

THUNDER BAY TERMINAL

INFORMATION TO VESSELS

Current versions of approved documents are maintained online. Printed copies are uncontrolled

IMPORTANT

- Smoking is strictly prohibited outside designated smoking areas!
- Cargo operations require at least one qualified person to be stationed on deck during loading or discharge!
- In case of an oil spill or other emergency, cargo operations must be stopped immediately and the terminal control room and Voyage Order contact must be informed.
- In case of any situation or incident that could possibly have an impact on health and/or environmental conditions, the terminal control room should be informed immediately on the emergency telephone number:

807 622 8701

or by the portable radio. Voyage Order contact should also be informed.

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Version:

Date	Revision	Updated by
June 1999	-	-
March 2016	1	Marine Operations
March 2018	2	Marine Operations

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GENERAL INFORMATION

1 GENERAL INFORMATION

1.1 LOCATION

The facility is shown on Canadian Hydrographic Service Chart numbers 2314 Port of Thunder Bay in latitude 48° 22.2' North, longitude 89° 14.8' West.



1.2 BERTH DESCRIPTION

- The berth is designed to offload bulk petroleum products, primarily gasolines and distillates, from domestic tankers.
- The dock is constructed of three large cylindrical cells that present a berthing face of approximately 56 metres. It is situated parallel to the shore.
- The facility is 2.5 nautical miles from open water and is on the Mission River. The Port Authority prefers vessels to use the Mission River approach instead of the Kaministikwia River approach which requires the road and rail bridges to be opened. The Harbour by-laws set speed and wake restrictions on vessels navigating the Mission River (see Section 4 Rules and Regulations).
- The cargo transfer manifolds are positioned on the centre cell and vessels normally berth starboard side to but can be berthed either port or starboard side to.

- There is no shore gangway and vessels must arrive at the facility with the vessel’s gangway ready to be deployed. N.B. The elevation of the dock is approximately 3.0 metres above lake level at chart datum.

1.3 WATER DEPTH

- The lake water is fresh and chart datum is 183.2 metres above the International Great Lakes Datum 1985 (IGLD 1985).
- Water levels fluctuate during the season and Masters should secure the latest information on water levels when planning their required under keel clearance for berthing and while in berth.
- The Canadian Hydrographic Service provides mariners with continuous, real time, information on water levels at various locations in the Great Lakes through a telephone accessed voice announcing water level gauge system. The facility is situated five miles from the Thunder Bay gauge at Keefer Terminal and some discrepancy may occur between the actual level at the dock and the gauge (see telephone numbers in Section 2, Communications).
- For most recent soundings taken at the dock, refer to Appendix 5, provided as information only and strictly not to be used for navigation purposes. Suncor accepts no liability for and does not warrant the currency and accuracy of any such information and shall not be liable should any such information prove to be inaccurate, and the master is advised to ask his local agents to supply current information prior to arrival in order to ensure safe navigation at all times.
- The Mission River and the berth is subject to siltation and the depths found in the last survey will be subject to change (Suncor requests Masters to use caution when establishing their vessel’s draft for voyages early in the navigation season and to keep Suncor’s Marine Department apprised of any actual water depths that deviate from the information in this booklet.)
- The bottom in the Mission River and at the berth is mud

The vessels must follow their company ISM policies for under keel clearances and be guided by Canadian Coast Guard regulations.

Masters are advised to be in full compliance with the Canadian Coast Guard guidelines reference to net under keel clearance when alongside the terminal. Copies of these regulations can be obtained from the vessel’s agents.

1.4 SERVICES AT THE BERTH

Bunkers	No pipeline supply
Fresh Water	Non potable water is available (vessel hose required)
Garbage Disposal	Not accepted across the dock

Slop and Tank Cleanings	Not accepted at the facility (This facility is a cargo discharge terminal)
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1.5 SECURITY

1.5.1 Access to and from the vessel

- Access to and from the vessel is controlled by a gate. Taxicabs are not allowed past the gate, which is a short walk to/from, the berth. Masters must advise the terminal operations staff who are approved to visit the vessel. All vessels must provide a crew list and visitors to vessels at the berths who are not crew members must be pre-approved by Suncor Marine Department.
- All persons and property may be subject to search. If you elect to enter the terminal area, you are deemed to have given consent to search and inspection

Port Facility Security Officer (PFSO):

Name	Numbers
Al Hamilton	807 622 8701
E-mail	ahamilton@suncor.com
Cell	807 628 2218

- The terminal is compliant with the requirements of the International Code for the Security of Vessels and of Port Facilities and the relevant amendments to Chapter XI of SOLAS (ISPS Code). It is mandatory that all vessels comply with the referenced ISPS code. A compliant Declaration of Security (DoS) will be issued between vessels and shore for each call to the marine facility.

1.5.2 Access to the Terminal

1.5.2.1 General

- Anyone who has been granted access to the premises has to proceed to and from the vessel via the shortest route possible, using only the main road between the gate and the jetty.

1.5.2.2 Crew

- Crew that are mentioned on the crew list have permission to leave and re-enter the terminal. They must carry identity papers to enable the security guard to check their identity versus the crew list.

1.5.2.3 Vessel chandlers and other visitors to the vessel

- Access to the premises is only allowed to visitors mentioned on the visitor list, issued by the agent or after approval by the vessel's master. All visitors have to identify themselves at the gate by means of a passport or driving licence. Government officials, in their official capacity, will be granted access upon presentation of their official ID-card.
- Furthermore, anyone carrying goods that are to be delivered on board a vessel must present documents (i.e. a waybill, packing list etc.) covering the carriage of such goods to security guards before entry is granted.

1.5.2.4 Unaccompanied Luggage

- Depending on the security level, Suncor reserves the right to refuse unaccompanied luggage at the gate. Alternatively, when unaccompanied luggage is presented at the gate, Suncor may invite the vessel's security officer to personally take receipt of this luggage on behalf of its rightful owner.

1.6 WEATHER

- The dock is well protected with little or no wave action
- Masters are referred to Environment Canada online at for current meteorological data:
https://weather.gc.ca/marine/region_e.html?mapID=09

1.7 RIVER CURRENT

- The Mission River current speeds range between one (1) to in excess of three (3) knots and are roughly parallel with the dock. The current is particularly strong during the spring thaw and after heavy rain.

