



STANDARDS FOR TRANSPETRO TERMINALS  
TERMINAL INFORMATION

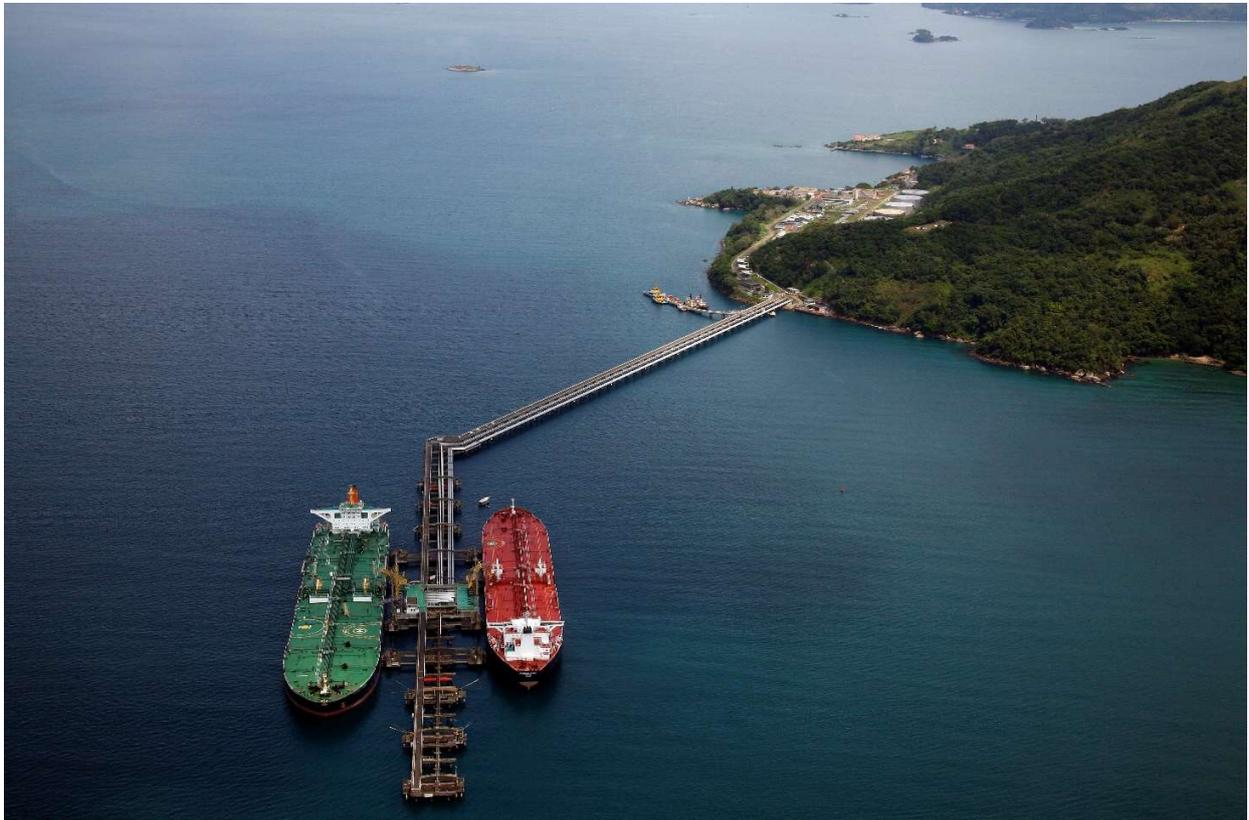
Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

# **TEBIG**

## **PORT INFORMATION**



### **ALMIRANTE MAXIMIANO FONSECA**

### **MARITIME TERMINAL**



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## 1. INTRODUCTION

This publication was prepared by Petrobras Transportes S.A. (TRANSPETRO) that operates the Almirante Maximiano Fonseca Maritime Terminal, also known as TEBIG, in the port of Angra dos Reis. Provides essential information for ships operating in the terminal. This document is also distributed internally in the organization, to the stakeholders of the port, local and national authority.

The Port Information document has Portuguese and English versions.

The information contained in this publication is intended to supplement, never replace or alter any type of national or international legislation, instructions, guidelines or official publications. Information that contradicts any item contained in the above-mentioned documents must therefore not be taken into consideration.

This document, after study, is updated, following instructions / recommendations from USP.

The Terminal reserves the right to alter any of the operational characteristics presented herein without prior notice.

If misleading information is found that needs to be updated, please contact:

- **Management of the Waterway Terminal of Angra dos Reis**
- Address: Rodovia Procurador Haroldo Fernandes Duarte, km 467
- Postal Code: 23.916-000 – Angra dos Reis – RJ.
- Telephone: (24) 3366-5201
- Fax: (24) 3366-5390
  
- **Petrobras Transporte S.A - TRANSPETRO**
- Address: Avenida Presidente Vargas, nº 328
- Postal Code: 20.091-060 – Centro - Rio de Janeiro – RJ
- Telephone: (21) 3211-9085
- Fax: (21) 3211-9067

The latest version of this Port Information can be obtained from the following address:

[http://www.transpetro.com.br/pt\\_br/areas-de-negocios/terminais-e-oleodutos/informacoes-portuarias.html](http://www.transpetro.com.br/pt_br/areas-de-negocios/terminais-e-oleodutos/informacoes-portuarias.html)



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## 2. DEFINITIONS

**Syzygy tide** – Condition in which the tide reaches the maximum amplitude at a given time of year

**Low tide**– Condition in which the tide reaches the minimum amplitude at a certain time of year.

**IMO** – International Marine Organization

**SQUAT effect** - Increased draft of a ship as a result of increased displacement speed, especially in restricted waters.

**VTS** - “Vessel Traffic Service”

**ISGOTT** – “International Safety Guide for Oil Tankers and Terminals”

**BP** – “Bollard Pull” - Longitudinal static traction of vessel

**NAUTICAL INSPECTOR** – Professional responsible for the Inspection and Operational Monitoring of Ships and Terminals

**TEBIG** – Ilha Grande Bay Terminal

**DWT** – Gross Tonnage

**COW** – Crude Oil Washing.

**PRE** – Emergency Response Plan

**STS** – **Ship-to-ship cargo transfer operation.**

**UTC** – “Universal time control”

**UN-BUNKER** - Petrobras department that sells the bunker stocked at TRANSPETRO terminals

## 3. CHARTS AND REFERENCE DOCUMENTS.

Information about the Terminal can be found in the publications listed below.

### Charts

Area	Letter Number - Brazil (DHN)
<i>(Port &amp; Approach Anchoring)</i>	1607
<i>(Port Entrance and Channels)</i>	1631
<i>(Terminal and Approach Area)</i>	1636
<i>(Barra Leste)</i>	1621



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#### Other Publications

Type/Subject	Editor or Source - Brazil (DHN)
<i>(Standards and Procedures of the Port Authority)</i>	<i>NPCP</i>
<i>Support for navigation on the South Coast</i>	South Coast Route

#### 4. DOCUMENTS AND EXCHANGE OF INFORMATION.

The following items must be provided by the Terminal or vessel as indicated in the table.

Information	Prepared by:			Delivered to:			Feedback
	Terminal	Ship	Both	Terminal	Ship	Both	
<b>Before Arrival</b>							
Estimated Arrival (ETA) and vessel information		X		X			According to Appendix D.
<b>Prior to Cargo or Bunker Transfer</b>							
Load details/ "slop" /oily water		X		X			According to Appendix E.
Information essential to the operation. ( <i>complete on site</i> )	X				X		According to Appendix E.
Ship/Shore Safety Checklist			X			X	According to Appendix A of ISGOTT.
<b>During Cargo or Bunker Transfer</b>							
Repeat Ship/Shore Safety Checklist			X			X	According to Appendix A of ISGOTT.
<b>After Cargo or Bunker Transfer, Before Departure</b>							
Information required for undocking the Vessel			X			X	Quantity of fuels and water on board.
<b>After Undocking, at the exit of the port</b>							



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Information relating to the output data of the Porto		X			X		Pilot disembarkation time and departure from port.
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## 5. PORT OR ANCHORAGE DESCRIPTION.

### 5.1 General Description

TEBIG consists of a pier with two berths, near the city of Angra dos Reis and operated by Petrobras Transportes S.A. – TRANSPETRO.

The terminal operates with tankers carrying oil and oil products. The oil movement aims, through import or cabotage, to serve the REDUC and REGAP refineries through a 40" diameter and 123 km long pipeline. The movement of national oil makes the terminal also act as an export warehouse and cabotage for smaller terminals.

The terminal also carries out Ship-to-Ship Operations moored (Double Banking) at the 2 Piers, Terminal Operation Manual agreement

The movement of derivatives aims to meet the preparation of bunker and export of surplus fuel oil in national production. The bunker is used to meet the supply demand to ships operating in the terminal.

TEBIG has implemented corporate Safety protection measures applicable to ships and port facilities, in accordance with the requirements of the International Maritime Organization – IMO, through the adoption of the ISPs code – International Ship and Port Facility.

If necessary, these protective measures can be triggered by the ship through the VHF radio.

TEBIG operates normally at safety level 01.



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## 5.2 Location

### 5.2.1 Coordinates

The terminal facilities are located at the following coordinates 23°03'38"S and 044°12'10"W.

### 5.2.2 General Geographical Location

The Angra dos Reis – TEBIG Waterway Terminal is located in the Bay of Ilha Grande, State of Rio de Janeiro on the southeast coast of Brazil.

## 5.3 Approaches to the Terminal

### 5.3.1 General Description

One of the bars for demanding Ilha Grande bay is located at latitude 23° 18'S and longitude 44°30' W between the Marambaia Island and Ponta da Joatinga, about 20 miles from the terminal, in the south-southwest direction. This bay is big and the coast, at that time, is well cut. At its entrance is Ilha Grande. The ships that demand the TEBIG facilities must do it through the west bar, which is safer, deeper and signaled.

The demand for the TEBIG facilities is made by the west bar, in the general direction of SW-NE, between the thick tip of Sítio Forte and the Ponta do algodão, which is at the southeast end of the Gipóia Island, located about 4 miles to the northwest.

The ships that demand the TEBIG facilities by the west bar of Ilha Grande should rule over the light of the Laje do Coronel. Marking it at more than 000°, which will leave them safe from the Laje do Pendão de Fora. When marking the Laje Branca at 090°, turn to BE, governing in the direction of the entrance of the swept channel, demarcated by 19 lights and 03 floating buoys, which extend about 9 miles in a direction approximately southwest-northeast, 350 meters wide and 22.5 meters of minimum depth, maximum draft for berthing. It is possible to moor ships of up to 500,000 DWT at the TEBIG pier.

Channel signalling is described in section 5.3.3.

The notable points, geographical accidents and hazards encountered in the approach to the terminal are described in section 5.1.



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### 5.3.2 Anchorages

It is forbidden to anchor near the pier of TEBIG, because it is an area located in the access channel to the port of Angra dos Reis for ships that demand the east bar. Recommended or designated anchorages in the approach are described in the following table:

<b>Recommended or Designated Anchorages</b>				
<b>Name</b>	<b>Latitude &amp; Longitude</b>	<b>Anchorage Radius</b>	<b>Minimum Depth</b>	<b>Notes</b>
<b>Standby and Relief Anchorage</b>	Latitude 23°09'00"S Longitude 44°23'48"W	One mile	25 meters	Located 2.8 miles from Ponta do Acaiá in the true marking 075° of the Laje Branca
<b>Anchorage for visit</b>	Not set	-	-	The ship will be released by the port authorities immediately after docking

### 5.3.3 Navigation Aids

Ilha Grande Lighthouse is on the Ponta do Castelhanos, its international order number is 1167 G 0408, located on the hill on the cavalry of the Ponta do Castelhanos, at the following coordinates latitude 23°10'S and longitude 44°06' W. Its altitude of focus is 121 meters. It is a square masonry tower in the center of a house, 16 meters high, painted white and with the following characteristics Gr Lp (3) B 10 sec 27 M.

Laje do Coronel Lighthouse is located in the middle of the laje, at 23°06'S and 44°24'W, with a luminous focus at a height of 9 meters, is a reinforced concrete column in the shape of a pyramid trunk, 4 meters long, painted with black and red horizontal stripes, whose international number is G 0450 and has the following characteristics Gr Lp (2) B 10 sec



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"Laje Branca" lighthouse, located in the middle of the laje at 23°08'S and 44°21'W, with a focus of light at a height of 6 meters, is a cylindrical masonry column, 4 meters long, painted with black and red horizontal stripes, whose international number is G 0448 and has the following characteristics Gr Lp (2) B5 sec 5M.

Laje Preta Lighthouse - Located in the middle of the Laje Preta, its light source is 12 meters high, in a 6 meters high concrete cylindrical construction, painted in black and white horizontal stripes with the following characteristics: Lp V 3 sec 5M. Its position is 23°03'S and 044°18'W.

Itaquatiba Island Lighthouse - Situated at a height of 45 meters, it is a square, masonry construction, 5 meters high, painted white with the following characteristics: Lp B 6 sec 5M. Its position is Latitude 23°04'S and Longitude 044°15' W. Its international number is G 0420.

Ponta do Pasto Lighthouse - Located on the continent, it is close to the TEBIG facilities, at a height of 9 meters. It is a concrete cylindrical construction, 8 meters high, at the tip of the point and about 0.5 mile west of the Ponta do Leme, with the following characteristics: Lp E 3 sec 9M. Its position is Latitude 23°03'S and Longitude 044°15'W. Its international number is G 0422.

Saracura Island Lighthouse is 17 meters high. It is a square masonry tower 4 meters high, painted red and built in the middle of the island with the following characteristics: Lp E 5 sec 5M. Its international number is G 0424.

Laje dos Homens Lighthouse is 8 meters high. It is a cylindrical, concrete construction, 5 meters high, at the southern end of this group of rocks and 1.1 miles NE of the laje Preta. Its international number is G0428.

The access channel that leads from the anchorage to the maneuver basin is marked by 19 beacons, 9 with green lights with a range of 5 miles and 10 with red lights with a range of 5 miles.

The lights that mark the channel swept to the terminal facilities have the following characteristics: Lp V 5 sec 5M and Lp E 5 sec 5M.



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### 5.3.4 Port Limits

The official limits of the port range from latitude 23 ° 18'S and longitude 44 ° 30' W to latitude 23°09'S and longitude 44 ° 23'W.

### 5.3.5 Pilotage

The pilotage is mandatory for all ships that maneuver in the port, mooring or anchoring, from the entrance of the access channel. The organizations that offer this service are described in section 8.3.

The pilotage is provided, for mooring and unmooring, by the ship's cargo agents. The agents trigger the pilotage for mooring based on their arrival forecast (ETA informed by the ships) and the docking schedule at the terminal (informed by the Terminal terminal supervisor). In undocking, pilotage is triggered by the expected end of the operation provided by the ship and time of cargo release. The minimum time for pilot request is 3:30 h. For maneuvers from 21:30 h the ship's agent must request the pilot until 18 h, after 18 h the pilot can only be scheduled for 9:30 h the next day.

The pilots wait for the ships in a speedboat or tug, at the height of the Ponta do Acaíá, in the vicinity of coordinates 23°09'S and 44°23'W. The ships must be sufficiently ballasted and properly equipped with regard to mooring equipment and respective accessories.

