



PORT INFORMATION

ADMIRAL SOARES DUTRA MARINE TERMINAL - TEDUT

TRAMANDAÍ - RS - BRAZIL

JUNE / 2023

6th EDITION

Revisão B

ADMIRAL SOARES DUTRA MARITIME TERMINAL - TEDUT

Operated by Petrobras Transporte S.A. – Transpetro S.A.

Tramandaí – RS, Brazil

REVISIONS LOG

EDITION	REVISION	CHANGES	DATE	PREPARED BY	APPROVED BY
5th	A	Updating of telephone contact numbers.	04/20/2010	Rômulo Prazeres	Luiz Vicente M. F. da Costa
5th	B	Updating of position of single point moorings.	11/04/2013	Rômulo Prazeres	Luiz Vicente M. F. da Costa
5th	C	Inclusion of nighttime maneuvers.	11/04/2013	Rômulo Prazeres	Luiz Vicente M. F. da Costa
5th	D	Alteration of environmental limits	08/30/2014	Rômulo Prazeres	Luiz Vicente M. F. da Costa
5th	E	New single point moorings and procedures	01/15/2015	Rômulo Prazeres	Luiz Vicente M. F. da Costa
5th	F	General revision.	07/06/2020	Adauri Duarte Barreto	Gersino de Lucca
6th	A	Updating of telephone contact numbers, new standard procedures and general revision.	12/09/2022	Rômulo Prazeres	Jean Paulo Guarnieri
6 th	B	Regulations for the use of tugboat	01/06/2023	Rômulo Prazeres	Jean Paulo Guarnieri

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INTRODUCTION

The Port Information contained in this document was prepared by Petrobras Transportes S.A. – (TRANSPETRO S/A), which is responsible for the operations carried out at the Almirante Soares Dutra Terminal - TEDUT. This document seeks to provide essential information to ships operating at the Terminal.

Vessels that intend to carry out operations at this Terminal must comply with the recommendations contained in the International Safety Guide For Oil Tankers Terminals (ISGOTT), International Maritime Organization (IMO) conventions, and adhere to the Terminal's operating regulations.

Port Information is available in both Portuguese and English versions and is distributed to vessels that intend to carry out operations at the Terminal, as well as to Local and National Authorities.

The information contained in this publication is intended to supplement and not to 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.

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

It is important to note that the Terminal will gladly receive any suggestions, corrections or recommendations with regards to the matters addressed in this document in order to improve the quality of information provided. Therefore, if information is found that requires updating, please contact the Terminal's Administration or TRANSPETRO S.A.'s head office at the following addresses and telephone numbers:

Tramandaí Terminal Administration

Address: Rodovia Cristovão Pereira de Abreu, Km 103 – Osório – RS

Postal Code: 95520-000

Telephone: (55 51) 2161-5550

Transpetro - Head Office

Telephone: (55 21) 3211-9060

Address: Avenida Presidente Vargas, nº 328 – 9th floor - Rio de Janeiro - RJ.

The most recent version of this Port Information can be found at the following web address:
<https://transpetro.com.br/transpetro-institucional/nossas-atividades/dutos-e-terminais/informacoes-portuarias.htm>

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DEFINITIONS

IMO – International Maritime Organization

ISPS Code – International Ship and Port Facility Security Code

SQUAT EFFECT - Increase in a vessel's draft as a result of an increase in its speed.

BREAKWAY COUPLING – Automatic hose decoupling device.

VTS (Vessel Traffic Service)

ISGOTT – International Safety Guide for Oil Tankers and Terminals

SOLAS – Safety of Life at Sea – International Convention for the Safety of Life at Sea

BP (Bollard Pull) - Longitudinal static traction force

GIAONT – Operational Vessel and Terminal Inspection and Monitoring Group.

DWT – Deadweight Tonnage

COW (Crude Oil Washing) - cleaning of cargo tanks using the product transported by the vessel itself

LCP – Local Contingency Plan

ETA – Estimated Time of Arrival

SPM (Single Point Mooring or Single Buoy Mooring)

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

BEAUFORT SCALE – Scale used to measure the intensity of winds based on sea conditions.

BUNKER – Marine fuel intended for use in ships.

SLOP – Waste tank.

CRE – Emergency Response Center

CALM (Catenary Anchor Leg Mooring) - system used in the anchoring and installation of single point mooring/subsea hose units.

GANGWAY – Straight metal structure fitted with lateral handrails. A gangway's steps are self-leveling in accordance with the respective slope and its floor area is composed of anti-slip materials. It is placed parallel to the side of the vessel using a retractable platform that is fixed to the deck.

PILOT LADDER – Flexible ladder consisting of rope with wooden and/or rubber steps and designed in compliance with the SOLAS convention.

PSI – Pounds per Square Inch.

NOR – Notice of Readiness

MARINE PILOT – Professional holding a bachelor's degree in Nautical Sciences and receiving Second Officer training that assists the NT's Master during approach maneuvers, mooring/unmooring and, at the discretion of the Terminal, the transfer of petroleum and its derivatives.

SSSCL – Ship/Shore Safety Check List (ISGOTT).

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NAUTICAL CHARTS AND REFERENCE DOCUMENTS

3.1 – NAUTICAL CHARTS

The following publications provide information on the Terminal:

Area	CHART NUMBER TYPE		
	Brasil (DHN)	US Hydrographic Office	British Admiralty
Anchoring and Approaching Ports	2000	24110	3969
Terminal and Approach Area	2010	24110	3969

Table 1: nautical charts.

3.2 – REFERENCE DOCUMENTS

In addition to the information contained in the above-mentioned nautical charts, further information and Terminal data can be found in the following documents:

Port Authority Standards and Procedures – RS www.marinha.mil.br/cprs/npcp	Directorate of Ports and Coasts - DPC
Navigational support for the South Coast - South Coast Itinerary	Directorate 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

Table 2: reference documents.

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DOCUMENTATION AND EXCHANGE OF INFORMATION

The table below identifies the party responsible for the preparing each document, the party to which it must be delivered and the respective time, and the type of document that must be delivered:

Information	Prepared by:			Delivered to:			Comments:
	Terminal	Ship	Both	Terminal	Ship	Both	
Before Arrival							
Estimated Arrival (ETA) and Vessel information		X		X			In accordance with ISGOTT
Description of cargo, slop and ballast on board.			X			X	In accordance with ISGOTT
Before Cargo Transfer or Bunkering							
Detalhes da carga/ "slop" /lastro a bordo		X		X			In accordance with ISGOTT
Information essential to operations			X			X	In accordance with ISGOTT
Ship/Shore Safety Checklist			X			X	In accordance with ISGOTT
During Cargo Transfer or Bunkering							
Repeat Ship/Shore Safety Checklist			X			X	In accordance with ISGOTT
After Cargo Transfer or Bunkering, Before Departure							
Information necessary to unmooring vessel			X			X	Qty. of Marine Fuel, Diesel oil and Fresh Water on Board
After Unberthing/Unmooring on Departure							
Information regarding vessel's departure from port		X		X			Time of Pilot Off and Commenced of Sea Passage

Table 3: party responsible for documentation

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DESCRIPTION OF THE PORT AND ANCHORAGES

5.1 – GENERAL DESCRIPTION

Almirante Soares Dutra Maritime Terminal, or TEDUT's operations system consists of two Single Point Moorings (SPM601 and SPM602) that are installed on the open seas. Due to its characteristics, TEDUT is considered to be a Marine Terminal.

The Terminal's single buoy moorings are installed in an unsheltered area and are considered to constitute a Private Port located outside the limits of the Organized Port of Porto Alegre – RS.

5.2 - LOCATION – APPENDIX A

5.2.1 - COORDINATES

The Terminal's Single Point Moorings are installed at the following coordinates:

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

5.2.2 – GENERAL GEOGRAPHIC LOCATION

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

5.3 – TERMINAL APPROACHES

5.3.1 - GENERAL DESCRIPTION

There are three water tanks highlighted in DHN nautical chart 2010 that are considered to be the Terminal's visible points: Turist, Agrimer and Tramandaí.

