INFORMAÇÕES PORTUÁRIAS

Port information

Madre de Deus Waterway Terminal

INTRODUÇÃO

INTRODUCTION

This Port Information is prepared by **Petrobras Transporte S.A. (TRANSPETRO)** which operates the Madre de Deus Waterway Terminal (Terminal Almirante Alves Câmara - TEMADRE) in the port of Madre de Deus in Bahia and is the provider of the oil transfer operations between ships anchored in the Todos os Santos Bay.

It presents the essential information for ships operating at the terminal and STS in the BTS, is distributed to the Port's stakeholders, National and Local Authorities, and in the various branches of the company.

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 legislation, instructions, guidelines or official publications, national or international. Therefore, any information contained in this Port Information that contradicts any item of the aforementioned documents should be disregarded.

The Terminal reserves the right to change any operational information presented herein, after analyses and joint studies among the relevant agencies.

TRANSPETRO will analyze any suggestions, recommendations or corrections to the issues addressed herein, aiming at improving the information. In case erroneous information is found that needs to be updated, please contact us:

Management of the Madre De Deus Waterway Terminal

Rua Milton Bahia Ribeiro, s/n, Madre de Deus – Bahia - CEP 42.600-000 Tel.: 55 71 3877-7237 / 3877-7019 / 3877-7222 / 3877-7267

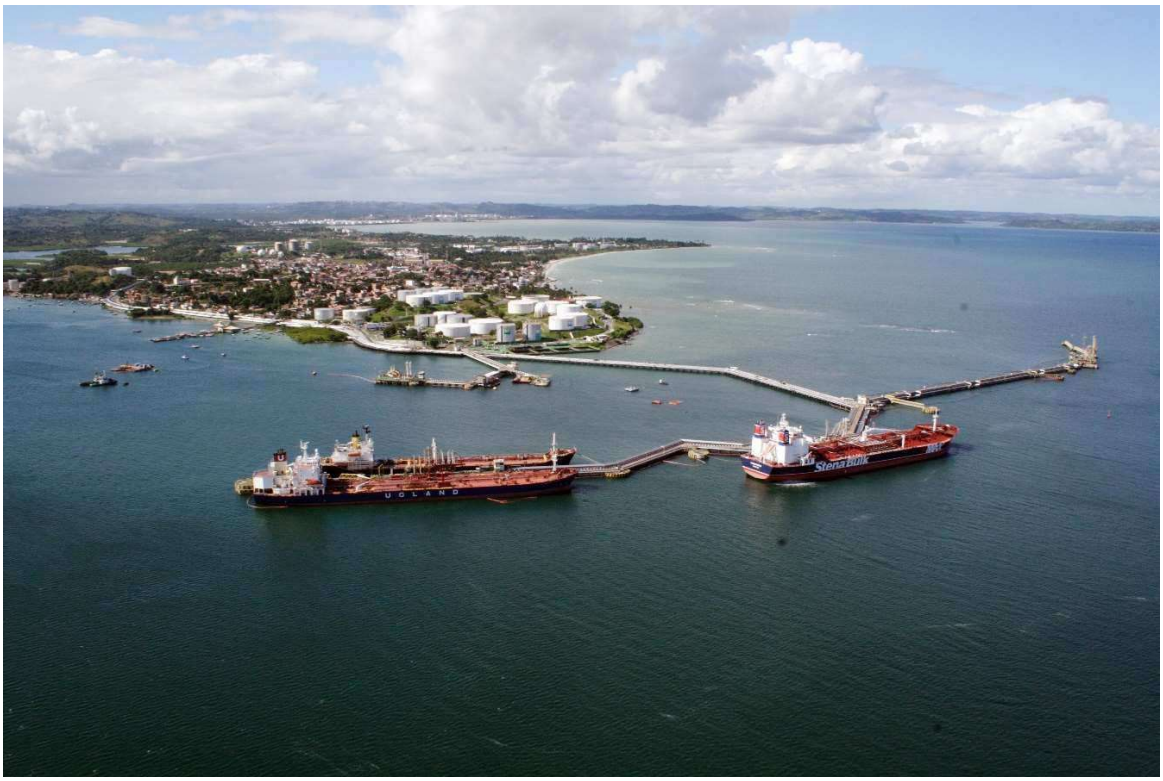
Petrobras Transporte S/A - TRANSPETRO

Av. Presidente Vargas, nº 328, Centro, CEP 20.091-060, Rio de Janeiro – RJ Communication Advisory

Phones 55 21 3211-9039 and 55 21 3211-9000.

The latest version of this Port Information can be obtained through the following link: npcp-ba.pdf (marinha.mil.br)

Madre de Deus Waterway Terminal



TEMADRE

Review	Amendments	Date	Preparation	Approval
1	Initial issue	22/02/2009	Alberto Carvalho and Cleber Vieira	
2	Revision A	26/12/2019	CMT/Pinheiro	Alberto Carvalho
3	Revision B	29/06/2020	CMT/Pinheiro	Alberto Carvalho
4	Update of the minimum depth in the channel according to LH and calculation of the resulting CMR	20/12/2021	Luiz Filipe	Jorge Rego
5	Inclusion of Ship to Ship (STS) Operation at Anchorage in Baía de Todos os Santos Alteration of chapters 6 to 15 Inclusion of tables 3 and 10 Inclusion of item 10.5.10 - Simultaneous Operation with Segregated Loads Revision C	17/10/2022	Cledison Martins	Jorge Rego
6	Update of maximum displacement and depth of the pier PS1 Update of the operational draft of the pier PS1 Update of the conditions for berthing and unberthing manouvers of the píer PS1 Revision D	20/03/2023	Isabelle Santos	Jorge Rego
7	Update of Cap. 12 – Ship to Ship operation anchored at Todos os Santos Bay (Ordinance 40/2023)	16/10/2023	Isabelle Santos	Jorge Rego

8	**Update of Cap. 6 – Madre de Deus Warterway Terminal – Channel Access depth (items 6.1, 6.2 e 6.6.2)** **Update item 6.2.3 - Minimum Recommended Draught (CMR – Table 3)** **Update text item 6.7.1 High funds, banks, crowns and evolution basin** **Updated Pier Depth PP1, PP2 and PP4 – Item 7.1 Physical details of berths** **Update of conditions for berthing and unberthing maneuvers PP1 and PP2 – item 7.2.1** **Inclusion Item 7.2.5 – Secondary Pier 2 (PS2)** **Inclusion Item 7.2.6 – Operating Draughts x Minimum under keel clearance** **Update Item 7.3 – Tugboats and Port Support Services (Table 8)** **Update Table 12 (Operation References PP4) – Chapter 7.5**	**08/01/2024**	**Isabelle Santos**	**Jorge Rego**

9	**Chapter 6 Update – Madre de Deus Terminal** **- Access to the Madre de Deus Terminal (6.1)** **- Positioning buoys 15 and 17 (6.2)** **- Navigation restrictions in the access channel (6.6) – Depth (6.6.2); Maximum Recommended Draft (6.6.3); Transit of vessels on the channel (6.6.4)** **Chapter 7 Update – Detailed Terminal Description** **- Physical details of the berths (7.1) – Distance between fenders (PP3) and depth (PP4);** **- Maneuver conditions (7.2) – PP4 and PS1** **- Tugs and Port Services (7.3) – Table 8 Required quantity of tugs** **- Mooring (7.4) – Positioning of hooks and bollards** **- Operational Drafts x Under Keel Clearance (7.2.6)** **Chapter 10 Update – Procedures** **- Ship/Terminal Access (10.3)** **Chapter 12 Update – Ship to Ship Operation Anchored at Todos os Santos Bay (BTS)** **- Amendment to ordinance (12.1)** **- Maneuver conditions (12.3.4)** **- Use of tugboats (12.3.7)**	**28/11/2024**	**Isabelle Santos**	**Jorge Rego**

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1. Definitions

Tidal range – Vertical distance between a consecutive high and low tide;

BP – "Bollard Pull" - Longitudinal static traction of vessel;

GIAONT – Operational Inspection and Monitoring Group of Ships and Terminals, which includes

OPERATIONAL SAFETY INSPECTORS;

IMO – International Maritime Organization;

ISGOTT – International Safety Guide for Oil Tank Ships and Terminals;

Spring Tide – Condition in which the tidal amplitude reaches its maximum value (Very High Tide and Very Low Tide);

Neap tide – Condition in which the amplitude of the tide reaches its minimum value (Lowest high tide and highest low tide);

NPCP-BA – Standards and Procedures of the Port Authority;

VTS - "Vessel Traffic Service";

UTC – Universal Time Coordinated – also known as Greenwich Mean Time (GMT);

POAC – Person In Overall Advisory Control;

STS – Ship to Ship – Transfer of oil between ships;

STS Superitendent – STS Nautical Inspector;

STS Provider –Company Responsible for STS;

TIER – Classification for Pollution Emergency Response Level.

CPBA – Port Authority of Bahia

2. NAUTICAL CHARTS

In the table below are the nautical charts covering the Todos os Santos Bay and Vicinity of the Port of Salvador.

NAUTICAL CHARTS

Table 1 - Applicable Nautical Charts

Area	Chart Number			
	Brazil (DHN)	US Hydrographic Office	British Admiralty	Other
Proximities to the port of Salvador	1101		NZ 541	
Port of Salvador	1102			
Aratu Bay and surroundings	1103			
Todos os Santos Bay (Northeast part)	1104			
Port of Madre de Deus	1105			
Todos os Santos Bay (Northern part)	1106			
Todos os Santos Bay (West part)	1107			
Todos os Santos Bay (S.Roque port and nearby)	1108			
Todos os Santos Bay	1110		NZ 545	

3. DOCUMENTS AND EXCHANGE OF INFORMATION

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

Table 2 - Documents and exchange of information by stage of operation in TEMADRE

Information	Prepared by:			Delivered to:			Feedback
	Terminal	Ship	Both	Terminal	Ship	Both	
BEFORE ARRIVAL							
Estimated Arrival (ETA) and vessel information		X		X			According TO ANNEX E
Essential information about the Terminal	X				X		According TO ANNEXES B, C and D
Prior to Cargo or Bunker Transfer							
Cargo, slop or ballast details on board		X		X			According to ANNEX F
Information essential to the operation. (complete on site)	X				X		According to ANNEX F
Ship/Terminal Safety Checklist			X			X	According to ISGOTT
DURING CARGO OR BUNKER TRANSFER							
Repeat the Safety Checklist			X			X	According to ISGOTT
AFTER TRANSFER OF CARGO OR BUNKER, BEFORE DEPARTURE							
Information required for undocking the Vessel			X			X	Quantity of fuels and water on board as final release
AFTER UNDOCKING, AT PORT EXIT							
Information relating to data leaving the port		X			X		Pilot disembarkation time and departure from port

Information	Prepared by:				Delivered to:				Feedback
	POAC	Mother Vessel	Draughter Vessel	STS Superintendent	POAC	Mother Vessel	Draughter Vessel	STS Superintendent	
BEFORE ARRIVAL									
Estimated Arrival (ETA) and vessel information		X	X		X				According to Annex E
Joint Plan Operation	X					X	X		According to Ship-to-Ship Transfer Guide
Risk Analysis	X					X	X		According to Ship-to-Ship Transfer Guide
Mooring Plan	X					X	X		According to Ship-to-Ship Transfer Guide
Fender certificates and hoses	X					X	X		According to Ship-to-Ship Transfer Guide
POAC BTS	X					X	X		According to Ship-to-Ship Transfer Guide
Form B POAC Questionnaire	X					X	X		According to Ship-to-Ship Transfer Guide
Prior to Cargo Transfer									
Load details		X	X			X	X	X	According to Annex F
Information essential to the operation (complete on site)		X	X			X	X	X	According to Annex F
SHIP-TO-SHIP Transfer Checklist 6		X	X	X		X	X	X	According to Ship-to-Ship Transfer Guide
Ship/Ship Operational Safety Checklist		X	X	X		X	X	X	According to ISGOTT
Ship/Terminal Safety Checklist		X	X	X		X	X	X	According to ISGOTT
DURING CARGO TRANSFER									
SHIP-TO-SHIP Transfer Checklist 6A		X	X	X		X	X	X	According to Ship-to-Ship Transfer Guide
Repetitive Safety Checklists		X	X			X	X		According to ISGOTT

AFTER CARGO TRANSFER, BEFORE DEPARTURE									
SHIP-TO-SHIP Transfer Checklist 5		**X**	**X**	**X**		**X**	**X**	**X**	**According to Ship-to-Ship Transfer Guide**
Information required for undocking the Vessel		**X**	**X**					**X**	**Quantity of fuels and water on board as final release**
AFTER UNDOCKING, AT PORT EXIT									
Information relating to data leaving the port		**X**	**X**					**X**	**Pilot disembarkation time and departure from port**
Inform the Captaincy about the departure and destination of the vessels	**X**				**X**				**Annex 6D of NORMAN 08**

4. GENERAL DESCRIPTION

TODOS OS SANTOS BAY

TODOS OS SANTOS BAY is one of the largest in Brazil. Its bar is located between the tip of Santo Antônio to E and the island of Itaparica to W with a width of 5 miles; it extends for 22 miles in the direction N – S and has a maximum width of 18 miles in the direction E – W. Its east bank is occupied by the city of Salvador, capital of the state of Bahia; the northeast bank is low, and the north and west banks are mountainous. Inside the bay there are numerous islands and on the banks flow several rivers, the most important being the Paraguaçu River.

The outlines of the bay rise gradually and are very much cut out especially to the east and north, providing well sheltered berths.

It is represented in letters 1101 to 1108, and 1110 of the Directorate of Hydrography and Navigation (DHN) of the Brazilian Navy.

In the TODOS OS SANTOS BAY are located the public ports of Salvador and Aratu; the Naval Base of Aratu; the Terminals for private use of USIBA, Dow Química, TPC, TRBA and the Madre De Deus Waterway Terminal - TEMADRE.

The islands of Maré, Frade, Vacas, Madre de Deus, Itaparica, Bom Jesus dos Passos, Maria Guarda and some other minors are north of the bay.

The Ilha de Frade is located between 5 and 8 miles in the north-northeast direction of the northern end of the island of Itaparica.

At the northeast end of Ilha de Frade is Ponta do Cavalo. About 0.5 miles north of Ponta do Cavalo is the island of Madre de Deus, separated from the mainland by a shallow and narrow channel called Furo do Suape.

At the Mirim tip on the southern edge of the island of Madre de Deus, there are the facilities of the Madre De Deus Waterway Terminal – TEMADRE.

In the western part of the TODOS OS SANTOS BAY is located the area designated by CPBA to carry out STS operations.

ANCHORAGE AREAS

See DHN nautical charts (Directorate of Hydrography and Navigation of the Brazilian Navy) numbers 1101, 1102, 1107 and 1110.

In an emergency and for a short period of time, the ship may anchor in the evolution basin according to the warning contained in DHN chart 1105.

5. MADRE DE DEUS WATERWAY TERMINAL

The Terminal's facilities are located in the port of Madre de Deus, on the island of the same name, about 16.5 miles from the entrance to the Todos os Santos Bay (BTS). It is bordered to the north by Ilha de Maria Guarda, to the south by Ilha do Frade, to the east by Ilha da Maré and to the west by Ilha das Vacas.

The Terminal pier allows the mooring of five ships. All docking stations have luminous beacons and are classified as main and secondary. The main posts are identified by the letters PP followed by numbering and are: PP-1, PP-2, PP-3 and PP-4. The secondary posts are identified by the letters PS followed by numbering and are: PS-1 and PS-2.

Carta Náutica do Terminal de Madre de Deus - 1105

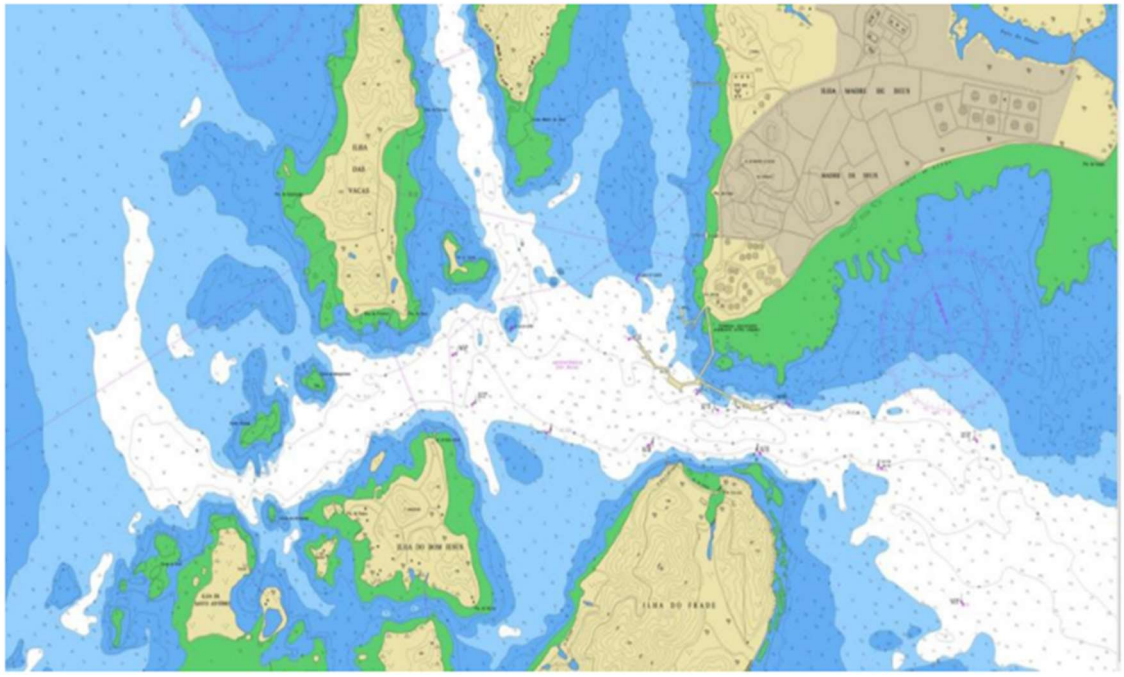


Figure 1 - Top view of the pier position

TERMINAL ACCESS

Access to the Madre de Deus Terminal is carried out by a one-way channel with lighted beacon of articulated buoys numbered from 1 to 17, in red and green colors, which begins at position lat. 12º 49.2'S – long. 038º 34.0' W and ends at the evolution basin in front of the Terminal. It is 5.5 miles long and its lowest depth is 15.2 meters (49.87 feet) found in the vicinity of Madre de Deus Buoy No. 13, as verified by the 2024 LH analyzed and used by the CHM (Authorizations No. 689/2023, 690/2023, 691/2023, 692/2023 and 366/2024). It is forbidden to anchor, overtake and cross ships in the access channel.

Vessels may demand Terminal facilities, provided they comply with the conditions set out in these instructions.

MARKING OF THE ACCESS CHANNEL OF MADRE DE DEUS TERMINAL AND EVOLUTION BASIN

The signaling of the Access Channel and Evolution Basin to the Terminal consists of the following buoys:

a) Hinged buoys numbered 1 to 17, in the colors red (ST) and green (PS);

b) Special yellow articulated buoys, numbered 1 to 3, indicating the auxiliary lateral channel with a depth of 10.5 meters;

c) Special yellow articulated buoys numbered 4 to 5 indicating the western limit of the evolution basin;

d) Articulated buoy of the Baixio do Bom Jesus;

e) Lighthouse of the Baixio de Madre de Deus; and

f) Lighthouse of the Baixio do Capeta.

The access channel has a minimum depth of 15.2 m, in the vicinity of Buoy Madre de Deus No. 13..

The table below summarizes the entire set of buoys in the TEMADRE area.

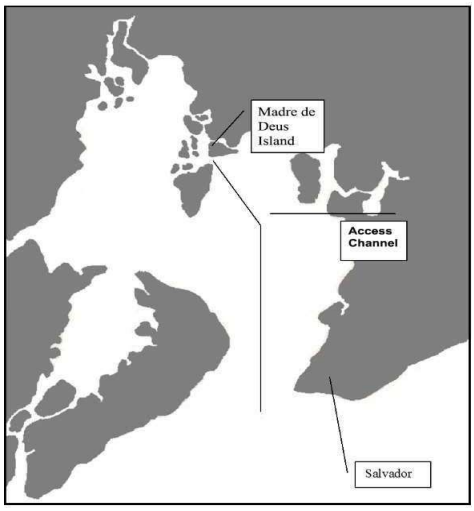


Figure 1 - Schematic of the access channel and evolution basin

Table 2 - Coordinates of the beacon of the access channel and evolution basin to TEMADRE

MARKING OF THE ACCESS CHANNEL AND EVOLUTION BASIN				
Nautical signal	**Latitude**	**Longitude**	**Luminous Characteristics**	**Indication (Navigable Channel)**
MADRE DE DEUS #1	12º49.02'S	038º33,91'W	Lp (E) 3s E.1,0-Ecl.2,0	ST (Starboard Side)
MADRE DE DEUS #2	12º49,11'S	038º34,19'W	Lp (V) 3s V.1,0-Ecl.2,0	PS (Port Side)
MADRE DE DEUS #3	12º48,55'S	038º34,14'W	Lp (E) 3s E.0,5-Ecl.2,5	ST (Starboard Side)
MADRE DE DEUS #4	12º48,63'S	038º34,32'W	Lp (V) 3s V.0,5-Ecl.2,5	PS (Port Side)
MADRE DE DEUS #5	12º47,79'S	038º34,52'W	Lp (E) 3s E.0,5-Ecl.2,5	ST (Starboard Side)
MADRE DE DEUS #6	12º47.81'S	038º34,68'W	Lp (V) 3s V.0,5-Ecl.2,5	PS (Port Side)
MADRE DE DEUS #7	12º47,05'S	038º34,91'W	Lp (E) 6s E.0,5-Ecl.5,5	ST (Starboard Side)
MADRE DE DEUS #8	12º47,11'S	038º35,01'W	Lp (V) 6s V.0,5-Ecl.5,5	PS (Port Side)
MADRE DE DEUS #9	12º46,52'S	038º35,29'W	Lp (E) 3s E.0,5-Ecl.2,5	ST (Starboard Side)
MADRE DE DEUS #10	12º46,18'S	038º35,71'W	Lp (V) 6s V.0,5-Ecl.5,5	PS (Port Side)
MADRE DE DEUS #11	12º46,08'S	038º35,62'W	Lp (E) 3s E.0,5-Ecl.2,5	ST (Starboard Side)
MADRE DE DEUS #12	12º45.45'S	038º36,70'W	Lp (V) 3s V.0,5-Ecl.2,5	PS (Port Side)
MADRE DE DEUS #13	12º45,36'S	038º36,34'W	Lp (E) 3s E.0,3-Ecl.2,7	ST (Starboard Side)
MADRE DE DEUS #14	12º45,40'S	038º37.15'W	Lp (V) 3s V.0,5-Ecl.2,5	PS (Port Side)

MADRE DE DEUS #15	12º45,32723'S	038º36,90672'W	Lp (E) 3s E.0,5-Ecl.2,5	ST (Starboard Side)
MADRE DE DEUS #16	12º45,38'S	038º37.54'W	Lp (V) 3s V.0,5-Ecl.2,5	PS (Port Side)
MADRE DE DEUS #17	12º45,3120'S	038º37,3118'W	Lp (E) 3s E.0,3-Ecl.2,7	ST (Starboard Side)
BUOY # 1	12º47.14'S	038º35,06'W	Lp (A) 3s A.0,5-Ecl.2,5	Special Buoy
B0IA No. 2	12º46,22'S	038º35,78'W	Lp (A) 3s A.0,5-Ecl.2,5	Special Buoy
BUOY No. 3	12º45,86'S	038º36,39'W	Lp (A) 3s A.0,5-Ecl.2,5	Special Buoy
BUOY No. 4	12º45,25'S	038º38,20'W	Lp (A) 3s A.0,5-Ecl.2,5	Special Buoy
BUOY No. 5	12º45,10'S	038º38,27'W	Lp (A) 3s A.0,5-Ecl.2,5	Special Beacon
Baixio de Bom Jesus	12º45.34 S	038º37,92'W	Lp(v)3s V.0.3 – Ecl.2.7	Special Buoy
Baixio do Capeta	12º45.02 S	038º38,05'W	Lp(2)B 5s B.0.5-Ecl.1.0 B.0.5 – Ecl.3.0	Lighthouse
Baixio de Madre de Deus	12º44.86' S	038º37.59'W	Lp(2+1)V 12s V.1.0 Ecl.1.0 V.1.0 – Ecl.3.0 V.1.0 – Ecl.5.0	Lighthouse

PORT CONTROL OR VTS (VESSEL TRAFFIC SERVICE)

The Madre de Deus Terminal does not have special traffic control and navigation services.

PILOTAGE

The pilotage is mandatory for ships destined to TEMADRE and STS anchored in the TODOS OS SANTOS BAY , from the Pilot Waiting Point (PEP), located in LAT.13º 00,78 'S and LONG 038º 33,74'W.

The contact can be established through channels 10 and 16 of the VHF, by e-mail: cop.zp12@practicedabahia.org.br or by telephone (71) 3016-8512/8513/8514, fax (071) 3016-8515. For all situations, the Pilotage service is activated by the ship's agent.

Boarding of the pilot will take place at the anchorage where the ship is anchored, at the PEP (Pilot Position) or at the terminals where the ship is moored.

The Master of the tanker is responsible for the maneuvers. In addition, he is obliged to warn the pilot of any abnormality or difficulties of the ship such as defects in mooring equipment, rudder, machinery and/or boiler deficiency or lack of necessary equipment that may cause danger to the ship's navigation, berthing and unberthing.

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

If the Captain decides not to follow the pilot's instructions, in order to preserve the safety of the ship's maneuver, the Port Captain (Port Authority), through the ship's Agent, must be notified in writing. This fact shall also be reported to TEMADRE by the ship's Agency.

In case of emergencies, according to availability, the Pilot will be placed on the ship at the earliest possible time.

Pilotage Services must be requested from the ZP-12 Operations Center at least 03 hours in advance for mooring and 04 hours for unmooring from the Terminal.

ENVIRONMENTAL FACTORS

Winds

The predominant winds are those of E in the months of January, February, March, May, September, November and December, and ESE winds in the months of April, June, July, August and October. South winds usually blow on the new moon and the full moon, shaking the waters of the bay a lot. In August and September, winds sometimes occur with speeds above 15 knots. In the other months of the year, the wind speed maintains an average of 10 knots.

Waves

There are no wave records capable of impairing mooring, unmooring and ship operations.

Rainfall

The average rainfall in the region varies between 82 mm and 2,414 mm. The annual average fluctuates around 2,174mm per year.

The passage of any cold fronts produces winds from NE to SW, counterclockwise, with fresh gusts, which can reach very strong; continuous rainfall of stratum-nimbus and rainfall with thunderstorms of cumulus-nimbus; sharp and sudden increase in pressure, after the prefrontal decline; Fall, possibly sudden, of the air temperature.

Visibility

During winter intermittent rains occur and visibility can be considered to regulate the good. The occurrence of fog and occasions of poor visibility is rare.

Sometimes, smoke can occur from the industries of the Industrial Center of Aratu impairing visibility, an event that is also rare.

Tides and Currents

The tide in the bay of Todos os Santos has semi-diurnal characteristics. In the access channel to the Terminal, the current reaches up to 4 knots. The winds of E prevail with influence on the maneuvers, mainly of unloaded ships.

In the Terminal, the average sea level is 151cm above the reduction level of the chart. In the rainy season, the current of the flowing tide may exceed the mentioned values. See DHN Tidal Boards.

Salinity

The average salinity of seawater is 35.5 ppm, with small seasonal variations. The highest mean value found on the Northeast coast, at latitudes from 26º S to 32º S is 37.2 ppm.

Density

The average density of seawater ranges from 1022.0 to 1026.5 kg/m3.

Atmospheric Pressure

The local atmospheric pressure oscillates around 1,006.8mb in summer and 1,010.6mb in winter.

Air Humidity

The relative humidity of the air is high, ranging between 79 and 85%. The average relative humidity of the air is 82% throughout the year.

Temperatures

In the months of November to April temperatures range from 23ºC (73.4ºF) to 30ºC (86.0ºF). In the months of May to October temperatures range from 22ºC (71.6ºF) to 27ºC (80.6ºF).

NAVIGATION RESTRICTIONS IN THE ACCESS CHANNEL

Maximum navigation speed

During all navigation, a safety speed (about 8 knots in the channel of Madre de Deus) shall be adopted, as provided for in Regulation 6, Section I, Part B of the Convention on the International Regulations for Preventing Collisions at Sea (RIPEAM). In addition, the ship should not have a bandwidth.

Depth

The minimum depth of the access channel is 15.2 meters, which is found in the vicinity of Buoy Madre de Deus No. 13.

Maximum Recommended Draft (CMR)

The CMR for navigation in the access channel must employ the formula below, as established in the normative ordinance Port CPBA/ComOpNav/MB No. 15/2024, of the Port Authority (CPBA):

CMR = (P + M) – [(P + M)] x FS

In which:

P = Minimum channel depth, reduced to the reduction level;

M = Tide height, in meters, at the time of passage through the point of least depth in the channel section in the vicinity of Buoy Madre de Deus Nº 13;

FS = Decimal of the safety factor (10%).

On average, the passage through the point of lowest depth in the channel occurs between 1.5 hours and 2.0 hours after the pilot's time on board for berthing maneuvers. For unberthing maneuvers, no time interval is

considered between the pilot's time on board and the time of passage through Buoy No. 13, due to its proximity to the TEMADRE piers.

The calculation of the CMR must be considered for both berthing and unberthing maneuvers.

P (m)	FS	M (m)	CMR (m)
15,2	10%	0.0	13,68
15,2	10%	0.5	14,13
15,2	10%	1.0	14,58
15,2	10%	1.5	15,03
15,2	10%	2.0	15,48
15,2	10%	2.5	15,93
15,2	10%	3.0	16,38

Table 3 - CMR reference values, considering the height of the tide at the time of passage at the lowest depth point

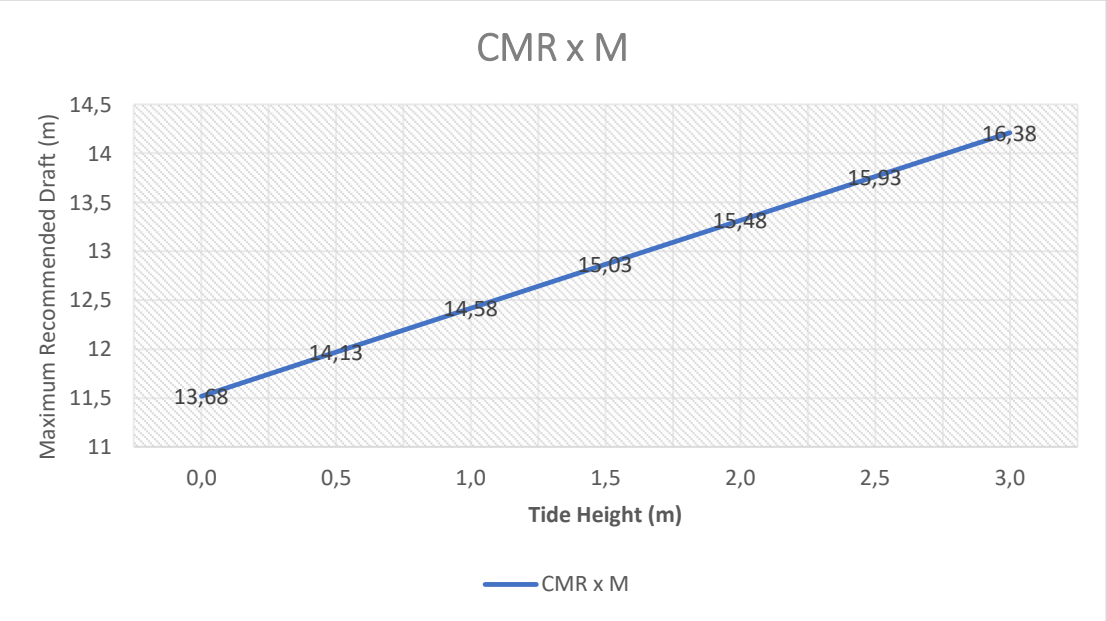


Figure 3 - CMR reference values, considering the height of the tide at the time of passage at the point of least depth

Vessels Traffic in the Channel

It is forbidden to anchor, overtake and cross ships in the access channel to the Terminal.

It is necessary to have a minimum interval of 1 hour between the undocking of the ship in Madre de Deus and the demand of a ship from the anchorage.

An interval of 2 hours is required between the ascent of 2 ships from Salvador to Madre de Deus. A 30-minute interval is required between the descent of 2 consecutive ships from the Terminal.

The movement in the access channel of vessels contracted by the Terminal for bunker transportation must be preceded by communication and prior consent of the Pilotage (via radio) and must also be communicated to the SUPERVISOR/ and SAFETY INSPECTOR/ GIAONT.

SHIP MANEUVERING AREASSHIPHANDLING AREAS

High depths, banks, crowns and others in the Evolution Basin

The evolution basin is delimited by the 10m isobath. The evolution basin, close to the Terminal facilities, is signaled by three luminous buoys. Ships must use the basin to turn when they will berth on the port side. Anchoring in and around the area of the evolution basin is prohibited.

Baixio de Madre de Deus: High bottom, of stones, in the vicinity of the Port of Madre de Deus, with a depth of 5.8m signaled by a light in the position Lat. 12º44,86'S – Long. 038º37,59'W Lp (2 + 1) V.12 sec.

Baixio do Bom Jesus: High bottom with a minimum depth of 3.2m to about 600m east of the northern end of the island of Bom Jesus. Signaled by green light buoy (Lp V.3 sec) next to 10 m isobath at position Latitude 12º45,34'S – Longitude 038º37,92'W.

The Baixio do Capeta is signposted by a light of black and red horizontal stripes (Lp (2) B 5 s) Located 800 meters northeast of the north end of the island of Bom Jesus, in the southeast part of a series of high bottoms 1.8m (6 feet) deep, existing at the end of a bank that extends southeast of the island of Vacas, lat 12º45,02 ' S – Long. 038º 38,05' W.

Ship Turning

It is the Master's responsibility to observe that the Pilot maneuvers the ship within the limits of the evolution basin. Vessels must use the basin to turn for port mooring, in PP-1, PP-2 and PP-4.

Wind Limits

The limit intensity of the wind for carrying out the mooring and unmooring maneuvers is 20 knots. The limit wind intensity for the Terminal operation is 30 knots.
The limit intensity of the wind for disconnection is 35 knots.

6. DETAILED TERMINAL ESCRIPTION

BERTH PHYSICAL DETAILS

The table below shows the characteristics of the terminal berths:

Table 4 - BERTH PHYSICAL DETAILS

Pier	Distance between fenders	Berth Depth (Tidal height = 0 m)	Max. ship length for berthing Daytime / Nighttime	Max. Displacement (ton)	TPB (dwt)	Products
PP-1	90 meters	12,8m	280 m	169.460	160.000	Oil, derivatives and LPG
PP-2	70 meters	12,6 m	280 m	169.460	160.000	Oil, derivatives, paraffin.
PP-3	64 meters	10.5 m	187 m	65.000	55.000	Oil, derivatives, paraffin
PP-4	80 meters	18.70m	280 m	169.460	165.000	Oil and dark derivatives
PS-1	35 meters	7.60 m	145 m	16.900	10.000	LPG and Bunker
PS-2*	80 meters	4,20 m	80 m	2.000	2.000	Bunker

*Moorings at this pier will be strictly subject to prior authorization from the Terminal.

CONDITIONS FOR BERTHING AND UNBERTHING MANEUVERS

Main Pier 1 and 2 - PP1 and PP2

Table 5 - Conditions for berthing and unberthing maneuvers in PP-1 and PP-2

Maneuvering	Board	Tidal Amplitude	Wind (knots)	LOA (meters)	DWT	POB
Berthing	PS	>1.7 m	20	280 (PP1) 280 (PP2) **(*)**	160.000	Low Water Stand (POB=LT-02hs) or High Water Stand (POB=HT-3hs)
		≤ 1.7 m				Flood (LT-02h ≤ POB ≤ HT-03hs) **(**)**
	ST	>1.7 m				Low Water Stand (POB=LT-03h.30m) or High Water Stand (POB=HT-02hs)
		≤ 1.7 m				EBB (HT-02hs ≤ POB ≤ LT-03.30m) **(**)**
Unberthing	BOTH	BOTH				Vessels with TPB ≤ 45,000 unberth at any time. Vessels with TPB > 45,000 unberth at flood tide (LT-02hs ≤ POB ≤ HT-01h)

LT = Low Tide; HT = High Tide

(*) The berthing of ships with LOA ≥ 250 m in PP2 must be evaluated and authorized in advance by the Terminal. For moorings in PP2, this type of ship may have a negative stern or bow when moored. In addition, simultaneous mooring of ships in PP1 and PP2 whose sum of their LOA's is greater than 500 meters, must also be previously authorized by the Terminal due to the risk of proximity of the moored ships (minimum distance between the ships ≥ 10% of the LOA of the largest ship).
(**) For the realization of this maneuver, a period of progression must be followed to implement the changes in the operational conditions for mooring in PP1 and PP2, as follows:

1. Start mooring operations in Quadrature condition (tidal amplitude ≤ 1.7 m) only during the day and with ships up to 70,000 dwt (Panamax). The other ships (Aframax and Suezmax) remain using the water stand conditions. This stage has already been completed with PILOTAGE and Port Authority (CPBA);

2. After a positive evaluation of the mooring conditions in the daytime quadrature, informed by the pilotage and Port Authority to CPBA, the expansion of the mooring conditions will be authorized, to cover the night period, still limited to Panamax ships (<70,000 dwt). This stage has been reschedule;

3. After a positive evaluation of the mooring conditions in the night quadrature of Panamax ships, informed by the Pilotage and Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the daytime period of Aframax ships (<115,000 dwt). The Suemax ships remain employing the Upholstery conditions; Current stage;

4. After a positive evaluation of the mooring conditions in the daytime quadrature, informed by the

Pilotage and Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the night period, still limited to Aframax ships (<115,000 dwt);

5. After a positive evaluation of the mooring conditions in the night quadrature of Aframax ships, informed by Pilotage and by the Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the daytime period of Suezmax ships (<160,000 dwt);

6. After a positive evaluation of the mooring conditions in the daytime quadrature, informed by the Pilotage and Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the night period of the Suezmax ships (<160,000 dwt) ending the period of progression of the maneuvers;

7. The maneuvers are conditioned to winds of up to 20 knots; and

8. Daytime maneuver – One whose POB is between sunrise minus 02 hours and sunset minus 02 hours (mooring) and sunrise minus 30 minutes and sunset minus 01 hour (unmooring).

Main Pier 3 – PP3

Table 6 - Conditions for mooring and unmooring maneuvers in PP-3

Maneuvering	Pier	Side	Wind (Knots)	LOA	Dwt	POB
Berthing	PP3	ST	20	187	55.000	For maneuvers by ST, ships must demand from Salvador 1,5 hour before the low tide until 3 hours before the high tide
Unberthing		ST			55.000	Vessels moored by ST unberthed from low tide up to 1 h before high tide

Main Pier 4 – PP4

Table 7- Conditions for berthing and unberthing maneuvers in PP-**4**

Maneuvering	Pier	Side	Period	Wind (knots)	LOA (meters)	Dwt	POB
Berthing	PP-4	PS (***)	>1.7 m	20	280	165.000	Low Water Stand (POB=BM-02.30m) or High Water Stand (POB=PM-03.30m)
			≤ 1.7 m		280		Flood (LT-02h ≤ POB ≤ HT-03h). **(*)**
Berthing		ST	> 1.7 m		280		Low Water Stand (POB=LT-03.30m) or High Water Stand (POB=HT-02 h)
			≤ 1.7 m		280		EBB (HT-2h ≤ POB ≤ LT-3h30m) **(*)**
Unberthing	PP4	PS	BOTH	20	280	165.000	Vessels that cannot unberth at any tidal time – LT-02h ≤ POB ≤ HT-01h Any Time (**)
Unberthing		ST	BOTH		280		High Water Stand (HT-01h ≤ POB ≤ HT) or Low Water Stand (LT-01h ≤ POB ≤ LT)

LT = Low Tide; HT = High Tide

(*) For this maneuver to be carried out, a progression period must be followed to implement the changes in the operational conditions for mooring in PP4, as follows:

1. . Start mooring operations in Quadrature condition (tidal amplitude ≤ 1.7 m) only during the day and with ships up to 70,000 dwt (Panamax). The other ships and conditions remain using the Upholstery conditions. This stage has already been completed with PILOTAGE and Port Authority (CPBA);

2. After a positive evaluation of the mooring conditions in the daytime quadrature, informed by the pilotage and Port Authority to CPBA, the expansion of the mooring conditions will be authorized, to cover the night period, still limited to Panamax ships (<70,000 dwt);

3. After a positive evaluation of the mooring conditions in the night quadrature of Panamax ships, informed by the Pilotage and Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the daytime period of Aframax ships (<115,000 dwt). The Suemax ships remain employing the Upholstery conditions;

4. After a positive evaluation of the mooring conditions in the daytime quadrature, informed by the Pilotage and Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the night period, still limited to Aframax ships (<115,000 dwt);

5. After a positive evaluation of the mooring conditions in the night quadrature of Aframax ships, informed by Pilotage and by the Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the daytime period of Suezmax ships (<160,000 dwt);

6. After a positive evaluation of the mooring conditions in the daytime quadrature, informed by the Pilotage and Port Authority to CPBA, an expansion of the mooring conditions will be authorized to cover the night period of the Suezmax ships (<160,000 dwt) ending the period of progression of the maneuvers; and

Daytime maneuver – One whose POB is between sunrise minus 02 hours and sunset minus 02 hours (berthing) and sunrise minus 30 minutes and sunset minus 01 hour (unberthing)

(**) To carry out this maneuver, a period of progression must be followed to implement the changes in the operational conditions for unberthing in PP4, as follows:

1. Start unberthing operations by PS in any tidal condition only during the day and with ships up to 70,000 dwt (Panamax) other ships (Aframax and Suemax) remain employing the flood condition (LT-2H≤POB≤HT-1H);

2. After a positive evaluation of the unberthing conditions by PS in any daytime tide condition, informed by the Pilotage and Port Authority to CPBA, the expansion of the unberthing conditions in any tide condition will be authorized to cover the night period, still limited to Panamax ships (<70,000 dwt);

3. After a positive evaluation of the unberthing conditions by PS in any night tide condition by Panamax ships, informed by the Pilotage and Maritime Authority to CPBA, the unberthing conditions will be authorized to cover the daytime period of Aframax ships (<115,000 dwt), Suezmax ships remain employing the flood condition (LT-02H ≤POB≤HT-01H);

4. After a positive evaluation of the unberthing conditions by PS in any daytime tide condition, informed by the Pilotage and Maritime Authority to CPBA, the unberthing conditions will be authorized to cover the night period, still limited to Aframax ships (<115,000 dwt);

5. After a positive evaluation of the conditions of unberthing by PS, in any condition of night tide of Aframax ships, informed by the Pilotage and Port Authority to CPBA, the expansion of the conditions of unberthing will be authorized to cover the daytime period of Suezmax ships (<160,000 dwt);

6. After a positive evaluation of the unberthing conditions by PS, in any daytime tide condition of Suezmax ships, informed by the Pilotage and Port Authority to CPBA, the expansion of the unberthing conditions will be authorized to cover the night period of Suezmax ships (<160,000 dwt), ending the period of progression of the unberthing maneuvers by PS;

7. Vessels that cannot unberth at any time of tide must comply with the flood condition: LT-02H≤POB≤HT-01H

8. The maneuvers are conditioned to winds of up to 20 knots; and

9. Daytime Maneuver – is one in which the POB is between sunrise minus 02 hours and sunset minus 02 hours (mooring) and sunrise minus 30 minutes and sunset minus 01 hour (unmooring).

(***) Suezmax ships with a maximum draft above 15.6 meters will only be able to berth at PP4 by PORTSIDE (PS) due to the limitation of hooks.

Additional recommendations

1. Vessels shall cross special buoy number 3 at a speed not exceeding 5 knots;

2. Use ECDIS/PPU as a navigational aid tool to predict ship behaviour during manoeuvers

Secondary Pier 1 – PS1

Table 10 - Conditions for berthing and unberthing maneuvers in PS-1

Maneuvering	Pier	Side	Wind (knots)	LOA	Dwt	POB
Berthing	PS1	ST/PS	20	Up to 110m	10.000	Maneuvers may be carried out in any tidal condition and with at least 1 meter more of tide in relation to the level of reduction.
		PS		Above 110m up to 145m		Maneuvers only at flood tide and with at least 1 meter more of tide in relation to the level of reduction.
Unberthing		ST/PS		Up to 145m	10.000	In any tidal condition and with at least 1 meter more of tide in relation to the level of reduction.

The berthing of Tankers up to 110m (LOA) will be at any flood tide and only by port side.

Tankers longer than 110m (LOA) and up to 145m (LOA) will be berthed at flood tide and only by Port Side;

The unmooring will be performed in any tidal condition; and

Mooring and unmooring manoeuvers shall be carried out at least 1 meter more than the reduction level.

Secondary Pier 2 – PS2

Pier intended for mooring tug boats, speedboats and bunker barges.

No restrictions for mooring and unmooring maneuvers.

Moorings at this pier are strictly subject to prior authorization from the Terminal.

For all piers: When the manoeuver has to be carried out at flood tide, unmooring must be initiated up to one hour before high tide

Operational Drafts x Under keel Clearance

Ships while moored at TEMADRE piers must maintain the minimum under keel clearance (UKC) at 0.60 meters.
The raw UKC cannot be less than the Maneuverability Margin (MM). It is recommended to use a minimum MM of 5% of the ship's draft or 0.6m, whichever is greater (NORMAM 224).

During periods of spring tides, the Terminal's Nautical Advisory should be consulted regarding the operational safety of the ships at berth.

The maximum recommended draft (CMR) for navigation in the Madre de Deus channel must follow that described in item 6.6.3 of this document and this must be considered when berthing and unberthing the Tanker.

TUGS AND PORT SUPPORT SERVICES

The Terminal has a mooring service that includes the supply of two boats with diesel engines to assist in the mooring maneuvers of the cables in the mooring, unmooring and emergencies tasks.

Boats for personnel transport - The Terminal has a specific boat for personnel transport. Where it is necessary to use ladders alongside for personnel access, this service may be carried out by a support boat.

Pilotage Speedboat – The Pilot uses the Pilotage speedboat itself.

Boats for delivery of materials and provisions – The Terminal only allows service boats on alongside vessel for material handling (garbage, lubricants and others) provided that the flash point of the product operated is above 60 degrees.

If it is below this value only with the operation stopped/ interrupted or with direct authorization from the Terminal General Manager, after performing a risk assessment.

For safety, four (4) azimuthal tugs, of at least 40 TPB, remain on STAND BY 24 hours a day tied to the buoy near the piers.

For STS operations anchored in the BTS, the following vessels are designated for support: barge for placing safety equipment, hoses and fenders, 1 tugboat, 2 emergency support boats and 1 speedboat for transporting people.

The tugboats used in the mooring/unmooring maneuvers of the ship are described in accordance with EMPLOYMENT OF STS TUGBOATS.

The table below indicates the minimum number of tugboats that should be used in the mooring and unmooring maneuvers:

Table 8 - Required number of tugboats

Berth	Vessel Size	Mooring (M) Unmooring (U)	Minimum number of tugboats	Criteria
PS-1	Up to 4.000 TPB	M and U	1	01 TUG (1)
	Above 4.000 TPB	M and U	2	02 TUG (1)
PP-1 e PP-2	Up to 35.000 TPB	M and U	2	02 TUG (1)(2)
	From 35.000 to 60.000 TPB	M and U	3	03 TUG (1)(2)
	Above 60.000 TPB	M and U	4	04 TUG (1)(2)(3)
PP-3	Up to 3.000 TPB	M and U	1	01 TUG (1)
	From 3.000 to 15.000 TPB	M and U	2	02 TUG (1)(2)
	From 15.000 to 31.000 TPB	M and U	2	02 TUG (1)(2)(4)
	Above 31.000 TPB	M and U	3	
PP-4	Up to 35.000 TPB	M and U	3	03 TUG (1)(2)(4)
	From 35.000 TPB to 60.000 TPB	M and U	4	04 TUG (1)(2)
	Above 60.000 TPB	M and U	4	04 TUG (5)

Alternative criteria for the use of conventional tugs:

(1) At least 01 of the tugs must have 2 axles

(2) Each tug shall have more than 15 metric tons of bollard-pull

(3) In manoeuvers involving ships with more than 60,000 TPB, 03 (three) azimuth tugs shall be used

(4) PP3: At least 01 (one) of the tugs must be azimuthal

(5) For ships deadweight greater than 115,000 TPB, the following configuration of azimuth tugs shall be considered:

- 2x 45 TBP; and

- 2x 50 TBP

MOORING

The Tanker and terminal representatives shall work closely to ensure that the mooring system is fully functioning and meets design and operating requirements. Although the responsibility for the mooring of a tanker rests with the Master, the terminal should also ensure that tankers are securely and safely moored. (ISGOTT 6th Edition, Chap.22.2).

This mutual agreement on the tanker's mooring should be archived before operations begin. It should be among the first duties of the tanker and terminal representatives at the pre-transfer conference. (ISGOTT 6th Edition, Chap. 21).

The safety of the mooring will be evaluated by a qualified safety inspector. TEMADRE may veto or interrupt an operation in which the mooring of the ship is deemed unsatisfactory.

Every ship destined for TEMADRE must be able to perform the mooring described in tables 9 and 10. The tables below summarize the minimum configuration for mooring (synthetic ropes and steel wires) and the positioning of the hooks/mooring bollards. Mooring lines must deserve permanent care in order to keep the ship always moored.

All mooring lines must be kept under adequate tension during operation, with the winches under brake, and the use of automatic tension winches is not allowed.

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

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

Mooring lines must be arranged as symmetrically as possible in relation to the vessel's midship.
The breast lines must be oriented as perpendicularly as possible to the longitudinal axis of the ship and passed as far forward and aft as possible.

Spring lines must be positioned as parallel as possible to the vessel's longitudinal axis.

As established in the OCIMF Mooring Equipment Guidelines, 4th Edition, if synthetic tails are used on steel wires, the tails must be of the same type, material and length, with a minimum dry breaking load between 25% and 30% higher than the minimum breaking load of the steel cable.

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

In STS operations mooring between ships will be prepared according to the mooring arrangements of the ships involved. This plan will be sent in advance to the ships involved.

Synthetic ropes

Table 9 - Recommended mooring arrangement - Synthetic cables

PIER	TANKER	FWD (BOW)			AFT (STERN)		
		Head Line	Breast Lines	Spring Line	Stern Line	Breast Lines	Spring Line
PP-1							
	Mooring by PS	3	2	2	3	3	2
	Mooring by ST	3	2	2	3	2	2
PP-2							
	Mooring by PS	3	0	2	3	2	2
	Mooring by ST	3	2	2	3	0	2
PP-3							
	Mooring by ST	3	0	2	2	1	2
PP-4							
	Mooring by ST	3	2	2	3	2	2
	Mooring by PS	3	2	2	3	2	2

Note: The mooring described in the table above is only suggested and may be changed due to new studies promoted by TRANSPETRO or the analysis of the characteristics of the ships involved.

Steel wires

Table 10 - Recommended mooring arrangement - Steel wires

PIER	TANKER	FWD (BOW)			AFT (STERN)		
		Head Line	Breast Lines	Spring Line	Stern Line	Breast Lines	Spring Line
PP-1							
	Mooring by PS	3	2	2	3	3	2
	Mooring by ST	3	2	2	3	2	2
PP-2							
	Mooring by PS	3	0	2	3	2	2
	Mooring by ST	3	2	2	3	0	2
PP-3							
	Mooring by ST	3	0	2	2	1	2
PP-4							
	Mooring by ST	3	2	2	3	2	2
	Mooring by PS	3	2	2	3	2	2

Note: The mooring described in the table above is only suggested and may be changed due to new studies promoted by TRANSPETRO or the analysis of the characteristics of the ships involved.

Positioning of slip hook and mooring bollards

Table 11 - Positioning of slip hook and mooring bollards

PIER	DOLPHIN	HOOKS W/ BOLLARDS	NUMBER OF MOORING LINES	MAXIMUM LOADS
PP-1	3	02 x 02 Hooks 01 x 03 Hooks 01 bollard	04 06 02	80 tons each 80 tons each
	4	01 x 03 Hooks 02 x 02 Hooks 01 bollard	06 04 02	80 tons each 80 tons each
	10	01 x 04 Hooks 01 bollard	08	80 tons each
	17	01 x 03 Hooks 01 x 02 Hooks	06 04	80 tons each 110 tons each
	5	01 x 04 Hooks (PP2)	08	80 tons each
PP-2 and PP-3	5	01 x 04 Hooks (PP2) 01 x 03 Hooks (PP3)	08 06	80 tons each 60 tons each
	6	01 x 03 Hooks (PP2) 01 x 02 Hooks (PP2)	06 04	80 tons each 60 tons each
	6	02 x 02 Hooks (PP3)	08	60 tons each
	7	01 x 03 Hooks (PP2) 01 x 03 Hooks (PP2) 01 bollard	06 06	80 tons each 60 tons each
	7	02 x 02 Hooks (PP3) 01 bollard	08	60 tons each
	8	01 x 03 Hooks (PP2) 01 x 03 Hooks (PP3) 01 x 04 Hooks (PP2 / PP3)	06 06 08	60 tons each 60 tons each 80 tons each
PP-4	11	01 x 03 Hooks 01 x 01 Hook w/bollard	06 02	40 tons each 80 tons each
	12	01 x 03 Hooks	06	100 tons each
	13	01 X 02 Hooks 01 x 01 Hooks	04 02	60 tons each 80 tons each
	14	01 x 02 Hooks 01 x 01 Hook	04 02	60 tons each 80 tons each
	15	01 x 03 Hooks	06	100 tons each
	16	01 x 03 Hooks 01 x 01 Hook	06 02	40 tons each 80 tons each
PS-1	1	02 bollards	04	100 tons each
	2	02 bollards	04	100 tons each
	9	01 bollard	02	100 tons each
	Buoy 1	01 Hook	02	40 tons each
	Buoy 2	01 Hook	02	40 tons each

CHARACTERISTICS OF THE BERTH FOR LOADING, UNLOADING AND FUELLINGBERTH

The tables below indicate the products handled, the arms available, flange details, temperature limits, flow rates and maximum loading/unloading pressures.

Note:

The information presented below is for information purposes only and is based on historical maximum values. It is necessary to define the operational conditions (arms, on-board sockets, number of lines, number of pumps, pressure, flow and temperature) during the initial release of the ship.

The positioning of the loading arms is presented in Annex C (BerthLoading arm distribution in each berth).

Bunker supply operations with hoses are not presented in these tables.

Table 12 - PP-4 operations references

Pier	**PP-4**				
Number	05	04	03	02	01
TAG	BC-0242	BC-0243-C	BC-0243-B	BC-0243-A	BC-0241
Diameter	8"	16"	16"	16"	8"
Product	MF	Dark	Dark	Dark	MGO
Design Pressure (kgf/cm²)	19,0	19,0	19,0	19,0	19,0
Maximum Operating Pressure (kgf/cm²)	10,0	10,0	10,0	10,0	10,0
Minimum Temperature (°C)	50,0	20,0	20,0	20,0	20,0
Maximum Temperature (°C)	90,0	90,0	90,0	90,0	30,0
Maximum Expected Flow (m³/h)	300	2.500	2.500	2.500	250

Table 13 - PP-1 operations references

Pier	**PP-1**						
Number	-	01	02	03	04	05	06
TAG	BC-0213	BC-0212-C	BC-0212-B	BC-0212-A	BC-0211-B	BC-0211-A	BC-0211-C
Diameter	12"	15"	16"	16"	16"	15"	8"
Product	GLP	Dark	Dark	Clear	Clear	Clear	MF
Design Pressure (kgf/cm²)	19,0	19,0	19,0	19,0	19,0	19,0	19,0
Maximum Operating Pressure (kgf/cm²)	12,0	10,0	10,0	10,0	10,0	10,0	10,0
Minimum Temperature (°C)	- 45,0	29,0	29,0	29,0	29,0	29,0	29,0
Maximum Temperature (°C)	+ 38,0	80,0	80,0	80,0	80,0	80,0	80,0
Maximum Expected Flow (m³/h)	2.500	3.200	3.200	3.200	3.200	3.200	500

Table 14 - PP-2 operations references

Pier	**PP-2**					
Number	01	02	03	04	05	06
TAG	BC-0222-C	BC-0222-B	BC-0222-A	BC-0221-B	BC-0221-A	BC-0221-C
Diameter	16"	16"	16"	16"	16"	8"
Product	Clear	Clear	Clear	Dark	Dark	MF
Design Pressure (kgf/cm²)	19,0	19,0	19,0	19,0	19,0	19,0
Maximum Operating Pressure (kgf/cm²)	10,0	10,0	10,0	10,0	10,0	10,0
Minimum Temperature (°C)	29,0	29,0	29,0	29,0	29,0	29,0
Maximum Temperature (°C)	80,0	80,0	80,0	80,0	80,0	80,0
Maximum Expected Flow (m³/h)	3.200	3.200	3.200	3.200	3.200	500

Table 15 - PP-3 operations references

Pier	**PP-3**				
Number	01	03	04	05	06
TAG	BC-0232-B	BC-0232-A	BC-0231-B	BC-0231-A	BC-0231-C
Diameter	12"	12"	12"	12"	8"
Product	Dark	Clear	Clear	Clear	MF
Design Pressure (kgf/cm²)	19,0	19,0	19,0	19,0	19,0
Maximum Operating Pressure (kgf/cm²)	10,0	10,0	10,0	10,0	10,0
Minimum Temperature (°C)	29,0	29,0	29,0	29,0	29,0
Maximum Temperature (°C)	80,0	80,0	80,0	80,0	80,0
Maximum Expected Flow (m³/h)	3.200	3.200	3.200	3.200	500

Table 1 - PS-1 operations references

Pier	**PS-1**		
Number	-	02	01
TAG	BC-0208	BC-0232-A	BC-0231-B
Diameter	10"	8"	8"
Product	GLP	MGO	MF
Design Pressure (kgf/cm²)	40,0	19,0	19,0
Maximum Operating Pressure (kgf/cm²)	27,0	10,0	10,0
Minimum Temperature (°C)	-45,0	29,0	29,0
Maximum Temperature (°C)	+ 38,0	80,0	80,0
Maximum Expected Flow (m³/h)	1.200	500	500

7. MANAGEMENT AND CONTROL OF MOORING AND STAY

The mooring and unmooring maneuvers of ships in the Terminal of Madre de Deus and in the STS in the BTS must always be performed with the participation of a trained Pilot and using tugboats in quantity and with the minimum traction capacity specified in this document.

The ship's turning maneuvers, whenever necessary, must occur within the limits of the evolution basin, and turning in front of the piers is prohibited.

All maneuvers are accompanied and recorded by the Terminal supervisor through mobile closed circuit television cameras.

In the mooring/unmooring, an operational safety inspection professional (safety INSPECTOR - GIAONT) and an operator are kept at the pier, positioned to evaluate the maneuver and guide the positioning of the vessel in relation to the loading arms. A mooring team is available to place the mooring lines on hooks and bollards.

At each pier there remains an operator responsible for operational monitoring, the exchange of information with the ship, communications, preparation of documentation and monitoring of the mooring and position of the ship.

This operator has a VHF radio (channels 9 and 13) for simultaneous communication with the ship and control room.

The acceptance of the Notification of Readiness from the Tanker will comply with the system below, as defined with Acelen and in accordance with the corporate procedure:

1. If the tanker is designated to anchor on arrival, the NOR shall be accepted at the time of anchoring;
2. In the event that the tanker berths on arrival, the NOR will be accepted at the time of the last mooring line on shore.

8. MAIN RISKS TO MOORING AND STAY

The weather conditions in the access channel, evolution basin and mooring piers are usually quite favorable and safe for navigation, maneuvering and stay.

The main risks associated with the maneuvers and stay of ships in the berths of TEMADRE are:

When moored in the PP-1, motivated by strong currents during the voids, there may be opening of the stern of the moored ships. This is most critical when there is large tidal amplitude (greater than 2.6m).

When moored by PS, it will be MANDATORY to place at least 01 breast in the stern on the Dolfin 17.

When mooring in the PP-4, due to strong currents and winds, mooring may occur with a speed higher than the operational limit of the fenders, causing damage to the terminal and ship facilities.

The risk mentioned above can be repeated in PP-1, under the same climatic conditions and with similar damages.

The risks described above require greater attention from the crew and ship pilots in relation to the tasks and mooring lines.

9. PROCEDURES

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

BEFORE ARRIVAL

Repairs on board and ship's cargo tanks washing should preferably be carried out in the anchoring area. To perform these services with the ship moored, prior authorization from the terminal will be required, after issuing the request by the Manager responsible for the ship.

Vessels destined for TEMADRE facilities must indicate the estimated arrival (ETA) 72 and 48 hours in advance, directly to the respective Agent. Alterations or confirmation of the vessel’s arrival must be provided a minimum of 24 hours in advance.

In the ETA information, it must be specified whether the mentioned time is local (LT = Local time) or ULT (Universal Local Time).

In order to optimize the start of key meeting and avoid delays, the gangway should be out of the cradle, positioned on main deck level and ready to down, as soon as mooring lines all fast alongside the berth.

The safety net of the ship's gangway shall, as far as possible, be installed in advance for the purpose of avoiding delays in the commencement of the ship's clearance.

In order to optimize the initial liberation process, this Terminal implemented the exchange of some operational documents via e-mail, which is sent prior to the ship's berthing, enabling the exchange of documents between ship and terminal in advance.

ARRIVAL

When docking, after the safety inspection carried out by the Operations Safety Inspector (GIAONT), based on the ISGOTT Safety Checklist, if there are pending issues that are not resolved by the crew, the ship will not have authorization from the terminal to start the operation.

Port authorities are triggered by the ship's agents depending on the arrival and forecast for berthing. The terminal information for the ship and vice versa are described in ANNEXES “D” and “E”, respectively.

In general, the visit is carried out after the anchoring in Todos Santos Bay before the ship docks

SHIP / TERMINAL ACCESS

The TEMADRE piers do not have telescopic ladders for access to moored ships. Aluminum handrail boards are available and can be combined with the ship's gangway.

The responsibility for providing secure access between ship/terminal is shared jointly between the ship and the terminal.

There must be means of safe access for loading and unloading of personnel, and always keep their boards and stairs ready to be lowered. In the case of using a board, there must be space for free walking and it must be equipped with a safety net.