Each Commander is solely responsible for the maneuvers, being responsible for all the information to be provided to the pilot on any peculiarity, specific conditions or difficulties existing; such as: deficiency of machinery, boilers, problems or breakdowns of navigational aids, mooring ropes or any element that may cause danger with regard to mooring, laying of ropes, loading and unloading of the ship.

Once moored, the ships must be in a condition considered satisfactory by the pilot and terminal operators.

If the Commander does not comply with the pilot's instructions, in order to preserve the safety of the ship's maneuver, the Port Commander, through the ship's agency, must be notified in writing. This fact will be reported to TEBIG by the ship's agency.



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### 5.3.6 Port & Services Tugs

Available tugboat services are provided, for berthing and unberthing, by the ship's cargo agents. Agents provide the tugboats for mooring based on the size of the vessel, its expected arrival (ETA informed by the ships) and the mooring schedule at the terminal (informed by the Terminal terminal supervisor). In undocking, tugs are requested through the forecast of completion of the operation provided by the ship and time of cargo release. The rules regarding the number of tugs to be used are described in section 6.3.

The form of communication between tugs and ships during mooring and unmooring maneuvers is through VHF radio. Such devices are continuously connected in order to respond to any call from a ship moored at the pier or from terminal operation personnel. As an alternative in the event of failure of ship's or tugboat's appliances during maneuvering, ships will use the following whistle signals:

Call:

- 4 long sounds, followed by 1 or 2 short sounds – the number of short whistles defines whether they are called 1 or 2 tugs, respectively.

Before passing the tow rope:

- 2 short sounds – prepare to push forward or pick up cable at bow.
- 3 short sounds – prepare to push astern or pick up aft cable.

After passing the tow line:

- 1 long sound – pull to starboard side.
- 2 short sounds – pull to port side.
- 3 short sounds – stop pulling.

Maneuvering alongside:

- 1 short sound – pull.
- 2 short sounds – push.

Other signals, per whistle, are also used for auxiliary vessels:

Call:

- 2 long sounds followed by a short – to call the vessel from the pilot.
- 1 long sound followed by a short – to call the speedboat.



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All orders received by the tugboat shall be charged with a short sound. In view of the fact that the tugboats have VHF, the maneuvering orders are usually transmitted by the phonics.

The tugboats have Aldis lamps for communication by Morse signals.

Boats for personnel transport – The terminal does not have boats for personnel transport. This service can be requested through the ship's protective agent for rent at the port of Angra dos Reis.

Pilotage speedboat – The pilot uses the pilotage speedboat from the port of Angra dos Reis.

Supply delivery speedboats – As well as the personnel transport speedboat, this service is provided by the ship's protective agent. The supply of provisions to the ship must be given, when moored, daylight from the outer edge of the vessel. The contracted speedboats must be previously approved by the terminal before approaching the ship, the equipment for unloading/loading must be in good condition and the procedures must be followed.

The terminal has a mooring service that includes a supply of two boats with diesel engines to assist in the maneuvering of the cables. This service is triggered 3 hours in advance by the terminal supervisor, after the pilot request by the ship's cargo agents.

### **5.3.7 Navigation Risks**

The demand for the TEBIG facilities is made by the west bar, in the general direction of SW-NE, between the thick tip of Sítio Forte and the Ponta do algodão, which is at the southeast end of the Gipóia Island, located about 4 miles to the northwest.

The swept channel that goes from the anchorage to the TEBIG facilities, presents the following hazards, geographical accidents:

**Ilha Grande** - It goes from the tip of Castelhanos, limit of its extreme eastern point, about 6 miles southwest of Marambaia Island, to the tip of Acaiá, its western end. Its dimensions are 16 miles long by 7 miles wide. It is a rugged island, covered with thick vegetation that runs from its high peaks to the edge of the sea. The highest peak on Ilha Grande is Pedra d'água, which measures 984 feet and rises near the center of the island. About 1.5 miles



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east-southeast of the Pedra d'água peak is the pico do Papagaio, so called because it resembles the shape of a parrot's beak.

**Gipóia Island** - It is 2.75 miles long between the Algodão tip and the Escalvada tip, which is to the north. Its highest altitude is 279 meters and the island has several bays and inlets.

**Laje Branca** - This is a whitish rock, devoid of vegetation, located one mile northeast of ponta Grande. Descriptions of the Laje Branca lighthouse are in section 5.3.3.

**Laje do Fundo** - This is a rock where 8 meters are probed, it is located 1.1 miles NNO of Laje Branca.

**Laje do Coronel** - This is a flowstone, it is 4.5 miles NNW of the Acaíá point. The Coronel's Parcel, where 0.9 meter is pruma, is west of the laje do Coronel. Descriptions of the laje do Coronel lighthouse are in section 5.3.3.

There are two rocks SW of the Jurubaíba tip, which is the SW end of Gipóia Island. This point is 2.5 miles NW of Laje do Coronel and W of Algodão tip.

**Queimada Grande Island** - Located 2 miles ESE of the Algodão tip and is about 40 meters high. A ¼ of a mile SSW of Queimada Grande Island is Queimada Pequena Island. The passage between this island and the Ponta Grossa de Sítio Forte, which is SSE, is 1.5 miles wide and is safe.

**Laje dos Bêbados** - This is a rock where 10.4 meters are probed and is 0.5 mile west of the island Queimada Pequena.

**Pedras Zatim** - These are two-tenths of a mile NE of the island Queimada Grande and are dark stones grouped together and of little elevation; about 0.4 mile from these stones is the Laje da Bocaina, where 8 meters are probed.

**Laje do Mestre Bernardo** - This is a rock that probes 8.8 meters and is 0.9 mile NE of the Queimada Grande island.

**Imboassica Island** - Located about 1.2 miles SE of the Algodão tip. Its height is about 50 meters and to the SW is a series of reefs that extend for about 0.1 mile.



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**Laje do Calauzinho and laje Grande de Imboassica** - Both are less than 1 meter (3 feet) high, they are between reefs, about 0.9 meter (3 feet) SE of the Algodão tip. Between them and the cotton tip is the cotton slab, which is a rock where you can probe a little more than 0.5 meters. About 0,6 and 0,8 mile east of the Algodão tip are the Laje da Mariquita and the Laje dos Ferros. The first one is probed 10,5 meters and the second 7 meters. The sea sometimes breaks at the Laje dos Ferros.

**Ponta da Pitangueira** - Located on the east coast of Gipóia Island about 0.3 mile NNE of the Algodão tip. Its coordinates are: 23°03'48 "S and 44°20'42 "W. There is a white masonry beacon to the SW of the Pitangueira tip.

**Laje Preta do Algodão** - Located about 0.3 mile NNE of the Pitangueira point, this is a dark colored rock with little elevation.

**Ilha dos Porcos Grandes** - Located 1.5 to 2 miles ENE of the Algodão tip, it is the largest of a group of three islands named Ilha dos Porcos, it is about 75 meters high and covered with vegetation. Porcos Islet, which is the smallest island, is 0.2 mile SE of the W end of Porcos Grande Island and Porcos Pequena Island is 0.18 mile NE, is 100 feet high and has two small peaks covered with light green vegetation.

At 0.1 mile ESE of the Porcos Islet, there is a small rock where you can probe about 3.5 meters.

**Laje Preta** - Located 0.5 mile north of the NE end of the island of Porcos Grande, it is about 7 meters high, sparse vegetation and dark in color. A description of the laje preta lighthouse is in section 5.3.3.

**Laje do Miguel** - Located about 0.4 mile NE of laje Preta is a rock where 7.5 meters are probed.

**São João Islands** - These are located about 0.7 to 1.1 mile WNW of Porcos Grande Island. These four islands are surrounded by high bottoms.

**Botinas Islands** - Also located about 0.7 to 1.1 miles WNW of Porcos Grande Island are farther west of the São João Islands, are low and identical in appearance. The largest of these islands is São João, which is further west, with Redonda nearby and to the south.



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**Laje de São João** - Located a little over 0.5 mile SW between the Botinas Islands and the Laje Preta do Algodão, it is uncovered by the tide.

**Laje Chata** - Located about 0.12 mile NE of the Botinas islands, it is demarcated by a triangular beacon of 3 meters and is probed 1 meter.

A rock, where 3 meters are probed, is about 0.12 mile from Pasto tip, a tip on the east coast of Gípóia Island that should not be confused with another tip of the same name on the mainland where the lighthouse is located. Its coordinates are Lat. 23°04'S and Long. 044°21'W.

**Piedade Island** - Located east of Piedade tip, NE end of Gípóia Island, about 0.7 mile NW of Pasto tip. Piedade Island is 31 meters high. Almeida Island is 0.35 mile from Piedade tip. There is a rock between the two islands that probes less than 1.8 meters.

**Laje do Almeida** - Located 0.2 mile SE of Almeida Island. Its smallest depth is 2.7 meters.

**Laje do Pendão** - Located 0.35 mile north of the Almeida Island. This laje, where 3 meters are probed, is demarcated to the west by a blind buoy painted in black and red stripes.

**Itacuatiba Island** - Located east of the Jacuacanga Bay, about 1 mile SSW of the Pasto tip (the mainland tip) and about 1 mile WNW of Macacos Island, it is covered with sparse vegetation. Descriptions of the lighthouse on Itacuatiba Island are in Section 5.3.3.

**Laje de Itacuatiba** - This is a rock that probes 6.4 meters and is 0.4 mile NE of the Itacuatiba lighthouse, it is marked by a black painted blind buoy NE of the laje.

**Saracura Island** - Located 1.25 miles NW of Itacuatiba Island, it has sparse vegetation. At 0.1 mile NNE there are reefs where 5.5 meters are probed, demarcated to the north by a black painted buoy. The laje light is described in section 5.3.3.

**Laje de Saracura** - It is a rock where 7 meters are probed, 0.45 mile from the lighthouse of Saracura Island and demarcated to the north by a blind buoy painted with black and red stripes.



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**Laje do Despique** - It is a rock where 8.8 meters are probed and which is 0.2 mile NNE of Saracura Island.

**Laje do Badejo** - Two rocks that are probed from 7 to 8 meters and are close to the laje da Saracura. Located about 0.35 mile NNE of Saracura Island and separated from each other by 0.1 mile.

**Laje do Sabonete Pequeno** and **Laje do Sabonete Grande** - The first one probes 2.4 meters and the second one probes 6.7 meters. They are located 0.12 mile to the W and 0.2 mile to the WNW, respectively, of the East end of Jacuacanga Bay, about 0.4 mile to the NW of the Pasto tip (continent). The blind red buoy west of these rocks is 0.2 mile W of the East end.

**Laje dos Homens** - Located between Saracura Island and the mainland, 1.75 miles WNW of the former; about 0.8 mile north is Guaxima Island. Both consist of masses of rocks of low height. Some submerged rocks uncover themselves with the tide and are located about 0.1 mile north of the Laje dos Homens. The lighthouse of the laje is described in section 5.3.3.

**Laje Alagada** - Located 0.2 mile NNW of the laje dos Homens lighthouse. It is partially uncovered by the tide. There is a red light on this laje.

**Laje Baixa** - Located 100 meters SE of the Laje Alagada, this laje probes 2.5 meters.

**Laje Duas Irmãs** - This is a rock that probes 2.7 meters and is 1.1 miles NNW of the East end. It is demarcated by a black and red striped light buoy that displays Gp Lp (2) B 10 sec 5M.

**Ilha dos Macacos** - Located near the north end of the Grande island.

**Ponta do Luiz** - This is the west end of Macacos Island and is 1.5 miles NE of Bananal tip.

**Ilha Comprida** - Its west end is located 0.2 mile SW of Luiz tip.



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**Ilha Aroeira** - Small island 0.12 mile north of Luiz tip (Lat. 23°05'S and Long. 044°14' W).

**Laje da ilha Comprida** - This is a rock where 8 meters are probed and is 0.3 mile WNW of the west end of ilha Comprida. About 0.25 mile NE of the east end a monument has been erected that stands at a height of 69.5 meters (228 feet). On the beach at the entrance to the bay of Ilha Grande are the ruins of an old abandoned convent, these ruins are not clearly visible from the entrance.

Laje Maciel - Located west of the Gambelo tip and 0.3 mile SO of the Coqueiros tip, it probes 6.4 meters (21 feet). A rock where 24 feet (7.3 meters) is probed lies south of the Laje do Maciel.

### 5.3.8 General Restrictions

There is no maneuver to unberth a VLCC ship loaded at night during the night.

There is no mooring maneuver alongside at night, in the case of STS.

It is recommended as maximum speed limit for maneuvers in the port:

Wind = 20 knots.

Current = 1 knot.

Only one ship at a time can navigate the marked channel.

The maximum speed allowed to ships that demand the access channel for docking in TEBIG is 06 knots.

The ship must remain parallel to the mooring pier at a minimum distance of 100 meters and, from this moment, comply with the maximum speed limit of 15 cm/sec, according to table 6.3.

At berths of a vessel for transshipment to the starboard side of the pier, the vessel should keep parallel to vessel 1, at a minimum distance of 100 meters and, from this moment on, respect the maximum speed limit of 10 cm/sec, as per table 6.3



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### 5.4 Maneuvering Areas

The maneuvering basin, near the pier, is approximately 0.6 miles in the N-S direction; 1.3 miles in the E-W direction and more than 30 meters deep.

The transshipment operation is carried out with the vessels moored, using the interconnection alignments of the terminal berths.

The transshipment operation alongside is carried out, using the alignments with hoses between the ships.

#### 5.4.1 Navigation and Mooring Aids

The terminal has monitoring equipment to measure the speed and angle of approach of the vessel in the berth.

The terminal operator assists the ship during mooring to position it in order to allow the connection of the loading arms.

For berthing of Vessel alongside, there is no monitoring equipment to measure the speed and angle of approach of the vessel to Vessel 1.

The Nautical Inspector (STS Superintendent) of the terminal assists the ship during mooring alongside to position it in order to allow the connection of the loading hoses.

#### 5.4.2 Depth Control

In TEBIG the draft limit for berthing and unberthing in berths is **25 meters** at any time of the year. The points that limit the maximum draft for berthing at the terminal are in the access channel and are described in the nautical charts according to section 3.



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#### 5.4.3 Maximum Dimensions

The maximum size of the vessels for mooring in the TEBIG is 500,000 DWT for moorings in the P-1 (external berth) and 350,000 DWT in the P-2 (internal berth).

#### 5.5 Environmental Factors

The region where the TEBIG is located has high relative humidity that oscillates from 76 to 81%, the atmospheric pressure oscillates around 1,015 mba with good weather and the local temperature variation, during the year it oscillates between 18° C (64.4 ° F) in the months of June and July, and 35 ° C (95 ° F) in the months of December and January.

Additional meteorological information for the area is provided in the following sub-items:

##### 5.5.1 Predominant Winds

In autumn and winter, cool and cold winds are common on the coast from Rio de Janeiro to Santos. In the daytime period, the breeze (turn) tends to increase the eastern component of the wind, unlike the nighttime period, when the western component predominates. At night, the wind speed tends to decrease, reaching the lull around 8 pm.

Due to the high mountains of Ilha Grande, the eastern winds, which are predominant in the region, have different directions and vary in intensity in the range of 03 to 15 knots.

The southwest winds, brought by cold fronts, more frequent in the afternoon, are the most intense and raise the sea in protected places. Its speed ranges from 20 to 60 knots. Generally, in sheltered areas, ports, bays and canals of the region, they usually blow just after 12 o'clock, when the winds, from moderate to fresh, compete for a decrease in temperature.

The northeast winds, of lower incidence, however, of a certain frequency in the dawn and morning, blow with the intensity of: 03 to 20 knots.

##### 5.5.2 Wave conditions

The terminal, being in a sheltered area, bay of Ilha Grande, does not present significant variations of waves or waves.



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### 5.5.3 Rainfall

The highest levels of rainfall seen in the region generally occurs at dusk and sometimes persists throughout the nighttime hours. This rainfall is more frequent during the spring and summer months. The average annual rainfall in the region is approximately 2,000 mm. The incidence of hail or snow is historically uncommon in the region.

### 5.5.4 Thunderstorms

Lightning storms are more frequent in the spring and summer seasons, in the afternoon and early evening periods. The factors that contribute to the formation of these weather events are incoming cold fronts and high temperatures during the day.

### 5.5.5 Visibility

The visibility in general is good, however, there is closure in the early hours of the autumn and winter mornings. During the summer months, there is sometimes a dry mist in the area that decreases visibility.

### 5.5.6 Tidal and Other Currents

In the flood tide, the current has the approximate direction from east to west, almost parallel to the berth of the pier. The current variation in this direction is 0.1 to 1.0 knot.

At the ebb tide, the current has the approximate direction from west to east, the reverse direction of the flood tide. The variation of the current in this sense is 0.1 to 2.0 knots.

The strong northeast, south and southwest winds influence the direction of the current, which obeys its direction. In the region there are no notable tidal currents.

### 5.5.7 Variation of Tidal Levels

The average normal tidal amplitude at the Terminal is 1.10 meters (4 feet), at the time of the spring tide there are larger variations up to 1.70 meters (5.5 feet). The maximum draft for mooring in the TEBIG (25 meters) was calculated according to the worst tide condition.



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### 5.5.8 Measurements

The terminal has instantaneous wind and current intensity and direction information. When vessels approach to dock, this information may be made available via VHF radio to the onboard representative by the terminal operator.

## 6. TERMINAL DESCRIPTION.

### 6.1 General Description

The TEBIG pier has two berths (P-1 – external berth and P-2 – internal berth). This pier, which starts from the tip of the Rudder, extending for 1318 meters in the east-west direction, has the shape of an "L" and is located in front of the central part of the bay of Ilha Grande.

### 6.2 Physical details of the berths

The following table shows the characteristics of the terminal's berths:

Terminal: TEBIG (TRANSPETRO/DTO/TA/OP2/ANGRA)										
Berth No.	Type	Berth length (meters)	Depth (meters)	Tide (meters)		Breadth (maximum)	Max. ship length	Products Handled	Displacement (maximum)	Distance between fenders
				Syzygy	Low					
P-1	L	570	35	1.70	1.10	not applicable	450	Oil, oily water, O.Fuel O. Diesel, bunker	500,000 t	70 meters
P-2	L	570	35	1.70	1.10	not applicable	450	Oil, oily water, O.Fuel O. Diesel,	350,000 t	70 meters



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### 6.3 Mooring and Berthing Arrangements

Tugs, maximum speed and approach angle, hooks/mooring bollards, number of cables required for mooring ships.

Mooring and Docking Arrangements													
Berth No.	Requires practical	Vessel Size Maximum DWT)	Tugs & BP required No. (Minimum)				Approach		Mooring Points		Mooring Lines (bow and stern)		
			Mooring		Undocking		Speed	Angle	Bollards (Minimum)	Hooks	Lines	Athwart spring line	Spring Line
			No.	BP	No.	BP	(maximum) cm/s	(maximum)					
P-1	Yes	Up to 200,000	3	46	5	46	15	10th	-	12	3	3	2
											4	3	2
	Yes	Up to 500,000	4	46	6	46	15	10th	-	12	4	4	2
											4	3	2
P-1 *	Yes	Up to 200,000	4	46	4	46	10	10th	3	-	4	-	2
P-2	Yes	Up to 200,000	4	46	4	46	10	10th	-	12	3	4	2
											4	3	2
											3	3	2
	Yes	Up to 350,000	4	46	6	46	10	10th	-	12	4	4	2
										4	3	2	
P-2 *	Yes	Up to 200,000	4	46	4	46	10	10th	3	-	4	-	2

● P-1 \* moored to the Border

P-2 \* moored to the Border

The Eagle-type DP ships and some Suezmax class ships have the stern mirror bollards positioned internally in relation to the respective mooring winch, making it difficult to carry out a safe mooring between the two ships to carry out the Ship-to-Ship operations. Due to this configuration a specific mooring arrangement has been defined for STS operations involving these types of ships to decrease the loads applied on the mooring lines during operation.



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Therefore, below is the proposed mooring for STS operations between these types of ships:

Berth No.	Requires pilot	Vessel Type	Mooring Points		Mooring Lines (bow)			Mooring Lines (aft)		
			Bollards (Minimum)	Hooks	Lines	Athwart spring line	Spring Lines	Lines	Athwart spring line	Spring Lanes
P-1	Yes	Suezmax*	-	12	3	3	2	2	3	2
P-1 *	Yes	Eagle	3	-	4	-	2	2*	2	2
P-2	Yes	Suezmax *	-	12	4	2	2	2	3	2
P-2 *	Yes	Eagle	3	-	4	-	2	2*	2	2

P-1 \* moored on the starboard side

P-2 \* moored on the starboard side

2\* - 2 lashing going from the outer ship to the Dolphin

Eagle - DP ships with stern mirror bollards positioned internally in relation to their mooring winch

Suezmax\* - with stern mirror heads positioned internally relative to the respective mooring winch as found on the Eagle type.



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#### 6.4 Characteristics of the berth for Loading, Unloading and Supply

Table indicating per berth: the products handled; the hoses / arms available; the connections, reductions and flange details; the temperature limits; the maximum loading/unloading flows and pressures, etc.

Berth No.	Products	No. of arms	Connecti on Diameter	Reels and Reductions available	Lines	Receive or Send	Temp.		Flow rate (maximum) m3/h	Pressure (maximum)	NotesNotes
							Min	Max			
P-1	Oil	4	16"	(2) 16"X16"	3 x 42"	Receives and Sends	15	50	5.000	10 Kgf/cm2	Flow per arm
									8.000		Flow per line
	Oily water	1	12"	(1) 12"X12" (with drain)	1 x 26"		15	40	5.000		Flow per arm
									4.000		Flow per line
	Fuel Oil	1	12"	(1) 16"x12"	2 x 20"		15	60	1.800		Flow per arm
									1.350		Flow per line
	Diesel Oil	1	12"	(1)16" x 8"	1 x 12"		15	40	1.800		Flow per arm
									1.000		Flow per line
P-2	Oil	4	16"	(1) 12" x 8"	3 x 42"	Receives and Sends	15	50	4.000	10 Kgf/cm2	Flow per arm
									8.000		Flow per line
	Oily water	1	12"	(2) 12" x 6"	1 x 26"		15	40	4.000		Flow per arm
									4.000		Flow per line
	Fuel Oil	1	12"	(2) 8" x 4"	2 x 20"		15	60	1.800		Flow per arm
									1.350		Flow per line
	Diesel Oil	1	12"	(2) 8" x 4"	1 x 12"		15	40	1.800		Flow per arm
									1.000		Flow per line



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Berth No.	Products	No. of hoses	Connecti on Diameter	Reels and Reductions available	Receive or Send	Temp.		Flow rate (maximum)	Pressure (maximum)	Notes				
						Min	Max							
P-1 moored to the Border	Oil	2	12"	16" x 12" (2) 12" x 8" (2)	Receives and Ships	15	*	3.900 m <sup>3</sup> /h	10 Kgf / cm <sup>2</sup>	Flow per hose * Maximum hose operating temperature: 80°C				
	Oily water	1				15	*							
	Fuel Oil	2				15	*							
	Diesel Oil	1	8"			15	*	1.750 m <sup>3</sup> /h						
P-2 moored alongside	Oil	2	12"			16" x 12" (2) 12" x 8" (2)	Receives and Ships	15			*	3.900 m <sup>3</sup> /h	10 Kgf / cm <sup>2</sup>	Flow per hose * Maximum hose operating temperature: 80°C
	Oily water	1						15			*			
	Fuel Oil	2						15			*			
	Diesel Oil	1	8"					15			*	1.750 m <sup>3</sup> /h		



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## 6.5 Management & Control

The TEBIG control house is located in the auxiliary services area – ASA. In this center is the operator responsible for the control of all terminal operations, through the supervisory system. There is a room on the pier where the operators of that area carry out the preparation of documentation, communications and monitoring of the mooring and position of the ship.

The communications are carried out with the ships through VHF radios in maritime frequency previously combined and registered. A secondary medium, via terrestrial VHF radio, is set for failure in the main system.

## 6.6 Main Risks

The main risks associated with the vessels' stay in the TEBIG berths are:

- When unprotected by the absence of a larger ship in the external berth (P-1), the ship that is moored in the internal berth (P-2) is more vulnerable, due to the position of the berth, when there is a strong current in the west-east direction, the risk of removing the bow from the pier fenders, when moored port side, and in the stern, when moored starboard side.
- The same danger may occur due to the incidence, in the same previous conditions, of strong southwest wind.

The risks described above require greater attention from the ships' crew in relation to mooring lines.

## 7. PROCEDURES

During the ship's stay in port, several actions are taken to enable safe operation and manage risks in order to minimize them. In all phases, as described in the sub-items below, the measures are taken in order to facilitate the operations and plan them properly.

### 7.1 Before Arrival

- 7.1.1 When docking, after the safety inspection carried out by the Nautical Inspector, based on the ISGOTT checklist, if there are pending issues that are not resolved by the crew, the ship will not have authorization from the terminal to start the operation.



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**7.1.2** Repairs on board and washing in the ship's cargo tanks should preferably be carried out in the anchoring area. To perform these services with the ship moored, prior authorization from the terminal will be required.

In operations with Ships moored alongside, repairs are not allowed.

**7.1.3** Ships destined for TEBIG facilities must indicate the estimated arrival (ETA) 72 and 48 hours in advance, directly to the respective agent, through PPR (Official Radio Coast Station). Alterations or confirmation of the vessel's arrival must be provided a minimum of 24 hours in advance. The ETA information shall specify whether the mentioned time is local or UTC.

**7.1.4** The ship's Commander shall comply with the provisions of the ISPs Code.

## **7.2 Arrival**

**7.2.1** Port authorities are triggered by ship agents depending on arrival and forecast for berthing. As a general rule, the visit is carried out after mooring.

**7.2.2** Bunker supply requests must be forwarded to UN-Bunker, through its agent.

**7.2.3** The information from the ship to the terminal is described in appendix "G".

**7.2.4** Below is the list of important addresses and telephones in the port:

### **Internal Revenue Service**

Largo da Lapa nº 35 Centro – Angra dos Reis  
Telephone: 24 – 33651730 / 33651992 / 3365-3503

### **Police Station**

Rua Doutor Coutinho nº 86 Centro – Angra dos Reis  
Telephone: 24 – 33650027 / 33999084 / 3377-5822 / 3377-8611 / 3377-8553

### **33th Battalion of the Military Police of Angra dos Reis (33rd BPM).**

Rodovia Governador Mario Covas – Km 142 – Perequê – Angra dos Reis  
Telephone: 24 – 33999080 / 3362-3190 – (21) 3399-9157



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### **City Polyclinic**

Rua Doutor Moacir de Paula Lobo, 75 - Centro – Angra dos Reis  
Telephone: 24 – 33

### **Federal Police Station**

Rua Benedito Pereira da Rocha, 463 – Casa A – Parque das Palmeiras – A. Reis  
Telephone: 24-3364-8100 (General) – 24-3364-8130 (Duty)

### **Passports/Foreigners**

Praça Lopes Thunder, s/nº – Port of Angra dos Reis  
Telephone: 24-3365-3503

## **7.3 Mooring**

### **7.3.1 Vessel mooring system**

Mooring lines must be cared for permanently in order to keep the ship always moored. All cables must be kept under adequate tension during operation, with the winches under brake, and the use of automatic tension winches is not allowed.

All mooring lines must be of the same type, diameter and material (fiber or wire), and the use of mixed moorings is not allowed.

Mixed moorings are those in which the cables that perform the same function are of different type, diameter and materials.

Mooring lines shall be arranged as symmetrically as possible in relation to the middle of the ship.

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

Springs shall be oriented as parallel as possible to the longitudinal axis of the ship.

If fiber tails are used on wire ropes, the tails must be of the same type, with a diameter 25% more than the minimum breaking load of the wire rope, of the same material and of the same length.

The horizontal angle of the bow and stern Lines in relation to the direction of a crossing perpendicular to the longitudinal axis of the ship shall not exceed 45°.



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### 7.3.2 Ship / shore access

The TEBIG piers have telescopic stairs for easy access to moored ships. Crew members who disembark, use the terminal facilities, will have to be dressed in closed leather shoes, long pants, sleeve shirts and circulate only through the demarcated area to the expansion curve, where there will be a vehicle to take them to the exit gate.

7.3.3 - In ships moored alongside, the embarkation/disembarkation will be done by speedboat.

## 7.4 Prior to Cargo Transfer

7.4.1 The loading arms have electrically insulated gasket.

7.4.2 The resources required for connection are agreed upon on the first contact of the ship with the terminal. The ship must provide a loading coupler with a diameter that allows the terminal's loading arms to be connected.

After the connection of the loading arms, they are tested for their tightness, using the static pressure of the terminal column for this purpose.

A ship's representative must accompany the entire operation and must be close to the ship's cargo outlet.

7.4.3 On-board measurements will be carried out by the ship's personnel and accompanied by the terminal representatives and other inspectors. The material used must be properly grounded and the measuring accessories must be explosion proof.

7.4.4 The start of the operation only occurs after the completion of the initial letter, by the representatives of land and on board.

7.4.5 The Ship/Shore Safety Checklist. (Appendix A of the "ISGOTT") is checked and completed by the Nautical Inspector during the initial release of the vessel.

7.4.6 It is forbidden to carry out ramming or cleaning of boiler piping with the ship moored. Care must be taken that sparks do not escape through the chimney. Failure to comply with these regulations shall result in one or more of the following penalties:

- Immediate interruption of operations;



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- Fine of the competent authorities;
- Compulsory unberthing of the ship from the pier;
- Communication of the infringement to shipowners;
- Accountability of the ship for fines, loss of time and all other related expenses arising from this fact.

**7.4.7** The prohibition on the permanence of unauthorized small vessels on the side or in the vicinity of moored ships must be strictly observed. Only terminal service vessels or those authorized may be in the vicinity or alongside, provided that they meet all safety conditions. Infringement of this standard will have to be reported to the competent authority.

**7.4.8** Ships moored may not move their propeller(s) while they remain connected to the loading arms. Ratcheting may be used after proper warning to the terminal operator, but the propeller must be moved so slowly that absolute safety is obtained. Vessels shall be liable for any damage resulting from these procedures.

## **7.5 Cargo Transfer**

**7.5.1** The monitoring of pressures during cargo transfer is recorded by the on-board and shore representatives on the ship's manifold on an hourly basis. The terminal controls the internal pressure variables through the centralized supervisory control system. The flows on both sides of the operation are removed every hour and compared between the parties having, according to the system used, a limit parameter for operational control. Notice of any changes in operating conditions must be provided and documented by the parties involved in operations. It is expressly forbidden to close valves during operation that cause back pressure in the system.

**7.5.2** The ballast and de-ballast nets and tanks of the ships must be intended only for this purpose, being isolated from the other on-board nets. The water ballast to be discharged to the sea must be completely free of oil, any oily residue or other substance capable of causing pollution of seawater.

**7.5.3** TRANSPETRO's schedule, which interacts with Petrobras logistics, provides terminal tanks to receive slop from ships. When the ship needs to unload slop in Angra dos Reis, it must inform, via agent, the quantity to be unloaded and its provenance. The system used by the terminal for slop discharge is the same used for unloading other products, using lines prepared for this purpose.



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**7.5.4** Conventional tank cleaning operation is normally not accepted. However, the COW operation is accepted, depending on prior authorization of the schedule for the purpose of the ship's stay in the port and the Nautical Inspector for operational safety purposes.

**7.5.5** Repairs or maintenance work of any nature, involving or coming to involve the risk of sparks or other means of ignition, may not be carried out while the ship is moored at the terminal piers. In extreme cases, all safety standards must be observed and met. Repairs involving the facilities of the piers or involving any restriction of the ship during the stay must be previously authorized by the terminal.

**7.5.6** The intermediate inspections, according to Appendix A of the "ISGOTT", will be carried out by the Nautical Inspector during the operation of the ship every 6 hours, **and every 4 hours in STS Operations**

**7.5.7** The interruption of loading or unloading of the ship must occur in any situation that may pose a danger, either to the ship or to the terminal.

Operations may be temporarily suspended during storms, thunderstorms and/or strong winds.

Terminal operation personnel are authorized to stop/suspend the operation in the event of non-compliance with any of the universally accepted and adopted safety rules and standards in the transportation of oil by sea.

The ship's Commander has the right to stop the operation if he has reason to believe that shore operations do not offer safety after contacting the operation

**7.5.8** For any emergency situation, the Angra dos Reis terminal interrupts the ongoing operations so that all resources are focused on mitigating the accident. The actions and contacts for each type of emergency are described in the management PCL and the main telephones are described in section 9.



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## 7.6 Load Measurement & Documentation

**7.6.1** After the end of the operation, the drainage of the loading arms used must start. Terminal operators will arrange for drainage of the arms used for closed system at the pier. The ship's representative must arrange for the drainage of the on-board section.

**7.6.2** The final measurements on board will be carried out by the ship's personnel and accompanied by the terminal representatives and other inspectors. The material used must be properly grounded and the measuring accessories must be explosion proof. The final release of the ship must take place after comparing the quantities handled and the complement of the stay documentation.

## 7.7 Undocking & Departure from Port

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

**7.7.2** The pilot normally disembarks at the same embarkation point described in section 5.3.5 where a port pilotage speedboat will await him.

**7.7.3** The access for boarding the Pilot on the ship moored alongside, must be by the ship's ladder, by the sea edge.

## 7.8 Compliance with ISPs Code

**7.8.1** - The Waterway Terminal of Angra dos Reis has implemented measures of corporate Safety protection applicable to ships and port facilities, in accordance with the requirements of the International Maritime Organization – IMO, through the adoption of the ISPs – International Ship and Port Facility Safety Code.

If necessary, these protective measures can be triggered by the ship, through the Terminal Port Safety Supervisor (PFSO) or via VHF radio, call channels 16, 9 or 8.



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7.8.2 - The Angra dos Reis Waterway Terminal operates normally at safety level 1. For more information, the Terminal port Safety supervisor, who is trained in accordance with the requirements required by the IMO, may be contacted by Tel.: (24) 3366-5250 / 3366-5251

## 8. ORGANIZATION OF PORT AND ANCHORAGE

### 8.1 Port Control or VTS

This section is not applicable to TEBIG.

### 8.2 Maritime Authority

8.2.1 The maritime authority to which the terminal is subordinate is the Police Station of the Port Authority of Angra dos Reis.

8.2.2 The delegate of the Port Authority of Angra dos Reis determines that the visit of the authorities is carried out after the ship has docked at the TEBIG pier.

8.2.3 The official limits of the port range from latitude 23°18'S and longitude 44°30'W to latitude 23°09'S and longitude 44°23'W, according to section 5.3.4.

8.2.4 The Port Authority is the maritime authority within the limits of the port of Angra dos Reis, it is responsible for determining the actions and notifying those responsible for any incident within the limits of the port.

### 8.3 Pilotage

8.3.1 For all ship maneuvers, starting from the point of embarkation of the pilot (section 5.3.5), the pilotage is mandatory.

8.3.2 Pilotage organization operating in the port of Angra dos Reis.

#### **ATALAIA MANGARATIBA**

–Mangaratiba:

Address – Estrada RJ 14 , 118 – Casa 02 – Alto do Ibicuí – Mangaratiba – RJ.

Phone - (21) 2789-1278 / (21) 2789-1344



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**RJ PILOTS**

Avenida Rio Branco, 4 - Sls.: 1.501/02/03 – Centro – Rio de Janeiro – RJ

Tel.: (21) 2516-1336 / 2233-4562

Fax: (21) 2233-9738

**8.3.3** For all situations the pilotage service is activated by the ship's agent. In case of emergencies, according to availability, the pilot will be placed on the ship at the earliest possible time.

**8.4 Tugs and other Maritime Services**

**8.4.1** List of tugs available at the anchorage and/or Terminal.

OPERATOR	NAME	ENGINES	BP	HP	Approved
SMIT	TUPINAMBÁ	2	46.65	3698	Yes
SMIT	TAPAJÓ	2	46.65	3698	Yes
SMIT	TOUCAN	2	46.65	3698	Yes
SMIT	TICUNA	2	46.65	3698	Yes
SMIT	ARTHUR	2	61.74	4936	Yes
SMIT	LANCELOT	2	62.60	4935	Yes



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**8.4.2** Other relevant port maritime services:

Divers: According to the table below

Company	TELEPHONES	Contact person	Immediate mobilization capacity
ENGEPRON	(21) 2490-1835 / 999-548-355	Mr. Ari	1 team
SUPER SUB	(24) 3361-7386	Mr. Otto	1 team

Ship repairs: In the Jacuacanga cove, BrasFels, installed for the construction of ships, can serve ship repairs in exceptional cases.

Support boats: The support boats for supplying costing materials, provisions and garbage removal are activated via the ship's agent.

**8.5 Other Oil/Gas Terminals**

Not applicable to TEBIG

**8.6 Other Key Users**

Not applicable to TEBIG



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## 9. EMERGENCY AND COMBAT PLANNING.

### 9.1 Emergency Contacts

The following table indicates the essential contacts with Phone Number, Fax Number and Radio Channels/Frequencies

Organization	Business Hours	Identifying Acronym	Telephone	Fax	Mobile Phone	Call VHF/UHF	Chat VHF/UHF
Port Authority	24 hours	DelAReis	(24)3365-0365	(24)33654595	- X -	16	- X -
Tugboats	24 hours	- X -	(24)3366-5252	- X -	- X -	16	13
Practical	06 to 18 h	- X -	(21)2789-1278	(21)27891344	X	16	13
Berth control house	24 hours	- X -	(24)3366-5246	- X -	- X -	16	09
Terminal Control House	24 hours	- X -	(24)3366-5449	(24)33665390	(24)998148328	- X -	09
TEBIG Operations (administrative)	7 am to 4 pm	OANG	(24)3366-5203	(24)33665390	(21)997006426	- X -	- X -
TEBIG MANAGEMENT	7 am to 4 pm	- X -	(24)3366-5201	(24)33665390	(24)998763272	- X -	- X -
Port Facility Safety Officer	07: 00 AM to 10: 00 PM	PFSO	(24)3366-5251	(24)33665390	(24)998122442	- X -	- X -
Fire	24 hours	CBMERJ	(24)3365-0193	- X -	- X -	- X -	- X -
Civil Defense	24 hours	- X -	(24)3377-7480	(24)33654588	X	- X -	- X -
City Hall of Angra dos Reis	08 to 17 h	PMAR	(24)3365-1234	(24)33651255	- X -	- X -	- X -
INEA	24 hours	X	(24)3367-1673	(21)25853819	X	- X -	- X -
IBAMA	24 hours	- X -	(24)3365-4695	(24)33654695	X	- X -	- X -

### 9.2 Environmentally Sensitive Areas

In the PRE (Maps, Drawings and Annexes) the areas most sensitive to an environmental impact are listed by leaves, which contains maps of environmental sensitivity, showing, according to the area selected, the points that are subject to the greatest impact when this type of event occurs in the bay of Ilha Grande.



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The following pages are available in this document:

- Macaco Island
- Ubatuba
- Mangaratiba
- Itaoca
- Angra dos Reis
- Ponta Grossa

### 9.3 General Description of Organization of Emergency Response

Responsibilities to deal with possible emergencies involving vessels arriving at the Terminal.

Incidents within the Port/TEBIG Terminal area					
Incident Type	Responsible Organization	Other Organizations Involved			
Channel Collision	Port Authority	Civil Defense	TRANSPETRO		
Vessel Stranding	Port Authority	Civil Defense	TRANSPETRO		
Berth Collision	Port Authority	TRANSPETRO	Civil Defense		
Vessel Sinking	Port Authority	Civil Defense	Fire Department	TRANSPETRO	
Vessel Fire	Vessel	TRANSPETRO	Fire Department	Civil Defense	Port Authority
Berth Fire	TRANSPETRO	Fire Department	Civil Defense	Port Authority	
Pollution	TRANSPETRO or Ship	Port Authority	INEA	IBAMA	

### 9.4 Contingency Plans

**9.4.1** The PRE (Emergency Response Plan) is TEBIG's plan to combat emergencies in all its facilities. It is available in all operational areas, in frames located at the entrances to the



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operating rooms, maintenance and administrative buildings. The responsible for its update is the local HSE (health, safety and environment activity).

- 9.4.2** Emergency and fire-fighting equipment shall be kept ready for use as long as the ship remains moored. The operating fire hoses must be extended, one forward and one aft of the load outlets.

A pollution response kit (sawdust, rags, shovels, buckets, squeegees, transfer pumps, etc.) must be kept ready for use in the event of an oil spill. Additional precautions should be taken in order to avoid pollution of seawater by oil.

TEBIG has an Emergency Response Center (CRE) that is equipped with modern equipment and various facilities for use in accidental pollution. Periodically, intensive training is carried out, which enables terminal employees to act in accordance with the PRE (Emergency Response Plan). Displayed at strategic points, the Terminal's ERP allows rapid action to be taken in responding to emergencies. In its shed are stored containment barriers, oil collectors and other equipment and materials necessary for the tasks. Work vessels, support vessels, tankers and collecting vessels are moored at the tugboat pier in a permanent state of readiness.

Four platforms are installed on the TEBIG pier with **150 meters** of containment barriers each, located at strategic points for siege of the ships moored, in order to protect, immediately, in case of pollution at sea during operations with ships. Two vessels available, with **150 meters** of containment barriers each, are in the vicinity of the ships moored for immediate response. Two other smaller and faster vessels are also available in the area surrounding the Terminal for the purposes of inspections and offer assistance in deploying barriers.

For the fixed siege, 200 m of containment barriers are installed in each berth of the pier; in addition to **1,080 m** of containment barriers located on fixed platforms, for immediate use, if necessary.

- 9.4.3** The terminal has an ambulance equipped for first aid care in the Auxiliary Area (area located near the pier). A nursing technician works in an administrative regime, a time that concentrates the largest number of people due to maintenance and works services. The most serious cases or outside the administrative hours will be sent to the health center, located in the Jacuacanga neighborhood, about 15 km from the site, or to the city of Angra dos Reis, about 23 km from the site.



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## 9.5 Public Emergency Response Resources

In the port of Angra dos Reis, only TRANSPETRO, through TEBIG and other operational units, activated through the Emergency Response Plan, has resources that can be used to mitigate sea pollution events. For other emergencies, public organizations offer the resources for which they are intended.

### 9.5.1 Local Emergency Services

The fire department, the civil defense of Angra dos Reis, the police and the hospital unit of Angra dos Reis have the resources for which they are intended and are triggered according to the table in section 9.1.

### 9.5.2 Mutual Aid Plans

The institutions listed below participate in the WFP (Costa Verde Mutual Assistance Plan) their resources are available as previously agreed in this plan

- Military Fire Brigade of the State of Rio de Janeiro
- Petrobras Transporte – TRANSPETRO/TEBIG
- Ampla
- Civil Defense of Angra dos Reis - SEDECT - AR
- ELETRONUCLEAR
- Civil Defense of Mangaratiba - SENDEC MANGARATIBA
- INEA
- Hotel Portobello
- Hotel Portogalo
- Club Med
- Brasfels Shipyard
- Military Police
- Federal Highway Police
- Vale
- Viação Senhor do Bomfim
- Marina Porto Real
- GRAM – Mambucaba Radiomators Group
- Transmar – Angra dos Reis Maritime Transport
- Colégio Naval
- PARATY Civil Defense Coordination



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- Red Cross Angra dos Reis Branch
- DEEP BLUE
- Police Station of the Port Authority of Angra dos Reis
- DNIT
- Viação Senhor do Bonfim
- EVAL – Empresa Viação Angrense Ltda
- Angrense Express
- PARATY Municipal Guard
- ICN - Itaguaí Construções Navais S/A
- IEDBIG
- JH de Paula Transportes
- Marina Costabella
- Marina Porto Galo
- Marina Porto Real
- Federal Highway Police
- Porto Lopes
- STT - Air Transit
- Angra dos Reis Port Terminal – TPAR
- TRANSMAR
- VALE
- Viação Senhor do Bonfim

## 9.6 Oil Spill Response

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

### 9.6.1 Terminal Response Capacity

The resources available at the terminal to combat oil spill situations are listed in the pre, which is available in all administrative, operational and maintenance areas of TEBIG.

### 9.6.2 Response Capacity of the Environment Agency

The Environmental Agency of Angra dos Reis does not have resources to combat oil spills at sea.



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### 9.6.3 Resources available from Mutual Support Plans of other Terminals

The resources available at other terminals of TRANSPETRO to respond to pollution emergencies occurring in the vicinity of the terminal are listed in the PRE of the Terminal.

### 9.7 Handling a Major Incident

TEBIG PRE lists the actions and those responsible for each type of event planned, which may occur within its unit, pipeline range or vessels and involve third parties. For events that are not provided for in this document, TRANSPETRO/PETROBRAS will make available all national or international resources that are within its reach.



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## 10. CONTACT INFORMATION

The tables below indicate the Organization, Position Telephone, Fax, E-mail, Channel/Radio Frequencies.

### 10.1 Terminal

Location	Contact	Telephone	Fax	VHF/UHF Channels	
				Call	Chat
Berth P-1 and P-2	Operator	(24) 3366-5246	- x -	16	09
Control Room	Operator	(24) 3366-5445	- x -	16	09
Terminal supervisor	Supervisor	(24) 3366-5283	- x -	- x -	Terrestrial 02
Safety (SMS)	Safety Engineer	(24) 3366-5590	- x -	- x -	Terrestrial 06

### 10.2 Port Services

Organization	Contact	Telephone	Fax	Email	VHF/UHF Channels	
					Call	Chat
Port Authority	Duty Officer	(24) 3365-0365 (24) 3364-4595	(24) 3365-3355	secom@dlanr. mar.mil.br-	16	- x -
Pilots Association	Dispatcher	(21) 2789-1278 (21) 2789-1344	- x -	atalaiamangarati ba@practicage m-rj.org.br	16	13
Tugboats	Branch	According to 10.3	Idem 10.3	- x -	16	13



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### 10.3 Navigation Agents and Selected Suppliers

Company	Business	Telephone	Fax	Email	VHF/UHF Channels	
					Call	Chat
<b>GAC</b>	Agent	(24) 3362-5343 (24) 992-541-617	- X -	Petrobras.angra@gac.com	- X -	- X -
<b>TERRA ENERGY</b>	Agent	(24) 3365-3207	(24) 3365- 5127	teamangra@teamangra.com.br	- X -	- X -

### 10.4 Local Authorities, State and National Agencies

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



Port: Angra dos Reis

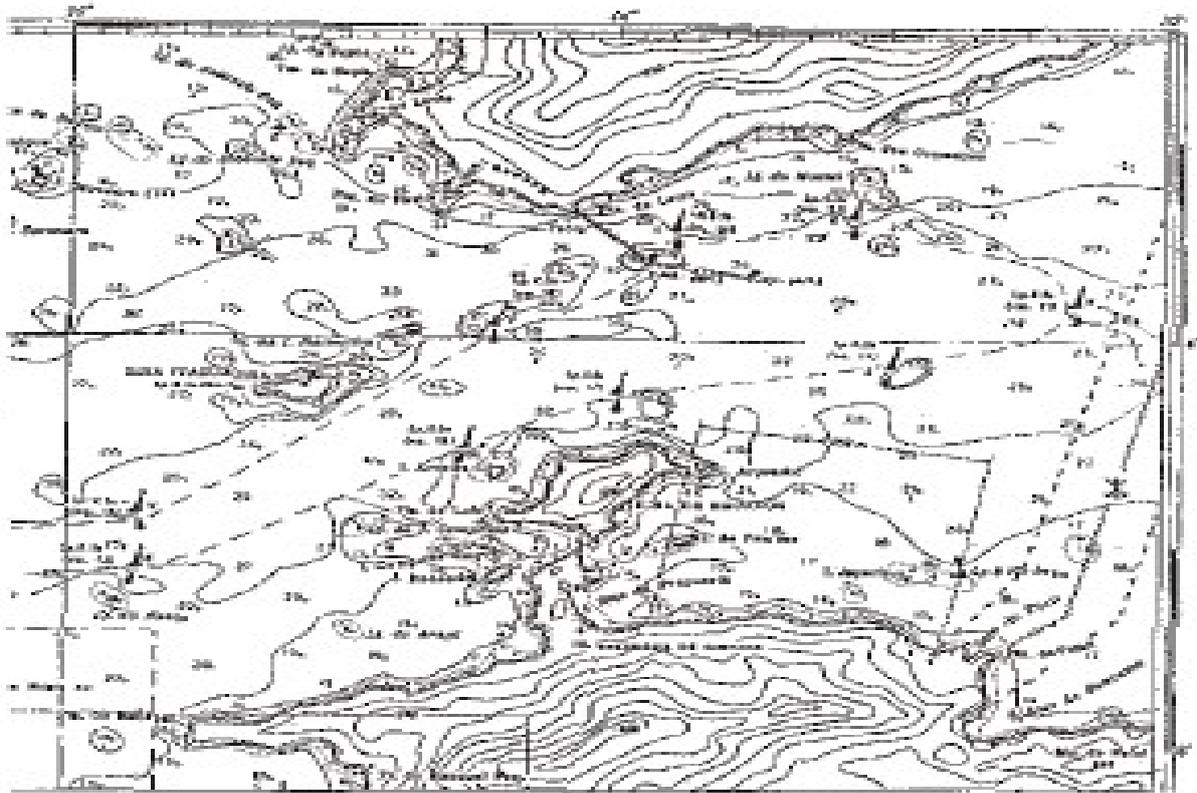
Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

## APPENDICES

### APPENDIX A

#### TEBIG PIER Location





STANDARDS FOR TRANSPETRO TERMINALS  
 TERMINAL INFORMATION

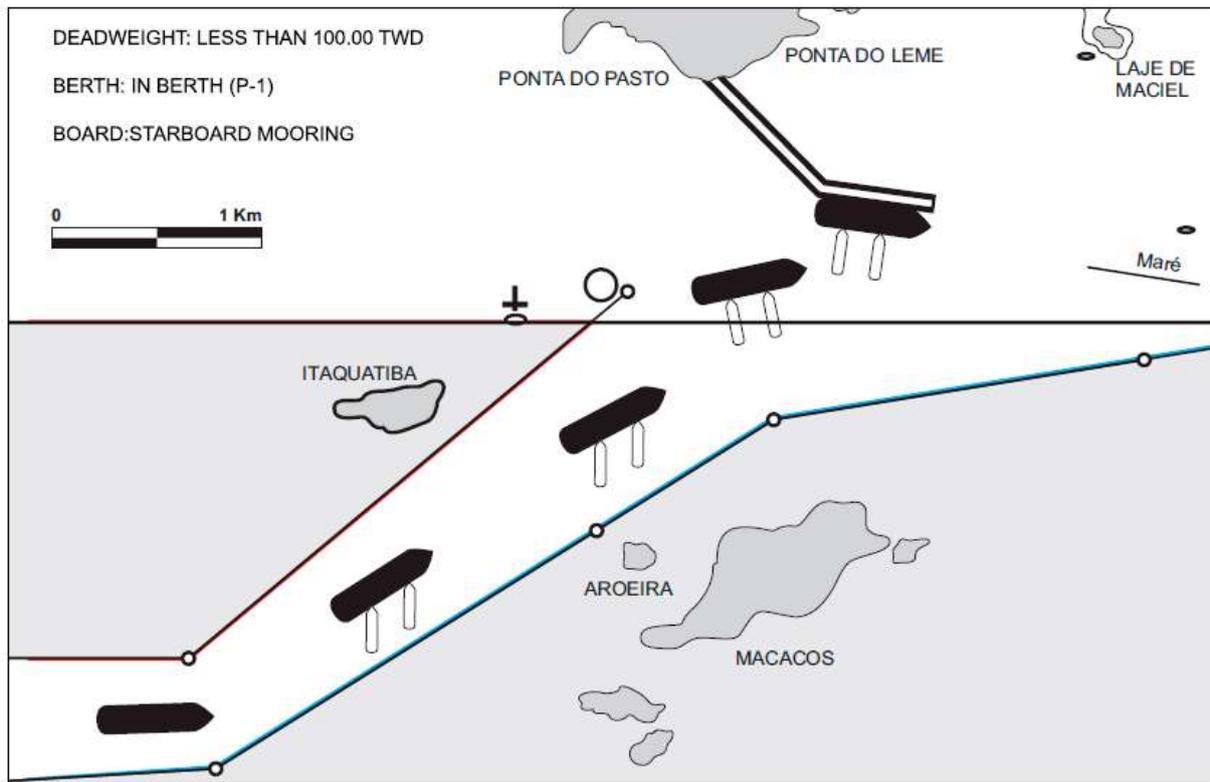
Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**B - Towing schemes for ships with less than 100000 DWT.**

**B1 – Outer Berth, moored by port side**





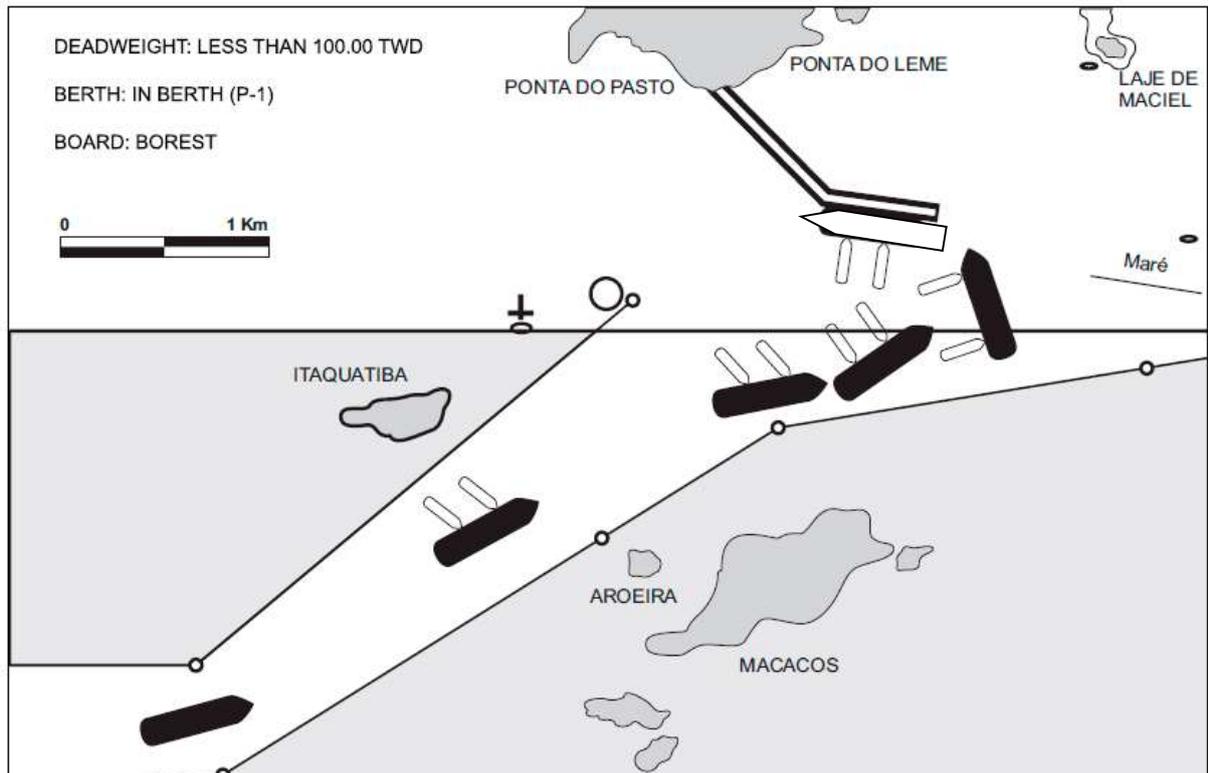
STANDARDS FOR TRANSPETRO TERMINALS  
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Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**B2 - Outer Berth, moored by starboard side**





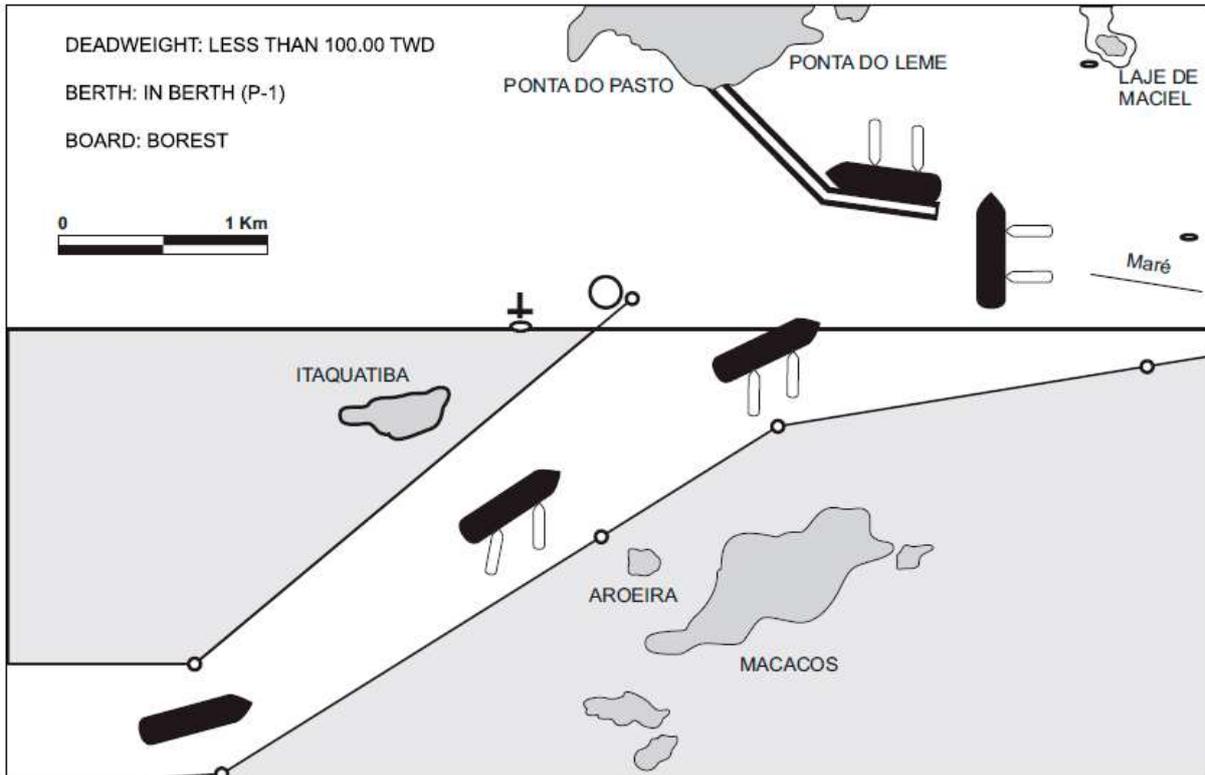
STANDARDS FOR TRANSPETRO TERMINALS  
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Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

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**B-3 - Inner berth, tied by Port Side**



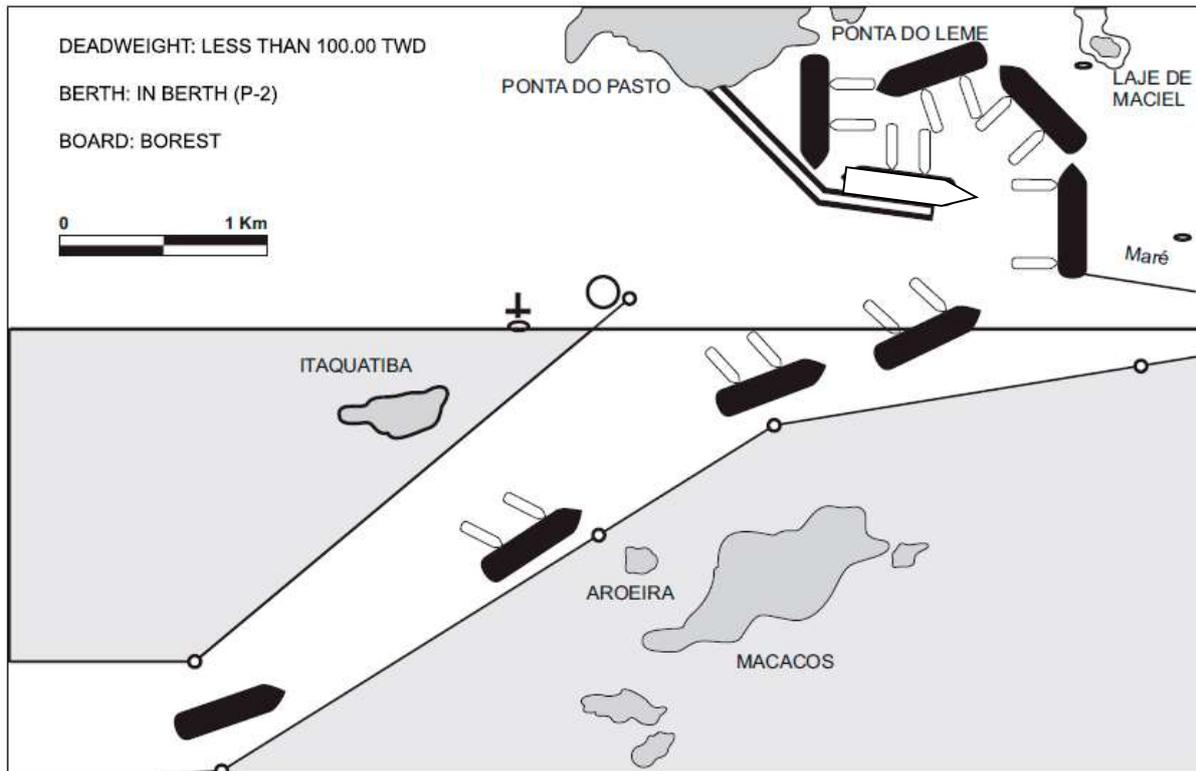


STANDARDS FOR TRANSPETRO TERMINALS  
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**B4 - Outer berth, moored by starboard side, draft less than 15 meters.**





