Portland Public Schools
Lead and Copper in Water Testing Project
Flushing and Sampling Protocol

The following protocol was created using the guidance of the Environmental Protection Agency (EPA) document "3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance". Although this document provides an action limit of 20 ppb for lead, the District has elected to utilize the more stringent action limit of 15 parts per billion (ppb) for lead to meet the public water supply action limit. Additionally, copper results will be compared to the action limit of 1.3 parts per million (ppm) as identified by the EPA regulation for copper in the Lead and Copper Rule.

Outlets: All cold water outlets, including drinking fountains, classroom, kitchen and bathroom sinks, soda fountains with water dispensers, any exposed laundry spigots, shower heads, bathroom utility spigots, icemakers, and hose spigots on the exterior of the buildings are being flushed and or sampled. Icemakers in particular are not being flushed however the ice from the icemakers is being sampled. Any outlets that are broken or not in use are labeled as such and are not flushed or sampled.

Flushing: Flushing will occur at every cold water outlet, approximately 8 to 12 hours prior to the sampling event, and the water will sit for a period of at least 8 hours but no more than 18 hours before sampling occurs. During flushing, the water lines for the school are purged by continually running one or more outlets furthest from the main during the flushing event. During the purging of the water lines, each cold water outlet is flushed for a minimum of 1 minute in order to confirm that fresh water from the main is flowing through the outlet, which is indicated by a noticeable colder shift in temperature. Outlets are flushed moving away from the water main until the furthest outlet is reached at which point the purging lines are turned off. During flushing, a Drinking Water Sample Data Sheet & Chain of Custody Record is completed noting the sample number and associated sample location and flush time per outlet. As a point of reference, a map of each school with the sample locations for each outlet is completed. After flushing each outlet, signage is posted on each outlet and the building is closed and locked in effort to keep it from being used until it can be sampled 8 to 18 hours later.

Sample Collection: Samples are collected using plastic, wide-mouthed and narrow-mouthed 250 mL preserved and unpreserved bottles. Those bottles that are unpreserved are being preserved by the associated laboratory after receipt per the analytical method. During sample collection, each bottle is marked with a school identification code followed by the sample number (Ex. 001-01A, 001-01B). Sampling at each cold water outlet is conducted 8 to 18 hours after flushing was completed, prior to being used. Water is sampled without touching the mouth of the container to the faucet. Two samples are being collected from each of the cold water outlets being tested. The first sample collected is the first draw sample (also called an A sample). The first draw sample is the first flow of water from the outlet into the bottle filling the bottle (leaving approximately one inch from the top for unpreserved samples). This first draw sample represents the water standing in the fixture that would initially be consumed. The flush sample (also called a B sample) is collected into a new sample bottle 30 seconds to one minute after the water has been allowed to continuously flow from the outlet, also filling the bottle approximately one inch from the top. The flush sample represents the water from the plumbing line behind the wall and outlet. Upon completion of a sampling event, the sample bottles are packaged and the associated Water Sample Data Sheet & Chain of Custody Record is signed and shipped or hand-delivered with the samples to the respective laboratory.

Laboratories, Analysis and Analytical Results: Due to number of samples being collected, multiple accredited laboratories in the State of Oregon are being utilized for this project. All laboratories for this project are performing analysis using the EPA Method 200.8 for analysis for lead and copper. Analytical results are provided in micrograms per liter (µg/L) or ppb for lead and milligrams per liter (mg/L) or ppm for copper.

Interpretation of Results: Upon receipt of the results from each laboratory, TRC is providing a summary spreadsheet of all results, per school, highlighting any results exceeding 15 ppb for lead and or 1.3 ppm for copper.