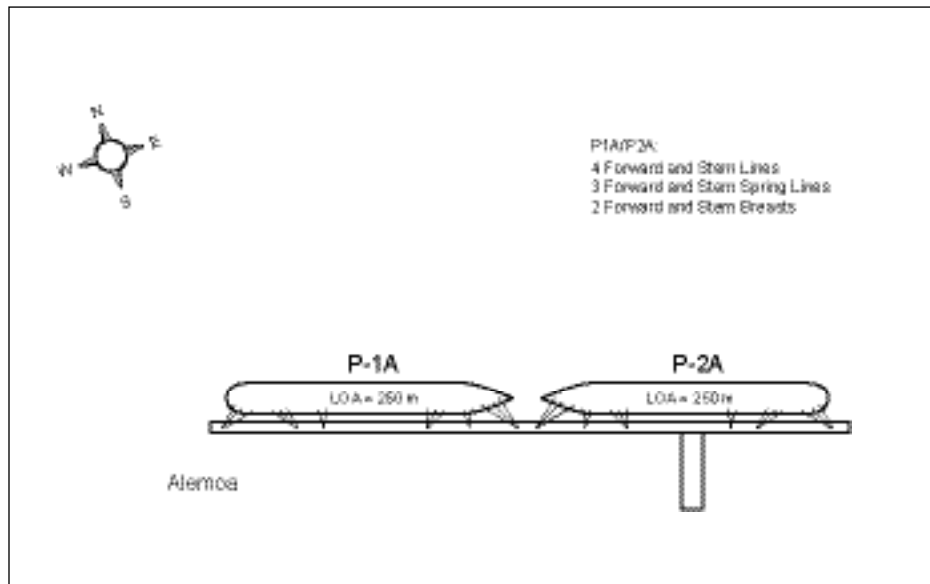
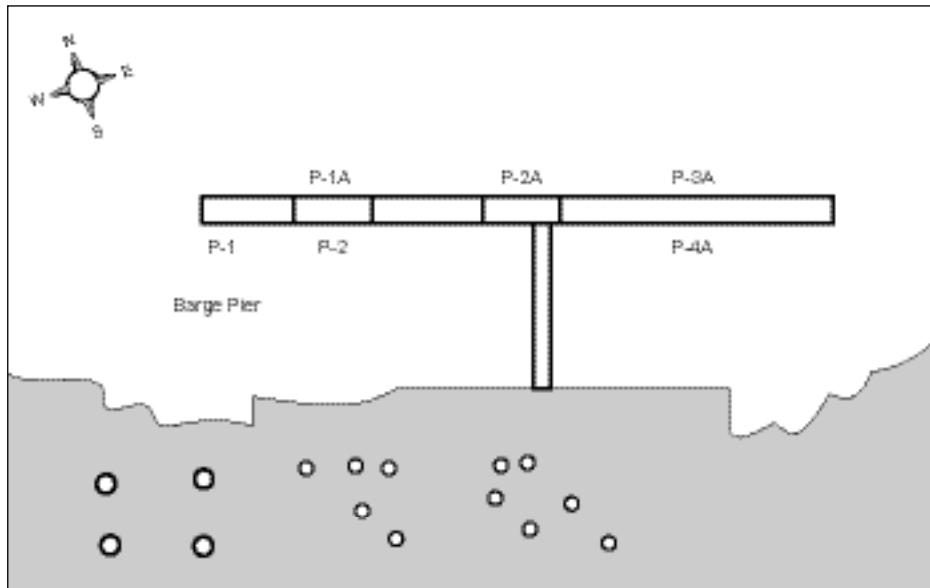
A – Berths and approaches to the Santos Terminal



