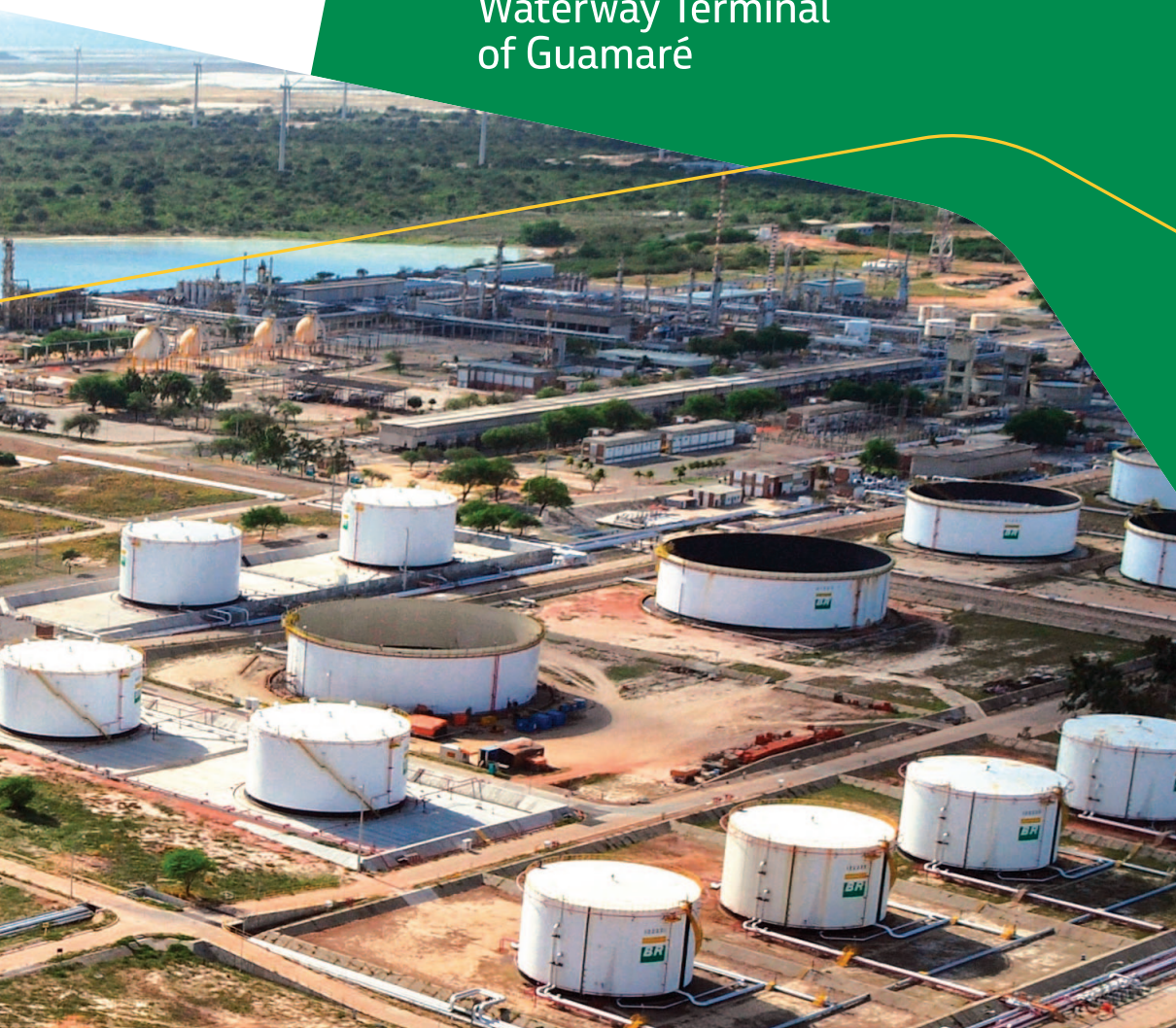


INFORMAÇÕES PORTUÁRIAS

Port Information

GUAMARÉ

Waterway Terminal
of Guamaré





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INTRODUCTION

This Port Information is prepared by Petrobras Transporte S.A. – Transpetro, which operates the Waterway Terminal of Guamaré (TA GUAMARÉ) in the Oceanic Mooring Areas of Ubarana for Heavy Oils and Light Oils in Rio Grande do Norte.

It presents the essential information for the ships which operate in the terminal and is distributed internally in the organization, to interested parties, port authorities, maritime authorities, maritime agencies, tanker ships, and other municipal, state, and federal authorities.

The Port Information has versions in Portuguese and English.

The information contained in this publication is intended to supplement, never replace or alter any type of law, instructions, guidance, or official, national, or international publications. Consequently, anything which contradicts any item of the abovementioned documents should not be taken into consideration.

The Terminal reserves the right to change any operational information presented here, without prior notification.

Transpetro will analyze any suggestions, recommendations, or corrections to the topics addressed here, aiming to improve the information. If incorrect information which needs to be updated is found, please contact:

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The most recent version of this Port Information can be obtained at the address: **www.transpetro.com.br**

DEFINITIONS

BP – Bollard Pull – Longitudinal static traction of the vessel.

CDA – Environmental Defense Center (Centro de Defesa Ambiental) of Petrobras S.A.

COW – Crude Oil Washing (Cleaning of the crude oil cargo tanks).

DHN – Board of Hydrography and Navigations (Diretoria de Hidrografia e Navegação).

DWT – Deadweight Ton.

GIAONT – Generic designation of the professional operational safety inspectors. The name is derived from the Portuguese, *Grupo de Inspeção e Acompanhamento Operacional de Navio e Terminais* (Ship and Terminal Inspection and Operational Monitoring Group).

IMO – International Maritime Organization.

Isgott – International Safety Guide for Oil Tankers and Terminals.

MBL – Minimum Breaking Load.

Mooring Master – Professional certified and skilled in accordance with the STCW (Seafarers' Training Certificate and Watchkeeping) to serve as an experienced hand on the open sea.

Neap tide – Condition in which the tide attains the minimum amplitude in a given period of the year.

Spring tide – Condition in which the tide attains the maximum amplitude in a given period of the year.

Squat Effect – Increase in draft of a ship as a consequence of the increase of travel speed, especially in restricted waters.

UTC – *Universal Time Coordinated* .

VTS – Vessel Traffic Service..

REFERENCE CHARTS AND DOCUMENTS

Information regarding the Terminal can be obtained in the following publications.

1.1 Nautical Charts

Area	Chart Number
	Brazil (DHN)
From Maceió point to the cape of Calcanhar	21900
From Areia Branca to Guamaré	720
Port of Guamaré	704

1.2 Other Publications – Brazil (DHN)

Além das informações contidas nas cartas acima referidas, outras informações e dados acerca do Terminal podem ser obtidos nos documentos abaixo:

Typo/Topic	Editor or Source
	Brazil (DHN)
Standards and Procedures of the Port Authority	NPCP
Support for Navigation on the East Coast	DH1-II
List of Lighthouses	DH-2
List of Radio Aids	Lista DH 8-8



DOCUMENTS AND EXCHANGE OF INFORMATION

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	Ship	Both	Terminal	Ship	Both	
Before Arrival							
Estimated Time of Arrival (ETA) and information about the vessel		X		X			According to Appendice P
Essential information about the Terminal	X				X		According to Appendices A to O
Before Transfer of the Cargo							
Details of the cargo, "slop" or ballast aboard		X		X			According to Appendice Q
Information essential to the operation. (complete on site)	X				X		According to Appendice Q
Ship/Terminal Safety Checklist			X			X	According to Appendice A of the ISGOTT.

continua

Information	Prepared by:			Delivered to:			Comments
	Terminal	Ship	Both	Terminal	Ship	Both	
During the Transfer of the Cargo							
Repeat the Safety Checklist			X			X	According to Appendice A of the ISGOTT
After Transfer of the Cargo, Before Departure							
Information needed for unmooring of the ship			X			X	Quantity of fuel and water aboard
After Unmooring, Upon Departure from the Port							
Information related to Port departure data		X		X			Schedule for disembarkation of the mooring master and departure from the port

DESCRIPTION OF THE PORT AND ANCHORAGE AREA

5.1 General Description of the Terminal

TA Guamaré is located at Highway RN 221, km 25, no number, Rural Zone of the municipality of Guamaré, State of Rio Grande do Norte, CEP 59598-000, around 170 km from the capital, Natal, and 9 km from the city of Guamaré.

Its facilities are equipped with 13 (thirteen) atmospheric Tanks, with a nominal storage capacity on the order of 260,000 m³. It also has 2 (two) Mooring Areas, 1 (one) Unloading Platform for tanker trucks, and 2 (two) submarine Pipelines which interconnect the Mooring Areas with the Terminal.

Its activities consist in the receiving of petroleum from the maritime and terrestrial production fields through the terrestrial pipelines, receiving of petroleum from the independent producers through the truck unloading platform, storage in the tanks, and delivery of this petroleum through the submarine pipeline and mooring area, receiving of produced water through the mooring areas and sending it for treatment at the E&P stations. And also operations with Light oils, receiving and sending of Naphtha and Diesel by submarine pipeline and mooring area, storage and internal transfers with clients. Totaling and monthly movement, between input and output, of around 700,000 m³.

5.2 Location

5.2.1 General geographic location

The Waterway Terminal is located on the North (N) coast of the State of Rio Grande do Norte, in the so-called Costa Branca or Salineira zone. It can be reached by federal highway BR-406, departing from Natal, the capital of the State, and taking RN-401 after the district of Baixa do Meio in the direction of the city of Guamaré.

5.2.2 Land base

The Waterway Terminal of Guamaré (Administration and Tankage) TA-GME is located at around 9 km to the Southwest (SW) of the seat of the municipality of Guamaré, in Rio Grande do Norte.

5.2.3 Coordinates of the mooring areas

Ubarana Heavy Oil Mooring Area:

- Latitude: 04° 52' 25" S
- Longitude: 036° 22' 27" W

Ubarana Light Oil Mooring Area:

- Latitude: 04° 55' 8" S
- Longitude: 036° 26' 05" W

5.3 Approach of the Terminal

5.3.1 General description

The two mooring areas are on the open sea, both can be approached by ships navigating from the south or the north. However, the particulars of each mooring area, specified below, must be observed.

Ships navigating from the south, after Cape Calcanhar, can obtain radar positions from production platform PAG II, which has Racon, and is located at the following geographical coordinates: 04° 52' 29" latitude South (S) and 036° 16' 12" longitude West (W). This platform is located around 6 nautical miles to the east of the Heavy Oil mooring area.

Ships navigating from the North (N) can approach in the same manner, taking care to avoid Urca do Tubarão, located approximately 5 nautical miles to the West (W) of the Heavy Oil mooring area and 10 nautical miles to the Northwest (NW) of the Light Oil area.

It is recommended not to approach the Heavy Oil mooring area by its South (S) side, due

to the existence of submarine pipelines not marked on the navigation charts.

On nighttime approaches to the Light Oil area, attention must be paid to the signal buoy with radar reflector at the coordinate: 04° 52' 03" latitude South (S) and 36° 22' 10" longitude West (W), with a white light which flashes white for 0.3 s and is hidden for 2.7 s, with a reach of 5 nautical miles.

For approaches to the Light Oil area, the isolated danger buoys should be observed, at Lat 04° 55',65 S and Long 36° 27',25 W, Lat 04° 50',8 S Long 36° 27',44 W. These mark a high bottom of 8 meters, as well as the Urca do Tubarão.

The PUB 1 platform, located at the coordinates Lat 04° 54' 56" S and Long 36° 20' 22" W, should serve as a reference point for navigation of the Light Oil mooring area. The approach should be made from the North, due to the presence of a high bottom to the South of the area.

The Light Oil mooring area has a standby buoy at the coordinates: Lat 04° 49' S Long 036° 30' W, which marks the entrance from the navigation channel to it. This buoy can serve as a reference for start of navigation through the channel and ships in the anchorage area.

5.3.2 Anchorages

Almost all the area to the North (N) and Northwest (NW) of the Heavy Oil mooring area is good for anchorage, because the bottom offers good tension (sand and gravel).

Starting from the signal buoy, one can anchor at any distance to the West (W) or Northwest (NW) of it; however, it is recommended to anchor as close as possible to the Mooring Area. This recommendation aims to facilitate mooring maneuvers and visits from authorities.

On the other hand, one should avoid anchoring to the South (S) of the two mooring areas due to submarine pipelines and high bottoms not marked on the navigation charts.

For the Light Oil mooring area, all the area to the North (N) is good for anchoring, since the bottom offers good tension (sand and gravel). The Urca do Tubarão to the northwest (NW) should be avoided.

The suggested coordinates for the anchoring area are below:

Heavy Oils Mooring Area:

- 1) Lat 04° 50' S and Long 36° 24' W
- 2) Lat 04° 50' S and Long 36° 20' W
- 3) Lat 04° 51' S and Long 36° 24' W
- 4) Lat 04° 51' S and Long 36° 20' W

Light Oils Mooring Area:

- 1) Lat 04° 48' S and Long 36° 27' W
- 2) Lat 04° 48' S and Long 36° 29' W
- 3) Lat 04° 49' S and Long 36° 27' W
- 4) Lat 04° 49' S and Long 36° 29' W

The Port Authority advises Captains that, when anchoring their ships, to keep the crew on their Travel Duty, with the objective of having skilled personnel aboard in a sufficient number for conducting emergency maneuvers.

Location of embarkation of mooring master

For mooring to any area, the Mooring Master will board, during daylight, in the anchorage area, with the ship producing shade on the side where the ladder is lowered. He will advise the Captain on the mooring and unmooring maneuvers of the ship, supervise the tasks of connection and disconnection of the hose lines, as well as monitor the mooring conditions and environmental conditions during the operations.

The Mooring Master will board together with an offshore team which will perform the connection and disconnection of the hose lines.

The Ship shall provide suitable accommodation and meals for the personnel on board and the Mooring Master, given that they will remain on board until the end of the operation.

5.3.3 Navigation aids

In addition to the PAG II Platform and the signal buoys of both mooring areas, there are also the Ubarana II, III, and IV and POUB-1 production platforms.

The coordinates of the platforms are as follows:

- **PUB II (Fixed - Concrete):** 04° 55' 46" latitude South (S) and 036° 20' 21" longitude West (W).
- **PUB III (Fixed - Concrete):** 04° 55' 22" latitude South (S) and 036° 22' 30" longitude West (W).
- **PUB IV (Fixed - Jacket):** 04°54' 31" latitude South (S) and 036° 24' 42" longitude West (W).
- **POUB-1 (Fixed – Jacket):** 04° 53' 06" latitude South (S) and 036° 24' 01" longitude West (W).

Because it is an Oceanic Terminal with unique characteristics, the Terminal will provide the aid of a Mooring Master who will give support to the mooring and unmooring maneuver of the Ship to the Mooring Area.

5.3.4 Limits of the port

The Ubarana Mooring Areas of the Waterway Terminal of Guamaré are outside the area of the organized port and in open sea and, therefore, are subject to the maritime authority, which obligates the Terminal to meet the pertinent Standards and Laws.

When there are ships operating, it is considered a restricted area, and when there are not, a public area, in accordance with the Public Port Safety Plan (PSPP) in compliance with the ISPS Code.

5.3.5 Port Control or VTS (Vessel Traffic Service)

Because it is an oceanic terminal, the local control is exercised by Petrobrás Transporte, but the control of external traffic is exercised by the Navy of Brazil, through the 3rd Naval District which, in turn, communicates with the internal safety sector of Petrobrás.

5.3.6 Pilotage

There are no skilled hands at the terminal. All the maneuvers will be directed by the captain of the ship with the aid of a Mooring Master from the terminal itself. The Mooring Master will evaluate, together with the captain, the meteorological conditions and decide when the maneuver should be done.

The services provided by the Mooring Master are free of charge and under express consent and conditions that Transpetro will not be liable for any damage and losses resulting from this guidance, assistance, or acts suggested or performed by the professional.

The Captain of the NT must communicate to the Mooring Master regarding any special conditions of his NT, such as deficiency in the navigation equipment, tow-ropes, reel, winch, or lack of other necessary supplies which may place the tasks of mooring, connection, etc. at risk. The NTs must be moored to the Mooring Master's full satisfaction.

The Mooring Master will report any unsatisfactory operational conditions to the manager of the terminal, who may reject the NT for future cargoes unless the deficiencies pointed out are resolved.

5.3.7 Towboats, barges, and port services

The Terminal provides a barge for aid in the tasks of mooring, unmooring, and emergencies. The responsibility is that of the Mooring Master, with the aid of a team of divers and mooring service providers.

The barge may serve for emergencies, transport of provisions or some special need. These services must be solicited to the Mooring Master, who will decide together with the Management in Guamaré.

The use of tugboats is conditional upon the evaluation of the Mooring Master together with the Captain of the Ship. They will decide according to the meteorological conditions.

The Ship must provide tow-ropes in good conditions for use.

Filling of potable water, fuels, lubricants, or foodstuff during the ship's stay in the berth is not viable, since it is an oceanic terminal.

For the same reason as the previous item, there are no facilities of any other types, such as:

- Derricks or lighters
- Laundromat
- Naval repairs
- Tank cleaning
- Compass adjustment or calibration of direction-finder

5.3.8 Risks to navigation

There are no great risks to navigation in the vicinity of the Ubarana Mooring Areas of the Terminal of Guamaré.

For the Heavy Oils area, the maximum draft recommended on arrival is 12 m, and on departure, 14 m.

For the Light Oils area, while the beaconing of the access channel is being built, the maximum draft on arrival and departure is limited to 8 meters. With the completion of the beaconing, the maximum draft is defined at 9 meters, for arrival and departure.

Pay attention to the Urca do Tubarão around 5 nautical miles to the West (W) of the Heavy Oil Mooring Area and 5.2 nautical miles to the Northwest (NW) of the Light Oils area.

The average tidal variation is 1.80 m between spring high and low tide.

5.3.9 General restrictions

Each mooring area accommodates only 1 (one) ship; if there is more than 1 (one) ship, the Management of the Terminal will decide which is priority.

There is no nighttime mooring; if the ship arrives during this time, it must anchor and get in contact via VHF radio with the terminal to find out what time the Mooring Master will go aboard with his team the following day.

The possible restrictions with regard to the meteorological conditions will be clarified by the Mooring Master and the Captain of the ship, who will decide together on the safest time to carry out the mooring maneuver in the mooring area.

5.4 Maneuvering Area

The turning basin is situated around the mooring area.

The majority of approaches are made from the north of each area, where there are no pipelines or high bottoms.

If there is a need to approach from the south of the Heavy Oil area, it is recommended that cable stoppers be used on the anchors, since the ship will pass over the 26" oil pipeline.

5.4.1 Navigation and mooring aids

The Terminal has no equipment to aid navigation for approach.

The Mooring Master will use the navigation aid equipment of the ship when the approach cannot be made visually.

The captain of the support barge will aid the Mooring Captain when requested.

5.4.2 Depth control

Heavy oils:

- The maximum suggested draft upon arrival is 12 meters and 14 meters upon departure.
- The maximum depth in the Mooring Area is 22 meters at high tide.
- The minimum depth is 17 meters at low tide.
- The captains must leave the Mooring Area with a true heading between 000° and 030° where they will find deeper waters.

Light oils:

- The maximum draft is 8 meters while the beaconing of the access channel is being built. With its conclusion, Transpetro will determine the new draft.
- The maximum depth is 20 meters at high tide.
- The minimum depth in the center of the mooring area is 15 meters at low sea.
- Departure from the area will be guided by the Mooring Master, with heading within the access channel.

5.4.3 Maximum dimensions

The maximum size of vessels for mooring in the Ubarana Heavy Oils Mooring Area of TA-Guamaré is 135,000 DWT.

The maximum size of vessels for mooring in the Ubarana Light Oils Mooring Area of TA-Guamaré is 50,000 DWT.

5.5 Environmental Factors

Weather conditions at the Ubarana Mooring Areas are good throughout the year.

Atmospheric pressure – The annual average is around 1014.0 mb.

Atmospheric temperature – The average atmospheric temperature is 27°C, varying from 22°C in the winter (June/July/August) to 34°C in the summer (December/January/February).

Relative air humidity – The relative air humidity is high throughout the year, around 87%, especially in the rainy months.

The other meteorological information of the area is described below.

5.5.1 Prevailing winds

The prevailing winds of the area of the Ubarana Mooring Area are SE, E, and ENE.

From the end of March until the beginning of August, the prevailing wind is from the southeast (morning and night), 130° to 160°, moderate to strong.

From August until the middle of October, East (E) prevails – 085° to 095°, moderate, and East/Northeast (E:NE) – 070° to 055°, moderate to strong.

From October to March, the prevailing wind is from the Northeast (NE) – 050° to 070°, strong from afternoon until early morning, when it generally turns to the South/Southeast (SSE) and remains weak until the morning of the next day.

5.5.2 Waves and swells

The waves in around the Mooring Area are normally provoked by the prevailing wind.

With the Southeast (SE) wind, the swells present an average height of 1.5 m, and with the East (E) and Northeast (NE), swells up to 3 m.

There are occasionally NE swells of up to 2.0 in height.

5.5.3 Pluviometric precipitation

The period of greatest concentration of rains is from January to June, considered the winter of the region.

In this period, intense rains of short duration occur, and the average precipitation is 408 mm.

In the dry season, which goes from August to November, the precipitation level decreases to a minimum of 10.5 mm/month, generally in November.

December is considered the transition month, but with little precipitation.

5.5.4 Lightning storms

The Mooring Area does not have a significant history of Lightning Storms.

5.5.5 Visibility

Visibility considered good to excellent, generally from 10 nautical miles in daylight, which may be reduced in the rainy period.

The months which have the highest percentage of cloudiness are between January and June.

5.5.6 Tidal current and other currents

The current which prevails in the mooring area is that of the tide, which can reach up to 3 knots. Occasionally strong surface currents are observed, which can make some maneuvers difficult. The tide chart used is that of the city of Guimarães.

5.5.7 Variations in tidal levels

At spring tide, the variation is 1.80 meters.

At neap tide, the variation is 0.60 meters.

For more details, consult the tide charts of the ship.

5.5.8 Measurements

The Mooring Area of TA Guimarães does not provide any instrument which measures the atmospheric or marine conditions of the area.

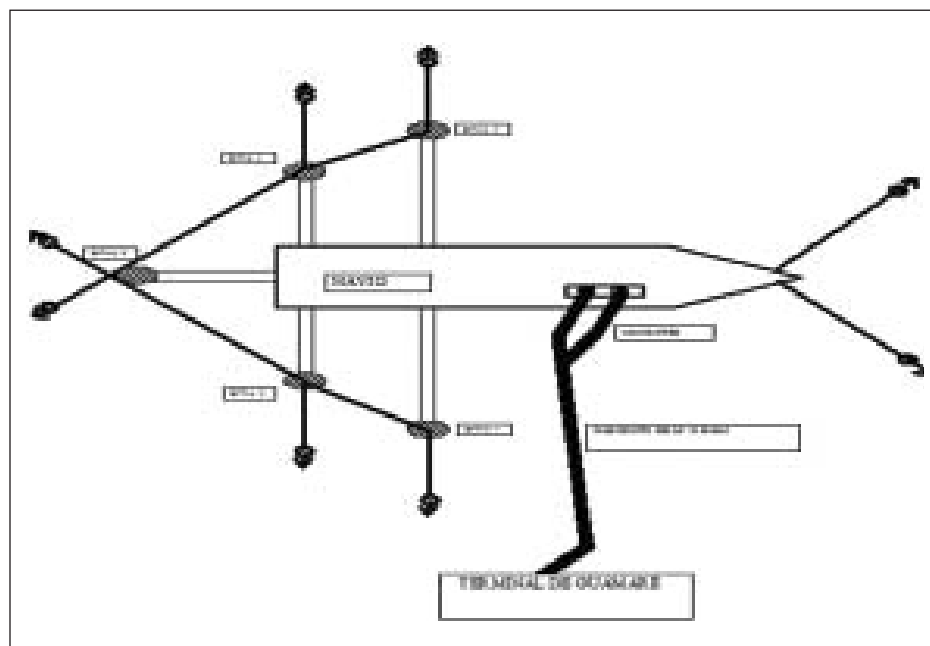
This information can be obtained from the website of the Navy of Brazil: <http://www.mar.mil.br/> (Access the menu Information for Navigators à Meteorology) and may be complemented with the information available on the website of the Center for Weather Forecasting and Climatic Studies: <http://www.cptec.inpe.br>.



DESCRIPTION OF THE TERMINAL

6.1 General Description

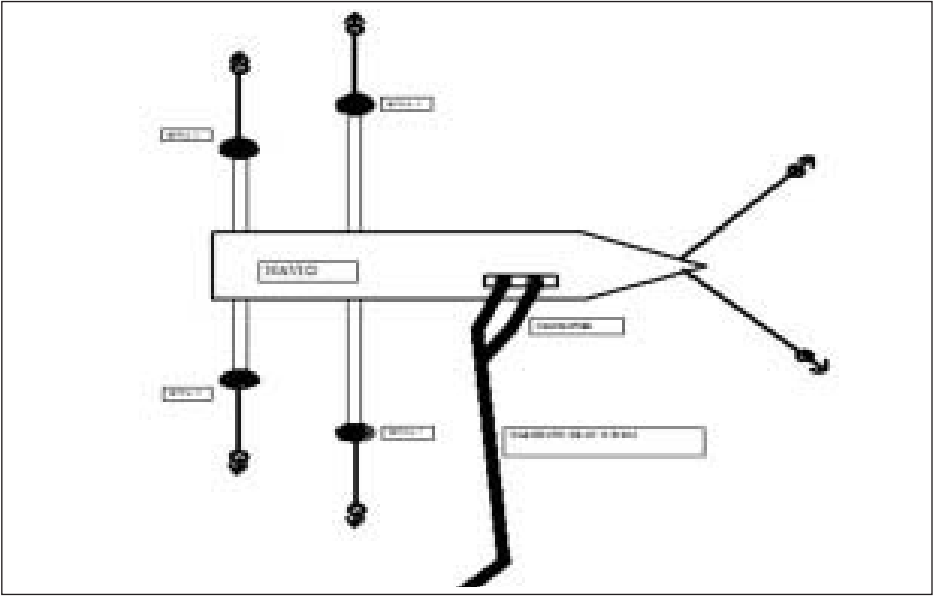
Heavy oils: Conventional Mooring Area with 5 circular mooring buoys with 20,000 N of buoyancy, forming a V-shaped berth, as in the sketch below.



Below is a table with flows, products, lines, and movements:

No. of Berths	Products	Lines	Hoses	Movement	Flow
Single	Petroleum	1 x 26"	2 x 10"- #300	Sending/ Receiving	1800 / 1500
Single	Water	1 x 26"	2 x 10"- #300	Receiving	1300
Single	RAT	1 x 26"	2 x 10"- #300	Sending	1400
Single	Diesel	1 x 26"	2 x 10"- #300	Sending/ Receiving	1100 / 1200
Single	Naphtha	1 x 26"	2 x 10" - #300	Sending/ Receiving	1100 / 1200

Light oils: Conventional Mooring Area with 4 circular mooring buoys with 16,000 N of buoyancy.



Below is a table with flows, products, lines, and movements:

No. of Berths	Products	Lines	Hoses	Movement	Flow
Single	Diesel	1 x 26"	2 x 10"- #300	Sending/ Receiving	1100 / 1200
Single	Naphtha	1 x 26"	2 x 10" - #300	Sending/ Receiving	1100 / 1200

6.2 Physical Details of the Mooring Area

The heavy oils mooring area is of the conventional type with multiple buoys. Ships are moored to two fore anchors and five buoys. Two fiber or steel cables are passed through each buoy. The ships are loaded through a 26"Ø submarine pipeline which bifurcates into two hose lines.

The light oils mooring area is of the conventional type with multiple buoys. Ships are moored to two fore anchors and FOUR buoys. Two fiber cables are passed through each buoy. Ships are loaded through a 20"Ø submarine pipeline which bifurcates into two hose lines.

One or two hose lines may be connected, always by BE.

Each of the hose lines is approximately 160 m in length, and the design pressure is 300 psi.

The extremities of the lines are marked by rope buoys and have a pickup cable, ¾" in diameter with length of 40 m for its recovery. The Ø 10" flanges are connected to the outlets of the ships using a quick-decoupling device, the connection flanges being Ø 10", ANSI standard, CLASS 300 PSI.

The longitudinal axis of the ship will have its orientation modified in relation to the azimuth of the axis of the mooring area, according to the direction of the prevailing wind.

6.2.1 Characteristics of the mooring buoys

Heavy oils / light oils

- Ty: Circular.
- Weight: 9850 Kg/ 7500 kg
- Buoyancy: 196,153 N / 16,000 n
- Diameter: 3200 Mm / 3200 mm

6.2.2 Characteristics of the anchoring system

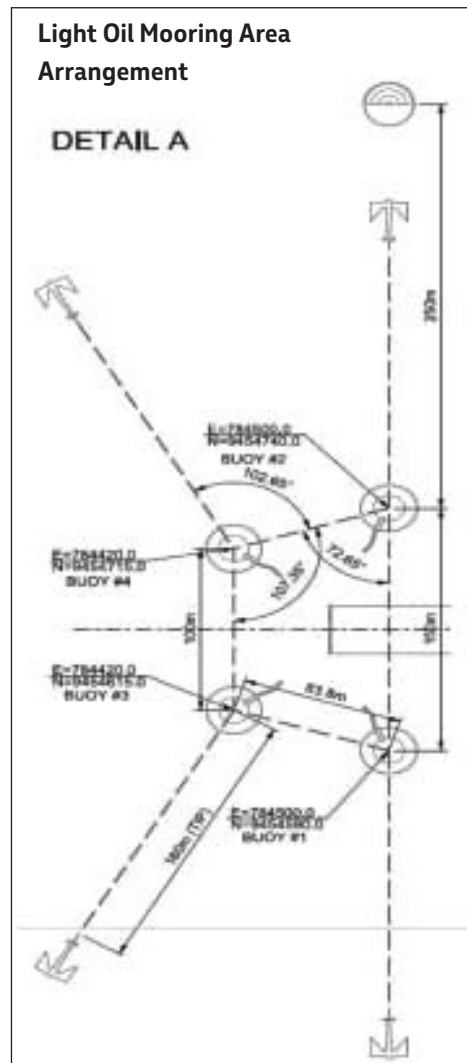
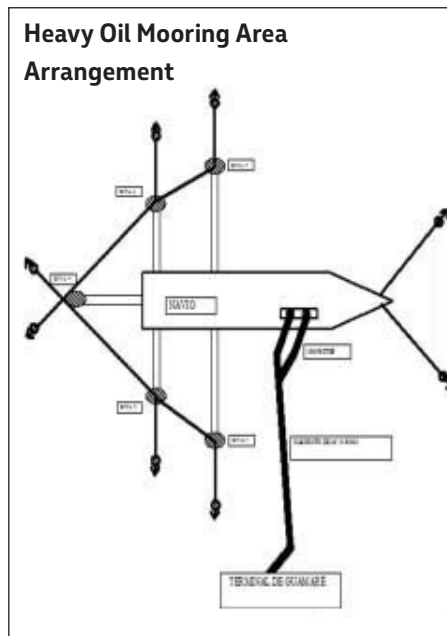
Heavy oils:

- Moorings of 63.5 Mm (2.1/2"): 36 Shackles (weight x anchor)
- Moorings of 63.5 Mm (2.1/2"): 5 Shackles (buoy pendant)
- 10 Ton positioning weight: 5 (Trapezoidal shape)
- 12 Ton main anchors: 6 Dunforth type

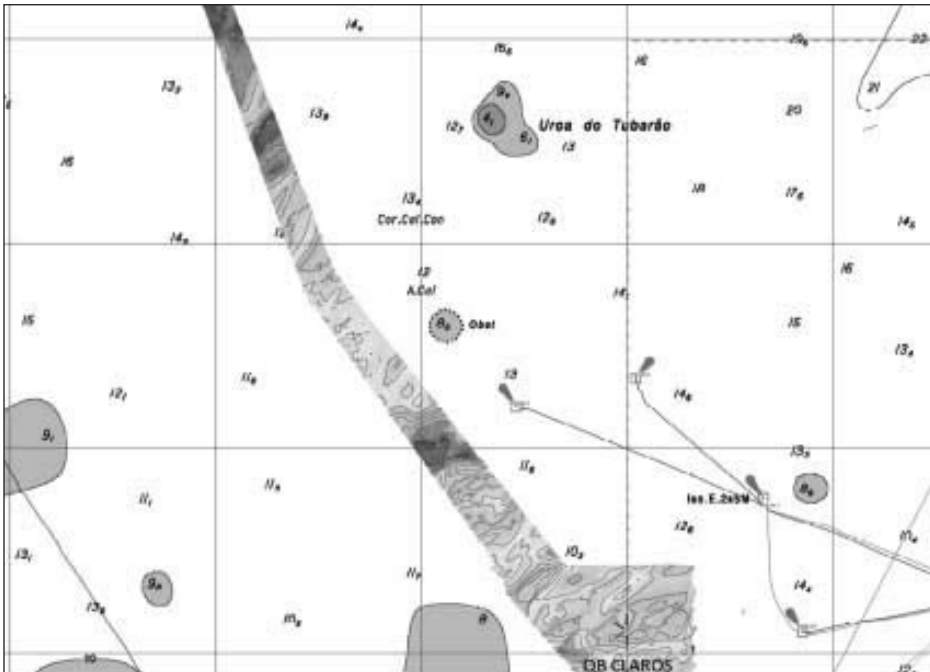
Light oils:

- Moorings of 56 mm: 160 Meters (anchor / buoy)
- Moorings of 56 mm: 25 Meters (buoy pendant)
- 16 Ton positioning weight: 5 (Trapezoidal shape)
- 4 Ton main anchor: 6 Dunforth typeh

6.2 Mooring Arrangements



Location Map Of Light Oil Mooring Area and Access Channel



6.2.1 Conditions for boarding of the mooring master

ships must provide a rope ladder perfectly and sufficiently long to reach the barge of the terminal and positioned beside the gangway ladder (combined), so that those who are boarding the ship can pass over to the latter after climbing 2 or 3 meters.

6.2.2 Recommended mooring

Every ship destined for TA Guamaré must be equipped to execute the mooring below. The safety of the mooring is the responsibility of the captain of the ship and will be assisted by the Mooring Master.

TA Guamaré may veto or interrupt an operation in which the mooring of the ship is judged unsatisfactory.

The ship is moored to the HEAVY OILS mooring area in the following configuration: Two anchors with approximately 8 shackles and moored with 2 cables (steel or fiber) on each of the 5 buoys in the area (see drawing above).

The ship is moored to the LIGHT OILS mooring area in the following configuration: Two anchors with approximately 7 shackles and moored with 2 cables (fiber) on each of the 4 buoys in the area (see drawing above).

As soon as the second anchor is lowered, the first mooring cables can be delivered to the barge which will clinch them to the windward side of the mooring buoys, in the order dictated by the mooring master.

Mooring will only take place in daylight.

6.3 Characteristics of the Berth for Loading and Unloading

Loading in the HEAVY OILS area is done using a 26" submarine pipeline, 30 Km in length from the coast.

Loading in the LIGHT OILS area is done using a 20" submarine pipeline, 16 Km in length from the coast.

In both area, at the end of each rigid line, there is a PLEM, from which two flexible submarine hose lines bifurcate, each approximately 160 meters in length, pressure class 300 PSI.

The loading intake should preferably be equipped with a 10" flange, ANSI standard 300 PSI. The flows and products vary according to the tables in item 6.1.

At midship, a winch with a capacity of 10 T SWL must be in condition for hoisting and connecting the hose selected, always by BE.

The windlass of the ship (drums, brakes, cable stoppers, etc.) must be in perfect working order so that the moorings and anchors can be lowered, turned, or adjusted.

Miscellaneous connection and mounting equipment (slings, joints, quick-coupling sockets, etc.) are provided by the Terminal and loaded onboard as soon as the NT arrives.

6.4 Management and Control of Mooring and Stay

The Control Room of the Transpetro's Terminal of Guamaré is located in the tankage area of the Terminal, within the region of the Industrial Hub of Guamaré of UN-RNCE of Petróleo Brasileiro S.A. – Petrobras.

The operator responsible for the control of all the operations of the terminal, done via manual and automatic measurement systems, remains here.

Also in this room is the Supervisor of the area that controls the documentation, communications, and monitoring of the mooring and position of the ship.

During the operations of the ships, hourly checks of the communications are made.

The communications are undertaken with the ship by radio on a VHF system at maritime frequency (channel 12), previously agreed upon and registered.

A UHF radio, supplied by the Terminal, is kept on a previously agreed-upon channel in case there is any failure in the main system. In some situations it may function simultaneously with the main one.

The exchange of information aiming to achieve the control of the operation, established by Petrobras Standard N-2689, is done by the representative of the Ship who is at the head of the operation and the Control Room of the Terminal. This communication is done via VHF radio on channel 12 which is monitored 24 hours a day.

6.5 Principal Risks

The principal risks associated with the stay of the ships in the berth of the Waterway Terminal of Guamaré are:

- 1 A ship moored in the berth becomes vulnerable when there is wind or over 30 knots.
- 2 In the months from February to June, the rainy period in which the winds decrease in intensity, there may be the formation of clouds of hydrocarbons. For this reason, all those involved in work on deck must use gas masks, if the ship has not been rendered inert.
- 3 For both the areas, the final bearing is greater than true 100° with ENE winds with intensity which can reach above 30 knots.
- 4 When the cables passed to the buoys are of different materials
- 5 When the mooring cables are broken.
- 6 When the Anchors are dragged from the position where they were dropped.



PROCEDURES

During the ship's stay in the port, various actions are carried out to enable a safe operation and manage the risks so as to minimize them. In all the phases, as described in the subitems below, the measures are taken with the objective to facilitate the operations and plan them adequately.

7.1 Before Arrival

7.1.1. Conditions for refusal for operation of moored ships

When mooring, after the safety inspection conducted by the Mooring Master, based on the Safety Checklist from the ISGOTT, if there are any pending items not resolved by the crew, the ship will not receive authorization from the Terminal for the start of the operation.

7.1.2. Cleaning and repairs on board

Repairs on board and cleaning of the cargo tanks of the ship must be conducted, preferably, in the anchorage area. To conduct these services with the ship moored, prior authorization from the Terminal will be required.

7.1.3 Information on the ETA

Ships bound for the facilities of TA Guamaré must indicate their estimated time of arrival (ETA) 72 and 48 hours in advance, directly to the respective Agent (see item 7.2.4) and to the Terminal.

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

The ETA information must specify whether the time mentioned is local or UTC.

When ships are 50 miles from the Terminal, contact may be made by VHF, on channel 16 (156.80 MHz). The Terminal monitors this frequency 24 hour a day.

7.2 Arrival

7.2.1 Communication with the Port Authority

The port authorities are involved, when necessary, by the agents of the ships depending on the arrival and plan for mooring. As a general rule, the visit is conducted after mooring.

7.2.2 Bunker and water filling

The Terminal does not have structures to provide bunker or water.

7.2.3 Communications with the Terminal before mooring

The information from the terminal for the ship and vice-versa is described in annexes P and Q, respectively.

The official time of arrival is considered to be when the ship reaches the anchorage area or when the Mooring Master boards, whichever event occurs first. However, the time of issuance of the notification of ready to operate will not be that of the arrival, unless the NT is really, in all its aspects, ready to operate.

NTs will be loaded in turn, respecting the order of arrival, except when the manager, in special circumstances, give priority to one ship outside the queue or when there is a change in Petrobras' loading schedule.

7.2.4 List of important telephone numbers in the port

Internal Revenue Department – (84) 3220-2297

Military Police – 190

Civil Defense – (84) 3232-1769

IBAMA – (84) 3201-4230

Fire Department – 193

7.3 Mooring

7.3.1 Mooring of the ship

The mooring to be conducted for each ship must be considered satisfactory by the Captain and by the Mooring Master who acts as a representative of the Terminal.

The mooring cables need constant care in order to keep them always taut with the ship moored.

All the cables need to be kept under adequate tension during the operation, with the winches being braked; the use of winches with automatic tensioning is not permitted.

All the mooring cable must necessarily be in a good state of conservation, of the same type, gauge, and material (fiber or wire), and when possible, of the same length; the use of mixed moorings is not permitted.

The first mooring cables must be sufficiently long to reach the hasps of the most distant buoys, at around 400 meters.

The traverses have to be oriented as perpendicularly as possible to the longitudinal axis of the ship and always passed astern.

The springs need to be oriented as parallel as possible to the longitudinal axis of the ship and passed astern.

The maximum tension applied to the cables must be 55% of its MBL.

If fiber tails are used on the wire cables, the tails must be of the same material type and length, with breaking load 25% higher than the minimum breaking load of the wire cable (MEG).

The horizontal angle of the stern head lines in relation to the direction of a transverse perpendicular to the longitudinal axis of the ship may not exceed 45%.

Extra care must be taken with the transverses and springs in the period of tidal changes.

The maneuvers for approach, mooring, and unmooring must be executed at low speed, preferably against the current.

The loading plan and its sequence must be presented to the mooring master from the Terminal soon after the mooring, as well as the log of loading operations, containing efforts and drafts for each passage.

If the ship does not have the sufficient number of cable, preferably of steel, has cables and winches in poor condition or the crew is not in a condition to keep the mooring according to the recommendations, additional measures will be adopted by the mooring master, such as:

- Interrupting the operation and unmooring the ship.
- The costs arising from said additional measures are the full responsibility of the captain and shipowner.
- While moored, ships must keep the machines in stand-by, ready to enter into operation.
- In principle, the performance of any repair while the ship remains moored will not be permitted.
- Repair will only be authorized in extreme cases, for which extra safety precaution measures will be taken.
- Any expenses arising from the extra safety precaution measures will be covered by the captain/shipowner.

7.3.2 Access ship / barge

All ships must provide means of safe access for embarkation and disembarkation of personnel and always keep the ladders ready to be lowered.

Lifebuys with guide cables must be available in the vicinity of the means of access.

The gangway latter paired with the rope ladder must be used when necessary to access the ship (see item 6.3.1 above).

7.4 Before Transfer of the Cargo

7.4.1 Electrical grounding

The loading hoses are electrically non-continuous.

7.4.2 Connections and reductions

The resources needed for connection are agreed upon during the ship's first contact with the Terminal.

The ship must provide the intakes and install reductions and load connections so as to enable the coupling with the loading hoses.

The land personnel will perform the connections and disconnection of the hoses, aided by the personnel aboard, who will handle the winches and boom cranes, when necessary.

After connection of the loading hose, it will be tested with regard to its seal tightness, using the static pressure of the column from the terminal for this purpose.

An onboard representative must monitor the whole operation, and must be near the cargo intake of the ship.

7.4.3 Clearances

Before the start of the Loading or Unloading operation, a measurement of all the tanks will be taken, as well as a sample of the tanks which contain product. At the end of the operation, another measurement and sampling of the tanks will be done.

These measurements will be conducted by the personnel of the ship, monitored by the representatives of the terminal and other inspectors.

To avoid the risk of ignition by a spark of static electricity during the measurement, the material used must be duly grounded and the measurement accessories must be explosion-proof.

7.4.3.1 Inspection of tanks

Whenever possible, the inspection of a ship must be conducted without entering the tanks. If the load required internal inspection of the tank, all the safety precautions inhered to entry into confined spaces must be taken.

In this case, the ship must arrive with the tanks degasified and in “free for man” condition. If TA Guamaré or the Inspectors reject the tanks inspected, the delay will be attributed to the ship.

7.4.4 Agreement between Terminal and Ship regarding minimum safety conditions for operation

Operational safety conditions are agreed upon during the initial clearance through completion of the initial chart, by land and onboard representatives and other documents used by the Terminal to guarantee operational safety and compliance with standards.

Communications are conducted with the ship via VHF radios on maritime frequencies previously agreed upon and registered. A secondary means, via cellular telephone, is agreed upon in case of failure in the principal system.

In case of failure in the system of communication via radio, the operation cannot be started or must be suspended if it is underway, until the problem is resolved.

The control room of TA Guamaré is located in the tankage area of the Terminal, in its land facilities. Operators responsible for the control of all the terminal's operations are in these rooms.

The control room may be contacted via maritime frequency VHF radio, channel 16 (156.80 MHz) or by telephone at (84) 3235-5216/3235-5401.

7.4.5 Safety inspection

The Ship/Land Safety Checklist (ANNEX A of the "ISGOTT") is checked and completed by the Mooring Master on board and the Chief Officer of the ship during the initial clearing of the ship.

7.4.6 Soot blowing

It is prohibited to conduct soot blowing or cleaning of the boiler pipes with the ship moored.

Precautions must be taken so that sparks do not escape through the chimney.

Failure to comply with this regulation will result in one or more of the following sanctions: immediate interruption of the operations; fine from the competent authorities; compulsory unmooring of the ship from the mooring area; communication of the infraction to the shipowners; assignment of liability to the ship for fines, loss of time, and all the other related expenses arising from this fact.

7.4.7 Vessels alongside during the ship's stay

The prohibition regarding the stay of unauthorized small vessels alongside or in the vicinity of the moored ships must be strictly observed.

Only vessels in the terminal's service or authorized vessels may remain in the vicinity or alongside, provided that they satisfy all the safety conditions.

Breach of this norm will be communicated to the competent authority.

7.4.8 Propeller maintenance

Moored ship must keep their propulsion system in standby, without propeller movement, during the whole operation.

In the event of any urgency, the ship must be capable of unmooring, clearing the berth, after disconnecting the hose.

7.4.9 Jettisoning of ballast

The Terminal does not provide facilities for receiving of any amount of dirty ballast.

7.4.10 Protection against product return and overflow

The terminal does not have retention valves to impede the output of product to the ship when the land manifold is aligned.

For unloading, the ship is responsible for monitoring the level of the tanks in order to avoid overflows.

7.5 Cargo Transfer

7.5.1 Monitoring of pressures and flows

During the transfer of the cargo, the pressure is recorded by the onboard and land representatives, being verified in the manifold of the ship hourly.

The terminal controls the internal pressure variables, and flows are verified in real time through the supervisory system provided in the control rooms.

During the cargo operation, the pressure in the manifold onboard cannot exceed **2.0 Kg/cm²**.

The flows of the operation, measured on the ship and in the terminal, and the total volume moved are checked hourly and compared between the parts, with a limit parameter for operational control, according to the system used.

Any change in the operation conditions must be communicated and documented between the parties.

It is expressly prohibited to close the valves which provide counterpressure during the operation.

7.5.2 Special requirements for the GLP

Not Applicable. The Terminal does not operation GLP

7.5.3 Requirements for ballasting/unballasting

The networks and tanks for slop, ballasting, and deballasting of ships must be used only for this purpose, being isolated from the other networks onboard.

Water ballast to be unloaded to the sea must be completely free of oil, any oily residue, or other substance capable of causing pollution of the ocean water.

The Terminal does not provide facilities for receiving of ballast.

7.5.4 Conditions for receiving of SLOP

The Terminal does not provide facilities for receiving of Slop.

7.5.5. Cleaning of tanks

Normally, the conventional operation of tank cleaning is not accepted.

However, the COW operation is permitted on unloading, provided that there is a prior request and authorization of the scheduling for the stay of the ship at the next port and the consent of the mooring master for purposes of operational safety.

7.5.6 Onboard repairs

No repairs or maintenance work of any nature which involves or come to involve a risk of sparks or other means of ignitions may be conducted while the ship is moored to the terminal's mooring area.

In extreme cases, all the safety standard must observed and met.

7.5.7 Safety inspection

Intermediate inspections, according to ANNEX A of the "ISGOTT", will be conducted by the Mooring Master onboard, during the operation of ship, every 6 hours.

7.5.8 Emergency stop

The interruption of the loading or unloading of the ship must be requested, via radio or another means of communication, whenever any situation occurs which may present a danger to the ship or to the terminal.

The operations must also be temporarily suspended during storms, thunderstorms, and/or strong winds.

The terminal's operation personnel is authorized to interrupt/suspend the operation in the case of breach of any of the rules and standards concerning safety, universally accepted and adopted in the maritime transport of petroleum.

The captain of the ship has the right to interrupt operation if he has reason to believe that the operations on land do not offer safety, provided that he gives prior notice to the operators of the Terminal.

For any emergency situation, the terminal of Guamaré interrupts the operations underway so that all the resources can return for mitigation of the accident.

7.5.9 Actions to be taken in emergencies

The actions and the contacts for each type of emergency are described in the PRE (Plan for response to emergency) and the main telephone numbers are described in section 9.

7.6 Cargo Measurement and Documentation

7.6.1 Drainage of the cargo hose

After the end of the operation, the drainage of the part of the loading hose must be started so as to make it feasible to disconnect it.

The representative of the ship must arrange for drainage of the onboard part.

7.6.2 Final onboard measurements

The measurement must be taken by the personnel of the ship and monitored by the representatives of the terminal and other inspectors. The material used must be duly grounded and the measurement accessories must be explosion-proof.

The final Clearance of the ship is give after the comparison of the quantities moved and the completion of the documentation of the stay.

7.7 Unmooring and Exit from the Port (Mooring Area)

7.7.1 During the unmooring maneuver and exit from the port (mooring area), the draft limits and dangers listed in subitem 5.3 and its subitems must be observed.

7.7.2 The mooring master disembarks soon after the signal buoy, where the support barge will await on the shaded side of the ship.

7.8 Compliance with the ISPS CODE

The Waterway Terminal of Guamaré has implemented business security protection measures applicable to ships and port facilities, under the terms of the requirements from the International Maritime Organization (IMO), through adoption of the ISPS (International Ship and Port Facility) Code.

In case of need, these protection measures may be engage by the Ship through the Port Facility Security Officer (PFSO) by telephone at (55 84) 3235-5236 – Cell: 9985-0295 (DDD 84).

The Waterway Terminal of Guamaré normally operates at security level 01. For more details, contact the Port Facility Security Officer (PFSO), who is trained in accordance with the requirements of the IMO.



ORGANIZATION OF THE PORT OR ANCHORAGE AREA

8.1 Port Control or VTS

This section is not applicable to TA Guamaré.

8.2 Maritime Authority

8.2.1 The maritime authority to which the Terminal is subordinate is the Port Authority of the State of Rio Grande do Norte.

8.2.2 The captain of the parts of Rio Grande do Norte determines that the visit of authorities is conducted before the mooring of the ship in the mooring area.

8.2.3 The boundaries of the port are given in subitem 5.3.4.

8.2.4 The Port Authority is the maritime authority in the limits of the Ubarana Mooring Areas, and is responsible for determining the actions and prosecuting those responsible for any incident at the site.

8.3 Pilotage

8.3.1 For all the maneuvers of ships, pilotage is obligatory starting at the point of embarkation of the mooring master (subitem 5.3.6).

8.3.2 Regardless of the nationality, type of vessel, or destination, the minimum size for which the pilotage service is obligatory is 2000 TPB.

8.3.3 The mooring masters are employees or contractors of Transpetro.

8.3.4 For all situations, the service of pilotage conducted by the mooring master is initiated by the Terminal. In emergency cases, depending on availability, the mooring master is placed on the ship at the earliest time possible.

8.4 Towboats and Other Maritime Services

8.4.1 Towboats available

The towboats in the Ubarana Mooring Area of the Waterway Terminal of Guamaré are from the support fleet for petroleum prospecting and production of the Potiguar Basin of Petróleo Brasileiro S.A.

The high sea towboats can only be used in cases of emergency.

8.4.2 Other relevant maritime services

For any other relevant maritime services, the Mooring Master may be engaged to seek means to help, among the available possibilities and together with the Terminal.

8.5 Other Tanker/Gas terminals

8.5.1 There is no other tanker terminal in the port of Guamaré

8.5.2 The mooring area and the terminal of Guamaré are for the exclusive use of Transpetro.

EMERGENCY PLANNING AND RESPONSE

9.1 Emergency Contacts

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

Organization	Hours	Abbreviation	Telephone	Fax	Cellular	VHF/UHF Call	VHF/UHF Conversation
Port Authority	24 hours	CPMA	(84) 3201-9630	–	–	16	–
Towboats	24 hours	–	(84) 3235-5079	–	–	16	–
Skilled Hands	24 hours	–	(84) 3235-5236	–	(84) 9985-0295	16	–
Operations TA- Guamaré	07:30 to 16:30 h	TA-Natal	(84) 3235-5216	(84) 2235-5327	–	–	13
Supervision TA- Guamaré	07:30 to 16:30 h	TA-Natal	(84) 3235-5401	(84) 3235-5327	–	–	–
Fire Department	24 hours	CBM	193	–	–	–	–
Internal Revenue	08:00 to 17:00	PRF	(84) 3220-2297	–	–	–	–
Military Police	24 hours	PM	190	–	190	–	–
Civil Defense	24 hours	–	(84) 3232-1769	(84) 3232-1762	193	–	–
Natal City Hall	08:00 to 17:00	–	(84) 3232-8718	(84) 3232-8737	–	–	–
Ibama	24 hours	–	(84) 3201-4230	(84) 3201-4231	–	–	–
Port Facilities Security Officer	24h during stay of the ship	SSP	(84) 3235-5236	(084) 3235-5327	(084) 9974-7860	16	13

9.2 Sensitive Areas for the Environment

The Emergency Plan of TA Guamaré (PRE) described the areas most sensitive to environmental impact, given through sensitivity maps, and evidencing, according to the area selected, the points which are subject to greater impact which this type of event occurs in the area of the Terminal.

9.3 General Description of the Emergency Response Organization

The responsibilities for dealing with possible emergencies which involve the vessels which arrive at the Terminal.

Type of Incident	Organization Responsible	Other Organizations Involved			
Collision in the Port	Port Authority	Civil Defense	Transpetro	–	–
Grounding of Vessel	Port Authority	Civil Defense	Transpetro	–	–
Collision in the Mooring Area	Port Authority	Transpetro	Civil Defense	–	–
Sinking of Vessel	Port Authority	Civil Defense	Fire Department	Transpetro	–
Fire on the Vessel	Ship	Transpetro	Fire Department	Civil Defense	Port Authority
Pollution	Transpetro or Ship	Port Authority	CRE	Port Authority	

9.4 Emergency Plans

9.4.1 The PRE (Plan for Response to Emergency) is the plan of TA-GME to respond to emergency at all its facilities.

This document is available in all the operational areas, on posters located at the entrances of the rooms for operation, maintenance, and administrative buildings. The party in charge of updating it is the local HSE (activity of health, safety, and the environment).

9.4.2 Moored ships must keep the emergency tow cable available to be used in case of emergency.

The emergency and firefighting equipment need to be ready for use, while the ship remains moored.

The operation fire hoses must be extended, one fore and the other aft of the loading intake.

A pollution response kit (Sopep) – consisting of wood shavings, rags, shovels, buckets, squeegees, transfer pumps, etc., must be prepared to be used in case of oil spill.

The terminal has an Environmental Defense Center (CDA) equipped with modern equipment and various facilities, the center can be engaged in pollution response emergencies.

There are periodic trainings on various types of response to pollution.

9.4.3 The terminal has a medical post with a clinic which can be engaged in accordance with the plan to response to emergency (PRE).

9.5 Public Resources for Response to Emergencies

9.5.1 Port Administrator

The Terminal belongs to Transpetro itself.

9.5.2 Maritime Authority

The Maritime Authority is the Port Authority of Rio Grande do Norte.

9.5.3 Local Emergency Services

The Fire Department, Civil Defense, Military Police, and the hospital units of Guamaré are involved according to the table in section 9.1

1.5.4 State and National response organization

There are no pollution response organization at the State and National level.

9.5.5 Mutual Aid Plans

The institutions listed below participate in the Mutual Aid Plan (PAM). Its resources are available as previously agreed upon in this plan:

- Military Fire Department
- Transpetro/TA Guamaré
- Municipal City Hall of Guamaré (Civil Defense)
- Petrobras/RPCC
- NGB Norte Butane Gas

9.6 Response to Oil Spill

The subitems below describe the resources available for response to pollution in the areas adjacent to the terminal.

9.6.1 Terminal's Response Capacity

The resources available in the terminal for response to oil spill situations are listed in the PRE, which is available in all the administrative, operational, and maintenance areas of TA Guamaré.

9.6.2 Response Capacity of the Environmental Entity

The environmental entity of RN (Idema) does not have resources for response to oil spills in the sea.

9.6.3 Resources Available from the Mutual Support Plans of Other Terminals

The resources available at other Transpetro terminals for response to pollution emergencies occurring in the vicinity of the terminal are listed in the PEL.

9.6.4 Response to Medium-scale Spill - Tier 2

Organization designated for response to significant pollution. In these events, regional resources of Transpetro and Petrobras are requested. These resources, their readiness, and form of engagement are described in the PEL.

9.6.5 Response to Large-scale Spill - Tier 3

Organization designate for response to large-scale pollution. In these events, regional resources of Transpetro and Petrobras are requested. These resources, their readiness, and form of engagement are described in the PEL.

9.7 Response to Other Large-scale Emergencies

The PEL of TA Guamaré lists the actions and responsible parties for each type of event foreseen, which may occur within the its unit, pipeline span, or vessels which involves third parties. For events not foreseen in this document, Transpetro and Petrobras will provide all the national or international resources within their reach.

9.8 Pollution in the Sea and Packaging of Garbage

Stopping pollution is of supreme importance.

Brazilian law is quite rigorous as regards pollution in the waters along the coast. It is prohibited to release any type of material, detritus, garbage, oil, or pollutant substances in the maritime area of TA Guamaré.

Heavy fines will be imposed on violators by the port authorities, as well as confinement as set forth by law. It is the responsibility of the captains of the ship to ensure that no oil or contaminated water is pumped or spilled on board their ship.

All the sea valves, both for cargo tanks and holds, must be conveniently closed before any operation. The transfer of cargo must be conducted with total care, so as to impede errors or delays which might result in spills.

All the scuppers must be closed, to avoid contamination of the waters in case of spill from overflows.

The objective is the complete elimination of the operational pollution of the sea by oil and by harmful substances and the minimization of accidental spills.

It is prohibited to through any type of drainage or perform direct discharge to the sea during the stay in the mooring area or along the whole extent of the oceanic area where the various platforms are located.

The captains of the ship must inform the Port Authorities of the occurrence of any spill of pollutant substances in the area of TA ARACAJU or the port. As mentioned in item 2.17 of this manual, the Contingency Plan for response to pollution will be engaged.

The terminal provides no resources for collecting and discarding garbage from on board, and when this measure is necessary, the agent should be contacted.

During the stay of the ships in the mooring area, garbage must be contained in suitable closed receptacles and locations, kept this way. As previously mentioned, there is no collection.

It is expressly prohibited to keep sludge tanks or other garbage receptacles hanging on board or alongside, with risk of falling into the sea.

The terminal has barriers, an oil skimmer, raft, safety material, and support vessel.

IMPORTANT: Pollution may be classified as a crime by Brazilian law, in accordance with Law 9.605 of February 12, 1998, which sets for the penal and administrative sanctions derived from conducts and activities harmful to the environment, both for parties who pollute and for parties who fail to prevent them.



CONTACTS

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

10.1 Terminal

Location	Contact	Telephone	Fax	VHF/UHF Channels	
				Call	Conversation
Terminal Supervisor	Supervisor	(84) 3235-5401 9974-8440	(84)3235-5327	-	-
Terminal Control Room	Operator	(84)3235-5216	(84)3235-5327	16	12
Terminal Manager	Manager	(84) 32355263 9988-9708	(84)3235-5327	-	-
Safety (SMS)	Inspector	(79) 3235-5416	(84)3235-5327	-	-

10.2 Port services

There are no port services in Guamaré.

10.3 Navigation Agents and Selected Suppliers

Maritime scheduling services are done by Petrobras/SC/RNNE. The person responsible 24 hours a day is Christiane Fassanaro Cortez de Carvalho, whose telephone for contact is (84) 9984-4059.

10.4 Local Authorities, State and National Agencies

The table in section 9.1 shows the list of these authorities and their respective contacts.

10.5 Emergency Response Organizations

The emergency response organizations available in the port are listed in section 9.1.

BIBLIOGRAPHY AND CONSULTATION SOURCES

Dicionário de Comércio Marítimo. Author: Wesley O. Collyer

Glossário de Termos Técnicos para a Construção Naval. Ministry of the Navy – Ports and Coasts Board.

Navegar é Fácil. Author: Navy Captain Geraldo Luiz Miranda de Barros

Símbolos e Abreviaturas Usadas nas Cartas Náuticas Brasileiras, 4th edition, nº12.000. Board of Hydrography and Navigation. Navy of Brazil.

Normas e Procedimentos da Port Authority do RN – NPCP

Lista de Faróis, 25th edition. Board of Hydrography and Navigation. Navy of Brazil.

Roteiro Costa Leste, 11th edition. Board of Hydrography and Navigation. Navy of Brazil.

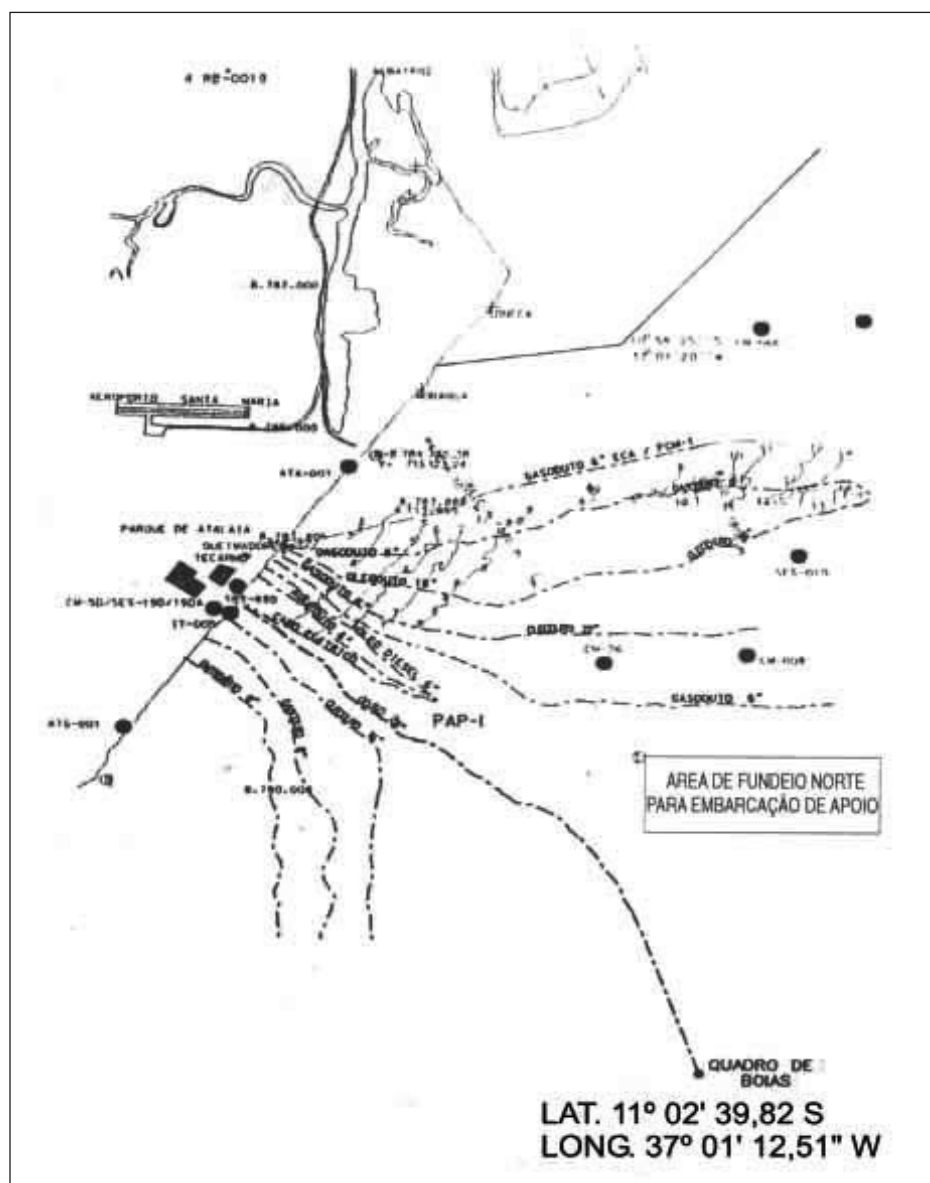
Nautical Charts 1000 and 1003. Navy of Brazil.

International Safety Guide For Oil Tankers And Terminals – ISGOTT. 4th edition, 1996, translation and revision by 1th ON José Vieira Nascimento.

Distribuição da direção do vento. Ministry of Agriculture and Supply – MA. National Institute of Meteorology – INMET. 4th District – SEOMA.



A – Map of Location of Heavy Oils Mooring Area



B – Mooring Report with Wind and Sea from the ENE

RELATÓRIO DE AMARRAÇÃO (MOORING REPORT)			
NAV. # 112	EMBARQUE Nº 2272	VOLUME COMANDO 228 1ST BALE	
DATA CHEGADA 12/01/72	DESTINO CUBA F.M. - 114	INÍCIO EMBARQUE 17/11	
DATA SAÍDA 12/01/72	RETOUR FOR	TERMINO EMBARQUE 12/11	
HORA (TIME) 0800		COMPLETION LOADING	
HORA (TIME) 0800			

VENTOS (WINDS)

ONDEANTES (WAVES)

IS CONDIÇÃO DE AMARRAÇÃO (MOORING CONDITION NR 1)

SEQUÊNCIA DE AMARRAÇÃO (MOORING SEQUENCE)		CARGOS (LOADS)	
Nº BALE	SEQUÊNCIA	Nº BALE	SEQUÊNCIA
1	114	1	114
2	114	2	114
3	114	3	114
4	114	4	114
5	114	5	114
6	114	6	114

QUADRO "A" (EXHIBIT "A")

VENTO E MAR RECORRENTES E NE (PREVAILING WIND AND SEA)

ESCALA: ESCALA 1:1000

IS CONDIÇÃO DE AMARRAÇÃO (MOORING CONDITION NR 1)

VENTO E MAR RECORRENTES E NE (PREVAILING WIND AND SEA)

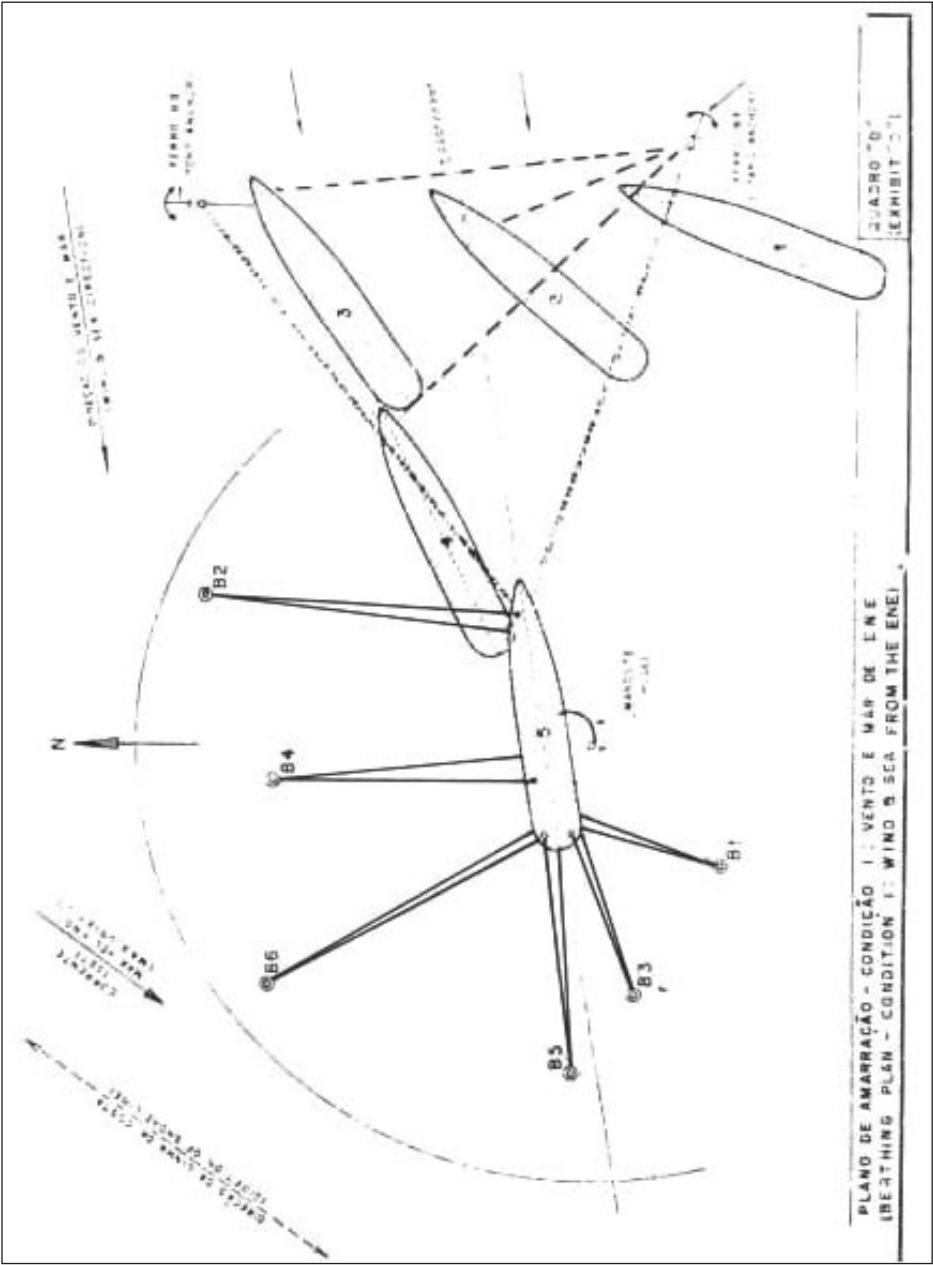
ESCALA: ESCALA 1:1000

[illegible]

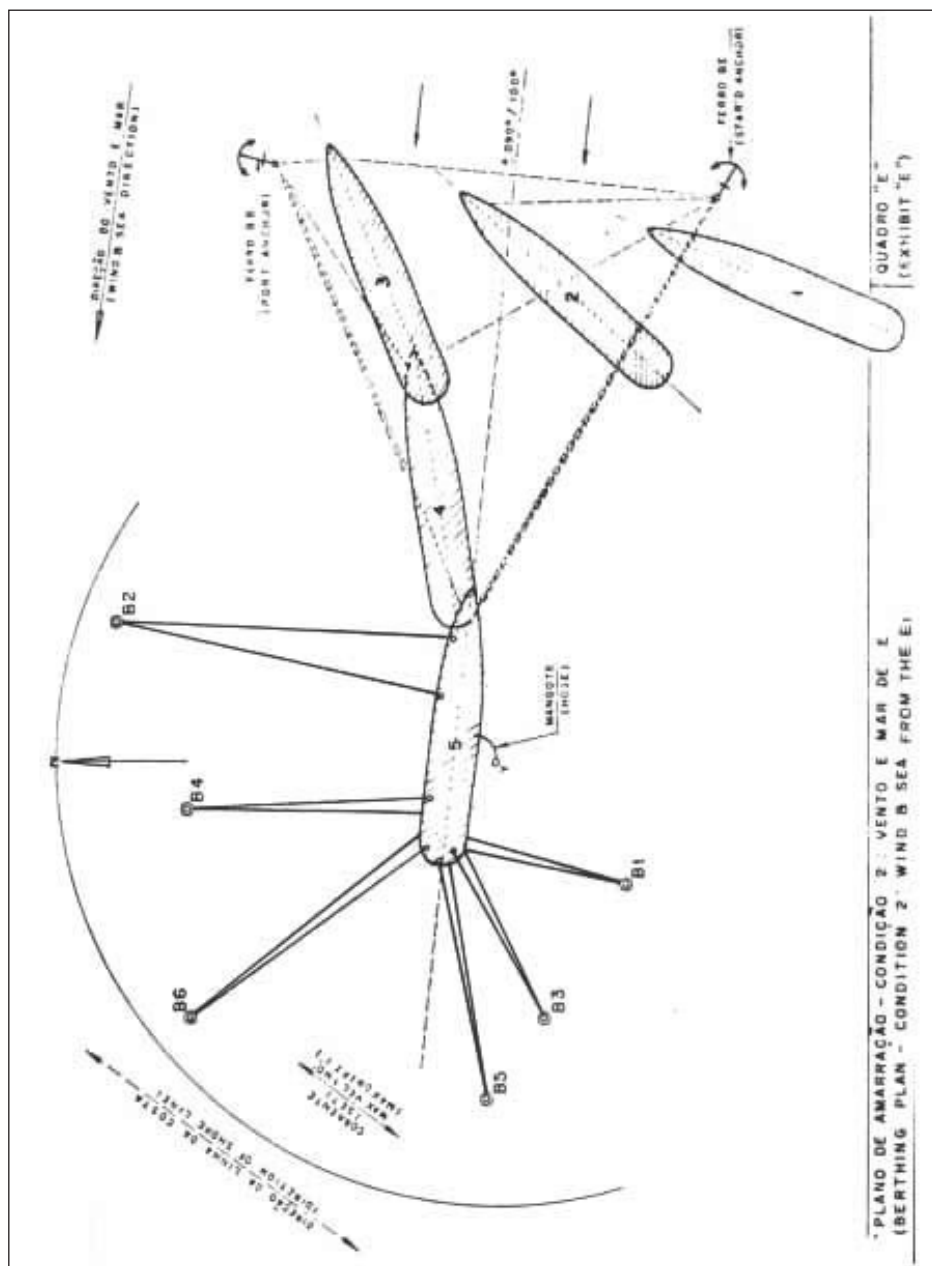
PORT INFORMATION

56

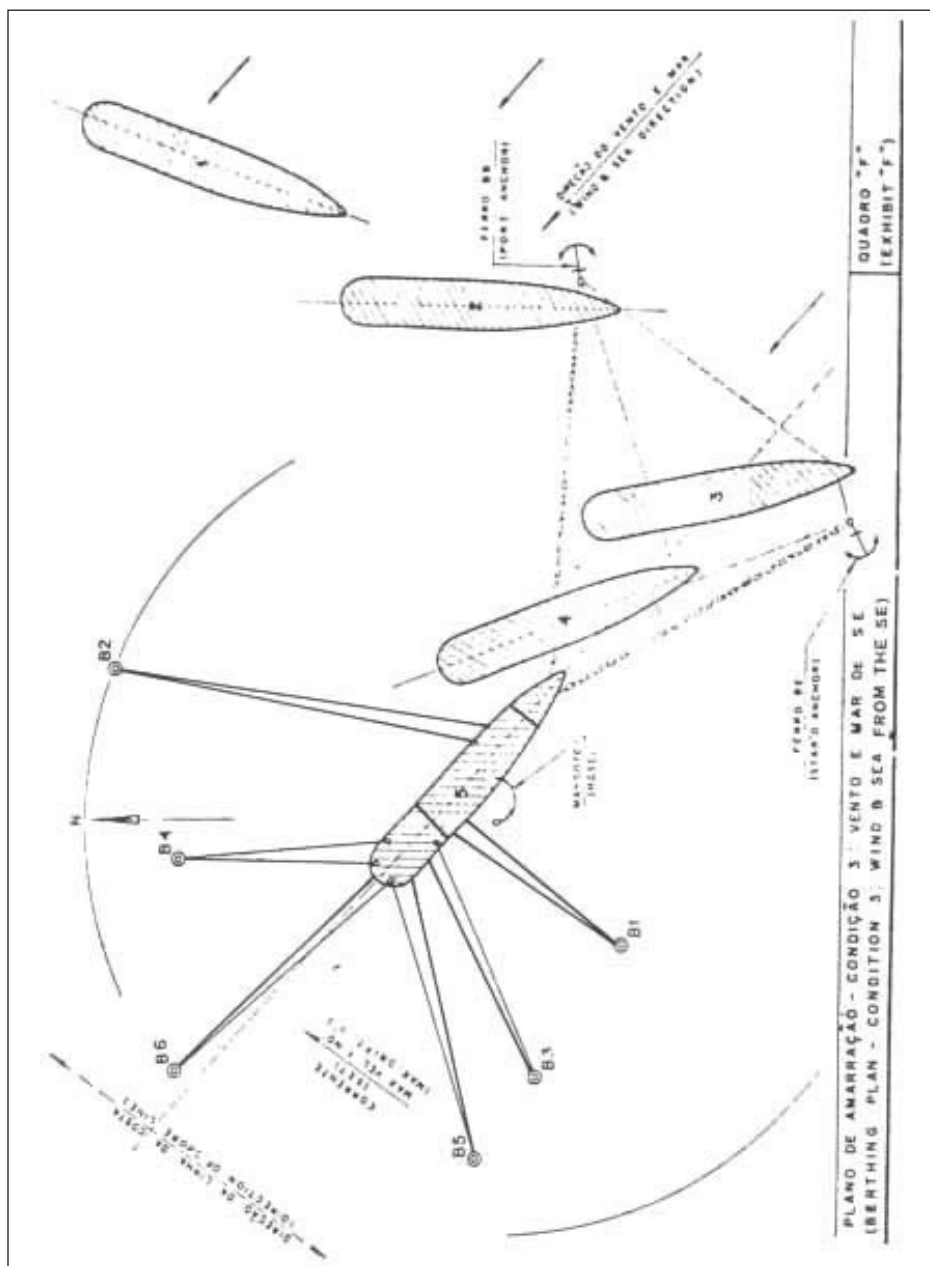
E – Mooring Report with Wind and Sea from the ENE



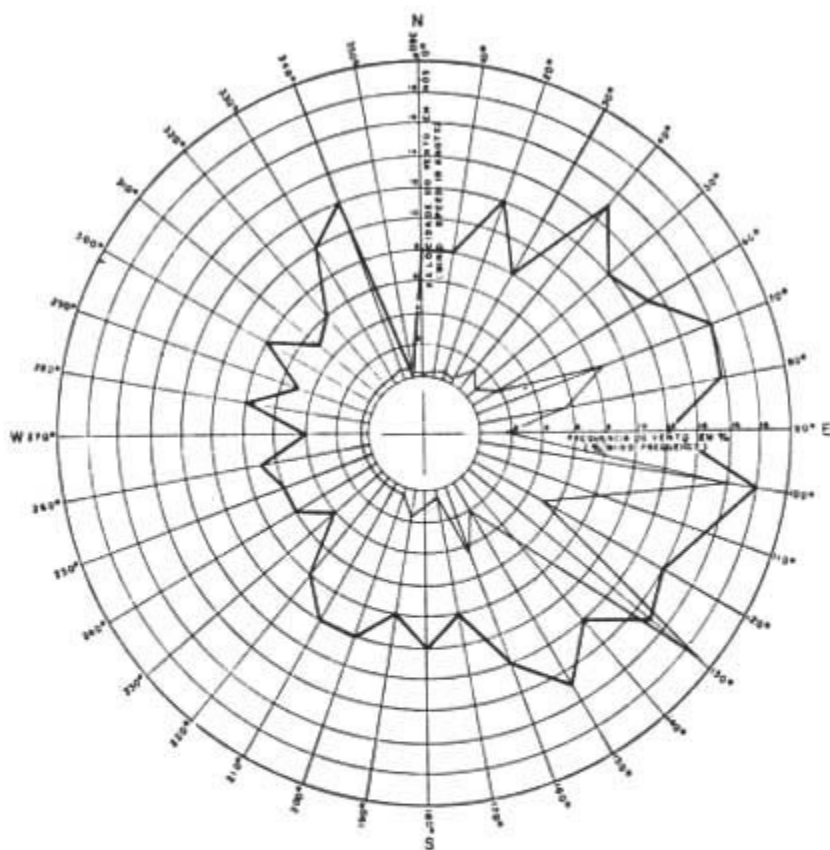
F – Mooring Report with Wind and Sea from the E



G – Mooring Report with Wind and Sea from the SE



H – Intensity and Frequency of Winds



— INTENSIDADE DO VENTO MAXIMO EM NÓS
(STRONGEST WIND FORCE IN KNOTS)

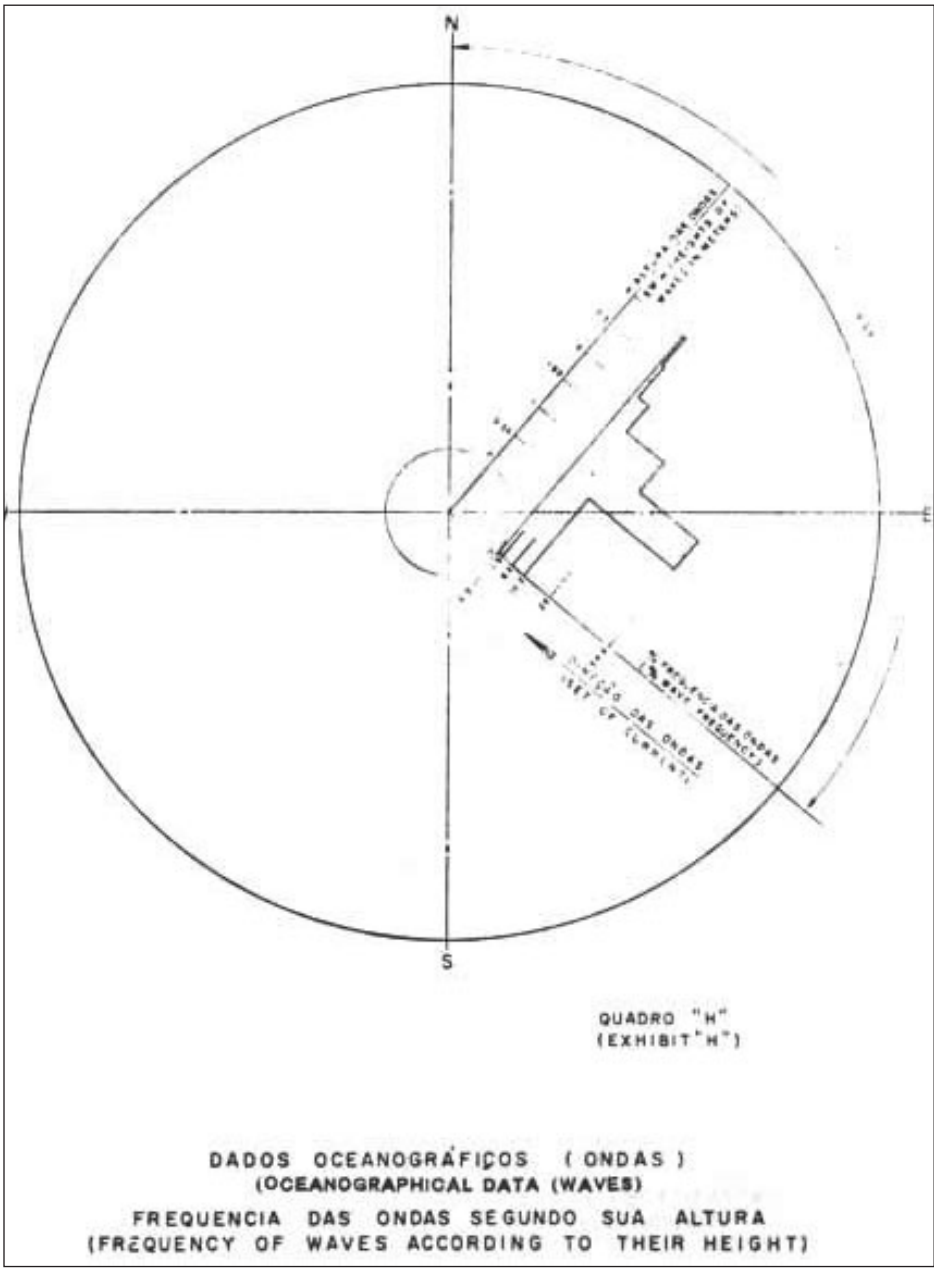
— FREQUENCIA DO VENTO EM %
(% OF WIND FREQUENCY)

QUADRO "Q"
(EXHIBIT "Q")

DADOS METEOROLÓGICOS (VENTOS)
(METEOROLOGICAL DATA WINDS)

INTENSIDADES E FREQUENCIA SEGUNDO DIVERSAS DIREÇÕES
(FREQUENCY & FORCE ACCORDING TO DIRECTION)

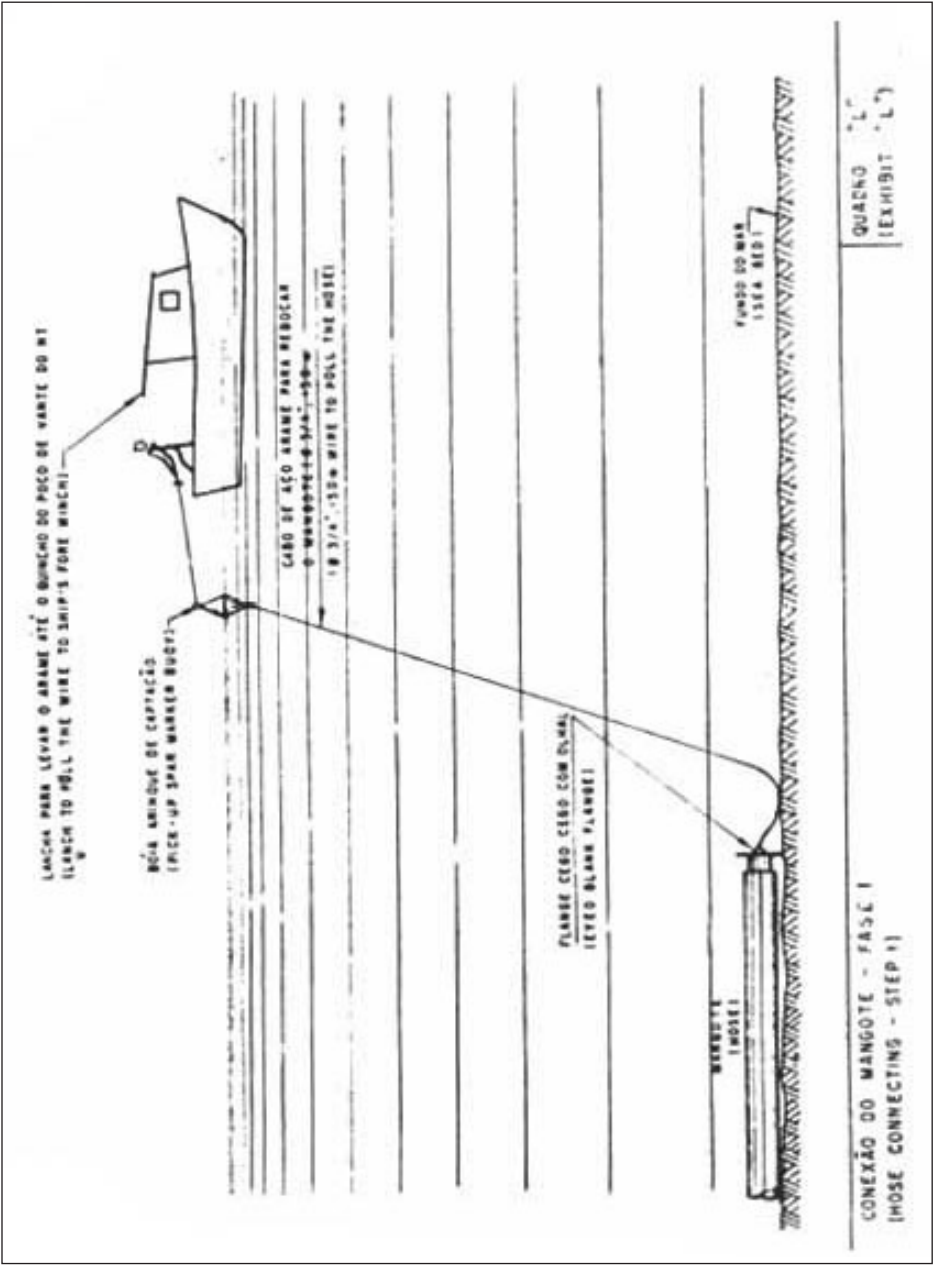
I – Frequency of Waves According to their Height