2

COMMUNICATIONS

2 COMMUNICATIONS

2.1 ESTIMATED TIME OF ARRIVAL (ETA)

- Masters are required to co-ordinate their arrival in accordance with the terms of the charter party, and to provide the terminal with ETA's:
 - On departure from the loading facility; and
 - On departing the Sault St. Marie locks;
 - Four (4) hours prior to arrival at the terminal

2.2 USEFUL LOCAL NUMBERS

Suncor Thunder Bay Terminal	Tel: 807 622 8701 (7am – 5pm ET) Tel: 807 627 7114 (after hours) Fax: 807 623 0932
Suncor Marine Department - Voyage Orders	Tel: 905 804 4500
Thunder Bay Port Authority	Tel: 807 345 6400 (office hrs) Tel: 807 624 8200 (24 hrs) Fax: 807 345 9058 http://www.portofthunderbay.com/
Canadian Hydrographic Service, Water Levels	http://www.tides.gc.ca/eng/info/bulletin Tel: 807 344 3141 Tel: 1 877 775 0790
Oil Pollution Response	Tel: 613 930 9690
Police Fire Ambulance	911
Canadian Coast Guard	Tel: 1 800 265 0237 (Any CG radio station)
Oil Spills, Fire/Emergencies - MCTS	Tel: 1 800 265 0237
Gravel and Lake Service - Assist Tugs:	Tel: 807 473 7821
Thunder Bay Tug Service - Assist Tugs	Tel: 807 344 9221

2.3 CARGO TRANSFER COMMUNICATION

- The terminal provides a portable radio for the vessel's use in communicating with terminal staff during cargo transfer operations.

3

BERTHING AND MOORING

3 BERTHING AND MOORING

3.1 VESSEL SIZE AND RESTRICTIONS

- There is less water depth west of the shore manifold and this constrains the forward draft of vessels with longer bow to centre of manifold dimensions when the vessel is berthed in the recommended starboard side to position.

Vessel Size Criteria	Restriction
Maximum Displacement	20,000mt
Maximum Length Overall	163m
Maximum bow to centre manifold	82m

- The vessels must follow their company ISM policies for under keel clearances and be guided by Canadian Coast Guard regulations.
- Masters are advised to be in full compliance with the Canadian Coast Guard guidelines reference to net under keel clearance when alongside the terminal. Copies of these regulations can be obtained from the vessel agents.

3.2 SPOT APPROVAL

- The parameters shown in 3.1 may be relaxed for an individual vessel call, subject to a marine technical review of the special circumstances of the relaxation request and written approval by Suncor Marine Department.

3.3 MOORING CRITERIA

- The berth is well protected with a good breasting face and well placed mooring bollards. Mooring bollards, other than those on the berthing cells, require long leads and handling across open water and the shoreline. Masters should take this into account when planning the execution and duration of the mooring operation and, under these circumstances, synthetic breast and head lines are preferred instead of wire cables.
- There is very little traffic past this berth but, when traffic does occur, the deck watch should guard against passing vessel effect.
- All vessel mooring wires must be fitted with synthetic mooring tails that meet OCIMF guidelines. (i.e. maximum 11 metres in length with a minimum breaking strength of 125% of the breaking strength of the wire to which they are attached and be connected to the wire with mandal or tonsberg type shackles).

- Mooring lines in similar service, e.g. spring lines, should be of the same material and be similar in length.
- While the responsibility for the adequate mooring of a tanker rests with the Master, the terminal has an interest in ensuring that vessels are securely and safely moored. Appendix 1 Mooring Guidelines are guidelines for minimum moorings which terminal staff will expect vessels to deploy while at this facility. Masters should ensure that to the maximum extent possible, breast lines shall be deployed at right angles to the longitudinal axis of the vessel and spring lines shall be deployed parallel to the longitudinal axis of the vessel.

3.4 BERTHING INFORMATION

- The dock, which consists of three large cells interconnected by walkways, is close to and parallel with the river bank
- The fendering is solid rubber with energy absorption enhanced by the compression design of the fender. This is very adequate fendering for typical traders and vessels up to the maximum approved criteria (see Section 3.1).

3.5 BERTHING/UNBERTHING MANOEUVRES

- There is adequate water depth in the Mission River for vessels bound for the Suncor facility. Masters are advised to stay in the centre of the river to maximize under keel clearance.
- The dock is usually approached at slow speed stemming the current and berthing starboard side to. Vessels should not plan a port side berthing when the river current is strong i.e. in excess of 1 knot.
- Masters should ensure that the vessel does not fall inshore of the line of the face of the dock as the water depth lessens sharply inside of this line. They should also exercise caution to avoid the vessel proceeding West of the chosen berthing position as the water depths in the West end of the berth decrease quite rapidly (see Section 1.3).
- The unberthing manoeuvre, for vessels berthed starboard side to, requires the vessels to move a few hundred metres ahead to the junction of the Mission and Kaministikquia Rivers where an adequate turning basin is available.
- Nothing in this berthing principle shall exonerate the master from taking any precautions required by the ordinary practice of seamen, or by any relevant special circumstances of the case. At all times the vessel should proceed at a safe speed so that she can take effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions

3.6 TUG ASSIST

- All vessels visiting this facility will be comparatively small domestic tankers.
- No vessel should attempt to transit the Mission River enroute to the facility unless the vessel's own propulsion and steering mechanisms are in proper working order. Accordingly, Suncor does not require the vessels authorized to visit this facility to utilize tug assist. Masters may elect to use tug assist to aid the berthing or unberthing manoeuvre in ice conditions and are encouraged to utilize tug assist when, in their judgement, it will enhance the safety of the berthing, or unberthing of the vessel.
- Assist tugs are available in Thunder Bay (see Section 2.2).

3.7 LINESMEN

- An adequate number of shore linesmen will be provided to take vessel lines and perform dock mooring duties. Vessel crews are not to be utilized to perform dock mooring duties.

Guideline	Berthing	Unberthing
All vessels	4 Persons	2 Persons

3.8 ENVIRONMENTAL LIMITS

Wind Limits – Berthing:

- The Suncor Energy facility is not an exposed berth and the Masters decision to transit the Mission River and to berth will be subject to an evaluation of the wind direction and speed, the load condition of the vessel, the river current and other conditions the Master deems applicable. Vessels should not be berthed in adverse wind conditions (i.e. offshore or onshore winds in excess of 30 knots).

