PORT INFORMATION

Terminal Information Booklet (TIB)

TRAMANDAÍ / TEDUT Marine Terminal

MARINE TERMINAL
ADMIRAL SOARES DUTRA - TEDUT TRAMANDAÍ

Full Terminal Address: Rodovia Cristóvão Pereira de Abreu, KM 103 – Osório – RS – Brazil
CEP 95520-000
Telephones: Tel: + 55 (51) 2161-5550
E-mail: rprazeres@transpetro.com.br

Contacts

Organization	Time	Telephone / Fax	Cellphone	VHF/ UHF Call Channel	VHF / UHF Talk Channel
Port Authority	24/7	+ 55 (51) 3684-2037	+55 (51) 99933-0411	16	TBC
TEDUT Management	07:30 a.m. to 04:30 p.m.	+ 55 (51) 2161-5550	N/A	N/A	N/A
Nautical Advisor	Business days 07:30 a.m. to 04:30 p.m.	+55 (51) 2161-5583	+55 (51) 99550-1145		
Mooring Master	24/7	+55 (51) 2161-5534	+55 (51) 99951-9079 +55 (51) 99913-4812	09 or 11	09 or 11
Operational Control Center (CCO)	24/7	+55 (51) 2161-5554	+55 (51) 99951-9097	09 or 11	09 or 11
Terminal Port Facility Security Officer (PFSO)	24/7	+55 (51) 2161-5534 +55 (51) 2161-5554	+55 (51) 99550-1145 or +55 (51) 99619-0888 or +55 (51) 99112-4749	09 or 11	09 or 11

INTRODUÇÃO

This Port Information has been prepared by Petrobras Transportes S.A. **(TRANSPETRO)** which operates the **TEDUT** **Marine Terminal** in the port of **TRAMANDAÍ**.

It contains essential information for ships seeking to operate at the Terminal and is distributed to the port's stakeholders, national and local authorities, and the various branches of the company.

This Port Information has versions in Portuguese and English.

The information contained in this publication is intended to supplement, never replace or alter any type of official, national or international legislation, instructions, guidelines, or publications. Therefore, anything that contradicts any of the aforementioned documents should not be taken into consideration.

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

TRANSPETRO will analyze any suggestions, recommendations, or corrections to the subjects covered herein with a view to improving the information presented. If you find incorrect information that needs to be updated, please contact us:

TRAMANDAÍ - TEDUT Marine Terminal

Address: Rodovia Cristóvão Pereira de Abreu, KM 103 – Osório – RS – Brazil
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Petrobras Transportes S/A - TRANSPETRO

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Telephones +55 (21) 3211-9039 and +55 (21) 3211-9000.

The latest version of this Port Information and the Port Information of other **Transpetro** Terminals can be obtained at the following address:

https://transpetro.com.br/transpetro-institucional/nossas-atividades/dutos-e-terminais/informacoes-portuarias.htm

SUMMARY

REVISIONS

Revision	Alterations	Date	Preparation	Approval
V.0	Initial Version	04/25/2025	Capt. Rômulo Prazeres - Nautical Advisor Deck Officer Jacqueline Ferreira Vieira – C3JG Ives Marcelo Xavier – T2YN	Capt. Rômulo Prazeres Nautical Advisor
V.0	Page 33, item 8.5: Inclusion of the quick hose disconnection procedure	06/20/2025	Capt. Rômulo Prazeres - Nautical Advisor Deck Officer Jacqueline Ferreira Vieira – C3JG Ives Marcelo Xavier – T2YN	Capt. Rômulo Prazeres Nautical Advisor

1. Emergency Procedures

1.1 GENERAL

EMERGENCY CONTACTS

Organization	Operation Hours	Telephone	Cellphone	VHF / UHF Call	VHF / UHF Talk
Nautical Advisor	Business days 07:30 a.m. to 04:30 p.m.	+55 (51) 2161-5583	+55 (51) 99550-1145		
Mooring Master	24/7	+ 55 (51) 2161-5534	+ 55 (51) 99951-9079 + 55 (51) 99913-4812	09 or 11	09 or 11
Firefighters	24/7	193	N/A	N/A	N/A
Tramandaí Hospital	24/7	+ 55 (51) 3684-0300	N/A	N/A	N/A
Police	24/7	190	N/A	N/A	N/A
Emergency Management Agency (RS)	09:00 a.m. to 06:00 p.m.	+ 55 (51) 98409-5394	+ 55 (51) 98442-7254	N/A	N/A
IBAMA (Porto Alegre)	08:30 a.m. to 06:00 p.m.	+ 55 (51) 3214-3401	N/A	N/A	N/A
FEPAM	08:00 a.m. to 05:00 p.m.	+ 55 (51) 3661-1685	N/A	N/A	N/A

GENERAL DESCRIPTION OF THE EMERGENCY RESPONSE ORGANIZATION

Type of Incident	Responsible Organization	Other Organizations Involved				
Collision in the Single Point Mooring	Maritime Authority	Terminal	P&I	Ship Agent	Emergency Management Agency	ANP
Vessel Running Aground	Maritime Authority	Terminal	P&I	Ship Agent	Emergency Management Agency	ANP
Vessel Sinking	Maritime Authority	Terminal	P&I	Ship Agent	Emergency Management Agency	Fire Department
Vessel on Fire	Maritime Authority	Terminal	Fire Department	Agent	P&I	X
Fire on the Single Point Mooring	Maritime Authority	Fire Department	Agent	Maritime Authority	X	
Pollution	Maritime Authority	Terminal	P&I	IBAMA	ANP	

CONTINGENCY PLANS

The Local Contingency Plan (PCL) is the document that contains the communication flow and the strategy for fighting emergencies in single point moorings and surrounding areas.

The vessel's emergency and fire-fighting equipment must be kept operational and available throughout the period the vessel remains anchored.

Fire hoses must be extended, one fore and one aft of the ship, unless fire monitors can override this requirement.

A suitable amount of absorbent material must be kept ready for use in case of an oil spill.

Additional precautions must be taken to avoid polluting sea waters.

The Terminal has an Environmental Defense Center (CDA) located in the Maritime Area (Trapiche), close to the coast, which is equipped with equipment and facilities for use in fighting pollution and mitigating environmental damage.

This Center has a stock of containment booms, oil skimmers, work vessels, support vessels, tanker vessels, and response vessels.

The Terminal periodically carries out emergency simulations and training sessions to enable personnel to act quickly and efficiently in fighting emergencies.

LOCAL EMERGENCY SERVICES

The Fire Department, the Emergency Management Agency of the municipality of Tramandaí, the Civil Police, and the hospital unit of Tramandaí have additional resources to act in emergencies and can be contacted according to the table in section 1.1.

MARINE MUTUAL SUPPORT PLANS

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

1.2 OIL SPILLAGE AND STEAM RELEASE

The resources available to response oil spill situations are listed in the PCL, which is available in all administrative, operational, and maintenance areas of the Terminal.

TERMINAL RESPONSE CAPACITY

The Environmental Agency of the municipality of Tramandaí does not have resources to response oil spills.

RESPONSING MEDIUM-SIZED SPILLS

In the event of significant pollution - a medium-sized incident - the Terminal will provide the available TRANSPETRO's regional resources.

These resources, their readiness, and how they are contacted are described in the PCL.

RESPONSING LARGE SPILLS

The Terminal's PCL lists the actions and those responsible for each type of event in the event of major incidents (catastrophic proportions) that may occur within its facilities (single point moorings), pipeline areas, or vessels.

For this type of event, TRANSPETRO/PETROBRAS will provide all national or international resources that are within its reach.

1.3 FIRE AND EXPLOSION

See item 1.1 General/Emergency Plans

EVACUATIONS (EVACUATION ROUTE AND MAP OF ASSEMBLY POINTS)

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

1.5 COLLISION / BERTH DAMAGE

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

1.6 MEDICAL EMERGENCY

See item 1.1 General / LOCAL EMERGENCY SERVICES

1.7 SECURITY BREACH

See item **8.15 ISPS CODE COMPLIANCE**

1.8 MAN AT SEA

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

1.9 EMERGENCY STOP (ESD)

Not applicable

1.10 INCIDENT NOTIFICATION POLICY

Your representative will ask for a copy of the document containing instructions for a particular emergency.

2. Safety, Environment, and Health Policies

2.1 PERSONAL PROTECTION EQUIPMENT (PPE's)

They must be used throughout the vessel's stay.

2.2 TERMINAL ACCESS (SHORE CREW AND VISITORS)

The personnel on board are not allowed to go ashore, considering the peculiarities of the location – open sea and unsheltered waters, "going ashore" is only recommended in cases of extreme necessity and if meteorological and oceanographic conditions allow it.

However, if it is imperative to "go ashore", the ship's Captain must contact their shipping agent to arrange the appropriate boat service for transporting persons.

In any case, Transpetro will not be held responsible for the risks involved in transporting crewmembers from ship to shore and vice versa.

VISITORS

Visits on board moored or anchored vessels are not permitted, except when duly authorized by the Captain, the Terminal Manager, and the Maritime Police. Any unauthorized persons found or attempting to enter the vessel will be necessarily reported to the Maritime Police.

2.3 DECLARATION OF SECURITY (ISPS CODE)

Tramandaí Terminal has implemented corporate security protection measures applicable to vessels 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 Security) Code.

If necessary, these security measures can be contacted by the vessel through the Mooring Master or via VHF radio, call channel 09, 11, or 16.

Tramandaí Terminal operates normally at MARSEC (Maritime Security) level 1.

For further information, the Terminal Port Facility Security Officer (PFSO) can be contacted at the following telephone number: Tel: (+55 51) 2161-5534 or 2161-5554.

