SHELL MARINE TERMINAL - FREDERICIA

PORT INFORMATION
AND
SAFETY REGULATIONS

ADP Fredericia Havn A/S

July 2017 – Version 10.4

A/S Dansk Shell
Shell Raffinaderiet
Fredericia, Denmark

IMPORTANT

- **Smoking is <u>strictly prohibited</u> outside designated smoking areas!**
- **Cargo operations require at least one qualified person to be stationed on deck during the duration of cargo operation!**
- **In case of an oil spill or other emergency, cargo operations must be stopped immediately and the terminal control room must also be informed!**
- **In case of any situation or incident that may possibly have an impact on health and/or environmental conditions, the terminal control should be informed immediately on the emergency telephone number**:

+45 79 20 38 10 / +45 79 20 38 11

Or by the VHF ch.14!

PORT INFORMATION
Fredericia, Shell Marine Terminal

This booklet contains general information and safety regulations for vessels using the terminal facilities at the Shell Marine Terminal, Fredericia.

The responsibility for the safe conduct of operations on board your ship while at the terminal rests with you as Master. Nevertheless, since our personnel, property and other shipping may also suffer serious damage in the event of an accident involving your ship, we wish, before the start of operations, to seek your full co-operation and understanding of the safety requirements set out in the Ship/Shore Checklist and in these regulations.

Failure to comply with these regulations will involve cessation of cargo operations and/or removal from berth, pending complete investigation and receipt of written assurance from the Master that effective control has been established. A vessel will be held responsible for any cost and delays arising from non-compliance with the relevant safety procedures.
It is the Master's responsibility to ensure that all officers and crew are informed of and understand the contents of these safety regulations. The content of this booklet is in addition to and does not supersede or replace any information contained in the Danish Harbours "Standard Regulations" and the latest edition of International Safety Guide for Oil Tankers and Terminals (ISGOTT V)

The information contained herein is believed to be correct at the time of issue; however no responsibility can be accepted by A/S Dansk Shell, its principals or agents for the accuracy of anything contained herein, or contained within any supplemental publication.

A/S DANSK SHELL
SHELL-RAFFINADERIET
Fredericia, Denmark

CONTENTS

1 IMPORTANT TELEPHONE NUMBERS

1.1 FIRE BRIGADE / AMBULANCE

Arranging of fire brigade and ambulance should preferably be done via the terminal control room, but may be contacted on telephone on: **112**

1.2 SHELL MARINE TERMINAL - CONTROL ROOM

+45 7920 3810 / **7920 3811**, or if using supplied telephone only dial local exchange number 3810 / 3811.
VHF channel 14 Call "*Shell Terminal"*

1.3 PORT AUTHORITIES – Associated Danish Ports (ADP)

24/7 duty telephone no: +45 7921 5020 or mobile telephone no. +45 2969 2020

1.4 PILOTS

	DANISH PILOT SERVICE	DAN PILOT
VHF Call	Ch 28 (16)	Ch 87 (16)
VHF working channels	28	12
24 hrs. duty call	+45 75 91 44 96	+45 63 25 66 66
E-mail	info@danishpilotservice.dk	danpilot@danpilot.dk

1.5 TUG OPERATOR

Svitzer 24 hrs on +45 3919 3920 / +46 3110 9710

1.6 BOATMEN / MOORING COMPANIES

	FREMOCO	DanMooring
24 hrs. duty call	+45 75 91 44 96	+45 29 70 30 64
E-mail	info@fremoco.dk	DanMooringFredericia@gmail.com

1.7

1.8 SHIP'S AGENTS

Fredericia Shipping A/S +45 7620 2020
Shipping.dk A/S. +45 7620 6000

1.9 SEAMAN'S MISSION

+45 7592 0199

1.10 TAXI

Egeskov Taxi +45 7595 7007
Fredericia Taxa +45 7550 3411

Arranged taxis will not be granted access to the terminal; personnel for shore leave have to meet at the gate.

Only pre-announced taxis in connection with crew-change will be granted access.

2 TERMINAL INFORMATION

The Shell Terminal is located at Skanseodden in Fredericia Harbour at the entrance to Little Belt. The harbour has a relatively large water depth and the current conditions in Little Belt prevent the build-up of sand and ice conditions.

The distance from the pilot boarding area “Fyns Hoved” to the terminal is 35 NM and the maximum allowed draft in the channel is 14.0 m.

The Shell terminal is comprised of two berths, no.41 and 42. The depths at the berths at mean water level are:

- Berth No. 41 - 10.5 m and max draft 10.0 m, at mean sea level.
- Berth No. 42 - 15.0 m and max draft 14.0 m, at mean sea level.
- Channel: A dredged channel with 15.7 m. water depth and max draft 14.00 m. at mean sea level.

The average tidal range is 0.4 m. The water level varies between + 1.4 m and -1.6 m depending on the wind direction and force. High water levels can be expected with northerly/easterly gales and low levels with southerly/westerly gales. The prevailing winds are westerly.

The density of the seawater varies with the seasons, but the average is 1.015

Current conditions vary according to the direction of the wind, but normally an east going current of 0.5 - 2.0 knots is running along the berths. Under special weather conditions the current may increase up to 6 knots.
Actual current can be found at http://flow.adp-as.dk

2.1 PILOTS

Pilotage for berthing and unberthing is compulsory for all vessels calling the Shell Marine Terminal at Fredericia. Vessels en-route to and from the Shell Marine Terminal must also comply with all regulations regarding use of sea pilot within Danish territorial waters. A copy of these regulations can be obtained from the pilots on request.

Frederica pilot area extends to “Fyns Hoved” (T-Route buoy no.23). The distance to the Shell terminal is 35 NM. Smaller vessels with pilot exemptions certification or larger vessels with a Skagen/Grenå sea pilot on board will be required to have a certified berthing pilot on board minimum 3 nm North/East of Frederica harbour entrance (N 55°35 – E 009°51,5). The sea pilot may also be certified as berthing pilot.

2.2 ANCHORAGE

The Associated Danish Port (Port Authority) and the Shell Terminal request vessels only to use the designated anchorage areas FA1 and FA2 - North and Northeast of the Port. The area just south of the Strib Lighthouse is only to be used in special occasions and only with the pre-approval of the ADP.

2.3 PRE-ARRIVAL INFORMATION - TANKER TO TERMINAL

Through the agent the following information should be submitted to the terminal at least 12/24 hours prior to arrival or upon sailing from last port:

- Name of vessel / IMO No. / Call sign.
- Overall length and beam of vessel and draught on arrival.
- Estimated time of arrival at harbour pilot boarding area
- Vessel's displacement on arrival and departure.
- Vessel ready to load/discharge upon arrival.
- Maximum draught expected during and upon completion of cargo handling.
- If fitted with an inert gas system, confirmation that the ship's tanks are in an inerted condition and that the system is fully operational.
- 24 hours prior to arrival, vessels with current or previous cargo of crude oil, condensate, fuel or naphta shall be measured and report on below test for minimum 2 compartments (vapour space):

  Oxygen: % (Max 8 %)

  H_2S: ppm (Max 50 ppm)

  Mercaptan ppm (Max 0.5 ppm)
- COW request/requirement/regulations in connection with crude oil discharging
- Advise on / report any defects that could adversely affect safe operations or delay commencement of cargo handling.
- Ship's manifold details, including type, size, number. Also products to be handled at each manifold, numbered from forward.
- Advance information on proposed cargo handling operations, including grades, sequence, quantities and any rate restrictions.
- Information, as required, on quantity and nature of slops and of any contamination by chemical additives. Such information must include identification of any toxic components, such as H_2S.
- Min. 24 hrs prior to arrival or on departure from last port, forward Waste Declaration according to EU directive 2000/59/EF

2.4 LIMITING CONDITIONS FOR OPERATION

2.4.1 WIND RESTRICTIONS

No berthing operations: Normally there will be no berthing operations in wind conditions above 22 m/s or if more than 26 m/s are forecasted during vessels port stay.

Cargo operations stop at: Operations shall be stopped and hoses/arms drained empty at 22 m/s for all vessels, additional moorings to be put out as necessary.

Hoses disconnected at: Any operation of the loading arms at Berth no.41 should not take place above 22 m/s, except in emergency situations. When weather conditions are on the borderline hoses/arms can be kept connected but should be drained empty.

If weather forecast is bad and winds above 30 m/s is expected hoses/arms should be disconnected when stopping operations at 22 m/s or preferably before if situation permits.

Vessel to be made ready to clear Jetty at: Above 30 m/s there is a risk that the vessel's moorings will not hold the vessel in position. The vessel should then be made ready for sailing and await the pilot's guidance / instructions. Tugs should be called for stand-by if necessary as evaluated by the vessel's Master and pilot.

In SOUTHERLY winds and vessel above 70,000 tdw in ballast condition, the harbour authorities will be informed and they may advise that tugs should be called in to reduce the force on Jetty dolphins.

Jetty 41: Large vessels, stern lines on single mooring hook:
If the wind is expected to be North by Eats, above 35-40 kts (force 8/18 m/s) berthing will be prohibited or vessel asked to leave, due to strain on mooring hook exceeding limits.

2.4.2 CURRENT RESTRICTIONS

In connection with extreme weather conditions in the Danish and Baltic Region, the current can reach above 5 knots.

If the actual current is 4 knots or above, berthing at the terminal is not allowed.

At jetty No. 42, no berthing is allowed if the current is forecasted or expected to reach a speed of 5 knots or more during the vessel's planned port stay.

If the current reaches 5 knots, the cargo operation must be suspended and the loading arm or hose must be disconnected. If the vessel is category 1, 2 or 3 (see item 3.7.2) the master must call for a pilot and the necessary number of standby tug(s).

The minimum towage requirements are listed under paragraphs 3.4, 3.5 and 3.6.

2.4.3 VISIBILITY RESTRICTIONS

Berthing/sailing operations will be suspended, if the visibility is less than indicated in the following table:

Length	Arrival	Departure	Corresponding to
LOA ≤ 125 m	2 x ship's length	2 x ship's length	180 m to 250 m
125 m < LOA ≤ 175 m	3 x ship's length	3 x ship's length	375 m to 525 m
175 m < LOA	0.5 NM	0.8 NM	Approx. 900 m / 1400 m

2.4.4 SWELL RESTRICTIONS

Frederica port is located in the Little Belt and is generally well protected, but in north-easterly gale conditions "coasters" may get affected by swell. If the swell conditions create vessel movements, which affect the safe mooring or exceeds the safe moving criteria of the loading arms, loading and discharge operations will be suspended and the loading arms disconnected.

2.4.5 ELECTRICAL STORMS

Loading/discharging operations will be suspended on the approach of electrical storms, regardless of whether an IG and/or vapour control system is in use. All tank openings, tank-venting systems (including IG mast riser isolating valve) and manifold valves must be kept closed.

2.5 LPG OPERATIONAL RESTRICTIONS

Manoeuvring of loading arms will not take place if the wind speed is expected to reach or exceed 22 m/sec during connection and disconnection.

Loading or discharging of LPG must be stopped during vessel arrival / departure at other berth.

2.6 REDUCERS

On arrival, vessel's manifolds should be blinded off and fitted with correct sized reducers as detailed in the terminal information section of this booklet.

2.7 H_2S AND MERCAPTAN MEASUREMENT

Vessels with previous cargo of crude oil, condensate or naphtha must measure the cargo tank atmosphere for the presence of H_2S and Mercaptans 24 hrs before arrival in the Port.

MAX ALLOWABLE CONCENTRATION OF H_2S WITHIN THE ENCLOSED CARGO SPACE IS 50 PPM AND MERCAPTAN 0.5 PPM.

The content of H_2S and Mercaptan shall be measured in minimum two tanks and the results stated in the pre-arrival telex/mail.

On board the vessel, the Master is responsible for all precautions to be taken to ensure that the crew, terminal staff/surveyors etc. are not exposed to H_2S levels exceeding concentrations above 5 ppm.

If values exceed the permitted concentrations, vessels must ventilate their tanks prior to arrival to obtain the permissible level.

On arrival, cargo tanks must be depressurised to minimum positive pressure to allow the shore representative to perform a control measurement. Failure to comply with these regulations will result in possible shifting to the anchorage for ventilation of cargo tanks. Any costs arising from such shifting and subsequent delays will be for the ship's account.

2.8 BERTH APPROACH/MOORING LOAD MONITORING

On berth no. 42 the approach of larger vessels will be monitored using a laser docking system. A large display is situated to the east of the jetty, enabling the pilots and Masters to monitor the approach. During the final approach, the speed towards the berth should be minimised in order to reduce the impact on the fenders.

MAX ALLOWED TRANSVERSE SPEED AT FENDER TOUCH IS 12 CM/SEC

If the vessel exceeds this limit, a Letter of Protest with the arrival report attached will be presented to the Master of the vessel. An Independent fender survey will be carried out immediately after departure, and the vessel will be charged for the survey expenses. If the survey reveals any damages, a claim will be forwarded to the owners of the vessel.

On berth no. 42 all mooring hook stations are fitted with a Mooring Load Monitoring system (MLMS). The MLMS system enables the terminal to monitor the load on each mooring line during the entire port stay.

Ensure that the vessel's mooring lines are tended and kept sufficiently taut during the vessel's stay alongside to prevent undue movements of the vessel.

If the vessel s to comply with this, the cargo operation will be stopped until the issue has been corrected as per terminal requirement. Any time and cost incurred in this connection will be for the account of the vessel/owner.

2.9 PORT STATE INSPECTIONS

Denmark is a signatory to the Memorandum for Port State Control and, in addition to terminal inspections; masters can expect governmental inspections to be undertaken aimed at confirming that the ship meets all relevant international standards.

3 SAFETY & ENVIRONMENT

Responsibility for the safe conduct of operations on board a ship while at our terminal rests with the master. Nevertheless, since our personnel, property and other shipping may also suffer serious damage in the event of incident aboard your ship we wish, before operations start, to seek your full co-operation and understanding on the safety requirements set out in the Ship - Shore Safety Checklist.
These safety requirements are based on safe practices widely accepted by the Oil and Tanker industries. We therefore expect the master and all under his command to adhere strictly to them throughout their stay alongside this terminal. We, for our part, will ensure that our personnel do likewise and co-operate fully with the ship's crew in the mutual interest of safe and efficient operation.

3.1 PRE-TRANSFER CONFERENCE

Prior to commencement of any cargo operation, a pre-transfer conference will be held between the Loading Master and the ship's cargo officer.
An International Ship/Shore Safety Check list will be handed over to the Master by the Shell representative.

All items on this list will be jointly checked by the Loading Master or his representative and a ship's officer.

All safety items mentioned in the Ship Shore Safety Checklist for seagoing tankers must be met.

Repetitive checks will be undertaken at intervals agreed during the pre-transfer conference.
Material safety data sheets (MSDS) are available from the terminal for all cargoes to be loaded, and will be delivered to the vessel in connection with the Pre-Transfer Conference.

The vessel's agent, will, on behalf of Shell, handle all commercial documentation between the vessel and Shell.

3.2 TERMINAL MANNING / CCTV SYSTEM

The terminal is manned with at least 2 terminal operators on a 24/7 basis all year around. One of the operators also has the role as Loading Master.

Furthermore, both jetties at the terminal are equipped with a number of cameras, enabling the terminal operators to remotely monitor jetty areas, marine loading arms / hoses etc.

The terminal Control Room is situated in front of jetty No. 42.

3.3 SAFETY ZONE - 25 METER

A 25-meter safety zone is in effect around all vessels during cargo operations at the terminal. Within this zone, all equipment must be intrinsically safe and the use of naked light, mobile phones, pagers etc. is prohibited.

All vessels or small crafts must obtain approval/clearance from both the terminal and the vessel's master prior to entering this safety zone.

3.4 CONSIDERATION TO OUR NEIGHBOURS

As the residential area is very close to the terminal, every effort to reduce the environmental impact to our neighbours is required. During your vessel's stay in Fredericia, we strongly urge you to consider minimising the use of ventilators/fans without jeopardising the safety on board. Noise and soot from the vessel's funnel should be minimised as much as practically possible.

3.5 SHIP / SHORE SAFE ACCESS

The terminal will provide a shore gangway providing there is a safe and sufficiently large deck area available on the vessel. If for any reason the provision of a shore gangway is not possible, the vessel must provide safe access to the jetty, equipped with a safety net and life buoy.

3.6 EMERGENCY EVACUATION / ESCAPE ROUTES

The main gate / entrance area to the terminal is identified as ASSEMBLY POINT in the case of an emergency evacuation of a vessel. Alternatively, the parking lot outside the Control Room will be an ASSEMBLY POINT in case the main gate is blocked or otherwise not accessible.

The escape routes from the two jetties are shown on the attached **LOCATION MAP**

3.7 SMOKING AND THE USE OF NAKED LIGHT

Smoking and use of naked light is strictly prohibited on the jetties, in the shore Terminal area and on board vessels alongside the berths. Exemption is made in those spaces on board ships designated as "Smoking Area" by the Master, and jointly agreed with the terminal representative. Such smoking areas shall be listed on the Ship/Shore Safety Check List under item A36.

3.8 PORTABLE ELECTRONIC EQUIPMENT

Mobile Phones, Personal computers, Pagers and Cameras may only be used in or on:

- Permanent buildings as nominated by Terminal Personnel
- Areas on the ship nominated by the Master
- Mobile phones must be switched off in the terminal area and outside the accommodation on the ship. (Ex proof phones excluded)
- Batteries for mobile phones, pagers and UHF/VHF radio should not be changed, unless it's inside a permanent building

3.9 REPAIRS

When the ship is alongside, only minor repairs may be carried out, and the ship's engines must not be immobilised. In any case, the port's safety regulations are to be observed. In exceptional circumstances, immobilisation may be permitted, subject to the approval of the harbour authorities and terminal marine superintendent. Stand-by tugs may then be required as a precondition for the permission.

3.10 HOT WORK

No Hot work is permitted while the vessel is alongside the berth.

3.11 LIFTING OF STORES

The ship's crane may be used for lifting provisions and stores. However, no lifting of any equipment that may ignite sparks such as drums, steel, pipes etc may take place during cargo operations.

3.12 DECKWATCH AND MOORINGS

The vessel's staff must monitor the vessel's loading/discharging continuously, and a deck watch must be present on the deck in the vicinity of the cargo manifold.

Due to the strong current conditions in Little Belt, particular attention must be paid to the hose connections as well as the moorings, which must be maintained taut at all time.

3.13 INCIDENT REPORTING

Any incident concerning vessel safety, safe mooring, cargo handling, pollution or crew/visitors must be reported to the terminal representative and the Port Authorities.

ALL INCIDENTS MUST BE REPORTED TO THE TERMINAL IMMEDIATELY

3.14 FIRE ALARM ASHORE

In case of an emergency at the terminal, the alarm will be given by the sound of a **CONTINOUS SIREN**.

Every Thursday at 18.10 CET a fire alarm test will be carried out.

3.15 ACTION ON VESSEL IN CASE OF FIRE ASHORE OR ON BOARD ANOTHER VESSEL AT THE TERMINAL

a. All cargo transfer operations must be stopped immediately, and manifold valves should be closed.

b. Prepare vessels for immediate departure

c. Await instructions from terminal representative or Port Authority

3.16 ACTION ON VESSEL IN CASE OF FIRE ON BOARD

a. Give the alarm by means of: Intermittent sound of long blasts (min 10 sec.) on ship's whistle or rapidly and continuously ringing of ship's bell.

a. Inform terminal by phone +45 79203810 or VHF ch. 14

b. Fight fire and prevent fire spreading

c. Cease all cargo operations, drain hoses and then close all valves

d. Stand by to disconnect hoses or arms

e. Bring engines to standby and ready for departure

In case of fire on board a vessel moored at our jetties, the responsibility for firefighting rests with the Master in consultation with the local Fire Brigade in cooperation with the Port Authority.

3.17 FIRE PRECAUTIONS

All tankers must be provided with a fire water system with hydrants, fire hoses complete with couplings and jet/jet spray nozzles.

The vessel's firefighting equipment, including main- and emergency fire-pumps and portable dry chemical extinguishers positioned in the proximity of the ship's manifold shall be kept ready for immediate use.

Fire hoses fore and aft on the cargo deck and nearby the manifold shall be uncoiled and connected to the fire main with at least one fire pump maintaining pressure on the main.

3.18 FIRE-FIGHTING EQUIPMENT ON THE JETTIES

For firefighting purposes, each jetty is equipped with:

a. Remote controlled water/foam monitors.

b. Water monitors with hose connections on the jetty decks.

c. A number of portable fire extinguishers and hoses.

d. An international standard 2.5" Storz fire ship/shore connection.

e. A sprinkler system to protect the Hose Gantry System / Marine Loading Arms, shore gangways and the firefighting Sky Chief towers.

3.19 ACTIONS ON SHORE IN CASE OF FIRE ON THE TERMINAL

a. Raise alarm

b. Cease all cargo operations, drain hoses and then close all valves

c. Inform all ships and harbour authorities

d. Fight fire and prevent fire spreading – Assist local Fire Brigade

3.20 OIL SPILL RESPONSE

No oil or mixture containing oil may be discharged or allowed to escape from a vessel whilst at the Terminal. The engine room bilge overboard valve should be closed and locked shut whilst the vessel is in port. It is important that the surface of the water around the vessel is monitored as a check against the inadvertent escape of oil. To prevent pollution of coastal waters and in an endeavour to avoid subsequent heavy claims, the shore installation will, in case of any oil spill from a vessel, take such steps as may be deemed necessary to fight the pollution before it spreads.
If the oil spill is due to faulty equipment or material on the vessel or to negligence on the part of the ship's personnel, the shore installation shall be indemnified by the ship for any expenses incurred in connection with the preventive action taken.

AN OIL SPILL MUST BE REPORTED TO THE TERMINAL IMMEDIATELY

3.21 FREDERICIA COUNCIL GENERAL ALARM

In case of a chemical spill, nuclear power accident or other general hazardous situations,

a general alarm may be sounded by the council's sirens with 4 blasts each 45 s. long.

You should then stay inside your accommodation with closed ventilation and listen on VHF Ch 14 and await instructions. When there is no more danger a long tone of 45 s. will be sounded.

3.22 STATE OF READINESS

The main engines and any other essential machinery must be maintained in a state of readiness for vacating the jetty at short notice. If, for any reason, the vessel cannot comply with this requirement, the loading master must be advised immediately. Sufficient crew under supervision of a responsible ship's officer shall remain on board to deal with any emergency.

Main engines should not be tested until the loading arms have been disconnected.

3.23 SAFETY IN GENERAL

If the terminal operators observe unsafe conditions or situations, the terminal reserves the right to stop all cargo operations. All costs resulting from the above shall be for the account of the vessel owner/charterer until corrections have been carried out in accordance with the Terminal instructions.

During arrival and departure situations all personnel involved have a "Stop Work Authority" if any activity in connection with mooring or unmooring the vessel possesses imminent risk or danger to themselves or their co-workers.

4 JETTY REGULATIONS

4.1 CONDITIONS OF ACCEPTANCE

The Shell Marine terminal at Fredericia accepts vessels for handling with the understanding that cargo operations are carried out safely.

The terminal reserves the right to suspend operations and will require the removal of any vessel from the terminal for:

a. Any violation of safety and environmental regulations.

b. Defects of vessel, equipment, personnel or operations, which in the reasonable opinion of the terminal present a hazard to the terminal, employees or operations.

c. Operational performance that does not conform to the requirements of the terminal .

The terminal shall not be liable for any costs incurred by a vessel, its owners, charters or agencies because of a refusal to load/discharge all or part of a nominated shipment, delay to or suspension of loading/discharging, or as a requirement to vacate the jetty arising from this regulation or the instruction mentioned in the regulation for Prevention of Oil Pollution.

The terminal reserves the right to monitor the loading/discharging of any vessel to ensure that the ship is loaded in compliance with international load line regulations and to notify the appropriate authority in the event of in contravention of these regulations.

Any charges incurred because of overloading and subsequent correction shall be for the vessel's account.

4.2 RECEIPT AND DISPLAY OF REGULATIONS

Operations shall not begin until:

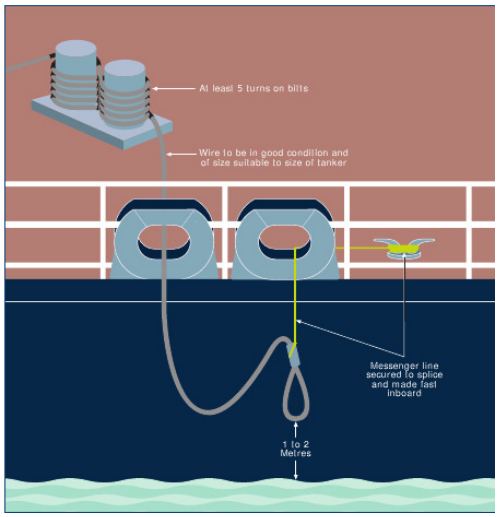
a. The Master or his representative has signed the Ship/Shore Safety Checklist and guidelines together with the Loading Master and both have to verify that all the agreed signals and procedures are understood and that all matters relating to safe operations and environmental precautions are being carried out.

b. Smoking notices are displayed in the agreed places on board.

4.3 EMERGENCY TOWING OFF PENNANTS - FIRE WIRES

Use of “Fire wires”, “Emergency towing off pennant” (ETOPS) is **not** a requirement of the Terminal. However, if ETOPS are being deployed, they are to be paid out as near centre line as possible and positioned at the offshore bow and quarter and eye maintained about a meter above water level to enable tugs to connect the towline.

The preferred method of rigging is to secure the inboard end to bollards, with a minimum of five turns and lead the outboard end direct to shipside chock with messenger line secured in the splice and a bight hanging over the side and no slack on deck.



4.4 BERTH NO. 41

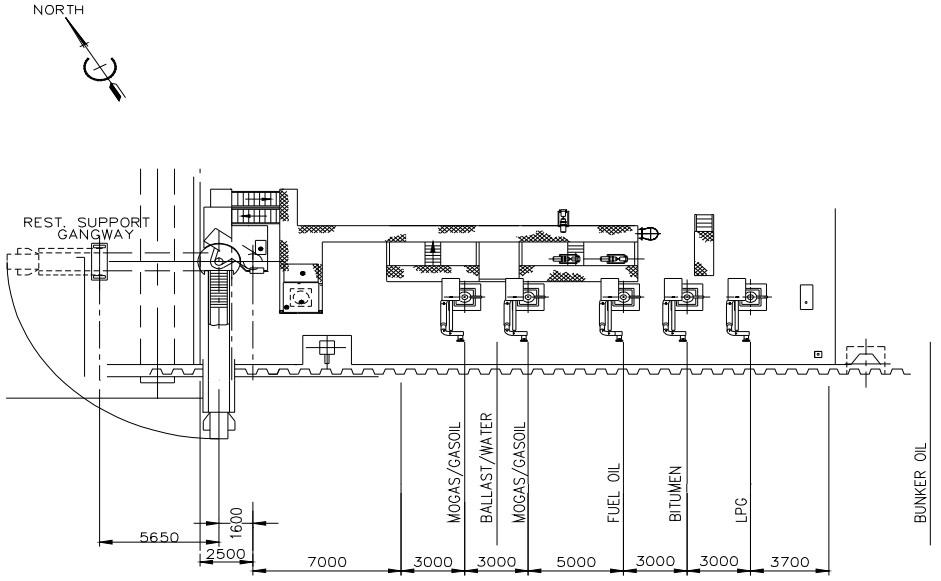
4.4.1 GENERAL LIMITATIONS:

Minimum water depth at mean sea level	10.5 m
Max Draft at mean sea level	10.0 m[1]
Max LOA:	175 m
Max Displacement:	30,000 tons

Loading Arm	Product	Min/max manifold height above water level	Connection	Max working Pressure	Max load/ disch rate	
					From terminal	From refinery
Z 8402	Mogas/ Gasoil	0.20 m / 10.60 m	8" ASA	11.5 bar	780 - 864 m³ *)	700 m/h
Z 8403	Mogas/ Gasoil	0.20 m / 10.60 m	8" ASA	11.5 bar	780 - 864 m³ *)	700 m³/h
Z 8406	LPG	2.40 m / 7.60 m	4" ASA	14.5 bar	150 m³/h	
Z 8404	Fuel oil	0.20 m / 10.60 m	8" ASA	11.5 bar	780 - 864 m³ *)	700 m³/h
Hose	Cleaning water	6" Hose	6" ASA	10.0 bar	788 m³/h	
Vapour return			4 " ASA	4"/6" reducer available		

* Varies with type of product

Loading from refinery with two arms connected: Max rate = 1.250 m³/h (w/2 header)
Loading from terminal with two arms connected: Max rate = 1.000 m³/h *)



[1] The average tidal range is 0.4 m. The water level varies between + 1.4 m and -1.6 m depending on the wind direction and force. **When loading to Max draft the present water level must be taken into consideration and at low water the max draft must be reduced accordingly.**

4.5 BERTH NO.42

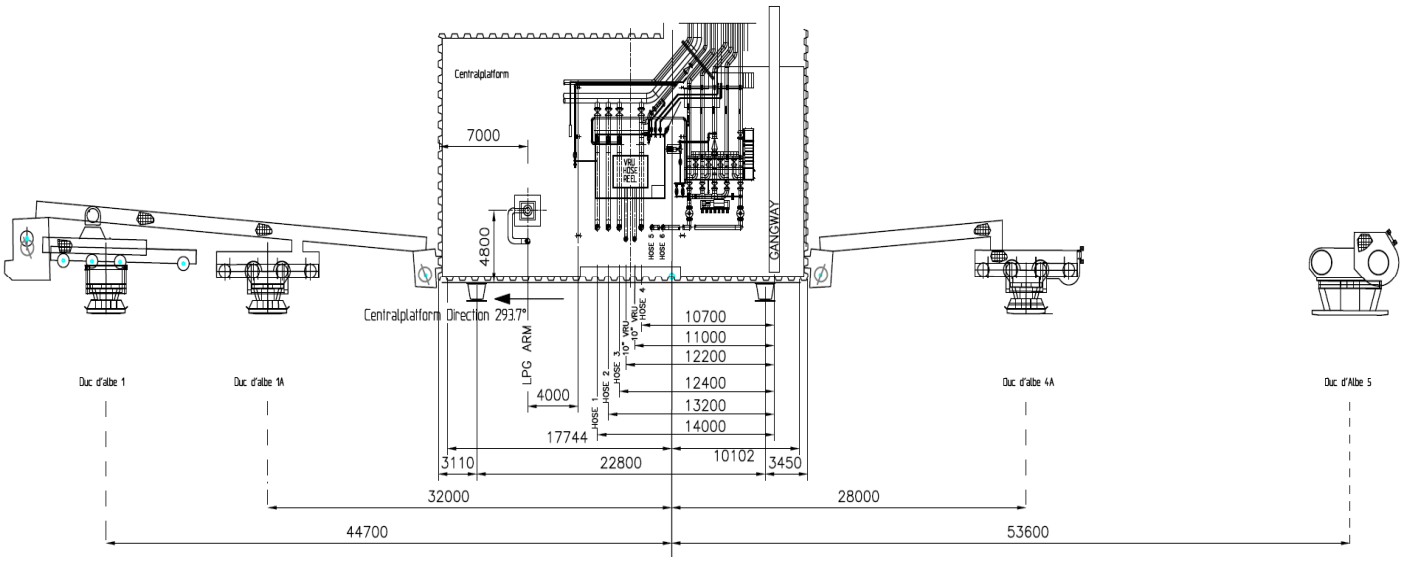
4.5.1 GENERAL LIMITATIONS:

Minimum water depth at mean sea level	15.00 m
Max draft at mean sea level	14.00 m[1]
Max LOA	275 m
Max berthing displacement	110 000 tons
Max displacement when berthed alongside terminal	150 000 tons
Max beam	50.00 m
Max manifold height above water level: Hose tower	18.00 m
LPG arm	8.00 m
Min. manifold height above waterline	3.50 m
LPG arm	2.00 m
Min. parallel body in ballast condition	30.00 m
LPG manifold to aft parallel side	20.00 m

Hose no.	Product	Connection	Max working pressure	Max load/ discharge rate m³/h
1	Crude/fuel oil	10”	15 bar	2730/ 2268
2	Crude/fuel oil	10”	15 bar	2730/ 2268
3	Crude/fuel oil	10”	15 bar	2730/ 2268
4	Crude/fuel oil/ Cleaning water	10”	15 bar	2730/ 2268 / 1323
7 a+b	2 x Vapour Return	10”	110 mbar	9900
5	Mogas/Gasoil	10”	15 bar	1250 (1)
6	Fuel oil	10”	15 bar	1000
LPG	LPG	200 mm	14,5 bar	200

Large crude oil vessels: Please connect on / utilize the vessel’s two foremost manifolds in order to allow access for shore gangway

(1) Discharge rate with boosterpump: Up to 1500 m³/h



The average tidal range is 0.4 m. The water level varies between + 1.4 m and -1.6 m depending on the wind direction and force. **When loading to Max draft the present water level must be taken into consideration and at low water the max draft must be reduced accordingly.**

4.6 TOWAGE REQUIREMENTS JETTY NO.41

4.6.1 BERTHING / UNBERTHING WITH CURRENT RESTRICTIONS

Table valid for vessels with bow thruster and berthing / unberthing in current conditions:

Current speed [S]	ACTUAL DISPLACEMENT		
	< 3500 t	3500 – 12000 t	12 – 30000 t
S < 2 kn	No req.	1 tug on arrival	1 tug
2< S < 4 kn	No req.	1 tug	2 tugs
S > 4 kn	No berthing / unberthing operation restricted *)		

4.6.2 BERTHING WITH WIND RESTRICTIONS

Table valid for vessels with bow thruster berthing at jetty No.41.

Wind direction	ACTUAL DISPLACEMENT			
	Wind Speed [W]	< 3500 t	3500 - 12000 t	12 – 30000 t
000 – 360 º	15 < W < 22 m/s	1 tug		2 tugs
000 – 360 º	22 < W < 26 m/s	No berthing operations		
000 – 360 º	W > 26 m/s	No berthing if forecast is expected above 26 m/s during the vessel's port stay.		

4.6.3 UNBERTHING WITH WIND RESTRICTIONS

Table valid for vessels with bow thruster unberthing from jetty No.41.

Wind direction	ACTUAL DISPLACEMENT			
	Wind Speed [W]	< 3500 t	3500 - 12000 t	12- 30000 t
140 – 360 º	15 < W < 22 m/s	No req.	1 tug	2 tugs
000 – 360 º	22 < W < 26 m/s	1 tug	2 tug	Operations restricted *)
000 – 360 º	W > 26 m/s	Unberthing operation restricted *)		

Above tables are ***minimum*** requirements and it is the vessel's Master, with advice from the Pilot, who is responsible for evaluating the conditions and ensuring that proper safety margins are in place and ordering the necessary number of additional tugs. **Vessels without any bow thrusters** should follow above table in 4.6.3 and, depending on conditions and the Master's and Pilot's discretion have one additional tug or more. On arrival, tugs must be connected prior to passage of berth no.42, and on departure, tugs shall be connected prior to any mooring singling up process.

*) Departure / unberthing under severe weather condition shall be approved by the Terminal

4.7 TOWAGE REQUIREMENTS JETTY NO.42

4.7.1 BERTHING WITH CURRENT RESTRICTIONS

Table valid for vessels berthing in current conditions at jetty No.42.

Current speed [S]	Direction	ACTUAL DISPLACEMENT			
		< 12000 t	12 – 40000 t	40 - 80 000 t	80 - 110000 t
S < 1 kn	All	1 tug	2 tugs	3 tugs	4 tugs
S > 1 kn	South				No berthing
S < 2 kn	East				4 tugs
2< S < 4 kn	All				No berthing
S > 4 kn		No berthing			
S > 5 kn		No berthing if current above 5 kns is expected during the vessel's port stay.			

4.7.2 UNBERTHING WITH CURRENT RESTRICTIONS

Table valid for vessels unberthing in current conditions at jetty No.42.

Current	ACTUAL DISPLACEMENT				
	< 12000 t	12 – 40000 t	40 - 80 000 t	80 - 110000 t	110 – 150000 t
< 2 kn	1 tug	2 tugs	2 tugs	3 tugs	3 tugs
2-4 kn			3 tugs		
> 4 kn	Unberthing operation restricted *)				
> 5 kn	No berthing if current above 5 kns is expected during the vessel's port stay.				

4.7.3 BERTHING/UNBERTHING WITH WIND RESTRICTIONS

Table valid for vessels berthing/unberthing at jetty No.42
(All wind directions: 000º – 360º)

Wind Speed [W]	ACTUAL DISPLACEMENT				
	< 12000 t	12 – 40000 t	40 - 80 000 t	80 - 110000 t	110 – 150000 t
W < 15 m/s	1 tug	2 tugs	3 tugs on arrival 2 tugs on departure	4 tugs on arrival 3 tugs on departure	3 tugs **(no arrival)**
15< W < 22 m/s		2 tugs	3 tugs		
22< W < 26 m/s	No berthing operations				
W > 26 m/s	No berthing if forecast above 26 m/s is expected during vessels port stay.				

Above tables are ***minimum*** requirements and it is the vessels Master, with advice from the Pilot, who is responsible for evaluating the conditions and ensuring that proper safety margins are in place and ordering the necessary number of additional tugs. On arrival, tugs must be connected prior to passage of Skanseodden. At departure, tugs shall be connected prior to any mooring singling up process. Table based on max vessel size of Displacement 150,000 t. If any requirements for larger vessel, a supplementary risk assessment is to be carried out to review the need for additional precautions.

*) Departure / unberthing under severe weather condition shall be approved by the Terminal

4.8 AVAILABLE TUGS

4.8.1 GENERAL

The vessel, via its agent, is responsible for arranging the required/necessary number of tugs. At 6 hours prior to departure, the agent should contact the pilot station for the latest wind and current forecast and order the correct number of tugs according to port requirements.

Tug(s) available in the port of Fredericia are to be ordered at least four hours prior to the towage operation, but can, if required, be mobilised on one hour's notice. If further tugs than those available are needed, then such tugs can normally be mobilised from other ports on six hours' notice.

Tugs are operated by Svitzer and arrangements can be made 24/7: +45 3919 3920.

- The tugboat's line is used for towing
- The tug and its crew are engaged as being employed by the ship being towed. The vessel must compensate for all damage and costs arising during the assistance for which the tug could be made responsible.

Names and capacity of frequently used tugs:

TUG NAME	BHP	BP	PROPULSION	LxBxD
Fenja	4.900	64	ASD + b.thr	33.6 x 10,2 x 5,2
Frigga	4.900	64	ASD + b.thr	33.6 x 10,2 x 5,2
Svitzer Mjølner	4.900	62	ASD + b.thr Fi-Fi tug	30,3 x 11,5 x 5,5
Svitzer Mars	4.900	62	ASD + b.thr Fi-Fi tug	30,3 x 11,5 x 5,5
Svitzer Thor	4.412	91	ASD + b.thr Fi-Fi tug	33,30 x 13,00 x 5,7
Svitzer Trym	5,423	76	ASD + b.thr Fi-Fi tug	33.3 x 13.0 x 5.7
Svitzer Nabi	5,025	72	ASD + b.thr Fi-Fi tug	30.8 x 11.1 x 5.5
Svitzer Nari	5,025	72	ASD + b.thr Fi-Fi tug	30.8 x 11.1 x 5.5
Svitzer Bjørn	4,000	53	ASD	32.9 x 11.1 x 3.9
Sigyn	4.000	51	ASD + b.thr + Fi-Fi tug	33,6 x 10,2 x 5,2
Svitzer Maltby	5,630	65	ASD + b.thr + Fi-Fi tug	30.3 x 11.5 x 5.5

ABBREVIATIONS:			
BHP	= brake horse power	Conv.	= Conventional Tug
BP	= bollard pull (metric tonnes)	Tractor	= Tractor/Voith Schneider
LxBxD	= length, breadth, draft	b.thr.	= bow thruster
ASD	= Azimuth Stern Drive tug	s.thr.	= side thruster

4.8.2 MINIMUM TUGBOAT REQUIREMENT

Tugboats used for assistance in and out of the Shell Oil Terminal shall be as per below Table

Number of required tugs	Requirement
1	BP 40 t + / ASD
2	1. BP 40 t + / ASD 2. BP 50 t + /ASD
3	1. BP 40 t + / ASD 2. BP 50 t + /ASD 3. BP 50 t + / ASD
4	1. BP 40 t + / ASD 2. BP 50 t + /ASD 3. BP 50 t + / ASD 4. BP 60 t + / ASD

4.9 RECOMMENDED MOORING PLANS

4.9.1 MOORING DIAGRAM

Vessels shall comply with the enclosed recommended mooring plans, commensurate with their size and the prevailing weather conditions.

4.9.2 TYPES AND CATEGORIES OF VESSELS

Table valid for vessel normally calling the Shell Oil Terminal:

Category	Type	Displacement	Typical dimension
1	Suezmax 120,000 – 200,000 DWT	Max. 110,000 arrival Max. 150,000 alongside	
2	AFRAMAX, LR 2 80,000 – 120,000 DWT	Max. 110,000 arrival	LOA: 240 – 250 m. Beam: 42 – 46 m. Draft: 14 m. +/-
3	PANAMAX, LR 1 50,000 – 80,000 DWT		Beam: max. 32.31 m. Draft: 14 m. +/-
4	Medium / Handy / Small Tank Less than 50,000 DWT		

4.9.3 MINIMUM NUMBER OF MOORING LINES

Vessel category	Jetty 41	Jetty 42
1	N/A	Headlines forward : 4 (wires only) Breast lines forward : 2 (wires only) Spring lines forward : 2 (wires only) Stern lines : 4 (wires only) Breast lines aft : 2 (wires only) Spring lines aft : 2 (wires only)
2	N/A	Headlines forward : 4 (wires only) Breast lines forward : 2 (wires only) Spring lines forward : 2 (wires only) Stern lines : 4 (wires only) Breast lines aft : 2 (wires only) Spring lines aft : 2 (wires only)
3	N/A	Headlines forward : 3 Breast lines forward : 2 Spring lines forward : 2 (wires only) Stern lines : 3 Breast lines aft : 2 Spring lines aft : 2 (wires only)
4	As per mooring diagram	As per mooring diagram

4.9.4 APPROVED TYPES OF MOORING LINES

For the category 1, 2 and 3 vessels only the moorings “on drums” are considered included in the vessel’s mooring arrangement. All loose / manually handled moorings are considered additional

All required moorings must be steel wires (on drums) on Category 1 and 2 vessels.

As the prevailing current is easterly and up to 4 knots (6 knots under extreme weather conditions), it is a minimum requirement for a category 3 vessel to have steel wires (on drums) as spring lines at berth no.42.

Mixed moorings (moorings of different material in same direction) are not allowed.

HMPE mooring ropes are considered acceptable as replacement for steel wires provided they are of similar strength and numbers.

4.10 MOORING / UNMOORING PROCEDURES

The use of a mooring crew is compulsory, irrespective of vessel size. A Mooring crew is available 24 hrs/day and the ship's agent will arrange for their services. During mooring / unmooring operations, sufficient ship's crew should be stationed forward and aft. Masters are responsible for vessels being securely moored and that tension winches (if fitted) are on manual brakes whilst at the berth. Due to the strong current conditions in the area, mooring and unmooring has to be done with utmost care and the below procedures must be followed:
Simultaneous mooring operations on berth 41 and 42 are not allowed.

4.10.1 ARRIVAL PROCEDURE BERTH NO.42

If the vessel requires tugboats because of its size, they should be connected before passage of Skanseodde green light buoy. In easterly current conditions, mooring must be done in below sequence:

1. Aft springs
2. Forward spring lines
3. Breast lines.
4. Head and stern lines.

Large crude oil vessels: Please connect on / utilize the vessel's two foremost manifolds to allow access for shore gangway

4.10.2 DEPARTURE PROCEDURE BERTH NO.42

Tugboats must be connected before any moorings are singled up. In easterly current conditions, singling up must be done in below sequence:

1. Stern lines
2. Forward spring lines
3. Aft breast lines
4. Forward breast lines
5. Head lines
6. Aft spring lines

After departure in strong current conditions, to achieve high manoeuvrability, main engine must be able to go to full ahead very quickly, either by using "Harbour Mode" or by overriding settings.

4.10.3 "BEST PRACTICE" ACTIONS TO BE USED FOR ARRIVALS AND DEPARTURES AT BERTH 42

1. Operational language to be English between tug and pilot if requested by Master.
2. Tugboats to be referred to by tug's name.
3. Initial "toolbox talk" to be done before operation commences between Pilot/Ship, Tugboats and linesmen.
4. Pilot-Master information exchange is to be done before departure and arrival.

As pilots are to have at least 3 peer-to-peer training tours with berthing operations annually, to experience and share experiences with another pilot, ships will often experience having two pilots onboard where only one of the pilots will have operational control
Pilots and tugboat masters have annual meetings to familiarize themselves with their different aspects of the berthing operations.

4.11 MOORING LOAD MONITORING SYSTEM (MLMS)

On berth no. 42, all mooring hook stations are fitted with a Mooring Load Monitoring system (MLMS). The MLMS system enables the terminal to monitor the load on each mooring line during the entire port stay.

Ensure that the vessel's mooring lines are tended and kept sufficiently taut during the vessels stay alongside to prevent undue movements of the vessel.

If the vessel fails to comply with this, the cargo operation will be stopped until the issue has been corrected as per terminal requirement. Any time and cost incurred in this connection will be for the account of the vessel/owner.

4.12 GARBAGE

No garbage or other materials, either liquid or solid, may be discharged overboard from a vessel, but must be retained in suitable receptacles on board or arrangements made for disposal ashore.
A garbage reception facility can be found at the terminal (see LOCATION MAP). The port authorities must be informed of all garbage to be deposited, and the relevant EU regulation waste declaration must be completed and submitted prior to arrival.
The jetty operator will sign for the receipt; however, the vessel is responsible for delivering the garbage to the reception area and depositing it in the correct bins/containers. See garbage container area map.
For chemical waste, metal drums, pyrotechnics, sample gas cylinders etc. not covered by the checklist, the removal must be arranged via the agent for the account of the vessel.
Two handcarts will be available for the transport between the vessel and the garbage container area.
Minimum 24 hrs. prior to arrival or on departure from last port, forward Waste Declaration according to EU directive 2000/59/EF

4.13 ENCLOSED SPACE ENTRY

No enclosed space entry into any tank or another compartment is permitted whilst moored alongside the Terminal. For emergency repairs, the Marine Superintendent will assess the safety precautions in place and, if satisfactory, may permit tank entry.

