

MAXUM PETROLEUM, INC.



WAC 173-184-130

SAFE AND EFFECTIVE THRESHOLD REPORT

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Appendix A: PSHSC Bunkering Standards of Care

Appendix B: WADOE RATE A DELIVERERS- Boom Reporting Form

1. INTRODUCTION

MAXUM Petroleum's Safe and Effective Threshold Report, as required by WAC 173-184-130, details the considerations that will be addressed when pre-booming fuel and lubricant deliveries.

MAXUM has reviewed the data on deliveries made over the past 36 months to determine the observed conditions at the time of each delivery during the period. The data was compiled from the tug logs, barge logs and other documents which details the conditions at the time of each delivery.

As an active member of the Puget Sound Harbor Safety Committee, MAXUM has and abides by the standards in "Bunkering Operations within the Waters of Puget Sound and the Straits of Juan de Fuca" section of the Harbor Safety Plan (*see attached Appendix A*). A copy of these standards are onboard each MAXUM tug and barge operating in the designated area and also for MAXUM barges in the Columbia River.

2. Operational Factors

The following factors were considered in setting the MAXUM Petroleum Safe and Effective Threshold values:

1. Safety of MAXUM personnel, our Booming Contractors and the personnel of the vessel receiving product from the MAXUM barge.
2. Ability of the vessel deploying the boom to operate safely and deploy the boom properly in the conditions prior to the start of the delivery as well as the conditions forecast for the duration of the delivery.
3. If the physical structure (side freeboard, stern freeboard, etc.) of the vessel performing the booming would cause difficulty and/or injuries in trying to handle boom under adverse conditions.
4. The most adverse conditions under which the boom can physically contain the oil.

3. Summary of Safe and Effective Threshold Values

For any MAXUM barge making a *Rate A* delivery, pre-booming will not be started and/or deployed boom will be retracted in the event any one (1) of the following limits are exceeded:

1.	WIND (knots)	>20
2.	WAVE HEIGHT (feet)	>3
3.	WAVE TYPE	Steep, choppy & breaking.
3.	CURRENT (knots) *See note below	>1.0
4.	VISIBILITY (feet)	<1000

On all deliveries requiring pre-booming, the decision to boom will be at the discretion of the PIC or other MAXUM personnel in charge of the transfer. The decision will be based on a case by case basis with the above individual criteria or a combination of the above criteria determining whether or not to pre-boom. Additionally, at the discretion of the PIC, and with the concurrence of MAXUM Management, any *Rate A* delivery that cannot be pre-boomed can be made once the ***Dept. of Ecology's Rate A Deliverers- Boom Reporting Form*** (See ***Appendix B***) has been submitted, made at *Rate B* or discontinued entirely based on the conditions at the location of the delivery.

Note: Current speed determined by two visual means:

- 1. Witnessing a noticeable wake on the barge or ship being bunkered,***
- 2. By calculating the time it takes for an object to float the length of the barge***

4. Methodology

MAXUM Petroleum makes deliveries at a large number docks, piers, anchorages and other locations in the Puget Sound, Straits of Juan de Fuca and Columbia River. Each transfer site is unique and can have unique conditions that will affect the decision to pre-boom or not. In all cases the PIC or other MAXUM personnel in charge of a transfer, will utilize all of the equipment and resources at their disposal to measure and/or quantify the values of the conditions at the transfer site. Sea state, current and tidal information is available from NOAA on their website or in published material. National Weather Service (NWS) also broadcasts weather information that can predict the conditions at the time the transfer commences until the time the transfer will end. This would allow the PIC to predict when to pre-boom and when, if necessary, to retrieve boom that has been deployed before conditions become unsafe to do so.

For both the Puget Sound and the Columbia River, MAXUM personnel monitor reports from the USCG as well as the NWS.

MAXUM equipment is manned by licensed, qualified individuals with extensive experience in making oil deliveries in this area. Their experience with deliveries in a given area to a specific vessel is invaluable and will guide them in the safe and efficient use of booming.

In the event that the PIC or other MAXUM personnel in charge of a transfer decides that it will not be safe or effective to pre-boom a delivery, the information concerning that delivery will be transmitted to the Washington Department of Ecology on the “***Dept. of Ecology’s Rate A Deliverers- Boom Reporting Form***”(***See Appendix B***).

The PIC will also log the conditions and the decision to not pre-boom in the vessel logbook. During each transfer, conditions will be constantly monitored so that boom can be deployed if it has not been or boom can be retrieved if it has to be for safety concerns.

5. Transfer Sites

a. Seattle, Elliott Bay & Puget Sound

MAXUM Petroleum does relatively few *Rate A* deliveries in this area. However, high winds in excess of 25 knots, waves higher than 1.5 feet or and currents in excess of 1.5 knots can be expected under storm conditions. If any one condition exceeds the safe and effective threshold values or a combination of the conditions makes it unsafe to pre-boom, pre-booming will not occur and a decision will be made to continue the delivery at *Rate A* advising the Department of Ecology as such or reducing the delivery to *Rate B* or discontinuing the delivery until such time as the conditions improve.

There are also man-made obstructions which would preclude MAXUM Petroleum from pre-booming. The most prevalent of these is the tribal fishing nets that, at certain times of the year, are in the East Waterway. The same decision process as above would be utilized.

b. Tacoma & Commencement Bay

MAXUM Petroleum does few *Rate A* deliveries in this area. The same conditions as are found in Seattle can be found in Tacoma with the exception of current. Therefore, high winds in excess of 25 knots and waves higher than 1.5 feet can be expected under storm conditions. If any one condition exceeds the safe and effective threshold values or a combination of the conditions makes it unsafe to pre-boom, pre-booming will not occur and a decision will be made to continue the delivery at *Rate A* advising the Department of Ecology as such or reducing the delivery to *Rate B* or discontinuing the delivery until such time as the conditions improve.

c. Anacortes, Vendovi Anchor and Bellingham

MAXUM Petroleum performs a good portion of their *Rate A* deliveries in this area and normally contracts pre-booming services. The conditions can be severe in these areas on occasion. Therefore, high winds in excess of 25 knots and waves higher than 1.5 feet can be expected under storm conditions. Also, under certain seasonal high water or flood conditions, the current can be in excess of 1.0 knots. If any one condition exceeds the safe and effective threshold values or a combination of the conditions makes it unsafe to pre-boom, pre-booming will not occur and a decision will be made to continue the delivery at *Rate A* advising the

Department of Ecology as such or reducing the delivery to *Rate B* or discontinuing the delivery until such time as the conditions improve.

d. Port Angeles & the Straits of Juan De Fuca

MAXUM Petroleum does a good portion of their *Rate A* deliveries in this area and normally contracts pre-booming services. The conditions can be severe in this area on occasion. Therefore, high winds in excess of 25 knots and waves higher than 1.5 feet can be expected under storm conditions. If any one condition exceeds the safe and effective threshold values or a combination of the conditions makes it unsafe to pre-boom, pre-booming will not occur and a decision will be made to continue the delivery at *Rate A* advising the Department of Ecology as such or reducing the delivery to *Rate B* or discontinuing the delivery until such time as the conditions improve.

e. Columbia River

MAXUM Petroleum does a very small amount of *Rate A* deliveries (These transfers are mostly conducted at Vigor Industrial Shipyard in Portland, OR or to government vessels that are normally pre-boomed per policy, regardless of transfer rate) in this area as most deliveries are at *Rate B*. The conditions can be severe in this area on occasion. Therefore, high winds in excess of 25 knots and waves higher than 1.5 feet can be expected under storm conditions. Also, under certain seasonal high water or flood conditions, the current can be in excess of 1.0 knots. If any one condition exceeds the safe and effective threshold values or a combination of the conditions makes it unsafe to pre-boom, pre-booming will not occur and a decision will be made to continue the delivery at *Rate A* advising the Department of Ecology as such or reducing the delivery to *Rate B* or discontinuing the delivery until such time as the conditions improve.

During Periods of high-water there may be excess floating debris in the river. In these cases, all efforts will be undertaken to remove such debris from inside the boom or that diminishes the effectiveness of the booming.

A determination shall be made to forego booming and /or bunkering altogether if floating debris build-up causes any threat to the safe transfer.

6. Booming Strategies

Figure 1: Booming Pier-side Transfers Puget Sound

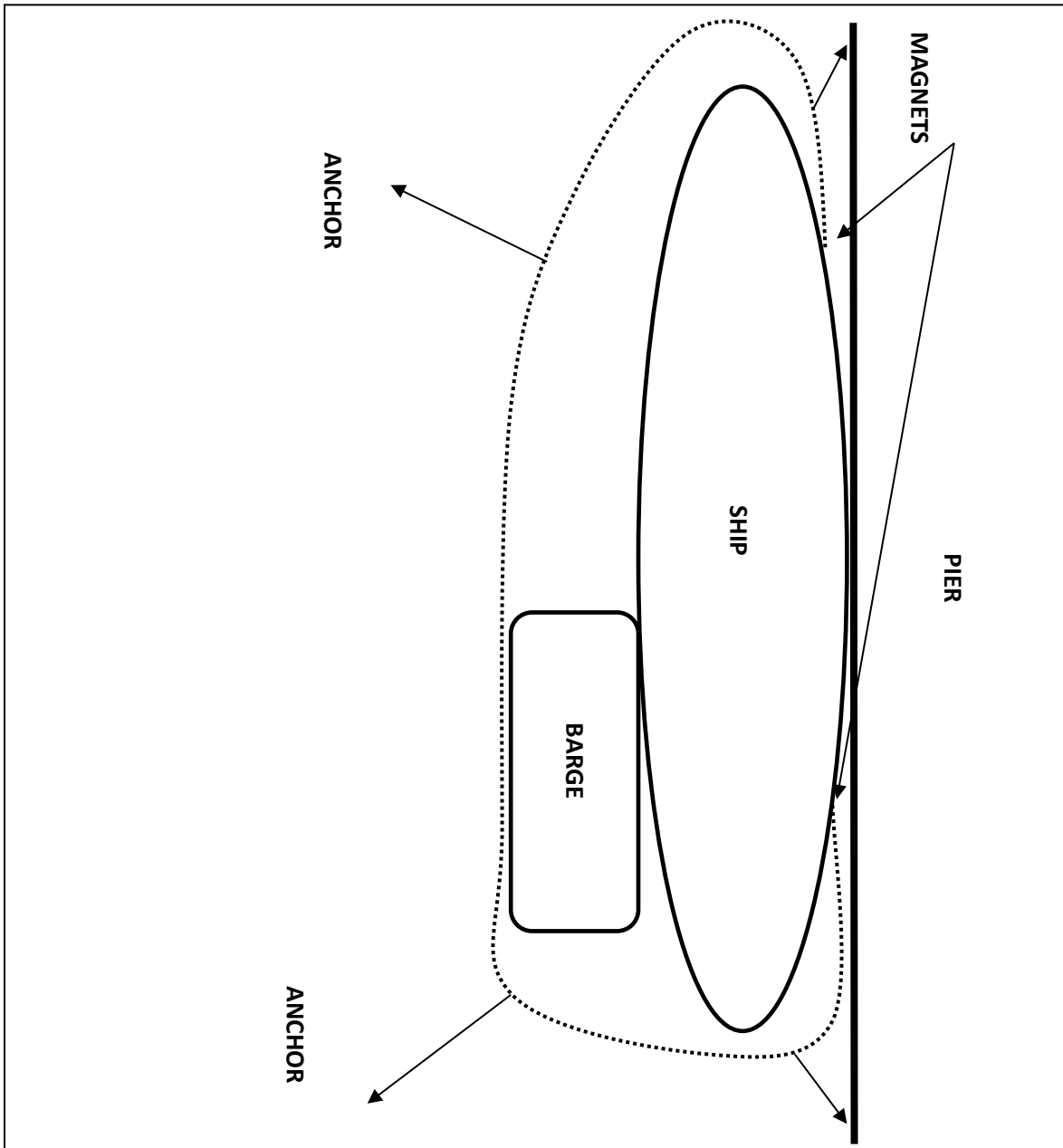


