FIELD PROCEDURE 27
Vapor Tightness of Gasoline Delivery Tank

A. Pretest Preparations

1. Empty the delivery tank of all liquid.
2. Purge as much as possible the delivery tank of all volatile vapors by any safe, acceptable method. Two methods are as follows; the first is more effective than the second.
   a. Carry a load of non-volatile liquid fuel, such as diesel or heating oil, immediately prior to the test.
   b. Blow ambient air into each tank compartment for at least 20 min.
3. As much as possible, maintain isothermal conditions. Allow the tank temperature to equilibrate in the test environment. During the test, protect the tank from extreme environmental and temperature variability, such as direct sunlight.
4. Open and close each dome cover.
5. Connect static electrical ground connections to tank. Attach the liquid delivery and vapor return hoses (optional), remove the liquid delivery elbows, and plug the liquid delivery fittings. **(Note:** If liquid delivery hose is not attached, inspect it for tears or holes, or fill with water to detect any liquid leakage.)
6. Attach the test cap to the end of the vapor recovery hose.
7. Connect the pressure-vacuum supply hose and the pressure-vacuum relief valve to the shut-off valve. Attach a manometer to the pressure tap.
8. Connect compartments of the tank internally to each other if possible. If not possible, test each compartment separately, as if it were an individual delivery tank.

B. Pressure Test

1. Connect the pressure source to the pressure-vacuum supply hose.
2. Open the shut-off valve in the vapor recovery hose cap. Apply air pressure slowly, pressurize the tank to P_i, the initial pressure specified in the regulation.
3. Close the shut-off and allow the pressure in the tank to stabilize, adjusting the pressure if necessary to maintain pressure of P_i. When the pressure stabilizes, record the time and initial pressure.
4. At the end of "t" minutes, record the time and final pressure.
5. Repeat steps B2 through B4 until the change in pressure for two consecutive runs agrees within ± 12.5 mm H_2O. Calculate the arithmetic average of the two results.
6. Disconnect the pressure source from the pressure-vacuum supply hose, and slowly open the shut-off valve to bring the tank to atmospheric pressure.

C. Vacuum Test

1. Connect the vacuum source to the pressure-vacuum supply hose.
2. Open the shut-off valve in the vapor recovery hose cap. Slowly evacuate the tank to V_i, the initial vacuum specified in the regulation.
3. Close the shut-off valve and allow the pressure in the tank to stabilize, adjusting the pressure if necessary to maintain a vacuum of V_i. When the pressure stabilizes, record the time and initial vacuum.
4. At the end of "t" minutes, record the time and final vacuum.
5. Repeat steps C2 through C4 until the change in vacuum for two consecutive runs agrees within ± 12.5 mm H_2O. Calculate the arithmetic average of the two results.
6. Disconnect the vacuum source from the pressure-vacuum supply hose, and slowly open the shut-off valve to bring the tank to atmospheric pressure.

D. Post-Test Clean-up

Disconnect all test equipment and return the delivery tank to its pretest condition.

E. Alternative Procedures

1. To obtain either pressure or vacuum, pump water into the bottom of a delivery tank or drain water out of the bottom. Slight alterations of any of the specific step-by-step procedures to accommodate these mechanisms are permissible.
2. For techniques other than specified above for purging and pressurizing a delivery tank, obtain prior approval from the Administrator. Provide a demonstrated equivalency with the above method.

FIELD DATA SHEET 27
Gasoline Delivery Tank Pressure Test

Tank Owner _____ Job # _____

Address _____ Date/Time _____

Test Location/Run # _____ Personnel _____

Tank ID# _____ Bar. Pressure, P_b _____ in. Hg Ambient Temp., °F_____

Pressure Test					
Applicable Regulation _____ Time, t = _____ minutes					
Initial Pressure, P_i = _____ mm H_2O Allowable Pressure Change, Δp = _____ mm H_2O					
Run #	Initial		Final		Diff, Δp (mm H_2O)
	Pressure, P_i (mm H_2O)	Time	Pressure, P_f (mm H_2O)	Time	
1					
2					
				Average	

Vacuum Test					
Applicable Regulation _____ Time, t = _____ minutes					
Initial Vacuum, V_i = _____ mm H_2O Allowable Vacuum Change, Δv = _____ mm H_2O					
Run #	Initial		Final		Diff, Δv (mm H_2O)
	Vacuum, V_i (mm H_2O)	Time	Vacuum, V_f (mm H_2O)	Time	
1					
2					
				Average	

____ Difference between Runs 1 and 2 $\leq \pm 12.5$ mm H_2O?

QA/QC Check

Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____

Checked by: _____ _____

Personnel (Signature/Date) Team Leader (Signature/Date)

Witnessing Inspector

Name _____ _____

(Signature/Date)

Affiliation _____