4.2 TEST NO. 2

This test was performed to determine the quantity of hot water that each water heating system could deliver before being completely depleted of hot water. A system was considered completely depleted of hot water once the outlet temperature no longer decreased in temperature when a consistent draw was being applied and the unit was in recovery mode. Since the natural gas-fired instantaneous water heater has the capacity to endlessly provide 8.5 gallons per minute (GPM) of hot water, the test was not performed on this unit.

Prior to conducting the test, each water heater was set to provide an outlet temperature of approximately 135°F at a flow rate of approximately 7.0 GPM. The energy and flow meters were reset to zero. This test is performed by continuously withdrawing 7.0 GPM of hot water from the water heating systems until the tank can no longer supply hot water.

All the raw data that was collected during this test can be found in ***Appendix C***. Once the hot water draw had begun, and a consistent flow was established, the inlet and outlet water temperatures were recorded. Once recovery began (the moment when the burner fired or the elements energized), the elapsed time, quantity of water withdrawn, and the inlet and outlet temperatures were recorded. When the outlet temperature would not decrease any further (i.e. the tank was completely depleted of hot water), the draw was concluded and the elapsed time, quantity of water withdrawn, the energy meter reading, and the inlet and outlet temperatures were recorded. Once recovery ended, the elapsed time was recorded and a flow was induced across the outlet thermometer so that the final inlet and outlet temperatures could be recorded.