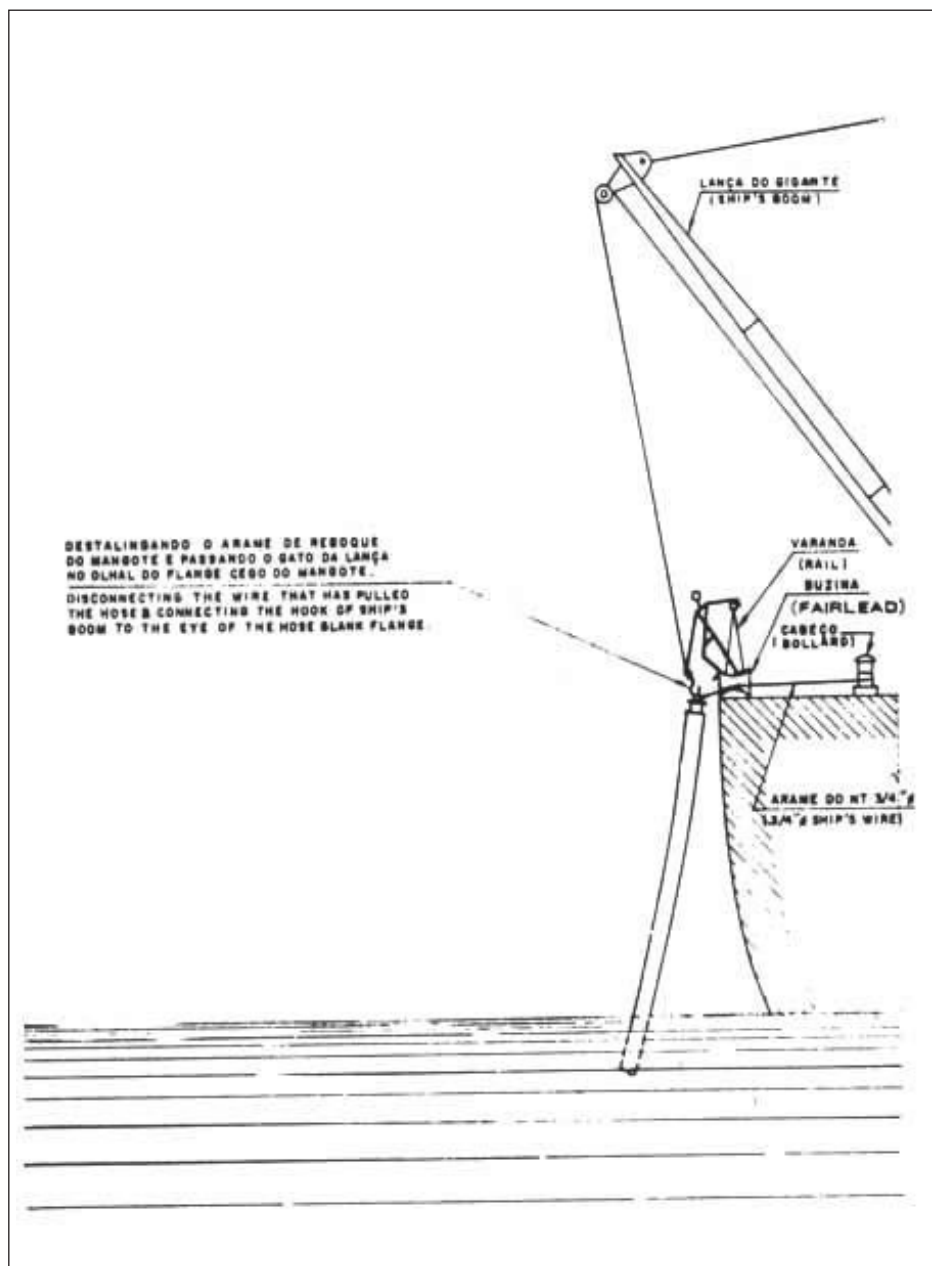
PORT INFORMATION



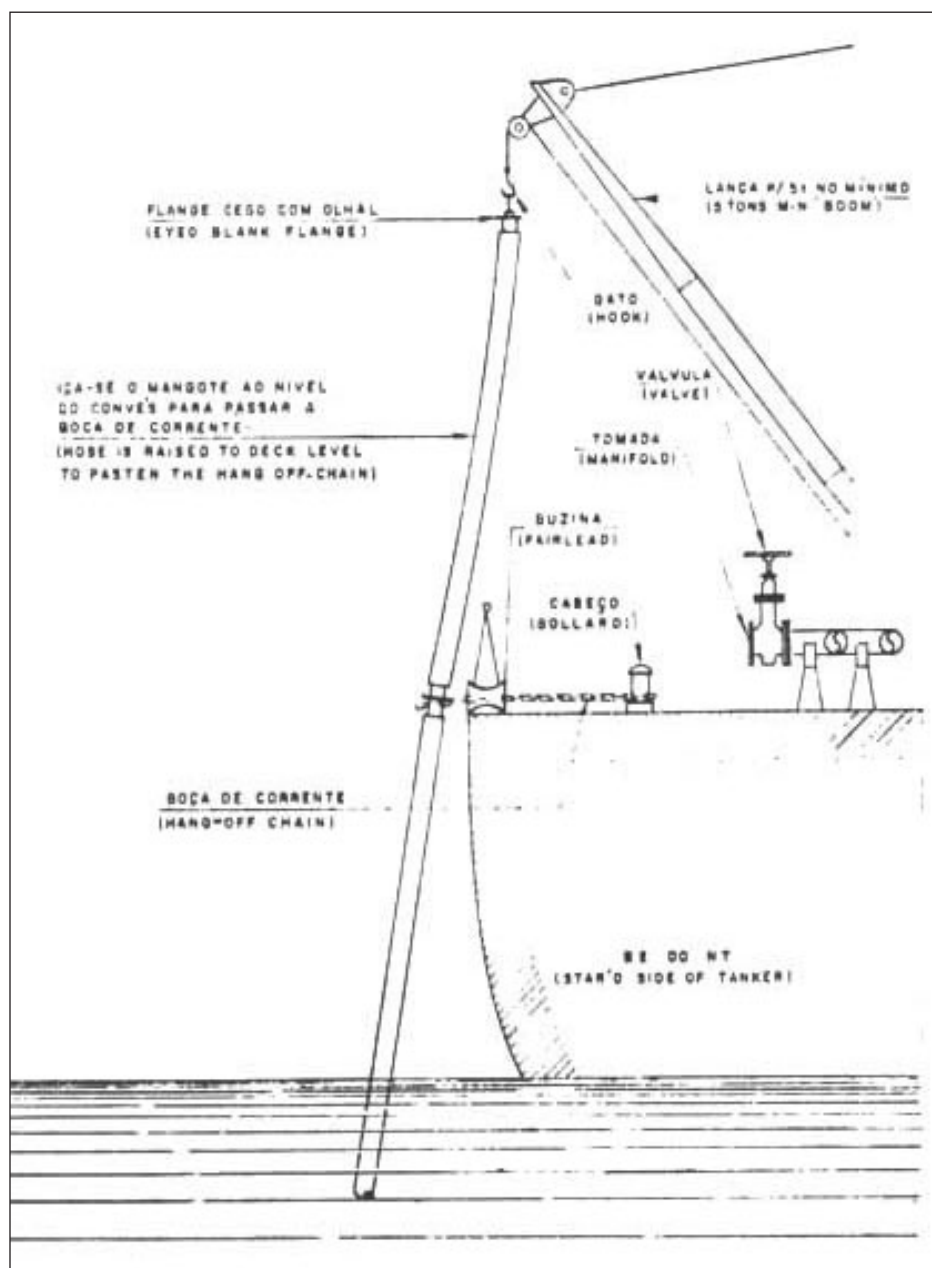
K – Connection of the Hose – PHASE 1



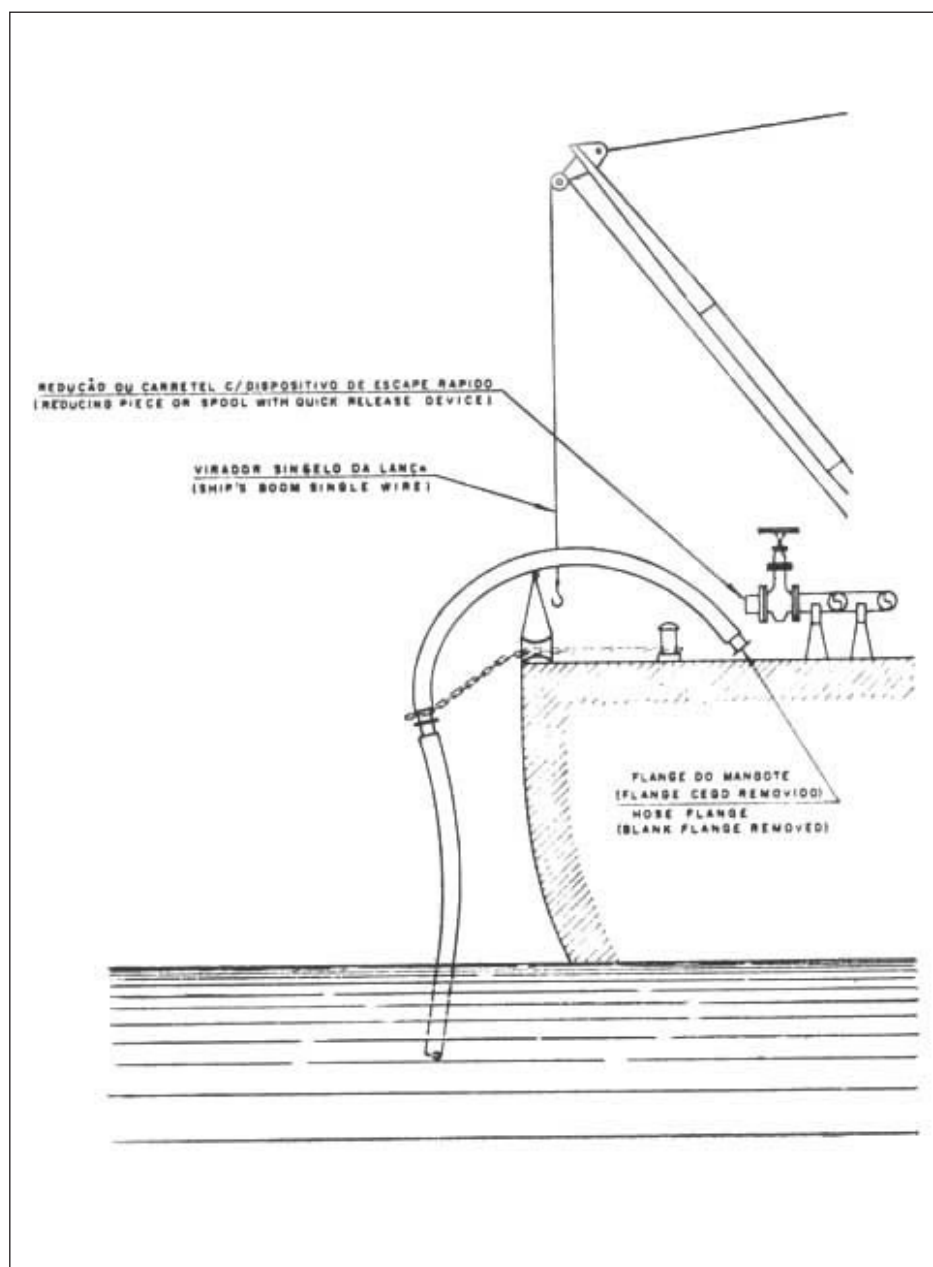
L – Connection of the Hose – PHASE 2



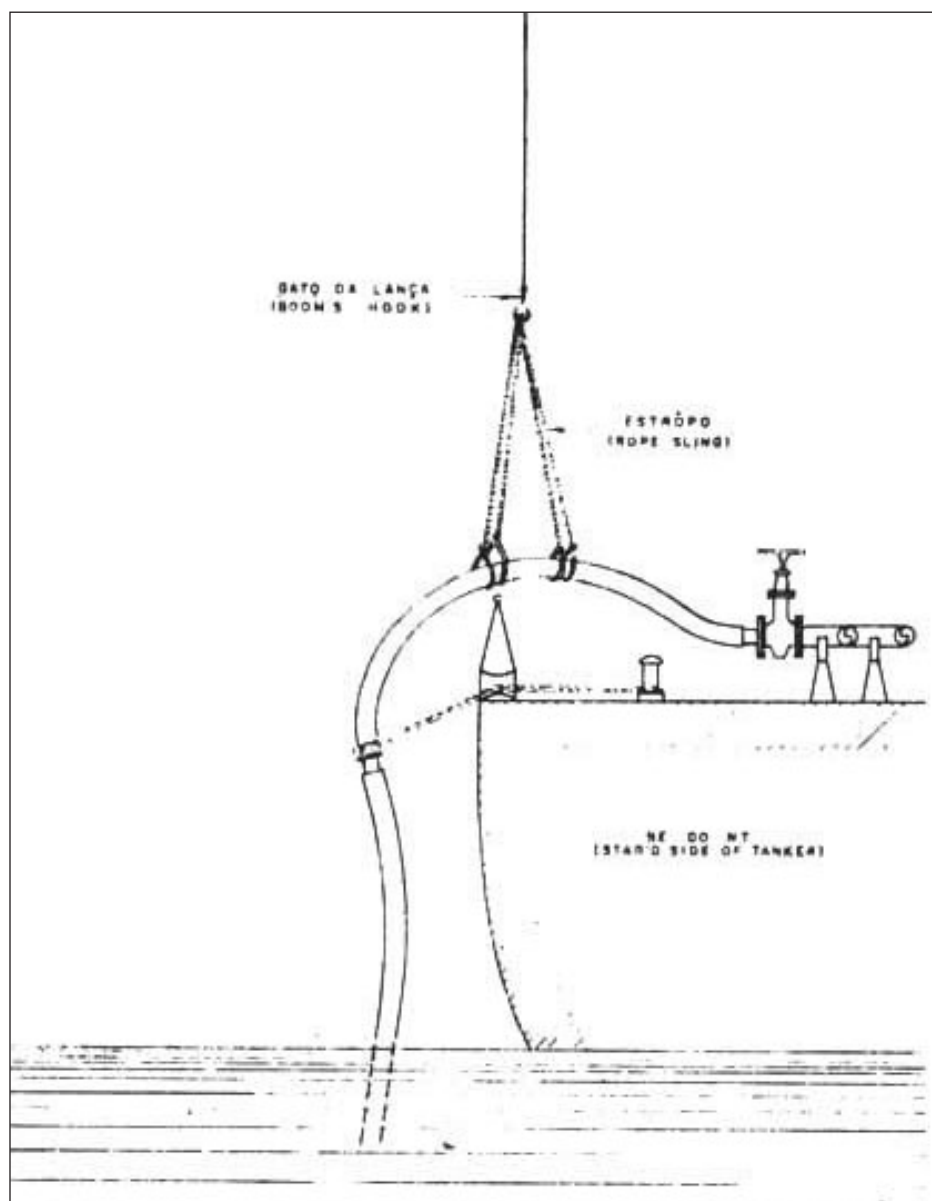
M – Connection of the Hose – PHASE 3



N – Connection of the Hose – PHASE 4



O – Connection of the Hose – PHASE 5



Note: little used method at TA Guamaré. Opt for the hose over the side to facilitate the disconnection in case of emergency.

P – Essential Information of the Vessel for the Terminal

Request for information about the vessel	
Name of the Ship:	Estimated Time of Arrival (ETA):
Flag:	Last Port:
Name of the Captain:	Next Port:
Shipowners:	Agents:
Does the ship have an inert gas system ?	
Oxygen Content:	
Total length (LOA):	Draft on Arrival:
Length between Perpendiculars:	Maximum Draft during Transfer:
Width:	Draft on Departure:
Number of engines:	Transverse Propulsion:
Number of propellers:	Bow (No. & power)
	Stern (No. & power)
Towboats– at minimum required:	
(N° & bollard pull)	
Number & Size of the Manifold Flanges:	Distances:
Load:	Bow to Manifold:
Ballast:	Side to Manifold:
Bunker:	Height of Manifold to Main Deck:
Cargo scheduling (complete as applicable)	
Assignment:	
Type & quantity	Type & quantity
Type & quantity	Type & quantity
Unloading ballast to sea:	
Quantity:	Estimated Time:
Unloading slop / ballast to land:	
Quantity:	Estimated Time:

Loadings requested (<i>bunkers</i>)
Type & quantity:
Type & quantity:
Type & quantity:
Type & quantity:
Additional information (if any):

Please send by fax or e mail to the Supervisor of the Terminal,

Fax N°	E mail
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Q – Information to be exchanged before the transfer of the cargo

(a)	Name of the Ship:
(b)	Number of the trip:
(c)	Date of mooring:
(d)	<p>Contract data:</p> <p>N° of pumps onboard:</p> <p>Volumetric capacity 98%:</p> <p>Guaranteed pressure upon unloading (When it is an unloading operation):</p> <p>Ballasting/Unballasting capacity simultaneous with loading/unloading:</p>
(e)	<p>Information about the trip</p> <p>Type of charter (VCP,TCP,COA,etc)</p> <p>Type of trip (Cabotage/Long Course)</p> <p>Ports or locations of origin and destination</p>
(f)	Ship requested loading?
(g)	Means of communication between ship and terminal
(h)	<p>Information about the load:</p> <p>Product:</p> <p>Quantity:</p> <p>Temperature:</p> <p>API:</p>
(i)	<p>SLOP:</p> <p>Quantity:</p> <p>Temperature:</p> <p>API:</p> <p>Fluidity:</p> <p>Origin:</p> <p>Contaminants:</p>

(j)	Ballast: Dirty Ballast: Quantity: Temperature: Segregated Ballast: Quantity:
(k)	Information about the operation: For unloading: Will the ship conduct a special operation ? (COW, Inertization, etc.) Time planned for the special operation Time needed to stop the pumps For loading: Advance time for notice of TOP Flow for period of TOP Quantity of ballast to be unloaded Maximum flow permitted for unballasting Are there restrictions regarding the electrostatic properties? Are there restrictions regarding use of valves which close automatically? Conditions of the Ship / Terminal For loading/unloading operation per product: Ship – Pressure, Flow, Temperature (Max. and Min.) Terminal – Pressure, Flow, Temperature (Max. and Min.) Sequency of operations per product: Quantity to be loaded/unloaded: Tanks of Origin/Destination: Onboard / land lines: Loading arms / hoses used: Expected start and end of the operation:
(l)	Complementary information about the operation and safety:

