KIRBY INLAND MARINE

CARGO TRANSFER PROCEDURES FOR THE BARGE

KIRBY 11600

PLEASE NOTE:

FOR PROPER VALVE ALIGNMENT AND SAFE CARGO TRANSFER GUIDANCE, PLEASE REFER TO KIRBY MARINE TRANSPORTATION'S CARGO HANDLING PROCEDURE MANUAL AND FOLLOW THE KIRBY TRANSFER PLAN.

IF YOU NEED A COPY OF THE PROCEDURE MANUAL, PLEASE CALL THE KIRBY DUTY LINE (713) 435-1618 OR (713) 435-1925 BEFORE CARGO OPERATION.

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1.0: CHEMICAL INFORMATION

The Person in Charge (PIC) of this barge is responsible for obtaining a Cargo Information Card (CIC) or a Material Safety Data Sheet (MSDS) for the specific Hydrochloric Acid (HCL) involved in the transfer. The CIC or MSDS must be posted by the barge's warning sign and remain in place until the barge is clean and gas free. This barge is dedicated to the loading, discharge, and transport of Hydrochloric Acid (CHRIS CODE "HCL") which shall be designated by no other name for USCG regulatory purposes.

A copy of the CHRIS Manual data sheet for HCL is included in the two following pages of these procedures. It contains, as a minimum, the required information of 33 CFR 154.310(a)(5)(ii) as referenced by 33 CFR 155.750(a)(1).

(ii)(a) is addressed on the proper USCG name of Hydrochloric Acid as listed in 46 CFR Table 151.05-1

(ii)(b) and (c) are primarily addressed under the heading of "Cautionary Response Information".

(ii)(d) is primarily addressed under the heading of "Health Hazards"

(ii)(e) is primarily addressed under the headings of "Chemical Reactivity", "Shipping Information", and "Hazard Classifications".

(ii)(f) is primarily addressed under "Cautionary Response Information", "Health Hazards, and "Water Pollution".

(ii)(g) is primarily addressed und "Fire Hazards".

The second page of the CHRIS information provides useful data for engineers if called to the scene for a long term response effort.

Regardless of the attached CHRIS information, the MSDS is the most accurate source of information available, even though they are not yet of the "user friendly" format for inland barge operations as used in the CIC, CHEMICAL DATA GUIDE (CGD), or CHRIS Manual. These provide good generic information which is reasonably accurate, but might be deficient in certain cargo specifics. Remember, the MSDS should address the customer's specific Hydrochloric Acid, thus it will be more accurate. For example, according to the USCG regulation, spent hydrochloric acid or hydrochloric acid adulterated by other chemicals, INHIBITORS, oils, solvents, water, etc. are not authorized for this barge. Only the MSDS for the specific product would indicate whether or not the acid is spent or other impurities exist.

The Person In Charge should never hesitate to ask to view the MSDS. It must be made available by the "Right to Know" laws, so ask for it.

HYDROCHLORIC ACID

HCL

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Watery liquid	Colorless	Sharp, irritating odor
Muriatic Acid	Sinks and mixes with water. Irritating vapor is produced.		

Evacuate.
Keep people away. AVOID CONTACT WITH LIQUID AND VAPOR.
Wear chemical protective suit with self-contained breathing apparatus.
Stay upwind and use water spray to "knock down" vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Not flammable.
Flammable gas may be produced on contact with metals.
Wear chemical protective suit with self-contained breathing apparatus.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled, will cause coughing or difficult breathing.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Will burn skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Dangerous to aquatic life in high concentrations.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge
Chemical and Physical Treatment:
Neutralize

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 1; Non-oxidizing mineral acid
2.2 Formula: HCl-H_2O
2.3 IMO/UN Designation: 8.0/1789
2.4 DOT ID No.: 1789
2.5 CAS Registry No.: 7647-01-0
2.6 NAERG Guide No.: 157
2.7 Standard Industrial Trade Classification: 52231