While alongside:

Stop cargo	30kts
Disconnect arm	35kts
Take precautionary action	40Kts

4

RULES AND REGULATIONS

4 RULES AND REGULATIONS

4.1 GENERAL FEDERAL GOVERNMENT REQUIREMENTS

- Masters are required to operate their vessels in compliance with Canadian Legislation and Regulations while in Canadian waters. Many of Canada’s marine requirements are based on IMO and ILO standards. Certain requirements are, however, unique to Canada and Masters of non-Canadian vessels and should ensure that their vessel’s agent informs them of distinct Canadian requirements.

4.2 PORT OF THUNDER BAY REGULATIONS

- Masters should ensure compliance with these regulations and attention is drawn to speed and wake restrictions in the Mission River.

4.3 SUNCOR THUNDER BAY RULES AND REGULATIONS

- Tankers destined for the Terminal are required to have on board, the latest edition of the *“International Safety Guide for Oil Tankers and Terminals - ISGOTT”*.
- Suncor is committed to safe operations and protection of the environment at its Thunder Bay Terminal. Vessel crew are requested to immediately bring any unsafe condition or pollution risk to the attention of terminal staff and to take appropriate action to remedy the situation, including the suspension of cargo transfer activity.
- Nothing in these rules and procedures will relieve Masters of their responsibilities in observing normal safety, fire prevention, pollution prevention and security precautions.
- Terminal staff are authorized to advise and request Masters to take additional measures to ensure safe operations should circumstances so require. Terminal staff are also authorized to suspend oil transfer operations in the event of an infringement of terminal rules and procedures or if any other hazardous situation is encountered.

The following safety regulations have been developed in an effort to reduce the possibility of an incident involving fire, explosion, spills or other hazard:

1. Safety Requirements

- Masters and/or barge supervisors will adhere to the following Suncor Thunder Bay Terminal Rules and Procedures after completion of berthing operations.

2. Safety Check List

- On completion of berthing and prior to the commencement of cargo transfer, the Vessel/Terminal Safety Check List - Appendix 2, will be completed following a joint inspection by the terminal operator and a responsible tanker officer / barge supervisor.

This safety Check List is based on the recommendations of the “International Safety Guide for Oil Tankers and Terminals”(ISGOTT).

3. Gangway

- The vessel’s gangway must be in good condition and of an appropriate length for safe access between vessel and shore. An effective safety net must be deployed. N.B. elevation of dock above chart datum is 3.0m.

4. Vessels Decks

- Walkways required for accessing cargo systems, deck machinery and emergency equipment shall be kept clear of obstructions and, in winter, provide a safe walking surface

5. Engine Readiness

- The vessels main engines, steering machinery and other equipment essential for manoeuvring shall be maintained in a state of readiness for vacating the berth under full engine power at 15 minutes’ notice.

6. Repairs

- No hot work is to be performed on board any vessel while alongside the terminal. The testing of radar, vessel’s radio equipment and other electrical equipment is prohibited unless written permission is received from the terminal supervisor. Tank cleaning and gas freeing shall not be carried out alongside without written approval from the terminal supervisor. Chipping and scraping on the deck or hull is prohibited.

7. Staffing

- A sufficient number of vessel’s personnel to safely handle the operation in progress and deal with emergencies, including an emergency departure from the berth, are to be onboard while the vessel is in the berth.

8. Vessels Moorings

- Vessels personnel must frequently monitor and carefully tend the vessels moorings to ensure that the vessel is safely secured having regard to the weather and current conditions.

9. Vessel/Shore Communications

- Communication between the terminal and vessel will be by portable UHF radios. These shall be tested and found satisfactory before transfer operations commence. The tanker's responsible officer and the terminal operator shall confirm with each other that the communication system and signals for controlling the operations are understood by all personnel involved prior to the commencement of cargo transfer. See Section 5.3 and Appendix 3.
- In the event of a total breakdown of radio communication between the terminal and the vessel during cargo transfer operations, operations shall be immediately suspended and not resumed until satisfactory communications are re-established.

10. Smoking

- Smoking is strictly prohibited while at the berth except in designated areas which have been jointly approved by the Master and by the terminal operator.
- Smoking notices specifying the designated smoking areas shall be exhibited in conspicuous places on board the vessel.
- Where smoking is approved on vessels, approval may be withdrawn by terminal operator if circumstances so warrant.

11. Matches and Lighters

- The carrying and use of matches and lighters is prohibited on board the vessel while alongside the terminal except under controlled circumstances in the designated smoking areas.

12. Portable Electrical Equipment

- Portable electric lamps and portable electric equipment for use in hazardous areas must be of an approved type.
- Any other electrical or electronic equipment of non-approved type, such as radios, mobile telephones, radio pagers, calculators, photographic equipment are not to be active, switched on or used within hazardous areas.

13. Radio Equipment

- The use of the vessels radio transmitting equipment while alongside is prohibited and the transmitting antennae should be earthed. This does not apply to permanently and correctly installed VHF and UHF equipment provided the power output is reduced to one watt or less.

14. Galley Stoves and Other Cooking Equipment

- The use of galley stoves and other cooking equipment shall be permitted, provided the Master and terminal operator agree to their use.

15. Radar - Satellite Communication Terminals - Closed Circuit Television

- The use of this equipment for any purpose is prohibited during the period that the vessel is alongside, except with the approval of the terminal operator.

16. Prevention of Sparking and Excessive Smoke

- Soot blowing and excessive smoke are prohibited, and immediate steps shall be taken to eliminate any sparking from funnels/stacks

17. Inert Gas Systems

- All tankers fitted with cargo tank inerting system should arrive with cargo tanks inerted to 5% O₂ or less by volume and pressurized as required by the SOLAS Convention.

(a) Tank Inspection, Gauging, Sampling, Water Dips and Temperatures

- Cargo tanks requiring inspection should only be opened on a tank-by tank basis. The IG system shall be maintained at about 200mm water gauge except for the individual tank to be opened which, if possible, is to be isolated from the system and the sighting port opened with care. On completion of inspection the tank shall be secured and repressurized. The next tank is not to be isolated and opened until the preceding tank is secured and open to the IG system
- All gauging, sampling water dips and temperatures will be taken either through special fittings provided; or if it is necessary to open up tanks for this purpose, then this will be done one tank at a time as described above.

(b) Failure of IGS

- If at any time the IGS is not maintaining the prescribed conditions, the terminal operator shall order a suspension of transfer operations. The cost of any delays and shifting shall be on the vessel's account.

18. Fire Precautions

- The vessel's firefighting appliances, including main and emergency fire pumps, shall be kept ready for immediate use.
- Before operations commence, at least two fire hoses and jet/fog nozzles shall be laid out on the tank deck, connected to the fire main and tested as required by the terminal

operator. The two fire monitors immediately adjacent to the manifold should be elevated, aligned towards the manifold area and made ready for immediate use. A fire pump shall maintain pressure on the fire main and also be ready for immediate use. Two portable fire extinguishers, preferably of the dry chemical type, shall be available in the proximity of the manifold area.

- Should fire occur on the vessel, the Master or responsible vessel's officer of such vessel shall make an immediate signal by prolonged blasts on the vessel's whistle and by sounding the fire alarm, and will also place the engine on standby. All transfer operations will cease immediately.

19. Emergency Procedures

- As required by the Vessel/Terminal Safety Check List, the Master of the vessel and the terminal operator should discuss and agree upon the action to be taken in the event of an emergency or a fire on board either the tanker or the terminal. This should include means of communication and emergency procedures. See Section 6.

20. Operating Procedures

- Procedures for cargo and/or ballast operations shall be agreed in writing between the terminal operator and the vessel's Master or Chief Officer. See Appendix 3.

21. Sea and Overboard Discharge Valves

- Before any cargo transfer commences, sea and overboard discharge valves connected to the cargo or ballast system shall be closed and sealed with numbered seals. When sealing is not practicable, as with hydraulic valves, some suitable means of marking should be used to indicate that the valves are to remain closed. Seal numbers should be recorded on the Vessel/Terminal Safety Check List. Except in an emergency, these seals shall be removed only with the approval of the terminal operator. A careful watch shall also be maintained to ensure that oil is not leaking through sea and overboard discharge valves.

22. Conditions to be observed on Board Vessels During Transfer Operations

- (a) Deballasting has to be carried out on the outboard side of the vessel. In case this is not possible (due to the pipeline configuration of the vessel) alternative to be agreed during initial meeting with terminal representative

- (b) A qualified vessel's officer, able to communicate effectively in English with the terminal staff, is required to be on deck or in the control room at all times. A continuous deck watch is to be maintained to ensure moorings are carefully tended and cargo transfer arms are under observation at all times.
- (c) Towing off wires shall be made fast to bitts as far forward and aft as possible on the outboard side. The wires shall be in good condition, at least 1 1/8" (28mm) diameter, and secured with at least five turns or have the eye on the bitts. The outboard eye shall be maintained at a height of between 1 metre and 2 metres above the water at all times using a small diameter heaving line for this purpose.
- (d) All doors, portholes and openings leading from or overlooking the main deck to accommodation, machinery spaces (excluding pump room) and forecastle shall be kept closed. Cargo control room doors opening on to or above the main deck may be opened momentarily for access.
- (e) All ventilators through which gas can enter accommodation or machinery spaces shall be suitably trimmed. Air conditioning units shall be stopped or operated in a recirculation mode. Window type air conditioning units shall be electrically disconnected.
- (f) The venting of the vessel's tanks shall take place only through the vessel's fixed venting system.
- (g) All cargo, ballast and bunker tank lids and tank washing openings shall be securely closed.
- (h) Sighting and ullage ports when not in use shall be kept closed. When any are open for operational reasons, the openings shall be protected by approved gauze flame screens. These screens shall be kept clean and in good condition. Portable screens should be a good fit.
- (i) All unused cargo and bunker connections shall be properly blanked, fitted with a gasket and bolted with a bolt in every hole at the manifold. Stern cargo pipelines (if fitted) shall be isolated forward of the aft accommodation by blanking.
Any part of a slop transfer system which extends into machinery spaces shall be securely blanked and isolated on the tank deck.
- (j) If for any reason there is poor dispersion which results in an accumulation of gas on or about the decks of the vessel, transfer shall be stopped or the transfer rate

relevant to a particular tank or tanks reduced at the discretion of either the terminal operator or the responsible vessel's officer.

- (k) The vessel shall by day fly Flag "B" of the International Code, and by night an all-round red light.
- (l) H2S portable monitors must be worn by all personnel working on deck if the cargo contains H2S
- (m) The person in charge of the transfer operation on the vessel shall conduct inspections of adjacent water areas around the vessel frequently and at least once each hour to ensure that no oil has spilled or leaked into the water.

23. Movements of Refuelling Vessels, Garbage Barge, Tugs, Workboats and Other Craft

- During transfer operations, no craft shall be allowed alongside the vessel unless approval has been given by the terminal operator, Suncor Marine Department and as agreed to by the Master of the vessel.

24. Emergency Escape

- Means for emergency escape shall be provided on the offshore side of the vessel. For security reasons such means is to be stowed at deck level in such a manner as to be ready for expeditious use in an emergency. Such means shall be of adequate length to reach the water at all times.

25. Conditions Requiring Immediate Action

Ballast or cargo transfer operations shall not be started, or if started, shall be discontinued by either the responsible officer of the vessel or the terminal operator when any of the following conditions is noted:

- (a) On the approach of and during electrical storms, heavy rainstorms or period of high winds, all tank openings and cargo valves shall be closed, and transfer arms disconnected.
- (b) If a fire occurs on the terminal, the vessel or any craft in close proximity, and in addition, all tank openings and cargo valves shall be closed.
- (c) If there are insufficient competent personnel aboard the vessel to safely handle the operation in progress, and to handle any emergency situation.
- (d) If a spill or leak occurs aboard the vessel or on the terminal.

- (e) If any other emergency situation arises which, in the opinion of the vessel's responsible officer or the terminal operator constitutes a potential hazard to either the vessel or the terminal.

