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# SARNIA MARINE TERMINAL

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## Information to Vessels

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

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# 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 must be informed!
- In case of any situation or incident that may possibly have impact on health and/or environmental conditions, the terminal control should be informed immediately on below telephone number:

**1 519 383 3627**

or by the portable radio!

***For more information***

**Suncor Marine Department,**

**2489 North Sheridan Way Mississauga ON**

**Canada L5K 1A8 (905) 804-4500**

**[marineop@suncor.com](mailto:marineop@suncor.com)**

<http://www.suncor.com/marine>

## Revisions

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### DISCLAIMER

The information contained in this document is only meant to guide the user and does not claim to be complete or final. As a result, Suncor Energy Inc does not hold itself liable for any claims or other issues as a result of information contained herein or not included or considered.

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# **GENERAL INFORMATION**

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## 1 GENERAL INFORMATION

### 1.1. LOCATION

The facility is shown on Canadian Hydrographic Charts Numbers 2260 in latitude 42°56.0'N, and longitude 082°26.5'W and US Chart 14852



Masters are referred to Canadian Hydrographic Service Publication CEN 303 Welland Canal and Lake Erie and CEN 304 Detroit River, Lake St. Clair, St. Clair River. CEN 305 Lake Huron, St. Mary's River, Lake Superior

Vessels in international trade must transit the St. Lawrence Seaway to access the facility.

Approach Channel Width is 471.0m

### 1.2. BERTH DESCRIPTION

The berths are designed primarily to load and discharge vessels containing petroleum products.

**North Berth:** Effective breasting face is 64.62 meters made up of five cribs. The two forward and two aft cribs are 3.66 meters wide and the centre crib which holds the manifold is 18.29 meters. Distance between the cribs is 19.51 metres. There are two wooden abutments off each corner of the centre (manifold) crib approximately 1.83 meters. Vessel must make the northern crib first. There is adequate rubber fendering on all cribs. There is a conventional mooring arrangement for all lines.

Vessels are responsible to make manifold connections on the vessel.

Manifold size: 8 inch.

Line size: 10 inch.

Distance from shore manifold to jetty edge: 6.4 meters.

Maximum Discharge pressure: 100 psi(g)

*The North berth is also used for discharge of gravel.*

**South Berth:** Effective breasting face of dock is 76.81 meters made up of four cribs. The two forward and one aft crib are 3.66 meters wide and the centre crib which holds the manifold is 18.29 meters wide. Distance between cribs is 25.6 meters joined by catwalk set in from the breasting face. There is adequate rubber Fendering on all cribs. There is a conventional mooring arrangement for all lines.

Vessels are responsible to make manifold connections on the vessel.

Manifold size: 8 inch.

Line size: 10 inch.

Distance from shore manifold to jetty edge: 6.4 meters.

Maximum Discharge Pressure: 100 psi

*The South berth is the only berth that asphalt can be loaded at.*

### **1.3. WATER DEPTH**

The depth of water in North Berth is 7.6 metres and South Berth is 6.5 metres at chart datum and in the channel approaching the Port of Sarnia is 8.3 metres.

Sarnia is a fresh water non-tidal port. Water levels do vary subject to climatic conditions such as long periods of sustained precipitation, periods of drought and the thawing of accumulated snow and ice in the spring. Water levels may fluctuate during periods of high winds.



The Canadian Hydrographic Service provides mariners with continuous, real time, information on water levels at various locations in Sarnia Harbour and statistical data is maintained to assist in forecasting water levels and aid mariners in voyage planning.

Suncor advises all Captains, Owners, Operators and Brokers etc. involved in vessel movements to, from or within the Port of Sarnia to secure information on water levels for planned and actual dates of the vessels visit. The operation centre of Port of Sarnia interfaces with the Canadian Hydrographic Service and is an alternative contact point for water level information

#### 1.4. SERVICES AT THE BERTH

- Bunkers: **No pipeline supply.**  
No bunkers are available directly from the refinery. Bunkers are available in the Port of Sarnia by marine delivery and truck delivery mode. No marine fuelling barge is allowed to come alongside tankers at our berth engaged in cargo or ballast transfer operations or while tank cleaning or gas freeing operations are taking place
- Fresh Water: **Available**
- Garbage Disposal: Available
- Slop and Tank Cleaning: Not accepted at the facility  
No engine bilge or other non cargo slops are accepted by the refinery. Slops that, due to their content, are unacceptable to the refinery, must be removed directly from the vessel by a third party waste disposal contractor.