2.4 ALCOHOL AND OTHER DRUGS

According to ISGOTT, item 13.4, for crew health and safety reasons, the use of alcohol and drugs has a dangerous effect on the performance, behavior, and insecurity in the workplace. Therefore, the consumption of alcohol or the use of illicit drugs is not permitted at **Transpetro** Terminal**.**

Transpetro, to support the efforts of international authorities to response illicit drug trafficking and the use of alcohol in non-permitted places, complies with the relevant preventive measures to avoid the use, possession, and distribution of these criminal substances.

2.5 SMOKING

Smoking areas must be identified and smoking requirements must be observed.

2.6 PORTABLE ELECTRONIC EQUIPMENT AND UNPROTECTED LIGHTS

All portable electrical equipment used must be intrinsically safe and explosion-proof.

Only intrinsically safe and explosion-proof electric lighting may be used on deck while the ship is at the monobuoy.

2.7 MAINTENANCE ON BOARD

VESSEL REPAIRS

Ship repairs are only permitted at Anchorage C (CHARLIE).

No repairs or maintenance work of any nature that involves or may involve a risk of sparks or other means of ignition may be carried out while the ship is moored to the single point mooring, without written permission from the Mooring Master.

While the ship is moored to the single point moorings, no repairs or maintenance work may be carried out that involves or may involve a risk of sparks or other means of ignition.

In extreme cases – where maintenance is imperative – all safety standards must be observed and met.

Any type of repair that implies any restriction of the ship during its stay must be previously authorized by the Terminal.

It should be noted that, in all cases, it is expressly forbidden to carry out any type of maintenance that involves restricting the main engine, which prevents or hinders the movement of the ship under its own power.

2.8 MATERIAL HANDLING

Agreed with the Terminal.

2.9 SAFETY DATA SHEET (SDS)

The SDS is compulsory for all chemical products classified as hazardous or whose intended or recommended uses give rise to risks to the health and safety of workers.

2.10 BENZENE AND H2S

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

2.11 STATIC ELECTRICITY

Precautions must be **taken** to prevent the risk of ignition by static electricity sparks during measurements, sampling, connections, and loading/discharging operations.

3. General Information

3.1 CHARTS AND REFERENCE DOCUMENTS

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

Charts

Area	Type of Chart Number		
	Brazil (DHN)	US Hydrographic Office	British Admiralty
Anchoring and approaching the port	2000	24110	3969
Terminal and Approach Area	2010	24110	3969

Other Publications

In addition to the information present in the Charts referred to above, other information and data about the Terminal can be obtained in the documents below:

Type / Subject	Publisher or Source
NPCP-RS – Standards and Procedures of the Port Authority of Rio Grande do Sul	Board of Ports and Coasts - DPC - http://www.mar.mil.br/cprs/npcp
Navigation Support on the South Coast – South Coast Itinerary	Board of Hydrography and Navigation - DHN
Admiralty Sailing Directions NP5 – South America – Vol.1	The United Kingdom Hydrographic Office - UKHO
Guide to Tanker Ports	Shipping Guides Limited – U.K. www.portinfo.co.uk

3.2 SHIP/TERMINAL COMMUNICATION POLICY

See items below.

3.3 DOCUMENTS AND INFORMATION EXCHANGE

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

Information	Prepared by:			Delivery to:			Comment
	Terminal	Vessels	Both	Terminal	Vessels	Both	
Before Arrival							
Estimated time of arrival (ETA) and information about the ship		x		x			According to ISGOTT
Essential information about the Terminal			**x**			**x**	According to ISGOTT
Before Transfer of Cargo or Bunker							
Details on cargo / slop / ballast on board		x		x			According to ISGOTT
Essential operational information			x			x	According to ISGOTT
Ship/shore safety checklist			x			x	According to ISGOTT
During Transfer of Cargo or Bunker							
Repeat the ship/shore safety checklist			x			x	According to ISGOTT
After Transfer of Cargo or Bunker, Before Departure							
Information needed for unberthing the ship			x			x	Quantity of fuel and water on board
After unberthing, when departing the Port							
Information needed for unberthing the ship			x			x	Timetable for pilot disembarking and departing the Port

3.4 OPERATING HOURS

There are no time restrictions to carry out mooring, unmooring, and cargo transfer maneuvers. Such operations normally take place during daylight and nightlight. See table below.

3.5 LOCAL TIME

Brasília Time in UTC-03:00

3.6 COMMUNICATION LANGUAGES

Ship/Terminal communication must be in Portuguese or English.

3.7 USEFUL PHONE NUMBERS

See item 10. **Contacts**

3.8 ENVIRONMENTAL MONITORING PROCEDURES

The Terminal receives daily forecasts for the region of the single point mooring system.

Access to this information can be obtained via VHF radio on channels 09 or 11, and, during the operation, through the Mooring Master.

4. Description of the Port or Anchorage

4.1 GENERAL DESCRIPTION

The operating system of the Maritime Terminal Almirante Soares Dutra - TEDUT consists of two single point moorings (SPM601 and SPM602), installed on the high seas, which characterizes it as an oceanic Terminal.

The single point moorings are installed in an unsheltered location, considered a Private Port, located outside the area of the Organized Port of Porto Alegre – RS – Brazil.

4.2 LOCATION

LOCATION – APPENDIX A

Coordinates

The single point moorings are established in the following coordinates:

SPM	LATITUDE	LONGITUDE
601	**30º 00' 42.5" S**	**050º 05' 42.5" W**
602	**30º 01' 74.7" S**	**050º 04' 35.1" W**

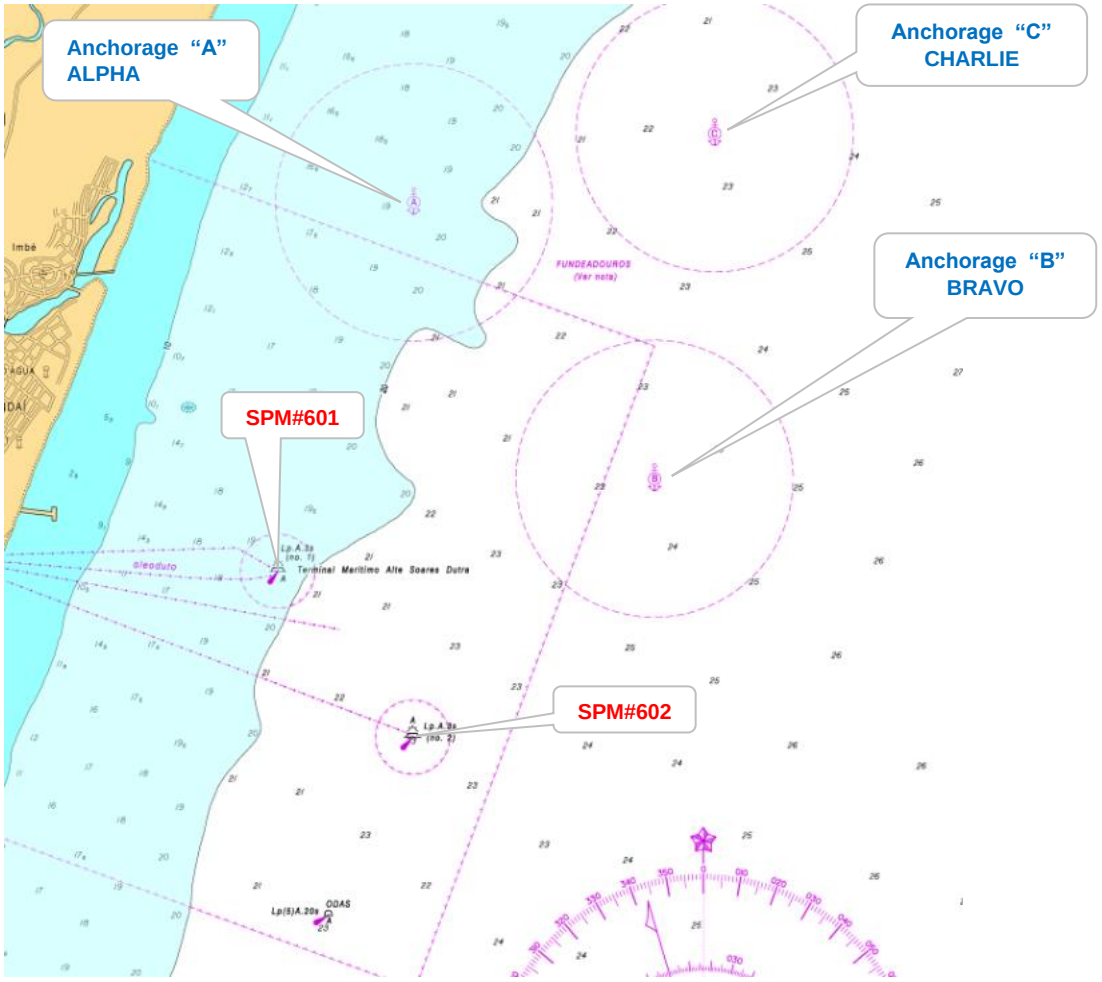
ANCHORAGE

In general, the anchorage area has a good holding seabed (fine sand and mud). There are three anchorages for vessels intending to operate at the Terminal:

- **Anchorage A (ALFA)** intended for anchoring vessels that will operate at SPM601 - latitude 29º 57' 42" S and longitude 050º 04' 24" W;

- **Anchorage B (BRAVO)** intended for anchoring vessels that will operate at SPM602 - latitude 29º 59' 24" S and longitude 050º 02' 30" W;

- **Anchorage C (CHARLIE)** intended for anchoring vessels undergoing repairs or awaiting orders – latitude 29º 57' 30" S and longitude 050º 01' 54" W.



