

## Is it a leaking water tank?

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Recently, we inspected a 15 years old house in Richmond. Before we started, the buyer told us there was always standing water in the drain pan of water heater, which they concerned. We took serious on the client's requirement but we won't change our sequence of inspection. Otherwise we may lose items supposed to be inspected. Moreover, at the age of this building, it was the time to see different conditions on various components of the property. A thorough maintenance should be considered. Also it means more load on this inspection.



Since the initial inspection of the landscape, porch and balcony, it was verified that the house was not well maintained by this owner. A lot of work is on the way of the new owner. When we inspected hot water tank and boiler, we found the HW tank just changed in 3 years and nicely piped. The pressure relief valve was in place. It was little chance to have the tank or pipe leaking. At this moment, the adjacent boiler started running. The water dripped out from the pressure relief pipe. (Figure 1) This is unusual. Although the pressure relief valves were necessary on the 2 facilities, they are only the safety precaution control rather than the regular operation control. They should only be activated once something wrong in the operation. Consequently the work must be transferred to plumber. But we still helped analyse the reason and possible consequence which made the buyer to know before the deal.

When the boiler is running, the water expands inside the exchanger, which leads the water pressure increases in the pipe. But due to the expansion tank (figure 2) installed, the pressure is only in between of 12-25 psi. If there is water dripping from pressure relief pipe, the pressure is over 30 psi and also means the expansion tank failure is quite possible. There may have something wrong with the air vent (figure 3) as well, but rear is not a main issue. All rooms can get the heat and the pressure is back to normal when the boiler is idle. Therefore the pressure reduce valve is still effective and no piping blockage is existing. To change the expansion tank is a quick easy way to fix the trouble. If not repaired, the potential risk is: 1. the pipe blast and leakage chances are quite possible once the last protection the pressure relief valve failed; 2. The keep added fresh water comes in with oxygen which causes the corrosion of the heat exchanger. The cost of a new boiler is not cheap for the premature failure of the exchanger.

We confirmed the performance of HW tank and pointed out the reason of standing water. The client was satisfied with our service and we were happy to help solving the problems. We also suggested hiring the professional to service the boiler every year in order to keep it working longer.