#### 1.5. SECURITY

##### 1.5.1 Access to and from the vessel

Access to and from the vessel is controlled by a gate. Masters should advise the harbour authority operations centre of persons who are approved to visit the vessel.

##### Port Facility Security Officer (PFSO)

Name	Numbers
Jamie Armstrong	+1-519 383 3664
Fax	+1 519 346 2620
E-mail	<a href="mailto:jarmstrong@suncor.com">jarmstrong@suncor.com</a>
24/7 Security	+1-519 337 2301 ext 3640
Fax	+1 519 346 2620

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 ship via the shortest route possible, using only the main road between the gate and the jetty.

### **1.5.2.2 Crew**

Crew that is mentioned on the crew list has 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 Ship chandlers and other visitors to the ship**

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 ship must present documents (i.e. a waybill, packing list etc.) covering the carriage of such goods .

### **1.5.2.4 Unaccompanied Luggage**

Depending on the security level we reserve the right to refuse unaccompanied luggage at the gate. Alternatively, when unaccompanied luggage is presented at the gate, we might invite the ship's security officer to personally take receipt of this luggage on behalf of its rightful owner

## **1.6 WEATHER**

In general terms, the average temperatures are below freezing December through March, requiring Masters to pre-plan and ensure that deck crew has adequate warm clothing and that deck machinery is maintained in operable condition.

Masters are referred to Canadian Hydrographic Service Publication CEN 303 Welland Canal and Lake Erie and CEN 304 Detroit River, Lake St. Clair, St. Clair River. CEN 305 Lake Huron, St. Mary's River, Lake Superior

## **1.7 TIDAL RANGE AND CURRENT**

Current in the main section of the river is 3 to 4 knots max. There is usually a lot of small craft in the St. Clair River and approaches. There is a posted speed limit of 10.4 knots between Fort Gratiot Light and St. Clair Flats Canal Light 2. The river has an average rate of between 1.4 to 1.7 knots in the area of dock.

## **1.8 ANCHORAGE**

Anchorage can be in Lake Huron Cut above buoys 11 and 12 clear of the approach channel or in the Upper St. Clair River clear of any traffic. Take note of any restrictions in the use of anchors as indicated on the charts

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# COMMUNICATIONS

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## 2 COMMUNICATIONS

### 2.1 ESTIMATED TIME OF ARRIVAL (ETA)

Masters are required to provide information on ETA's in accord with the terms of the charter party and to provide the refinery operations centre (+1-519-383-3627) with ETA at 48 hours (if possible), 24 hours (mandatory), again at 12 and 4 hours and if ETA changes by +/- 1 hour.

### 2.2 USEFUL LOCAL NUMBERS

Suncor Tank farm (24 hours)	+1-519-383-3627
Dock Phone	+1-519-337-2301
North Berth	Ext 3324
South Berth	Ext 3254
Port of Sarnia Operations Centre, water levels, spills	+1-519-337-6221 (24 hrs)
Harbour Master	+1-519-344-5121
Regional Port Official at Sarnia	1-800-268-0600, Pager # 91511
Vessel Traffic System: MCTS Operations	+1-(613)-925-4471; Fax +1 (519) 337 2498
Sarnia Pilotage Authority	+1-810-982-1762
Great Lakes Pilotage Authority	+1-613-933-2991ext.209
Canadian Coast Guard, Emergencies, Spills	Any Coast Guard Radio Stn
Vessel Traffic System	+1-519-337-6221(24 hrs)
Immigration Canada	+1-519-464-5000
Towing and Salvage, tug assist	+1-519-330-9245(24hrs)
Police/ Fire/ Ambulance	911
Suncor Marine Group - voyage orders	+1-905-804-4500
Oil Pollution Response	+1-613-930-9690

### 2.3 CARGO TRANSFER COMMUNICATONS

The Terminal provides portable radios for ship to shore communications on cargo transfer operations i.e. one to the ship and one to the terminal operations centre.

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# **BERTHING AND MOORING**

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### 3 BERTHING AND MOORING

#### 3.1 VESSEL SIZE AND REISTRICIONS: NORTH BERTH

Maximum length of vessel: North Berth 182 m

#### 3.2 VESSEL SIZE AND REISTRICIONS: SOUTH BERTH

Maximum length of vessel: South berth 146 m

Visibility at berth is less than 2 vessel lengths.

BERTH: Suncor Energy Products Inc                      PORT: Sarnia  
 LAT 42.56.11.752 N LONG 82.26.41.999 W – North Dock  
 LAT 42.56.07.749 N LONG 82.26.46.503 W – South Dock

- |     |                               |   |
|-----|-------------------------------|---|
| 1.  | Berth Operator and/or User:   | Suncor Energy Products Inc/Nova Chemicals   |
| 2.  | Maximum Length Overall (LOA): | 182 m   |
| 3.  | Maximum Beam:                 | 23.3 m  |
| 4.  | Maximum Displacement:         | N/A   |
| 5.  | Water density:                | Fresh Water   |
| 6.  | Night berthing/un-berthing:   | Allowed   |
| 7.  | Fresh Water:                  | Fresh water available through<br>Municipal water line at dock   |
| 8.  | Type of Berth:                | Two dock faces  |
| 9.  | Minimum size of vessel:       | No stated minimum   |
| 10. | Shore Gangway:                | Available   |
| 11. | Grades of cargo handled:      | - Asphalt flux<br>- Bunker fuel/VGO<br>- o-Xylene<br>- Mixed Xylene<br>- Toluene<br>- Gasoline (Reg,Prem, LVB87, LVB94) |

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	- Naphtha
	- No. 2 Fuel oil / #2 ULSD
	- Kerosene / #1 ULSD
12. Dirty Ballast Reception:	No
13. Slops Accepted.	No
14. Number and size of tugs available:	One
	Gordon Marine Office No.1-519-330-9245(24hr),1-519-332-0576 (Tug Menasha)
15. Pilot boarding areas:	Up-bound – Detroit, Down-bound Buoys 11&12

### 3.3 SPOT APPROVAL

The parameters shown above may be relaxed for an individual voyage subject to a marine technical review of the special circumstances of the relaxation request and written approval by Suncor Marine Management.

### 3.4 MOORING CRITERIA

The two berths do not have a history of mooring problems. Masters should be alert to the strong downstream current and the probability of passing vessel effect while their vessel is in the berth.

All vessel mooring wires must be fitted with synthetic mooring tails that meet OCIMF guidelines. i.e. Maximum 11 meters 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 Mandel 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. Appendixes 1, Mooring Guideline Diagrams are guidelines for minimum moorings which terminal staff will expect vessels to deploy while at this facility.

### 3.5 BERTHING INFORMATION

North & South Berths are almost parallel to the channel and the river current. The preferred berthing procedure - see Section 3.6 - is to stem the current and berth starboard side to.

The fendering at both berths consists of large fixed rubber fenders along a cement face dock. There is minimal capacity to absorb energy! Masters are cautioned to exercise care in the berthing maneuver to minimize the angle and speed of approach.



Pilotage is compulsory unless masters have their qualifying voyages and have filed for exemptions through the Great Lakes Pilotage Authority. Masters requiring pilotage services must give at least 12 hours notice to the Pilot offices. Messages are to contain:

1. The vessel's name/Call Sign/IMO No
2. Draught
3. ETA/ETD
4. Destination.

A 4 hour confirmation is required. Pilot requests should be addressed to "Pilots Port Huron" and be made via VHF through VTS Sarnia on channel 10 or by telephone at 1-800-828-6776.

The contact for information at Great Lakes Pilotage Authority:

Capitaine Daniel-René Trottier,  
Directeur de l'Exploitation/Director of Operations,  
Administration de Pilotage des Grands Lacs,  
Great Lakes Pilotage Authority,  
Tel. +1-613 933-2991 poste/ext. 209

Pilots have to use the down stream current with maneuvering as a mean of doing a soft starboard side approach to the SUNCOR dock.

