UST-22A

Overfill Prevention Equipment Operability Check INSTRUCTIONS

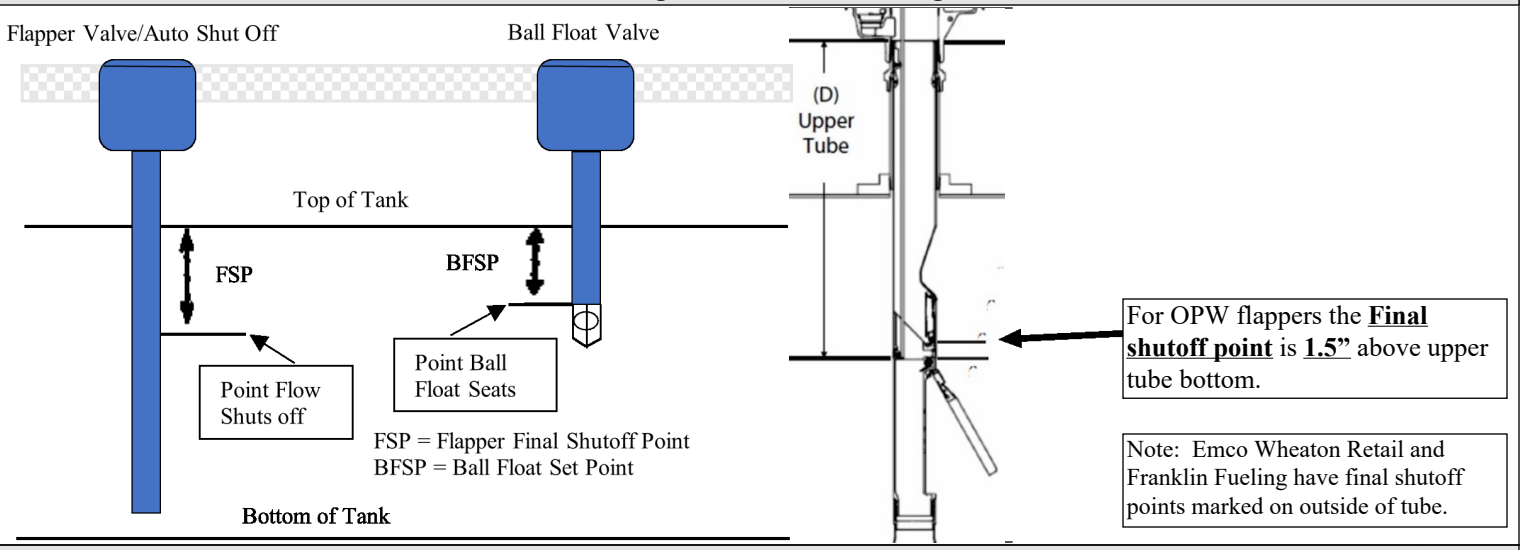
Operability check of overfill equipment is required **triennially for all UST systems** or for any UST system prior to returning to service from temporary closure.

- Inspect overfill prevention equipment for operability, proper operating condition, and calibration in accordance with PEI RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection, and Secondary Containment Equipment at UST Facilities" and/or the "Overfill Prevention Equipment Inspection Procedure" below and any additional inspection procedures listed in the manufacturer's guidelines. Page 4 only required if tank tilt must be determined per guidelines listed on this page.
- Step-by step instructions, with example calculations, for conducting the operability check can be found at the following address: http://deq.nc.gov/about/divisions/waste-management/ust/guidance-documents
- In accordance with 15A NCAC 2N .0301, new ball float vent valves cannot be installed after June 1, 2017.

Overfill Prevention Equipment Inspection Procedure

Flapper Valve/Auto Shut Off	1. Remove tank fill cap and visually confirm that drop tube device is present and not obstructed. 2. Ensure that tight-fill adapter on fill riser is tight and in good condition. 3. Remove drop tube device and ensure that the drop tube assembly is in good condition and all necessary gaskets/seals are in place. 4. Ensure that the drop tube device is installed correctly in accordance with manufacturer's requirements. Enter measurement from tank top to point that overfill equipment's final shutoff of product flow occurs. 5. Determine if tank has a ball float installed. If a ball float is installed, then either remove the entire ball float valve assembly or determine the ball float valve body length from tank top and the percentage that flow restriction occurs (Enter the ball float valve length and percentage in the ball float section on page 2) and ensure that the flapper/auto-shutoff device will completely shut-off flow at a lower level in tank. If the length of the ball float cannot be determined, then the flapper/auto shutoff device must be installed at less than 90% of tank capacity. 6. Complete the "Tank Tilt Determination" section of this form if the drop tube device is set for final shutoff greater than 95% of tank capacity and if the tank is tilted by one inch or more, the drop tube device must be installed in the low end of the tank.
Ball Float Valve	1. Remove fitting/cap and ball float valve and visually confirm that ball float valve is present and in good condition. 2. Ensure all tank top fittings are in good condition and appear to be vapor tight. 3. Ensure that "standard" drop tubes are properly installed in the tank fill riser. 4. Ensure that ball float valve is installed correctly in accordance with the manufacturer's requirements. Enter measurement from tank top to point that ball float seats to restrict vapor exiting the tank. 5. Complete the "Tank Tilt Determination" section of this form if the ball float valve is set to restrict flow at greater than 90% of tank capacity and if the tank is tilted by one inch or more, the 30 minute flow restriction ball float valve must be installed in the low end of the tank. Note: In accordance with 15A NCAC 2N .0301, new ball float vent valves cannot be installed after June 1, 2017.
High Level Alarm (HLA)	1. Remove the electronic alarm device from the tank and visually inspect for damage or corrosion. 2. Ensure the device functions correctly by causing an alarm condition (e.g., slide float upward). Enter measurement from bottom of stem to point where alarm occurs. (This procedure is for tank level monitor stems that touch the bottom of tank when installed.) 3. Reinstall the electronic alarm device in accordance with the manufacturer's requirements. 4. Ensure that alarm is audible and identifiable by the delivery person as an overfill alarm. 5. Complete the "Tank Tilt Determination" section of this form if the electronic alarm is set to alarm at greater than 90% of tank capacity and if the tank is tilted by one inch or more, the electronic alarm must be installed in the low end of the tank.

Overfill Length Determination Diagram



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Overfill Prevention Equipment Operability Check
AUTOMATIC SHUTOFF AND BALL FLOATS

UST FACILITY

Owner / Operator Name	Facility Name	Facility ID
Facility Street Address	**Facility City**	**County**

CONTRACTOR/PERSON CONDUCTING INSPECTIONS

Company Name	Phone	Email address

I certify, under penalty of law, that the testing data provided on this form documents the UST system equipment was checked in accordance with the manufacturer's guidelines and the applicable national industry standards listed in 15A NCAC 2N .406 and/or 15A NCAC 2N .0900.

Print Name of person conducting inspection	Signature of person conducting inspection	Inspection Date

Overfill Equipment Check	Tank #	Tank #	Tank #	Tank #	Tank #
Product:					
Tank chart volume (gallons):					
Tank chart diameter (inches):					
Tank Type:	☐ FRP ☐ Steel	☐ FRP ☐ Steel	☐ FRP ☐ Steel	☐ FRP ☐ Steel	☐ FRP ☐ Steel
If FRP Compartment tank, select:	☐ Base ☐ End	☐ Base ☐ End	☐ Base ☐ End	☐ Base ☐ End	☐ Base ☐ End
Overfill device manufacturer/model					
Flapper Valve/Auto Shut Off	A "No" answer to any items below or ball float length not determined and flapper/auto shut-off greater than 90% indicates an operability check failure.				
Drop tube removed from tank?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Drop tube and float mechanism are free of debris?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Float moves freely without binding and poppet moves into flow path?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Bypass valve in the drop tube is open and free of blockage (if present)?	☐ Yes ☐ No ☐ Not Present	☐ Yes ☐ No ☐ Not Present	☐ Yes ☐ No ☐ Not Present	☐ Yes ☐ No ☐ Not Present	☐ Yes ☐ No ☐ Not Present
Current length from tank top to final shutoff point (inches) **FSP**					
Percent tank volume when final shutoff occurs (%)					
If tank has a ball float, is the flapper installed lower in tank than the ball float? (If present, complete ball float length and percent set point below)	☐ Yes ☐ No ☐ Length not Determined ☐ Not Present	☐ Yes ☐ No ☐ Length not Determined ☐ Not Present	☐ Yes ☐ No ☐ Length not Determined ☐ Not Present	☐ Yes ☐ No ☐ Length not Determined ☐ Not Present	☐ Yes ☐ No ☐ Length not Determined ☐ Not Present
Ball Float Valve	A "No" answer to any items below indicates an operability check failure.				
Tank top fittings are vapor tight?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Ball Float removed from tank?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Cage intact & ball in good condition, ball moves freely & seats firmly?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Vent hole in pipe is open and near top of tank?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Current length from tank top to ball float set point (inches) **BFSP**					
30-minute flow restrictor installed (if ball float set at more than 90%) (Provide documentation such as pictures/hole diameter)	☐ Yes ☐ N/A	☐ Yes ☐ N/A	☐ Yes ☐ N/A	☐ Yes ☐ N/A	☐ Yes ☐ N/A
Percent tank volume when flow restriction occurs (%)					
Inspection result	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail

Comments: *(include information on repairs made prior to testing, and recommended follow-up for failed tests)*

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Overfill Prevention Equipment Operability Check
OVERFILL ALARM

UST FACILITY

Owner / Operator Name	Facility Name	Facility ID
Facility Street Address	**Facility City**	**County**

CONTRACTOR/PERSON CONDUCTING INSPECTIONS

Company Name	Phone	Email address

I certify, under penalty of law, that the testing data provided on this form documents the UST system equipment was checked in accordance with the manufacturer's guidelines and the applicable national industry standards listed in 15A NCAC 2N .406 and/or 15A NCAC 2N .0900.

Print Name of person conducting inspection	Signature of person conducting inspection	Inspection Date

Overfill Equipment Check	Tank #	Tank #	Tank #	Tank #	Tank #
Product:					
1. Tank chart volume (gallons):					
Tank chart diameter (inches):					
Tank Type:	☐ FRP ☐ Steel	☐ FRP ☐ Steel	☐ FRP ☐ Steel	☐ FRP ☐ Steel	☐ FRP ☐ Steel
If FRP Compartment tank, select:	☐ Base ☐ End	☐ Base ☐ End	☐ Base ☐ End	☐ Base ☐ End	☐ Base ☐ End
Overfill device manufacturer/model					
2. Overfill alarm activates in test mode at the console?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
3. When activated, overfill alarm can be heard or seen while delivering to the tank?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
4. After removing the probe from the tank, it has been inspected and any damaged or missing parts replaced?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
5. Float moves freely on the stem without binding?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
6. Moving product level float up the stem triggers alarm?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
7. Inch level from bottom of stem when 90% alarm is triggered.					
8. Tank volume at inch level in Line 7.					
9. Percent tank volume when alarm occurs (%) (attach alarm setup) (Line 8 / Line 1) X 100					
10. Does line 9 equal 90% or less?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
11. Fuel float level on the console agrees with the gauge stick reading?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
12. Overfill alarm activates at any product level above 90% tank capacity?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
13. Overfill alarm and tank setup reports attached?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If any answers in Lines 2, 3, 4, 5, 6, 10, 11 or 13 are "No", or Line 12 is "Yes" and tank tilt has not been determined, the system has failed the operability check.					
Inspection result	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail

Comments: *(include information on repairs made prior to testing, and recommended follow-up for failed tests)*

Overfill Prevention Equipment Operability Check
TANK TILT DETERMINATION

Tank tilt must be determined if 30 minute flow restriction ball float valves[1] or electronic alarms are set to restrict flow/alarm at a height greater than 90% tank capacity or drop tube devices[2] are set to completely shut off flow at a height greater than 95% tank capacity.

[1] Only certain types of ball float valves are constructed with the calibrated pressure relief orifice necessary to allow setting of these devices at a height greater than 90% capacity. Consult with the manufacturer to determine which type of ball float valve you have.

[2] Certain types of drop tube devices are "two stage" shut off devices. The first stage acts to restrict flow and it is not until the second stage engages that complete shut off occurs. You must determine whether or not the manufacturer provides that the second stage (complete shut off) engages at 95% of tank capacity when installed in accordance with their instructions.

Method of Determining Tank Tilt	☐ Product level gauge at two separate tank openings ☐ Measured with a tank inclinometer	☐ Elevation of each end of tank surveyed with a level ☐ Other (specify):

Results of Tank Tilt Determination						
	Tank #					
	Tank tilt cannot be determined	☐	☐	☐	☐	☐
	Overall tank tilt (inches)					
	Indicate whether overfill device is installed at center or high/low end of tank	☐ Low (A) ☐ Center (B) ☐ High (C)	☐ Low (A) ☐ Center (B) ☐ High (C)	☐ Low (A) ☐ Center (B) ☐ High (C)	☐ Low (A) ☐ Center (B) ☐ High (C)	☐ Low (A) ☐ Center (B) ☐ High (C)

If tank tilt cannot be determined the ball float valve/electronic alarm must be set to restrict flow at 90% tank capacity or the drop tube device must be set to completely shut off flow at 95% tank capacity.

If tank tilt is determined to be one inch or greater and the overfill device is installed in the high end of the tank, then:

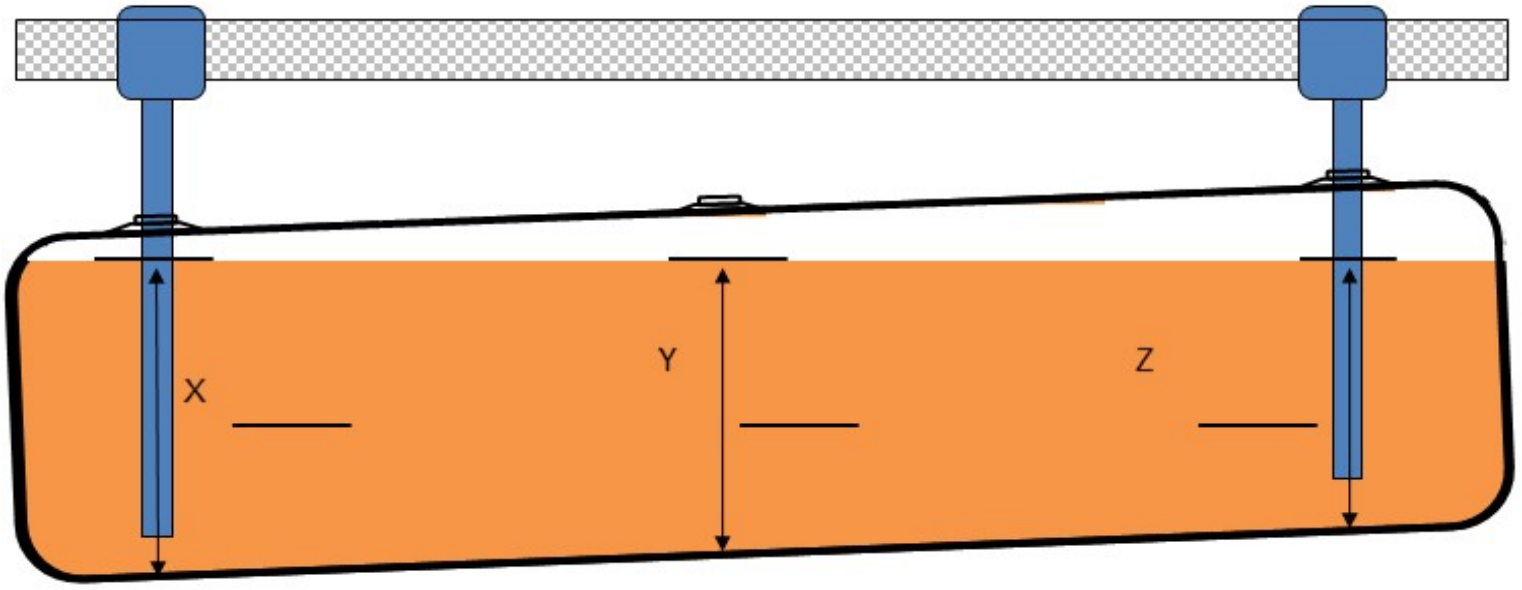
- all ball float valves/electronic alarms (regardless of type) must be set to restrict flow/alarm at 90% tank capacity;
- all drop tube devices (regardless of type) must be set to completely shut off flow at 95% tank capacity.

Tank Tilt Diagram

☐ A. Check if Overfill installed here

☐ B. Check if Overfill installed at center

C. Check if Overfill installed here ☐



To determine tank tilt, measure the product level at two of the three positions on the diagram above. Write the measurement on the lines beside X, Y, and/or Z. If the overfill device is installed at the end where the product level is greatest, then mark "A" (Low end). If the overfill device is installed in the center, then mark "B" (Center). If the overfill device is installed at the end where the product level is the least, then mark "C" (High end).

Calculate tank tilt using one of the following formulas, depending on where your measurements were taken, and enter that value on the form for "Overall Tank Tilt":

Overall Tank Tilt = X - Z **OR** Overall Tank Tilt = 2 * (X - Y) **OR** Overall Tank Tilt = 2 * (Y - Z)