4.14 BUNKERS

All bunker oil deliveries at the terminal are to be arranged with Shell Marine Products. No bunker barges are allowed alongside vessels moored at the berths.

4.14.1 BERTH NO.41

Gasoil is available on following connections: 2, 3, 4 and 6“ ASA - 3 and 4” DIN

Fuel oil is available by the 8” loading arm.

4.14.2 BERTH NO.42

Fuel oil is available on a 10“ hose.

As bunker deliveries, have not been made in recent years, the system is in state of being removed.

4.15 FRESH WATER

Fresh water delivery is available at both berths. Cost is app. DKK 39.40 per m^3. Minimum quantity to be invoiced is 10 m^3 + an administration fee of DKK 675.00.

5 BALLAST AND SLOPS REGULATIONS

5.1 DIRTY BALLAST

It is not permitted to discharge dirty ballast, clean ballast water carried in cargo tanks or slop into harbour waters and any pollution of the coastal waters will result in heavy fines.

5.2 BALLASTING / DEBALLASTING

Segregated ballast discharged over board shall be monitored for any possible oil mixture. Under no circumstance is it allowed to discharge the ballast onto the jetty pier. The jetty may then be undermined and the vessel will be held responsible for all costs resulting there from..

The Master is responsible for ensuring that the vessel is at all times ready for manoeuvring, with respect to draft, trim, stability and propeller immersion.

5.3 TANK CLEANING WATER / ENGINE SLOPS

Reasonable quantities of tank cleaning water (approx. 30 m^3 but will be assessed on a case to case basis) can be accepted free of charge from vessels nominated for loading. 24 hours' notice is required for the discharge of tank cleaning water, stating quantity, temperature, origin and relevant quality parameters of the oil residues. On request, the ship must produce representative samples of the tank cleaning water requested to be pumped to shore for quality check. For quantities above what is accepted free of charge the cost is DKK 130.00 per m^3.

Degreaser, lube oil, MTBE, gasoline components containing ethanol, FAME, bio fuels containing FAME and all sorts of chemicals cannot be accepted in the tank cleaning water, but can be disposed of by gulley sucker to an approved waste disposal plant at the ship's expense. The vessel's crew will handle the slop hoses, including stowing after use.

Engine slops (Sludge), the quantity that was collected on the last voyage and max 5 m^3 on smaller vessels, can be accepted free of charge (24 hrs. notice required) within normal working hours. The sludge must be heated and discharged in a pumpable condition at a connection at the vessel manifold, if not, the expenses will be for the ship's account.

5.4 GAS FREEING AND/OR TANK CLEANING

No gas freeing, purging of vessel's cargo tanks or regular tank cleaning is permitted alongside the berths.

For Crude Oil Washing (C.O.W.) please see the requirements in Section 6.8

6 LOADING AND DISCHARGING PROCEDURES

6.1 PROCEDURES TO AVOID BACK FILLING

The refinery is located 7.5 km from the terminal and at a height of 25 meters above sea level. The shorelines are not fitted with a non-return valve and, consequently, there is a backpressure of 3.5 bars on the shoreline at all times. The vessel's manifold valves must not be opened during discharge, until the vessel's cargo pumps are running and the manifold pressure is higher than 3.5 bars.

6.2 EMERGENCY SHUTDOWN

(item B25 of the ship/shore safety checklist)
Loading operations will normally be stopped by the control room on vessel's request (VHF ch. 14).

From the shore, an emergency shut-down push button is brought on board, just as the jetties are provided with emergency shut-down push buttons. If the push buttons are activated, all cargo/oil movement operations will stop immediately and the motor operated valves in the cargo lines at the terminal will close.

The vessel can stop discharging operations at any time by stopping the ship's cargo pumps and closing the ship's manifold valves.

If an emergency stop is required by shore, the ship will be informed by VHF or verbal.

Transfer operations shall be halted immediately, in event of any of the following:

- Cargo spillage or suspected cargo spillage.
- Fire or explosion on the vessel or in the Terminal.
- Failure of the ship / shore communication system.
- Mooring line rupture or moorings repeatedly not properly tended.
- Deck watch absent.
- Any incident/occurrence that might affect the safety of the cargo operation

6.3 PRESSURE SURGE PRECAUTIONS

The correct emergency shutdown procedure should be followed, utilising the Emergency Shut Down (ESD) pendant provided, which will:

1. Stop the cargo loading pumps
2. Close the onshore loading valves
3. Stop cargo flow to the vessel.

Only then may the vessel's cargo valves be closed.

CLOSURE OF A VESSEL'S VALVE AGAINST THE SHORE LOADING PUMPS WILL RESULT IN EXCESSIVE SURGE PRESSURE WITHIN THE SHORE SYSTEM.

6.4 DRAINING OF LOADING ARMS/HOSES

The ship must leave enough space in cargo tanks to be able to drain loading arms/hoses on completion of cargo operations.

6.5 INERT GAS SYSTEM (I.G.)

Any ship should ensure that the inert gas system is fully operational and utilised during all cargo operations.

The Fredericia Marine Terminal requires all tankers fitted with an I.G. system to comply with the rules and regulations as laid down in SOLAS concerning the construction and operation of Inert Gas Systems.

If the I.G. plant is unable to provide inert gas with an O_2 content below 5%, maintaining an O_2 content of max. 8% in the cargo tanks, cargo-operations will not be allowed.

These conditions should be maintained during the entire cargo operations.

The terminal representative will make regular checks to ensure that the ship is complying with these conditions.

Company Marine Policy is, that if a vessel (regardless of tonnage) is equipped with an Inert Gas (I.G.)system, it should work according to original design criteria.

Inerting of empty cargo tanks: When all thanks have been inerted, they should be kept common with the inert gas main and the system pressurised with a minimum positive pressure of at least 100 mm water gauge.

6.6 CHECKS OF THE INERT GAS SYSTEM DURING DISCHARING

The jetty operator will check the I.G registration apparatus in connection with his duties doing re-checks according to the Ship/Shore Safety Check List. Before commencing Crude Oil Washings, the ship's apparatus will be checked by the terminal. The following will be checked:

a. The I.G. supply line, the O_2 content in the supply line should be kept below 5%.

b. Two tanks or more to be Crude Oil washed, the O_2 content of the tanks should be kept below 8%.

c. The I.G. pressure maintained in the cargo tanks, the pressure should be kept at a minimum of at least 250 mm w.g.

6.7 CLOSED OPERATION DURING LOADING / DISCHARING

Tankers must be loaded or discharged with the ullage, sounding and sighting ports securely closed.

The gasses displaced by the incoming cargo should be vented to the atmosphere via the vent riser. Devices fitted to the vent riser to prevent the passage of flames must be checked regularly to confirm that they are clean, in good condition and correctly installed.

Use of Vapour Recovery Unit (VRU) might be required in connection with the loading of highly volatile grades. The Loading Master will advise accordingly.

6.8 ULLAGING AND SAMPLING

Wherever possible, ullaging, dipping and sampling of the ship's tanks should be done using closed sampling equipment. Under no circumstances are shore personnel/surveyors to open any tank without approval from the ship's officer and a representative of the ship's staff being present. Cargo tanks should always be depressurised using the fitted tank-venting system.

6.9 REGULATIONS FOR CRUDE OIL WASHING OPERATIONS (C.O.W.)

To perform C.O.W. alongside the jetty, an approval of the Terminal will be required.

Permission to perform C.O.W. must be requested via ship's/owner's agent 24 hours prior to arrival.

Only tank vessels with an operative inert gas installation in good condition and provided with fixed tank washing machines connected to the fixed tank washing system with steel piping, may perform a crude oil washing under the following conditions:

a. Oxygen percentage in the cargo tank(s) to be washed not to exceed 8% (Vol.).

b. Pressure of inert gas in cargo tank(s) to be not less than 250 mm (10") W.G. to prevent any entry of air.

Should the Oxygen content of the inert gas supply exceed 5% or the pressure of the inert gas drop below the 250 mm. W.G. then the C.O.W. shall be suspended until satisfactory conditions are restored.

Any other system for water washing of cargo tanks must be isolated from the C.O.W system by means of blank flanges or screw caps.

Cargo pumps must be shut down immediately when the pressure of the inert gas reaches a level below 100 mm W.G. This must be done either fully automatically or manually when an audible and visual low pressure alarm fitted in the control room is activated (alarm setting at 200 mm W.G.).

Crude Oil Washing operations to be carried out in consultation with the Loading Master and the cargo-surveyor.

Marpol requires a minimal crude oil washing.

Preferably, crude oil washings should be collected into the cargo slops tanks and finally discharged ashore at the end of the cargo operations.

6.10 HAZARDS OF H_2S IN CRUDE OILS, RESIDUAL OIL and NAPHTHA

Hydrogen Sulphide (H_2S) is present in all known crude oils, although the concentration can vary significantly. Even at a low concentration in the oil, the hydrogen sulphide -concentration in the vapour space of tanks can be considerable. H_2S is a very toxic substance; human exposure to H_2S can result in serious health-threatening circumstances. In view of this, cargo tanks of all ships loaded with high sulphur crudes and naphtha must be tested for the presence and concentration of H_2S. The TLV (Threshold Limited Value) value mentioned in ISGOTT is 5 ppm. When the measured value exceeds 50 ppm, the ship's tanks and ullage ports are not allowed to be opened for ullage measurements and sampling, unless a vapour-lock system is provided, which should be used at all times!

Blowing off cargo tanks, which contain a concentration of H_2S exceeding 5 ppm is forbidden because of safety and environmental reasons. If, for an exceptional reason, a ship's tank must be blown of, e.g. to drain the transfer hoses after completion of the discharging, permission should be obtained from the loading master / terminal.

6.11 HIGH RISK H_2S CARGO

Vessels coming to discharge a cargo containing more than 50 ppm H_2S should be considered as a high risk toxic cargo. **For safety reasons, cargoes with such a H_2S content will not be sampled, whether a closed sampling device is available or not.** Crew changes and vessel visits should be avoided when discharge operations are in process. If, for any exceptional reason, a ship's visit is needed concurrently with discharge operatons, it should be agreed with the loadingmaster. Visitors will be asked to sign a "H_2S letter" at the Terminal's gate before they proceed to the vessel. This letter states the H_2S dangers and procedures. Visitors boarding/leaving the vessel by walking through the cargozone of the vessel, should be guided by the duty deck officer. This duty officer and other crew members on deck, should be equipped with H_2S detection and EEBD (Emergency Escape Breathing Device) escape equipment. For other details, please comply with ISGOTT 2.3.6.4. and 2.3.6.5.

6.12 HAZARDS OF STATIC ELECTRICITY

The use of compressed air for clearing the marine loading arms / hoses, containing either crude or other petroleum products, into the ship's tanks or ashore, is STRICTLY PROHIBITED, because of the potential hazards that will arise, owing to static electricity.

6.13 THUNDERSTORMS

All cargo and ballast operations must be suspended during local thunderstorms.

In consultation with the Loading Master it will be decided whether the loading arms / hoses must be disconnected.

7 ISPS

7.1 ACCESS TO TERMINAL - ISPS

Unauthorized persons are prohibited from entering the berth or boarding vessels. All unauthorised persons will be denied access to the terminal. Visitors, service personnel and other persons without registered access cards, wishing to visit the vessel, must be reported to the terminal in advance via the agent, stating the full name, company name and purpose of visit on the vessel and must produce identification.
For the vessel's crew, the terminal will supply an access card, which must be used to exit and enter the terminal at the turnstile at the front gate. This card is only valid for one exit and one entrance. If an access card is lost during shore leave, it must be reported immediately. The vessel will subsequently be required to assist in verifying the identity of the crew member.

Vessel's crew members that appear to be under the influence of alcohol and / or drugs will be prohibited from entering the terminal facilities. Vessels are expected to undertake their own precautions in respect of intoxicated persons appearing on deck.

7.2 ISPS - IMO PORT INFORMATION

Name of port	: Port of Fredericia, Denmark
Port ID number	: 25832
IMO Port Facility No.	: DKFRC-0008
Facility name	: Fredericia, Shell terminal

7.3 TERMINAL CONTACT DETAILS

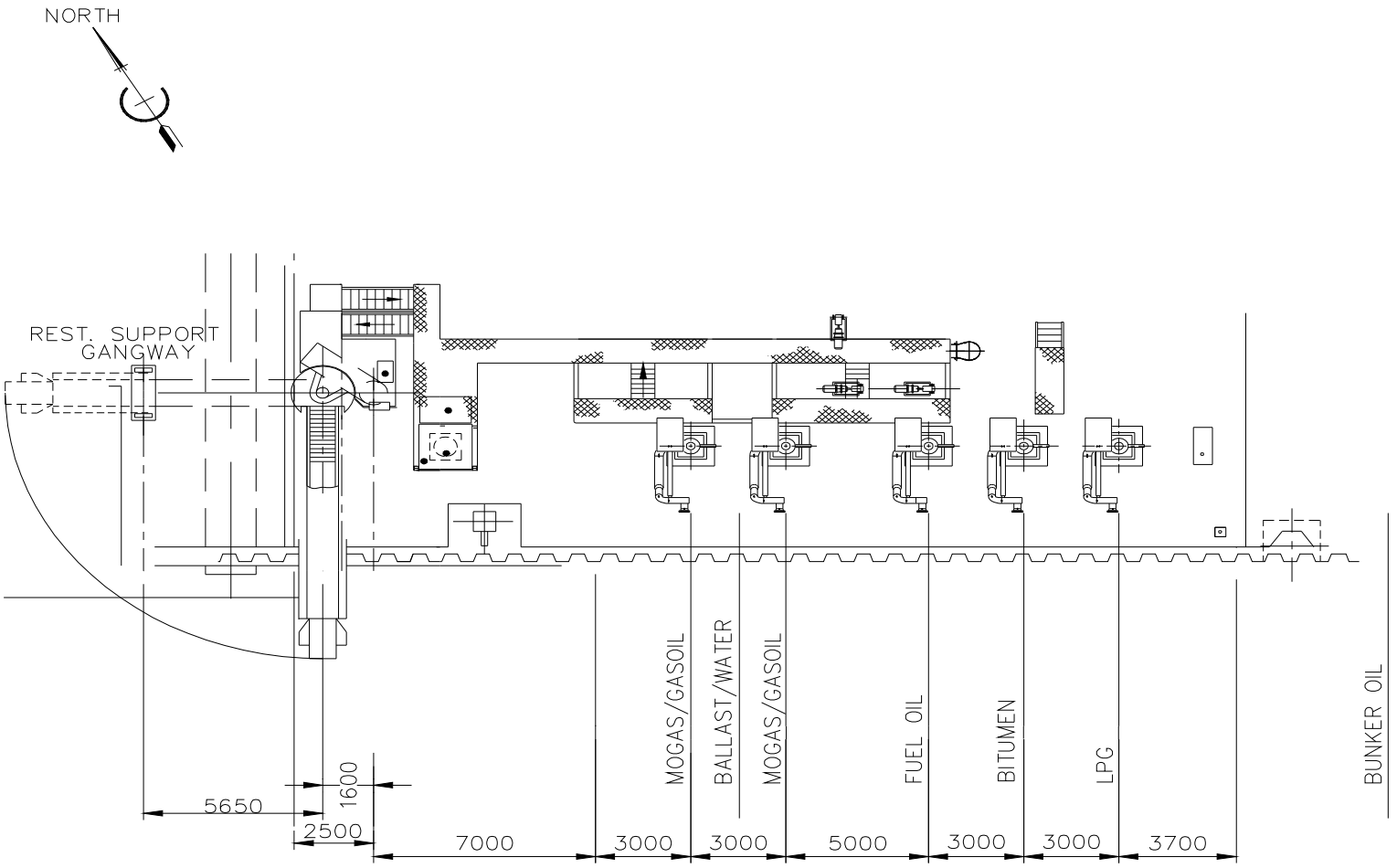
Shell terminal control room can be contacted on VHF channel 14. Call: "Shell Terminal" secondary means of contact can be done via telephone +45 79203810 / +4579203811

At berth No. 41, the terminal will provide a portable UHF radio to the vessel for the Ship / Shore communication, if requested.

At berth No. 42, a telephone, with connection to the shore control room, is placed on board the ship. The shore control room telephone number is 3810 or 3811. Additionally, the terminal will provide a portable UHF radio to the vessel for the Ship / Shore communication, if requested.

All communication should be based on positive feedback, i.e. just an "OK" is not sufficient.

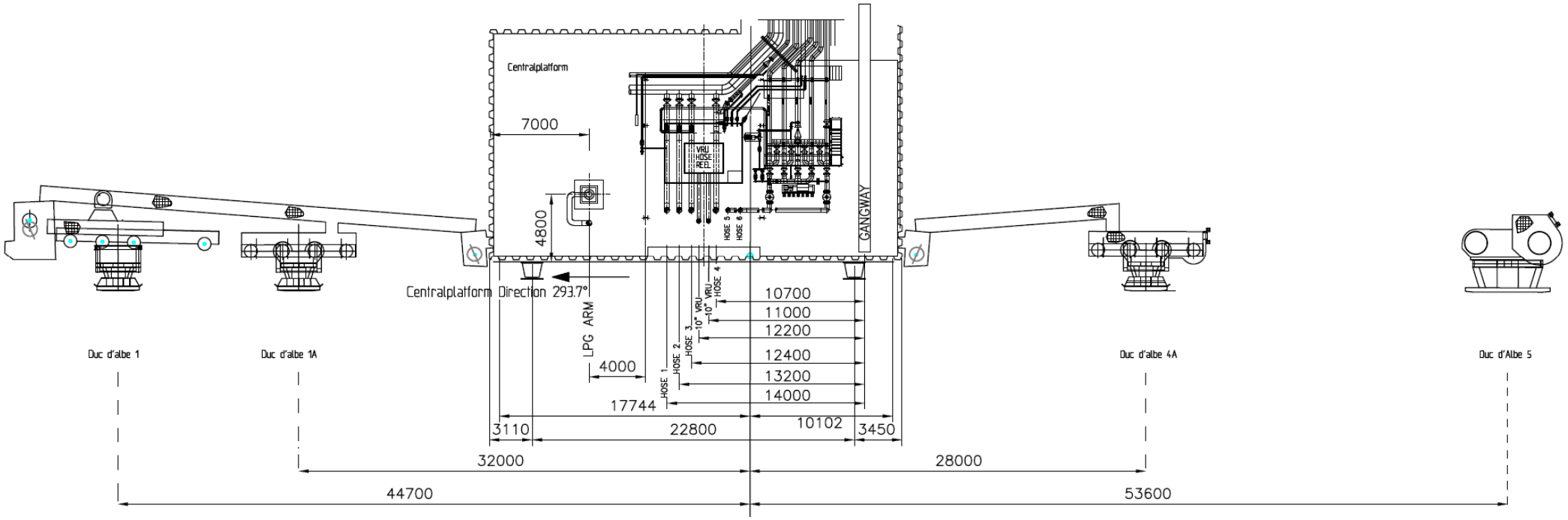
8 MANIFOLDS ON BERTH NO.41



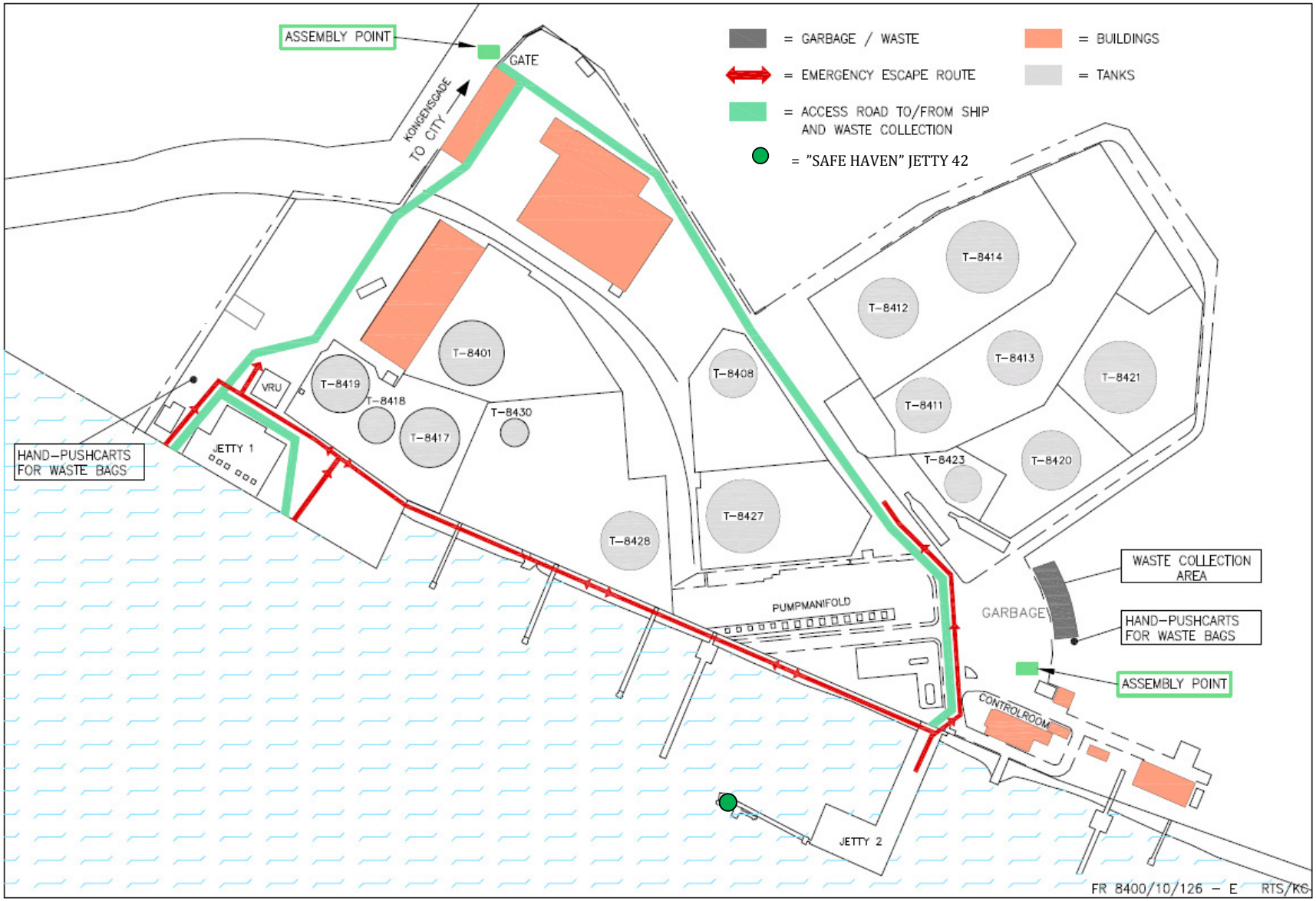
9 MANIFOLDS ON BERTH NO.42

Hose no.1-4: Crude/fuel oil
Hose no.5: Mogas/Gasoil
Hose no.6: Fuel oil
Hose no 7 a-b: Vapour Return hoses
LPG Arm

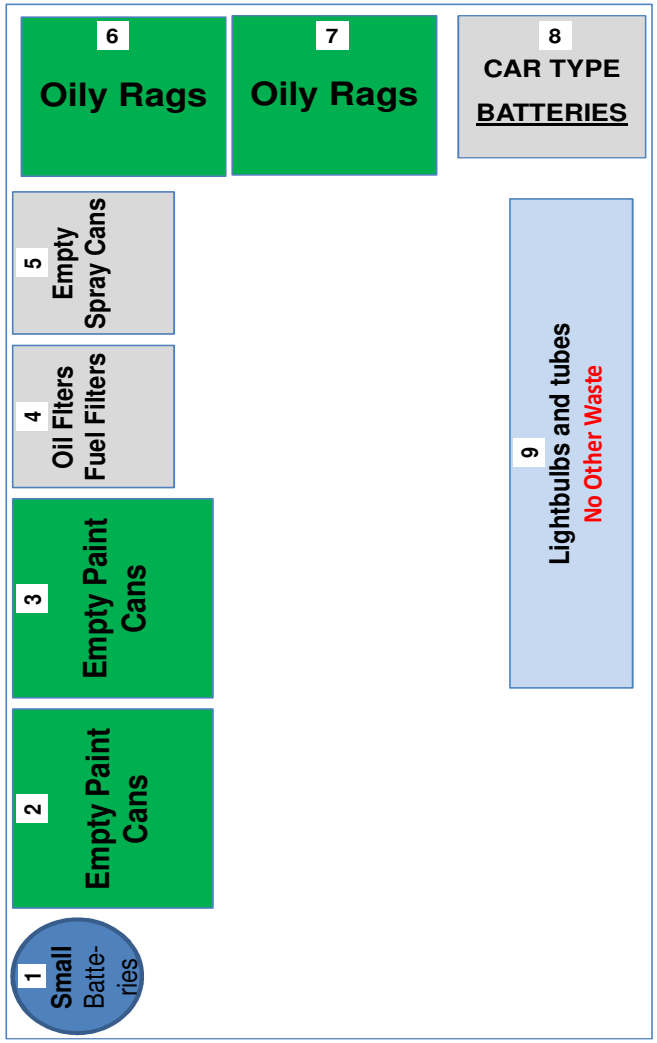
The limited distance between hoses and shore gangway should be noted. When crude oil vessels are moored in a westerly direction they are asked to connect on the two most forward manifolds to allow access on board the vessel for shore gangway.



10 LOCATION MAP



11 GARBAGE PLAN (situated next to the terminal control room)



11
Small Combustible Burnable waste smaller than 50x50x100 cm. Cardboard plastic or wood unable for recycling and

FOOD Waste

12
Small Combustible Burnable waste smaller than 50x50x100 cm. Cardboard plastic or wood unable for recycling and

FOOD Waste

13

Plastic

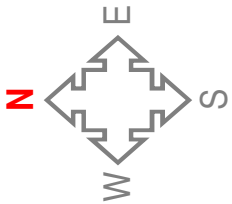
14
Big Combustible Burnable waste bigger than 50x50x100 cm.

WOOD.

Galley/Cabin waste with food waste

Tins in scrap!

No Hazardous garbage. Paint, Oil, Oil barrels, pressurized cylinders etc. via Agent only!!



10

Scrap

Placed about 25 m West of Waste Station.

NO LIQUID!! NO OTHER WASTE!!

No Garbage outside containers!

2013 April. Shell Terminal Fredericia DK

12 MOORING POINTS

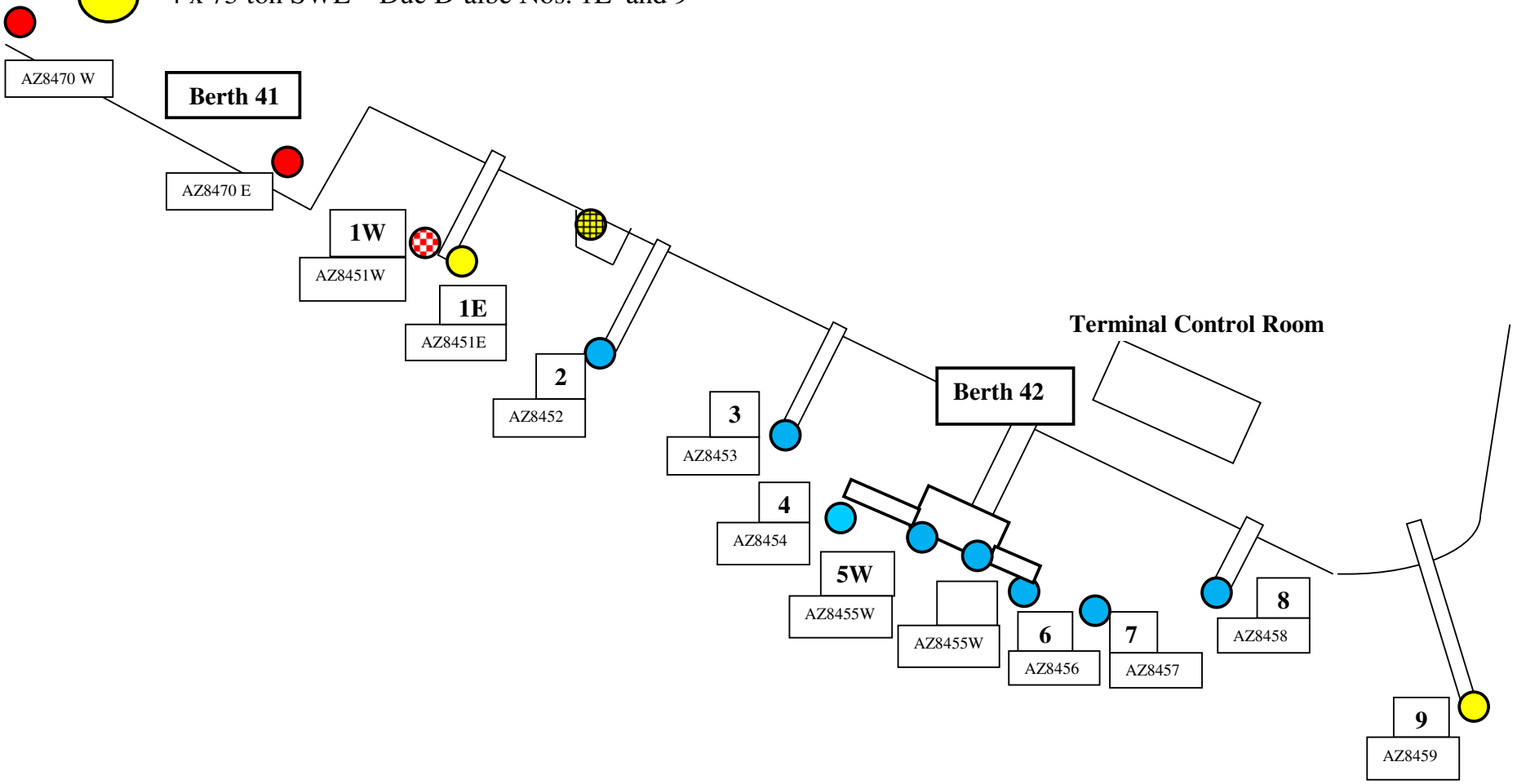
1 x 60 ton SWL. Jetty 41 E/W

2 x 75 ton SWL - Duc D'albe Nos. 2, 3, 4, 5E, 5W, 6, 7, 8

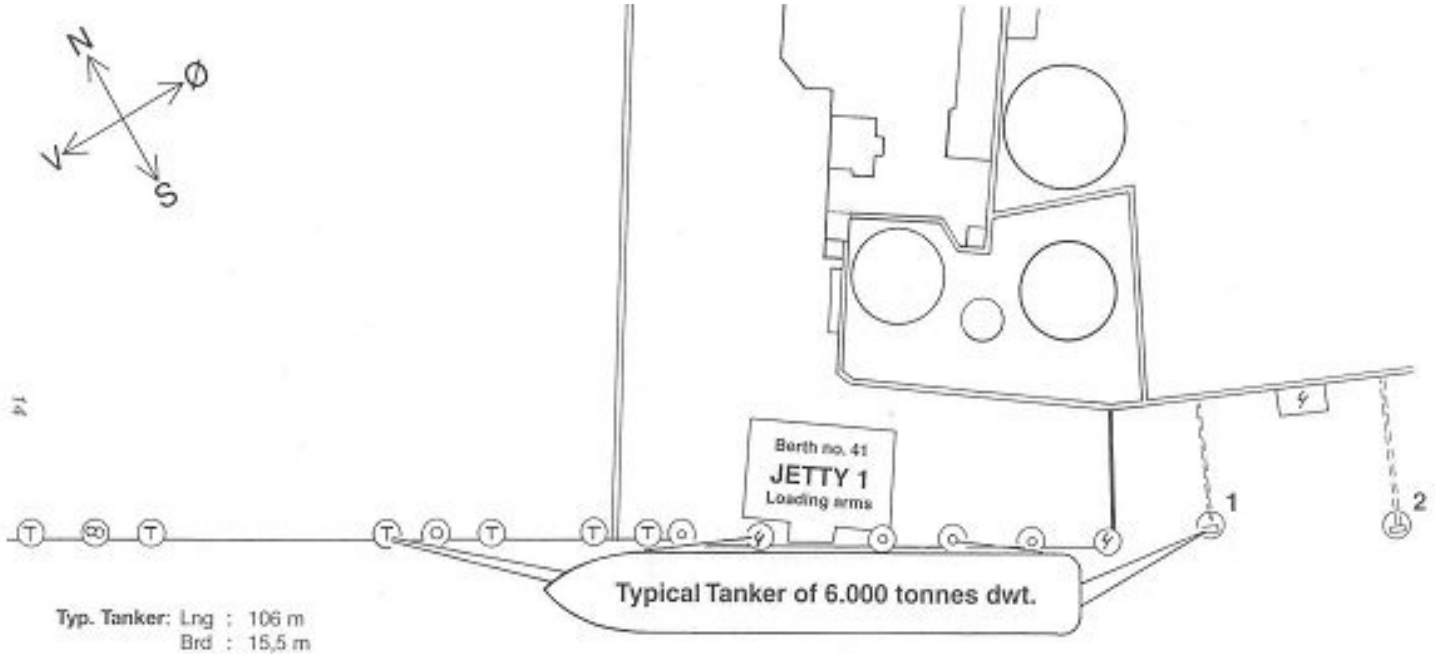
4 x 75 ton SWL – Duc D'albe Nos. 1E and 9

2 x 30T nominal Duc D'albe No. 1 W

1 x 15T nominal, Max 15T. Shorehook



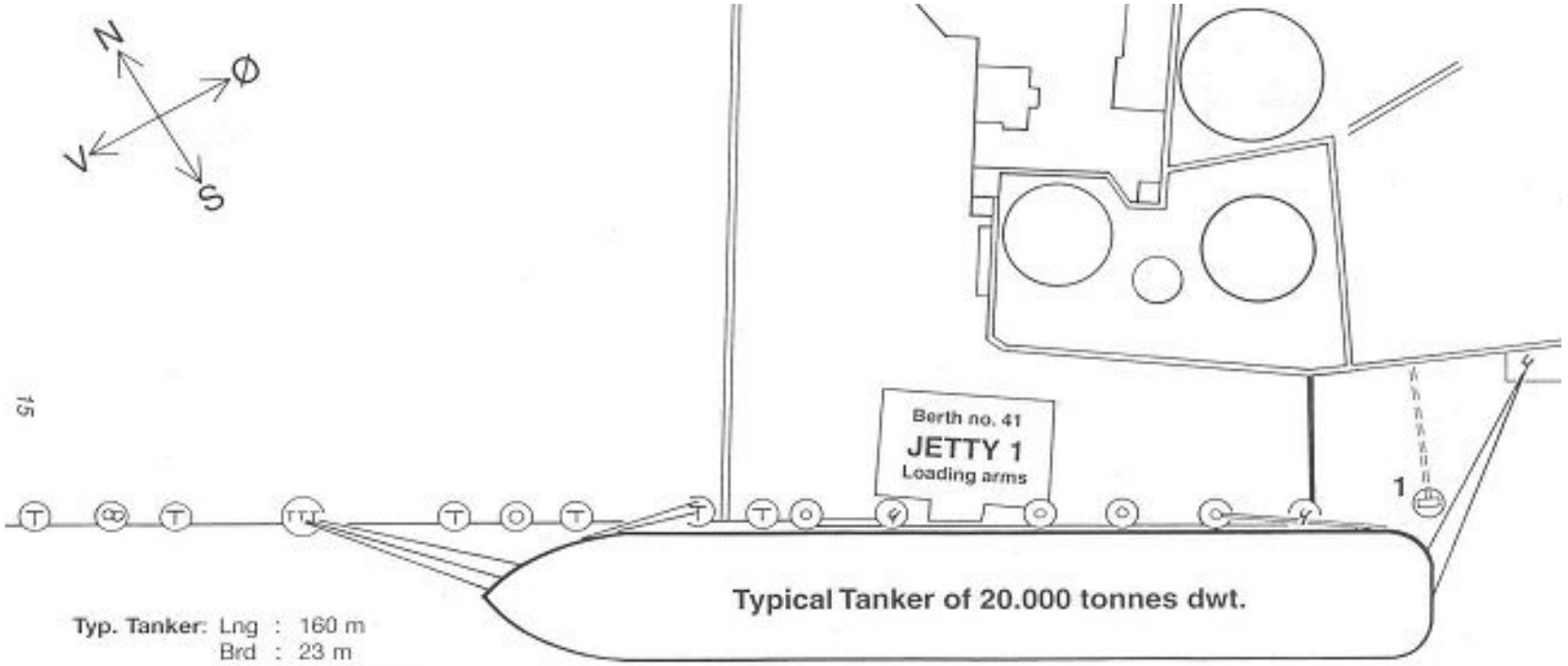
13 MOORING PLANS



Typ. Tanker: Lng : 106 m
Brd : 15,5 m
DWT: 6.150 Ts.