Lifebuoys with tag lines shall be available in the vicinity of the means of access. The ship's gangway or gangway shall be employed when required.

The movement of crew members through the terminal facilities is prohibited, except on the route ship/access gate/ship. In these situations, the crew must use the conduction

PRIOR TO CARGO TRANSFER

Grounding and Electrical Insulation

Loading arms, cargo manifolds and other metal structures have their masses grounded in the terminal mesh. As for the electrical insulation between ship and terminal, each arm has an individual insulation joint.

For operations on the pier with hoses, the insulation is carried out by inserting an electrically discontinuous section in the hose line, the rest of the line being formed by electrically continuous hoses. Semi discontinuous hose lines are used for STS operations.

Connections and Reducers

The resources required for connection are agreed upon on the first contact of the tanker with the terminal.

The tanker must arrange the manifold and install reducers and cargo connections in order to enable the coupling of the loading arms.

The shore personnel do the connections and disconnections of the arms, hoses and ground cables, assisting by the crewmembers, who handle the winches and cranes, when necessary.

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

A ship's representative must accompany the entire operation and must be close to the ship's cargo manifold. All connected cargo arms must be supported in support, especially, those that are connected to reductions.

Flexible hoses are used in STS operations, as described in the Joint Plan Operation previously sent to the ship by the POAC.

Safety Inspection

The start of the operation only occurs after the initial letter has been completed, by the land and on-board representatives. The Ship/Shore Safety Checklist is checked and completed by the SAFETY INSPECTOR (GIAONT) during the initial release of the ship. (CHAPTER 25 of the “ISGOTT”)

Communication

The communications are carried out with the ships through VHF radios in maritime frequency previously combined and registered. A secondary communication system must be established, which must be used in case of failure in the main system.

The communication system together with the necessary telephone number information and/or channels to be used shall be agreed and documented during the initial release meeting. Representatives of both parties must sign the form of agreement. ISGOTT 21.1.

Operational Controls

TEMADRE has two separate control rooms. The main ("Operations Room") is located in the tanking area of the Parque do Mirim (Mirim Park), immediately after the access lane to the mooring piers and is responsible for all operations carried out at the pier, except when loading/unloading LPG ships.

In the case of operations with propane ships, the operations are conducted by the "Control Room" of Parque Maria Quitéria (LPG Yard), 1500 meters from Mirim Park. In these rooms are the operators responsible for the control of all terminal operations, through the supervisory system.

Tank Inspection

Whenever possible, the inspection of a ship should be done without entering the tanks. If the cargo requires internal tank inspection, all safety precautions inherent in entering confined spaces must be taken. In this case, the ship must arrive with the tanks degassed and in a "free for man" condition. If the TEMADRE or the Inspectorate rejects the inspected tanks, the delay will be charged to the ship.

Gauging and Quantities Calculation

Ship's measurements will be carried out by the crewmembers and, where applicable, accompanied by the terminal representatives and other inspectors. The material used must be properly grounded and the measuring accessories must be explosion-proof.

Discharging of Dirty Ballast, Slops and Effluents

The Terminal has two tanks to receive slop discharges, dirty ballast and onboard effluents. Each tank has a capacity of 6,500 m3. The maximum receiving flow is 500 m3/h. The ship must schedule the discharges in advance because, to accept them, the Terminal needs to make space available in the tanks.

The Terminal reserves the right to refuse discharge of ballast and effluents that has not been previously scheduled. It is mandatory to measure the amount of waste to be discharged and its characteristics.

Under no circumstances is the discharge of dirty ballast from petrochemical vessels whose tanks have loaded toxic products allowed.

Ramonage

It is forbidden to carry out branching or cleaning of boiler piping with the ship moored. Care must be taken that sparks do not escape through the chimney.

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

Access for small boats

The prohibition on the permanence of unauthorized small vessels on the side or in the vicinity of moored ships must be strictly observed.

Only terminal service vessels or those authorized may be in the vicinity or alongside, provided that they meet all safety conditions. Infringement of this standard will have to be reported to the competent authority.

Protection against product return and overflow

The terminal does not have check valves to prevent the output of product to the ship when aligned the earth manifold. In discharges, it is up to the ship to monitor possible undesirable receipts and the level of the tanks in order to avoid overflows.

CARGO TRANSFER

Pressure monitoring

During the transfer of the cargo is recorded by the on-board and shore representatives on the ship's manifold every hour. The terminal controls the internal variables of pressure and flow rates are verified in real time through the supervisory system available in the control rooms.

Operating Flow Rate

The flows of the operation, measured on the ship and at the terminal, and the total volume handled are compared hourly and compared between the parties having, according to the system used, a limit parameter for operational control.

Notice of any changes in operating conditions must be provided and documented by the parties involved in operations. It is expressly forbidden to close valves during operation that cause back pressure in the system.

Transactions with LPG

The ship must meet all the conditions relevant to derivative ships. In addition, it will be necessary to inform in advance the flow or pressure reduction needs and carefully monitor the cargo temperature.

The Terminal has a particle filter and features for effective drainage of free water from the LPG, minimizing the possibility of problems during operations. It also has a vapor return line that can be used in gasification operations of the on-board tanks.

Slop and Ballast Discharge

Ships' slop and ballast tanks and their pipelines must be destined only for this purpose, being isolated from other ships' pipelines.

The water ballast to be discharged to the sea must be completely free of oil, any oily residue or other substance capable of causing pollution of seawater, i. e., ships must have segregated ballast system.

TRANSPETRO's schedule, which interacts with ACELEN's logistics, provides terminal tanks to receive slop from ships. When the ship needs to unload slop in Madre de Deus, it must inform, via Agent, the quantity to be unloaded and its origen.

The system used by the terminal for slop discharge is the same used for unloading other products, using lines prepared for this purpose.

Tank Cleaning

The COW operation is accepted, depending on prior authorization of the schedule for the purpose of the ship's stay in the port and the GIAONT for operational safety purposes. A specific standard form for this operation must be completed and signed for both parties before operation begins.

Repairs on board and at the pier

Repairs or maintenance work of any nature, involving or coming to involve the risk of sparks or other means of ignition, may not be carried out while the ship is moored at the terminal piers.

In extreme cases, all safety standards must be observed and met. Repairs involving pier facilities or implying any restriction of the ship during the stay must be authorized in advance and by mutual agreement with the parties involved before the begining of the service and with the appropriate risk analysis approved.

Safety Inspection

The intermediate inspections, according to Chapter 25 of the "ISGOTT", will be carried out by GIAONT during the operation of the ship every 4 hours.

During operation

Cargo Crane Movement: Its use will not be allowed while the loading arms are connected.

Propeller Movement: Moored ships will not be able to move their propeller(s) as long as they remain connected to the loading arms.

Engine ratchet may be used after proper warning to the terminal operator, but the propeller must be moved so slowly that absolute safety is obtained. Vessels shall be liable for any damage resulting from these procedures.

Note: No handling of cranes is allowed during operation with volatile loads (Flash point below 60°C).

Emergency Stop

The interruption of loading or unloading of the ship must be requested, by radio or other means of communication, whenever it occurs in any situation that may pose a danger, either to the ship or to the terminal.

Operations must also be temporarily suspended during storms, thunderstorms and/or strong winds. Terminal operation personnel are authorized to stop/suspend the operation in the event of non-compliance with any of the universally accepted and adopted safety rules and standards in the transportation of oil by sea.

The master of the ship has the right to stop the operation if he has reason to believe that the operations do not offer safety. For any emergency situation, the Madre de Deus terminal interrupts the ongoing operations so that all resources are focused on mitigating the accident.

The actions and contacts for each type of emergency are described in the management's Emergency Plan and the main telephones.

Simultaneous Operation with Segregated Cargoes

The Madre de Deus Terminal is prepared and qualified to carry out simultaneous operations with segregated cargoes. To this end, the ship and terminal must previously agree on the conditions for this type of operation.

CARGO GAUGING AND DOCUMENTATION

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

Final measurements on board: will be carried out by the ship's personnel and, when applicable, accompanied by the terminal representatives and other inspectors.

The material used must be properly grounded and the measuring accessories must be explosion-proof.

Ships final clearance: occurs after comparing the quantities handled and the complement of the operation documentation.

UNBERTHING AND DEPARTURE

During the unberthing maneuver and leaving the port, the channel limits and hazards reported in section 5 and its sub-items must be observed.

10. ORGANIZATION OF PORT AND ANCHORAGE

COMPLIANCE WITH ISPS CODE

The Madre de Deus terminal has implemented corporate Safety protection measures applicable to ships and port facilities, in accordance with the requirements of the International Maritime Organization (IMO) through the adoption of ISPs – International Ship and Port Facility.

If necessary, these Safety measures can be triggered by the ship through the Port Facility Safety Officer PFSO or through the VHF radio, channel 16/13/09

The Terminal operates normally at SAFETY LEVEL 01. For further details, the Terminal Port Safety Supervisor, who is trained in accordance with the requirements required by the IMO, may be contacted.

MARITIME AUTHORITY AGENT

The Maritime Authority Agent to which the Terminal is subordinate is the Captain of the Ports of Bahia.

It is the Maritime Authority within the limits of the port of Salvador, Aratu and Madre de Deus, it is responsible for determining the actions and notifying those responsible for any incident within the limits of the port.

This requires the visit of the tax and health authorities to be carried out before the ship docks at the TEMADRE pier. Eventually and upon early formalization, the inspection may be carried out with the ship moored.

The ships destined to TEMADRE will be visited by the Port Health, Customs and Federal Police. The ship's agent shall make arrangements in this regard.

Any and all documents related to the ship's dispatch at the last port must be submitted to the Maritime Authorities.

SUPPORT BOATS

The Terminal has 2 (two) boats powered by diesel and steel hull for the assistance of mooring, unmooring and emergencies. It is mandatory to call the boats of the Terminal for the maneuvers. The call is made by the SAFETY INSPECTOR/ GIAONT.

11. SHIP TO SHIP (STS) OPERATION ANCHORED IN THE TODOS OS SANTOS BAY (BTS)

According to the Ordinance of the Port Authority of Bahia No. 33, of April 25, 2024, the Oil Transfer between Ships (Ship to Ship – STS) Anchored in Todos os Santos Bay (BTS) is authorized.

The STS Service Provider, will be responsible, as appropriate, for the duties provided for in Law No. 12.815, of June 5, 2013 and in the Rules of the Maritime Authority for Traffic and Permanence of Vessels in Brazilian Jurisdictional Waters of the Directorate of Ports and Coasts

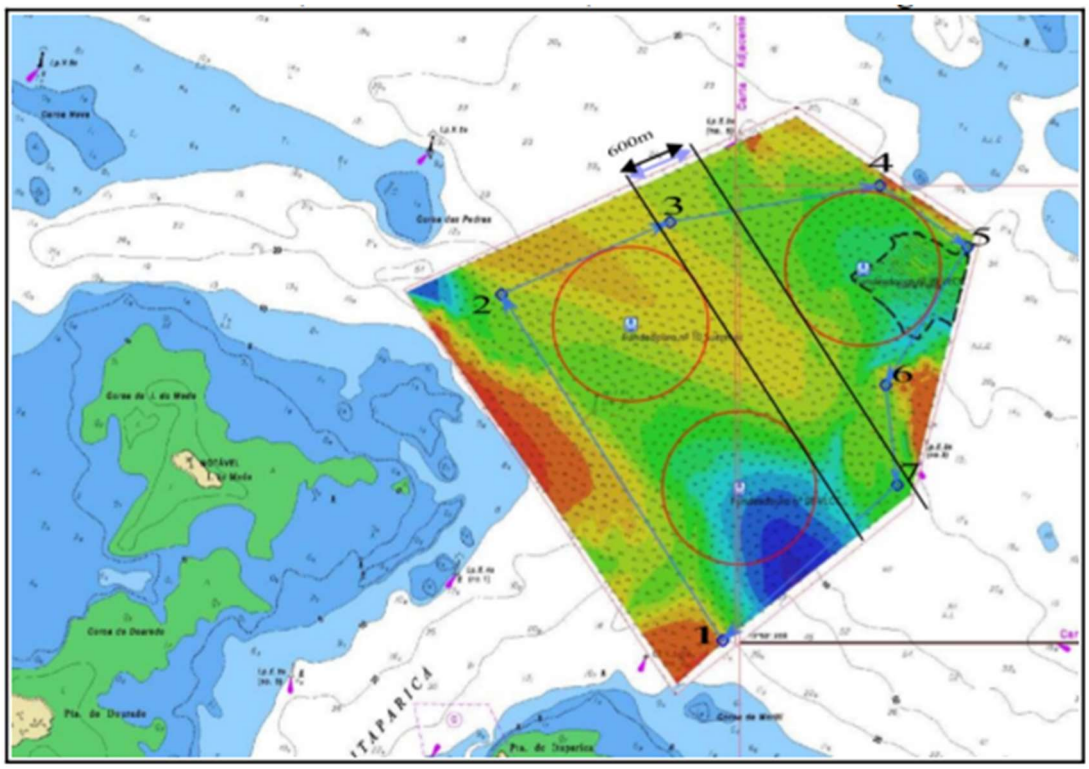
(NORMAM-204/DPC), regarding the performance of the STS operations in question.

REQUIREMENTS FOR STS OPERATION ANCHORED IN TODOS SANTOS BAY (BTS)

Location:

The area authorized by the Port Authority of Bahia to carry out sts, is located south of TRBA, in the TODOS OS SANTOS BAY , in the state of Bahia, as shown in the figure and table below:

POINTS	RANK
1	Lat- 12^{0}52.1847'S and Long- 038^{0}40.0579'W
2	Lat- 12^{0}50.6067'S and Long - 038^{0}41.0888'W
3	Lat- 12^{0}50.2769'S and Long - 038^{0}40.3218'W
4	Lat- 12^{0}50.1089'S and Long - 038^{0}39.3258'W
5	Lat - 12^{0}50.3890'S and Long - 038^{0}38.9187'W
6	Lat- 12^{0}51.0180'S and long - 038^{0}39.2979'W
7	Lat- 12^{0}51.4757'S and long - 038^{0}39.2437'W



Access Channel

I) Access to the operations area will occur through beacon defeat through virtual buoys (AIS AtoN) from a point outside the Pilotage Zone.
II) Exceptionally, for entrance and exit of VLCC, the wave height must be less than 2 meters (Hs< 2m) and the PP (Pilot Position) must be considered: 13º10.67'S; 038º34.34'W; and
III) Maximum speed of 8 Knots.

OPERATIONAL PARAMETERS OF VESSELS INVOLVED IN STS OPERATIONS:

Mother Vessel:
I) Total length: up to 336.0 meters;
II) Beam: up to 60.0 meters;
III) Draft: up to 22,3 meters*; and
IV) Deadweight (dwt): up to 320,000 ton.

Daugther Vessel:
I) Total length: up to 285.0 meters;
II) Beam: up to 48.95 meters;
III) Draft: up to 16 meters*; and
IV) Deadweight (dwt): up to 160,000 ton.

***Maximum draft for VLCC entrance and exit (considering a maximum speed of 8 knots):**
Up to 20 meters – No need use tide;
Up to 21 meters – Requires use of 1,0 meter of tide;
Up to 22 meters – Requires use of 2,0 meters of tide;
Up to 23 meters – Requires use of 2,5 meters of tide.

The maximum draft for the first entrances and exits maneuvers of the VLCC (laden condition) must be limited to 20 meters.

The gradual increase to the maximum draft of 22,3 meters will be subject to the analysis of information and measurements carried out by the STS Provider, together with Pilotage, and by this Port Authority, which will be responsible for authorizing this increase

MANEUVERING CONDITIONS

I. The maneuvers of heaving and drop anchor will occur at any time, observing, when necessary, the use of the tide and the meteorological conditions;
II. The mooring maneuvers alongside will be carried out only during the daytime, with full visibility, and daytime being considered that period between sunrise minus 1h30min and sunset minus 3h;
III. The mooring maneuvers between ships must take place during daytime;
IV. Meteoceanographic limits for mooring and unmooring: wind < 15 knots, current intensity < 1 knot, significant wave height < 0.6m, period < 6 sec;
V. The POBs for berthing alongside shall be as follows:
- Low tide < POB < Low tide +2h; or
- High tide < POB < High tide +2h;
VI. Mooring side: opposite side of the anchor in the water;
VII. Perform the final approach to berthing alongside only after the anchored ship is fully stabilized;
VIII. Provision of real-time current, wind and tide information to the Captain and Pilot;
IX. Ships must have ECDIS and speed indicators, type doppler;

X. Use of Portable Pilot Unit (PPU) for Pilotage;
XI. Provision of four primary fenders and two secondary fenders ("baby fenders") of the Yokohama type near the berthing side;
XII. During the period of the STS operation, the ships must comply with the procedures described in paragraphs a, b, c and d of article 5.1 of NORMAM-204/DPC, during the entire period of the cargo transfer operation.
XIII. Provision of a "Fire Fighting" tugboat;
XIV. Provision of vessel(s) for the collection of oil with spill response equipment and material for use in an environmental emergency, during the stay of the ship moored alongside
XV. Provision of a Response and Emergency Center (CRE) with qualified personnel, support boats(s) with oil and material spill response equipment in sufficient quantity for use in an environmental emergency situation, according to the Local Emergency Response Plan;
XVI. Compliance with rules 41 (STS Operation Plan) and 42 (Notification) of chapter 8 of the International Convention for the Prevention of Pollution from Ships (MARPOL);
XVII. Compliance with the provisions of items 5.6.2 and 5.6.3 of NORMAM-204/DPC by the STS Provider, as well as any items contained in said NORMAM and not listed in Ordinance No. 33/2024, of the CPBA.

CONSIDERATIONS REGARDING THE SIZING OF HUMAN AND MATERIAL RESOURCES FOR EMERGENCY RESPONSE ACTIONS.

According to IBAMA's Normative Instruction, the sizing of human and material resources compatible with emergency response actions are prerequisites for the environmental authorization to be issued by the competent Environmental agency (federal or state), therefore, it is up to this agency to verify the adequacy between the Risk Analysis study and the Emergency Action Plan regarding human and material resources compatible with the identified scenarios.

This document precedes the authorization of the competent Environmental Agency for approval of anchored Ship to Ship operations.

The VLCC must be anchor at Anchorage Areas Nº8 or Nº10.

ANCHORAGE AREA

ANCHORAGE AREA	CENTER POSITION
Anchorage No. 08 (Radius = 0.35MN)	Lat - 12 ^{0} 51.49200'S and long - 038 ^{0} 3997940'W
Anchorage n ^{o} 09 (Radius = 0.35MN)	Lat - 12 ^{0} 50.74282'S and long - 038 ^{0}40.48663'W
Anchorage No. 10 (Radius = 0.35MN)	Lat - 12 ^{0} 50.48868'S and long - 038 ^{0} 39.40423'W

USE OF TUGBOATS

The following minimum number of azimuthal tugs is established for the maneuvers of mooring and unmooring alongside:

Vessel and condition	Minimum number of tugboats	Minimum Bollard Pull
Suezmax Loaded	4 x Azimultal	230 TPB
Suezmax Intermediate	3 x azimutal	180 TPB
Suezmax in ballast	2 x Azimultal	130 TPB
Aframax Loaded	3 x Azimultal	170 TBP
Aframax Intermediate	3 x Azimutal	145 TBP
Aframax in ballast	2 x Azimultal	105 TBP
Panamax Loaded	3 x Azimultal	145 TBP
Panamax Intermediate	3 x Azimutal	120 TBP
Panamax in ballast	2 x Azimultal	90 TBP
Handymax Loaded	2 x Azimultal	105 TBP
Handymax Intermediate	2 x Azimutal	90 TBP
Handymax on ballast	2 x Azimultal	80 TBP

An additional tug of up to 45 TBP must be used to assist in the maintenance of the anchored ship in position, when approaching the ship that will berth alongside.

SAFETY ZONE

With the ship in the anchoring position, the Safety Zone of two hundred meters radius around the ship is established, where the entry, transit or permanence of vessels that are not service providers or support for maneuvers is prohibited, without the prior authorization of the STS service provider.

EMERGENCY ANCHORAGE AREA

It is established as being the entire STS operation area.

12. EMERGENCY PLANNING AND RESPONSE

EMERGENCY CONTACTS

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

Table 2 - Emergency Contacts

Organization	Opening Hours	Identification Acronym	Telephone (71)	Fax (71)	Mobile Phone (71)	Call VHF/UHF
Port Authority	24 hours	CPBA	3507-3777 3507-3759		99687-7934	16
Federal Police	24 hours	---	3319-6000 3338-4550 3252-0060		---	-
ZP-12 Operations Center	24 hours	---	3016-8512 /8513 / 8514	3016.8515	99198-3779	16
Mirim Control Room	24 hours	---	3877-7019 / 7222 / 7267		99918-3944	09/16/13
LPG Park Control Room	24 hours	---	3877-7036 / 7240		---	16
TEMADRE Management	7 am to 4 pm	TA MDeus	3877-7237			---
Civil Defense Madre de Deus	24 hours	---	98214-0912		---	---
CRA (Local Environmental Agency)	24 hours	CRA	0800 711400	3313-3472		----
INEMA	24 hours	INEMA	0800 711400	31184-267 3118-4500 3118-4555	---	---

ENVIRONMENTALLY SENSITIVE AREAS

The TEMADRE Emergency Plan describes the area's most sensitive to environmental impact, related by sensitivity maps and showing, according to the selected area, the points that are subject to the greatest impact when this type of event occurs in the bay of Todos os Santos.

GENERAL DESCRIPTION OF THE EMERGENCY RESPONSE ORGANIZATION

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

Table 18 - Responsibility Matrix

INCIDENTS WITHIN THE PORT/TERMINAL AREA					
Incident Type	Responsible Organization	Other Organizations Involved			
Channel Collision	Port Authority	Civil Defense	TRANSPETRO	---	---
Vessel Stranding	Port Authority	Civil Defense	TRANSPETRO	---	---
Berth Collision	Port Authority	TRANSPETRO	Civil Defense	---	---
Vessel Sinking	Port Authority	Civil Defense	Fire Department	TRANSPETRO	---
Vessel Fire	Vessel	TRANSPETRO	Fire Department	Civil Defense	Port Authority
Fire in the Berth	TRANSPETRO	Fire Department	Civil Defense	Port Authority	---
Pollution	TRANSPETRO or Ship	Port Authority	CRA	IBAMA	---

EMERGENCY PLANS

The PEL (Local Emergency Plan) is TEMADRE's plan to combat emergencies in all its facilities. It is available in all operational areas, in boards located at the entrances of the operating rooms, maintenance and administrative buildings.

The responsible for its update is the local HSE (health, safety and environment activity).

TEMADRE has an Emergency Response Center (CRE) that is equipped with modern equipment and various facilities for use in accidental pollution. Periodically intensive training is carried out, which enables terminal employees to act according to the PEL (Local Emergency Plan).

Displayed at strategic points, the Terminal's ERP allows rapid action to be taken in responding to emergencies.

In its shed are stored containment barriers, oil collectors and other equipment and materials necessary for the tasks. Work vessels, support vessels, tank ships and oil-collecting vessels are moored at the pier in a permanent state of readiness.

The Terminal has an emergency ambulance in standby in SUAPE, which can be activated in case of need.

Preventive measures on board

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

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

PUBLIC EMERGENCY RESPONSE RESOURCES

In the port of Madre de Deus, only TRANSPETRO, through TEMADRE and other operational units, activated through the local emergency plan, have resources that can be used to mitigate sea pollution events. For other emergencies, public organizations offer the resources as they are intended.

Local Emergency Services

The Fire Department, the Civil Defense, the Military Police and the hospital units of Madre de Deus are called as needed.

Mutual Aid Plans

There are the plans:

- ✓ WFP – where the distribution companies of the region and the fire department participate.
- ✓ PCD – where the companies of the duct via consortium participate (Contingency plan of the duct via polo de camaçari-relam-porto de aratu)
- ✓ PCRIII – where all Petrobras and Transpetro companies from regional 3 participate, (Bahia, Sergipe and Alagoas).
- ✓ The institutions listed below participate in the WFP (Mutual Assistance Plan) and their resources are available as previously agreed in this plan:
- ✓ Military Fire Department
- ✓ Transpetro/Temadre
- ✓ Municipality of Madre de Deus (Civil Defense)
- ✓ Environmental Resources Center - CRA
- ✓ Mataripe Refinery - REFIMAT
- ✓ Other companies signatory to the Camaçari Dutovia Contingency Plan.

OIL SPILLAGE RESPONSE

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

Terminal Response Capacity

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

Environmental Agency's Combat Capacity

TRANSPETRO has at its disposal the Emergency Response Center (CRE) available for combating and collecting medium-sized oil spills. In large-scale events, the agreements signed allow the mobilization of Petrobras' Environmental Defense Center (CDA).

Resources available from the Mutual Support Plans of other Terminals

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

Tíer 2 Combat

Combat significant pollution. In these events, regional resources from TRANSPETRO and Petrobras are requested. These resources, their readiness and form of activation are described in the PEL.

Tíer 3 Combat

Combat a great deal of pollution. In these events, national resources from TRANSPETRO and Petrobras are requested. These resources, their readiness and form of activation are described in the PEL.

MAJOR INCIDENT RESPONSE

The PEL of TEMADRE lists the actions and those responsible for each type of expected event, which may occur within its unit, pipeline range or vessels and involves third parties. For events that are not provided for in this document, TRANSPETRO and Petrobras will make available all national or international resources that are within their reach.

13. CONTACTS

TERMINAL

Table 19 - Contacts

Location	Contact	Telephone (71)	Fax (71)	VHF/UHF Channels	
				Call	Chat
PP-1 Berth	Operator	3877-7207	----	16	09
Berth PP-2/PP-3	Operator	3877-7208		16	13
Berth PP-4	Operator	3877-7013	-----	16	09
Berth PS-1	Operator	3877-7204	----	16	09

Control Room for LPG	Operator	3877-7036		16	04
Terminal supervisor	Supervisor	3877-7220		16	03
Safety (SMS)	Supervisor			16	05
Surveillance	Inspector	3877-7128		16	08

AGENCY – CONE SUL
Tel.: (71) 32415236 / 32415342 – 974001455 - 974007371 - 974002677 (on duty)

OTHER
Port Authority of Bahia
(71) 3507-3750, 3507-3755, 3507-3867
20@cpba.mar.mil.br

Federal Police – Division of Maritime, Air and Border Police
(71) 3243-3952, 3319-6085 and 3319-6078

Port Health Service – Health Surveillance
(71) 3249-0280, 3312-2886 (general) and 3254-5271 (ANVISA)

Federal Revenue Office
(71) 3204-1198 (Salvador) and 3507-4900 (Lauro de Freitas)

Salvamar Leste (Salvador)
(71) 3363-5333

Eastern Nautical Signaling Service (Aratu Naval Base)
(71) 3307-3981 and fax -3307-3970

Luis Eduardo Magalhães International Airport
(71) 3204-1010

CRA – Environmental Resource Center
(71) 3313-3472

IBAMA – Brazilian Institute of Environment and Renewable Natural Resources
(71) 372-1650

Civil Police (Madre de Deus)
(71) 98214-0912

General Hospital of the State (Salvador)
(71) 3117-5999

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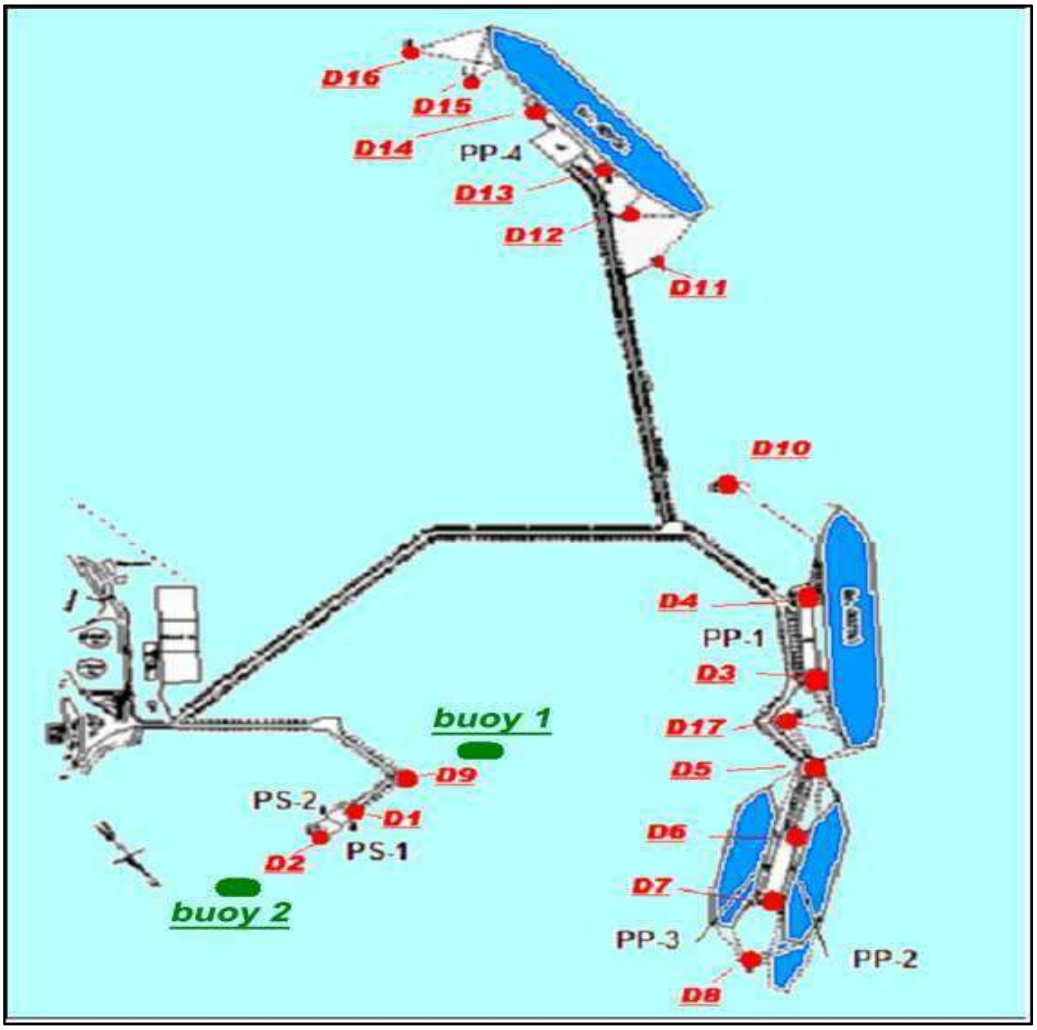
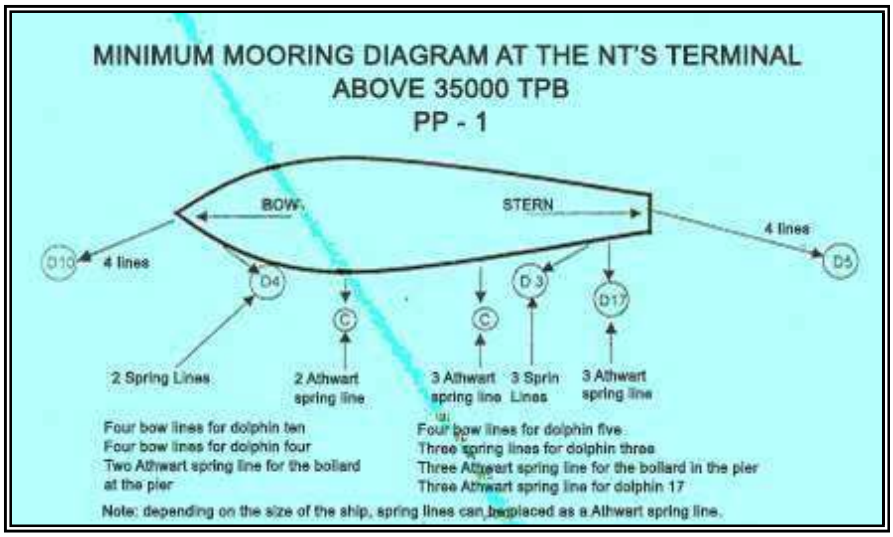
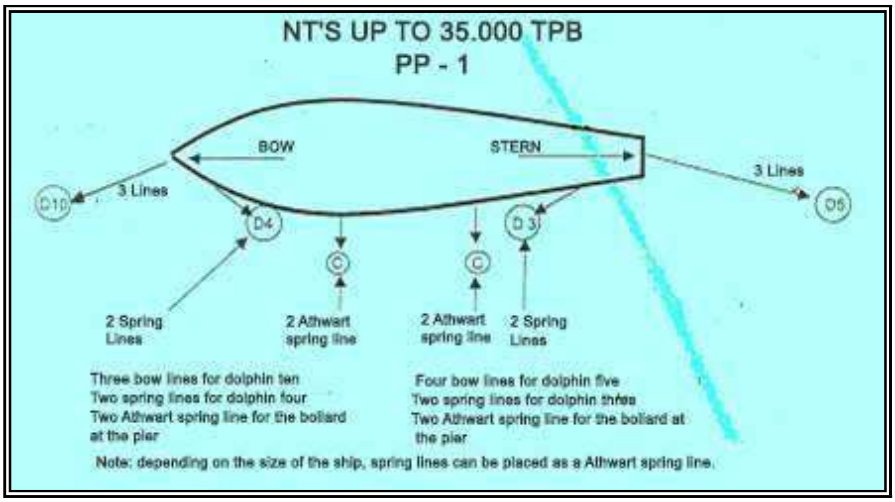
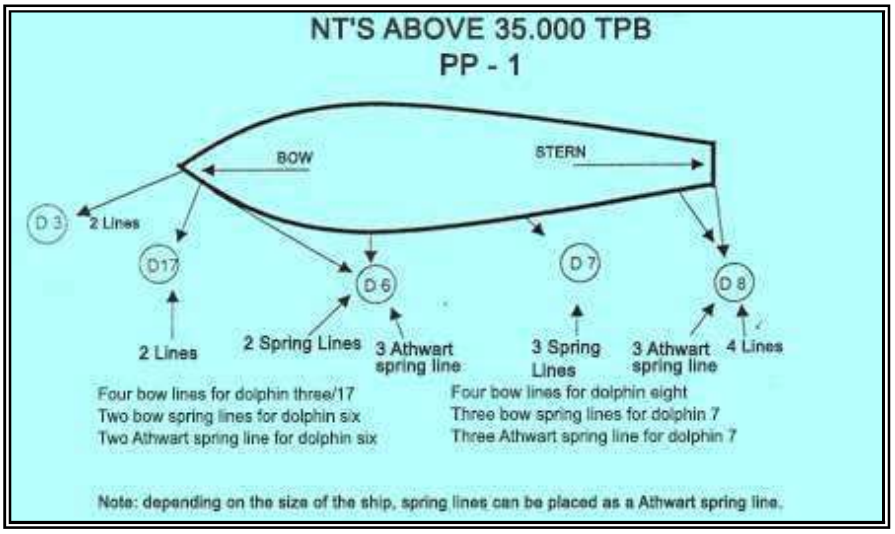
ANNEX A - Mooring dolphin locations

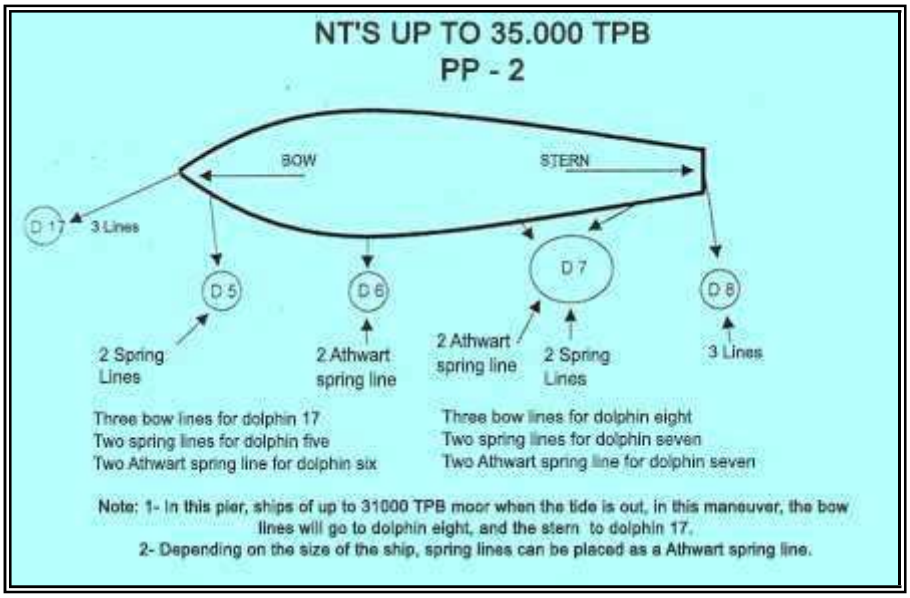


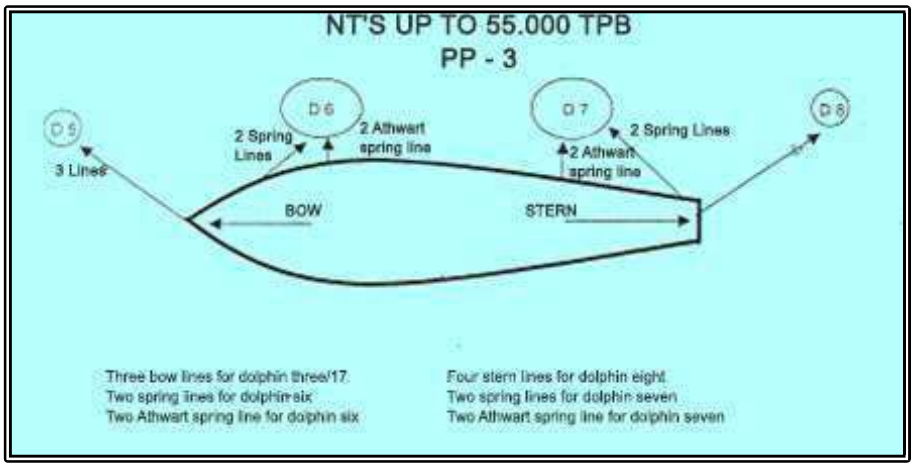
ANNEX B - Mooring Point Diagram

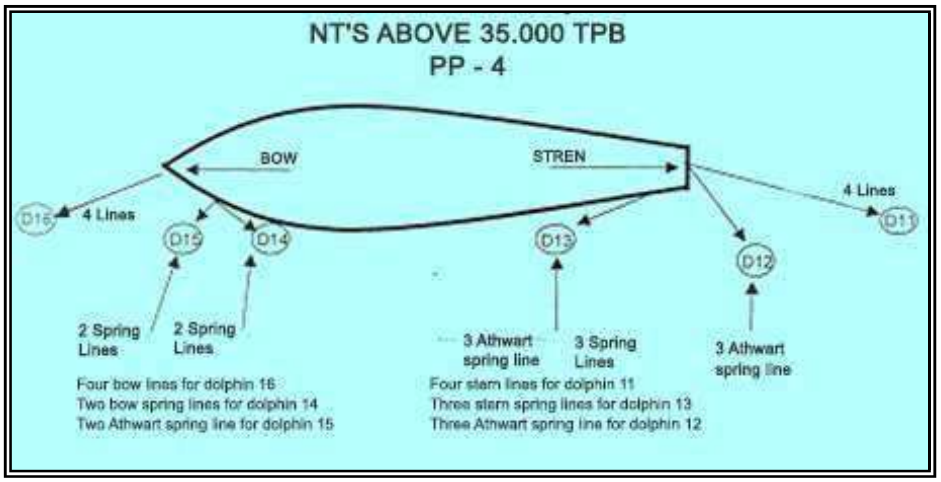


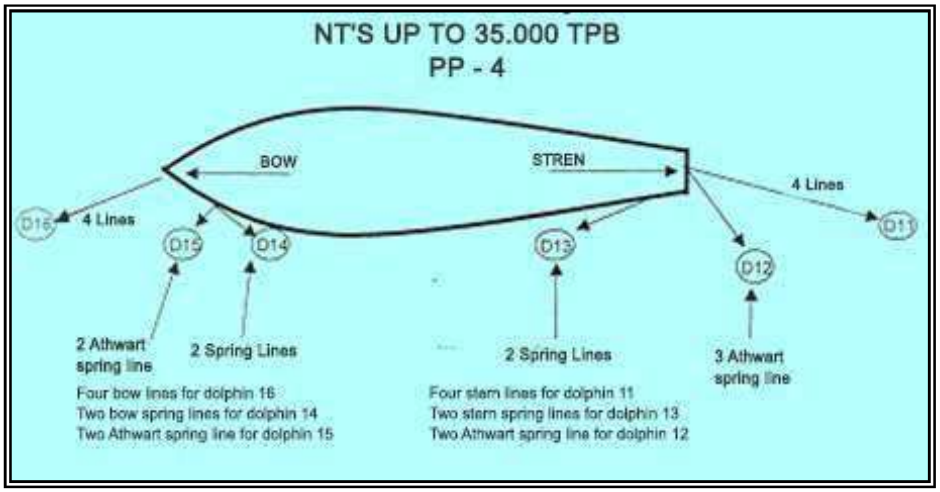

NT'S UP TO 35.000 TPB
PP - 1
BOW
STERN
3 Lines
3 Lines
D10
D4
D3
D5
2 Spring Lines
2 Athwart spring line
2 Athwart spring line
2 Spring Lines
Three bow lines for dolphin ten
Two spring lines for dolphin four
Two Athwart spring line for the bollard at the pier
Four bow lines for dolphin five
Two spring lines for dolphin three
Two Athwart spring line for the bollard at the pier
Note: depending on the size of the ship, spring lines can be placed as a Athwart spring line.

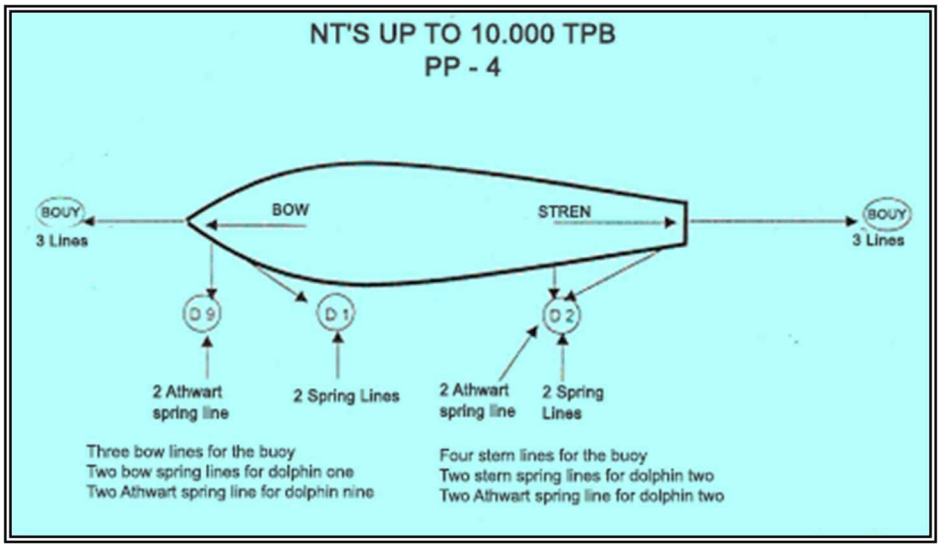

NT'S ABOVE 35.000 TPB
PP - 1
BOW
STERN
D 3
2 Lines
D17
D 6
D 7
D 8
2 Lines
2 Spring Lines
3 Athwart spring line
3 Spring Lines
3 Athwart spring line
4 Lines
Four bow lines for dolphin three/17
Two bow spring lines for dolphin six
Two Athwart spring line for dolphin six
Four bow lines for dolphin eight
Three bow spring lines for dolphin 7
Three Athwart spring line for dolphin 7
Note: depending on the size of the ship, spring lines can be placed as a Athwart spring line.


NT'S UP TO 35.000 TPB
PP - 2
BOW
STERN
D 17
3 Lines
D 5
D 6
D 7
D 8
2 Spring Lines
2 Athwart spring line
2 Athwart spring line
2 Spring Lines
3 Lines
Three bow lines for dolphin 17
Two spring lines for dolphin five
Two Athwart spring line for dolphin six
Three bow lines for dolphin eight
Two spring lines for dolphin seven
Two Athwart spring line for dolphin seven
Note: 1- In this pier, ships of up to 31000 TPB moor when the tide is out, in this maneuver, the bow lines will go to dolphin eight, and the stern to dolphin 17.
2- Depending on the size of the ship, spring lines can be placed as a Athwart spring line.

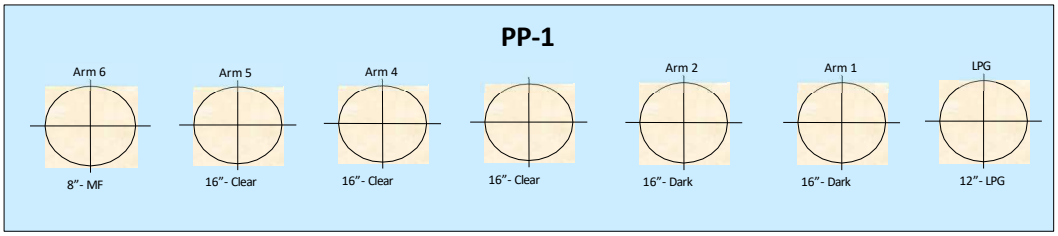

NT'S UP TO 55.000 TPB
PP - 3
D 5
3 Lines
D 6
2 Spring Lines
2 Athwart spring line
D 7
2 Athwart spring line
2 Spring Lines
D 8
BOW
STERN
Three bow lines for dolphin three/17
Two spring lines for dolphin six
Two Athwart spring line for dolphin six
Four stern lines for dolphin eight
Two spring lines for dolphin seven
Two Athwart spring line for dolphin seven

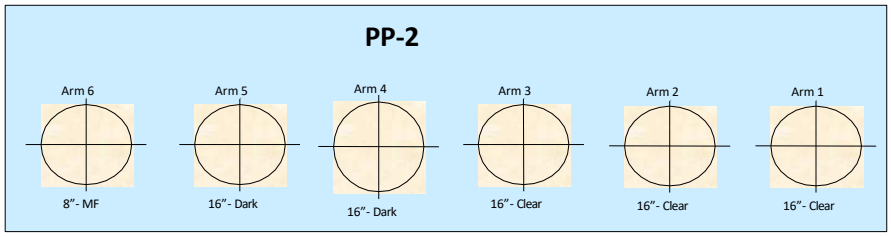

NT'S ABOVE 35.000 TPB
PP - 4
BOW
STREN
4 Lines
4 Lines
D16
D15
D14
D13
D12
D11
2 Spring Lines
2 Spring Lines
3 Athwart spring line
3 Spring Lines
3 Athwart spring line
Four bow lines for dolphin 16
Two bow spring lines for dolphin 14
Two Athwart spring line for dolphin 15
Four stern lines for dolphin 11
Three stern spring lines for dolphin 13
Three Athwart spring line for dolphin 12

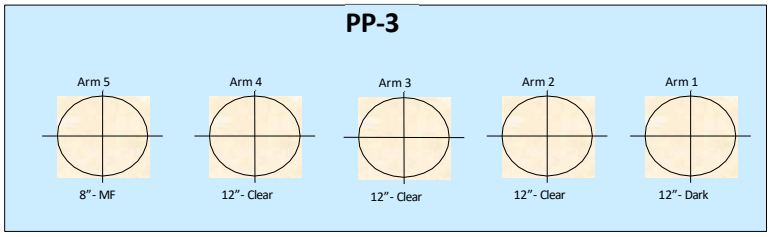

NT'S UP TO 35.000 TPB
PP - 4
BOW
STREN
4 Lines
4 Lines
D16
D15
D14
D13
D12
D11
2 Athwart spring line
2 Spring Lines
2 Spring Lines
3 Athwart spring line
Four bow lines for dolphin 16
Two bow spring lines for dolphin 14
Two Athwart spring line for dolphin 15
Four stern lines for dolphin 11
Two stern spring lines for dolphin 13
Two Athwart spring line for dolphin 12

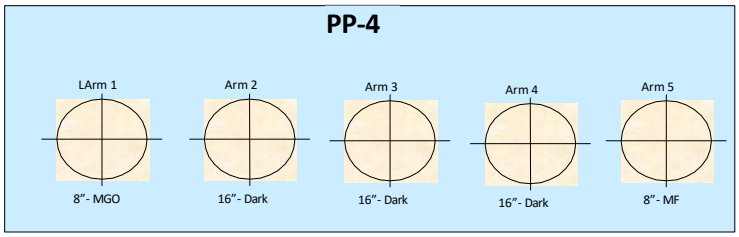


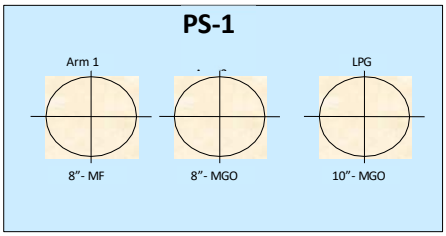
ANNEX C - BerthLoading arm distribution in each berth (Pier seen from board)



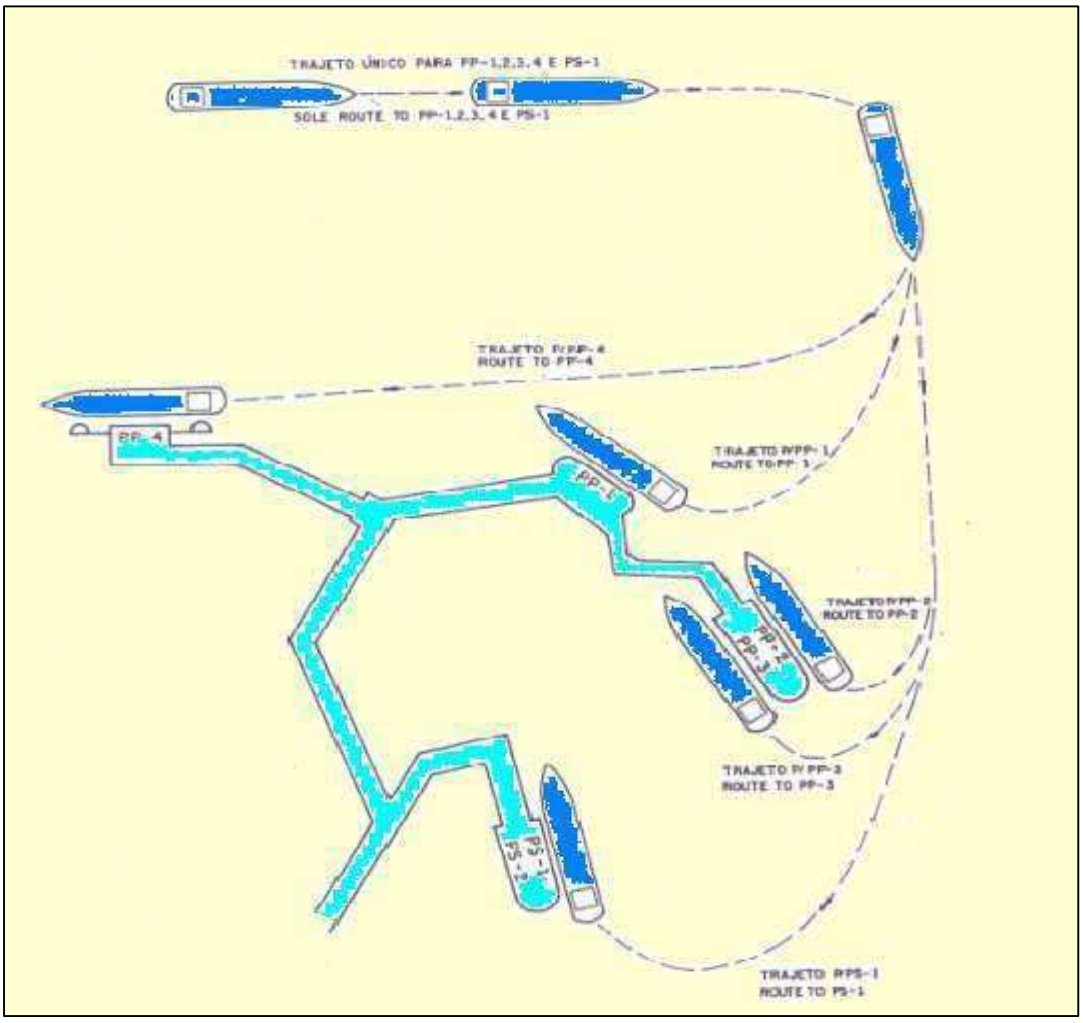

PP-2
Arm 6
8"- MF
Arm 5
16"- Dark
Arm 4
16"- Dark
Arm 3
16"- Clear
Arm 2
16"- Clear
Arm 1
16"- Clear

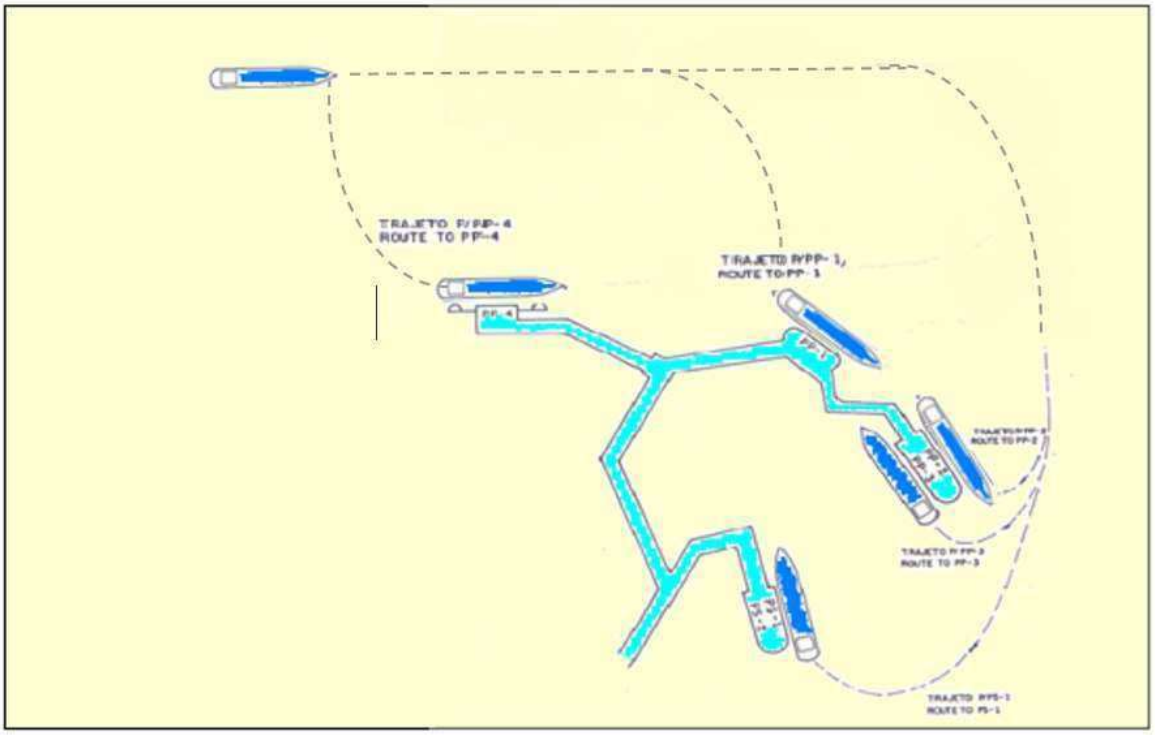

PP-3
Arm 5
8"- MF
Arm 4
12"- Clear
Arm 3
12"- Clear
Arm 2
12"- Clear
Arm 1
12"- Dark


PP-4
LArm 1
8"- MGO
Arm 2
16"- Dark
Arm 3
16"- Dark
Arm 4
16"- Dark
Arm 5
8"- MF

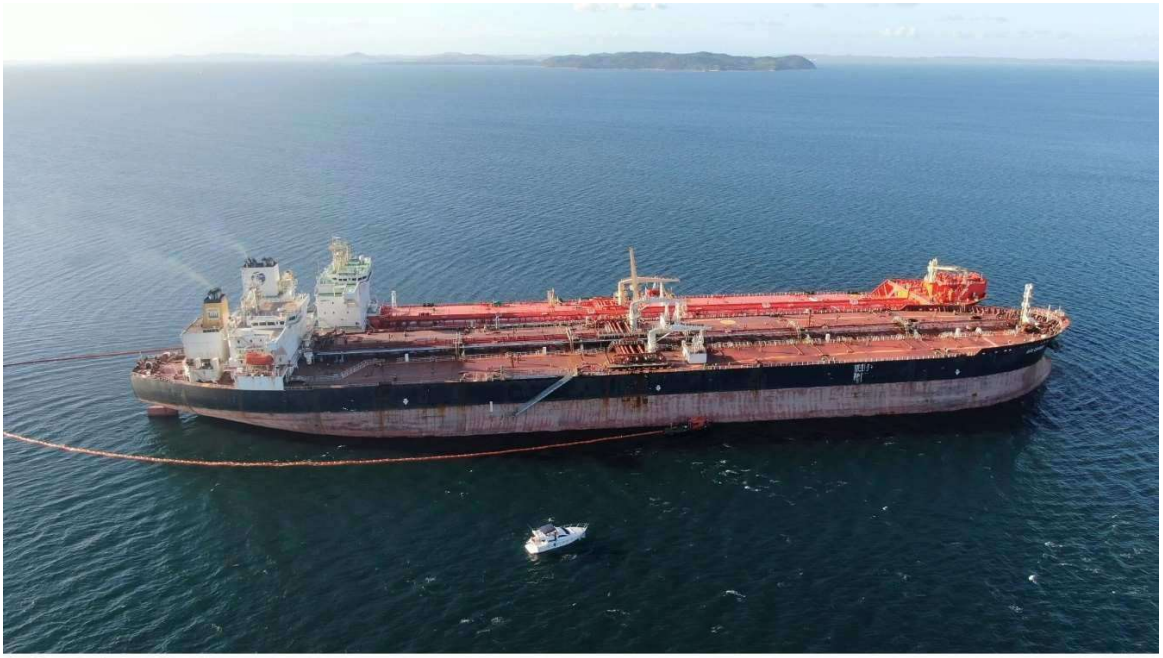

PS-1
Arm 1
8"- MF
8"- MGO
LPG
10"- MGO

ANNEX D - Basic mooring maneuvering guidance at TEMADRE




ROUTE TO PP-4
ROUTE TO PP-1
ROUTE TO PP-3

ANNEX E – Ship to Ship anchored at BTS



ANNEX F - Essential information from Vessel to Terminal

PORT AND TERMINAL OF:	
Request for Vessel Information	
Name of Vessel: Flag: Commander's Name: Owners:	Estimated Arrival (ETA): Last Port: Next Port: Agents:
Does the ship have an inert gas system? Oxygen Content:	
Overall Length (LOA): Length Between Perpendiculars: Mouth:	Arrival Draft: Maximum Draft during Transfer: Outbound Draft:
Number of engines: Number of propellers:	Transverse Propulsion: Bow (No. & power) Stern (No. & power)
Tugs – minimum number required: (No. of static & traction (bollard pull)	
Number Manifold Flanges & Size: Load: Ballast: Bunker:	Distances: Bow to Manifold Side to Manifold Manifold Height at Sea Level
LOAD SCHEDULE (fill in what applies)	
Name: Type and Quantity: m^3 Type and Quantity: m^3 Type and Quantity: m^3	
Discharge of the ballast to the sea: Quantity: m^3 Estimated time	
Slop / ballast discharge to shore: Quantity: m^3 Estimated time:	
DISCHARGE SCHEDULE (fill in what applies)	
Type and Quantity: m^3	Type and Quantity: m^3 Type and Quantity: m^3
Ballast:	Volume m^3 : Time:
Supplies requested (bunkers)	
Quantity type	Quantity type
Additional information (if any):	

PORT AND TERMINAL OF:	
Request for Vessel Information	
Name of Vessel: Flag: Commander's Name: Owners:	Estimated Arrival (ETA): Last Port: Next Port: Agents:
Does the ship have an inert gas system? Oxygen Content:	
Overall Length (LOA): Length Between Perpendiculars: Mouth:	Arrival Draft: Maximum Draft during Transfer: Outbound Draft:
Number of engines: Number of propellers:	Transverse Propulsion: Bow (No. & power) Stern (No. & power)
Tugs – minimum number required: (No. of static & traction (bollard pull)	
Number Manifold Flanges & Size: Load: Ballast: Bunker:	Distances: Bow to Manifold Side to Manifold Manifold Height at Sea Level
LOAD SCHEDULE (fill in what applies)	
Name: Type and Quantity: m^3 Type and Quantity: m^3 Type and Quantity: m^3	
Discharge of the ballast to the sea: Quantity: m^3 Estimated time	
Slop / ballast discharge to shore: Quantity: m^3 Estimated time:	
DISCHARGE SCHEDULE (fill in what applies)	
Type and Quantity: m^3	Type and Quantity: m^3 / Type and Quantity: m^3
Ballast:	Volume m^3 : / Time:
Supplies requested (bunkers)	

Quantity type	Quantity type
Additional information (if any):	

ANNEX G - Information to be exchanged before cargo transfer

Information between ship and terminal			
Name of ship: Voyage Number:		Mooring berth: Mooring date:	
Contractual data			
No. of onboard pumps:			
Volumetric capacity 98%:			**M^3**
Guaranteed discharge pressure: (When unloading operation)			**Kgf/cm^2**
Simultaneous ballast/de-ballast capacity with loading/unloading			
Voyage information			
Type of charter (VCP,TCP,COA,etc.)			
Type of voyage (Cabotage/Long Haul)			
Ports or location of origin and destination			
Ship Requested Refueling?			
Means of communication between ship and terminal			
Cargo information			
Product:	Quantity:	Temperature:	API
Slop			
Quantity:	Temperature:	API:	
Fluidity:	Origin: Contaminants:		
Ballast			

Dirty Ballast Quantity: Temperature:	**Segregated Ballast** Quantity:
Operational information	
For discharges: Will the ship do a special operation? (COW, Inertization, etc.) Expected time required for special operation Time required to stop pumps	
For loading: Amount of advance notice provided for TOP Flow rate during TOP period Amount of ballast to be discharged Maximum allowable flow rate during de-ballasting	
Are restrictions in place with regards to electrostatic properties?	
Are restrictions in place with regards to the use of self-closing valves?	
Vessel / Terminal Conditions for Loading/Unloading Operation by Product	
Vessel Pressure: Flow rate: Max Temperature: Min. Temperature:	**Terminal**: Pressure: Flow rate: Max Temperature: Min. Temperature:

Sequence of operations by product
Quantity to be loaded/unloaded Source / Destination Tanks On-board / onshore lines Loading arms/ hoses used Expected start and end of operations
Additional information on operation and safety