5.3.2 – ANCHORAGES

In general, the seabed in area of the Terminal's anchorages is considered to be consistent (fine sand and mud). There are three anchorages that may be used by vessels that intended to carry out operations at the Terminal:

- **Anchorage A (ALPHA)** intended for use by vessels operating at SPM601 - latitude 29° 57' 42 "S and longitude 050° 04' 24" W;

- **Anchorage B (BRAVO)** intended for use by vessels operating at SPM602 - latitude 29° 59' 24 "S and longitude 050° 02' 30" W;

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- **Anchorage C (CHARLIE)** intended for use by vessels that are currently under repair or awaiting orders – latitude 29° 57' 30 "S and longitude 050° 01' 54" W.



Figure 1: location of anchorages.

5.3.2 –AIDS TO NAVIGATION

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

» **Lighthouse south of Tramandaí – international number G 0607.4**

Geographical Coordinates: latitude 30° 00' 27" S and longitude 050° 08' 04" W

Characteristics: Gr Fl (3) B12 seconds.

Altitude of focus: 25 m.

Range: 15 miles.

Description: Truncated cone-shaped concrete tower with black and white rhombus-shaped markings.

Radar reflector – code Z (zulu).

Reference: DHN DH-2 light lists.

» **Lighthouse Radio: FB (Foxtrot – Bravo)**

Frequency: 300 kHz

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Range: 300 miles

Geographical Coordinates: latitude 30° 00' 34 "S and longitude 050° 08' 08" W.

Reference: DHN DH-8-8 list of radio aids.

Single buoy mooring SPM601: Period: 3 seconds
 1 flash: 3 seconds
 1 eclipse: 2.7 seconds

Single buoy mooring SPM602: Period: 8 seconds
 1 flash: 3 seconds
 1 eclipse: 2.7 seconds

5.4 - PORT LIMITS

There are no official established limits for the Port. The Terminal is situated on the open sea in unsheltered waters.

5.5 - PILOTAGE

There is no pilotage service available in Tramandaí.

The Terminal offers the services of a duly qualified Mooring Master and Loading Master. Such a professional will advise the ship's Master with regards to the maneuvers involved in the vessel's approach and mooring and unmooring to the single point mooring, as well as coordinate connection/disconnection operations and cargo transfer.

The use of the Marine Pilot (Mooring Master) is mandatory for all ships that intend to carry out operations involving the loading and unloading of products at the Terminal.

It is important to note, however, that each vessel Master is solely responsible for the maneuvers performed, as well as for providing Marine Pilots (Mooring Master) with the required information.

Masters are therefore responsible for providing notice of any irregularities, specific conditions, or difficulties, such as deficiencies in engine rooms, boilers, problems or failures in aids to navigation, mooring cables or any element that may cause danger with regards to operations and the safety of the vessel and Terminal facilities.

Conversely, if the ship's Master believes that the respective operation is being conducted in an erroneous or dangerous manner, they may relieve the Marine Pilot (Mooring Master) of their responsibility for directing the maneuver and inform the Port Captain/Officer/Agent of the situation in writing, providing a record of the occurrence using the model contained in Appendix D. In this case, the vessel's Master must assume responsibility for the maneuver and request that the Terminal designate a substitute Marine Pilot (Mooring Master).

5.6 – TUGBOATS AND PORT SERVICES

The terminal has a tugboat that is available to assist with maneuvers. At the discretion of the Marine Pilot (Mooring Master) and vessel Master, the tugboat is able to carry out a "pull-back" operation using tug's line.

The use of tugboat is not mandatory for ships. The Terminal will define its availability and use on the day of the mooring operations.

Boat service used to transport personnel: This service must be requested through the vessel's Agent. Such vessels are subject to inspection by the Port Facility Security Officer or asset security team at the dock's jetty. See item 7.3.2

Mooring boat: The Terminal offers a mooring service that consists of two mooring boats that are used to assist in mooring/unmooring maneuvers and connecting/disconnecting hoses.

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Boat service used to deliver provisions: In a manner similar to the vessels used for personnel transport, this service is provided by the vessel's Agent. The delivery of provisions must be authorized by the Marine Pilot (Mooring Master) in advance. If provisions are supplied with the ship moored, this operation should preferably be carried out during daylight hours. Such vessels are subject to inspection by the Port Facility Security Officer or asset security team at the dock's jetty.

5.7 – NAVIGATIONAL RISKS

Due to the fact that the Terminal is located on the open sea in unsheltered waters, there are generally no associated navigational risks to vessels using the Terminal's single buoy moorings.

5.8 - GENERAL RESTRICTIONS AND ENVIRONMENTAL LIMITS FOR OPERATIONS

There are no time restrictions in place for conducting mooring, unmooring and cargo transfer maneuvers. Such operations will normally take place during daylight hours and at night. See table below for more information.

Vessels moored at TEDUT's single mooring points will automatically assume the position resulting from the current, wind speed and direction and the intensity of swells. The characteristics of vessel mooring operations, the hoisting of hoses and all marine operations carried out at TEDUT are determined by weather and sea conditions. This includes, but is not limited to, characteristics of sea conditions and swells, the direction and intensity of winds, and visibility.

These limits are not absolute but rather relative to the effects that these forces have on the mooring system/connection/vessel (direction and angle of these three key forces), as well as whether they are persistent in nature. It is important to note that the size and shape of the vessel are also parameters that must be used to analyze safety conditions.

There are currently no established limits for current speed during mooring and/or operations.

During mooring of vessels to the single point moorings, the respective maximum limits are provided taking maximum wind speeds of 25 knots and a minimum visibility of 0.5 nautical miles into consideration.

A maximum acceptable wind speed of 20 knots and a minimum visibility of 1.0 nautical mile is in place for mooring operations carried out at night.

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 night time mooring operations.

During operation of the vessel, if at least one of the limits indicated in the yellow region (step 1) of Table 5, related to the wind speed or traction on the mooring line, when applicable, is reached during the transfer of products, the Marine

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Pilot (Mooring Master) must immediately advise support teams to prepare for a potential interruption of operations. At this stage, the vessel's Master must place the ship's engine room crew on alert.

If at least one of the limits indicated in the orange region (step 2) of Table 5 is reached during the transfer of products, the Marine Pilot (Mooring Master) must immediately interrupt pumping and prepare to disconnect hoses.

During this stage in which pumping is interrupted and the Marine Pilot (Mooring Master) prepares to disconnect hoses, the vessel's Master must confirm whether the engine room has been prepared and the support team and vessels must be engaged for the purposes of promptly disconnecting hoses.

Similarly, if at least one of the limits indicated in the red region (stage 3) in Table 5 is reached during the transfer of products, the on-duty Marine Pilot (Mooring Master), once pumping has been interrupted, must immediately request that hoses be disconnected and the engine room prepared to carry out unmooring with short notice.

ENVIRONMENTAL LIMITS		
TASK	ENVIRONMENTAL DESCRIPTION	SPM601 and SPM602 WORST ACCEPTABLE CONDITION
STOPPAGE	HEIGHT OF SWELL (METER)	3,0
	WIND (KNOT)	30
	CURRENT (KNOT)	N/A
	HAWSER TENSION (T)	≥ 50
HOSES DISCONNECTION / UNMOORING	HEIGHT OF SWELL (METER)	> 3,0
	WIND (KNOT)	≥ 35
	CURRENT (KNOT)	N/A
	HAWSER TENSION (T)	≥ 60

Table 5: operational limits during operations.

The Marine Pilot (Mooring Master) and Operations Supervisor are responsible for decision making with regards to environmental and operational safety parameters during the entirety of operational stages implemented by vessels making use of Transpetro's single buoy moorings.

5.9 – MANEUVERING AREA

The maneuvering basin used to approach the Terminal's mooring berths extends 360 ° around the single point moorings at a distance of approximately 0.8 miles. Sea depths in the region vary between bathymetric ranges of 20 to 25 meters.

Important: Due to the uniform nature of the region's coast, vessels requesting use of the Terminal must successively plot their positions, particularly during nighttime hours. Maneuvers that are performed in the maneuvering basin are generally considered to be safe. When navigating towards the anchorage, vessels must maintain contact via VHF radio in order to receive instructions in accordance with international radio procedures.

5.10 – DEPTHS AND DRAFT

The following table presents the depths of the sea in the region surrounding the single point moorings, as well as the maximum draft for vessels operating in the area:

SPM	DEPTH	MAXIMUM DRAFT
601	21 meters	16 meters
602	25 meters	18 meters

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Table 6: sea depths and draft.

5.11 - MAXIMUM DIMENSIONS

Vessels are only permitted to transport up to 200,000 tons while operating at SPM601 and SPM602.

5.12 – ENVIRONMENTAL FACTORS

The region at which the Terminal is located presents a high relative humidity ranging between 76% and 81%.

The average atmospheric temperature is approximately 20° Celsius, ranging from a minimum of -2° Celsius during winter months to 38° Celsius in summer.

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

5.12.1 – PREVAILING WINDS

Records for winds registered in Tramandaí's coastal region present a distinct predominance of northeasterly winds.

Northeasterly winds are prevalent throughout the entire year and mainly move in a northeast or east-northeast direction. The highest winds in the region are recorded from September to January.

Winds moving from south to west are more frequent between August and December, while winds moving from west to north typically occur during the months of May, June, July and August.

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

5.12.2 – WAVES AND SWELLS

Waves in the region reach heights of more than two meters and predominantly move in a direction approximately 110° (east-southeast) perpendicular to the coast.

5.12.3 - PRECIPITATION

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

Storms are occasionally registered in the region (force 12 on the Beaufort scale) and last for a few hours during winter months and for a shorter duration (accompanied by downpours) during spring and summer.

5.12.4 – THUNDERSTORMS

Thunderstorms are more frequent during the afternoon and early evening in the spring and summer seasons

The factors that contribute to the formation of these weather events are incoming cold fronts and high temperatures during the day.

5.12.5 - VISIBILITY

There is generally consistent visibility in the region. There are, however, occasionally fog and low-lying clouds present during early morning hours in autumn and winter months.

5.12.6 – MARINE CURRENTS

Sea currents in the region are generated by local winds.

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Currents generally predominantly move in a direction that is parallel to the coastline, ranging between 10° and 40° and speeds of 1 to 2 knots.

5.12.7 – TIDAL VARIATIONS

There are no tidal cycles seen in the Tramandaí region.

The absence of tidal variations is due to Tramandaí's geographical location, which corresponds to a point on the earth's sphere at which tides are not present. Tides therefore cannot be considered an element of current formation off the region's coast.

5.12.8 – WATER DENSITY

The density of the seawater in the region of the Terminal's single point moorings is 1.025.

5.12.9 – WEATHER FORECASTING

The Terminal can provide daily forecasts for the region in which the single buoying mooring system is located.

This information can be accessed through the VHF radio by calling "terminal" on the channels 9 or 11, and, during operations, through the Marine Pilot (Mooring Master).

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TERMINAL DESCRIPTION

6.1 - GENERAL DESCRIPTION

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

The Terminal's system consists of two single point moorings that are installed in the open sea and form the Terminal's berths. They are designed to be used in loading and unloading operations for petroleum and its derivatives.

The unloading of petroleum is aimed at supplying the Alberto Pasqualini Refinery - REFAP through means of importation or cabotage using two 34-inch diameter pipelines with marine sections 6.5 km in length and onshore sections 6.15 km in length.

The unloading of petroleum products is aimed at supplying the Alberto Pasqualini Refinery - REFAP and BRASKEM through means of importation.

Vessel loading operations provide for the exporting of diesel and gasoline and production surpluses from the Alberto Pasqualini Refinery - REFAP.

Both operations are carried out using a pipeline that is 28 inches in diameter and 3.9 km in length in marine sections and 6.2 km along onshore sections.

6.2 – PHYSICAL DESCRIPTION OF SINGLE POINT MOORINGS

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The Single Point Mooring System consists of the equipment described below and presents the following operational characteristics:

BERTH	PRODUCTS INVOLVED IN OPERATIONS	HOSES AND FLANGES	SEND OR RECEIVE	TEMP. (°C)		MAXIMUM FLOW RATE	MAXIMUM PRESSURE
SPM#1	Petrochemical naphtha, petrochemical condensate, gasoline and diesel oil	1 X 16"	Sends and receives	5 °C	50 °C	3,500 m ³ /h	7 kgf/cm ²
SPM#2	Petroleum	2 X 16"	Receive	5 °C	50 °C	8,000 m ³ /h	7 kgf/cm ²

Table 7: physical details of single buoy moorings.

Single Point Mooring SPM601

- Capacity: ship displacement up to 200,000 tons.
- Diameter: 12.5 meters
- Weight: 340 tons
- Number of chains: eight legs with ten shackles by 3 inches
- Sea depth at site: 21 meters

Single Point Mooring SPM602

- Capacity: ship displacement up to 200,000 tons.
- Diameter: 12.5 meters
- Weight: 340 tons
- Number of moorings: eight legs with ten shackles by 3 inches
- Sea depth at site: 25 meters

6.3 – MOORING ARRANGEMENTS

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 cable with 54 links (17 meters). Other accessories are available at the SPM for the maneuvering and mooring of vessels.

6.4 - CHARACTERISTICS OF BERTHS USED FOR LOADING AND UNLOADING

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

6.4.1 – FLOATING HOSES

Single buoy mooring SPM601: Two lines formed by two units with 26/27 hoses and a total length of 274/285 meters consisting of electrically continuous double carcass hoses with diameters of 16 and 20 inches. Each electrically discontinuous line is fitted with one hose (with the second positioned in the direction of the buoy).

Single buoy mooring SPM602: Two lines formed by two units with 27/28 hoses and a total length of 285/296 meters consisting of electrically continuous double carcass hoses with diameters of 16 and 20 inches. Each electrically discontinuous line is fitted with one hose (with the second positioned in the direction of the buoy).

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6.4.2 – SUBMARINE HOSES

Single buoy mooring SPM601: Two lines formed by two sets of two subsea hoses with a total length of 20 meters consisting of 20-inch diameter electrically continuous double carcass hoses fitted with floating devices in a Chinese-lantern configuration (CALM).

Single buoy mooring SPM602: Two lines formed by two sets of three subsea hoses with a total length of 27 meters consisting of 20-inch diameter electrically continuous double carcass hoses fitted with floating devices in a Chinese-lantern configuration (CALM).

6.4.3 – SUBMARINE MANIFOLD

Single buoy mooring SPM601: The manifold consists of three 150 PSI, 16-inch diameter ball valves, two 16-inch check valves and a 28-inch crossover that connects the pipelines. The ball valves are fitted with a hydraulic mechanical drive that uses the connection between the hoses and the surface. The manifold is mounted on skids on the seabed.

Single buoy mooring SPM602: The manifold consists of three 150 PSI gate valves with a 20-inch diameter and two 20-inch check valves. The gate valves are fitted with a pneumatic hydraulic drive that uses the connection between the hoses and the surface. The manifold is mounted on skids and anchored to the seabed.

6.4.4 - SUBMARINE PIPELINES – SINGLE POINT MOORING / TERMINAL

Single buoy mooring SPM601: Two carbon steel lines with a 28-inch diameter and an extension of 3.9 km.

Single buoy mooring SPM602: Two carbon steel lines with a 34-inch diameter and an extension of 6.5 km.

6.5 - OPERATIONAL MANAGEMENT AND CONTROLS

The Terminal's operations are administered by the Operational Control Center (OCC), which is located at the facility's tank farm approximately 12 kilometers from the single buoy moorings. Control of operations and the exchange of information with the vessel is centralized at this site.

Communications are carried out using VHF radios with a maritime frequency that was previously agreed upon and registered in advance (channel 9 for SPM601 and channel 11 for SPM602).

A secondary means of communication that relies on cellular telephony has been established for use in cases in which there is a failure in the main system. The cellular telephone numbers used are: SPM601 – (55 51) 99951-9079 and SPM602 - (55 51) 99913-4812

6.6 – KEY RISKS

The main risks associated with the vessels' call at the Terminal during operations stem from the geographical location of the single point moorings (in a coastal area), as well as due to the fact that they are positioned at a location that does not provide shelter from the consistent storms and strong winds that are particularly common in the region in September, October and November.

While navigating the region in which the Terminal is located, vessels must monitor weather forecasts for the ALPHA area from the Brazilian Navy's Hydrography and Navigation Center.

The Terminal also provides a weather forecast service that is updated daily. Forecasts can be requested through channel 9 or 11 VHF or from the Marine Pilot (Mooring Master) during operations.

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The above-mentioned risks require particular attention from crew with regards to the vessels' anchoring position. It is important to note that vessel anchors have previously broken while ships were anchored at the Terminal in bad weather conditions.

7

PROCEDURES

While vessels are moored at the Terminal, several actions must be taken to ensure that operations are carried out safely and minimize risk.

During the phases described in the items below, measures are implemented for the purposes of facilitating operations and providing safety.

7.1 – PRIOR TO ARRIVAL

Vessels that intend to carry out operations at the Terminal must send the entirety of the information contained in Appendix B in advance through the vessel's Agent. This information is essential in preparing operations.

Additionally, the start of operations will only be authorized once any pending items on the Ship-Shore Safety Check List – SSSCL have been addressed by the vessel.

Onboard repairs and washing of the ship's cargo tanks shall be performed in the area of the anchorage. Vessels are not authorized to perform repairs while carrying out operations at the single point mooring.

Vessels destined for the Terminal's facilities must provide the vessel's agent with an estimated time of arrival (ETA) 72, 48 and 24 hours in advance, respectively. Once they have received the ETA, the vessel's agent will inform the Terminal through means of an electronic message (e-mail).

Alterations or confirmation of the vessel's arrival must be provided a minimum of 24 hours in advance.

Information on the vessel's ETA must specifically state whether local time or GMT is used.

The time of arrival is considered to be the moment at which the ship reaches the anchorage or in cases in which anchoring is not possible due to poor weather conditions, the moment at which the end of the vessel's voyage plan (End of Sea Passage - EOSP) is reached.

The NOR (Notice of Readiness) will only be accepted if the ship is confirmed to be ready to commence operations with regards to all involved aspects.

The berthing schedule at TEDUT is defined by Transpetro's Head office.

7.2 - ARRIVAL

The port authorities are notified of the vessel's arrival by agents, taking into account the ETA that was provided and the expected time of mooring.

There is no bunker supply available at Tramandaí Terminal.

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The information that is to be exchanged between the Terminal and the vessel, and vice versa, prior to arrival, is described in appendices “B” and “C”, which are attached to this document.

7.3 - PROCEDURES FOR BOARDING OF MARINE PILOT (MOORING MASTER) AND MOORING TEAM**7.3.1 - BOARDING**

Sea conditions may be perceived differently by the bridge of a large vessel and smaller boat. Boarding personnel involves a high potential for risk and requires complete cooperation from the parties involved. Although there are no specific rules in place, the following recommendations must be used as a guide:

- a) Establish a location and time at which the transfer will occur;
- b) Ensure that there is sufficient time and space in the region at which boarding will be carried out;
- c) Heading and drift during boarding /disembarking;
- d) Attention must be paid to the vessel’s freeboard when installing the apparatus used for boarding /disembarking;
- e) Distance from the base of the ladder used/last step to wave/swell height.
- f) Maintain communication between the vessel and boat at all times.

7.3.2 - SAFE ACCESS BETWEEN THE VESSEL AND THE SHORE

Given the specific nature of the Terminal’s location (open sea and unsheltered waters), transporting vessel crew onshore is only recommended in cases of extreme necessity and when permitted by meteorological and oceanographic conditions.

If it necessary to transport vessel crew onshore, the Master must contact their navigation agent in order for the appropriate boat service to be provided.

Transpetro will not be held responsible for the risks involved in transporting the vessel's crew to shore and vice versa under any circumstances.

The pilot ladder and gangway used to access the ship must be provided by the vessel itself. The pilot ladder and gangway’s steps must be in good condition and comply with national and international rules.

For the purposes of providing increased safety in the boarding/disembarking of personnel and due to the specific nature of the Terminal’s location and the vessels involved, the Marine Pilot (Mooring Master) that is responsible for maneuvering the vessel during the respective operations may request that the Master make the pilot ladder available together with the gangway, even in circumstances in which the vessel’s freeboard is less than 9 meters and the vessel’s configuration allows for boarding/disembarking.

7.3.3 - APPARATUSES USED IN VESSEL ACCESS

- a) The steps providing access to the vessel must be clean, in good condition, and comply with requirements established under the SOLAS International Convention and by Brazil’s Maritime Authority.
- b) All pilot ladders must be positioned away from discharges produced by the vessel;
- c) The pilot ladder must be positioned in a manner that allows its steps to remain firmly attached to the side of the vessel;
- d) The lower platform of the gangway must remain firmly attached to the side of the vessel.

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7.4 – MOORING**7.4.1 – VESSEL MOORING SYSTEM**

The Marine Pilot (Mooring Master) will provide the vessel's Master with orientations with regards to the safest method to be used in mooring the vessel to the single point mooring system.

Vessels are moored to the single buoy mooring using a single 100% polyamide (nylon) double braided mooring hawser with a circumference of 21 inches and a length of 90 meters. The mooring hawser is coated with polyurethane and fitted with lace-on floats (installed by the Terminal) and extended using a 3-inch (76 mm) section of cable with 54 links (17 meters). Other accessories are available at the SPM for the maneuvering and mooring of vessels.

Vessel bow mooring arrangements must adhere to recommendations contained in the most recent edition of the OCIMF Guide "Mooring Equipment Guidelines". No more than two pedestal rollers must be used and the angle between the rollers must be as small as possible.

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

7.5 – PRIOR TO CARGO TRANSFER

7.5.1 - The vessel will be provided with electrical insulation through means of an electrically discontinuous hose that is installed in the second hose string position in the direction of the single buoy mooring.

7.5.2 - The Marine Pilot (Mooring Master) will coordinate the connecting and disconnecting of hoses.

Vessels that intend to carry out operations at the Terminal must be fitted with cranes with a minimum 10-ton effective capacity (SWL of 10 tons).

The maximum allowable distance between the bow and center manifold (BCM) is 140 meters for both single point moorings.

Hose connections must have a diameter of 16 inches and will be carry out on the vessel's port side. The resources required in vessel connections are provided by the Terminal.

One or two hose strings may be connected depending on the point of operation (SPM601 or SPM602).

A vessel representative must be positioned at the ship's manifold throughout the operation and remain in contact with the vessel's cargo control center.

During operations, two observers from the Terminal will remain on board at the bow and at the manifold and will inform the Marine Pilot (Mooring Master) of any situation that may affect operations.

NOTE: Given the specific nature of operations carried out at a Marine Terminal at which vessel/onshore access may be difficult, vessels must provide accommodation (cabins) and meals for the team described in the following section, which will remain on board throughout the operation:

- **Up to two Marine Pilots (Mooring Master) to be confirmed upon arrival;**
- **Six riggers;**
- **One Cargo Surveyor (where applicable).**

7.5.3 - Onboard measurements will be performed by vessel personnel and supervised by Terminal representatives and/or Inspectors. The material used must be properly grounded and the measuring accessories must be explosion-proof.

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7.5.4 - The start of operations is subject to the holding of a safety key meeting in which the SSSCL (Ship/Shore Safety Check List) and the Initial Letter will be agreed upon and signed.

7.5.5 - The discharging of dense smoke through the funnel of vessels moored at single buoy moorings, as well as carrying out of any form of sootblowing and cleaning of boiler tubes while the vessel is moored, is prohibited. Additionally, care must be taken to ensure that sparks do not escape through the funnel.

A failure to comply with such rules shall result in one or more of the following penalties being applied:

- Immediate interruption of operations;
- A fine imposed by the competent authorities;
- Forced unmooring of the vessel from the single point mooring;
- Reporting of the infringement to shipowners;
- The vessel will be charged for any fines, lost time and other expenses related to such penalties.

7.5.6 - Small vessels are strictly prohibited from remaining on the side or in the vicinity of vessels moored at the single point mooring at all times.

Only service boats or those authorized by port authorities or the Terminal may navigate in the vicinity of the SPM or alongside vessels, provided that they fulfill all safety requirements. Violations of this standard shall be reported to the Port Authority.

7.5.7 - Vessels carrying out operations at Tramandaí Terminal must ensure that their main engine remains ready for departure at all times.

This request is made to prevent vessels from reaching an unsafe distance from the single point mooring or damaging Terminal facilities.

7.6 – CARGO TRANSFER

7.6.1 - The pressure in the ship's manifold must be monitored on an hourly basis during cargo transfer and recorded by onboard and onshore representatives.

The Terminal controls the internal pressure in pipelines using the supervisory control system.

Flows and accumulated volumes are measured on an hourly basis during cargo transfer operations and compared by the parties. Any significant differences in flows and accumulated volumes must be investigated and the cargo transfer operation interrupted, if necessary.

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

The closing of valves that cause back pressure in the system during operations is expressly prohibited.

7.6.2 - The vessel's ballast and de-ballasting networks and tanks must be used exclusively for these purposes and isolated from remaining on-board networks

Ballast water must be discharged into the sea in accordance with provisions contained in the International Convention for Control and Management of Ships' Ballast Water and Sediments - BWM.

7.6.3 - There are no facilities available to receive slop at Tramandaí Terminal.

7.6.4 - Vessels are prohibited from carrying out conventional tank cleaning operations while the ship is moored to single point mooring.

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The Tanker must request authorization from the charterers. There are no restrictions regarding COW operations. Usually the Terminal Facility requests the tanker to perform a quantity of tanks as per minimum MARPOL requirements only.

7.6.5 - Repairs or maintenance work of any nature that involve or that may come to involve the risk of sparks or other means of ignition must not be carried out while the vessel is moored at the single buoy moorings.

In extreme cases in which it is absolutely imperative that maintenance be performed, all safety standards must be observed, and their respective requirements fulfilled.

Any type of repairs that involve restrictions being imposed upon vessels during their call at the Terminal must be authorized by the Terminal in advance.

It is important to note that under all circumstances it is expressly prohibited that any type of maintenance be performed that results in restrictions being imposed upon the vessel's engine room, thereby preventing or hindering the vessel's ability to move under its own means (see item 7.5.7).

7.6.6 - Throughout the period for which the vessel is moored in the single point mooring, the Terminal will carry out intermediary vessel inspections through the Marine Pilot (Mooring Master) in accordance with ISGOTT guidelines.

7.6.7 - Unloading of the ship will be interrupted if a situation is found to exist that poses a risk to either the vessel, the environment or Terminal facilities.

Operations may be temporarily suspended in cases whether the arrival of storms, thunderstorms and/or strong winds is imminent.

The Terminal's operational personnel are authorized to interrupt or suspend cargo transfer operations whenever a failure to comply with any of the universally accepted safety rules and standards adopted in international transport is discovered.

The vessel has the right to cease cargo transfer operations if they have reason to believe that onshore operations are not safe. In such cases notice must be provided to the Marine Pilot (Mooring Master) or the Terminal (Operational Control Center) in advance.

7.6.8 - In emergency situations, the Terminal will interrupt operations in order to allow the entirety of the facility's resources to be allocated towards mitigating the respective incident.

7.7 – CARGO MEASUREMENT AND DOCUMENTATION

7.7.1 - It is not necessary to flushing floating lines with water at the end of operations. However, the small stretch of line between the hose's valve and the valve located at the ship's cargo oil outlet must be drained prior to the start of disconnection operations.

7.7.2 - The final onboard measurements will be carried out by ship personnel and supervised by Terminal representatives and/or Inspectors. The material used must be properly grounded and the measuring accessories must be explosion-proof.

Final vessel clearance will be conditional upon the quantities handled being found to be within contractual limits through means of comparison.

7.8 – UNMOORING AND DEPARTURE FROM THE PORT

7.8.1 - The Marine Pilot (Mooring Master) is normally initiate unmooring operations immediately upon the vessel being provided with final clearance once all documentation has been completed.

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7.8.2 - The disembarking of personnel and equipment takes place away from the single point mooring at a safe location that is indicated by the Marine Pilot (Mooring Master) and agreed upon by the vessel's Master.

7.9 – CORPORATE SECURITY (ISPS CODE)

Tramandaí Terminal has implemented corporate security protection measures that are applicable to ships and port facilities under the terms of International Maritime Organization – IMO requirements by adopting the ISPS – International Ship and Port Facility Security Code.

If required, vessels may implement these security measures through the Marine Pilot (Mooring Master) or via VHF radio call channels 9, 11 or 16.

Tramandaí Terminal normally operates at safety level one (1).

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

8

ORGANIZATION OF PORT AND ANCHORAGE

8.1 – MARITIME AUTHORITY

The Port Authority is the Maritime Authority with jurisdiction within the limits of the Tramandaí Terminal. It is responsible for determining the nature of actions taken and notifying those responsible for any incident or accident occurring within the port's limits.

8.2 – PORT AUTHORITIES

An initial requirement for ships requesting use of the Terminal is a visit from representatives from the relevant authoritative bodies - the Federal Customs, National Health Regulatory Agency and the Federal Police. The vessel's agent is responsible for implementing the measures required for such inspections.

The Terminal is considered to be a Private Port located on the open sea outside the area of the Organized Port of Porto Alegre – RS. There are no officially established limits to the Terminal.

8.3 - PILOTAGE

There is no pilotage service available at the Port of Tramandaí.

However, the Terminal provides a Marine Pilot (Mooring Master) service that must be used by all vessels.

8.4 – TUGBOATS AND OTHER MARITIME SERVICES

The Tramandaí Terminal has a tugboat with a 45-ton bollard pull that may be used at the Marine Pilot's (Mooring Master) discretion during mooring maneuvers or even loading/unloading operations carried out as part of pull-back operations.

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8.5 – RELEVANT PORT SERVICES**8.5.1 – VESSEL REPAIRS**

Ship repairs may only be performed at anchorage C (CHARLIE).

8.5.2 – SUPPORT VESSELS

Support vessels used to supply costing materials and food provisions must be requested through the vessel's agent. Operation of these support vessels alongside ships must comply with safety requirements and receive authorization from the Terminal in advance.

9

EMERGENCY RESPONSE PLANNING

9.1 – EMERGENCY CONTACT LIST

The following table presents contact information for the Terminal bodies and Port Authorities that are to be used by vessels:

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Organization	Service Hours	Telephone	Mobile	VHF/UHF Call	VHF/UHF Conversation
Port Authority	24 horas	(55 51) 3684-2037	(55 51) 99933-0411	16	TBC
Marine Pilot (Mooring Master)	24 horas	(55 51) 2161-5534	(55 51) 9951-9079 (55 51) 9913-4812	09 ou 11	09 ou 11
Operational Control Center CCO	24 horas	(55 51) 2161-5554	(55 51) 9951-9097	VHF 09 VHF 11	VHF 09 VHF 11
Terminal Administration	07:30h às 16h30h	(55 51) 2161-5550	N/A	N/A	N/A
Fire Dept.	24 horas	193	N/A	N/A	N/A
Tramandaí Hospital	24 horas	(55 51) 3684-0300	N/A	N/A	N/A
Police	24 horas	190	N/A	N/A	N/A
IBAMA (Porto Alegre)	08:30h às 18:00h	(55 51) 3214-3401	N/A	N/A	N/A
FEPAM (Tramandaí)	08:00h às 17:00h	(55 51) 3661-1685	N/A	N/A	N/A

Table 8: list of emergency contacts.

9.2 – CONTINGENCY PLAN

9.2.1 - The Local Contingency Plan – PCL describes the flow of communications and the strategies used to respond to emergencies at single point moorings and the surrounding areas.

9.2.2 - The ship's emergency and firefighting equipment must be kept in proper operating condition and made available for the entire period for which the vessel is moored at the Terminal.

Fire hoses must be extended and placed at the vessel's aft and fore, unless firefighting monitors used by the vessel are able to fulfill this requirement.

An appropriate amount of absorbent material must be kept ready for use in the event of an oil spill.

Additional precautions must be taken in order to avoid sea pollution.

The Terminal's Environmental Defense Center (CDA), which is located near the coast within the shore base (Dock), is equipped with equipment and facilities used to prevent pollution and mitigate environmental damage.

This Center's inventory includes spill containment barriers, oil collectors, operational and support vessels, as well as tank and oil recovery vessels.

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The Terminal periodically conducts emergency simulations and training aimed at ensuring personnel understand how to act quickly and promptly during emergencies.

9.3 – PUBLIC RESOURCES USED IN EMERGENCY RESPONSE

Resources that can be used to mitigate emergencies in Tramandaí are exclusively held by the company operating the Terminal.

9.3.1 – LOCAL EMERGENCY SERVICES

The Military Firefighter Corps, the municipality of Tramandaí's Civil Defense, Civil Police and the hospital unit at Tramandaí possess additional resources that can be used in emergency response. These resources may be requested using the contact information provided in section 9.1.

9.4 – POLLUTION PREVENTION

The sub-items below describe the resources available to combat pollution emergencies in the region surrounding the single point moorings.

9.4.1 – TERMINAL POLLUTION RESPONSE CAPACITY

The resources that are available in providing a response to oil spills are listed in the PCL, which is available in the Terminal's administrative, operational and maintenance areas.

9.4.2 – POLLUTION RESPONSE CAPACITY OF ENVIRONMENTAL AGENCIES

The Environment Agency located in the municipality of Tramandaí does not have the resources needed to respond to oil spills.

9.4.3 - RESOURCES AVAILABLE UNDER THE MUTUAL SUPPORT AGREEMENTS WITH OTHER TERMINALS

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

9.4.4 - RESPONDING TO MEDIUM-SCALE ACCIDENTS

In the event that significant pollution occurs - medium scale accident - the Terminal will provide the regional resources that are available at TRANSPETRO.

These resources, their respective level of preparedness and manner in which they are engaged are described in the PCL.

9.4.5 - RESPONDING TO A LARGE-SCALE ACCIDENT

The PCL lists the respective measures that are to be taken and those responsible during each type of event in the case of a large-scale accident of a catastrophic proportion occurring in the vicinity of the facilities (single point moorings) or in sections of pipelines or vessels.

During these types of events, TRANSPETRO/PETROBRAS will provide the entirety of the national or international resources to which it has access.

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CONTACT INFORMATION

The following table describes the main contacts used by the Terminal and companies operating at the SPMs, including the name of Organization, contact position, telephone, facsimile, electronic address, and radio channel and frequencies.

10.1 – Terminal

Location	Contact	Telephone	Mobile	VHF Channel	
				Call	Conversantion
SPM#601	Marine Pilot (Mooring Master)	(55 51) 2161-5534	(55 51) 99951-9079	09 ou 11	09 ou 11
SPM#602	Marine Pilot (Mooring Master)	(55 51) 2161-5534	(55 51) 99913-4812	09 ou 11	09 ou 11
Operational Control Center CCO	Shift Supervisor	(55 51) 2161-5554	(55 51) 9951-9097	09 ou 11	09 ou 11
Terminal TEDUT (Security Issues)	Port Facility Security Officer PFSO	(55 51) 2161-5534	(55 51) 9955-0145	N/A	N/A

Table 9: Terminal contact information.

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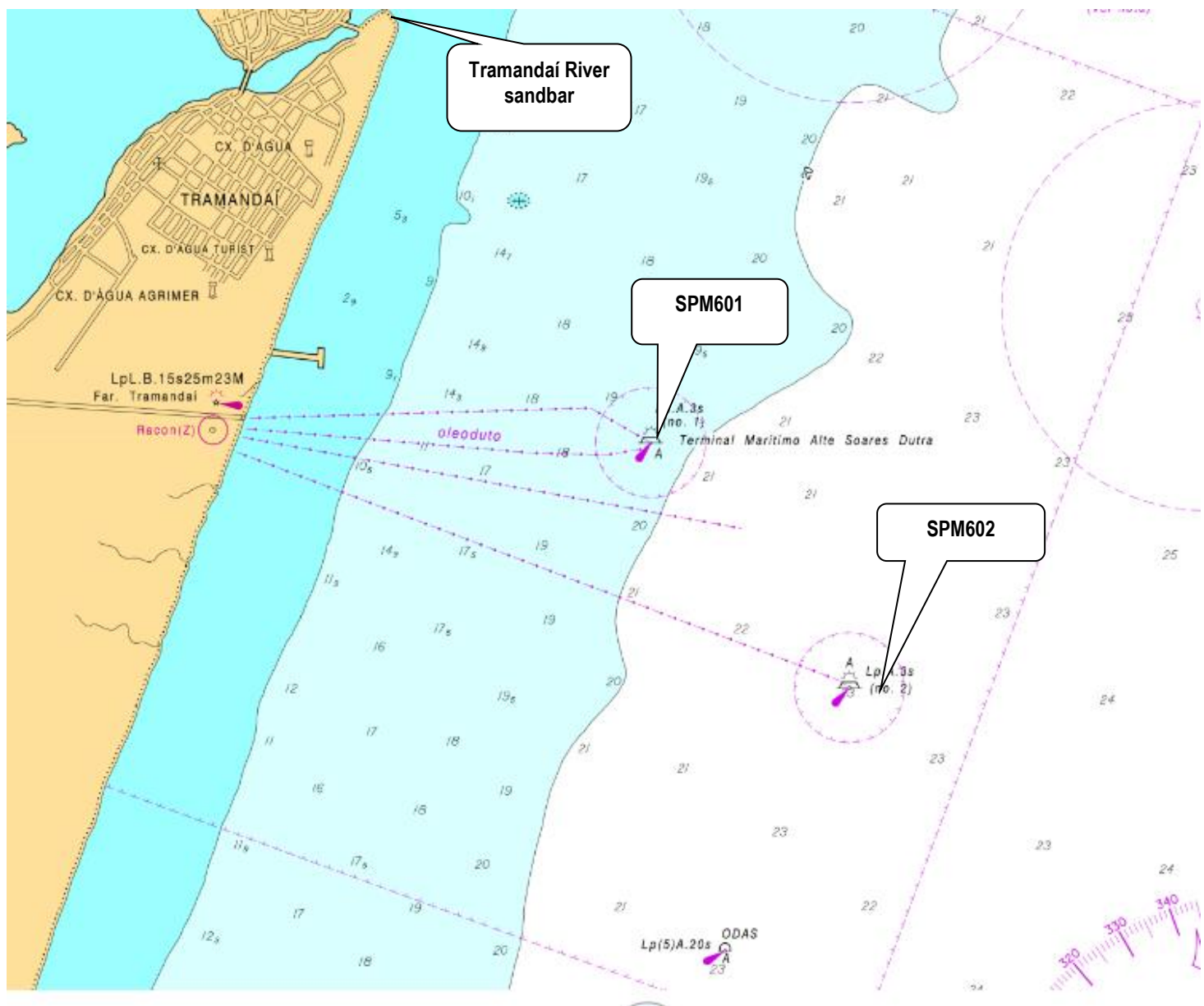
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APPENDICES

APPENDIX A

LOCATION OF SINGLE POINT MOORINGS



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APPENDIX B**INFORMATION REQUIRED PRIOR TO VESSEL'S ARRIVAL AT THE TERMINAL**

TRANSPETRO ADMIRAL SOARES DUTRA MARINE TERMINAL - TEDUT		
Request for Vessel Information		
Vessel Name:	Estimated time of arrival:	
Flag state:	Most Recent Port of Call:	
Master's Name:	Next Port of Call:	
Shipowner:	Agents:	
Is the Vessel fitted with an inert gas system?	Oxygen content in cargo tanks:	
Is the vessel's crew planning to carry out Crude Oil Washing?	Is the vessel's crew planning to wash tanks while moored?	
Length Overall (LOA):	Vessel draft on arrival:	
Length between perpendiculars:	Maximum draft during cargo transfer:	
Beam:	Vessel draft at departure	
Propulsion	Transverse propulsion	Tugboats required
Number of engines:	Bow (N° and power):	Minimum:
Number of propellers:	Bow (N° and power):	
Number and size of flanges		Distances
<ul style="list-style-type: none"> • Cargo: • Ballast: • Bunker: 		<ul style="list-style-type: none"> • Bow to manifold: • Vessel side to manifold: • Height of manifold from main deck:
Loading schedule		
Type and quantity (m ³)	Ballast	Unloading of slop / ballast discharge onshore:
Type and quantity (m ³)	Quantity (m ³)	Quantity: Not applicable (m ³)
Type and quantity (m ³)	Estimated time:	Estimated time: Not applicable.
Unloading Schedule		
Type and quantity (m ³)	Ballast	Unloading of slop / ballast discharge onshore:
Type and quantity (m ³)	Quantity (m ³)	Quantity: Not applicable (m ³)
Type and quantity (m ³)	Estimated time:	Estimated time: Not applicable
Fueling requested		
Type and quantity (HFO): Not applicable	Type and quantity (MDO): Not applicable	
Additional information (if applicable):		

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APPENDIX C**INFORMATION TO BE EXCHANGED PRIOR TO CARGO TRANSFER**

INFORMATION EXCHANGED BETWEEN VESSEL AND TERMINAL			
Vessel Name:		Mooring berth:	
Voyage Number:		Mooring date:	
Contract Details			
No. of onboard pumps:			
Volumetric capacity 98%:		M³	
Guaranteed discharge pressure: (during unloading operations)		Kgf/cm²	
Simultaneous ballasting / de-ballasting capacity during loading / unloading			
Voyage information			
Type of charter (VCP,TCP,COA,etc.)			
Type of voyage (Cabotage/Long Haul)			
Ports or location of origin and destination			
Has the vessel requested refueling?			
Means of communication between vessel and terminal			
Cargo information			
Product:	Quantity:	Temperature:	API:
SLOP			
Quantity:	Temperature:	API:	
Fluidity:	Origin:		
	Contaminants:		
Ballast			
Dirty Ballast Quantity:		Segregated Ballast Quantity:	
Temperature:			
Operational information			
Will the vessel carry out special operations during unloading? (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 operations by product			
Pressure vessel:	Temperature MAX:	Pressure terminal:	Temperature MAX:
Flow rate:	MIN:	Flow rate:	MIN:
Sequence of operations by product			

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Quantity to be loaded / unloaded
 Source / Destination Tanks
 On-board / onshore lines
 Loading arms/ hoses used
 Expected start and end of operations

APPENDIX D**DECLARATION OF MANEUVER**

BRAZILIAN NAVY

PORT AUTHORITY OF RIO GRANDE DO SUL

TRAMANDAÍ PORT AUTHORITY AGENCY

DECLARATION OF MANEUVER FROM MARINE PILOT

I hereby declare, for the purposes of verification from the Brazilian Maritime Authority, that the vessel

_____ IRIN _____ received pilotage services from the Marine Pilot

_____, who identified themselves during the respective approach, mooring and unmooring maneuvers performed at the TEDUT Terminal (SPM _____) between ____/____/____ and ____/____/____ at _____ hours.

The following individuals participated in the capacity of assistants:

Occurrences and Observations:

I hereby declare the preceding statements to be true and accurate.

Tramandaí, ____/____/____

(Master)

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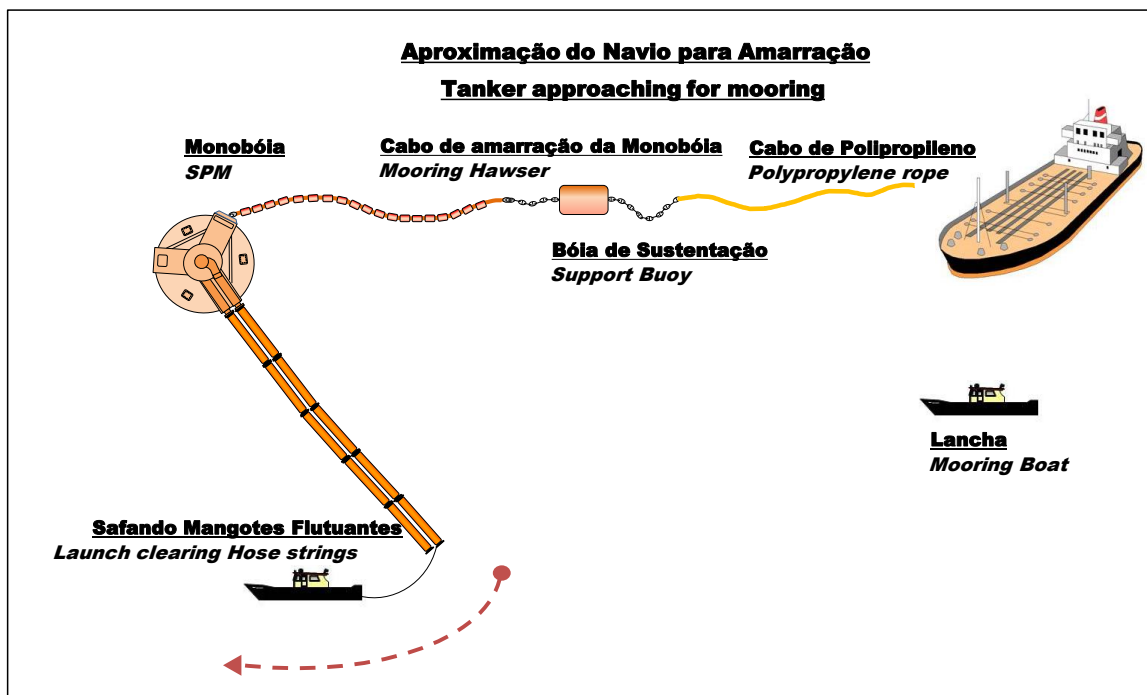
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APPENDIX E

PLEM UNIT, CHINESE LANTERN, SINGLE POINT MOORING, HOSES (SUBMARINE AND FLOATING) AND VESSEL.

APPENDIX F

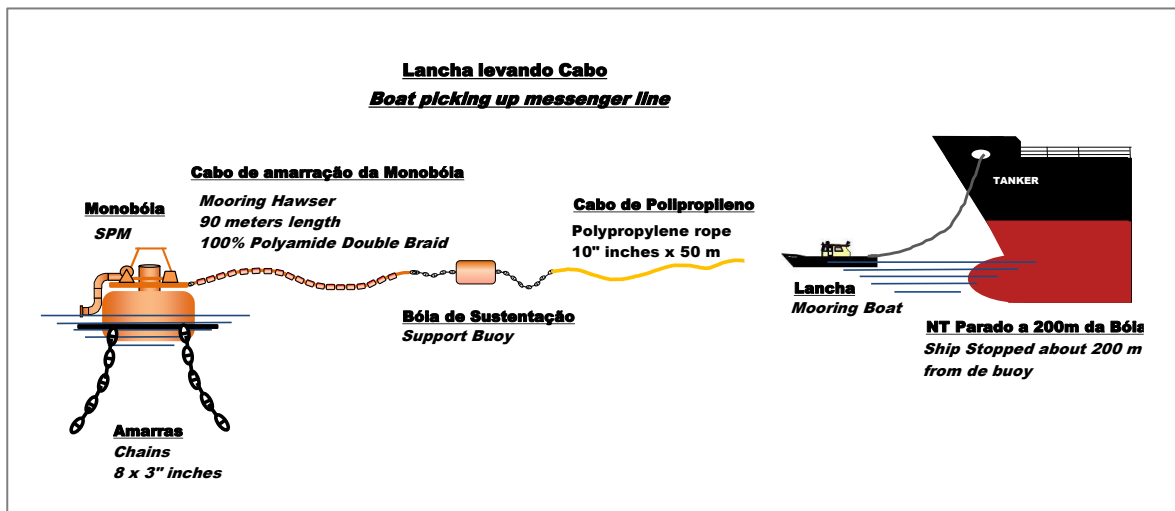


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APPENDIX G

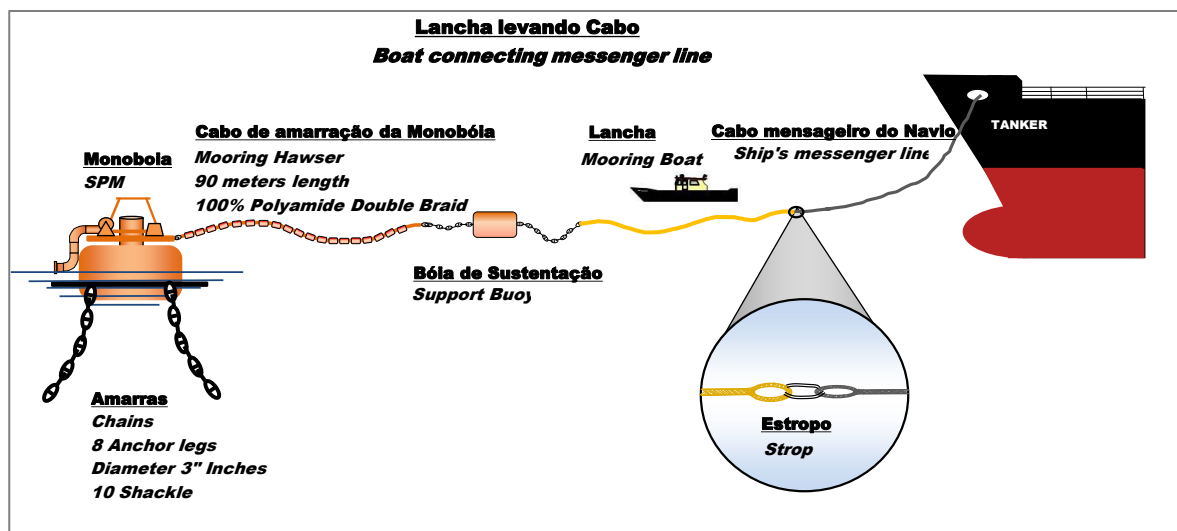


ADMIRAL SOARES DUTRA MARITIME TERMINAL - TEDUT

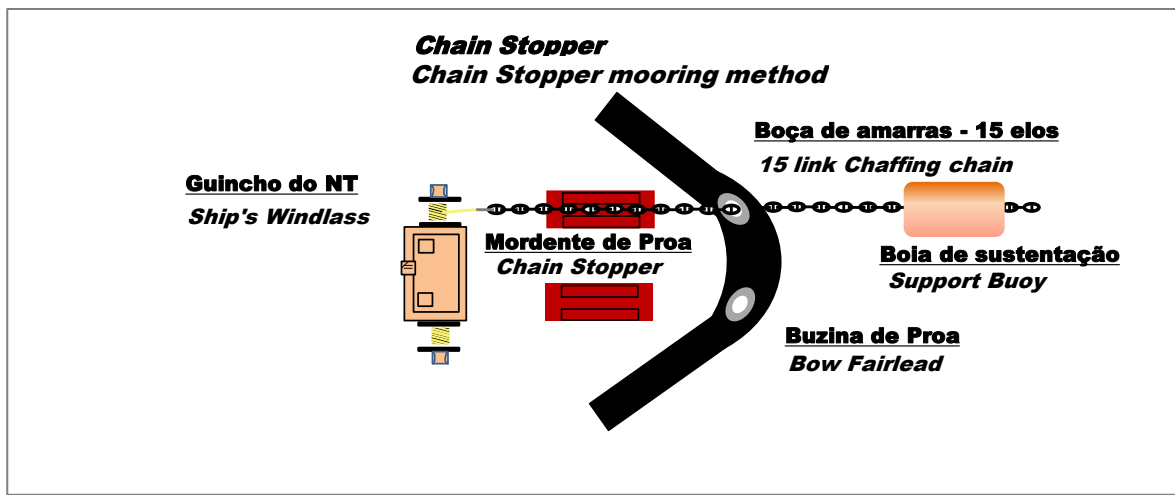
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APPENDIX H



APPENDIX I



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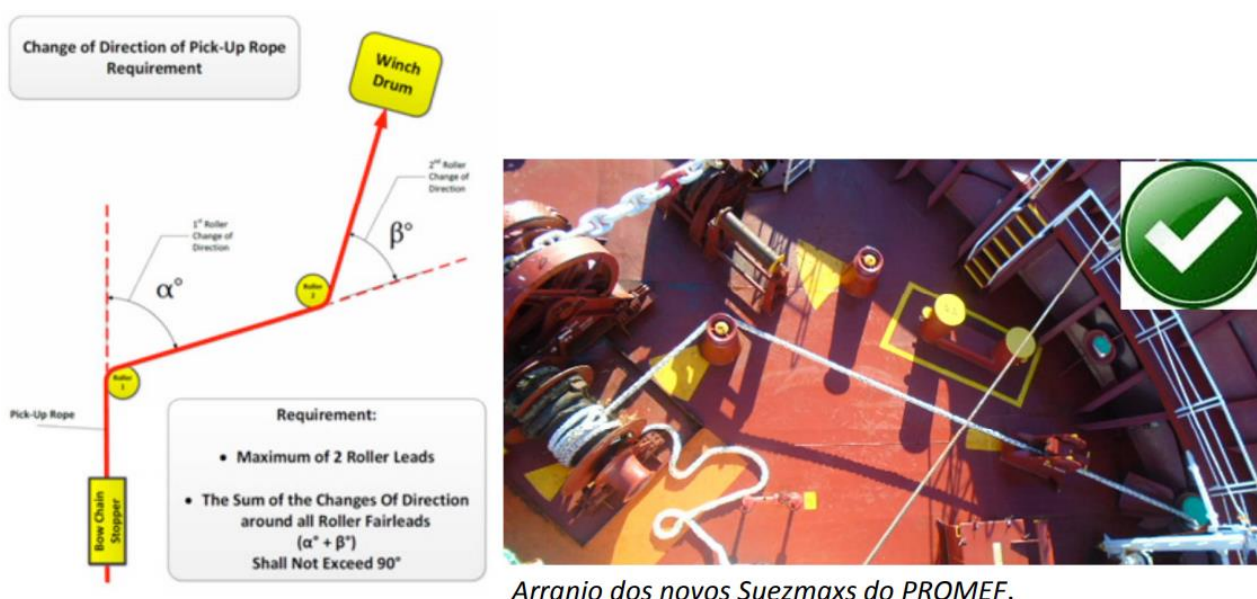
Tramandaí – RS, Brazil

APPENDIX J

MEG (Mooring Equipment Guidelines) – 3rd Edition – and OCIMF safety recommendations state that the winch drums used to store mooring lines in vessels for which the expected delivery date falls during or after 2009 should be directly aligned with the bow chain stopper (BCS) and the bow fairlead.

Due to the fact that such an arrangement is not always possible, the use of pedestal rollers is required. However, no more than 2 (two) pedestal rollers may be used for each BCS and there must be minimal variation in the direction of cable angles.

Minimum values are assigned at the discretion of each Oil Major. The majority of Oil Majors require that this value not exceed 90°.



BCS(s) must be located between 2.7 and 3.7 meters from the bow fairlead, regardless of vessel size. Bow fairleads must have minimum dimensions of 600 mm x 450 mm. If 1 (one) fairlead is used, it must be located along the vessel's center line; if it is recommended that 2 (two) fairleads be used, they must be spaced 2 meters from the center line and never more than 3 meters.

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Figure illustrating the main recommendations from OCIMF and MEG:

