

Appendix F – Corrosion Control

Corrosion Control

Corrosion is a common issue in Canadian drinking water supplies. Corrosion is the deterioration of a material, usually a metal, that results from a reaction with its environment. Corrosion in drinking water distribution systems can be caused by several factors, including the type of materials used, the age of the piping and fittings, the stagnation time of the water and the water quality in the system. Any change to the drinking water treatment process may impact corrosion in the distribution system and in household plumbing.

Although corrosion itself cannot readily be measured by any single, reliable method, the levels of lead at a consumer's tap can be used as an indication of corrosion. Monitoring of lead levels at the tap can help identify sources of lead and aid in the selection of strategies to effectively control corrosion and reduce levels of lead at the tap.

While corrosion control treatment is part of the Administration's overall LSCMP strategy, its implementation is complex and will change with changes in the drinking water system. The addition of orthophosphate to drinking water is one method some municipalities are using to combat corrosion. There can be challenges to adding Orthophosphate to a drinking water system as a means of corrosion control, these challenges need to be managed through operational changes.

The recommended 2036 Target Completion Service Option requires additional water testing to identify to the best of our abilities where lead water service connections exist since infrastructure records are not considered one hundred percent accurate and the City does not maintain records of the private side of infrastructure. Implementing corrosion control before this testing has occurred could inhibit the process of determining lead water service connections. Once corrosion control is implemented, it can 'mask' lead water service connections and make the identification of unknown water service connections difficult and costly.

The City of Regina is working with Buffalo Pound Water Treatment Plant (BPWTP) on a bench scale test to help determine factors such as appropriate dosage for varying water conditions and to evaluate any undesirable effects on the distribution system. To implement corrosion control before the completion of the bench scale test and the upcoming upgrades to the BPWTP would be counterproductive in that it would have to be reassessed and restarted following completion of the upgrades.