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Self-contained breathing equipment, air-line mask, or industrial canister-type gas mask; rubber or rubber-coated gloves, apron, coat, overalls, shoes.
3.2 Symptoms Following Exposure: Inhalation of fumes results in coughing and choking sensation, and irritation of nose and lungs. Liquid causes burns.
3.3 Treatment of Exposure: INHALATION: remove person to fresh air; keep him warm and quiet and get medical attention immediately; start artificial respiration if breathing stops. INGESTION: have person drink water or milk; do NOT induce vomiting. EYES: immediately flush with plenty of water for at least 15 min. and get medical attention; continue flushing for another 15 min. if physician does not arrive promptly. SKIN: immediately flush skin while removing contaminated clothing; get medical attention promptly; use soap and wash area for at least 15 min.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: 5 ppm
3.7 Toxicity by Ingestion: Currently not available
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: None
3.10 Vapor (Gas) Irritant Characteristics: Vapor is moderately irritating such that personnel will not usually tolerate moderate or high vapor concentrations.
3.11 Liquid or Solid Irritant Characteristics: Fairly severe skin irritant; may cause pain and second-degree burns after a few minutes' contact.
3.12 Odor Threshold: 1-5 ppm
3.13 IDLH Value: 50 ppm
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: 5 ppm
3.17 EPA AEGL: Not listed.

4. FIRE HAZARDS

4.1 Flash Point: Not flammable
4.2 Flammable Limits in Air: Not flammable
4.3 Fire Extinguishing Agents: Not pertinent
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Toxic and irritating vapors are generated when heated.
4.6 Behavior in Fire: Not pertinent
4.7 Ignition Temperature: Not flammable
4.8 Electrical Hazard: Not pertinent
4.9 Burning Rate: Not flammable
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichiometric Air to Fuel Ratio: Not pertinent
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity With Water: No reaction
5.2 Reactivity with Common Materials: Corrosive to most metals with evolution of hydrogen gas, which may form explosive mixtures with air.
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Flush with water; apply powdered limestone, slaked lime, soda ash, or sodium bicarbonate.
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 282 ppm/96 hr/mosquito fish/TL_m/fresh water 100-330 ppm/48 hr/shrimp/LC_{50}/salt water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): None
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 1
Human oral hazard: 1
Human contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: Food processing or technical: 18° Be-27.9%, 20 Be-31.5%, 22° Be-35.2%; Reagent, ACS, and USP: 23° Be-37.1%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
7.5 IMO Pollution Category: D
7.6 Ship Type: 3
7.7 Barge Hull Type: 3

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Corrosive material
8.2 49 CFR Class: 8
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue)	3
Flammability (Red)	0
Reactivity (Yellow)	0

8.6 EPA Reportable Quantity: 5000 pounds
8.7 EPA Pollution Category: D
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15°C and 1 atm: Liquid
9.2 Molecular Weight: 36.46
9.3 Boiling Point at 1 atm: 123°F = 50.5°C = 323.6°K
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.19 at 20°C (liquid)
9.8 Liquid Surface Tension: Not pertinent
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: 178 Btu/lb = 98.6 cal/g = 4.13 X 10^5 J/kg
9.13 Heat of Combustion: Not pertinent
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: —860 Btu/lb = —480 cal/g = —20 X 10^5 J/kg
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: 13.0 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 8.0 psia
*Physical properties apply to 37 % solution.

NOTES

HCL HYDROCHLORIC ACID

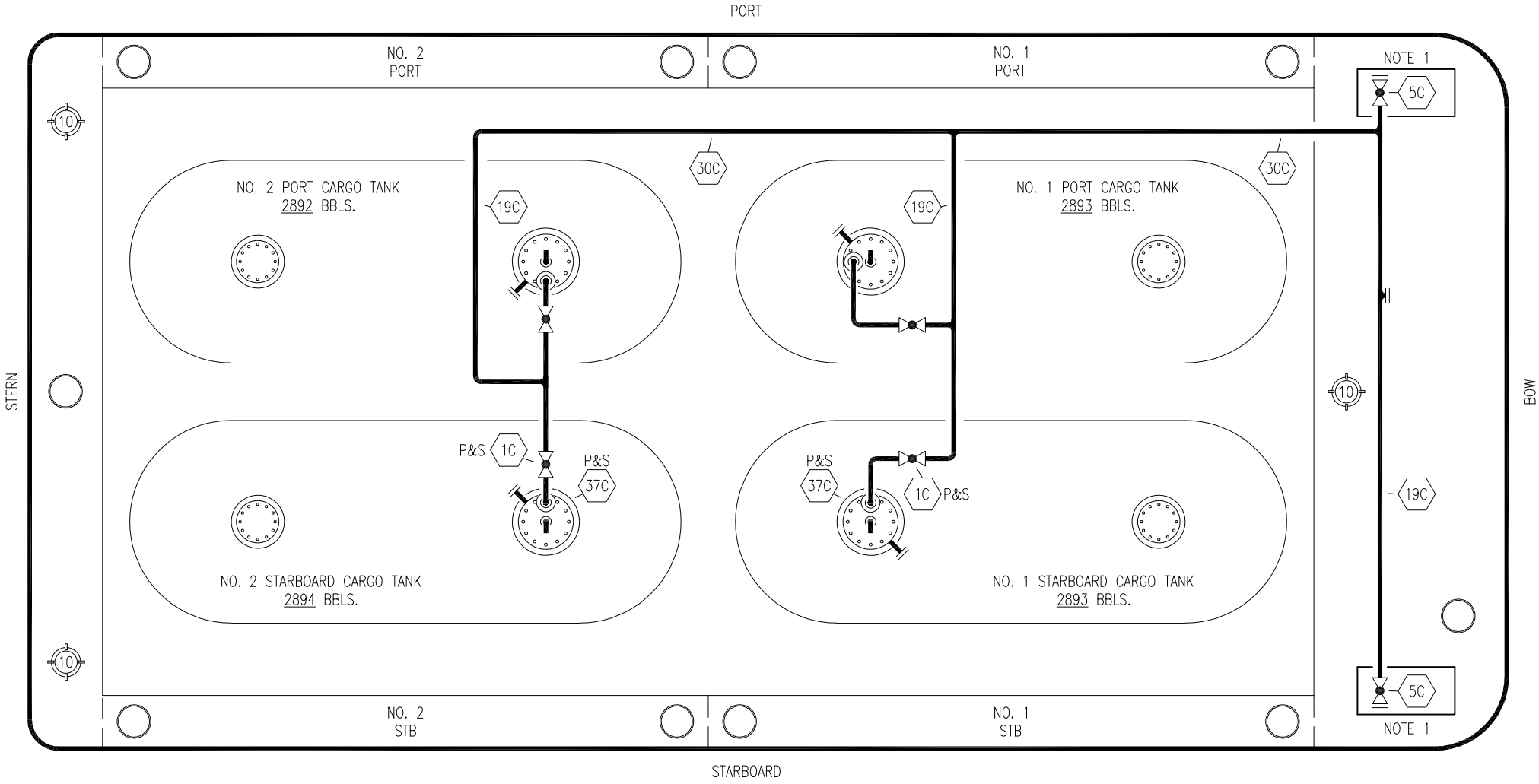
9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit-inch per hour-square foot-F	Temperature (degrees F)	Centipoise
40	74.770	35	0.417		N		N
50	74.599	40	0.429		O		O
60	74.419	45	0.441		T		T
70	74.250	50	0.453				
80	74.080	55	0.465		P		P
90	73.900	60	0.477		E		E
100	73.730	65	0.489		R		R
110	73.559	70	0.501		T		T
120	73.381	75	0.513		I		I
		80	0.525		N		N
		85	0.537		E		E
		90	0.548		N		N
		95	0.560		T		T
		100	0.572				
		105	0.584				
		110	0.596				
		115	0.608				
		120	0.620				

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	M	52	1.844		N		N
	I	54	1.970		O		O
	S	56	2.104		T		T
	C	58	2.246				
	I	60	2.396		P		P
	B	62	2.555		E		E
	L	64	2.723		R		R
	E	66	2.901		T		T
		68	3.088		I		I
		70	3.287		N		N
		72	3.496		E		E
		74	3.717		N		N
		76	3.951		T		T
		78	4.197				
		80	4.456				
		82	4.730				
		84	5.018				
		86	5.321				
		88	5.640				
		90	5.975				
		92	6.328				
		94	6.699				
		96	7.089				
		98	7.499				
		100	7.929				
		102	8.380				

1.1: PIPING DIAGRAMS

This section complies with 33 CFR 155.750 (a) (2) with regard to the piping diagram. It includes the following:

1. Piping diagram
2. Explanation of symbols to Piping Diagram



NO	DESCRIPTION
1C	CARGO TANK VALVE
5C	HEADER VALVE
19C	CARGO HEADER
30C	CARGO PIPELINE
37C	CARGO DROP
	ABOVE DECK PIPING
	ELECTRODE STICK

NOTE 1: CONTAINMENT AREAS

TODD SHIPYARD – EX: DC 620

REV.	DATE	BY	CHK	APP	REVISION DESCRIPTION
2	03/26/21	MRV	DDA	DAR	REVISED PER CLIENT COMMENTS
1	01/21/11	DDA	DDA	RJ	ADDED ELECTRODE STICK
0	01/11/10	RB	RB	OF	APPROVED

KIRBY INLAND MARINE

CARGO
PIPING FLOW DIAGRAM

SCALE: NONE

PAGE: 1 OF 2

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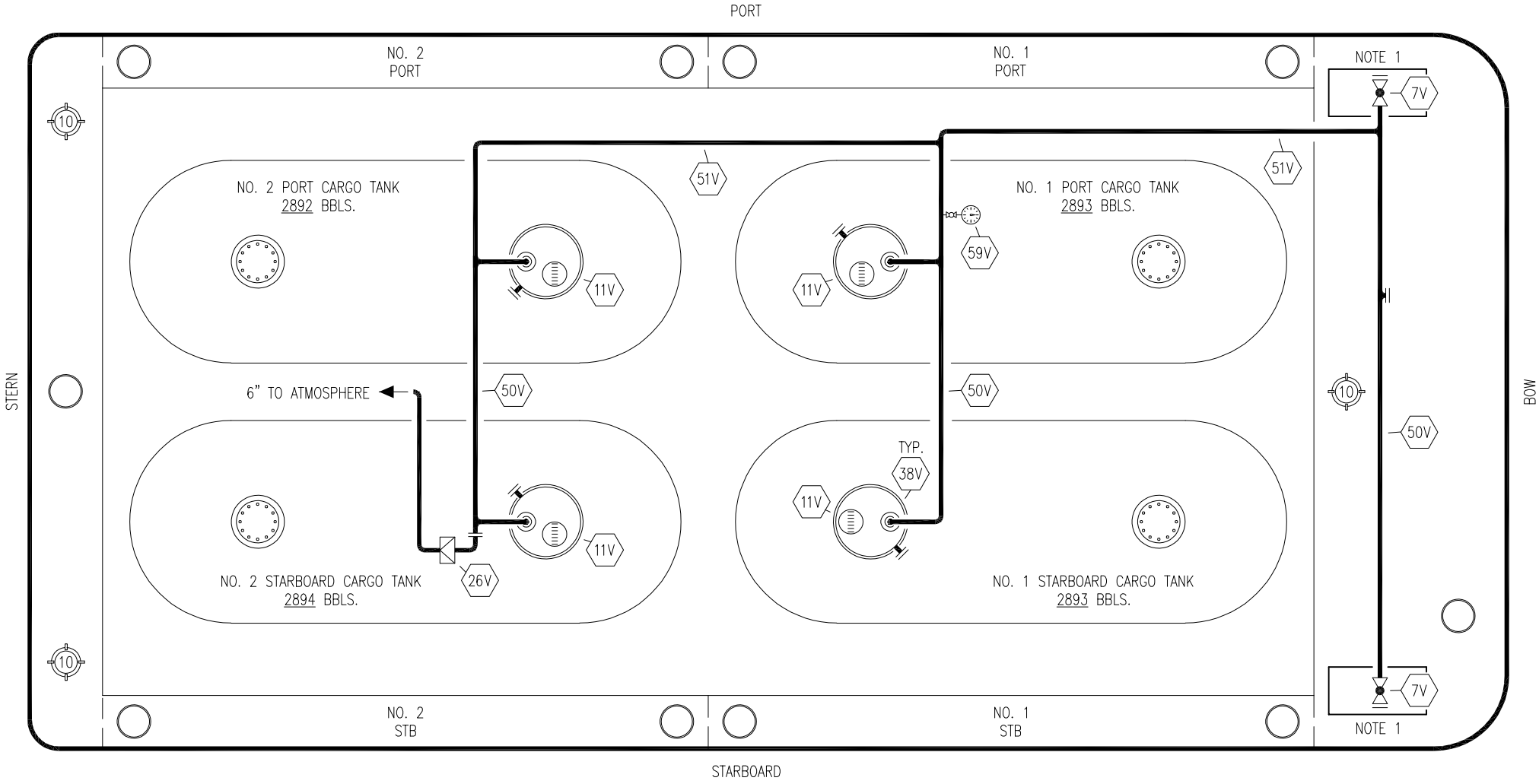
REV. 2



NO	DESCRIPTION
7V	HEADER VALVE
11V	RADAR
26V	6" RUPTURE DISK #45
38V	VAPOR DROP
50V	VAPOR HEADER
51V	VAPOR PIPELINE
59V	PRESS/VAC GAUGE
	ABOVE DECK PIPING

NOTE 1: CONTAINMENT AREAS

REV.	DATE	BY	CHK	APP	REVISION DESCRIPTION
2	03/26/21	MRV	DDA	DAR	REVISED PER CLIENT COMMENTS
1	01/21/11	DDA	DDA	RJ	ADD RADAR; REV. RUPT. DISK SIZE
0	01/11/10	RB	RB	OF	APPROVED

TODD SHIPYARD – EX: DC 620

KIRBY INLAND MARINE

VAPOR
PIPING FLOW DIAGRAM

SCALE: NONE

PAGE: 2 OF 2

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REV. 2

1.2: PROCEDURES FOR EMPTYING DISCHARGE CONTAINMENT

The USCG regulations in 46 CFR 151.50-22(c) require the use of a water hose connected to a water supply and ready for immediate use. Any leakage or spillage of acid should be immediately washed down. Usually, the terminal provides the water supply and hose.

Drip pans are installed under the header connections, which is an area most susceptible to leakage during hook up and disconnect operations. Small amounts of leakage in drip pans, etc. are to be diluted, contained, and neutralized with the use of soda ash, or other suitable material.

If the dock will not accept the residual waste for disposal, then the barge will have to be brought to the shipyard for proper disposal of the treated waste.

1.3: NUMBER OF PERSONS ON DUTY

The Tankerman on watch will be the designated person in charge of duty at all times during the transfer operations.

No one may connect top off, disconnect, or take part in any other critical procedure unless the person in charge personally supervises the operation. No one will be allowed to start the flow of cargo to or from the barge unless instructed to do so by the person in charge. The person in charge must be in the immediate vicinity of the operation and immediately available to all individuals involved in the transfer.

No person may serve as the person in charge of the transfer operations on more than one barge at a time.

1.4: DUTIES OF TANKERMAN (PERSON IN CHARGE)

The Tankerman (person in charge) is responsible for transferring barge and carrying out related operations on board in an efficient, safe, and pollution free manner.

The Tankerman (person in charge) shall:

1. Have on board a valid merchant mariner's document endorsed as Tankerman, certified to handle "dangerous liquids" (DL).

2. Make a thorough inspection of the barge prior to the start of the transfer and check the following:

    a. Hull condition

    b. Pressure gauge accuracy

    c. Any valve or rupture disk leakage

    d. Piping Diagram and Strappings for correctness and completeness

    e. Warning signs, flag, night warning light, shut down sign

    f. Operability of gauging system

    g. Detect evidence of water in the hopper which could affect load limits to Certificate of Inspection draft

3. In addition the tankerman shall ensure that:

    a. The vessel's moorings are strong enough to hold during all expected conditions of surge, current, and are long enough to allow for changes in draft, drift, and tide.

    b. The hoses are long enough to allow the vessels to move within the limits of its moorings without placing a strain on the hose arm or piping systems.

    c. Each hose is supported to prevent chaffing kinking, or other damages to the hose or hose couplings.

SECTION 1.4 continued:

d. Each transfer system is aligned to allow the flow of cargo.

e. Each part of the transfer system not in use is securely blanked or shut off.

f. Each end of hose or loading arm that is not in use is securely blanked by using a bolt in every hole.

g. Each hose has no loose covers, kinks, bulges, soft spots, gouges, cuts, or slashes that penetrate the first layer of hose reinforcement.

h. All connections in the transfer system are leak free.

i. The communications required for the transfer system are leak free.

j. Tankerman is at the site of the transfer and immediately available.

k. Transfer is conducted in accordance with the vessel transfer procedure.

l. Thankerman has a copy of transfer procedure in possession.

m. Tankerman and dock person in charge both speak English.

n. A pre-transfer conference is held with the person in charge of the dock facility and the person understands the following details of the transfer:

   1) The identity of the product being transferred

   2) The sequence of transfer operations

   3) The transfer rate

   4) The name, or title, and location of each person involved in the transfer operations

   5) Details of the transferring and receiving system

   6) Critical stages of the transfer operations

SECTION 1.4 continued:

7) Federal, state, and local rules that apply to the transfer

8) Emergency procedure

9) Discharge mitigation and containment procedures

10) Discharge reporting procedures

11) Watch or shift change arrangements

12) Transfer shutdown procedures

o. The Persons in charge of transfer operations for the vessel and facility must agree on the transfer operations prior to transfer.

p. The transfer operation is lighted between sunset and sunrise.

1.5: TENDING VESSEL MOORINGS DURING TRANSFER OPERATIONS

Proper mooring of the barge is essential for both safety and pollution prevention. You may not transfer cargo to or from a barge unless its moorings are strong enough to hold in all expected conditions of surge, current, and weather. The mooring lines must be long enough to allow for changes in draft, trim, surge, and tide during transfer operations.

All conditions at the dock must be considered to determine the adequate size, proper lead and the number of lines necessary. Surge of the barge, both at parallel to and at right angles to the dock, will be influenced by the proximity of traffic in the channel, the dock design, the state of the tide and the barge's draft. Be sure that all lines have the proper lead and are secure.

Be particularly mindful of docks with high and low mooring dolphins, etc. It may be necessary to shift from lower mooring supports to higher or visa versa, as the barge goes down or comes up from the water.

When mooring the barge, as a MINIMUM standard, the PIC should ensure that the number of mooring lines used is in accordance with the governing Standard Operating Procedures for the service of this barge. The lines are used in combination to fulfill the following functions:

(1) Towing lines
(2) Backing lines
(3) Spring lines

1.6: PROCEDURES FOR OPERATING THE EMERGENCY SHUTDOWN AND PROVISION OF COMMUNICATIONS

I. EMERGENCY SHUTDOWN OPERATIONS

In case of hose rupture, tank overflow, or other emergency, normal means of stopping the flow of product may require inadequate time to properly arrest it. To ensure a more timely, if not immediate, shutdown, both the vessel and facility are required to have emergency shutdown equipment.

For all loading operations the facility must supply the barge with an electrical, air operated, or mechanical control which is connected to the shoreside transfer system and enables the PIC of the barge to stop the flow of the product to the barge from his usual operating station. A communication device connected to the shoreside control operation and used for no other purpose would also be acceptable.

SECTION 1.6 continued:

II. COMMUNICATIONS

In vessel to vessel transfers, and vessel to facility transfers, there must be a means of continuous two-way voice communications between the Persons in Charge of each entity.

The means of communication must be usable and effective in all phases of the transfer operation and in all conditions of weather.

IF portable radio devices are used to comply with this requirement, they must be intrinsically safe as defined in 46 CFR 110.15-100(f), and meet Class 1 Division 1 Group D requirements as defined in 46 CFR 111.80.

Be Careful during unloading operations when you are within the vicinity of the operating pump engines. More frequent radio or other voice communication checks may be necessary to ensure timely notification.

1.7: PROCEDURES FOR TOPPING OFF TANKS AND OTHER PARTICULARS OF THE TRANSFER

It is useful for the PIC to refer to the piping diagrams in section 1.1 of these procedures. The barge has independent cargo tanks. The piping diagrams separately show the liquid cargo system and the vapor system, which is used for pressuring off cargo during discharge. The cargo tank pressure is protected by a rupture disk (#4) set at 45 psig.

Loading Operations

During loading operations, the appropriate header valve #1 is opened with the off side ones shut, and the appropriate tank valves #2 are opened as well. HCL pressures are low, and there is no reason for inserts to be present in the tanks to build up pressure. All vapor system valves can be closed, unless the terminal desires to vapor balance. In that case, the appropriate vapor system valves will be open and header connected to the vapor balance system of the terminal.

The HCL load is a homogeneous non split load. The USCG draft restriction ensures that cargo tanks will have sufficient outage when draft is reached. The PIC should have a good idea of the topping off stage by comparing the desired loading amount to the barge strappings. Remember, the COI draft is a mean midship draft.

The barge should be topped off with trying to maintain a level trim. If this is not possible, then try to load the same amount of product in all tanks and record the mean midship draft. If this meets USCG regulations and operational requirements for transit, then stick to this method. If not, the load might need to be staggered, but be careful not to vary the amount in each tank by 5%.

Discharge Operations

Although USCG regulations require cargo tank design pressures at no less than 50 psig, the discharge pressure system can be exposed to less air pressure if sufficient in obtaining the proper discharge flow rates. The rupture disks on this barge are set at 45 psig

Per CFR 151.50 a barge tank pressure not to exceed 10 pounds per square inch gauge

Air pressure comes in through the vapor line and pressurizes the liquid product out through the liquid line.

1.8: PROCEDURES FOR ENSURING THAT ALL VALVES ARE CLOSED UPON COMPLETION OF TRANSFER

After transfer operations are completed, the person in charge must review the cargo system to make certain that all necessary valves (including ballast system) are closed. Also, all manifolds and hoses are blind flanged and 8 bolted tight. All hatches, domes, etc. must be tightly closed.

1.9: PROCEDURES FOR REPORTING OIL SPILLS

In the event a discharge of oil or hazardous material occurs on deck or in the water, the PIC must shut down the transfer operation and notify the wheelhouse person on watch of the accidental discharge. Wheelhouse personnel will contact the appropriate dispatch office who will notify the appropriate USCG office(s).

The PIC will also take immediate action to protect personnel from exposure to hazardous chemical vapors by moving upwind and if necessary, donning personal protective equipment.

If the spill is contained on deck the dispatch officer will probably not notify the USCG. If the Spill is in the water then the USCG will be notified. You, as the scene PIC must be prepared to provide at least the following information to those who will be notifying the appropriate government agency:

1. Barge name
2. Time of the incident
3. Geographic location of the barge
4. Wind and tide conditions
5. Condition of the barge, particularly the equipment that might be associated with the discharge.
6. An estimate of the quantity of product discharge into the water; or the amount contained on deck

1.10: PROCEDURES FOR CLOSING AND OPENING THE VESSEL OPENINGS

Upon the completion of transfer and preparatory to getting underway, the PIC shall ensure that all closure mechanisms on the following openings are properly closed:

1. Expansion trunk hatches
2. Ullage openings
3. Sounding ports
4. Tank cleaning butterworth openings
5. Any other tank openings that maintain the seaworthy condition of the barge and prevent the inadvertent release of oil or hazardous material in the event of an accident. This includes, therefore, the rake void, and wing/innerbottom voids.

No person is allowed to open any of the closures mentioned above while underway or fleeted unless authorized to do so by the person in charge

No cargo tank hatches, ullage holes, or butterworth plates shall be opened or shall remain open without flame screens, except under the supervision of the person in charge. Unless the tank is gas free (46 CFR 35.30-10).

1.11: WEATHER CONDITIONS

Electrical Storms

Loading/discharging operations will not be started or must be stopped in anticipation of approaching electrical storms, regardless of whether cargo tanks are inerted or not. All cargo tank hatches must be closed and dogged. Vent stack valve, cargo line, and manifold valves must also be closed.

Still Air Conditions

The majority of products that we load have vapors that are heavier than air. These vapors tend to accumulate at or near barge levels. Without vapor control, and where there is little or no wind, you may exceed the permissible exposure limits for these products.

If this condition exists, the PIC Barge should consider stopping the loading operations or delaying the loading operations until weather conditions improve.

1.12: BARGE WARNING SIGNES AND SIGNALS

The person in charge is required to display certain signals and signes to alert others to the operations being conducted. For this product during cargo transfer alongside a dock, a red flag must be flown by day and a red light shown by night; both with 360 degree visibility.

To warn persons approaching the gangway or other access to the barge, a warning sign must be displayed on the port and starboard side facing outboard. This sigh is specific for HCL and meets the requirements of 46 CFR 151.45-2 with regard to format and structure.

The Cargo Information Card (CIC) for HCL must be crried in the pilot house of the towing vessel and readily available for use by the person in charge of the watch. This information must also be carried aboard the barge, mounted near the Warning Sign. (See Section 1.0 of these procedures for generic information on HCL)

1.13: HOSES

History has taught us that cargo hoses can be a weak link in the transfer system, so the USCG regulates them rather stringently. All we are required to address are hoses attached or assigned to the barge, but the PIC should bear in mind that an incident resulting from improper use of a facility hose used for facility/barge hook up might also result in the USCG citing the barge PIC under 33 CFR 156 for DOI items. It is best that the PIC take note of the following and apply the principles to ALL hoses used in the transfer.

Hose MAWP as marked should at least be 150 psig.

The hose should be marked with the words “OIL SERVICE”, or if in hazardous material “non oil” service, by chemical name. If the marking references “HAZMAT SERVICE__ See……”, which is another sheet of paper or document on the barge, and if that document is not available, check with your supervisor.

The MAWP is required to be marked on the hose as well.

Hoses are pressure tested annually. If the test date is not marked on the hose, check the supporting paperwork to ensure a valid and current test date. Ensure that the hose serial# marked on the hose matched the serial # referenced in the supporting paperwork.

Hoses involved in the transfer should not have loose covers, kinks, bulges, soft spots, gouges, cuts, slashes that penetrate the reinforcement. The hose should have no external deterioration and, to the extent internal inspection is possible with both ends open, no internal deterioration.

Ensure that hoses are supported so that they are not pinched between the barge and the facility. Ensure they are long enough to allow the vessel to move within the limits of its moorings to avoid placing strain on the hose of manifold systems.

Inspect the hose frequently during the transfer. Remember, it is the weak link.

Do not let the hose fall to the deck during handling, connecting or disconnecting.

Any hose that is not clean and gas free must be blanked off.

1.14: PERSONAL PROTECTIVE EQUIPMENT

151.50-73 Chemical Protective Clothing

When table 151.05 refers to this section, the following apply:

(a) The person in charge of cargo handling operations shall ensure that the following chemical protective clothing constructed of materials resistant to permeation by the cargo being handled is worn by all personnel engaged in an operation listed in paragraph

(b) of this section:

(1) Splash protective eyewear.

(2) Long-sleeved gloves.

(3) Boots or shoe covers.

(4) Coveralls or lab aprons.

(b) The section applies during the following operations:

(1) Sampling cargo.

(2) Transferring cargo.

(3) Making or breaking cargo hose connections.

(4) Gauging a cargo tank, unless gauging is by closed system.

(5) Opening cargo tanks.

(c) Coveralls or lab aprons may be replaced by splash suits or aprons constructed of light weight or disposable materials if, in the judgment of the person in charge of cargo handling operations,

(1) Contact with the cargo is likely to occur only infrequently and accidentally; and

(2) The splash suit or apron is disposed of immediately after contamination.

(d) Splash protective eyewear must be tight-fitting chemical-splash goggles, face shields, or similar items intended specifically for eye protection from chemical splashing or spraying.

(e) The person in charge of cargo handling operations shall ensure that each person in the vicinity of an operation listed in the paragraph of this section or in the vicinity of tanks, piping, or pumps being used to transfer the cargo wear splash protective eyewear under paragraph (d) of this section.