WORKSHEET FOR A RECEPTION FACILITY CERTIFICATE OF ADEQUACY FOR NOXIOUS LIQUID SUBSTANCE (NLS) RESIDUES

Worksheet Instructions

The following instructions for individual line items are provided to assist in completing the worksheet for a Certificate of Adequacy (COA) Application Form 5401B.

If you have any questions or need assistance in completing the worksheet, please contact the U.S. Coast Guard Captain of the Port (COTP) for your area.

A list of definitions, which you may find helpful in completing the worksheet is contained in Title 33 Code of Federal Regulations Part 158 (33 CFR 158).

Prior to using the worksheet, prepare a list of NLS cargoes or residues unloaded at the terminal/port in the last 12 months.

Terminals and ship repair yards not in operation for 12 months should check the NLS cargoes or residues expected to be unloaded in the next 12 months.

Reception Facility Section:

This section consisting of line items “A” through “P” is for calculating the estimated capacity of the proposed reception facilities. Those values which require calculation are entered in boxes with the applicable formula printed below.

"A" to “P” Enter data for the types (fixed, tank truck, barge, other) of reception facilities to receive NLS waste, as appropriate. Types completed should correspond to entries made in line item 2.A. of Form 5401B. Enter estimates of the time requirements to the nearest tenth of an hour (e.g. 3.1 hours).

"A" Enter the transfer rate based upon receiving NLS through a single connection. This is necessary since ships are not required to discharge waste through multiple connections. Discharge rates may be based on discharging through more than one connection, if all of the vessels and reception facilities have this ability.

"B" Enter the daily amount of waste that can be removed from the storage tanks by processing or by transfer to a processing or disposal facility.

"C" Same as "A."

"D" If more than one mobile tank truck reception facility is used, enter the total number of tank trucks available.

"I" Same as "A."

"J" If more than one mobile barge is used, enter the number of barges available.

"O" & "P" If the reception facility used is not described above, describe the reception facility and show the calculations for daily capacity and daily average transfer rate (attach additional sheets if necessary).

Ship NLS Waste Section:

This section consisting of line items "Q" through "S" is for identifying the NLS cargoes and residues unloaded at the terminal, port or ship repair yard. Ship repair yards only complete line item "S" in this section.

Ports which have more than one terminal in each category are to enter consolidated information for each port. For example, if a port has three terminals unloading NLS cargoes, the values reported in section "Q" and "R" would be equal to the sum of the cargoes received at each of the terminals. Similarly ship repair yards who elect to become part of a port should be included in the consolidated information.

The procedures for calculating the estimated reception facility capacities are based upon the specific values and requirements in 33 CFR 158. Applicable conversion factors are as follows:

1 cubic meter equals 264 gallons
1 cubic meter equals 34.5 cubic feet
1 cubic meter equals 1.308 cubic yards

"Q" Indicate the total number of potentially solidifying/high viscosity Category X cargoes that were unloaded at the terminal or port during the last 12 months. Terminals in operation less than 12 months should enter the anticipated trade expected during the next 12 months. Ports should enter the sum of cargoes unloaded in the terminals which are members of the port.

"R" Indicate the total number of potentially high viscosity/solidifying Category Y and other Category X cargoes unloaded at the terminal or port during the last 12 months. Terminals in operation less than 12 months should enter the anticipated trade expected during the next 12 months. Ports should enter the sum of NLS cargoes unloaded in the terminals which are members of the port.

"S" Check the applicable category of NLS residues unloaded at the ship repair yard during the last 12 months. Ship repair yards in operation less than 12 months should enter the anticipated trade expected during the next 12 months. Ports should enter the sum of residues unloaded in the ship repair yards which are members of the port.

Adequacy Criteria Section:

This section consists of line items “T” through “AE”. These line items compare the capacities, transfer rates and ability to provide timely reception facility service to the regulatory requirements.

Terminal Backpressure Section:

This section consisting of line items "AF" through "AH" compares the existing hydrostatic backpressure to the requirement to provide 1 BAR backpressure during stripping operations. This calculation assumes that line pressure losses are negligible. Terminals unloading only Category X and OS cargoes should enter “not applicable” in this section.

"AF" Refer to the terminal transfer line backpressure diagram in Figure 1 and enter the height in feet from the base of the tallest tank which will receive NLS cargo during stripping operations to the top of the tank.