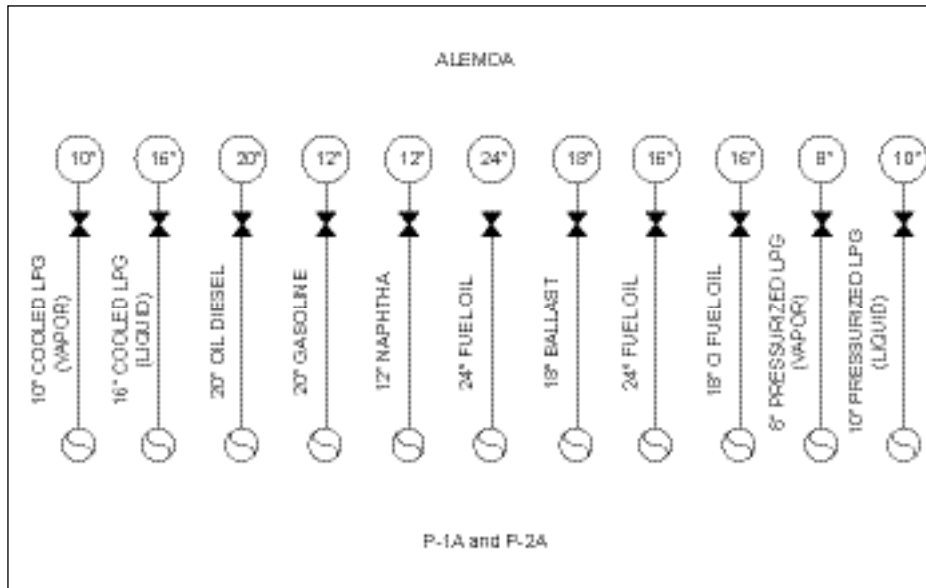
Carta

B – Berths, lengths and location of the mooring points

Terminal of Santos



C – Cargo Lines, dimensions and flange sizes



D – Essential Terminal information for the ships

Ship/Terminal Information Exchange

Item 3,1,4 of Isgott (Information from the Terminal to the ship before arrival)

To the Ship:					
From the Marine Terminal :					
Mooring berth:	Latitude:	Longitude:			
	Low tide draft: (m)	Water salinity: (mg/l)			
Berthing board	Port side:	Starboard:	According to the tide:		
	Maximum speed when berthing:				(m/s)
	Maximum angle when berthing:				(°)
	Speed/angle indicator position:				
Tugs available for maneuvering	Towing lines used in the maneuvers:				
	Auxiliary vessels available for maneuvers:				
	Call the ship's agency				
Mooring	Number of mooring lines required:				
	Line:		Breast line:		
	Spring line:		Material:		
Terminal equipment available for mooring					
Bollards:			Hooks:		
Additional mooring details:					
Access ladder	Terminal:		Ship:		
Connection details	Hoses:		Arms:		
	Diameter:		Pressure Class:		
Operating sequence	Product:	Loading 1°:	m ³	Discharging 1°:	m ³
	Product:	Loading 2°:	m ³	Discharging 2°:	m ³
	Product:	Loading 3°:	m ³	Discharging 3°:	m ³
	Product:	Loading 4°:	m ³	Discharging 4°:	m ³
	Has the sequence been changed?		Yes:	No:	
On-board tank measurement	Ship without inert gas system: Follow the recommendations in item 7,2,2 of Isgott,				
	Ship with inert gas system: Follow the recommendations in item 7,2,3 of Isgott,				
Necessidade de tanques desgaseificados			Yes:		No:
Berthed COW operations permitted?	Yes: Follow the recommendations in item 9,4 of Isgott,				
	No:				
Tank washing permitted for berthed ships?	Yes: Follow the recommendations in item 9,4 of Isgott,				
	No:				

Environmental wind condition limits	Speed:	knots	knots	knots
	Action:	Interruption	Disconnection	Unberthing
Environmental wave condition limits	Height:	> m	> m	> m
	Action:	Interruption	Disconnection	Unberthing
Operational limits (Product 1)	Variable:	Pressure >	Flow >	Temperature >
	Action:	Interruption	Interruption	Interruption
Operational limits (Product 2)	Variable:	Pressure >	Flow >	Temperature >
	Action:	Interruption	Interruption	Interruption
Possibility of receiving dirty ballast or slop?				
	Yes	Minimum fluidity	Maximum volume	
	No	°	m ³	
The product must be free of chlorinated or organo-chlorinated, or oxygenated solvents (ethanol, methanol and MTBE), machine residues contaminated with lubricant oil and metals, inorganic/organic chloride				

Responsible for the information:

E – Essential information from the ship to the Terminal

Port and Terminal:		
Vessel Information Request:		
Ship name:	Estimated Time of Arrival (ETA):	
Flag:	Last port:	
Captain's name:	Next port:	
Ship owners:	Agents:	
Does the ship have an inert gas system?		
Oxygen content:		
Length overall (LOA):	Draft at arrival:	
Length between perpendiculars:	Maximum draft during transfer:	
Beam:	Draft when leaving:	
Number of engines:	Transversal propulsion:	
Number of propellers:	Bow (number and power):	
	Stern (number and power):	
Tugs, minimum required:		
No, and static traction (bollard pull):		
Number and size of manifold flanges:	Distances:	
Cargo:	Bow to manifold:	
Ballast:	Hull to manifold:	
Bunkers:	Manifold height to main deck:	
Loading schedule (fill when applicable):		
Naming:		
Type and quantity: m ³	Type and quantity: m ³	Type and quantity: m ³
Ballast discharge at sea:		
Quantity: m ³	Estimated time:	
Slop/ballast discharge ashore:		
Quantity: m ³	Estimated time:	
Discharging schedule (fill when applicable):		
Type and quantity: m ³	Type and quantity: m ³	Type and quantity: m ³
Ballast:	Volume: m ³	Time:
Bunkers requested:		
Type and quantity:	Type and quantity:	
Additional information (if any):		

Please, send via fax or e-mail to the Terminal Supervisor.