26. Avoidance of Oil Pollution

- During transfer operations all scuppers shall be effectively plugged, fixed or portable manifold oil containment shall be in place, and no leakage or spillage of oil or water which can possibly contain oil shall be allowed to escape overboard. Scupper plugs may be removed to drain off accumulations of water periodically and replaced immediately after the water has been run off. Plugs to be manned at all times while open for draining. Manifold containment should be drained before transfer operations commence. Any leakage or spillage must be reported immediately to the terminal operator and regulatory authorities.
- A supply of absorbent material shall be available at the manifold to facilitate the immediate cleanup of minor spills.
- No hazardous material shall be thrown overboard, nor shall any other objectionable material, either solid or fluid, be thrown overboard from the vessel.

27. Tank Lids

- All cargo tank lids, ullage and sighting ports shall be securely closed before berthing or unberthing operations commence.

28. List

- Excessive listing of the vessel must be avoided

5

CARGO AND BALLAST TRANSFER

5 CARGO AND BALLAST TRANSFER

5.1 TERMINAL MANIFOLDS

- The berth is fitted with two manifolds which with 8” diameter flanges. Each manifold is fitted with an insulating flange.
- One manifold is for gasoline and the other is for distillates. The manifolds each connect to separate 8” diameter pipelines and the two grades can be discharged simultaneously.
- Maximum allowable working pressure at the shore manifold is 90lbs/square inch.
- Typical flow rates are 400 to 500 M3 per hour. All dock pipelines are pumped dry after the vessel is discharged.

5.2 VESSEL MANIFOLDS

- Vessel cargo hoses must be provided by the vessel to effect the flexible connection between the vessel and shore manifolds. The connection to the shore manifold should be an eight inch (8”) steel flange or reducer, conforming to *BS1560*, *ANSI B16.5* or equivalent.
- Vessel cargo hoses must be in good condition and have been tested in accordance with the requirements of the Canada Shipping Act. The date of the test should be visibly and permanently marked on the hose and the test certificate must be readily available for inspection by the terminal.

5.3 CARGO AND BALLAST OPERATING PROCEDURES

- Before cargo and or ballast transfer commences the vessel’s officer or barge supervisor, the terminal staff or supervisor and where applicable, the loading master will hold a pre transfer conference/safety meeting. Relevant information will be exchanged and a transfer plan agreed upon; all of which will be documented in writing. Information exchanged and the plan must include the items shown in *Appendix 3* at a minimum.

5.4 ENVIRONMENTAL LIMITS - CARGO OPERATIONS

See Section 3.8.

6

EMERGENCY RESPONSE TO FIRES, SPILLS, LEAKS ETC

6 EMERGENCY RESPONSE TO FIRES, SPILLS, LEAKS, ETC

6.1 FIRES

The terminal does not fight fires on vessels at the berth(s). Vessels are expected to be capable of fighting fires which occur on board, including securing capable external support, and notifying the proper authorities. (Refer to ISGOTT section 26.5)

6.1.1 Actions in the Event of Fire at Terminal

The terminal will raise the alarm to vessel at the berths via the portable radio communication system;

- The transfer operation is to be stopped immediately
- The terminal will respond to the fire
- Both the terminal and the vessel will take action to mitigate the spread of the fire to the vessel

Terminal will:

- Secure shore cargo system
- Stand by to cast off the moorings (if conditions allow)
- Disconnect hoses (if conditions allow)
- Communicate with authorities

Vessel will:

- Secure vessel cargo system
- Disconnect hoses
- Ready vessel for emergency departure
- Communicate with authorities

6.1.2 Action in Event of Fire on Board a Vessel

The vessel will raise the alarm to the terminal via the portable radio communication system and give five or more prolonged blasts on the vessel's whistle, repeated at intervals;

- The transfer operation is to be stopped immediately.
- The vessel will respond to the fire.
- Both the terminal and the vessel will take action to mitigate the spread of the fire to the terminal.

Terminal will:

- Secure shore cargo system
- Disconnect hoses
- Stand by to cast off the moorings (if conditions allow)

Vessel will:

- Secure vessel cargo system
- Ready vessel for emergency departure
- Communicate with authorities
- Depart berth as required

6.2 SPILLS OR LEAKS**6.2.1 Terminal Spills or Leaks**

In the event of a spill from the terminal or a leak from the cargo arms or shore cargo piping:

- The transfer operation is to be stopped immediately and vessel to be informed
- The terminal's spill response plan is to be implemented as appropriate. This will include informing the proper authorities and initiating containment, recovery, and clean up procedures.
- The cause of the spill must be determined and rectified before operation is resumed.

6.2.2 Vessel Spills or Leaks

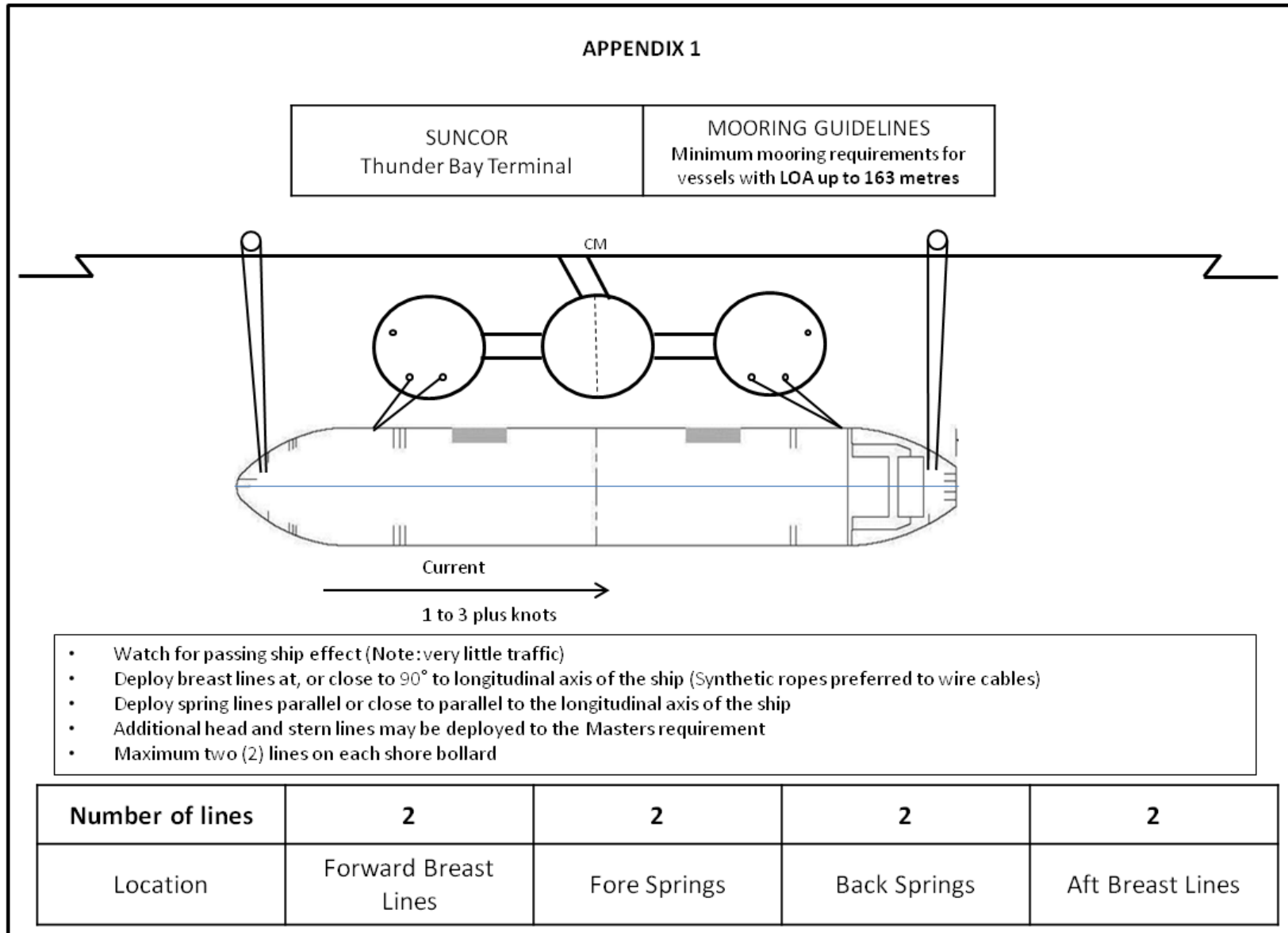
In the event of a spill or leak from the vessel:

- The transfer operation is to be stopped immediately and terminal to be informed.
- Suncor Marine Department to be informed.
- The vessel spill response plan is to be implemented as appropriate. This will include informing the proper authorities and initiating containment, recovery, and clean up procedures.
- The cause of the spill must be determined and rectified and confirmed with the Suncor Marine Department prior resumption of transfer operations

6.3 RESTARTING TRANSFER OPERATIONS AFTER A MARINE POLLUTION INCIDENT

- Transfer operations may only resume once the cause of the spill has been determined and remedied and after it has been clearly determined that restarting transfer operations will not interfere with the immediate, effective and sustained response to the marine pollution incident and after the terminal, Suncor Marine Department and the vessel have authorized a resumption of the transfer operation.

7 APPENDIX 1 MOORING GUIDELINES



8 APPENDIX 2 VESSEL SHORE SAFETY CHECKLIST (ISGOTT 26.3.3)

Vessel's Name

Berth **Port**

Date of Arrival **Time of Arrival**

PART 'A' – BULK LIQUID GENERAL - PHYSICAL CHECKS

Coding of Items

The presence of the letters 'A', 'P' or 'R' in the column entitled 'Code' indicates the following:

A ('Agreement'). This indicates that the referenced consideration should be addressed by an agreement or procedure that should be identified in the 'Remarks' column of the Check List, or communicated in some other mutually acceptable form.

P ('Permission'). In the case of a negative answer to the statements coded 'P', no operations are to be conducted without the written permission from the appropriate authority.

R ('Re-check'). This indicates items to be re-checked at appropriate intervals, as agreed between both parties and stated in the declaration.

The joint declaration should not be signed until all parties have checked and accepted their assigned responsibilities and accountabilities

Bulk Liquid - General	Ship	Terminal	Code	Remarks
1. There is safe access between the ship and shore.			R	
2. The ship is securely moored.			R	
3. The agreed ship/shore communication system is operative.			A R	System Back-up system
4. Emergency towing-off pennants are correctly rigged and positioned.			R	
5. The ship's fire hoses and fire-fighting equipment is positioned and ready for immediate use.			R	
6. The terminal's fire-fighting equipment is positioned and ready for immediate use.			R	
7. The ship's cargo and bunker hoses, pipelines and manifolds are in good condition, properly rigged and appropriate for the service intended.				

8. The terminal's cargo and bunker hoses/arms are in good condition, properly rigged and appropriate for the service intended.				
9. The cargo transfer system is sufficiently isolated and drained to allow safe removal of blank flanges prior to connection.				
10. Scuppers and 'save alls' on board are effectively plugged and drip trays are in position and empty.			R	
11. Temporarily removed scupper plugs will be constantly monitored.				
12. Shore spill containment and sumps are correctly managed.			R	
13. The ship's unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
14. The terminal's unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
15. All cargo, ballast and bunker tank lids are closed				
16. Sea and overboard discharge valves, when not in use, are closed and visibly secured.				
17. All external doors, ports and windows in the accommodation, stores and machinery spaces are closed. Engine room vents may be open.			R	
18. The ship's emergency fire control plans are located externally.				Location

If the ship is fitted, or required to be fitted, with an Inert Gas System (IGS) the following points should be physically checked:

Inert Gas System	Ship	Terminal	Code	Remarks
19. Fixed IGS pressure and oxygen content recorders are working.			R	
20. All cargo tank atmospheres are at positive pressure with oxygen content of 8% or less by volume.			P R	

PART 'B' – BULK LIQUID GENERAL – VERBAL VERIFICATION

Bulk Liquid - General	Ship	Terminal	Code	Remarks
21. The ship is ready to move under its own power.			P R	
22. There is an effective deck watch in attendance on board and adequate supervision of operations on the ship and in the terminal.			R	
23. There are sufficient personnel on board and ashore to deal with an emergency.			R	
24. The procedures for cargo, bunker and ballast handling have been agreed			A R	
25. The emergency signal and shutdown procedure to be used by the ship and shore have been explained and understood			A	
26. Material safety data sheets (MSDS) for the cargo transfer have been exchanged where requested.				
27. The hazards associated with toxic substances in the cargo being handled have been identified and understood.				H ₂ S Content Benzene Content.....
28. An International Shore Fire Connection has been provided.				
29. The agreed tank venting system will be used.			A R	Method
Bulk Liquid - General	Ship	Terminal	Code	Remarks
30. The requirements for closed operations have been agreed.			R	
31. The operation of the P/V system has been verified.				
32. Where a vapour return line is connected, operating parameters have been agreed.			A R	
33. Independent high level alarms, if fitted, are operational and have been tested.				
34. Adequate electrical insulating means are in place in the ship/shore connection.				
35. Shore lines are fitted with a non-return valve or procedures to avoid 'back filling' have been discussed.				

36. Smoking rooms have been identified and smoking requirements are being observed.			A R	Nominated smoking rooms:
37. Naked light regulations are being observed.			A R	
38. Ship/shore telephones, mobile phones and pager requirements are being observed.			A R	
39. Hand torches (flashlights) are of an approved type.				
40. Fixed VHF/UHF transceivers and AIS equipment are on the correct power mode or switched off.				
41. Portable VHF/UHF transceivers are of an approved type.				
42. The ship's main radio transmitter aerials are earthed and radars are switched off.				
43. Electric cables to portable electrical equipment within the hazardous area are disconnected from power.				
44. Window type air conditioning units are disconnected.				
45. Positive pressure is being maintained inside the accommodation.				
46. Measures have been taken to ensure sufficient mechanical ventilation in the pump room.			R	
47. There is provision for an emergency escape.				
48. The maximum wind and swell criteria for operations has been agreed.			A	Stop cargo at: Disconnect at: Unberth at:
Bulk Liquid - General	Ship	Terminal	Code	Remarks
49. Security protocols have been agreed between the Ship Security Officer and the Port Facility Security Officer, if appropriate.			A	

If the ship is fitted, or required to be fitted, with an Inert Gas System (IGS) the following statements should be addressed.

Inert Gas System	Ship	Terminal	Code	Remarks
50. The IGS is fully operational and in good working order.			P	
51. Deck seals, or equivalent, are in good working order.			R	

52. Liquid levels in pressure/vacuum breakers are correct.			R	
53. The fixed and portable oxygen analysers have been calibrated and are working properly.			R	
54. All the individual tank IGS valves (if fitted) are correctly set and locked.			R	
55. All personnel in charge of cargo operations are aware that in the case of failure of the Inert Gas Plant, discharge operations should cease, and the terminal be advised.				

If the ship is fitted with a crude oil washing (COW) system, and intends to COW, the following statements should be addressed.

Crude Oil Washing	Ship	Terminal	Code	Remarks
56. The Pre-Arrival COW checklist, as contained in the approved COW manual, has been satisfactorily completed.				
57. The COW check lists for use before, during and after COW, as contained in the approved COW manual, are available and being used.			R	

If the ship is planning to tank clean alongside, the following statements should be addressed.

Tank Cleaning	Ship	Terminal	Code	Remarks
58. Tank cleaning operations are planned during the ship's stay alongside the shore installation.	Yes/No*	Yes/No*		
59. If 'yes' the procedures and approvals for tank cleaning have been agreed.				
60. Permission has been granted for gas freeing operations.	Yes/No*	Yes/No*		

* Delete Yes or No as appropriate

PART 'C' – BULK LIQUID CHEMICALS - VERBAL VERIFICATION

Bulk Liquid Chemicals	Ship	Terminal	Code	Remarks
1. Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				
2. A manufacturer's inhibition certificate, where applicable, has been provided.			P	

3. Counter measures against accidental personal contact with the cargo have been agreed.				
4. Sufficient protective clothing and equipment (including self-contained breathing apparatus) is ready for immediate use and is suitable for the product being handled.				
5. The cargo handling rate is compatible with the automatic shutdown system, if in use.			A	
6. Cargo system gauges and alarms are correctly set and in good order.				
7. Portable vapour detection instruments are readily available for the products being handled.				
8. Information on fire-fighting media and procedures has been exchanged.				
9. Transfer hoses are of suitable material, resistant to the action of the products being handled.				
10. Cargo handling is being performed with the permanent installed pipeline system.			P	

PART 'D' – BULK LIQUEFIED GASES - VERBAL VERIFICATION

Bulk Liquefied Gases	Ship	Terminal	Code	Remarks
1. Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				
2. A manufacturer's inhibition certificate, where applicable, has been provided.			P	
3. The water spray system is ready for immediate use.				
4. There is sufficient protective equipment (including self-contained breathing apparatus) and protective clothing ready for immediate use.				
5. Hold and inter-barrier spaces are properly inerted or filled with dry air, as required.				
6. All remote control valves are in working order.				

7. The required cargo pumps and compressors are in good order, and the maximum working pressures have been agreed between ship and shore.			A	
8. Re-liquefaction or boil off control equipment is in good order.				
9. The gas detection equipment has been properly set for the cargo, is calibrated and is in good order.				
10. Cargo system gauges and alarms are correctly set and in good order.				
11. Emergency shutdown systems have been tested and are working properly.				
12. Ship and shore have informed each other of the closing rate of ESD valves, automatic valves or similar devices.			A	Ship
				Shore
13. Information has been exchanged between ship and shore on the maximum/minimum temperatures/ pressures of the cargo to be handled.			A	
14. Cargo tanks are protected against inadvertent overfilling at all times while any cargo operations are in progress.				
15. The compressor room is properly ventilated; the electrical motor room is properly pressurised and the				

DECLARATION

We, the undersigned, have checked the above items in Parts A and B, and where appropriate, Part C or D, in accordance with the instructions and have satisfied ourselves that the entries we have made are correct to the best of our knowledge.

We have also made arrangements to carry out repetitive checks as necessary and agreed that those items coded 'R' in the Check List should be re-checked at intervals not exceeding ____ hours.

If to our knowledge the status of any item changes, we will immediately inform the other party.

For	For Shore
Name.....	Name.....
Rank.....	Position.....
Signature.....	Signature.....
Date.....	Date.....

Record of repetitive checks:

Date:							
Time:							
Initials for Vessel:							
Initials for Shore:							

9 APPENDIX 3 CARGO BALLAST TRANSFER PLANNING

Information Exchange

- Volume and grade of cargo/ballast to be transferred.
- Cargo location on vessel.
- Maximum acceptable pressure and flow rates.
- Preferred/mandatory transfer sequence.
- Communication process.
- Terminal rules and procedures.
- Notification required to slow down and stop flow.
- Emergency stops.
- Weather outlook.

Documented Operational Plan

- Volume and grade of cargo and ballast to be transferred.
- Agreed sequence of multi-grade cargo transfers.
- Communication signals for: standby to transfer; start transfer; slow down transfer; stand by to stop transfer; stop transfer; emergency stop of transfer; emergency shutdown of transfer.
- The maximum pressure at: the vessels manifold; the terminal manifold.
- The start-up flow rate, the maximum transfer flow rate, the tank topping (slowdown) rate.
- The notification time for slowing and stopping transfer.
- The emergency shutdown procedure and time required to implement.
- Cargo temperature limits.
- System of venting.
- Times of staff's duty change on vessel and in terminal.

10 APPENDIX 4 MARINE CARGO TRANSFER IN ICE CONDITIONS

1.0 INTRODUCTION:

This document provides the necessary information required to ensure that all Thunder Bay Terminal personnel and contractors are knowledgeable about the safe work practices and response strategies required when receiving vessel deliveries under ice conditions.

2.0 SCOPE

This Standard Operating Procedure applies to Suncor Energy, Refining & Marketing, Distribution employees and contractors at Thunder Bay Terminal.

3.0 RESPONSIBILITY

Thunder Bay Terminal Management:

- Accountable to ensure full implementation and compliance of this standard operating procedure.
- Responsible to ensure all Thunder Bay Terminal Personnel and Contractors who are required to perform this task are fully trained and qualified.
- Responsible to ensure this document is reviewed and revised at specified intervals.

Thunder Bay Terminal Operators / Contractors:

- Responsible for executing this procedure in a safe and efficient manner.
- Responsible to communicate procedural irregularities concerning this task to Terminal Management

4.0 REFERENCED DOCUMENTS

- Distribution Standard Operating Procedure, Personal Protective Equipment
- Distribution Procedure Program, Cat A-3, SOP #01
- Thunder Bay Information to Vessels
- ISGOTT - International Safety Guide for Oil Tankers & Terminals

5.0 SUSTAINMENT & CONTINUAL IMPROVEMENT

- This document is classified in Process Safety terms as an Information Document and as such must comply with the Information Document Standard as outlined in Distribution Procedure Program, Cat A-3, SOP #01.
- Thunder Bay Terminal Management is to initiate document review process.
- To ensure this Standard Operating Procedure documents meets all applicable OEMS / PSM standards, this document is to be reviewed at a frequency not to exceed 5 years or when conditions change to warrant a review

6.0 PRECAUTIONARY STATEMENTS

Specific Hazards

Not applicable

Training - Proper training and demonstrated competency are prerequisites to performing this Standard Operating Procedure. Training shall be provided by a competent person and records shall be maintained. All operators expected to perform this task must trained and qualified in the procedure

Safety:

- Operators and Contractors must fully comply with all Thunder Bay and Distribution Safety requirements when executing this task.
- Contractors must comply with the written requirements as detailed on the Safe Work Permit.
- All work must cease immediately should conditions change or hazards arise that were not identified on the work permit. Thunder Bay Terminal personnel must be contacted immediately.

Personal Protective Equipment: When performing this procedure there is a potential for exposure to hazardous chemicals and/or hydrocarbons. Extreme caution should be exercised at all times, in accordance with Distribution Standard Operating Procedure, Cat A-1, SOP #10 – Personal Protective Equipment (PPE).

Special Personal Protective Equipment (PPE)

FRP Mustang Suits required for all work at Thunder Bay Dock

Material Safety Data Sheet (MSDS)

When hazardous materials are involved, Material Safety Data Sheets can be utilized as a reference for determining the extent of Personal Protective Equipment and other precautions

Special Tools / Equipment

Not applicable

7.0 PREREQUISITES:

Not applicable

8.0 PROCEDURE:

a. Terminal Manifolds:

- The berth is fitted with two manifolds which present 8” diameter flanges. Each manifold is fitted with an insulating flange.
- One manifold is for gasoline and the other is for distillates.
- The manifolds each connect to separate 8” diameter pipelines and the two grades can be discharged simultaneously.
- Maximum allowable working pressure at the shore manifold is 90 lbs / square inch.
- Typical flow rates are 400 to 500 M3 per hour. All dock pipelines are pumped dry after the vessel is discharged.

b. Vessel Manifolds:

- Vessel’s cargo hoses must be provided by the vessel to effect the flexible connection between the vessel and shore manifolds.
- The connection to the shore manifold should be an eight inch (8”) steel flange or reducer, conforming with *BS1560*, *ANSI B16.5* or equivalent.
- Vessel’s cargo hoses must be in good condition and have been tested in accord with the requirements of the Canada Shipping Act. The date of the test should be visibly and permanently marked on the hose and the test certificate must be readily available for inspection by the terminal.

c. Cargo Operating Procedures:

Before cargo and/or ballast transfer commences the vessel’s officer in charge and the terminal supervisor should exchange information and agree on a transfer plan which should be documented in writing. Information exchanged and the plan must include, as a minimum, the following;

- Volume and grade of cargo to be transferred.
- Agreed sequence of multi-grade cargo transfers.
- Cargo location on vessel.
- Maximum acceptable pressure and flow rates at the vessel and terminal manifolds.
- The start-up flow rate, maximum transfer flow rate, topping off transfer rate.

- Required lead time for slowing or stopping cargo transfer.
- Communication process, signals for: standby to transfer; start transfer; slow down transfer; stand by to stop transfer; stop transfer; emergency stop of transfer; emergency shutdown of transfer.
- Terminal rules and procedures.
- Emergency shut-down procedure and time required to implement.
- Weather outlook.

10.0 PROCEDURE DEVIATION

Deviations from this standard operating procedure must be authorized using the Management of Change procedure. Deviations must be documented and documentation must include the relevant facts supporting the deviation decision.

