

Fig. 1 Hot water distribution system general schematic including temperature control points. Three different types of vertical and horizontal distribution systems are represented: ① recirculation before the last tap; ② recirculation connected after each device; ③ recirculation connected after the last device.

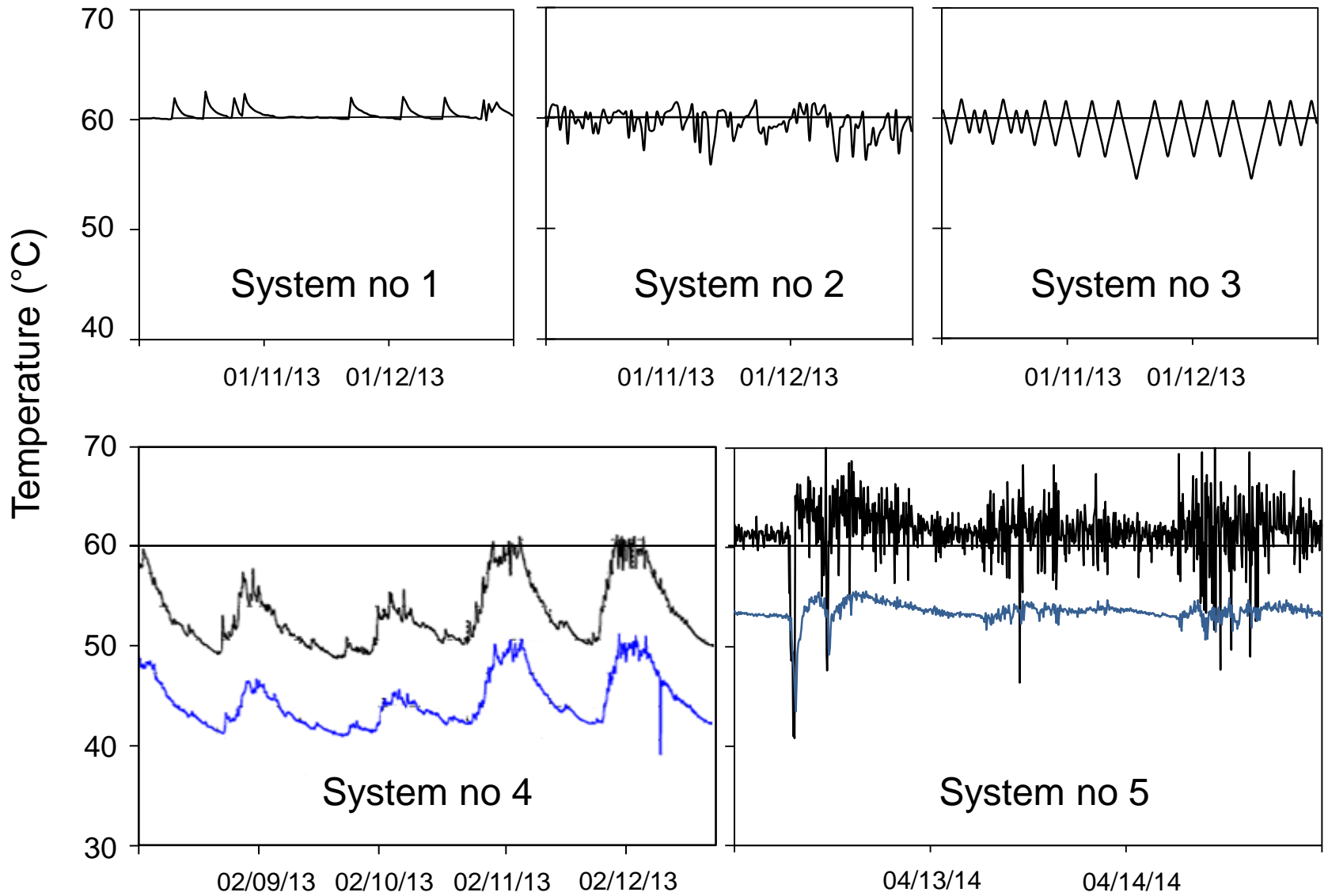


Fig. 2 Examples of continuous temperature monitoring at water heater outlet for each studied system (black line) and at the return loop for system 4 and 5 (blue line). No continuous monitoring data was available for systems 1 to 3. Date format is MM/DD/YY.

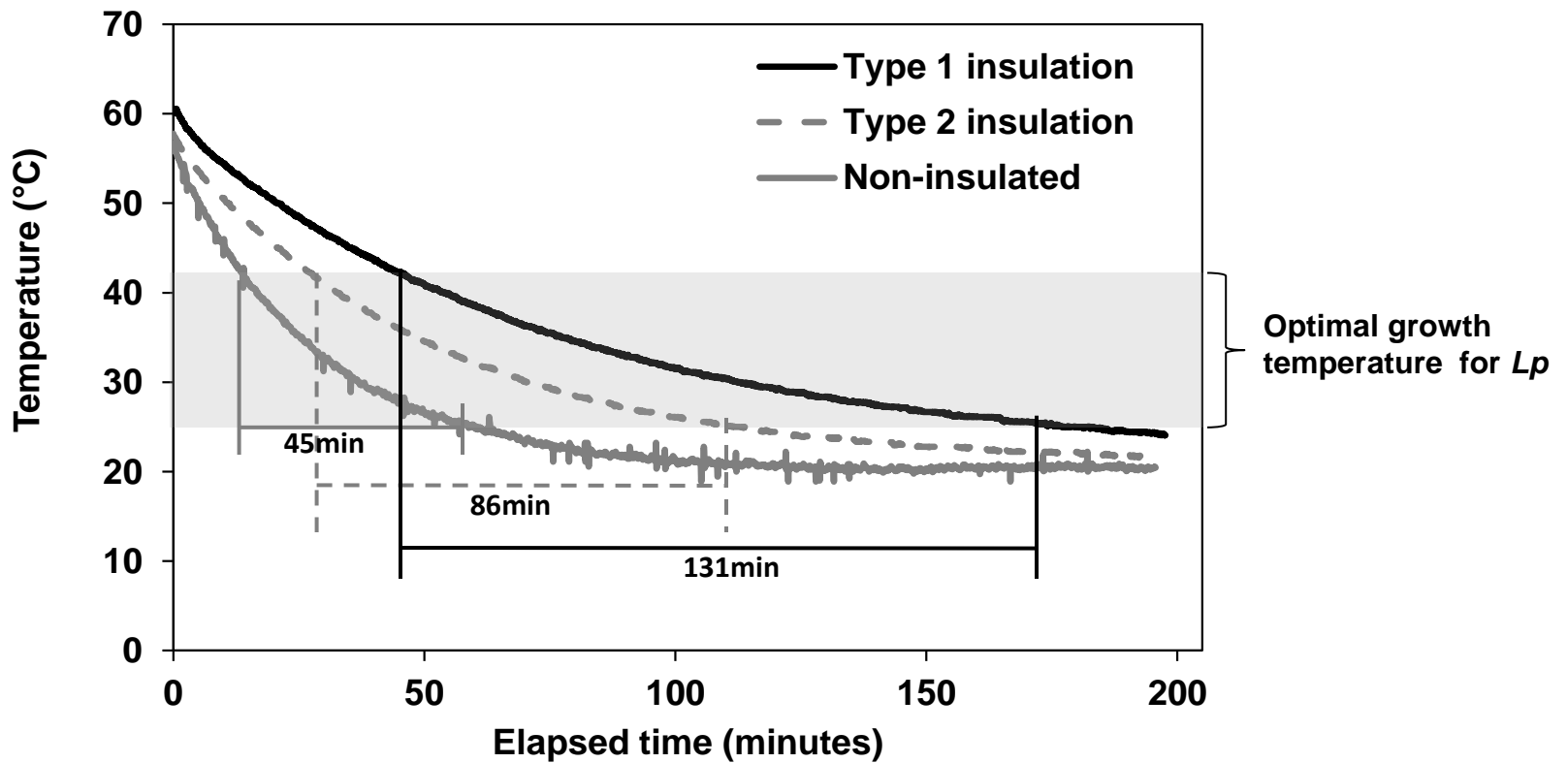


Fig. 3 Heat loss during stagnation of hot water in 1.25 cm diameter copper pipes with and without insulation at room temperature.

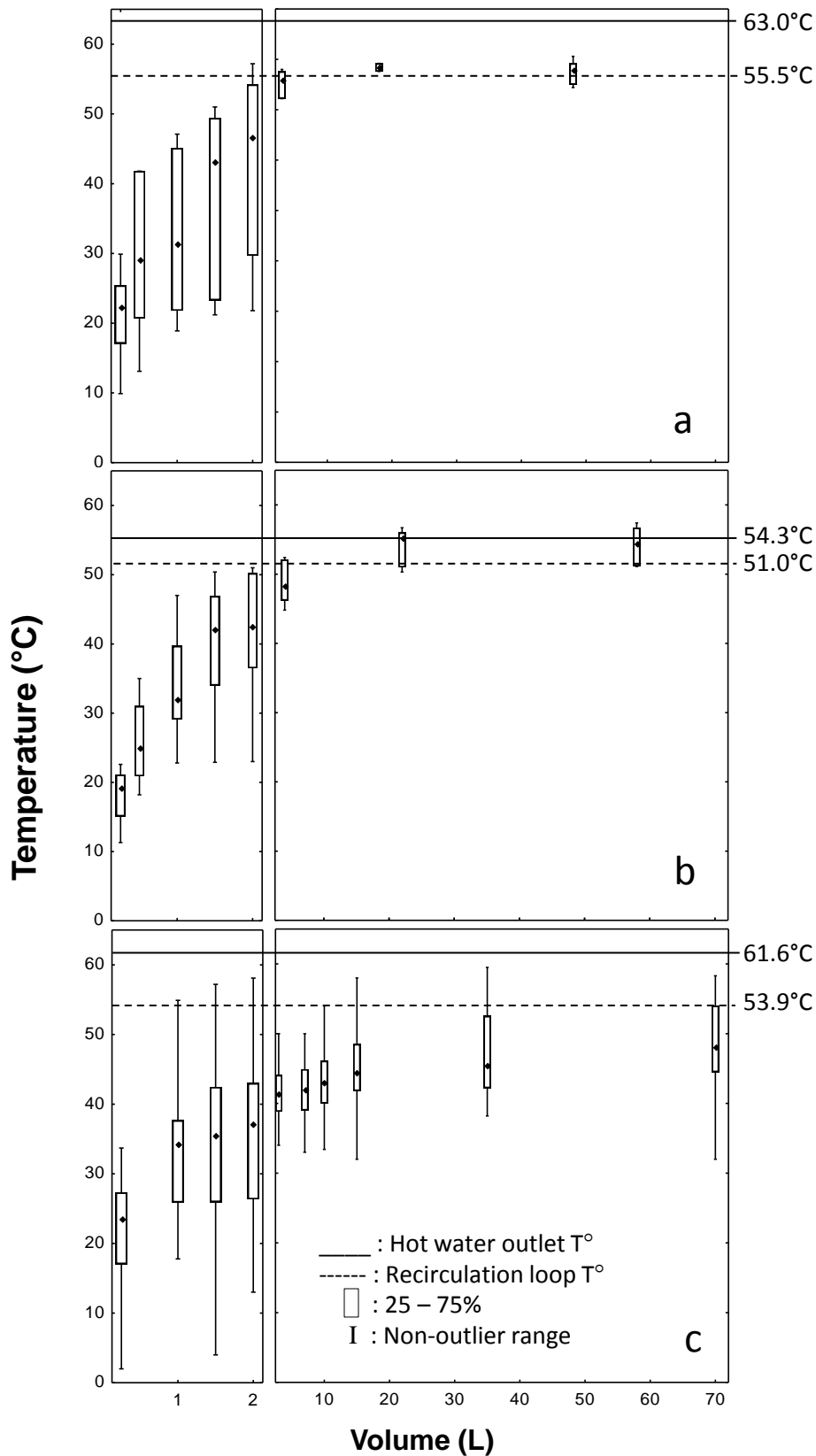


Fig. 4: Hot water temperature profiles at points-of-use as a function of volume for a) systems 1, 2 and 3 grouped, $n = 7$; b) system 4, $n = 7$; c) system 5, $n = 36$. Mean temperature at the hot water production unit outlet and at the return loop are shown for each system.

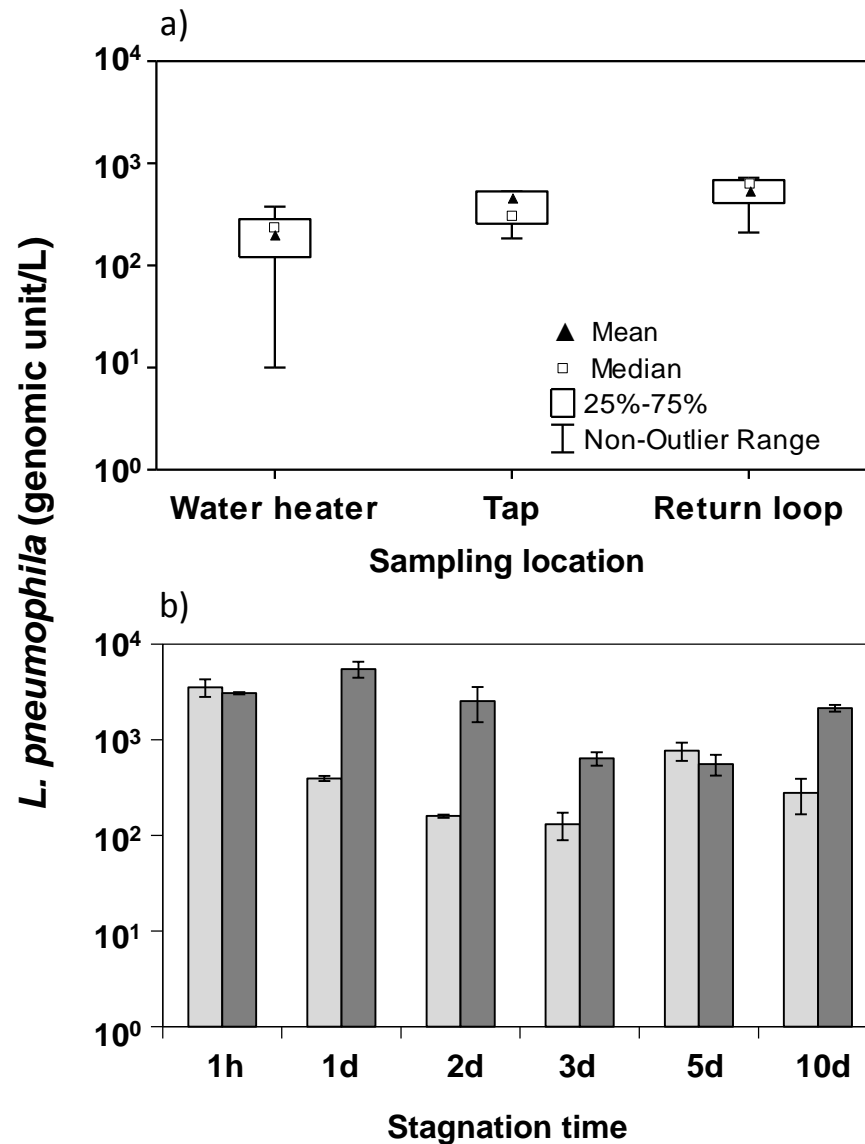


Fig. 5 Variability of *L. pneumophila* concentration measured by qPCR (a) in system 4, for repeat sampling events without prior stagnation (n = 5, Jan-Oct 2013) (b) in system 5, after different water stagnation times for tap A (light gray) and tap B (dark gray) (n = 2, Nov-Oct 2012).

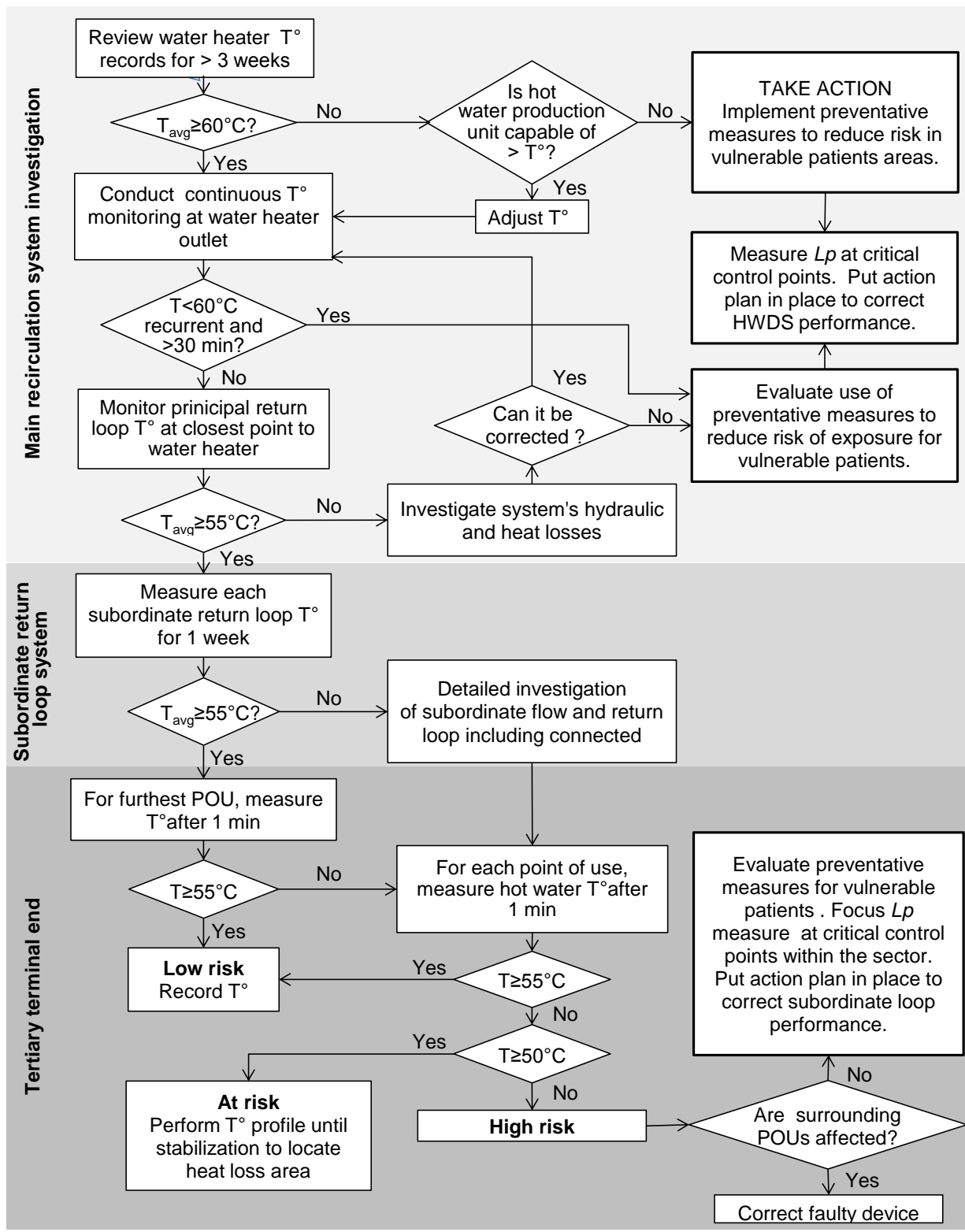


Fig. 6 Diagnostic flowchart for the initial assessment of *Legionella* risk in an existing HWDS