Figure 2: Booming at Anchor Puget Sound

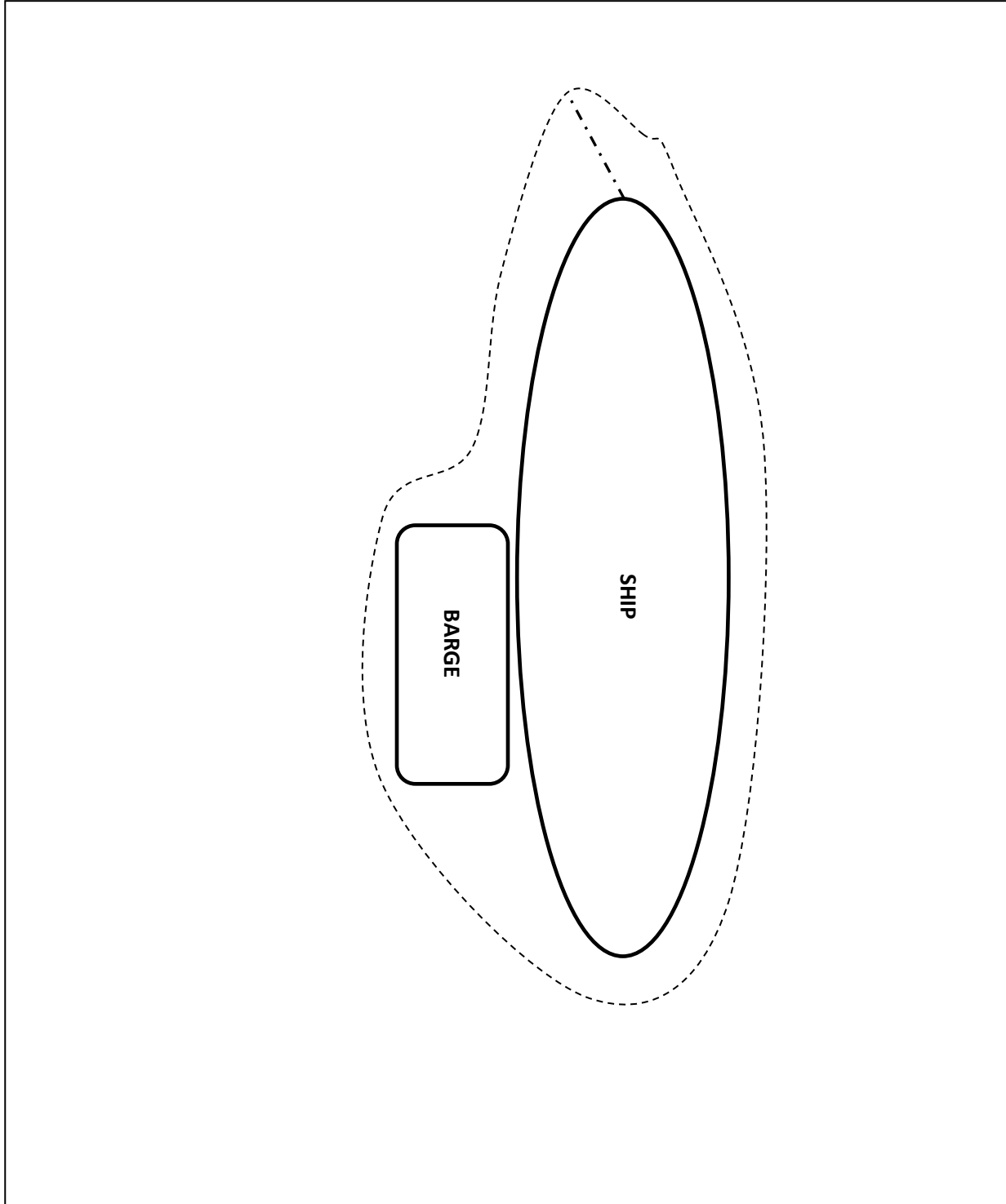


Figure 3: Booming Pier-side Transfers Columbia River

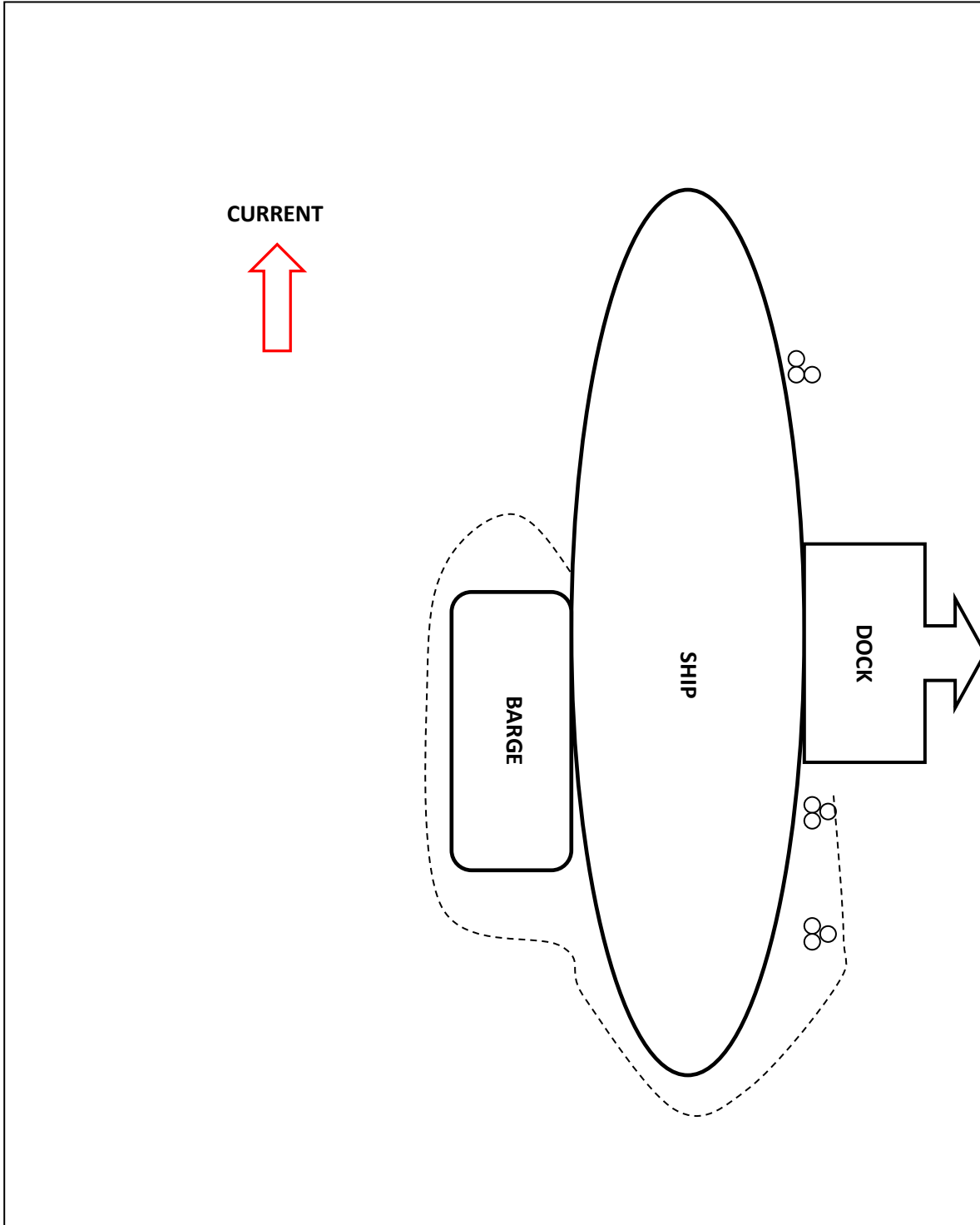


Figure 4: Booming at Anchor Columbia River

