

# INFORMAÇÕES PORTUÁRIAS

*Port Information*

## TEDUT

Terminal Marítimo  
Almirante Soares Dutra

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PORT  
INFORMATION

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**TEDUT**

Terminal Marítimo  
Almirante Soares Dutra

5<sup>th</sup> Edition / 2015



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# 1 INTRODUCTION

This Port Information is produced by Petrobras Transporte SA – (TRANSPETRO S/A), the operator of Terminal Almirante Soares Dutra – TEDUT and aims to provide basic and essential operational information for the safe operation between the Tanker and Terminal Facility.

The Tankers calling this Terminal Facility must be in accordance with the recommendations of the International Safety Guide for Oil Tankers Terminals (ISGOTT), Conventions of International Maritime Organization (IMO), and follow operational Terminal Facility rules and in accordance with the good practices in the worldwide industry.

The Port Information – with versions in Portuguese and English – is distributed to all ships that will operate in the Terminal Facility, as well as Local and National Authorities.

The information contained in this publication is intended to supplement, not replace or amend any legislation, instructions, guidelines or regulatory, national or international publications. Therefore, what goes against any item of the above documents should not be taken into consideration.

The Terminal Facility reserves the right to change any of its operating characteristics presented herein without notice.

It is noted that the Terminal Facility gladly accepts any suggestions, corrections or recommendations regarding the subject matter hereof, to improve the information. Thus, if information is found that needs to be updated, please contact the Terminal Facility Management or the site of Transpetro SA, as follows:

## **Management of Terminal Facility**

Rodovia Cristóvão Pereira de Abreu, Km 103

Zip Code 95520-000 – Osório – RS

Telephone: (55 51) 2161-5550– Fax: (55 51) 2161-5562

**Transpetro – Headquarters**

Av. Presidente Vargas, 328 / 9º andar – Centro

20091-060 – Rio de Janeiro – RJ

Telefone: (55 21) 3211-9060

The latest version of this Port Information can be obtained through the following site address: : **[www.transpetro.com.br](http://www.transpetro.com.br)**.

## 2 DEFINITIONS

**ACCOMMODATION LADDER** – Straight metal frame with side handrails and balusters. The steps are self-leveled according to the slope and have a non-slip floor. It is placed parallel to the side of the ship, from a retractable platform attached to the deck.

**BEAUFORT SCALE** – Scale that measures the intensity of the wind from the sea state.

**BP (Bollard Pull)** – Static longitudinal traction.

**BREAKWAY COUPLING** – Device for automatic disconnection of hoses.

**BUNKER** – Marine fuel used by ships.

**CALM** (Catenary Anchor Leg Mooring) – mooring system installation and set monobuoy / submarine hoses.

**COW** (Crude Oil Washing) – Cleaning of cargo tanks of the ship with the same cargo is handled.

**CRE** – Emergency Response Center.

**DWT** – Deadweight.

**ETA** (Estimated Time of Arrival) – Estimated time of Arrival.

**GIAONT** – Group Inspection and Monitoring Operational Vessel / Terminal.

**IMO** – International Maritime Organization.

**ISGOTT** – International Safety Guide for Oil Tankers and Terminals.

**ISPS Code** – International Ship and Port Facility Security Code.

**MOORING MASTER** – Bachelor degree in Nautical Sciences, with formation of Deck Officer who assists the Master of the tanker during maneuvers of approaching, mooring/unmooring, connecting/disconnecting hoses and coordinating the cargo transfer if requested by the Terminal Facility.

**PILOT LADDER** – Ladder consisting of flexible cables with wooden steps and / or rubber according to the SOLAS Convention.

**PRE** – Emergency Response Plan.

**SQUAT EFFECT** – Increasing the draught of a ship as a result of increased speed.

**SLOP** – Tank used for tanks washings, oil residues and dirty ballast residues.

**SOLAS** – Safety of Life at Sea – International Convention for the Safe of Life at Sea.

**SPM** (Single Point Mooring) – Monobuoy or single point mooring.

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

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

**VTS** (Vessel Traffic Service) – Traffic service for the Vessel.

# 3 CHARTS AND REFERENCE DOCUMENTS

## 3.1 Charts

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

Area	Type and Number of Chart		
	Brazil (DHN)	US Hydrographic Office	British Admiralty
(Approaching and anchorage of the Port)	2000	24110	3969
(Terminal Facility and approaching area)	2010	24110	3969

## 3.2 Reference Documents

In addition to the information contained in the letters referred to above, other information and data about the Terminal can be obtained from the following documents:

Type/Subject	Source
Standards and Procedures of the Port NPCP-RS	Directorate of Ports and Coasts – DPC
Navigation support in the South Coast – South Coast Roadmap	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. ( <a href="http://www.portinfo.co.uk">www.portinfo.co.uk</a> )



# 4 DOCUMENTS AND EXCHANGE OF INFORMATIONS

The table below shows who is responsible for the preparation of each document, to whom must be given the time of delivery and the type of document:

Information	Prepared by:			Delivered to:			Comments
	Terminal Facility	Ship	Both	Terminal Facility	Ship	Both	
Prior to arrival							
Estimated Time of Arrival (ETA) and information on the Vessel		X		X			As Appendix B
Prior to transfer Load							
Details of the cargo, slop and ballast on board		X		X			As Appendix C
Information essential to the operation	X				X		As Appendix C
Record of repetitive items of SSSCL			X			X	As Appendix of ISGOTT
During the transfer load							
Record of repetitive items of SSSCL			X			X	As Appendix of ISGOTT

*continue*

Information	Prepared by:			Delivered to:			Comments
	Terminal Facility	Ship	Both	Terminal Facility	Ship	Both	
After the transfer load, prior to leaving the Ship							
Necessary information for undocking the ship			X			X	Amount of fuel and water on board
After undocking, the output of the port							
Information relating to output data from the port		X		X			Time of disembarkation of Mooring Master and departure

# 5 PORT DESCRIPTION AND ANCHORAGE

## 5.1 General Description

Basically the Terminal Almirante Soares Dutra – TEDUT consists of two monobuoys (Single Point Mooring – SPM601 and SPM602), installed at open sea, which characterizes as an Oceanic Terminal.

The monobuoys are installed in a place out of a public harbor, being considered a Private Port, located off the Organized Port area of Port Alegre – RS.

## 5.2 Location (Appendix A)

### 5.2.1 Coordinates

The monobuoys are located 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 location

The Terminal Facility is located in the north coast of Rio Grande do Sul State, Brazilian South Coast, near Tramandai city, a touristic place around 113 kilometers off Porto Alegre city.

## 5.3 Approaching of the Terminal Facility

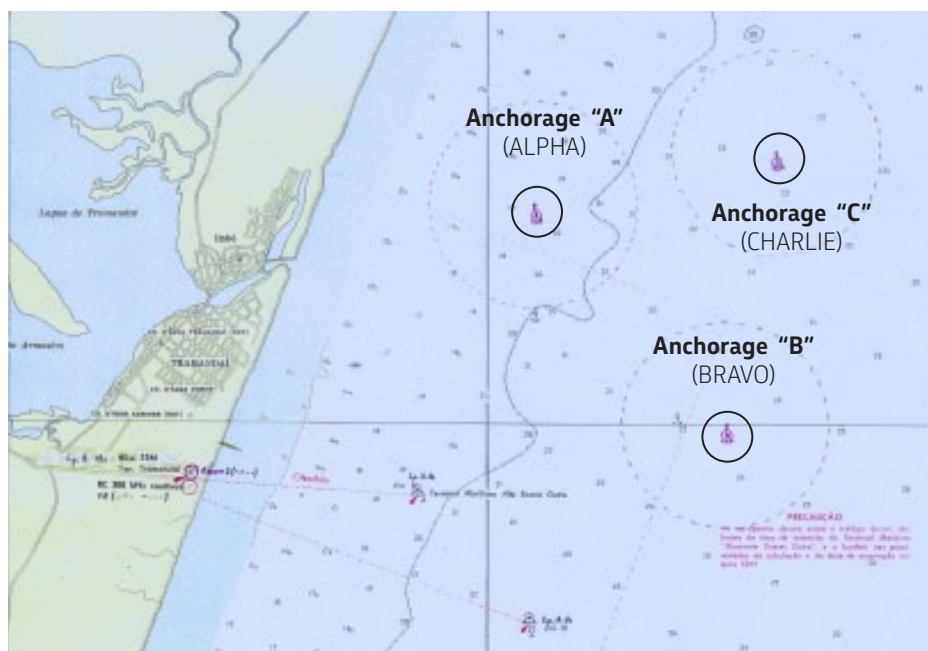
### 5.3.1 General description

Off the coast is distinguished, with emphasis, as visible points from Terminal Facility three water tanks, indicated in the Brazilian nautical chart DHN 2010: Turist, Agrimer and Tramandaí.

### 5.3.2 Anchorage

In general, the anchorage area has good sea bed of fine sand and mud. There are three anchorages for vessels calling the Terminal Facility:

- **Anchorage A (ALFA)** intended for the mooring of ships that will operate at SPM601 – latitude 29° 57' 42 "S e longitude 050° 04' 24" W;
- **Anchorage B (BRAVO)** intended for the mooring of ships that will operate at SPM602 – latitude 29° 59' 24 "S e longitude 050° 02' 30" W;
- **Anchorage C (CHARLIE)** intended for the mooring of vessels in repairs or awaiting orders – latitude 29° 57' 30 "S e longitude 050° 01' 54" W.



### 5.3.3 Aid of navigation

The following navigational aids to the vessels calling the Terminal Facility can be obtained:

→ **Lighthouse south of Tramandaí – international number G 0607,4**

**Position:** latitude 30° 00' 27" S e longitude 050° 08' 04" W

**Characteristics:** Gr Lp (3) B12 seconds

**Altitude focus:** 25 m.

**Range:** 15 miles.

**Description:** frustoconical masonry tower, painted in black and white diamonds.

**Radar reflector:** Z (Zulu) code.

**Reference:** Lists of lighthouses DH-2 da DHN.

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

**Frequency:** 300 kHz

**Range:** 300 miles

**Position:** latitude 30° 00' 34 "S and longitude 050° 08' 08" W.

**Reference:** List radio support DH-8-8 da DHN.

→ **Nautical Signs of monobuoys (characteristics):**

**Monobuoy SPM601:**

**Period:** 3 seconds

**1 flash:** 3 seconds

**1 eclipse:** 2.7 seconds

**Monobuoy SPM602:**

**Period:** 8 seconds

**1 flash:** 3 seconds

**1 eclipse:** 2.7 seconds

## 5.4 Port Limits

There are no official limits for the Port. The Terminal Facility is located offshore, in non-sheltered waters.

## 5.5 Pilotage

There is no pilotage service in Tramandaí.

The Terminal Facility provides the services of a Mooring Master (Loading Master) suitably qualified marine representative placed on board vessels to advise the Master during navigation of the vessel to/from the facility, mooring/unmooring of the ship and hose handling coordination. The Mooring Master may also coordinate the cargo operations,

documentation and communication duties and any other tasks as required by the facility operator.

The use of Mooring Master's is mandatory by all Tankers calling the Terminal Facility, no matter the operation is.

It is noted, however, that each Master is solely responsible for maneuvering and for providing the information to be provided to the Mooring Master.

Thus, it is up to the Master to inform any peculiarities specific conditions or difficulties, such as deficiency of main engine, boilers, problems or malfunctions of navigational aid apparatus, mooring lines or any element that might cause danger regarding to the people, the operation, the safety of the Vessel and Terminal Facility.

On the other hand, if the Master realizes that the operation is being conducted in a dangerous or wrong way, he should take the direction of the maneuver from the Mooring Master, giving notice the fact in writing to the Harbor Master / Agent and remarking the occurrence in the Piloting Maneuver of the model in Appendix D. In this case, the Master shall assume direction of the maneuver and ask for the Terminal Facility to indicate a Mooring Master replacement.

## 5.6 Tugboats and Port Services

The Terminal Facility has a tugboat to support maneuvering. At the discretion of the Mooring Master and Master the tugboat can be used for pull back operations.

**Service Boats for transportation of personnel:** This service must be requested through the Ship's Agent. Such boats are subject to the inspection by the Port Facility Security Officer or the equity security staff at the shore station. See item 7.3.2

**Mooring boat:** The Terminal Facility has a mooring boat service consisted of two boats to support in maneuvering mooring/unmooring and hoses connection/disconnection.

**Service Boat for delivery of provisions:** Same as a boat for personnel transportation, Ship's Agents shall provide this service. For safety reasons, the supply of provisions requires prior Mooring Master authorization. If performed with the Tanker moored it should be done preferably in daylight. Such boats are subject to inspection by the Port Facility Security Officer on the shore station.

## 5.7 Navigational Risks

As a general rule, as an open sea Terminal Facility without sheltered waters, there are no risks associated with navigation for ships intended to call TEDUT Terminal.

## 5.8 General and Environmental Limits of Operating Restrictions

There is no time restriction for carrying out maneuvers of mooring, unmooring or cargo transfer. Such operations typically may occur in daylight or at night time.

Once moored the ship automatically takes the position (weathervane) of the resulting current, speed and wind direction and the direction and intensity of the waves (swell). The operations of mooring ships, handling/connecting hoses and all related maritime operations in TEDUT are pre-determined by weather and sea conditions. This includes but is not limited to the consideration of the sea state and “swells”, direction and intensity of wind and visibility. These limits are not absolute but relative to the effects caused by these forces in ship/monobuoy/hoses (direction and angle of the three component forces) system as well as the persistence of them, considering that the ship size and shape are also parameters for safety conditions analysis.

There is no current speed limit for mooring/unmooring and/or cargo transfer.

The environmental limits for mooring/berthing at daylight are conditioned on winds from 22 to 27 knots or swell/waves of 2.5 meters height and visibility of 0.5 Nautical Mile (approx. 926 meters).

The environmental limits for mooring/berthing at night time are conditioned on winds up to 20 knots or swell/waves of 1.5 meters and visibility for 1.0 nautical mile.

Whenever sustained winds are in the 30 – 35 knots range, a heightened attention must be paid to SPM buoy and hawser movement.

Especially as a result of increasing the storm with sustained winds/gusts of 35 knots or waves/swell of 3,0 meters height the cargo transfer operations must be interrupted by the Mooring Master, hoses disconnected and the tanker required to place the main engine in “short notice” for departure the SPM.

Once the sea conditions rises up to sustained winds of 40 knots or waves/swell of 3,5 meters height the tanker must be requested to departure the SPM.

The excessive buoy motion or hawser tension or strain are also limits to be evaluated for carrying out cargo transfer and hose disconnection.

The environmental limits for remaining moored/berthed at the SPM's are conditioned to the winds up to 40 knots or swell/waves 3.5 meters height.

Mooring Master is responsible for the decision regarding to the environmental parameters and operational safety in all tankers at TRANSPETRO monobuoys.

ENVIRONMENTAL LIMITS		
Task	Environmental description	SPM 601 and SPM 602 Worst acceptable condition
Approaching and mooring at night time	Height ofswell (meter)	1.5
	Wind (knot)	20
	Current (knot)	N.A.
	Visibility (NM)	> 1.0
Approaching and mooring at day time	Height ofswell (meter)	2.5
	Wind (knot)	22 up to 27
	Current (knot)	N.A.
	Visibility (NM)	> 0.5
Stoppage	Height ofswell (meter)	3.0
	Wind (knot)	35
	Current (knot)	N.A.
Hoses disconnection	Height ofswell (meter)	> 3
	Wind (knot)	> 35
	Current (knot)	N.A.
Unmooring	Height ofswell (meter)	3.5
	Wind (knot)	40

## 5.9 Maneuvering Areas

The maneuvering circle in the approaching of mooring berths extends 360° around the monobuoys about 0.8 mile. The depths in the area vary between water depths from 20 to 25 meters.

**Important:** Due to the uniform coast, the ships that require the Terminal Facility shall plot their positions, especially at night. The passage of the ship in the maneuvering circle is safe. When bound for the anchorage, the ships must maintain contact via VHF radio to receive instructions in accordance with the international radio procedures.

## 5.10 Depths and Draught

The depths in the region of single point mooring and the maximum draught of vessels operation are as follows:

SPM	Depth	Tanker maximum draught
601	21 meters	16 meters
602	25 meters	18 meters

## 5.11 Maximum Dimensions

The maximum size of vessel for berthing at the Terminal Facility is 200,000 tons of displacement for both SPM's.

## 5.12 Environmental Factors

The region where the Terminal Facility is located has high air humidity, hovering in the range 76-81%.

The average air temperature is about 20°C (68°F), ranging from a minimum of 2°C (36°F) in the winter to 38° (100°F) in the summer.

The other meteorological data of the area are described in subparagraphs below:

### 5.12.1 Predominant winds

The record winds at Tramandai coast region shows a clear predominance winds from the northeast.

The southwest winds are most frequent from August to December, while the westerly up to northerly winds are more frequent in the months of May, June, July and August.

In the first semester (January-July), decreases the winds frequency while the strongest winds in the region are faced in October and November.

### 5.12.2 Waves and swell

The waves rarely reach more than two meters and the predominant direction is around 110 ° (east-southeast), perpendicular to the coast.

### 5.12.3 Precipitation

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

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

### 5.12.4 Lightning storms

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

The elements that contribute to its incidence are cold fronts and high temperatures during the day.

### **5.12.5 Visibility**

The overall visibility is good. Occasionally, however, there is fog in the morning early hours during fall and winter.

### **5.12.6 Marine currents**

The ocean currents are created by local winds.

The general behavior of the current shows a predominant direction parallel to the coast, lying between 10 ° and 40 °, ranging from 1 up 2 knots.

### **5.12.7 Tidal ranges**

There are NO cyclical tides off Tramandaí.

The absence of tides takes place regarding the geographical situation of Tramandaí, which corresponds to a point of zero tide on the globe. For that reason it cannot be considered as forming element current off the coast.

### **5.12.8 Density of water**

The density of seawater in the region of monobuoys Terminal Facility is 1,025.

### **5.12.9 Weather forecast**

The Terminal Facility has an agreement with a company that provides weather forecast updated daily for the region.

Access to this information can be obtained by calling channels 09 or 11. During cargo transfer it can be obtained from the Mooring Master.

# 6 DESCRIPTION OF TERMINAL FACILITY

## 6.1 General Description

The TEDUT Terminal is located on the northern coast of Rio Grande do Sul, the southern coast of Brazil, near Tramandai City, tourist resort at Rio Grande do Sul State north coast, distant about 120 Km (75 miles) from Port Alegre City.

The Terminal Facility consists of two Single Point Moorings that are installed at open sea, designed for operation with ships for handling crude oil and oil products.

The discharging of crude oil at the SPM 602 aims, through importation or cabotage, supplies Alberto Pasqualini Refinery – REFAP through two pipelines of 34 inches in diameter between SPM602 and shore tanks.

The discharging of oil products at the SPM601 aims, through import or cabotage, supplies Alberto Pasqualini Refinery – REFAP and Braskem (petrochemical Company near the refinery).

The loading operations at the SPM601 aim to export the excess production of diesel oil and gasoline from the Refinery REFAP.

Both operations at SPM601 are conducted through pipelines of 28 inches in diameter between the SPM601 and shore tanks.

## 6.2 Physical Details of Monobuoys

The monobuoys system is composed of the equipment and following operational characteristics:

SPM	Products Handled	Hoses and Flanges	Load or Unloading	Temp. (°C)		Maximum flow	Maximum pressure	Observations
SPM 601	Naphtha, petrochemicals condensate, gasoline and diesel oil	2 X 16" API	Both	5 °C	50 °C	3.500 m³/h	7 kgf/cm²	Unloading line
SPM 602	Petroleum	2 X 16" API	Unloading	5 °C	50 °C	8.000 m³/h	7 kgf/cm²	Unloading line

Note: Occasionally the operations above mentioned can be done at both SPMs.

### → Monobuoy SPM601

**Capacity:** up tankers with to 200,000 tons of displacement.

**Monobuoy Diameter:** 15 meters

**Weight:** 340 tons

**Number of anchor chains:** Eight legs of ten shackles by 3 inches

**Depth:** 21 meters

### → Monobuoy SPM602

**Capacity:** up to tankers with 200,000 tons of displacement.

**Monobuoy Diameter:** 15 meters

**Weight:** 340 tons

**Number of anchor chains:** Eight legs of ten shackles by 3 inches

**Depth:** 25 meters

## 6.3 Mooring Arrangements

The vessels are connected to the monobuoys through a single hawser of 21 inches in circumference, with a length of 90 meters, consisting of materials 100% polyamide double braid, coated with polyurethane and floats (installed by the Terminal Facility) and supplemented with accessories needed safe mooring of ships.

## 6.4 Particulars for the Berth, Cargo Transfer and Bunkering.

The Terminal Facility has the following characteristics:

### 6.4.1 Floating hoses

**Monobuoy SPM601 and SPM602:** The floating hoses consist of two hose strings. The hose string contains double carcass hoses of 20 and 16 inches, tapered to the 16 inch hose end flange. Each hose string has two electrically discontinuous hoses (tanker-end/second hose tanker toward buoy).

### 6.4.2 Submarine hoses

**Monobuoy SPM601:** two lines formed by two sets of two submarine hoses double carcass, of 20 inches in diameter and configuration type Chinese Lantern (CALM) – Appendix E.

**Monobuoy SPM602:** two lines formed by two sets of three submarine hoses double carcass of 20 inches in diameter and configuration type Chinese Lantern (CALM) – Appendix E.

### 6.4.3 PLEM (Pipeline End Manifold)

**Monobuoy SPM601:** The manifold is formed by three spherical valves 150 PSI and 16 inch diameter, two check valves 16 inches and one crossover that connects both pipelines. The valves are hydraulic mechanically operated from connecting hoses to the surface. The manifold is mounted on the seabed.

**Monobuoy SPM602:** The manifold is formed by three Gate Valves 150 PSI and 20 inch diameter and two check valves 20 inches. The gate valves have hydraulic pneumatically operated from connecting hoses to the surface. The manifold is mounted on skids and is staked on the seabed.

### 6.4.4 Submarine pipeline – Monobuoy / Terminal Facility

**Monobuoy SPM601:** Two lines of carbon steel in 28 inches diameter.

**Monobuoy SPM602:** Two lines of carbon steel in 34 inch diameter.

## 6.5 Operations Control

The Operational Control Center (CCO) is located in the tank farm, about 12 kilometers away from the monobuoys. CCO controls the Terminal Facility operations. All the operations and exchanges information with ships will be managed from that control center.

Communications are conducted through maritime VHF radios on prearranged and recorded frequency (channel 09-SPM 1 and channel 11-SPM602)

An alternative way of communication can be done through mobile phone in case the main system fails. The numbers of mobile phones are: SPM601 – (55 51) 9951-9079 and SPM602 – (55 51) 9913-4812.

## **6.6 Main Risks**

The main risks associated with the stay of vessels in operations at Terminal Facility arise from the geographical location of the monobuoys are located in not sheltered waters. There are frequent storms and strong winds that arise especially in September, October and November.

Throughout the period the vessels are in the Terminal Facility, they should monitor weather forecasts for the ALFA area through Weather Warnings from Brazilian Navy Hydrography and Navigation Center.

The Terminal Facility also features a weather service updated daily, whose predictions can be requested through CCO on channels 09 or 11 VHF or during operation via the Mooring Master.

The above-mentioned risks require greater attention from the ship's crew with respect to the ship's position anchoring. It is noted that there is a historic of broken mooring chains while at anchor during bad weather.

# 7 PROCEDURES

During the ship's stay at the Terminal Facility several actions are performed to enable safe operation aiming to manage and minimize the risks.

At all stages, described in subparagraphs below, the arrangements are made with the aim to facilitate the safest operation.

## 7.1 Prior to Arrival

The ship seeking to operate in Terminal Facility shall send in advance the information in Appendix B through the Agent.

Moreover, the start-up will be allowed only when all possible pending issues in the Safety Ship/shore Checklist – SSSCL – are solved by the ship.

Repairs on board and washing ship's cargo tanks should be only carried out in the anchorage area.

The Ship intended for TEDUT Terminal must inform the estimated time of arrival (ETA) to the ship's Agents, within 72, 48 and 24 hours in advance, respectively. The ship's Agent, knowing this ETA, should inform the Terminal Facility via fax (51) 2161-5528 or by sending electronic mail (e-mail) to the following address: [prog.tedut@petrobras.com.br](mailto:prog.tedut@petrobras.com.br)

The amendment or confirmation of the arrival of the ship must be reported at least 24 hours in advance.

The Information regarding ETA must be specified if it is local or GMT time.

The arrival time is considered the moment the ship reaches the anchorage area or in case the tanker cannot drop anchor (due to bad weather conditions), the time of End of Sea Passage – EOSP. The NOR (Notice of Readiness) will be issued only if the tanker is ready, in all respects, to start the operation.

The berthing schedule (mooring prospects or line up) in TEDUT is defined by TRANSPETRO Headquarter.

## 7.2 Arrival

Port authorities should be contacted previously by the ship's Agents taking into consideration the informed ETA and the forecast for berthing.

There is NO supply of bunkers at the Terminal Facility of Tramandaí.

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

The addresses and telephone numbers of some important public bodies around Tramandaí can be found below.

### **Brazilian Customs**

Avenida: Rio Grande, 1001 – Imbé – RS

Telephone: (55 51) 9975-2371

### **Federal Police:**

Avenida Paraná, 922 – Porto Alegre – RS

Telephone(55 51) 3353-9090

### **Hospital of Tramandaí:**

Avenida Emancipação, 1255 – Tramandaí – RS

Telephone(55 51) 3661-2511

### **Port Authority (Harbor Master):**

Avenida Beira Rio, 199 – Imbé – RS

Telephone (55 51) 3661-1677

## 7.3 Boarding Procedures for Mooring Master and Mooring Crew

### 7.3.1 Considerations for boarding

The perception of the sea state is not always the same, as compared the vision from the bridge of a large ship and on board a small boat. The people boarding is a task of high potential risk and requires a full cooperation of all parties involved. Although there are no specific rules, the following points should be used as a guide:

- a. To agree when and where the transfer should occurs;
- b. Enough time and space in the region where the task will occur;
- c. Suitable heading to provide a good lee and ship speed;

- d. Awareness of freeboard height and use of a pilot ladder or combination of pilot ladder/accommodation ladder.
- e. Bottom distance of ladder from waterline
- f. Maintain communication between tanker and mooring boat at all time.

### **7.3.2 Safe passage for Ship to/from shore**

Considering the peculiarities in the region – open sea and not sheltered waters, going ashore is only recommended in cases of extreme need and when the sea conditions and wind recommend.

However, if it is imperative going ashore, the ship's Master should contact the ship's agent for the proper service boat available for personal transportation.

In all cases, TRANSPETRO is not responsible for the risks involved in transporting people from ship to shore and vice versa.

Ladders to be used for access the ship should be provided by the ship. These ladders should be in excellent condition and arranged in accordance with the relevant international rules.

Seeking to achieve greater safety for the task of and regarding the peculiarities of the region and the vessels involved, the Mooring Master may request rigging the combination ladder even if the freeboard is less than 9 meters, once the ship's arrangements permits.

### **7.3.3 Ladders to the tanker**

- a. All ladders to access the tanker should be clean, in good condition and in compliance to the SOLAS Convention requirements and the Brazilian Maritime Authority.
- b. Every pilot ladder should be rigged in a place free of discharges from the tanker;
- c. The pilot ladder should be arranged so that every step remains firmly against the side of the tanker;
- d. The lower base of the gangway (lower skid) must remain firmly along the side of the ship.

## **7.4 Mooring**

### **7.4.1 Ship Mooring System**

The Mooring Master will assist the Master in the safest way to be followed for mooring at the monobuoys.

The ships will be moored to the monobuoys by a single mooring hawser double braid of 21 inches in circumference and 90 meters length consisting of 100% polyamide. It

consists of single mooring rope coated with polyurethane and floats, installed by the Terminal Facility, and supplemented with accessories necessary for the handling and mooring of ships.

Further details and mooring procedure can be seen in Appendices F, G and H.

## 7.5 Prior to Cargo Transfer

**7.5.1** The tanker electrical isolation will be accomplished through an electrically discontinuous hose installed at the first and second positions in the hose strings towards ship-monobuoy.

**7.5.2** The Mooring Master will coordinate the task of hoses connection and disconnection.

The minimum safe working load (SWL) capacity of ship's cranes or derricks is 10 tons (10 t SWL) for handling hoses at the Terminal Facility.

Regarding the particularity of the Terminal Facility for connection of floating hoses, the maximum allowable distance between the bow and the center of manifold of the ship (BCM) should be 140 meters for both SPM's.

The floating hoses will be connected on the tanker port side on a 16 inches diameter manifold connection.

A ship representative should be positioned close to the ship's manifold during the entire operation in order to give support to the ship's cargo control room.

The Terminal Facility will keep on deck watch during the entire operation one shore mooring crew. Positioned forward the tanker in contact full time via radio with the Mooring in contact full time via radio with the Mooring Master and Terminal Facility monitoring the ship's position related to the monobuoy and the weather condition.

**Note:** Considering the peculiarities of operations in an Offshore Terminal, where the ship / shore access is always a high potential risk (once moored), the Master must provide cabins and meals for two Mooring Masters, one Cargo Surveyor if applicable and three persons from shore mooring crew for the entire operation.

**7.5.3** The measurements (ullaging and sampling) shall be carried out by ship's crew and accompanied by Terminal Facility's representatives and / or Cargo Inspectors.

The equipment used must be properly grounded and its accessories for measuring should be explosion proof.

**7.5.4** The completion of the SSSCL (Ship/Shore Safety Checklist) and the pre-cargo transfer agreement documents signed by ship/shore (key safety meeting) are the key for the commencing the operation.

**7.5.5** Throughout the period in which the ship is moored in the SPM it is prohibited discharging heavy smoke through the smoke stack (chimney) or boiler pipe cleaners of any kind. In addition, precautions so that sparks cannot escape through the smoke stack (chimney) must be taken.

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

- Immediate interruption of operations;
- Penalty by the Port Authorities;
- Compulsory unmooring the Ship from the Monobuoy;
- Communication of the infraction to the ship owners;
- Fines, loss of time and all other related expenses, will be fully charged to the ship.

**7.5.6** It should be carefully observed the prohibition regarding small vessels near the ship, while berthed/moored to Monobuoy.

Only the authorized service boat in accordance with the security issues by the Port Authority or the Terminal Facility may stay nearby/alongside the ship. Transgressing of this rule will be immediately notified to the competent Port Authority and the Port Facility Security Officer.

**7.5.7** All vessels operating in Terminal Facility must keep its main engine full-time ready for departure in a short notice after Mooring Master requesting.

This requesting seeks to prevent the ship over rides the SPM or even cause any damage to the Terminal Facility.

## **7.6 The Cargo Transfer**

**7.6.1** The monitoring of the manifold pressures during cargo transfer shall be registered by the ship and shore representatives at hourly intervals.

The Terminal Facility will monitor the variables track (trend graphics) of pipelines through supervisory control system.

The volume of cargo transferred and received should be compared every hour and any significant discrepancy investigated, stopping cargo transfer if necessary.

Any change in operating conditions should be documented and communicated previously.

During operation, is expressly forbidden closing valves that may cause over pressure in the system.

**7.6.2** Ship's ballast tanks and lines are designed for that purpose only and must be isolated from cargo lines.

The ballast water to be discharged into the sea shall be in accordance with the International Convention for the Control and Ballast Water and Sediments Ship Management – BWM.

**7.6.3** There is NO reception of slop tanks at the Terminal Facility.

**7.6.4** Tank cleaning operations is prohibited once the tanker is berthed/moored at the SPM.

Crude Oil Washing operations must be previously requested by the tanker to the terminal operator.

**7.6.5** While the ship is berthed/moored in the SPM, repairs or maintenance work that involves or may involve risk of sparks or other means of ignition cannot be made.

In extreme cases – where maintenance is imperative – all safety regulations must be observed and followed.

Any kind of repair that implies a ship restriction the during the stay must be previously authorized by the Terminal Facility.

It is noted that, in all cases, it is strictly forbidden to perform any maintenance, which results a ship engine restriction or compromises the tanker to move under its own power (see item 7.5.7).

**7.6.6** Throughout the period that the ship is berthed/moored in the SPM some items of the SSSCL must be re-checked at appropriate intervals, as agreed between both parties.

**7.6.7** The interruption of the cargo transfer must take place in any situation that may be dangerous, either to the ship/shore crew, tanker, environment or the Terminal Facility.

Operations must be suspended temporarily during storms, thunderstorms or strong winds.

The Terminal Facility will stop / suspend the cargo transfer operation in the event of any non-compliance rule by the ship regarding safety or security standards accepted and adopted in the international shipping and oil industry.

The ship has the right to interrupt the operation, if the Master believes that the shore staff operations do not provide safety or security condition. In this case the Master must call in advance the Mooring Master or the shore Operations Control Center (CCO).

**7.6.8** In any emergency situation, the Terminal Facility will stop operations so that all resources can be focused to mitigate that possible accident.

## **7.7 Cargo Ullaging and Documentation**

**7.7.1** WILL NOT BE NECESSARY the tanker displaces the floating hoses with water after the cargo transfer. However, the small gap in the cargo lines between the hose valve and the tanker's outlet valve must be flushed (drained) before the hoses disconnection.

**7.7.2** The final ullaging and calculation shall be carried out by ship's crew and accompanied by Terminal Facility's representative and / or Cargo Inspectors. The equipment used must be properly grounded and its accessories for measuring should be explosion proof.

## **7.8 Unmooring and Departure from Port**

**7.8.1** The Mooring Master usually starts the departure maneuver right after the end of cargo documents signed, i.e. the end of the completion of the documents.

**7.8.2** The shore personnel disembarkation and equipment occurs off the SPM in a secure location, indicated by the Mooring Master in agreement with the tanker Master.

## **7.9 Port Facility Security (ISPS Code)**

The Terminal Facility has implemented protective measures regarding the security of the ships and Terminal Facility, pursuant to the requirements by the International Ship and Port Facility Security Code (ISPS Code).

Where necessary, these security measures can be triggered by the Master through the Mooring Master or via VHF radio on channels 09, 11 or 16.

Terminal Facility normally operates at security level one (01) – MARSEC 01.

Further details, Port Facility Security Officer can be contacted via the following phone numbers: Tel: (55 51) 2161-5530 or 2161-5554.



# 8 PORT AND ANCHORAGE ORGANIZATION

## 8.1 Maritime Authority

The Tramandai Harbor Master is the Maritime Authority within the limits of Tramandai. It is up to its responsibility to determine the actions and prosecuting those responsible for any incident or accident within the limits of the Terminal Facility.

## 8.2 Port Authorities

The first requirement to be met by ship calling the Terminal Facility is the boarding of the Port Authorities (Port Health, Immigration Officers and Customs) and their inspections.

## 8.3 Pilotage

There is No pilotage service at the Port of Tramandaí.

However, the Terminal Facility provides the service of a Pilot/Mooring Master who is mandatory for all maneuvers.

## 8.4 Tugs and Other Maritime Services

The Terminal Facility features a tugboat with 45 bollard pull tons that can be used for mooring maneuvers or even during the cargo transfer for “pull-back” operations.

## **8.5 Relevant Services at the Port**

### **8.5.1 Ship repairs**

Ship repairs are allowed only in anchorage area C (CHARLIE).

### **8.5.2 Support boats**

The boat service providing provisions must be requested through Ship's Agent. The operations of these boats on the ship's side must meet safety and security requirements and to be authorized by the Mooring Master.

# 9 EMERGENCY PLANNING AND RESPONSE

## 9.1 Emergency Contacts

The Terminal Facility emergency list for emergency situation or oil spillage:

Organization	Hours of Operation	Symbol of Identification	Telephone	Fax	Mobile phone	VHF/UHF Call Channel	VHF/UHF Conversation Channel
Harbor Master	24 hours	CPRS	(55 51) 3661-1677	(55 51) 3661-1677	N.A.	16	N.A.
Mooring Master	24 hours	C.M.	(55 51) 2161-5530	(55 51) 2161-5528	(55 51) 9951-9079 (55 51) 99134812	VHF 09 VHF 11	N.A.
Operational Control Center CCO	24 hours	C.C.O.	(55 51) 2161-5554	(55 51) 2161-5534	(55 51) 9951-9097	VHF 09 VHF 11	VHF 09 VHF 11
Terminal Facility Operations (O.H.)	07:30h to 16:30h	C.C.O.	(55 51) 2161-5554	(55 51) 2161-5534	N.A.	N.A.	N.A.
Management of Terminal Facility	07:30h to 16:30h	ADM	(55 51) 2161-5550	(55 51) 2161-5562	N.A.	N.A.	N.A.
Fire Department	24 hours	#	(55 51) 3661-1999	N.A.	N.A.	N.A.	N.A.
Civil Defense (Porto Alegre / RS)	24 hours	#	(55 51) 3228-9026	N.A.	N.A.	N.A.	N.A.

continue

Organization	Hours of Operation	Symbol of Identification	Telephone	Fax	Mobile phone	VHF/UHF Call Channel	VHF/UHF Conversation Channel
Hospital of Tramandaí	24 hours	#	(55 51) 3661-2511	(55 51) 3661-1299	N.A	N.A.	N.A.
City Hall (Tramandaí)	08:00h to 17:00h	PMT	(55 51) 3661-1762	#	#	N.A.	N.A.
FEPAM (Porto Alegre)	08:00h to 17:00h	#	(55 51) 3225-1588	(55 51) 3212-4151	(55 51) 9982-7840	N.A.	N.A.
IBAMA (Tramandaí)	08:00h to 17:00h	#	(55 51) 3661-3212 TDAI	N.A.		N.A.	N.A.
National Petroleum Agency	24 hours	A.N.P.	(55 21) 3804-0223	(55 21) 38040900		N.A.	N.A.

## 9.2 Contingency Plan

**9.2.1** The Local Contingency Plan is the document that contains the emergency contact list and emergency response strategy on monobuoys and surroundings.

**9.2.2** Ship's emergency and firefighting equipment must be kept operational and available for the entire period that the ship remains at the Terminal Facility.

Fire hoses should be extended, becoming one forward and one aft the ship's manifold, unless the firefighting monitor can override this requirement.

The tanker must keep for immediate use absorbent material in case of an oil spill.

The tanker should take extra precautions in order to prevent pollution at sea

The Terminal Facility has located in the shore station (Trapiche), near the coast, one Environmental Defense Center (CDA), which has equipment and facilities for use in case of pollution and mitigation of environmental damage.

This center features stocks booms, oil skimmers, workboats, tank and oil recover boat and personal staff.

The Terminal Facility performs periodical drills and trainings aiming to prepare the Terminal staff to quickly response in case of emergencies.

**9.2.3** The Terminal Facility has an equipped ambulance for first aid care. The remaining cases are referred to the Tramandaí Hospital, which are located near the shore station.

## 9.3 Public Resources for Emergency Response

In Tramandaí only the Terminal Facility have resources that can be used in the mitigation of emergencies.

### 9.3.1 Local emergency services

The Fire Department, Civil Defense of the Municipality of Tramandaí, Police and hospital have additional resources to act in emergencies and can be requested as section 9.1 of the table.

## 9.4 Oil Spill Response

The sub-items below describe the resources available to combating oil spill emergencies in the region of monobuoys and its adjoining areas.

### 9.4.1 Terminal facility's oil spill response capability

The resources available for oil spill response situations are related to PRE, which is available at the Terminal Facility.

### 9.4.2 Environmental Government Agency Oil Spill Response Capability

The Authority's Environment municipality of Tramandaí does not have the resources to respond an oil spill.

### 9.4.3 Available resources from Mutual Support Plans from other Terminal Facilities.

Resources in others Facilities in the vicinity of Tramandaí can be found in the PRE.

### 9.4.4 Intermediary oil spill response capability

In the event of significant pollution – midsize accident – The Terminal Facility will provide regional resources available at TRANSPETRO.

These features, their readiness and operation modes are listed in the PRE.

### 9.4.5 Fighting a large size accident

The PRE relates the actions and responsibility for each type of event in case of large size accidents (catastrophic proportions) that may occur in the vicinity of monobuoys or tanker.

For this type of event TRANSPETRO / PETROBRAS will provide all national or international resources.



# 10 CONTACTS

The following tables indicate the organization, post, telephone, fax, email address, channel and radio frequencies of the main contacts of the Terminal Facility and the companies operating in it.

## 10.1 Terminal Facility

Local	Contact	Telephone	Fax	Channels VHF/UHF	
				Call	Conversation
SPM601	Mooring Master	(55 51) 9951-9079	–	16	09 or 11
SPM602	Mooring Master	(55 51) 9913-4812	–	16	09 or 11
CCO – Centro Controle Operacional	Supervisor on Duty	(55 51) 2161-5554	(55 51) 2161-5534	16	09 or 11

## 10.2 Port Service

Organization	Contact	Telephone	Fax	E-mail	Channels VHF/UHF	
					Call	Conversation
Harbor Master	Officer on Duty	(55 51) 3661-1677	(55 51) 3661-1677	N.A.	16	12/14
Terminal Facility	Port Facility Security Officer	(55 51) 2161-5530	(55 51) 2161-5528	rprazerres@petrobras.com.br	09/11	09 ou 11
Terminal Facility	Nautical Advisor	(55 51) 2161-5530	(55 51) 2161-5528	N.A.	16	09/11/14

## 10.3 Shipping Agents and Suppliers

Company	Business	Telephone	Fax	E-mail	Channel VHF/UHF	
					Call	Conversation
Sampayo Nickhorn S/A	Agent	(55 51) 3627-3606 (55 51) 9911-0783 (55 51) 3627-2171		tramandai@sampayo.com.br	16	14
Agência Marítima Orion Ltda	Agent	(55 51) 3511-5100		orion@poa.amorion.com.br	N.A.	N.A.
Brasmarine Serviços Portuários Ltda	Agent	(55 51) 9966-8062 (55 51) 2131-9318	(55 51) 2131-9390	operations@brasmarine-br.com.br	N.A.	N.A.
Sonpex Agenciamentos Ltda	Agent	(55 53) 8124-1601 (Operations manager) (55 53) 8124-7764 (Agency director)	(55 53) 3035-2928	spx@sonpex.com	N.A.	N.A.
Supermar S.A	Agent	(55 53) 3231-1122 (55 53) 9962-5073	(55 53) 3231-1722	riogrande@supermar.com.br	N.A.	N.A.
Wilson Sons Agência Marítima Ltda	Agent	(55 51) 3343-0407	(55 53) 3233-7700 (55 51) 3343-0408	agerg@wilsonsons.com.br	N.A.	N.A.
Agência Marítima Granel Ltda	Agent	(55 53) 3234-1132	(55 53) 3234-2087	amg.portoalegre@granel.com.br	N.A.	N.A.
Mundial Serviços Marítimos Ltda	Ship Chandler	(55 51) 8209-0403 (55 51) 3627-3780		mundialsm@mundialsm.com.br	16	12/14
Continental Provedora de Navios Ltda	Ship Chandler	(55 51) 9985-3877 (55 51) 3315-4692		pronave@terra.com.br	N.A.	N.A.
Sul Trade Transportes Integrados Ltda	Agent	(55 53) 3235-3500 (55 53) 3233-5759	(55 53) 3235-3232	sultrade@sultrade-ag.com.br	N.A.	N.A.

Company	Business	Telephone	Fax	E-mail	Channel VHF/UHF	
					Call	Conversation
Unimar Agenciamentos Marítimos Ltda (Filial)	Agent	(55 51) 3343-2458 (55 53) 3231-1104	(55 51) 3343-0866	unimar-portoalegre@ unimar-agency.com.br	N.A.	N.A.

## 10.4 Local, State and National Authority Agencies

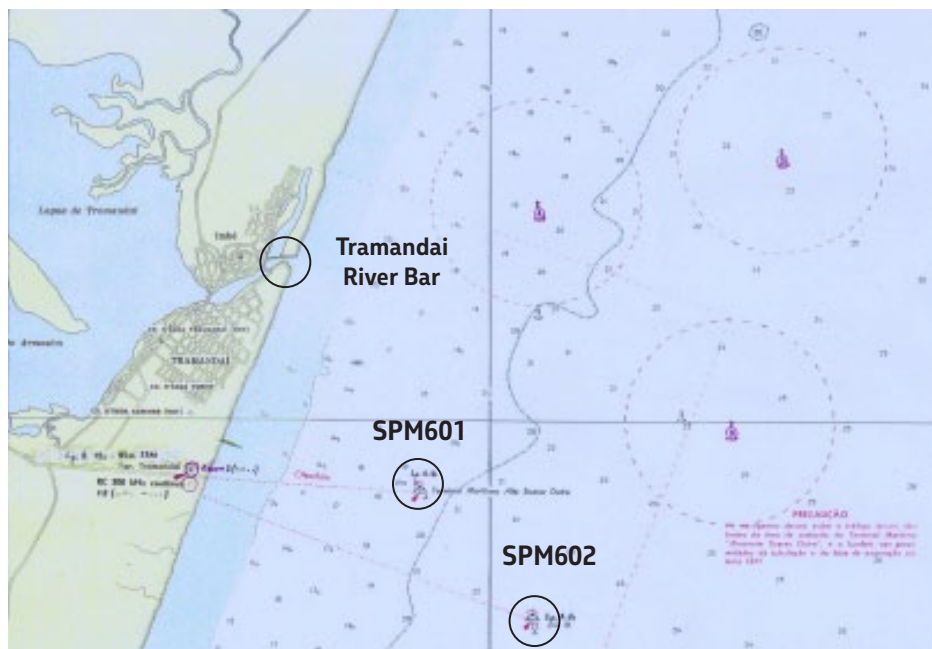
In Section 9.1 table consists of the list of authorities and their ways of contact.

## 10.5 Emergency Response Organizations

The emergency response organizations available in the Terminal Facility can be activated from the contacts listed in section 9.1 above.

# APPENDICES

## A – Location of monobuoys



## B – Pre-arrival informations from the Vessel to the Terminal

TRANSPETRO/DTO/TA/OP2/RS Terminal Marítimo Almirante Soares Dutra – TEDUT	
Informations About the Vessel	
Ship's name:	Oxygen content of cargo tanks:
Flag:	Last port of call:
Captain's name:	Next port:
Owners:	Agents:
Is the I.G.S. fully operational and in good working order (If fitted)?	Oxygen content of cargo tanks:
Does the ship intend to crude oil wash?	Is the ship planning to tank clean alongside?
Length overall (LOA):	Drafts on arrival:
Length between perpendiculars:	Maximum draft during handling cargo:
Breadth:	Departure draft:
Propulsion	Thrusters
Quantity of main engine:	Bow (Qty. and power):
Quantity of propeller:	Stern (Qty. and power):
Quantity of tugs required:	
Number and (bollard pull): N.A.	
Number /Size of Manifold Connections	Distances
· Cargo:	· Bow to center manifold:
· Ballast:	· Ship's side to Manifold:
· Bunker:	· Manifold height from the main deck:
Loading Schedule (If applicable only)	
Type and quantity (cbm):	Type and quantity (cbm):
Type and quantity (cbm):	Type and quantity (cbm):
Ballast	
Quantity (cbm):	Estimated time:
Slop/ballast discharge to shore	
Quantity (cbm): Not applicable	Estimated time: Not applicable.

Unloading Schedule (If applicable only)	
Type and quantity (cbm):	Type and quantity (cbm):
Type and quantity (cbm):	Type and quantity (cbm):
Type and quantity (cbm):	Type and quantity (cbm):
Ballast	
Quantity (cbm) :	
Estimated time:	
Slop/ballast discharge to shore:	
Quantity (cbm): Not Applicable	
Estimated time: Not Applicable	
Bunker Requested	
Type and quantity (HFO): Not Applicable	Type and quantity (MDO): Not Applicable
<b>ADDITIONAL INFORMATION (IF ANY):</b>	

## C – Information to be exchanged before the cargo transfer

Information between Ship and Terminal	
Name of Ship	Berth:
Voyage nr:	Date of berthing:
Contract data	
Nº. of existing onboard pumps:	
Cargo capacity at 98% (cbm):	m <sup>3</sup>
Guaranteed pressure in the discharge	kgf/cm <sup>3</sup>
Capacity ballast / de-ballasting simultaneously with loading / unloading	
Travel information	
Type of charter (VCP, TCP, COA, etc.)	
Type of voyage (Cabotage / Ocean Going)	
Ports and places of origin and destination	
Did the Ship request provisions/supplies?	
Ways of communication between Ship and Terminal Facility	
Cargo information	
Product:	Quantity:
Temperature:	API:
Information about the cargo transfer	
For discharging: Ship will make special operation? (COW, inerting, etc.)	
Time for the special operation	
Time required to stop the pumps	
For Loading: Time advance notice to TOP	
Flow for the period TOP	
Amount of ballast to be discharged	
Maximum rate allowed for the de-ballasting	
There are restrictions on the electrostatic properties?	
There are restrictions on the use of self-closing valves?	

Ship condition / Terminal Facility operation for loading / unloading by product	
Ship:	Terminal Facility:
Pressure vessel:	Terminal Facility pressure:
Flow:	Flow:
Maximum temperature:	Maximum temperature:
Minimum temperature:	Minimum temperature:
Sequence of operations by product	
Amount to be charged / discharged	
Tanks origin / Destination	
Lines board / land	
Loading arms / hoses used	
Forecast start and end of the operation	
Complementary operating and safety information	

## D – Proof of maneuver

BRAZILIAN NAVY  
PORT AUTHORITY OF RIO GRANDE DO SUL  
PORT AUTHORITY AGENCY IN TRAMANDAI

### CONFIRMATION OF PILOTING MANOEUVER

Declare, for the purposes of evidence by the Brazilian Maritime Authority, the ship \_\_\_\_\_ IRIN \_\_\_\_\_ was attended by Mooring Master \_\_\_\_\_ which is identified in maneuvers approach, mooring and unmooring in TEDUT Terminal (SPM \_\_\_\_\_) on \_\_\_\_/\_\_\_\_/\_\_\_\_ until \_\_\_\_/\_\_\_\_/\_\_\_\_ at \_\_\_\_\_ h.

Participated as assistants: \_\_\_\_\_

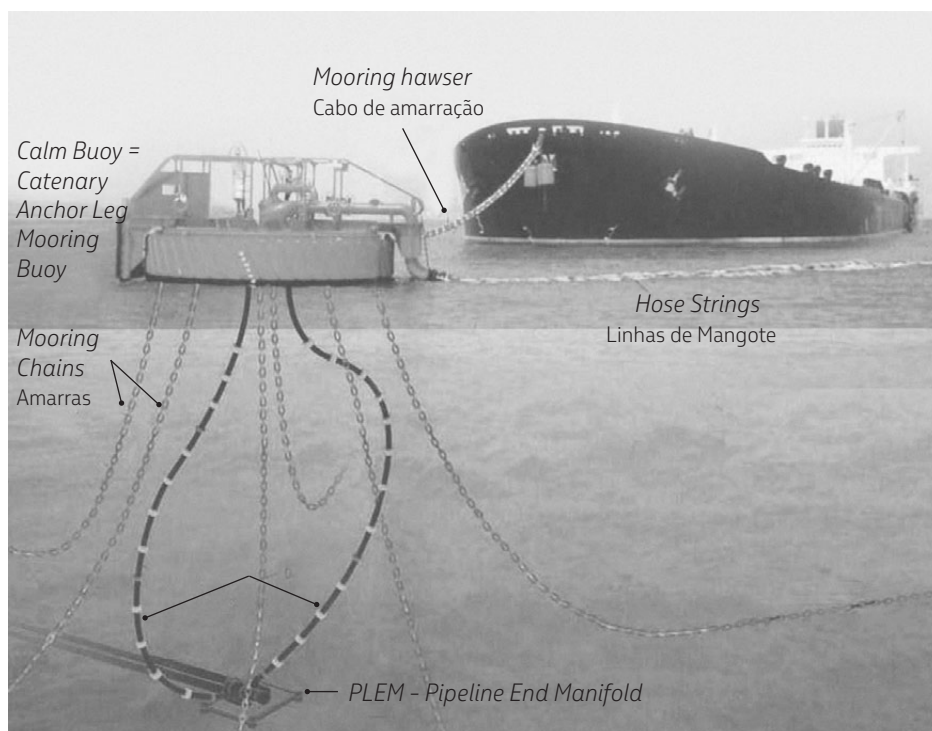
Results and observations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The above statement is an expression of the truth.

Tramandaí, \_\_\_\_/\_\_\_\_/\_\_\_\_

\_\_\_\_\_  
(MASTER)

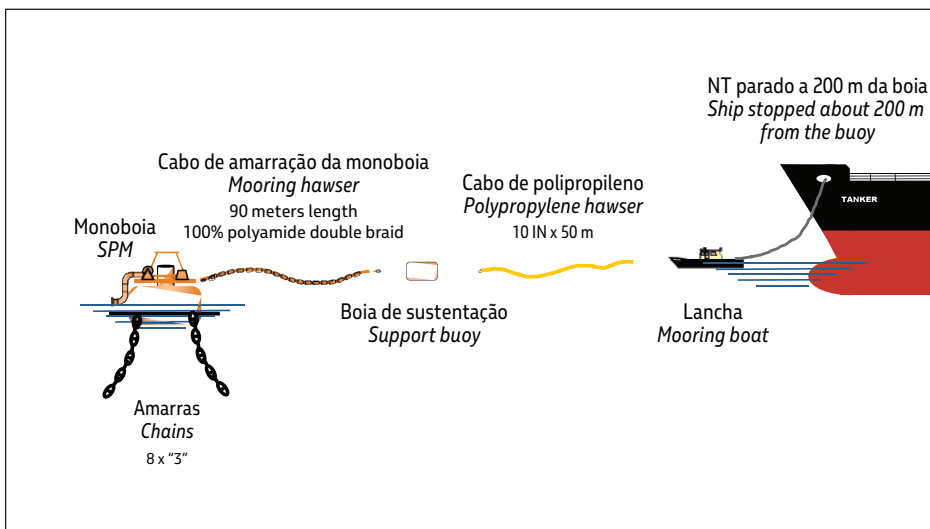
## E – Set PLEM, chinese lantern, monobuoy, hoses (submarine and floating) and Ship



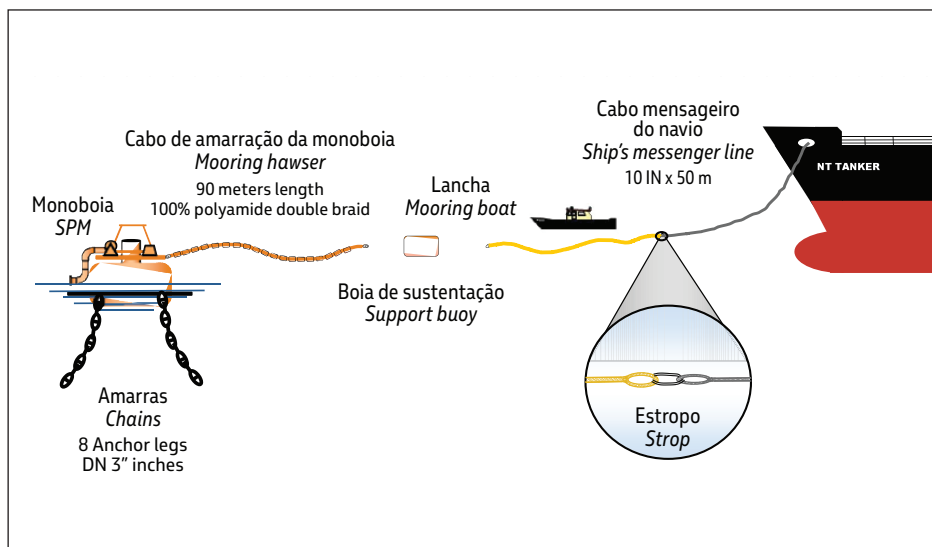
TERMINAL ALMIRANTE SOARES DUTRA - TEDUT



## 49



## H – Boat connecting messenger line



## I – Chain stopper mooring method