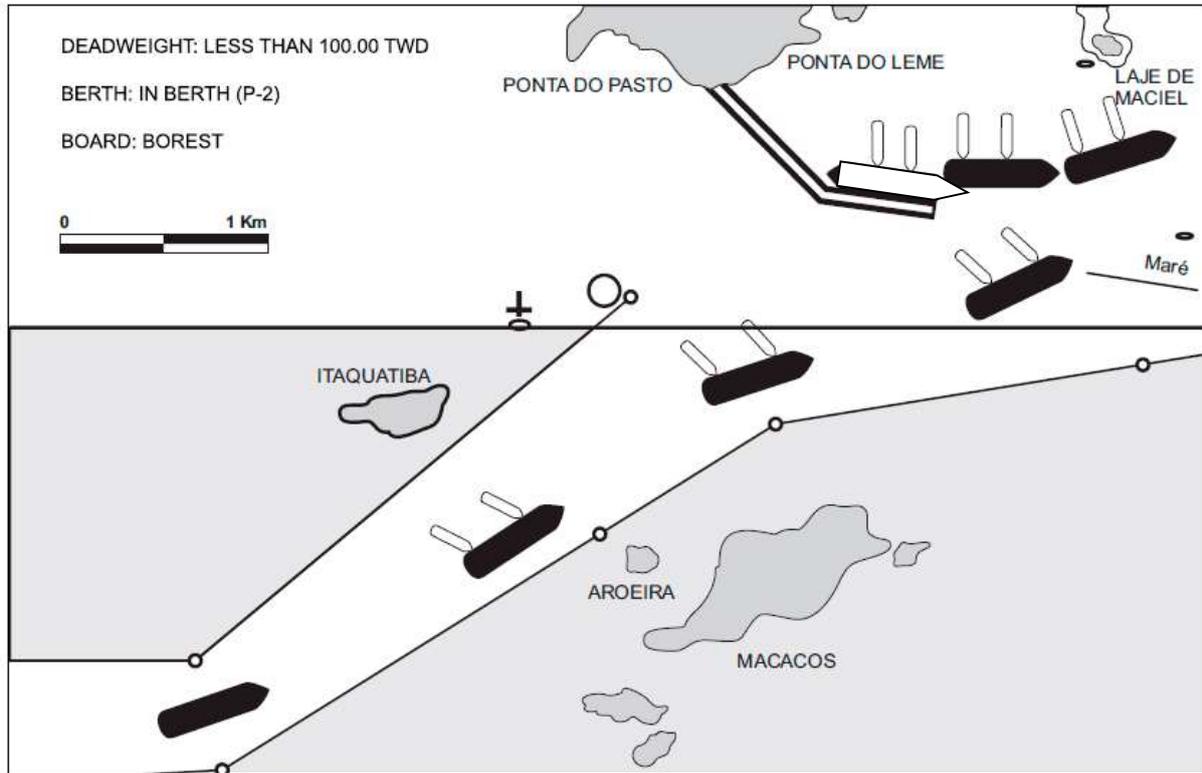
STANDARDS FOR TRANSPETRO TERMINALS  
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Variation of the previous scheme





STANDARDS FOR TRANSPETRO TERMINALS  
TERMINAL INFORMATION

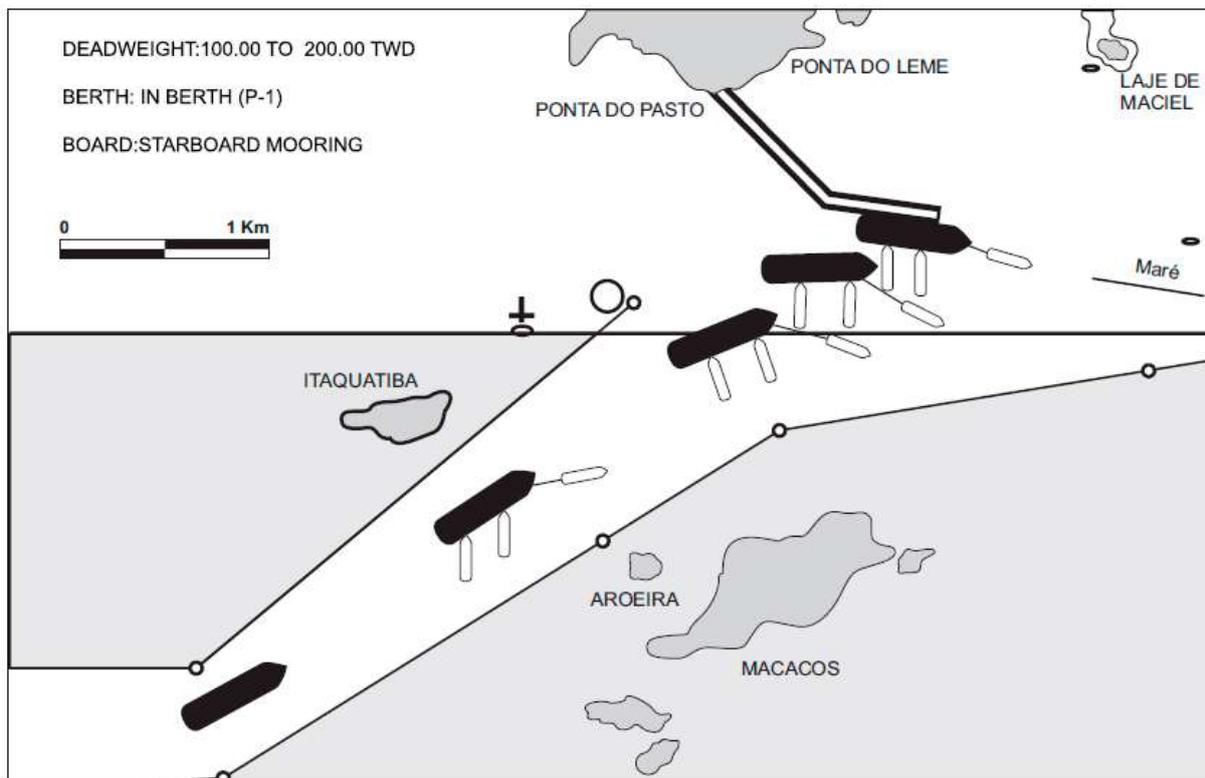
Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**C - Towing scheme for ships with more than 100,000 DWT and less than 200,000 loaded.**

**C1 – External berth, tied by Port Side**





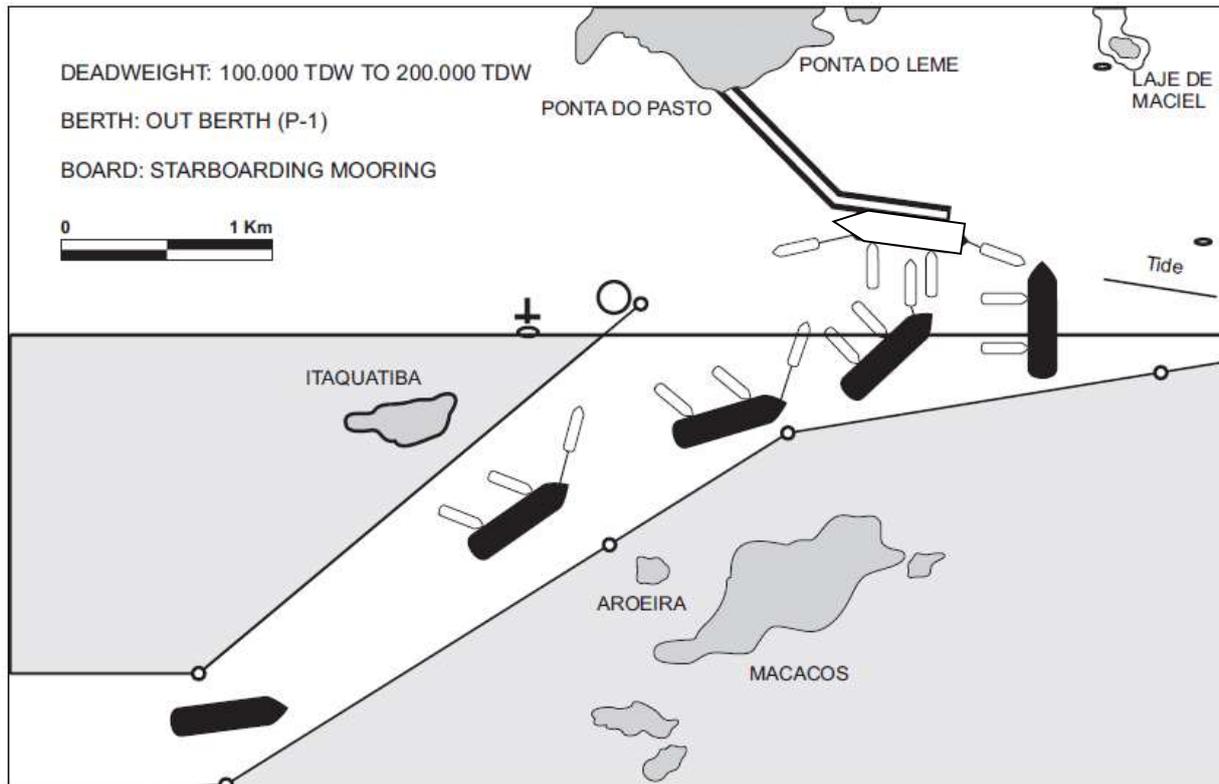
STANDARDS FOR TRANSPETRO TERMINALS  
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**C2 – Outer Berth, moored by starboard side**





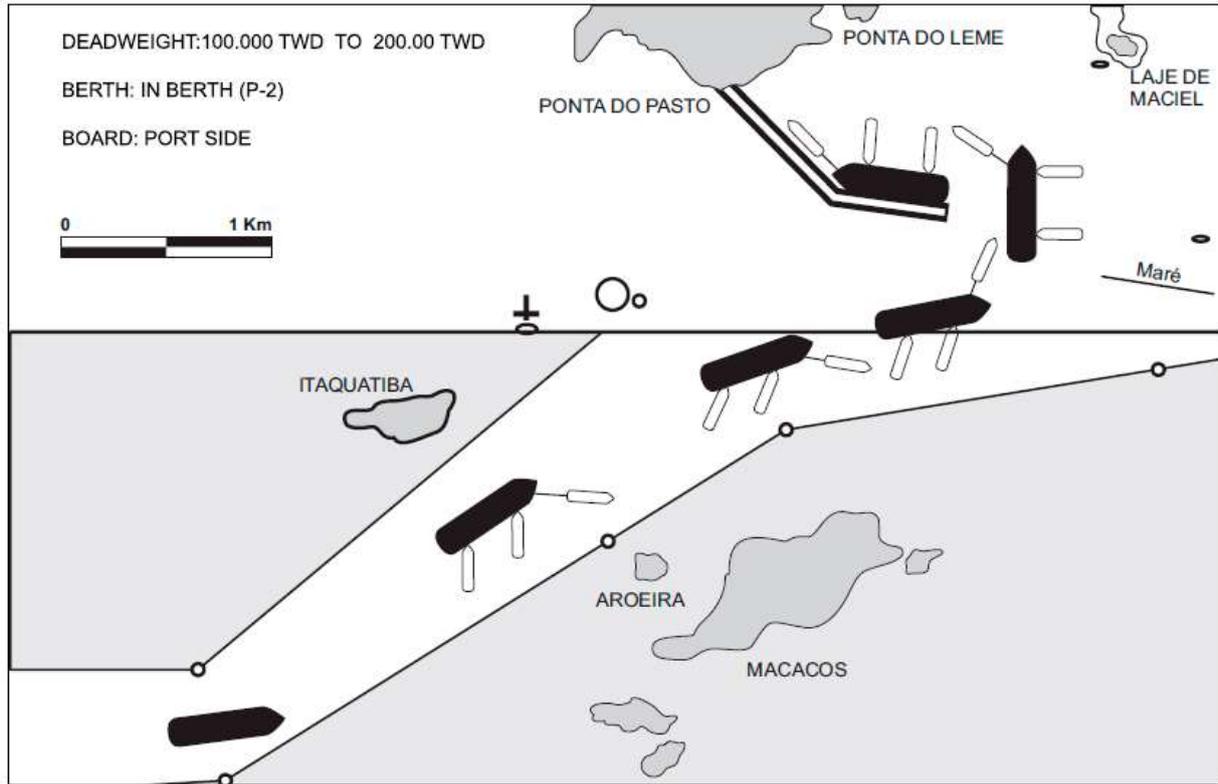
STANDARDS FOR TRANSPETRO TERMINALS  
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**C3 – Inner berth, moored by Port Side**





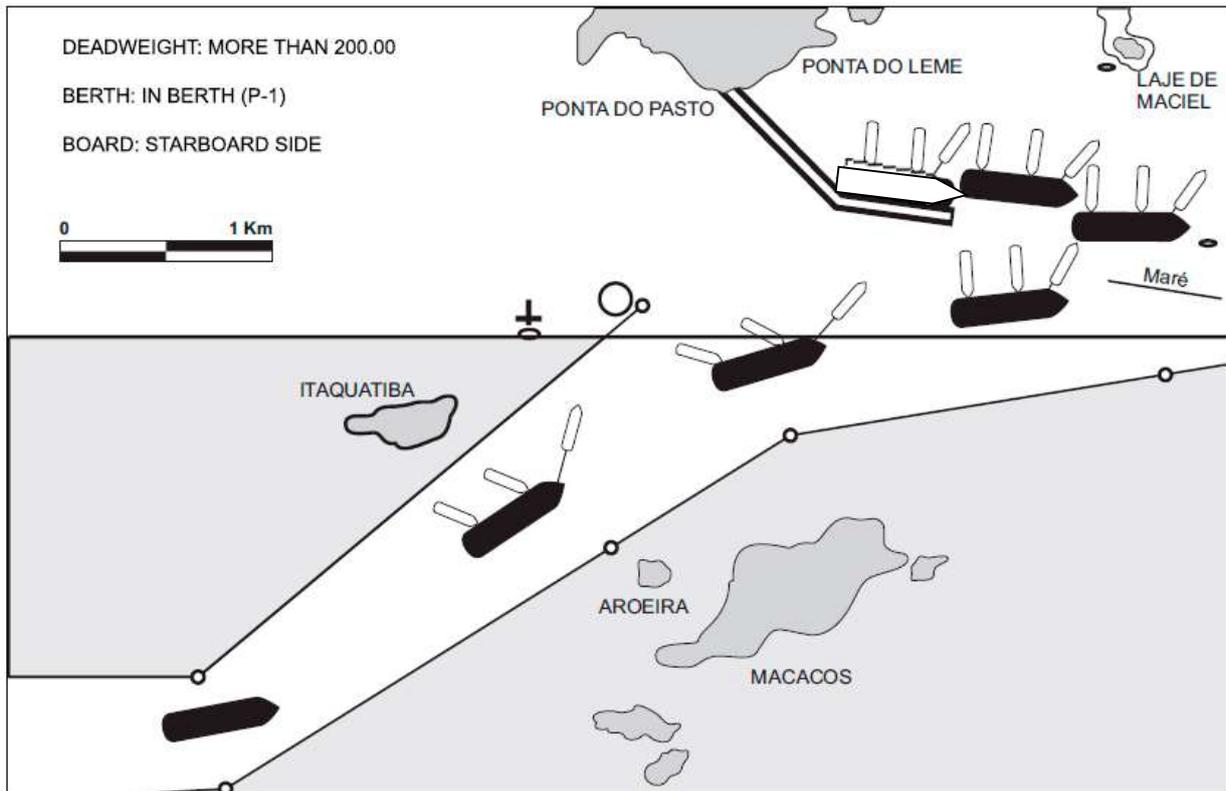
STANDARDS FOR TRANSPETRO TERMINALS  
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Port: Angra dos Reis