Picture 1: Anchorage locations.

4.3 TERMINAL APPROACH

GENERAL DESCRIPTION

The Tramandaí Terminal is located on the northern coast of the state of Rio Grande do Sul, on the southern coast of Brazil, close to the city of Tramandaí, a tourist resort on the northern coast of the state of Rio Grande do Sul, approximately one hundred and thirteen kilometers from Porto Alegre.

On the coast, three water tanks stand out as visible points of the Terminal, marked on DHN 2010 chart: Turist, Agrimer, and Tramandaí.

NAVIGATION AID

The following navigation aids can be used by vessels operating at the Terminal:

» **Lighthouse at the south of Tramandaí – international number G 0607.4**
Position: latitude 30° 00’ 27” S and longitude 050° 08’ 04” W
Characteristics: Gr Lp (3) B12 seconds.
Focus altitude: 25 m
Range: 15 miles.
Description: truncated masonry tower, painted in black and white diamonds.
Radar reflector – code Z (Zulu).
Reference: DHN DH-2 Lighthouse lists.

» **Lighthouse Radio: FB (Foxtrot – Bravo)**
Frequency: 300 kHz
Range: 300 miles
Position: latitude 30° 00’ 34” S and longitude 050° 08’ 08” W.
Reference: DHN DH-8-8 Radio aid list.

- ✓ **Single Point Mooring SPM601**:

- ✓ Duration: 3 seconds
- ✓ 1 flash: 3 seconds
- ✓ 1 eclipse: 2.7 seconds

- ✓ **Single Point Mooring SPM602**:

- ✓ Duration: 8 seconds
- ✓ 1 flash: 3 seconds
- ✓ 1 eclipse: 2.7 seconds

PORT LIMITS

There are no official boundaries established for the Port. The Terminal is located at open sea, in unsheltered waters.

4.4 MANEUVERING AREAS

The turning basin when approaching the mooring berths extends 360º around the single point moorings for approximately 0.8 miles. Depths in the region vary between bathymetric levels of 20 and 25 meters.

Important: Given the uniformity of the coast, vessels arriving at the Terminal must plot their positions continuously, especially at night. Maneuvers in the turning basin are safe. When heading for anchorage, vessels must maintain contact via VHF radio to receive instructions in accordance with international radio procedures.

4.5 ENVIRONMENTAL FACTORS

The region where the Terminal is located has high relative humidity, ranging from 76 to 81%.

The average atmospheric temperature is around 20º Celsius, ranging from a minimum of -2º Celsius in winter to 38º Celsius in summer.

Other meteorological information for the area is described in the subitems below:

PREVAILING WINDS

The wind record in the coastal region of Tramandaí shows a clear prevalence of northeast winds.

Northeast winds are prevalent in every month of the year, mainly as northeast or east-northeast. Their highest values occur from September to January.

South to west winds are more frequent from August to December, while west to north winds are more frequent in the months of May, June, July, and August.

In the first half of the year (January to July), the frequency of winds decreases, and the strongest winds in the region are recorded in the months of October and November.

WAVES & SWELLS

Waves reach more than two meters and their predominant direction is approximately 110° (east-southeast), perpendicular to the coast.

PRECIPITATION

The average annual rainfall in the region is approximately 1,255 mm.

There are occasional records of storms in the region (force 12 on the Beaufort scale), blowing for a few hours in winter and for a shorter duration (accompanied by showers) in spring and summer.

LIGHTNING STORMS

Lightning storms are more frequent in the spring and summer seasons, in the afternoon and early evening.

The elements that contribute with their formation are cold fronts and high temperatures during the day.

VISIBILITY

Visibility is generally good. Occasionally, however, fog occurs in the early hours of the morning, during the fall and winter periods.

TIDAL CURRENTS AND OTHER CURRENTS

Ocean currents are created by local winds.

The general behavior of the currents shows a predominant direction parallel to the coastline, between 10° and 40°, varying from 1 to 2 knots.

TIDES AT THE PORT

There is no tidal cycle around Tramandaí.

The absence of tides is due to the geographical location of Tramandaí, which corresponds to a point of zero tide on the globe. Given this, it cannot be considered as an element of current formation around the coast.

5. Terminal Description

The Terminal consists of a system of two single point moorings, which are the berths, installed in the open sea, designed to operate with vessels for loading and unloading petroleum and its derivatives.

The unloading of petroleum aims, through import or cabotage, to serve the Alberto Pasqualini Refinery - REFAP, through two oil pipelines, 34 inch in diameter and 6.5 km in length on the maritime side and 6.15 km in length on the shore side.

The unloading of petroleum derivatives aims, through import or cabotage, to serve the Alberto Pasqualini Refinery - REFAP and BRASKEM.

The loading operation aims to meet the export of diesel and gasoline, i.e. the surplus production from the Alberto Pasqualini Refinery - REFAP.

Both operations are carried out through an oil pipeline, 28 inch in diameter and 3.9 km in length on the maritime side and 6.2 km in length on the shore side.

5.1 TERMINAL LOCATION

The Terminal is located approximately six kilometers from the seaside and tourist city of Tramandaí, 113 km from Porto Alegre, capital of the State of Rio Grande do Sul, Brazil, and is operated by Petrobras Transporte S.A. - Transpetro.

5.2 TERMINAL LAYOUT

5.3 VESSEL ACCEPTANCE CONDITIONS

- Conditions Required of Vessels on Arrival

- ✓ In order for the vessel's approach, maneuvers, and operations to be possible, safe, and efficient, it is necessary for the vessel to present minimum performance characteristics and conditions.
- ✓ Maximum displacement of vessels for this single point mooring is 200,000 metric tons.
- ✓ The vessel's maneuvering conditions must be satisfactory, especially with regard to the propulsion main engine and rudder.
- ✓ The propulsion main engine must be in suitable conditions to remain ready for operation throughout the vessel's stay next to the single point mooring and to start operating as soon as determined.
- ✓ The bow arrangement of vessels must comply with the recommendations of the OCIMF Guide "Mooring Equipment Guidelines" in its latest edition. Special attention must be paid to ensure that the number of pedestal rollers does not exceed 2 units and that the angle between them is as small as possible, not exceeding 90º.
- ✓ **The vessel must provide support facilities for the group of persons from the Terminal who will remain on board during the vessel's stay in the single point mooring, such as overnight accommodation and meals. Normally, the group is made up of at least seven people, including 2 Mooring Master (to be confirmed before berthing) and 6 mooring master assistants.**
- ✓ Failure to meet any of the conditions set out above will result in the vessel being unsuitable for the Terminal and may result in her rejection for operation at the single point mooring.

5.4 MANAGEMENT AND CONTROL

The Operational Control Center (CCO), located in the tank farm area, approximately 12 kilometers from the single point moorings, manages the control of the Terminal's operations. This location is where operation control and information exchange with the vessel are centralized.

Communications are carried out via VHF radios on a previously agreed and registered maritime frequency (channel 09 for SPM601 and channel 11 for SPM602).

A secondary method, via cell phone, is agreed upon in case of failure of the main system. The cellphone numbers are: SPM601 – (+55 51) 99951-9079 and SPM602 - (+55 51) 99913-4812

5.5 MAIN RISKS

As a general rule, as it is an open sea location, without sheltered waters, there are no associated navigation risks for vessels heading to the Terminal's single point moorings.

The main risks associated with the stay of vessels in operations at the Terminal arise from the geographical location of the single point moorings (on the coast) and because they are located in a place that is not sheltered from the constant storms and strong winds that occur especially in the months of September, October, and November.

During the entire period in which they are within the Terminal's coverage area, vessels must monitor the weather forecasts for the ALFA area of the Brazilian Navy's Hydrography and Navigation Center.

The Terminal also has a weather forecast service updated daily, which can be requested via VHF channel 09 or 11 or, during operation, via the Mooring Master.

The risks mentioned above require greater attention from the vessel's crew regarding the vessel's anchoring position. It should be noted that there is a history of the anchor chains of vessels breaking while anchored during bad weather.

6. Description of the Single Point Mooring

6.1 MOORING TO THE SINGLE POINT MOORING

BOARDING PROCEDURE FOR THE MOORING TEAM AND MOORING MASTER

The perception of the condition of the sea is not always the same when compared from the bridge of a large ship and a small motorboat. Boarding persons is a potentially high-risk task that requires full cooperation from all parties involved. Although there are no specific rules, the following points should be used as a guide:

- ✓ Agreement of when and where the transfer will take place;
- ✓ Sufficient time and space in the region where the task will take place;
- ✓ Heading and lee side for boarding/disembarking;
- ✓ Pay attention to the freeboard for rigging the boarding/disembarking arrangement;
- ✓ Distance from the base of the ladder/last rung to the wave level/swell;
- ✓ Maintainance of communication between the ship and the motorboat at all times.

SHIP MOORING SYSTEM

Vessels carrying out operations at the single buoy moorings are moored using a single mooring hawser with a circumference of 21 inches and a length of 90 meters. The mooring hawser is made from double braided 100% polyamide material that is coated with polyurethane and can be extended using a 3-inch (76 mm) section of a chafe chain with 54 links (17 meters).

Other accessories are available at the SPM for the maneuvering and mooring of vessels. The maximum breaking load (MBL) of the mooring hawser is 599 metric tons.

As per Mooring Equipment Guidelines – OCIMF (latest edition) special attention must be paid to ensure that the number of pedestal rollers does not exceed 2 units and that the angle between them is as small as possible.

