



P/V Caps and Gasoline Stations

Any gasoline station required to have a Stage I vapor recovery system must have a properly functioning P/V cap on each gasoline storage tank vent.

What are P/V Caps?

Pressure vacuum vents, also known as P/V caps, are pressure release devices installed on gasoline storage tank vent pipes at gasoline stations. P/V caps are designed to minimize vapor (Volatile Organic Compounds – VOCs) loss while maintaining a safe pressure within the gasoline underground storage tank (UST). The P/V caps may also protect tanks against water, debris or insects entering the vent pipes. A normally closed poppet in the P/V cap opens at a pre-determined setting to allow the tank to maintain pressure at safe levels.

Stage I Vapor Recovery and P/V Caps

Nearly all gasoline stations in Spokane County are required to use and maintain Stage I vapor recovery systems. Stage I vapor recovery is designed to control the release of gasoline vapors to the atmosphere when gasoline is delivered to USTs. For stations required to use Stage I vapor recovery systems, no delivery of gasoline into the USTs should be permitted when the vapor balance system is not operated satisfactorily. A P/V cap is an integral part of a vapor recovery system.

Rain Caps vs. P/V Caps

It has come to Spokane Regional Clean Air Agency's attention that there are gasoline stations that have "rain caps" installed on the UST vent pipes that look very similar to P/V caps. Without P/V caps, tank vent pipes allow an uncontrolled path for gasoline vapors to escape to the atmosphere during UST fuel deliveries. Gasoline vapors



These rain caps look like P/V caps.

that go out vent pipes contain toxic air pollutants, such as benzene, and contribute to the formation of ground-level ozone.

Gasoline evaporation occurs primarily through an equilibrium process: liquid changes to a gaseous state to reach an equilibrium vapor pressure. This results in the vapor space in the fuel delivery truck and the UST being saturated with gas vapors, which are then vented through the vent pipe if no P/V cap is present.

Below is a picture of a "rain cap" on the left, and three P/V caps to the right. The best way to verify if your cap is a P/V cap is to look for a sticker or label with pressure ratings on it (as seen in the picture below with the three P/V caps to the right.) If your cap is metal, is only being held on to the vent pipe by one bolt (vs. three bolts) and does not have a pressure rating label, you likely have a "rain cap."



Rain Cap

P/V Caps

Any gasoline station that is required to use and maintain Stage I vapor recovery systems must have a properly functioning P/V cap on gasoline UST vents. If you are unsure of whether or not you have a properly functioning P/V cap, please contact your gasoline service provider.