The District pilots station are Port Huron, (Huron cut buoys 11 and 12) and at Detroit pilot boat station.

The pilot along with the master and the pilot boat operator would normally agree on a safe pilot exchange speed.

The berths are owned and operated by Suncor who Nova Chemicals have a berthing agreement with. There are two berths available. (North and South berths)

*While berthed at this berth interaction with other vessels that are in transit is possible..*

### **3.6 BERTHING MANOEUVRES**

The standard procedure is to approach the facility from downstream, stemming the river current and preparing for berthing starboard side to. When off the dock the vessel is manoeuvred, using the effect of the current, the vessels engines, the rudder and, dependent on the vessel size and environmental conditions.

*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.*

### 3.7 TUG REQUIREMENTS

Tugs are not normally required for these berths but a small tug is available by contacting:

Gordon Marine Office No: +1-519-344-5472 - 24 hr No.

Tug Menasha: +1-519-332-0576

The safe handling of the vessel is the responsibility of the Master.

Suncor does expect that effective use of tug assist will be utilized by vessel Masters in certain circumstances. The objective of tug assist is to generally aid in the safe berthing and un-berthing of the vessel in particular, to minimize the risk of a hard contact with the berth and/or damage to the berth's equipment.

When tugs are required to be utilized they shall be secured to the vessel by suitable means.

Minimum tug requirements - Masters shall increase these requirements at their discretion. To help minimize the risk of a hard contact while berthing or un-berthing, vessels are required to utilize tug assistance in accord with the appropriate conditions.

N.B. In winter, when ice obstructs the vessels access to the berth, tug assistance may be required for ice management.

### 3.8 LINESMEN

An adequate number of shore linesmen will be provided to take vessel lines and perform dock mooring duties.

N.B. ships crews on both foreign and Canadian flag vessels will not be utilized to perform dock mooring duties.

<b><i>Guideline</i></b>	<b><i>Berthing</i></b>	<b><i>Un-berthing</i></b>
Large Foreign Vessel	4 Persons	4 Persons
Small Domestic Vessel	4 Persons	4 Persons

### 3.9 ENVIRONMENTAL LIMITS

The Port of Sarnia is not an exposed port and the Masters decision to berth will be subject to an evaluation of the wind direction and speed, the load condition of the vessel, the availability of tug assist and the capability of the vessels' mooring equipment.

**Adverse wind conditions while in the berth:** Masters are reminded that in adverse wind conditions the access to a safe anchorage in the Port may be limited by supply/demand. If a Master elects to remain on the berth in adverse wind conditions he/she must take all necessary precautions such as deploying additional moorings and engaging tugs to aid in keeping the vessel safely alongside

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# RULES AND REGULATIONS

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## 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 should ensure that their vessel's agent informs them of distinct Canadian requirements.*

### 4.2 SPECIAL 'ICE NAVIGATION' REQUIREMENTS

Masters of laden tankers destined for or departing Suncor's Sarnia Terminal are advised that vessels must be in compliance with the ***"joint Industry - Coast Guard guidelines for the control of oil tankers and bulk chemical carriers in ice control zones of Eastern Canada"*** when transiting the Gulf and River St. Lawrence in winter.

### 4.3 PORT OF SARNIA

Masters should ensure compliance with local and Federal regulations.

### 4.4 SARNIA TERMINAL RULES AND PROCEDURES

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 Sarnia Terminal. Vessel staff is 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 is 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 will be given a copy of the following Suncor Sarnia East Terminal Rules and Procedures by the terminal operator as soon as possible after completion of berthing operations, and a signed acknowledgement will be required.

## 2. Safety Check List

On completion of berthing and prior to the commencement of de-ballasting or 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. This safety Check List is based on the recommendations of the “International Safety Guide for Oil Tankers and Terminals” (ISGOTT).

## 3. Gangway

The vessels 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.

Shore gangway is available if required.

## 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 short notice (i.e. 15 minutes).

## 6. Repairs

No hot work is to be performed on board any vessel while alongside the terminal. The testing of radar, vessels 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 vessels 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. N.B. Watch keepers should guard against “passing vessel effect” especially when the under keel clearance is low.