F – Information to be exchanged before cargo transfer

Information between ship and terminal			
Ship name:		Mooring berth:	
Voyage number:		Berthing date:	
Contractual data			
Number of on-board pumps:			
Volumetric capacity 98%:		m ³	
Guaranteed discharge pressure (for discharge operation):		kgf/cm ²	
Simultaneous ballast/deballast capacity with loading/discharging:			
Voyage information			
Freighting type (VCP,TCP,COA, etc.):			
Voyage type (cabotage/long run):			
Origin and destination ports or locations:			
Did the ship request bunker?			
Communication mean between ship and Terminal:			
Cargo information			
Product:	Quantity:	Temperature:	API:
SLOP			
Quantity:	Temperature:		API:
Fluidity:	Origin:		
	Contaminants:		
Ballast			
Dirty Ballast:			Segregated Ballast:
Quantity:	Temperature:	Quantity:	
Operation information			
For discharging:	Will the ship perform special operation (COW, Inertization, etc.)?		
	Estimated time for the special operation:		
	Required pump downtime:		
For loading:	Advance notice time for TOP :		
	Flow during TOP period:		
	Quantity of ballast to be discharged:		
	Maximum flow allowed for deballast:		
Are there restrictions concerning electrostatic properties?			
Are there restrictions on using valves with automatic closure?			
Ship/Terminal conditions for the operation loading/discharging per product			
Ship	Pressure:	Terminal	Pressure:
	Flow:		Flow:
	Temperature: Max,:		Temperature: Max,:
	Min,:		Min,:

continue

Operation sequence per product
Quantity to be loaded/discharged:
Origin/destination tanks:
Onboard/onshore lines:
Loading arms/hoses used:
Operation forecasted to start/end:
Complementary operating and safety information

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 (table of the Annex 3-C of the Normas e Procedimentos da Capitania dos Portos de São Paulo)

DWT (tonnes)	Traction Force (Bollard Pull) (tonnes)	Recommended Number of Tugs
2,000 to 2,500	3.0	1
2,501 to 3,000	5.0	1
3,001 to 4,500	6.0	1
4,501 to 5,000	7.0	1
5,001 to 7,500	9.0	1
7,501 to 10,000	11.0	1 a 2
10,001 to 12,500	14.0	1 a 2
12,501 to 15,000	1.0	1 a 2
15,001 to 17,500	19.0	1 a 2
17,501 to 20,000	21.0	1 a 2
20,001 to 25,000	25.0	1 a 2
25,001 to 30,000	28.0	1 a 2
30,001 to 35,000	32.0	2
35,001 to 40,000	36.0	2
40,001 to 45,000	39.0	2
45,001 to 50,000	42.0	2
50,001 to 60,000	46.0	2
60,001 to 70,000	51.0	2
70,001 to 80,000	53.0	2
80,001 to 90,000	55.0	2 a 3
90,001 to 100,000	56.0	2 a 3
100,001 to 110,000	58.0	2 a 3
110,001 to 120,000	60.0	2 a 3
120,001 to 130,000	62.0	2 a 3
130,001 to 140,000	64.0	2 a 3
140,001 to 150,000	66.0	2 a 3
150,001 to 160,000	81.0	2 a 3
160,001 to 170,000	83.0	2 a 3

continua

DWT (tonnes)	Traction Force (Bollard Pull) (tonnes)	Recommended Number of Tugs
170,001 to 180,000	86.0	2 a 3
180,001 to 190,000	87.0	2 a 3
190,001 to 200,000	89.0	2 a 3
200,001 to 210,000	90.0	4
210,001 to 220,000	91.0	4
220,001 to 230,000	93.0	4
230,001 to 240,000	95.0	4
240,001 to 250,000	96.0	4
250,001 to 270,000	98.0	4
270,001 to 290,000	101.0	4
290,001 to 310,000	106.0	4
310,001 to 330,000	110.0	4 a 6
330,001 to 350,000	114.0	4 a 6
350,001 to 370,000	118.0	4 a 6
370,001 to 390,000	121.0	4 a 6

Note: The bollard pull totals included in this table are considered the minimum required for carrying out the maneuvers, with tidal currents that do not impair them.