Further details and the mooring procedure can be found in Appendices F, G, H, I, and J.

NAVIGATION AND MOORING AIDS

The Mooring Master will guide the ship's Captain on the safe method to be followed for mooring to the single point mooring system.

DEPTH CONTROL

SPM	DEPTH	MAXIMUM DRAFT
601	21 meters	16 meters (TBC)
602	25 meters	18 meters

WATER DENSITY

The density of seawater in the region of the Terminal's single point moorings is 1,025

MAXIMUM DIMENSIONS

The maximum displacement of vessels for mooring at the Terminal is 200,000 metric tons of displacement, both for SPM601 and SPM602 operations.

PHYSICAL DETAILS OF THE SINGLE POINT MOORING

The single point mooring system consists of the following equipment and operational characteristics:

BERTH	HANDLED PRODUCTS	HOSES AND FLANGES	RECEIVE OR SEND	TEMP. (ºC)		MAXIMUM FLOW RATE	MAXIMUM PRESSURE
SPM #601	petrochemical naphtha, condensate, gasoline, and diesel oil	1 X 16”	Receive and send	5	50	3,500 m^3/h	7 kgf/cm^2
SPM #602	Crude Oil	2 X 16”	Receive	5	50	8,000 m^3/h	7 kgf/cm^2

Single Point Mooring SPM601

- ✓ Capacity: vessels up to 200,000 metric tons of displacement.
- ✓ Diameter of the single point mooring: 12.5 meters
- ✓ Weight: 340 metric tons
- ✓ Number of moorings: eight with ten 3-inch anchor chains
- ✓ Waterdepth on site: 21 meters

Single Point Mooring SPM602

- ✓ Capacity: vessels up to 200,000 metric tons of displacement.
- ✓ Diameter of the single point mooring: 12.5 meters
- ✓ Weight: 340 metric tons
- ✓ Number of moorings: eight with ten 3-inch anchor chains
- ✓ Waterdepth on site: 25 meters.

CHARACTERISTICS OF THE BERTH FOR LOADING, UNLOADING, AND BUNKER

The Tramandaí Terminal single point mooring system has the following characteristics:

FLOATING HOSES

Single Point Mooring SPM601: Two lines formed by two sets of 26/27 hoses, with a total length of 274/285 meters, formed by hoses with diameters of 16 and 20 inches, double carcass, electrically continuous, with one hose in each line (the second in the vessel-buoy direction) being electrically discontinuous.

Single Point Mooring SPM602: Two lines formed by two sets of 27/28 hoses, with a total length of 285/296 meters, formed by hoses with diameters of 16 and 20 inches, double carcass, electrically continuous, with one hose in each line (the second in the vessel-buoy direction) being electrically discontinuous.

SUBMARINE HOSES

Single Point Mooring SPM601: Two lines formed by two sets of two submarine hoses, with a total length of 20 meters, formed by hoses with a diameter of 20 inches, double carcass, electrically discontinuous, assembled with floats and in the “Chinese Lantern” formation (CALM) – Appendix E.

Single Point Mooring SPM602: Two lines formed by two sets of three submarine hoses, with a total length of 27 meters, formed by hoses with a diameter of 20 inches, double carcass, electrically discontinuous, assembled with floats and in the “Chinese Lantern” formation (CALM) – Appendix E.

SUBSEA MANIFOLD

Single Point Mooring SPM601: The manifold consists of three 150-pound, 16-inch diameter ball valves, two 16-inch check valves, and a 28-inch crossover that connects the pipelines. Ball valves have mechanic hydraulic actuation from connecting hoses to the surface. The manifold is mounted on skids on the seabed.

Single Point Mooring SPM602: The manifold consists of three 150-pound, 20-inch diameter ball valves and two 20-inch check valves. Gate valves have pneumatic hydraulic actuation from connecting hoses to the surface. The manifold is mounted on skids and is staked to the seabed.

SUBMARINE PIPELINES – SINGLE POINT MOORING / TERMINAL

Single Point Mooring SPM601: Two carbon steel lines, 28 inches in diameter and 3.9 km in length.

Single Point Mooring SPM602: Two carbon steel lines, 34 inches in diameter and 6.5 km in length.

6.2 MOORING ARRANGEMENTS

Vessels operating on the single point moorings are moored by a single cable measuring 21 inches in circumference, 90 meters in length, made of 100% polyamide material, double braid coated with polyurethane, and completed with the extension of a 54-link (17 meter) 03-inch (76mm) chafe chain and other accessories necessary for handling and mooring vessels. The maximum breaking load (MBL) of the mooring hawser is 599 metric tons.

7. Communication before Arrival

PROCEDURES

During the vessel's stay at the Terminal, several actions are carried out to enable safe operations with the aim of managing and minimizing risks.

At all stages, as described in the subitems below, measures are taken in order to facilitate and make operations safer.

PROCEDURES BEFORE ARRIVAL

The vessel intending to operate at the Terminal must send, in advance and completed, through the Agent, the information contained in Appendix B, as this information is essential for preparing the operation.

Furthermore, the start of the operation will only be authorized when all possible pending issues on the Operational Safety Checklist – SSSCL have been resolved by the vessel.

Onboard repairs and washing of the ship's cargo tanks must be carried out in the anchorage area. No repairs will be authorized by the terminal during operations on the single point mooring.

Vessels bound for the Terminal facilities must indicate their estimated time of arrival (ETA) to the Ship's Agent, 72, 48, and 24 hours in advance, respectively. The ship's Agent, in possession of this ETA, will inform the Terminal by sending an electronic message (e-mail).

Any change or confirmation of the ship's arrival must be communicated at least 24 hours in advance.

In the ETA information, the vessel must specify whether the time mentioned is local or GMT.

The Notice of Readiness (NOR) will only be accepted if the vessel is actually, in all aspects, ready to begin operations.

NOR accepted is considered the moment when the vessel reaches the anchorage area or, in bad weather conditions that make anchoring impossible, the moment of the end of sea passage (EOSP).

Transpetro's Head Office defines the berthing schedule at TEDUT.

PORT CLEARANCE OF THE SHIP BY PORT AUTHORITIES

Port authorities are notified by the ship's Agents, taking into account the ETA reported and the estimated time for mooring and stay at Tramandaí roads.

There is no bunker supply at Tramandaí Terminal.

The information to be exchanged between the Terminal and the vessel and vice versa, prior to arrival, is described in appendices "B" and "C", attached.

NATIONAL HOLIDAYS

All ships in Brazilian ports must display their flags in an arc on the national holidays of September 7 and November 15.

DANGEROUS GOODS FLAG

Oil tankers must keep the BRAVO flag flying during the day and a red light at night throughout their stay.

STANDBY MAIN ENGINE

While vessels remain moored to the single point mooring, they must keep their main engine in a condition for immediate use, to be able to leave the monobuoy as soon as they are notified to do so. They must also keep the vessel's winch and crane in standby condition.

Any necessary repairs must not interfere with this determination.

Failure to comply with this requirement will result in the vessel being towed to anchorage, with the vessel being responsible for the resulting expenses; and PETROBRAS/TRANSPETRO will not accept responsibility, under any circumstances, for any delays that may result from this.

SMALL BOATS ALONGSIDE

The strict prohibition on small boats remaining alongside or in the vicinity of moored and operating vessels must be carefully observed. Only the Terminal's own service boats or those authorized by the port authorities or the Terminal may be located nearby or alongside, provided that they meet all safety and security requirements.

INTERRUPTION OF OPERATION

The operation of the vessel must be interrupted in the event of a fire or the beginning of a fire on board, in the facilities on shore, including the single point mooring, in another ship nearby or passing a distance considered dangerous, or in any situation that may pose a danger, either to the vessel or to the single point mooring.

COMPASS (CARGO BALANCING)

In addition to having main engine on standby, the ship must be kept in a balanced cargo condition that allows it to move away from the single point mooring as soon as it receives a notice to do so.

7.1 INFORMATION FROM THE TERMINAL TO THE SHIP

7.1.1 BEFORE THE TRANSFER OF THE CARGO

The electrical insulation of the vessel will be carried out by means of an electrically discontinuous hose, installed in the second position of the hose lines in the ship-monobuoy direction.

The Mooring Master will coordinate the tasks of connecting and disconnecting the hoses.

The minimum effective capacity of the cranes of vessels intending to operate at the Terminal must be 10 metric tons (SWL 10 t).

The maximum distance allowed between bow and manifold must be 145 meters for both single point moorings.

The hose connection must have a diameter of 16 inches and will be made on the port side. The resources required to connect the ship are provided by the Terminal.

One or two hose lines can be connected, depending on the operating point (SPM601 or SPM602).

A ship's representative must be positioned at the ship's cargo manifold throughout the entire operation in a close contact with the ship's cargo control center.

The Terminal will keep an watchmen on board the vessel at all times. One positioned at the bow of the vessel and the second one at the ship's cargo manifold. The watchmen will inform the Mooring Master of any situation that may affect the operation.

NOTE: Considering the peculiarities of operations at an ocean Terminal, where ship/shore access is always a complicating factor, vessels must provide accommodation (cabin) and meals for the following team that will remain on board throughout the entire operation:

- **Up to two Mooring Masters (to be confirmed upon arrival);**
- **Six riggers (for connecting hoses and watch keeping services);**
- **One Cargo Inspector (where applicable).**

Cargo measurements onboard will be carried out by vessel personnel and monitored by representatives of the Terminal and/or Cargo Inspectors. The material used must be properly grounded and the measuring accessories must be explosion-proof.