Moorings: 2-3 Head ropes
1-2 Forward spring
2-3 Stern ropes
1-2 Aft spring

All moorings are evaluated according to quality and weather conditions.



Typ. Tanker: Lng : 160 m
Brd : 23 m
DWT: 19.999 Ts.

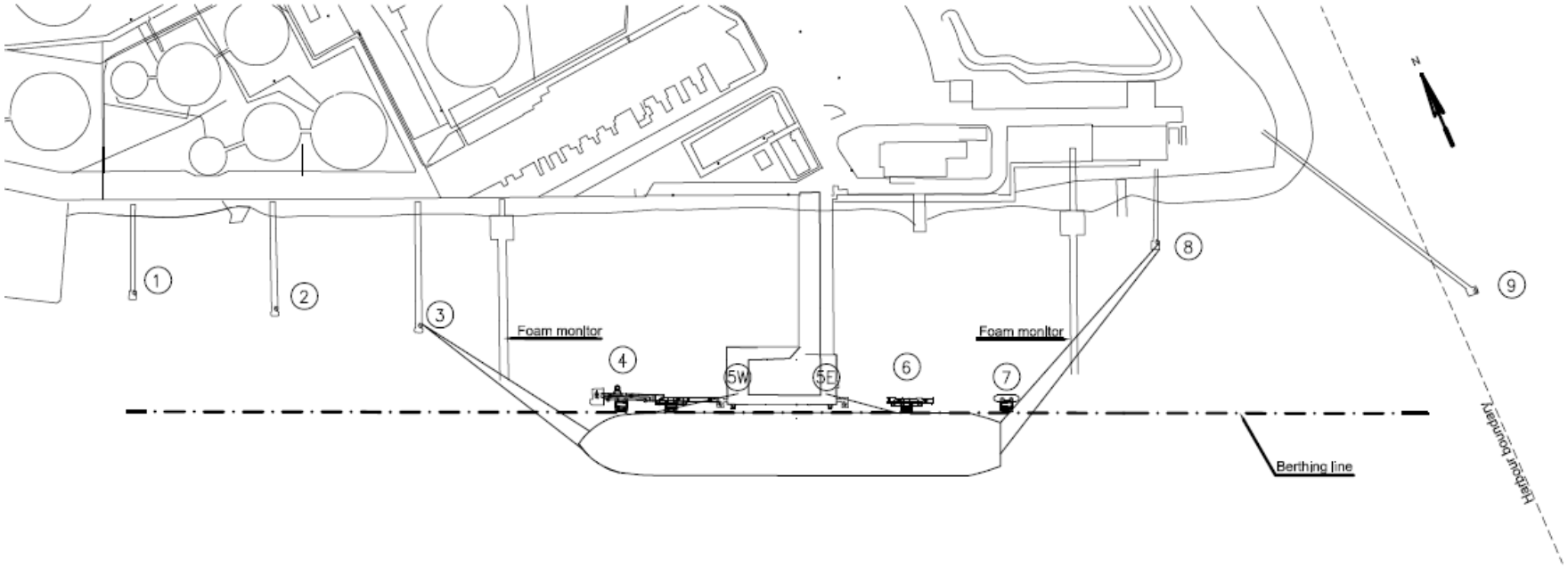
Moorings:

3	Head ropes
2	Forward spring
3	Stern ropes
2	Aft spring

All moorings are evaluated according to quality and weather conditions.

JETTY 2

Berth no. 42



Moorings: 2 Head lines
1 Spring forward
2 Stern lines
1 Spring Aft

Typical Tanker of 6.000 tonnes dwt.

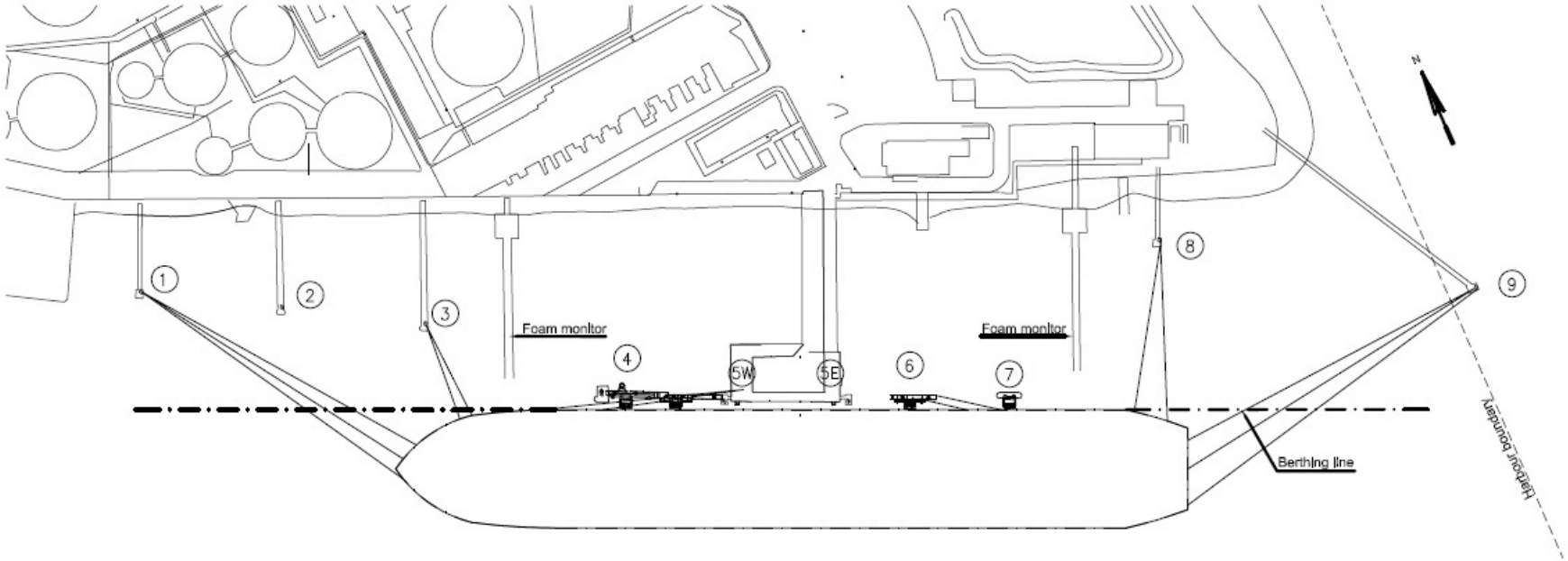
NOTES:

Water depth 15.0m
Max. LOA 275 m

0 50 100 150 200m

JETTY 2

Berth no. 42



Typical Tanker of 50.000 tonnes dwt.

Moorings:
- 3 Head lines
- 2 Breast forward
- 2 Springs forward (wires only)
- 3 Stern lines
- 2 Breast Aft
- 2 Springs Aft (wires only)

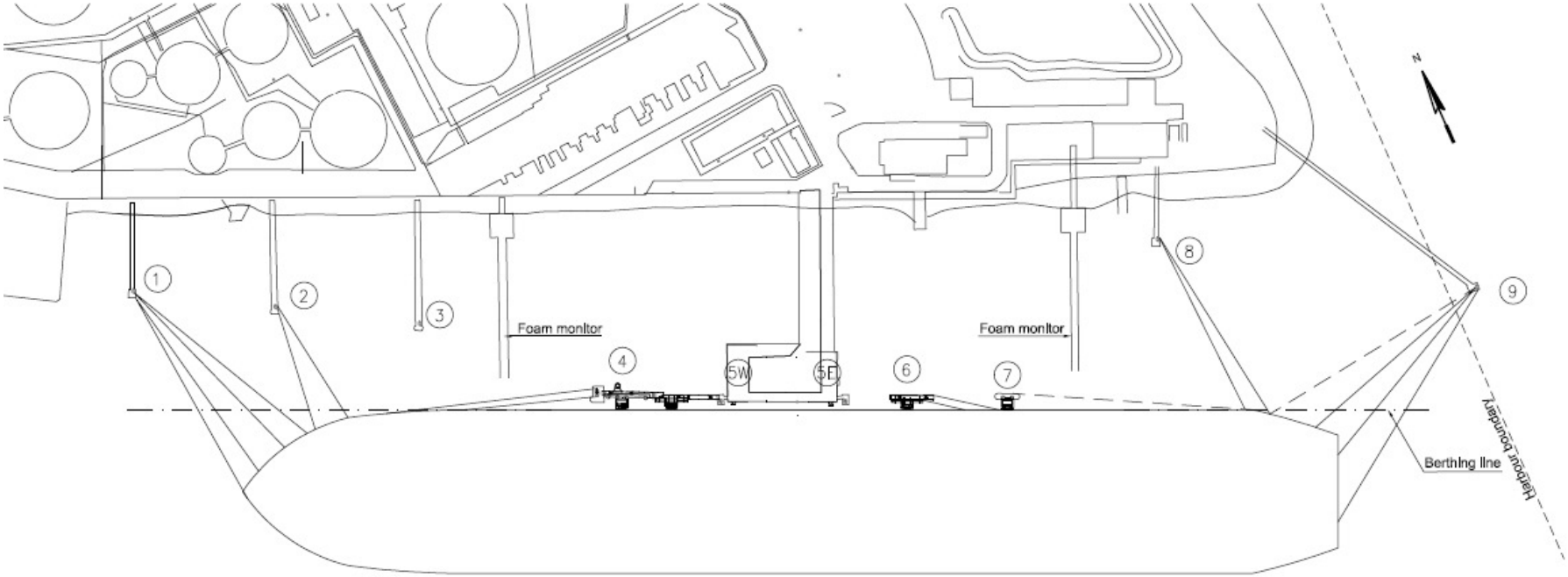
NOTES:

Water depth 15.0m
Max. LOA 275 m

0 50 100 150 200m

JETTY 2

Berth no. 42



Typical Tanker of DWT 80.000 tonnes and above

Moorings:

4 Head lines (wires only)
2 Breast forward (wires only)
2 Springs forward (wires only)
4 Stern lines (wires only) *
2 Breast Aft (wires only)
2 Springs Aft (wires only)

NOTES:

Water depth 15.0m
Max. LOA 275 m

0 50 100 150 200m