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Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**C4 –Inner berth, moored by Starboard Mooring**



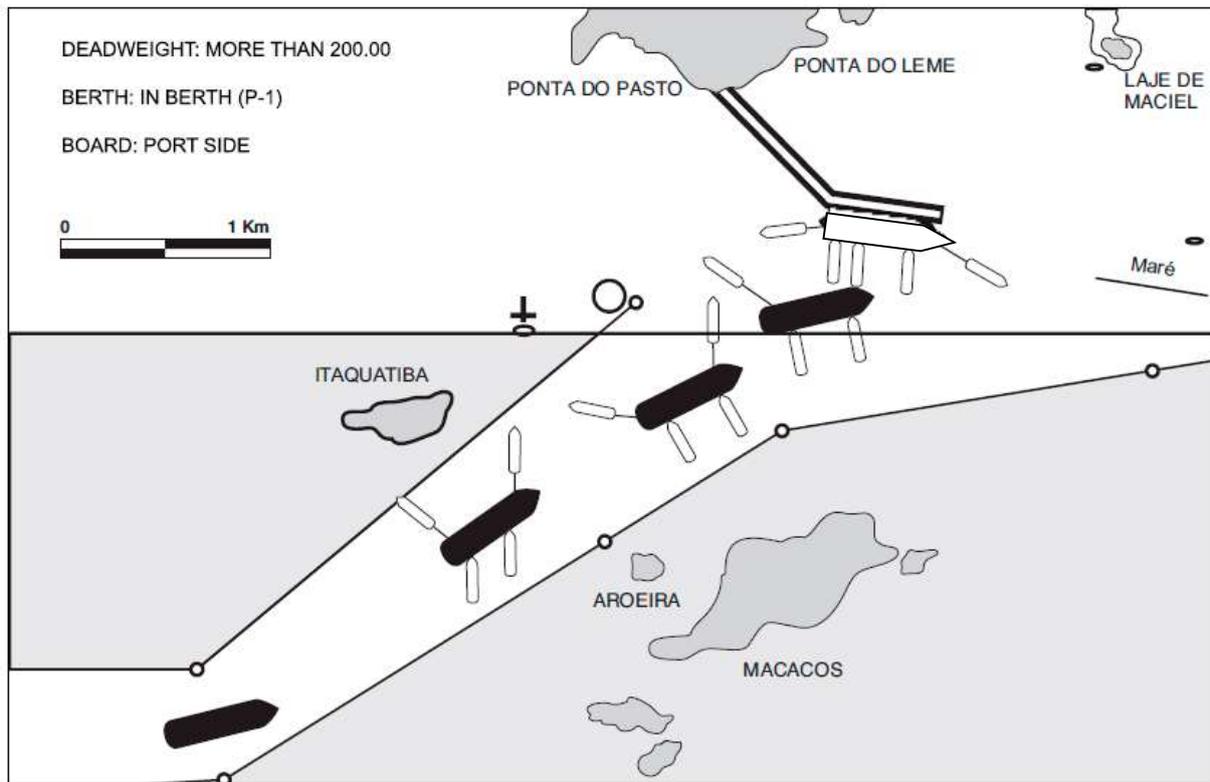


STANDARDS FOR TRANSPETRO TERMINALS  
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Port: Angra dos Reis Terminal: Almirante Maximiano Fonseca Maritime Terminal  
 Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**D - Towing scheme for ships with more than 200,000 DWT.**

**D1 – Outer berth, tied by Port Side**

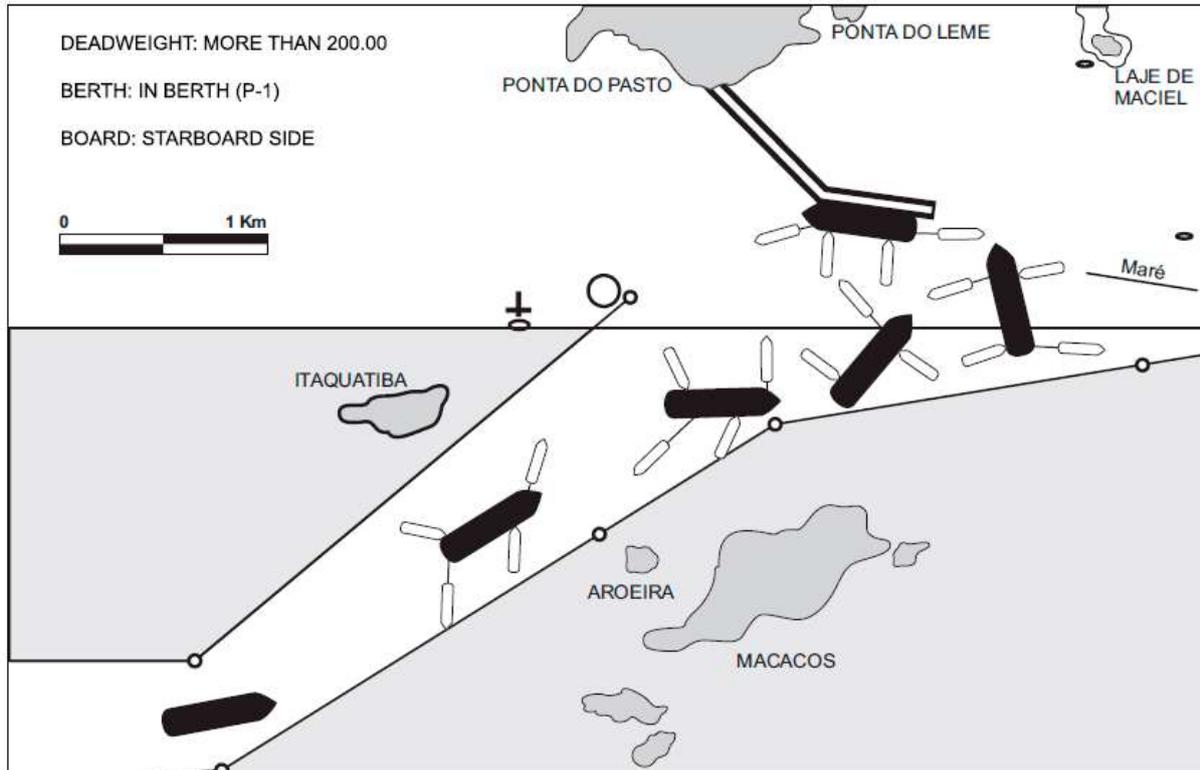


Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**D2 – Outer berth, moored by Starboard Mooring**





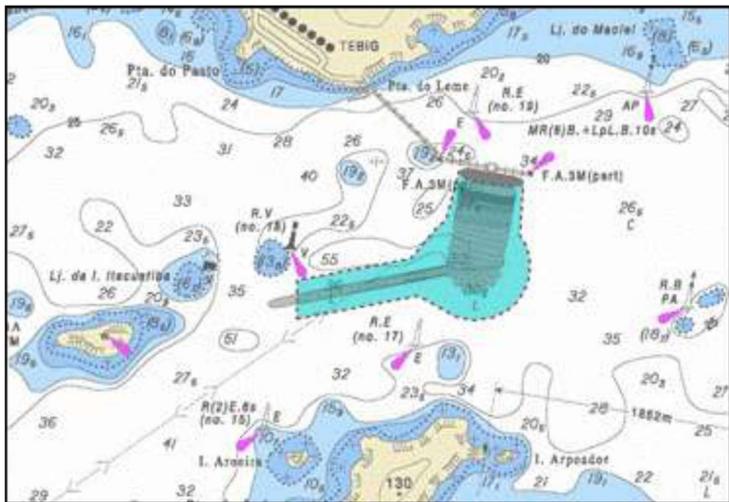
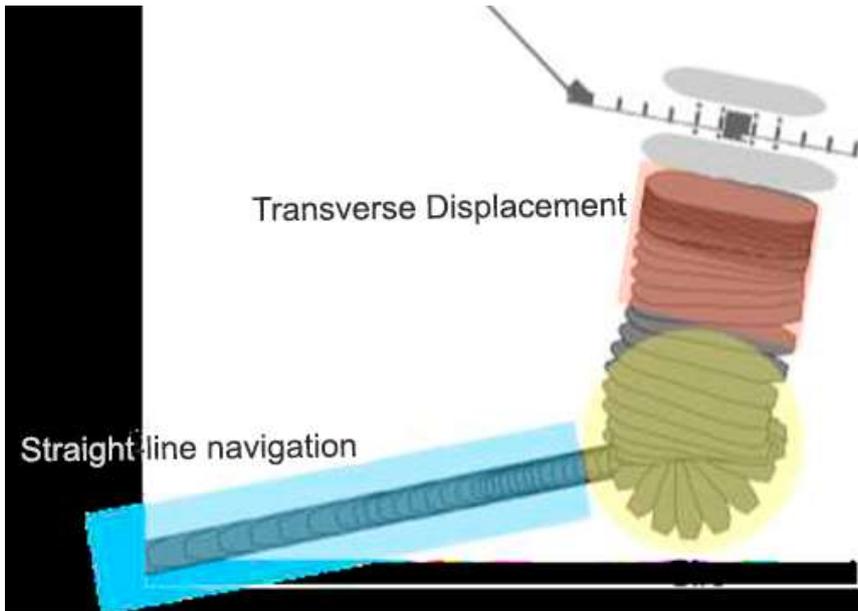
STANDARDS FOR TRANSPETRO TERMINALS  
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D2 – Outer berth, mooring alongside ship no. 2 to ship no. 1.





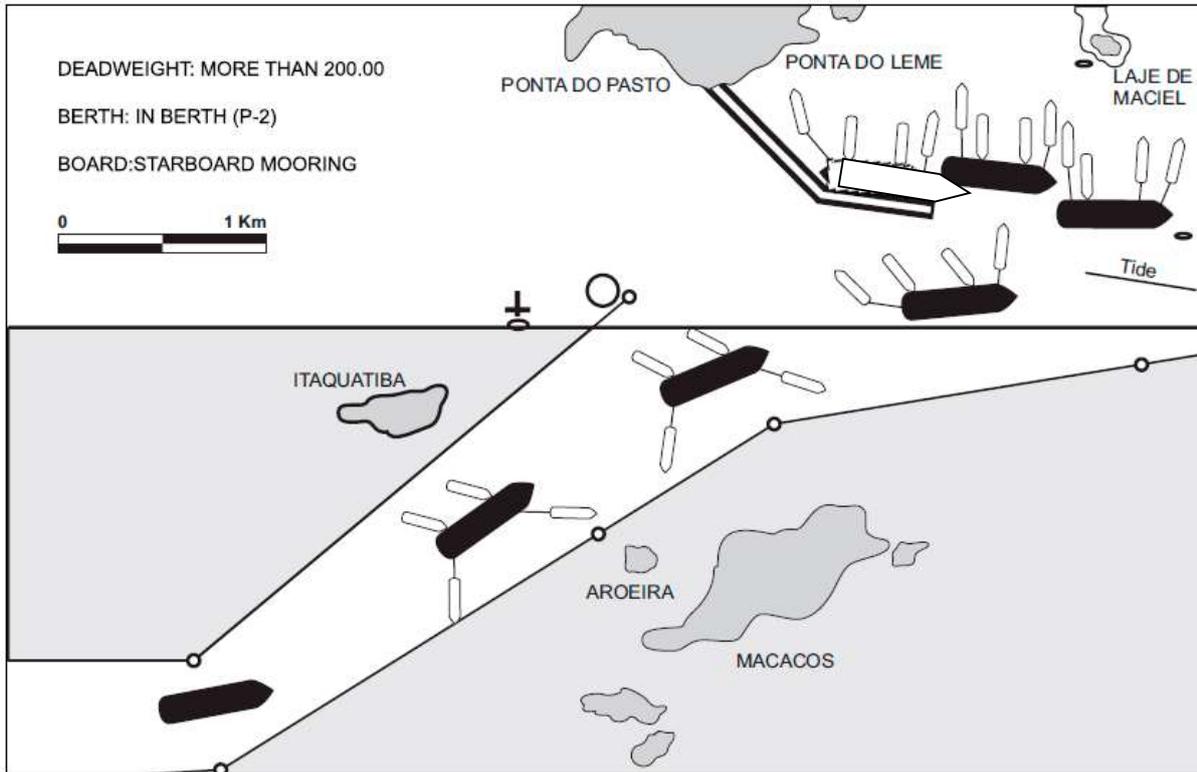
STANDARDS FOR TRANSPETRO TERMINALS  
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Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**D3 – Inner berth, moored by starboard side.**





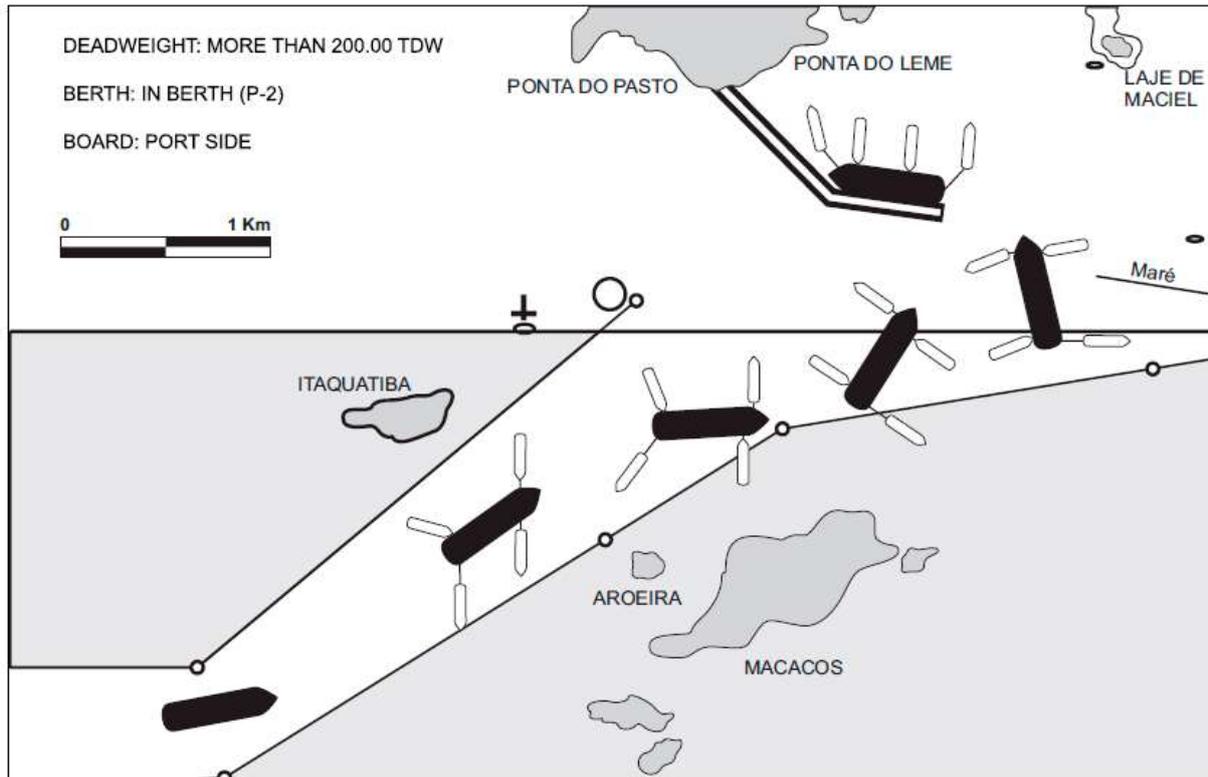
STANDARDS FOR TRANSPETRO TERMINALS  
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Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**D4 – Inner berth, moored by Port Side**





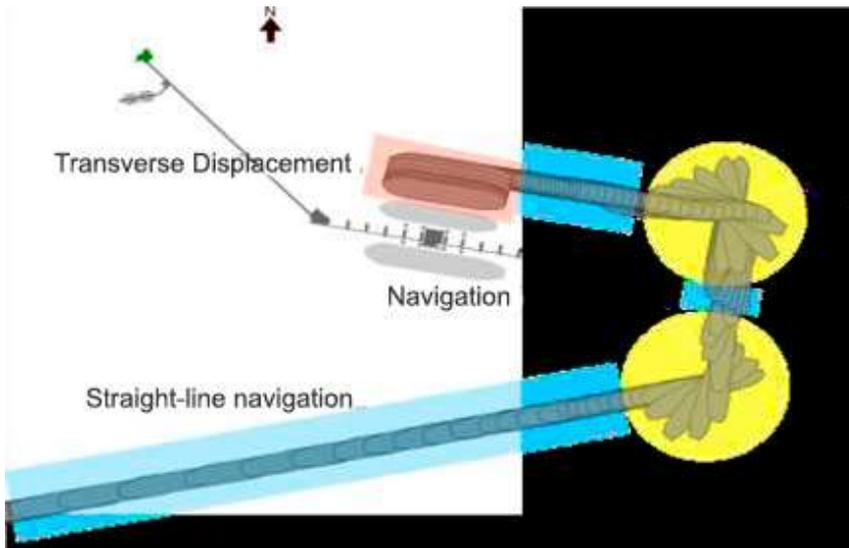
STANDARDS FOR TRANSPETRO TERMINALS  
TERMINAL INFORMATION

Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

D4 – Inner berth, mooring alongside ship # 2 to ship # 1.





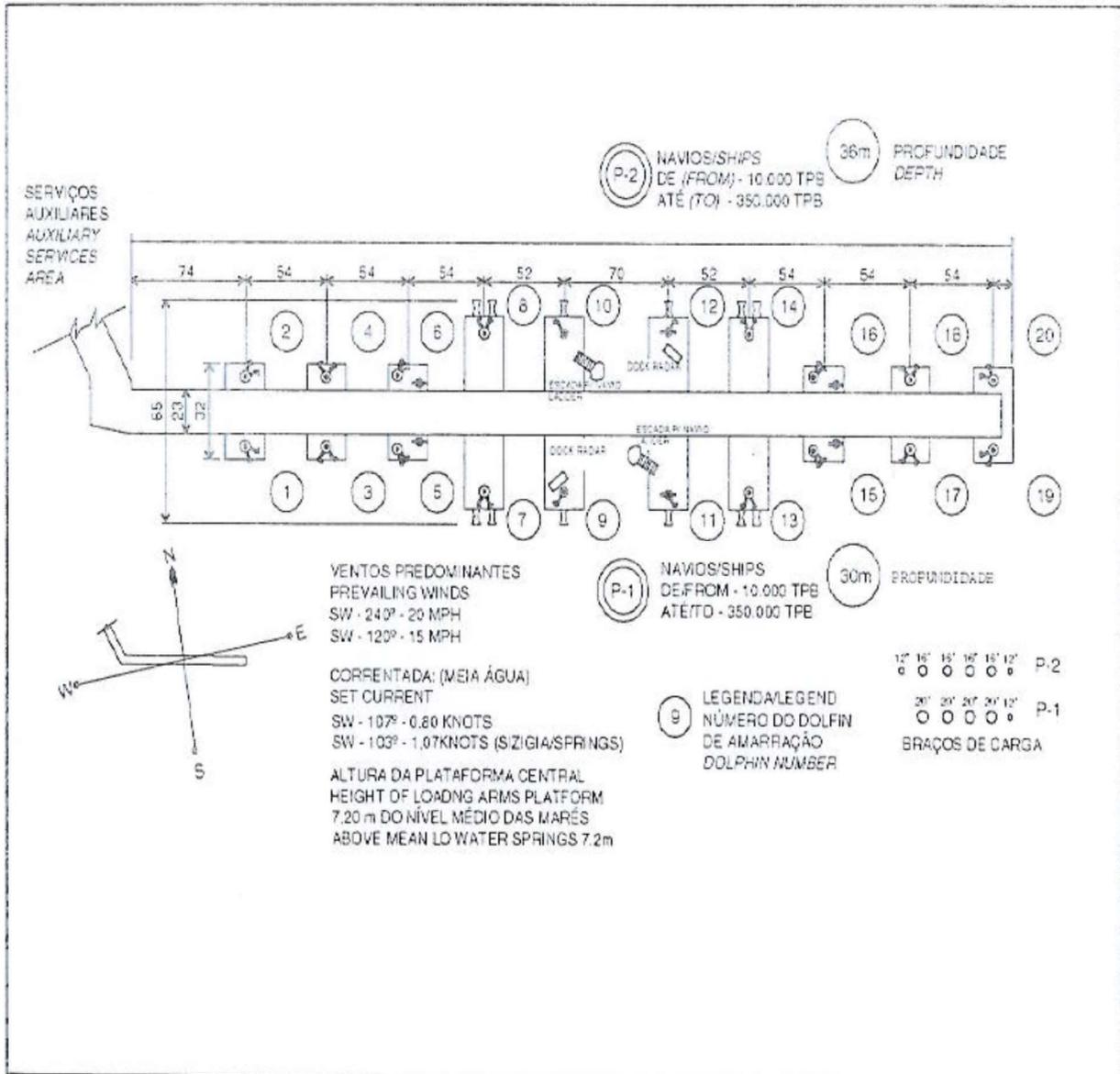
STANDARDS FOR TRANSPETRO TERMINALS  
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E - Diagram of each berth with the lengths, fenders and dolphins, the location of the mooring points and the manifolds





STANDARDS FOR TRANSPETRO TERMINALS  
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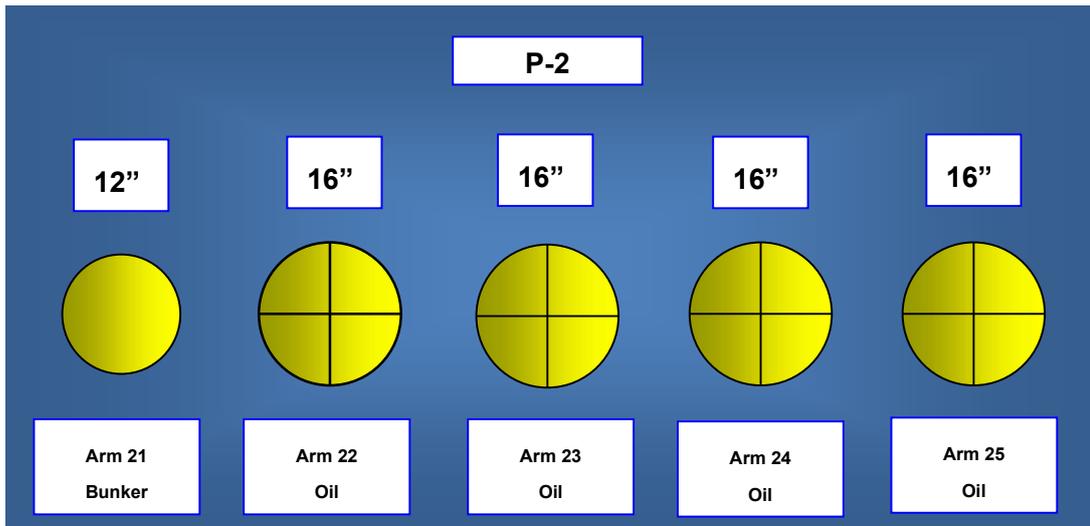
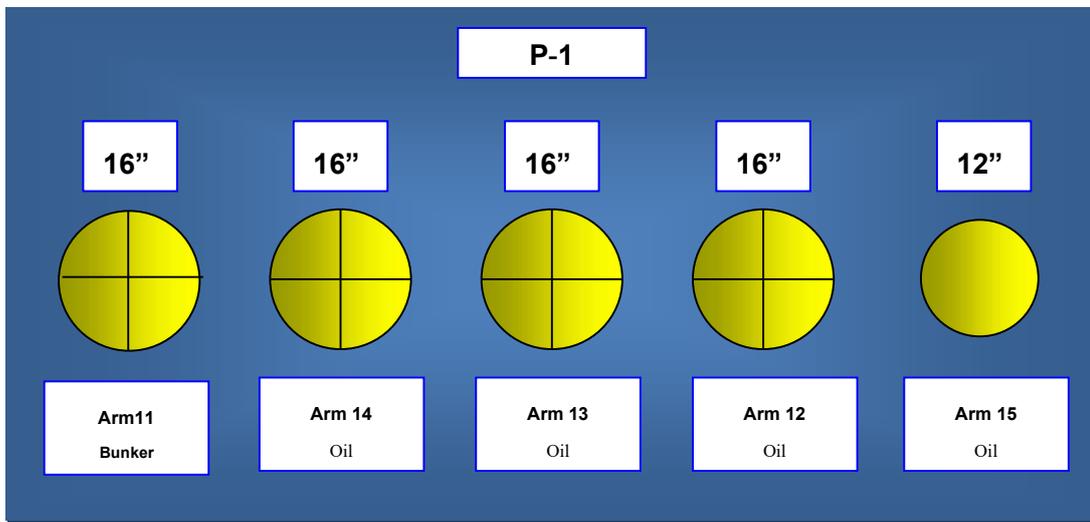
Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

APPENDIX F

Diagram with load connections, dimensions and sizes of flanges

(Vessel View)





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**APPENDIX G**  
**Vessel to Terminal Information**

<b>TERMINAL AND PORT OF:</b>		
<b>Request for Vessel Information</b>		
<b>Name of Vessel:</b>	<b>Estimated Arrival (ETA):</b>	
<b>Flag:</b>	<b>Last Port:</b>	
<b>Commander's Name:</b>	<b>Next Port:</b>	
<b>Owners:</b>	<b>Agents:</b>	
<b>Does the ship have an inert gas system?</b>		
<b>Oxygen Content:</b>		
<b>Overall Length (LOA):</b>	<b>Arrival Draft:</b>	
<b>Length Between Perpendiculars:</b>	<b>Maximum Draft during Transfer:</b>	
<b>Breadth:</b>	<b>Outbound Draft:</b>	
<b>Number of engines:</b>	<b>Transverse Propulsion:</b>	<b>Tugs – minimum number required:</b>
<b>Number of propellers:</b>	<b>Bow (No. &amp; power)</b>	<b>(No. of static &amp; traction (bollard pull))</b>
	<b>Stern (No. &amp; power)</b>	
<b>Number Manifold Flanges &amp; Size:</b>	<b>Distances:</b>	
<ul style="list-style-type: none"> <li>• Permitted</li> <li>• Ballast</li> <li>• Bunker</li> </ul>	<ul style="list-style-type: none"> <li>• Bow to Manifold</li> <li>• Free Edge</li> <li>• Side to Manifold</li> <li>• Manifold Height at Sea Level</li> </ul>	
	<b>Maximum:</b>	<b>Minimum:</b>
<b>LOAD SCHEDULE (fill in what applies)</b>		
<b>Appointment:</b>	<b>Discharge of the ballast to the sea:</b>	<b>Slop / ballast discharge to shore:</b>
Quantity and Type	<b>Quantity:</b>	<b>Quantity:</b>
Quantity and Type	<b>Estimated time:</b>	<b>Estimated time:</b>
Quantity and Type		
<b>DISCHARGE SCHEDULE (fill in what applies)</b>		
Quantity and Type	<b>Ballast:</b>	
Quantity and Type	<b>Volume:</b>	
Quantity and Type	<b>Time:</b>	
<b>Supplies requested (bunkers)</b>		
Quantity and Type	Quantity and Type	
<b>Additional information (if any):</b>		

Please fax or email to the Terminal Supervisor,

Fax..... Email No.....



STANDARDS FOR TRANSPETRO TERMINALS  
TERMINAL INFORMATION

Port: Angra dos Reis

Terminal: Almirante Maximiano Fonseca Maritime Terminal

Terminal Operator: Petrobras Transporte S.A - TRANSPETRO

**APPENDIX H (Information to be exchanged prior to cargo transfer)**

Information between ship and terminal			
Name of ship:		Mooring berth:	
Voyage Number:		Mooring date:	
Contractual data			
No. of onboard pumps:			
Volumetric capacity 98%:		<b>M<sup>3</sup></b>	
Guaranteed discharge pressure: (When unloading operation)		<b>Kgf/cm<sup>2</sup></b>	
Simultaneous ballast/de-ballast capacity with loading/unloading			
Voyage information			
Type of charter (VCP, TCP, COA, etc.)			
Type of voyage (Cabotage/Long Haul)			
Ports or location of origin and destination			
Ship Requested Refueling?			
Means of communication between ship and terminal			
Cargo information			
Product:	Quantity:	Temperature:	API
SLOP			
Quantity:	Temperature:	API:	
Fluidity:	Origin:		
	Contaminants:		
Ballast			
<b>Dirty Ballast</b> Quantity:		<b>Segregated Ballast</b> Quantity:	
Temperature:			
Operational information			
For discharges: Will the ship do a special operation? (COW, Inertization, etc.)			
Expected time required for special operation			
Time required to stop pumps			
Loading: Amount of advance notice provided for TOP			
Flow rate during TOP period			
Amount of ballast to be discharged			
Maximum allowable flow rate during de-ballasting			
Are restrictions in place with regards to electrostatic properties?			
Are restrictions in place with regards to the use of self-closing valves?			
Vessel / Terminal Conditions for Loading/Unloading Operation by Product			
<b>Vessel</b> Pressure:	MAX Temperature:	Pressure <b>Terminal</b> :	MAX Temperature:
Flow rate:	MIN:	Flow rate:	MIN:
Sequence of operations by product			
Quantity to be loaded/unloaded			
Source / Destination Tanks			
On-board / onshore lines			
Loading arms/ hoses used			
Expected start and end of operations			
Additional information on operation and safety			