The start of the operation is subject to a preliminary conference (safety key meeting) in which the SSSCL (Ship/Shore Safety Checklist) and the pre-cargo agreement (initial letter) will be agreed and signed.

CARGO TRANSFER

Monitoring of manifold pressures during cargo transfer must be recorded by onboard and shore representatives at hourly intervals.

The Terminal maintains control of the internal pressure variables of the oil pipelines through a supervisory control system.

During the entire cargo transfer operation, the accumulated flows and volumes are measured hourly and compared between the parties. Any significant differences should be investigated and the transfer operation should be stopped if necessary.

Any change in operating conditions must be communicated in advance and documented.

During operation, it is expressly forbidden to close valves that may cause back pressure in the system.

WATER DEPTH

Depths vary between bathymetric levels of 20 and 25 meters in the area of the single point mooring.

See item: **4.4 MANEUVERING AREAS**

WASTE AND SLOP DISPOSAL PROCEDURES

There is no facility for receiving slop at the Tramandaí Oil Terminal or collecting garbage from the ships.

7.2 INFORMATION FROM THE SHIP TO THE TERMINAL

Terminal Form (ISGOTT) See Appendix E

8. Operational Information

8.1 SHIP / TERMINAL ACCESS

See item: **2.2 TERMINAL / VISITOR ACCESS**

The stairs used to access the vessel must be provided by the vessel itself. These stairs must be in excellent condition and in accordance with national and international regulations.

Aiming at greater safety for the boarding/disembarking task and in accordance with the peculiarities of the location and the vessels involved, the Mooring Master may request the ship's Captain to provide the pilot ladder together with the accommodation ladder, even if the freeboard is below 9 meters and the ship's arrangement allows it".

a) All ladders to the ship must be clean, in good condition, and in accordance with the requirements of the SOLAS International Convention and the Brazilian Maritime Authority;
b) All pilot ladders must be positioned in a location free from discharges from the ship;
c) The pilot ladder must be arranged so that its steps remain firmly attached to the ship's side;
d) The lower base of the accommodation ladder (lower platform) must remain firmly against the vessel's side.

8.2 SAFETY KEY MEETING

See item 8.3

8.3 SHIP/SHORE SAFETY CHECK LIST (SSSCL)

The Ship/Shore Safety Check List (ISGOTT) is checked and filled by the terminal representative (Mooring Master) during the safety key meeting of the vessel, when all safety recommendations are addressed.

During the entire period that the ship is moored to the single point mooring, the Terminal will carry out, through the Mooring Master, intermediate inspections of the vessel in accordance with ISGOTT recommendations.

8.4 BALLASTING / DEBALLASTING POLICY

The vessels' ballast and deballast tanks and systems must be used only for this purpose, and they must be isolated from other systems on board.

Ballast water to be discharged into the sea must comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments - BWM.

WATER POLLUTION

The Brazilian legislation is very strict regarding water pollution by oil tankers. The discharge of crude oil or petroleum products into the sea, by themselves or mixed with ballast water, is punishable by high fines.

PETROBRAS/TRANSPETRO is responsible for reporting to the Port Authority any leaks, spills, etc., that occur at its facilities or of which it is aware.

8.5 HOSE CONNECTION/DISCONNECTION PROCEDURES

HOSE CONNECTION

After the ship is moored and aligned to the resulting forces of current, wind and sea, the boat supporting the hoses starts to bring them to the vertical of the port crane (always and only on the port side), until the internal floating hose string is hoisted and connected, initially, because it is the one that is close to the side. Then, the same task is repeated with the external floating hose string. The two lines of floating hoses are connected to the manifold, with a “Camelock” quick-release device for disconnection in case of emergency. At SPM 601 one floating hose will be connected only.

The electrical insulation between the ship and the monobuoy is achieved by inserting an electrically discontinuous hose in the second position of the hose line in the ship-monobuoy direction, with the rest of the line being formed by electrically continuous hoses aiming at the adequate dissipation of possible accumulated static charges.

ACCESSORIES

The accessories for connecting the hoses (straps, joints, nuts, screws, keys, ropes, etc.) are supplied by the Terminal.

HOSE DISCONNECTION

Once cargo transfer is completed, hoses disconnection begins, and the vessel's crane is involved in the task of releasing the hoses into the sea.

PROCEDURE FOR QUICK DISCONNECTION OF HOSES

Objective: To perform rapid disconnection of the hose lines from the ship's manifold when the defined weather conditions reach the values mentioned in the Operational Instruction tables, which are monitored online on the Terminal Supervisory System screens, in order to anticipate the arrival of bad weather and maintain the integrity of the systems and the safety of persons.

Task Execution: The Mooring Master must arrange with the Captain or First Officer, the IMMEDIATE presence of the crane operator and the ship's team, together with the mooring team on standby, at the first alert.

1) **ALERT ALARM -** When the wind speed is greater than or equal to 25 KNOTS or the tension in the mooring line reaches a value greater than or equal to 40 METRIC TONS, defined in the decision-making tables, the Supervisor/Operator must immediately call the Mooring Master to put the entire mooring team on standby, including the crane operator, the pumper, and the ship's team, regardless of the time and what they are doing.

2) **OPERATION STOP ALARM** – When the wind speed is greater than or equal to 30 KNOTS or the tension in the mooring line reaches a value greater than or equal to 50 METRIC TONS, defined in the decision-making tables, the Supervisor/Operator must immediately call the Mooring Master so that the ship IMMEDIATELY INTERRUPTS the loading/unloading operation and to position the teams on deck, awaiting orders for a possible disconnection.

3) **DISCONNECTION AND UMMORING ALARM** – When the wind speed is greater than or equal to 35 KNOTS or the tension in the mooring line reaches a value greater than or equal to 60 METRIC TONS, defined in the decision-making tables, the Supervisor/Operator must immediately call the Mooring Master for the IMMEDIATE DISCONNECTION AND UMMORING of the vessel.

8.6 CARGO TRANSFER PROCEDURES.

UNLOADING

At the beginning and during unloading operation, the following rules must be observed on board:

a) The Mooring Master will determine the start of pumping;
b) The maximum permitted pumping pressure and flow rate is 7kgf/cm^2 at ship's manifold;

c) As a general rule, when unloading is complete, the tanker should be ballasted with 40% of its DWT;
d) A watch keeping service must be maintained on the bow and in the manifold area;
e) Every hour, the ship/terminal flow rate will be checked, compared, and reported via **VHF**, thus avoiding any type of abnormality.

LOADING

At the beginning and during loading operation, the following rules must be observed on board:

a) The Mooring Master will determine the start of pumping by shore;
b) The maximum permitted back pressure is 1kgf/cm^2;
c) Maximum flow rate by shore will be 1,300m^3/h
d) A line displacement will be necessary before and after loading operation starts. Loading Master will give all the instructions regarding line displacement operation. As a general rule the amount of displacement is about 4,200 cubic meter (GOV). line displacement must be loaded in a segregated tank on board.
e) A watch keeping service must be maintained on the bow and in the manifold area;
f) Every hour, the ship/terminal flow rate will be checked, compared, and reported via **VHF**, thus avoiding any type of abnormality.

8.7 CARGO MEASUREMENT, SAMPLING, AND DOCUMENTATION

IT WILL NOT BE NECESSARY to flush the floating lines with water after the operation is complete. However, the small gap of line between the hose valve and the vessel's inlet valve must be drained before hoses disconnection begins.

Final onboard measurements will be carried out by vessel personnel and monitored by Terminal representative or Cargo Inspectors. The material used must be properly grounded and the measuring accessories must be explosion-proof.

The clearance of the vessel will depend on the comparison of the cargo quantities moved within the contractual limits. In loading operations this comparision will be done after the cargo calculation is done.

8.8 ENVIRONMENTAL LIMITS

The vessel moored to a single point mooring automatically takes the position resulting from the current, wind speed and direction and intensity of waves/swells. The operation of mooring the vessel, hoisting of hoses, and all maritime operations at TEDUT are predetermined by meteorological conditions and sea conditions. This includes, but is not limited to, consideration of sea conditions and swell, wind direction and intensity, and visibility.

These limits are not absolute but rather relative to the effects caused by these forces on the mooring/hoses connection/ship system (direction and angle of the three component forces), as well as their persistence, considering that the size and shape of the vessel are also parameters for analyzing safety conditions.

There is no current speed limit for mooring and/or operation.

For mooring vessels to single point moorings, the maximum limits are determined by maximum winds of 25 knots and minimum visibility of 0.5 nautical miles.

For nighttime mooring, the limits are winds with a maximum speed of 20 knots and minimum visibility of 1.0 nautical mile.

ENVIRONMENTAL LIMITS		
TASK	**ENVIRONMENTAL DESCRIPTION**	**SPM601 and SPM602 WORST ACCEPTABLE CONDITION**
APPROACHING AND MOORING AT NIGHT TIME	HEIGHT OF SWELL (METER)	**1,5**
	WIND (KNOT)	**20**
	CURRENT (KNOT)	**N/A**
	VISIBILITY (NM)	**> 1,0**
APPROACHING AND MOORING AT DAY TIME	HEIGHT OF SWELL (METER)	**< 2,5**
	WIND (KNOT)	**25**
	CURRENT (KNOT)	**N/A**
	VISIBILITY (NM)	**> 0,5**

Table 4: Environmental limits for mooring maneuvers.

During the operation of the ship, if at least one of the limits indicated in the yellow region (stage 1) of Table 5, related to wind speed or tension in the mooring line, when applicable, is reached during the transfer of products, the Mooring Master must immediately alert the support teams to prepare for a possible interruption of the operation. At this stage, the readiness of the ship's main engine must be requested from the vessel's Captain.