## 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 de-ballasting or cargo transfer.

In the event of a total breakdown of radio communication between the terminal and the vessel during cargo transfer operations, then these 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 required to be fitted with IGS should arrive with cargo tanks inerted to 8% O<sub>2</sub> or less by volume and pressurized as required by the SOLAS Convention.

(a) Tank Inspection, Gauging, Sampling, Water Dips and Temperatures Tanks to be inspected 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 re-pressurized. 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 will be for the vessel's account.

#### 18. Fire Precautions

The vessel's fire fighting 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.

#### 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.

#### 21. Sea and Overboard Discharge Valves

Before any cargo or ballast 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 pumphouse) 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 at 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.

### 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 and 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, and in addition, all tank openings and cargo valves shall be closed.

- (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 ship 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. Manifold containment should be drained before transfer operations commence. Any leakage or spillage must be reported immediately to the terminal operator.

A supply of absorbent material shall be available at the manifold to facilitate the immediate clean up 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

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# CARGO AND BALLAST TRANSFER

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## **5 CARGO AND BALLAST TRANSFER**

### **5.1 TERMINAL MANIFOLDS**

Both berths are fitted with manifolds and cargo hoses. Each manifold is fitted with an insulating flange.

Maximum allowable working pressure at the shore manifold is 150 lb. per square inch.

### **5.2 SHIP MANIFOLDS**

The vessels manifold should be fitted with reducers that are made of steel and fitted with eight inch flanges conforming to BS 1560, ANSI B16.5 or equivalent

### **5.3 CARGO TRANSFER OPERATING PROCEDURES**

No pipeline availability at this time.

N.B. No ballast is accepted by the refinery. Ballast water that, due to their content, are unacceptable to the refinery, must be removed directly from the vessel by a third party waste disposal contractor.

### **5.4 ENVIRONMENTAL LIMITS - CARGO OPERATIONS**

The pumping distance from the dock to the shore “cargo” tanks is approximately 1 mile.

### **5.5 CARGO AND BALLAST 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 exchange and the plan must include, as a minimum, the items shown in Appendix 3.

### **5.6 ENVIRONMENTAL LIMIT (CARGO OPERATIONS)**

Stop Cargo Transfer - 20 knots

Disconnect loading arms - 25 knots

**6**

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**EMERGENCY RESPONSE TO  
FIRES, SPILLS, LEAKS ETC**

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## 6 EMERGENCY RESPONSE TO FIRES, SPILLS, LEAKS, ETC

### 6.1 FIRES

The terminal does not fight fires on ships in the berths! Ships are expected to be capable of fighting fires which occur on board, including securing capable external support, and notifying the proper authorities.

(Refer ISGOTT section 26.5)

#### 6.1.1 Actions in the Event of Fire at Terminal

- The terminal will raise the alarm to vessels 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.

- disconnect hard arms.
- stand by to cast off the moorings.
- communicate with authorities.

Vessel will - secure ship cargo system

- ready ship for emergency departure.
- communicate with authorities.
- depart berth as required.

#### 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 ships whistle, repeated at intervals;

- the transfer operation is to be stopped immediately.
- the ship 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.

- stand by to cast off the moorings.

Vessel will - secure ship cargo system.



- ready ship 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.
- 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.

### **6.2.2 Vessel Spill or Leaks**

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

- the transfer operation is to be stopped immediately.
- 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.