"AG" Refer to the terminal transfer line backpressure diagram and enter the height in feet between a point 10 feet above mean low tide and the base of the storage tank referred to in "AF." Per 33 CFR 158, it is assumed that for purposes of these calculations the ship's manifold is 10 feet above mean low tide.

"AH" Perform the calculation indicated. If the value is 1 BAR or less, the COTP will accept this as indicating that the 1 BAR backpressure requirement is met. In the event the value is greater than 1 BAR you must make operational changes and/or equipment changes to reduce backpressure to 1 BAR or less. If additional equipment is added or modifications are made to the terminal's piping system, show the arrangements in the backpressure instructions manual. The COTP will accept the arrangement as meeting the 1 BAR backpressure requirement if the instructions manual is approved and stamped by a registered professional engineer. Otherwise, the COTP may request an operational test of the proposed arrangement.

The Certificate of Adequacy cannot be issued unless the following conditions in Table 1 are met. If the following conditions cannot be met, submit a waiver per the provisions outlined in 33 CFR 158.150 on a separate attached sheet.

TABLE 1
WORKSHEET CRITERIA FOR ADEQUACY

1. TERMINAL UNLOADS ONLY CAT. X SOLIDIFYING/HIGH VISCOSITY NLS. Line item "T" is less than "V"
   Line items "W", "AA" and "AE" are less than 10 hours
   Line items "AF" through "AH" are not applicable

2. TERMINAL UNLOADS ONLY CAT. Y SOLIDIFYING/HIGH VISCOSITY and CAT. X OTHER NLS.
   Line item "T" is less than "V"
   Line items "W," "AA" and "AE" are less than 10 hours
   Line item "AH" is less than 1

3. TERMINAL UNLOADS ONLY CAT. Y OR Z NLS
   Line items "A" through "AE" are not applicable
   Line items "AF" and "AG" are to be completed
   Line item "AH" is less than 1

4. SHIP REPAIR YARDS
   Line item "U" is less than "V"
   Line items "W," "AA" and "AE" are not applicable
   Line items "AF" through "AH" are not applicable

5. TERMINAL UNLOADS A COMBINATION OF NLS CARGOES.
   Divide the NLS cargoes into the four groups above and ensure that the line item statements are correct for each group.

WORKSHEET FOR A RECEPTION FACILITY CERTIFICATE OF ADEQUACY FOR NOXIOUS LIQUID SUBSTANCE (NLS) RESIDUES AND MIXTURES CONTAINING NLS RESIDUES

NAME OF TERMINAL/PORT _____

ADDRESS _____

_____

RECEPTION FACILITY SECTION: This section describes how to calculate the estimated capacity of the reception facility the terminal must provide to be issued a Certificate of Adequacy.

FIXED RECEPTION FACILITIES

A. MAXIMUM TRANSFER RATE CAPABILITY FOR NLS RESIDUES _____ Cubic Meters Per Hour

B NLS WASTE PROCESSING CAPABILITY OR TRANSFER FROM STORAGE FACILITY _____ Cubic Meters Per Day

MOBILE TANK TRUCK RECEPTION

C. MAXIMUM TRANSFER RATE CAPABILITY FOR NLS RESIDUES _____ Cubic Meters Per Hour

D. NUMBER OF TANK TRUCKS AVAILABLE _____ No. of Trucks

IF TANK TRUCKS ARE NOT OWNED, LIST THE NAME AND ADDRESS OF COMPANY (IES) WHICH ARE PROVIDING THEM (SUCH AS RENTAL OR LEASING COMPANIES):

_____

_____

_____

E. CAPACITY OF TANK TRUCK. (**NOTE**: for more than one truck use the average size) _____ Cubic Meters

F. TIME REQUIRED TO FILL TANK TRUCK NLS RESIDUE [ ] Hours

"E"
"C"

G. ESTIMATED TIME BETWEEN FILLING OF TANK TRUCKS: (If line item "D" is "1" or "0" enter "0." If line item "D" is greater than "1" enter the time it takes a truck once filled with waste to offload and load again) _____ Hours

H. DAILY CAPACITY OF MOBILE TANK TRUCK RECEPTION _____ Cubic Meters Per Day

(24 x "E" x "D") / ("F" + "G")

BARGE RECEPTION FACILITIES

I. MAXIMUM TRANSFER RATE CAPABILITY FOR NLS RESIDUES _____ Cubic Meters Per Hour

J. NUMBER OF BARGES AVAILABLE _____ Number of Barges

IF BARGES ARE NOT OWNED, LIST THE NAME AND ADDRESS OF COMPANY (IES) RENTING, LEASING, OR OTHERWISE PROVIDING THEM.

_____

_____

_____

K. CAPACITY OF BARGE. (**NOTE**: for more than one barge use the average size) _____ Cubic Meters

L. TIME REQUIRED TO FILL BARGE WITH NLS RESIDUES _____ Hours

"K" / "I"

M. ESTIMATED TIME BETWEEN FILLING OF BARGES: (If line item "J" is "1" or "0" enter "0." If Line item "J" is greater than "1" enter the time it takes a barge once filled with waste to offload and load again.) _____ Hours

N. DAILY CAPACITY OF BARGE RECEPTION FACILITIES. _____ Cubic Meters Per Day

(24 x "J" x "K") / ("L" + "M")

OTHER RECEPTION FACILITY CAPACITY

DESCRIBE COMPLETELY AND SHOW CALCULATIONS USED TO ARRIVE AT THE DAILY CAPACITY IN CUBIC METERS ("P") AND DAILY AVERAGE TRANSFER RATE ("O") IN CUBIC METERS PER HOUR:

_____

_____

_____

_____

O _____ **Cubic Meters Per Hour**

P _____ **Cubic Meters Per Day**

SHIP NLS WASTE SECTION: Ports should enter the sum of the operations for the terminals considered part of the port.

TERMINAL OR PORT: (Ship repair yards need not complete this section)

Q. NUMBER OF "CATEGORY X SOLIDIFYING/HIGH VISCOSITY" CARGOES HANDLED AT THE TERMINAL/PORT DURING THE LAST 12 MONTHS. If the same Category X cargo is carried in two different tanks on the same vessel, count this as one cargo. _____ Number of Cargoes

R. NUMBER OF "CATEGORY X OTHER AND Y SOLIDIFYING/HIGH VISCOSITY CARGOES" HANDLED AT THE TERMINAL/PORT DURING THE LAST 12 MONTHS. _____ Number of Cargoes

SHIP REPAIR YARD: (Only Ship Repair Yards complete this section)

S. Check the appropriate boxes for cargoes handled in the last 12 months on ships visiting the ship repair yard. The values under the "CAPACITY VALUES" column are used in calculating item "U"; they can be ignored here.

CATEGORY	CAPACITY VALUES
☐ Category X solidifying NLS	75 CUBIC METERS
☐ Category X other and Y solidifying/high viscosity NLS	50 CUBIC METER
☐ Category Y NLS	50 CUBIC METERS
☐ Category Z NLS	50 CUBIC METERS
☐ Category OS NLS	50 CUBIC METERS

ADEQUACY CRITERIA SECTION: This section calculates the amount of NLS residues that would be expected to be generated by vessels visiting the terminal/port or ship repair yard as determined by the criteria set forth in 33 CFR 158.320.

CAPACITY REQUIREMENT:

T. ESTIMATED DAILY CAPACITY REQUIREMENT OF THE TERMINAL/PORT TO RECEIVE NLS RESIDUES RESULTING FROM PREWASH OPERATIONS. (Enter here and on line 5B of the Form 5401B application). [ ] Cubic Meters

|(75 x "Q") + (50 x "R")|

U. ESTIMATED DAILY CAPACITY REQUIREMENT OF THE SHIP REPAIR YARD TO RECEIVE NLS RESIDUES. (From line item "S" add values under the "CAPACITY VALUES" column for those items checked under the Category" column and enter the value here and on line 5B of the Form 5401B application.) [ ] Cubic Meters

V. ESTIMATED DAILIY CAPACITY OF THE RECEPTION FACILITY TO RECEIVE NLS RESIUDES RESULTING FROM PREWASH OPERATIONS OR FROM SHIP REPAIR YARD OPERATIONS. (Enter here and on line 5A of the Form 5401B application.) [ ] Cubic Meters

"B" + "H" + "N" (+ "P" if applicable)

WATER TRANSFER RATE REQUIREMENT:

W. TIME REQUIRED TO TRANSFER NLS RESIDUES TO FIXED RECEPTION FACILITIES [ ] Hours

$$\frac{\text{"T"}}{\text{"A"}}$$

X. NUMBER OF TANK TRUCK TRIPS REQUIRED TO HANDLE NLS RESIDUES [ ] Number of Trips

$$\frac{\text{"T"}}{\text{"E"}}$$

Y. WHOLE NUMBER OF TANK TRUCK TRIPS [ ] Number of Trips

Round "X" to the next whole number

Z. TIME NECESSARY TO RECONNECT TRUCKS TO CONTINUE TRANSFER OPERTIONS [ ] Hours

("Y" - 1) × "G"

AA. TOTAL TIME REQUIRED TO TRANSFER NLS RESIDUES TO MOBILE TANK TRUCK RECEPTION FACILITIES

[ ] Hours

$\frac{\text{“T”}}{\text{“C”}}$ + **“Z”**

AB. NUMBER OF TANK BARGE TRIPS REQUIRED TO HANDLE NLS RESIDUES.

[ ] Number of Tank Barges

$\frac{\text{“T”}}{\text{“K”}}$

AC. WHOLE NUMBER OF TANK BARGES.

[ ] Number of Tank Barges

Round “AB” to the next whole number

AD. TOTAL TURNAROUND TIME NECESSARY TO RECONNECT BARGES TO CONTINUE TRANSFER OPERATIONS.

[ ] Hours

(“AC” – 1) x “M”

AE. TOTAL TIME REQUIRED TO TRANSFER NLS RESIDUES TO TANK BARGE RECEPTION FACILITIES.

[ ] Hours

$\frac{\text{“T”}}{\text{“I”}}$ + **“AD”**

TERMINAL BACKPRESSURE SECTION: Refer to the attached transfer line backpressure diagram and enter the values as indicated for the line items “AF” and “AG.”

AF. Enter maximum height of the tallest facility storage tank which will be expected to receive NLS residues resulting from stripping operations.

_____ Feet

AG. Enter difference in elevation from level of ship’s manifold at mean low water to the base of the facility storage tank to be used to receive NLS residues from stripping operations.

_____ Feet

AH. Estimated backpressure due to elevation difference between facility storage tank and offloading operations.

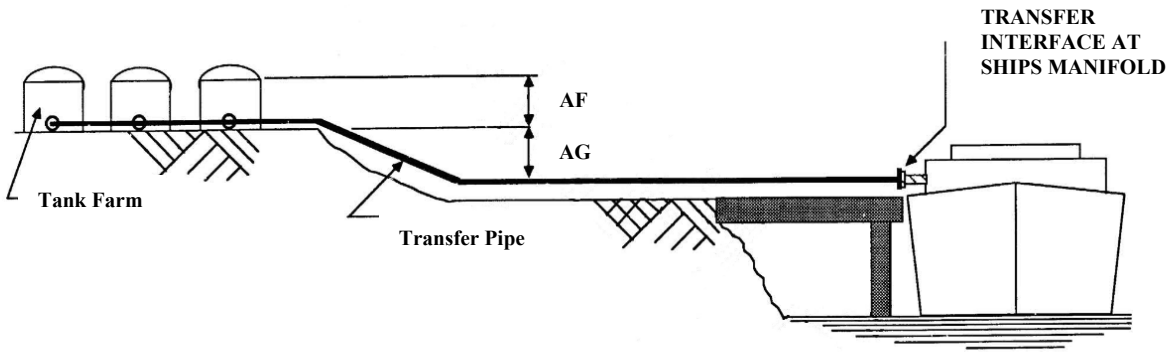
[ ] Bar

$\frac{\text{(“AF” + “AG”)}}{32}$

If value is greater than 1 BAR, the terminal or port must make equipment or operational changes which when certified by a professional engineer or demonstrated by an operational test to the COTP indicates the terminal can reduce the backpressure to 1 Bar or less during NLS cargo stripping operations.

PRINTED OR TYPED NAME OF PERSON COMPLETING THIS WORKSHEET:_____

Figure 1. **TRANSFER LINE BACK PRESSURE DIAGRAM**



Note:

AF = STATIC HEAD DUE TO LIQUID IN TANK

AG = STAIC HEAD DUE TO TOPOGRAPHY