If at least one of the limits indicated in the orange region (stage 2) of Table 5 is reached during the transfer of products, the Mooring Master must immediately stop pumping and begin preparations to disconnect the hoses.

At this stage of pumping interruption and preparation for disconnection, the readiness of the main engine must be confirmed by the Captain and support team and vessels must be contacted to begin the prompt disconnection.

Similarly, if at least one of the limits indicated in the red region (stage 3) of Table 5 is reached during the transfer of products, the Mooring Master (on duty), after interrupting pumping, must immediately request the disconnection of the hoses and the machine prepared for unmooring in short notice.

ENVIRONMENTAL LIMITS		
TASK	**ENVIRONMENTAL DESCRIPTION**	**SPM601 and SPM602 WORST ACCEPTABLE CONDITION**
CARGO STOPPAGE	HEIGHT OF SWELL (METER)	**3,0**
	WIND (KNOT)	**30**
	CURRENT (KNOT)	**N/A**
HOSES DISCONNECTION	HEIGHT OF SWELL (METER)	**> 3,0**
	WIND (KNOT)	**35**
	CURRENT (KNOT)	**N/A**
UNMOORING	HEIGHT OF SWELL (METER)	**> 3,0**
	WIND (KNOT)	**35**

Table 5: Operational limits during operation.

The Mooring Master and the Operation Supervisor are responsible for making decisions regarding environmental and operational safety parameters in all stages of the operation of vessels on Transpetro's single point moorings.

8.9 TANK CLEANING AND ENTRANCE POLICY

It is prohibited to carry out conventional tank cleaning operations when the ship is moored to a single point mooring.

Crude Oil Washing operations must be requested in advance by the vessel's Agent to the charterer or cargo owner. The Terminal normally requests vessels to wash only the minimum number of tanks as required by the MARPOL Convention.

8.10 INERT GAS

The inerting process is important for the safety of oil and chemical tankers. The vessel must fill the empty space in the tank with inert gas and keep oxygen concentration below 8%.

8.11 BUNKER POLICY

There is no bunker supply at Tramandaí Terminal.

8.12 POLLUTION PREVENTION

The vessel will send a summary of its emergency plans in advance.

8.13 POTABLE WATER

The TRAMANDAÍ Marine Terminal does not have the means to supply water to ships moored to the single point mooring or anchored offshore.

8.14 UNMOORING FROM THE SINGLE POINT MOORING

The Mooring Master normally starts the unmooring maneuver immediately after the hoses are disconnected and documents are signed.

The disembarking of personnel and equipment takes place around the single point moorings, in a safe location, indicated by the Mooring Master in common agreement with the ship's Captain.

8.15 ISPS CODE COMPLIANCE

The TRAMANDAÍ Marine Terminal is certified under the ISPS Code, having a valid Declaration of Compliance, having implemented port security measures applicable to vessels and port facilities, in accordance with the requirements of the International Maritime Organization (IMO).

If necessary, these protective measures may be contacted by the Vessel through the Terminal's Port Facility Security Supervisor (PFSO) or through the Terminal's Mooring Master.

The Terminal operates normally at security level 1.

If necessary, these security measures can be contacted by the vessel through the Mooring Master or via VHF radio, call channel 09, 11, or 16.

For further information, the Terminal Port Facility Security Officer (PFSO) can be contacted at the following telephone number: Tel: (+55 51) 2161-5534 or 2161-5554.

8.16 OTHER RELEVANT INFORMATION

GAS FREEING

It is NOT allowed to perform gas freeing of a ship while the tanker is moored at a single point mooring.

SOOT BLOWING

During the entire period in which the vessel is moored to the single point mooring, it is forbidden to discharge dense smoke through the funnel and to carry out any type of soot blowing or cleaning of the boiler pipes. Furthermore, precautions must be taken to prevent sparks from escaping through the funnel.

Failure to comply with this regulation will result in one or more of the following sanctions:

- ✓ Immediate interruption of operations;
- ✓ Fine by relevant authorities;
- ✓ Compulsory unmooring of the vessel from the single point mooring;
- ✓ Communication of the breach to shipowners;
- ✓ Fines, loss of time, and all other related expenses will be fully charged to the vessel.

SUSPENSION OF OPERATION

The interruption of the loading or unloading of the vessel must occur in any situation that may pose a danger, whether to the vessel, the environment, or the Terminal facilities.

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

The Terminal operation personnel are authorized to interrupt/suspend the operation in the event of non-compliance by the vessel with any rules and regulations concerning safety, universally accepted and adopted in international transportation.

The vessel has the right to stop operations if it has reason to believe that operations on shore are not safe. In this case, the vessel must notify the Mooring Master or the Terminal (Operational Control Center) in advance.

In any emergency, the Terminal may interrupt operations so that all resources can be focused on mitigating any potential loss.

PETROBRAS/TRANSPETRO is authorized to suspend operations in the event of non-compliance with any of the rules, laws, or regulations mentioned above, or in case the Mooring Master or Operations Supervisors believe there is any dangerous situation.

Tankers are expected to comply with all universally accepted and adopted safety regulations and standards for the maritime transportation of oil.

The Captain has every right to interrupt the operation if they have reason to believe that it is not safe and as long as the Captain notifies the Terminal in advance.

9. Port or Anchorage Organization

9.1 PORT CONTROL OR VTS

There is no VTS service at the port of TRAMANDAÍ.

9.2 MARITIME AUTHORITY

The Port Authority is the Maritime Authority within the limits of Tramandaí Terminal. It is responsible for determining actions and prosecuting those responsible for any incident or accident within the port limits.

9.3 PILOTAGE

The Terminal provides the services of a duly qualified Mooring Master and Loading Master. This professional will advise the ship's Captain on maneuvers involving approaching, mooring, and unmooring vessels to single point moorings, as well as coordinate hoses connection/disconnection operations and cargo transfer.

The use of a Mooring Master is mandatory for all vessels that intend to operate at the Terminal, both for product loading and unloading operations.

It should be noted, however, that each Captain is solely responsible for the maneuvers and for providing the information to be provided to the Mooring Master. Mooring Master will be considered an employee of the shipowner and will not be considered responsible or co-responsible for anything that occurs or fails to occur because of such operations.

Ship’s Captain must notify the Mooring Master of any abnormalities, specific conditions, or existing difficulties, such as, deficiencies in main engine, boilers, rudder, problems or malfunction in navigation aid devices, mooring ropes, or any element that may pose a danger to the operation, safety of the vessel, and the Terminal facilities.

On the other hand, if the ship's Captain is convinced that the operation is being conducted incorrectly or dangerously, the Captain must take charge of the maneuver from the Mooring Master, notifying the Terminal, Maritime Authority and Agent of the fact in writing and recording the occurrence in the form provided in Appendix D. In this case, the Captain must take charge the direction of the maneuver and request the Terminal to indicate a deputy Mooring Master.

Similarly, Transpetro assumes no liability of any nature for damages, accidents, losses or for anything that may occur or not occur due to the acceptance, by the ship's Captain, of the guidance, opinion, actions, or intentions of the Mooring Master, with which the ship's Captain may or may not agree, using their own judgment, which will necessarily prevail.

9.4 TUGBOATS AND OTHER MARITIME SERVICES

Tramandaí Marine Terminal has a tugboat with 45 metric tons of bollard pull that may be used, at the Terminal's discretion, in mooring maneuvers or even during loading/unloading operations in pull-back operations.

The use of a tugboat is not mandatory. Its availability and use will be defined by the terminal on the day of the mooring operation.

Service boats for transporting personnel: This service must be requested through the ship's Agent. Such vessels are subject to inspection by the Port Facility Security Officer or the security team at Trapiche Pier. See item 7.3.2

Mooring boat: The Terminal has a mooring service consisting of two boats to assist in mooring/unmooring and hose connection/disconnection maneuvers.

Service boats for delivering provisions: Similarly, to the service boat for transporting personnel, the ship's Agent provides this service. The supply of provisions depends on prior authorization from the Mooring Master. If carried out with the ship moored, it should preferably be done in daylight. Such boats are subject to inspection by the Port Facility Security Officer at Trapiche pier.

10. Contacts

The following tables indicate the Organization, position, telephone numbers, fax, electronic address, radio channel and frequencies of the main contacts of the Terminal and the companies that operate therein.

LOCATION	CONTACT	TELEPHONE	CELLPHONE	VHF CHANNELS	
				CALL	TALK
SPM #601	Mooring Master	+55 (51) 2161-5534	+55 (51) 99951-9079	09 or 11	09 or 11
SPM #602	Mooring Master	+55 (51) 2161-5534	+55 (51) 99913-4812	09 or 11	09 or 11
Operational Control Center (CCO)	Shift Supervisor	+55 (51) 2161-5554	+55 (51) 99951-9097	09 or 11	09 or 11
TEDUT Terminal	Port Facility Security Officer	+55 (51) 2161-5534	+55 (51) 99550-1145	N/A	N/A

11. DEFINITIONS

Spring tide – A tide just after a full moon or new moon, when there is the greatest difference between high tide and low tide.

Neap tide – Condition in which the tide reaches its minimum point at a certain time of year.

IMO – International Maritime Organization

ISPS Code – International Ship and Port Facility Security Code

BREAKWAY COUPLING – Automatic hose uncoupling device.

VTS – Vessel Traffic Service

ISGOTT – International Safety Guide for Oil Tankers and Terminals

SOLAS – Safety of Life at Sea

BP - Bollard Pull

NT – Tanker

GIAONT – Ship/Terminal Operational Inspection and Monitoring Group

DWT – Deadweight Tonnage

COW (Crude Oil Washing) - Cleaning of the ship's cargo tanks with the crude it is carrying

PCL – Local Contingency Plan

ETA – Estimated Time of Arrival

SPM – Single Point Mooring

VHF (Very High Frequency) – Radio frequency used in maritime operations.