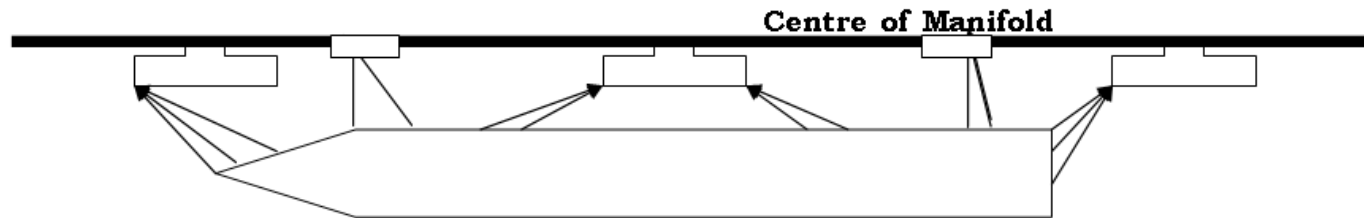
## **6.3 RESTARTING TRANSFER OPERATIONS AFTER A MARINE POLLUTION INCIDENT**

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

7 APPENDIX 1A – MOORING GUIDELINE SARNIA NORTH BERTH

**APPENDIX 1- A**

SUNCOR SARNIA DOCK	MOORING GUIDELINES MINIMUM MOORING REQUIREMENTS	NORTH BERTH
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- Watch for passing vessel effect
- Avoid Mixed Moorings

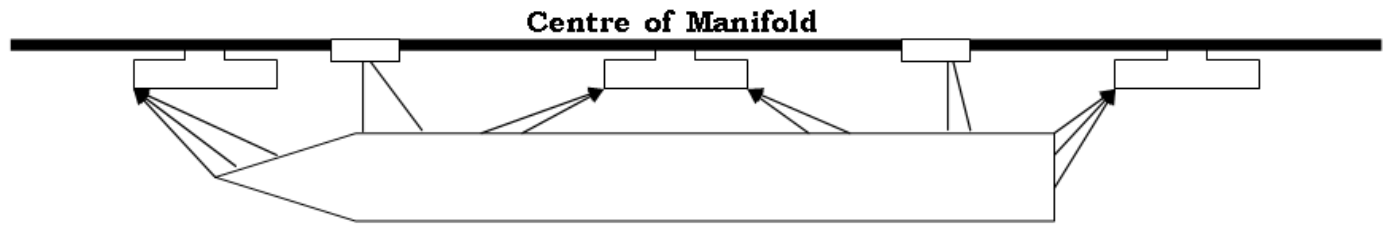
**Wind Limits**  
 Stop cargo transfer – 20 knots  
 Drain, disconnect arms – 25 knots  
 Take precautionary action – 30 knots

3 + 3	2	2	2 + 2	Number of Lines
Head/Stern Lines	Fore Springs	Aft Springs	Breast Lines	Location

Drawing only to show the mooring arrangement  
 Not to scale

8 APPENDIX 1B – MOORING GUIDELINE SARNIA SOUTH BERTH

<b>APPENDIX 1- B</b>		
SUNCOR SARNIA DOCK	MOORING GUIDELINES MINIMUM MOORING REQUIREMENTS	SOUTH BERTH



- Watch for passing vessel effect
- Avoid Mixed Moorings

**Wind Limits**  
 Stop cargo transfer – 20 knots  
 Drain, disconnect arms – 25 knots  
 Take precautionary action – 30 knots

3 + 3	2	2	2 + 2	Number of Lines
Head/Stern Lines	Fore Springs	Aft Springs	Breast Lines	Location

Drawing only to show the mooring arrangement  
Not to scale

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## 9 APPENDIX 2 - SHIP SHORE SAFETY CHECKLIST (ISGOTT26.3.3)

### **INSTRUCTIONS FOR COMPLETION:**

Responsibility and accountability for the statements within the Ship/Shore Safety Check List is assigned within the document. The acceptance is confirmed by ticking or initialling the appropriate box and finally signing the declaration at the end of the Check list. Greyed-out boxes are used to identify statements that generally may not be applicable to one party, although the ship or terminal may tick or initial such sections if they so wish.

The presence of the letters **A**, **P** or **R** in the column '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 accepted 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.

**Ship's Name** .....

**Berth** ..... **Port** .....

**Date of Arrival** ..... **Time of Arrival** .....

PART 'A' – BULK LIQUID GENERAL - PHYSICAL CHECKS

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 <sub>2</sub> 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 shut down 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 Ship	For Shore
Name.....	Name.....
Rank.....	Position.....
Signature.....	Signature.....
Date.....	Date.....

**Record of repetitive checks:**

Date:							
Time:							
Initials for Ship:							
Initials for Shore:							

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## 10 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 shut down 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.