GAS BOILER CLEAN AND TUNE

I. **HEAT EXCHANGER**

1. Visually check the heat exchanger for any cracks and, if present, document with photographs.
2. If the heat exchanger is cracked **stop all work and immediately contact the weatherization provider.**

II. **CLEAN**

A. Combustion Area

1. Brush down the heat exchanger sections to remove all dirt, soot, and rust.
2. Brush down and vacuum all flue passageways within the boiler.
3. Remove ribbon burners or burner tubes and brush down to remove dirt, soot and loose rust. Clean all flame ports. Inspect tubes for cracks.
4. Clean gas orifices and ensure proper size.
5. Brush down and vacuum remainder of combustion chamber so that it is free of dirt, soot, and loose rust.
6. Clean pilot orifices and test thermocouple.

B. Distribution

1. Check pump. If possible, lubricate the bearings.
2. Check that zone valves are functioning properly.
3. Purge expansion tank, if water is rusty or has sludge, drain, flush and refill the system with siliconized additive. Check for leaks.
4. Check that fill and safety valves are functioning properly.
5. Purge air valves and bleed radiators. Check and add water to the correct PSI specifications for the boiler.
6. Set Aquastat to appropriate setting.
7. Check each radiator for output.

III. **TUNE**

A. Combustion

1. Test for fuel leaks and fix any leaks that are present.
2. Adjust gas input to 3.5 inches of water column on natural gas or 10.5 inches of water column on liquid propane gas in the manifold. NOTE: If gas pressure is correct, and clocked input is more than 2 percent lower than rated input, check orifices for proper size. If furnace is overfiring and gas pressure is correct, then change to lower orifice size.
3. Adjust pilot flame just high enough to activate the thermocouple and ignite burner without delay.
4. Boilers with electronic pilots should ignite without delay.
5. Test ignitor to ensure that it will lock out after first or second attempt to ignite pilot (liquid propane only).
6. Adjust combustion as needed to meet BPI 1200 standard of <400 PPM air free for carbon monoxide or local code, whichever is more stringent.