BEAUFORT SCALE – A scale that measures wind intensity from the condition of the sea

BUNKER – Marine fuel for ships.

SLOP – Slop tank.

CRE – Emergency Response Center

CALM (Catenary Anchor Leg Mooring) - system for anchoring and installation of the single point mooring/submarine hose assembly.

ACCOMMODATION LADDER – A straight metal structure with handrails on both sides. The steps are self-leveling, according to the slope, and have a non-slip tread. It is placed parallel to the side of the ship, from a retractable platform fixed to the deck.

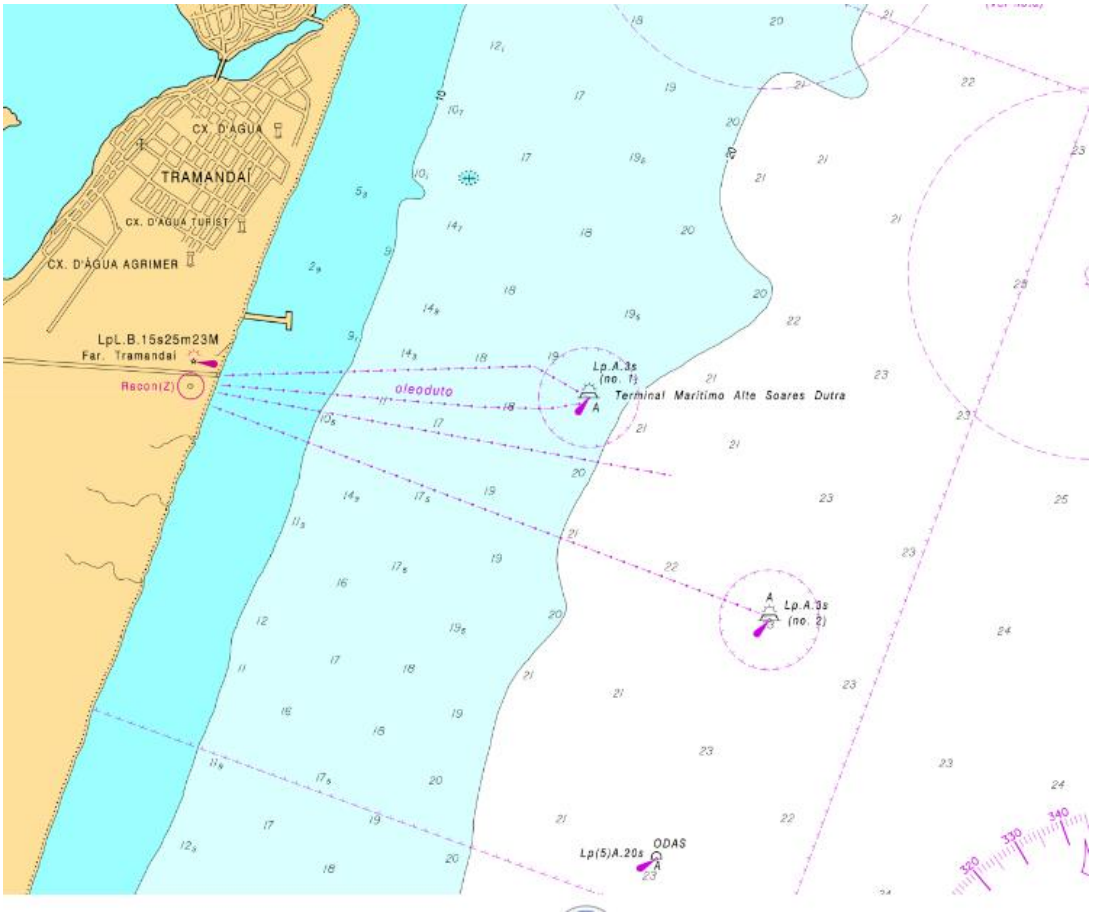
PILOT LADDER - A flexible ladder made up of cables with wooden and/or rubber rungs in accordance with the SOLAS convention.

MOORING MASTER – A suitably qualified marine representative placed on board vessels to advise the Master during navigation of the vessel to/from the terminal facility. The Mooring Master may also assist with or undertake ship handling, hose handling, cargo operations, documentation and communication duties and any other tasks as required by the facility operator.

SSSCL – Operational Safety Checklist (ISGOTT - Ship/Shore Safety Checklist).

APPENDICES

APPENDIX A
LOCATION OF THE SINGLE POINT MOORINGS



APPENDIX B
INFORMATION BEFORE THE VESSEL ARRIVES AT THE TERMINAL

TRANSPETRO MARITIME TERMINAL ALMIRANTE SOARES DUTRA - TEDUT		
Request for Vessel Information		
Ship Name:		Estimated Time of Arrival:
Flag:		Last Port:
Captain's Name:		Next Port:
Shiponwer:		Agents:
Does the ship have an inert gas system?		Oxygen content in cargo tanks:
Does the ship intend to do a crude oil washing?		Does the vessel plan to perform tank washing while moored?
Length Overall (LOA):		Entrance draft:
Length between perpendiculars:		Maximum draft during transfer:
Breadth:		Exit draft:
Propulsion	**Transverse Propulsion**	**Tugboats required**
Number of motors: Number of propellers:	Bow (# and power): Bow (# and power):	Minimum:
Number and size of flanges		**Distances**
• Function: • Ballast: • Bunker:		• Bow to manifold: • Side to manifold: • Distance from manifold to main deck:
Loading schedule		
Type and quantity (m^3) Type and quantity (m^3) Type and quantity (m^3)	Ballast Quantity (m^3) Estimated time:	Slop/ballast discharge to shore: Quantity: Not applicable (m^3) Estimated time: Not applicable.
Unloading schedule		
Type and quantity (m^3) Type and quantity (m^3) Type and quantity (m^3)	Ballast Quantity (m^3) Estimated time:	Slop/ballast discharge to shore: Quantity: Not applicable (m^3) Estimated time: Not applicable
Bunker requested		
Type and quantity (HFO): Not applicable	Type and amount (MDO): Not applicable	
Additional information (if any):		

APPENDIX C
INFORMATION TO BE EXCHANGED BEFORE CARGO TRANSFER

INFORMATION BETWEEN SHIP AND TERMINAL			
Ship Name: Voyage Number:		Mooring Berth: Berthing Date:	
Contract Data			
Number of pumps on board:			
98% Volumetric capacity:			**M^3**
Guaranteed unloading pressure: (for unloading operation)			**Kgf/cm^2**
Simultaneous ballast/deballast capacity with loading/unloading:			
Voyage information			
Type of charter (VCP, TCP, COA, etc.):			
Type of voyage (Cabotage/Long Haul):			
Origin and destination ports or locations:			
Did the ship request bunker?			
Means of communication between ship and Terminal:			
Cargo information			
Product:	Quantity:	Temperature:	API:
SLOP			
Quantity:	Temperature:		API:
Fluidity:	Origin: Contaminants:		
Ballast			
Dirty ballast Quantity: Temperature:		**Segregated Ballast** Quantity:	
Operation Information			
For unloading: Will the ship carry out a special operation? (COW, Inertization, etc.)			
Estimated time for the special operation			
Required pump downtime			
For loading: Advance notice time for TOP			
Flow rate during TOP period:			
Quantity of ballast to be discharged:			
Maximum flow rate allowed for deballasting:			
Are there any restrictions on electrostatic properties?			
Are there any restrictions on the use of self-closing valves?			
Ship / Terminal conditions for the operation of loading / unloading per product			

Ship Pressure: **Flow Rate:**	Temperature MAX.: MIN.:	**Terminal Pressure:** **Flow Rate:**	Temperature MAX.: MIN.:

Sequence of operations by product
Quantity to be loaded/discharged
Mother / Daughter Tanks
Ship / shore lines
Loading arms / hoses used
Forecast for start and end of operation

APPENDIX D
PROOF OF MANEUVER

BRAZILIAN NAVY

PORT AUTHORITY OF RIO GRANDE DO SUL

PORT AUTHORITY AGENCY AT TRAMANDAÍ

PROOF OF MANEUVER FROM THE MOORING MASTER

I declare, for purposes of verification before the Brazilian Maritime Authority, that the vessel _____ IRIN _____ was attended to by the Mooring Master _____, who identified themselves in the approach, mooring, and unmooring maneuvers at Terminal TEDUT (SPM _____) on _____/_____/_____ until ____/____/_____ at _____.

Participated as assistants: _____

Occurrences and Notes:

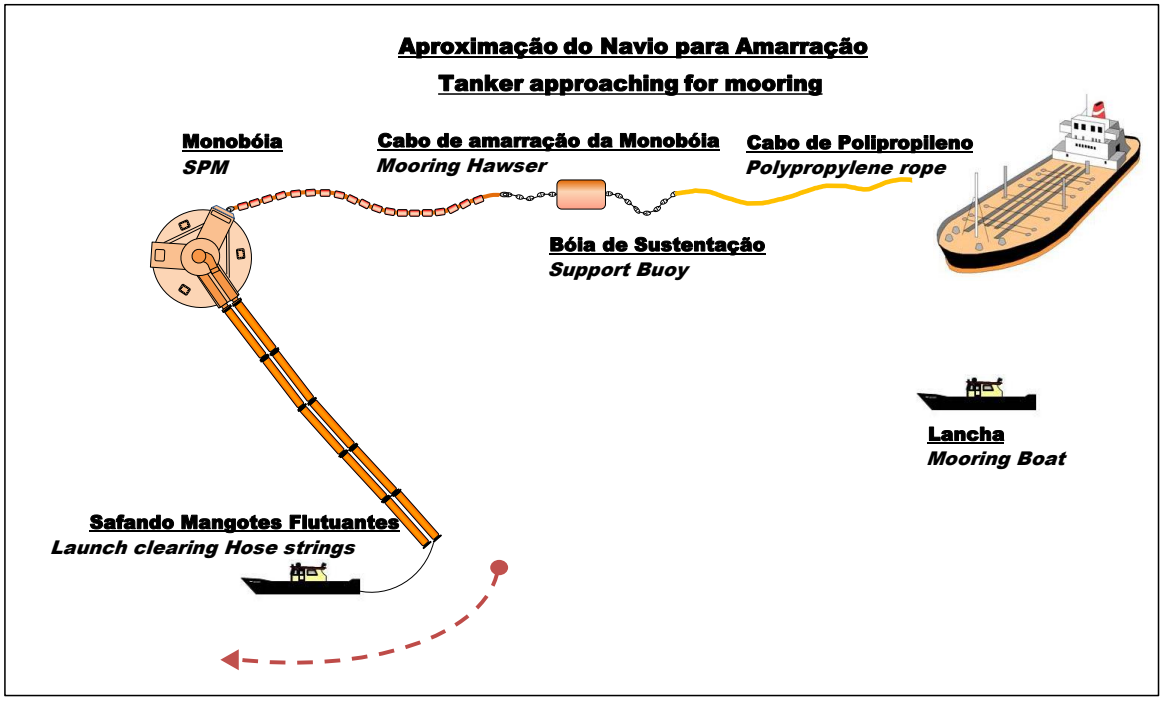
_____

_____

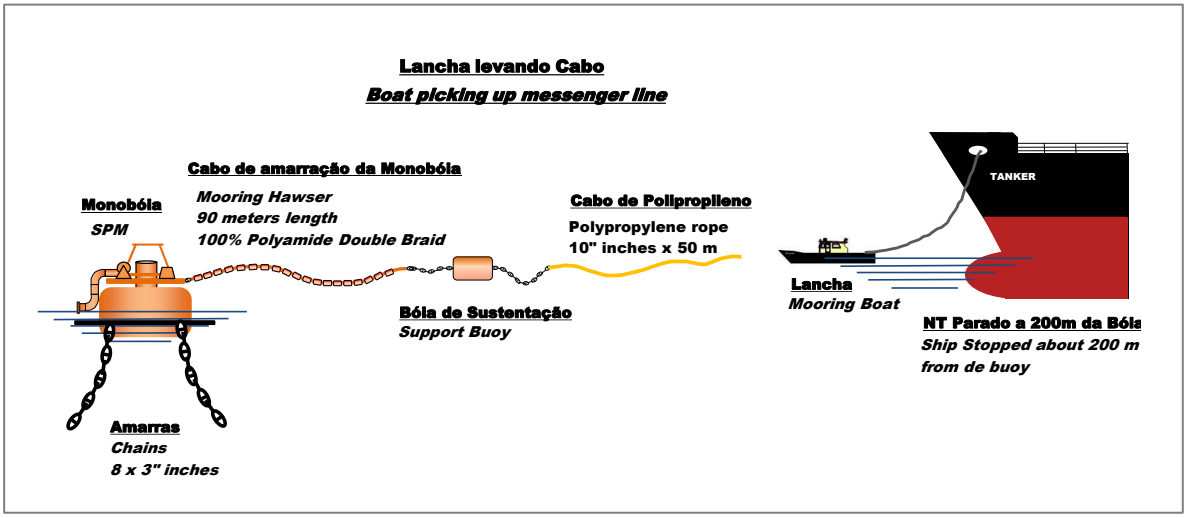
APPENDIX E

PLEM (pipeline end manifold) set, “Chinese Lantern”, single point mooring, (submarine and floating) hoses, and ship.

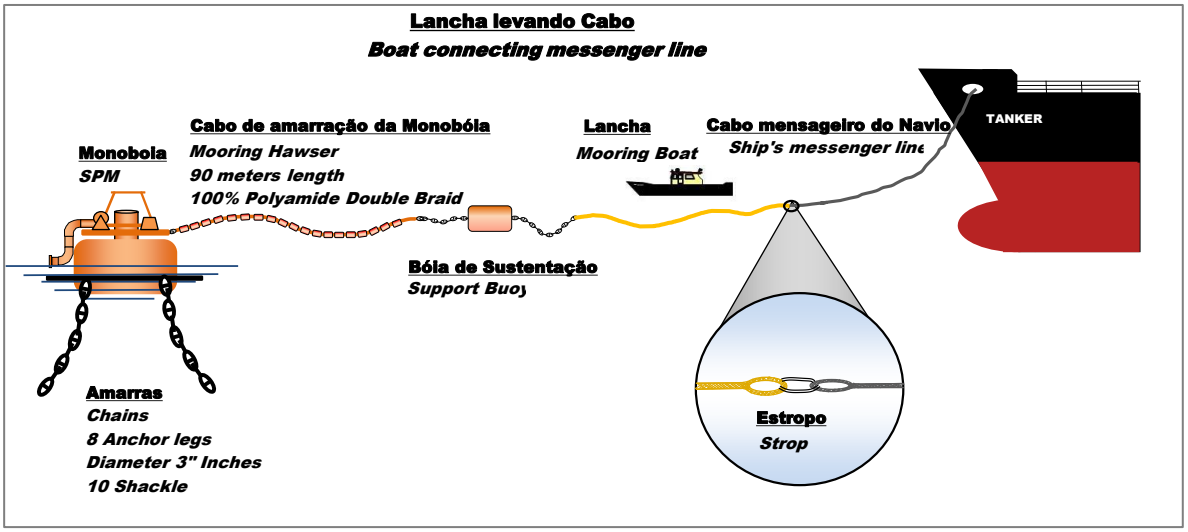
APPENDIX F



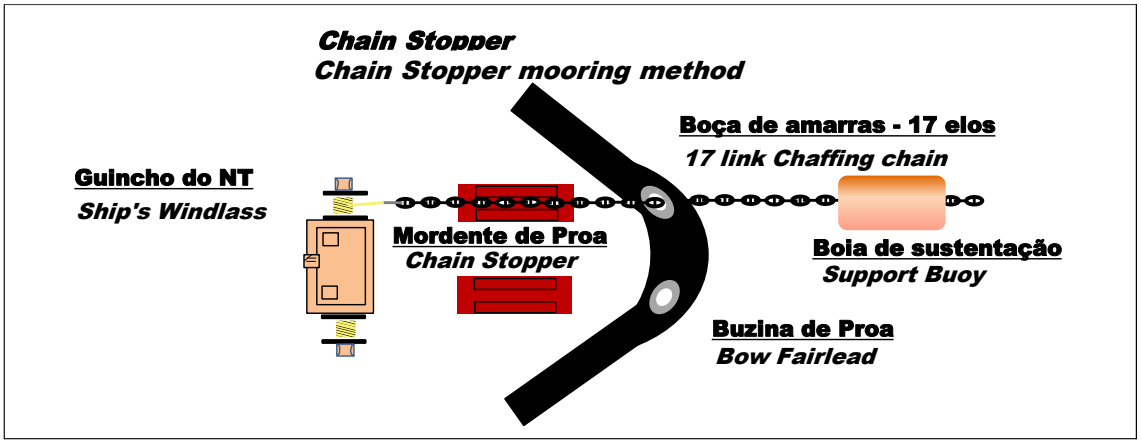
APPENDIX G



APPENDIX H



APPENDIX I

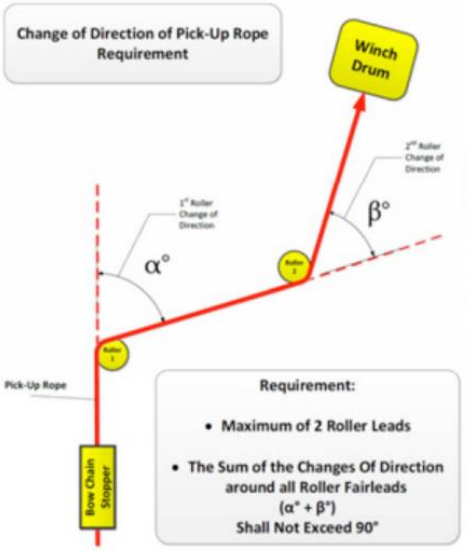


APPENDIX J

According to the MEG (Mooring Equipment Guidelines) and OCIMF recommendations, for vessels with delivery date during or after 2009, it is recommended, in terms of safety, for winch drums for cable storage to be directly aligned with the bow chain stopper (BCS) and bow fairlead.

Recognizing that sometimes such an arrangement is not possible, the use of pedestal rollers becomes necessary. However, the number of pedestal rollers used for each BCS cannot exceed two (2) and the variation in the direction of the angles that the cables make must be minimal.

The “minimum” value is at the discretion of each Oil Major. For most, this value cannot be greater than 90°.



Arranjo dos novos Suezmaxs do PROMEF.

BCS(s) must be located between 2.7 and 3.7 meters from the bow fairlead, regardless of the size of the vessel. The dimensions of the bow fairleads must be at least 600mm x 450mm. In the case of one (1), it must be located on the center line; if two (2) are recommended, they must be spaced 2 meters from center to center and never more than 3 meters.

Illustrative figure with the main recommendations of OCIMF and MEG: