	Corporation of the City of St. Thomas	**Report No.** ES72-07 **File No.** 06-120
Directed to:	Chairman Tom Johnston and Members of the Environmental Services Committee of Council	**Date** May 16, 2007
Department:	Environmental Services	- (Draft) Public Notice regarding Drinking Water Quality in Homes with Lead Water Services - Middlesex-London Health Unit Notice
Prepared by:	John Dewancker, Director	
Subject:	**Program for the enhancement of drinking water quality in homes with lead water services**	

Recommendation:

- That report ES 72-07 be received as information
- That the data collection phase of the action plan to mitigate lead in water service connections, as outlined in report ES 72-07, be approved.
- That a further report to Council be prepared to report on the remediation phase of this action plan and to quantify the City cost of lead water service replacement upon completion of the data collection phase

Origin:

- During the last few weeks there has been a concern raised in the local community of Municipal Water providers in respect to the water quality at homes that have lead water services.
- During the last two weeks, Environmental Services staff have initiated a random sample survey involving about 50 homes in the older parts of the City to determine the existence of lead water services at these homes and also to sample the tap water in any homes that are found to have lead water service line(s).

Analysis:

Out of the sample survey of 50 homes, 2 homes were found to have a lead water service. Water samples were taken at both locations, before and after flushing the water lines. On May 15, 2007, the test results (2) from one sampled location were returned by the testing laboratory and both samples confirmed an elevated concentration of lead (51*ug/l,* 24.6 *ug/l*) in the tap water above the Maximum Acceptable Concentration (MAC:10 *ug/l)*

It must be noted that the quality of the water in the St. Thomas municipal water distribution system consistently meets all the standards established under Ontario Regulation 170/03, the MOE Drinking Water Systems Regulation under the Safe Drinking Water Act. These standards cover Microbiological as well as Inorganic parameters including metals such as lead. The most recent Drinking Water Systems annual report for St. Thomas confirms a lead concentration of .5 *ug/l* which is well below the MAC of 10 *ug/l*.

When a water sample is taken from a water tap in a private residence, sample results are not to be reported as an evaluation measure of the water quality in the municipal distribution system. In this regard a MOE Laboratory Services Technical Bulletin confirms the requirements with respect to samples taken at the customer's tap.

Health Impacts of Lead in the Environment

The possible health impacts of lead in the environment have been a concern for many years. In 1992 the Health Canada Guideline for lead in drinking water was lowered from 50 *ug/l* (micrograms per litre, or parts per billion) to 10 *ug/l* for a sample from a tap that has been flushed for 5 minutes. The Guideline takes into consideration the health risk posed by exposure over time and is calculated for the populations at highest risk; children below the age of six and pregnant women. The Guideline also considers that the relative contribution of drinking water to the average daily lead intake is typically below 10%. Other sources for the uptake of lead are food, air, dust and dirt, with food being considered as the largest source of environmental lead exposure. Health Canada identified that "short-term consumption of water containing lead at concentrations above the MAC (maximum acceptable concentration) does not necessarily pose undue risk to health."

A copy of an information release by the Middlesex-London Health Unit, in which service area a significant amount of discussion about lead has been had recently, is attached herewith for the information of the Members.

Discussion

Although the Environmental Services Department has accurate records in its Infrastructure Management Information System (IMS) regarding the material type, size and location of more recently installed water services as well as all service replacements at each customer address, the information about original water service connections, installed during the early 1900's to mid 1900's is incomplete and has a number of data fields that need to be populated in the customer data base. This data base is being updated on an ongoing basis with new information as it becomes available through renewal replacement activities involving the replacement of water services as well as water meters.

It must be noted that there may be few pure lead services in existence; instead, a composite metal alloy material that contains lead and that was used to produce what is known as "camaloid" services could also be the cause of the water quality problem. This pipe has almost the same outside diameter as ½ inch copper pipe; it gets brittle over time and sheers off very easily when worked on.

In view of the above information, ES staff believe that it is appropriate to accelerate the gathering of information in respect to the property locations where lead water services are present. Lead water services appear to have been installed mostly between 1935 and 1955. Pipe materials used prior and after this period are galvanized metal, and copper and more recently PVC respectively.

ACTION PLAN with Recommended Mitigative Measures

The following measures are being recommended to advance progress in the mitigation of lead on the quality of the drinking water at the tap in homes that are serviced with lead water lines:

Data Collection Phase

- Accelerate the gathering of information in regards to the location of the homes that have a lead service. This would be done through the publication of a Notice in the local papers (T.J and Elgin County Market), insertion of same Notice in the water and sewage service bills and the posting of same on the City's website. A copy of this Notice regarding "Drinking Water Quality in Homes with Lead Water Services"; is attached with this report for the review and approval by the Members.

- Initiation of an education and awareness program to inform owners of properties with lead water service lines and to provide information about the replacement of these pipes. A Question and Answer form, based on information received from the City of London, will be developed in this regard. This information would be provided to each homeowner and be available also on the City's website.

- Offer a free testing service to the owners of these properties to determine if the quality of the water tested at the tap complies with the Drinking Water Quality Standard. Each homeowner who will have their water tested will be provided with written results as well as further background information.

Remediation Phase

- Where the MAC of 10*ug/l* is exceeded, replacement of the water service from the water valve into the home would be considered. The decision by the City of St. Thomas to replace the City portion of the water service within the road right-of-way (main to curb stop) would be made upon verification that this portion of the service has not been replaced in the past with a copper service, however once that determination has been made, the City water operations staff would include this work on the list of work orders and the service replacement work would be scheduled; time, manpower and financial resources permitting.

- The homeowners will be requested to proceed with the replacement of their portion of the service line(s) downstream from the curb stop into the home, at their cost. This work can be completed by a qualified plumber and a plumbing permit will need to be applied for and obtained by the property owner prior to proceeding with the work.

- The replacement of the City portion of the water service will be prioritized and scheduled to coincide with the homeowner's initiative to proceed with the replacement of their portion of the service. Section 6.17(b) Renewal of Service – City/Owner, in the City's water by-law 44-2000 makes reference to the replacement of a service where the pipe material is lead

Financial Considerations

The cost of the chemical analysis of the lead concentration of a water sample is $10.00 (discounted rate provided by the lab). The cost of analyzing two samples, pre and post flush is $20.00, this excludes the cost of staff time during sample collection and sample transportation.

The approximate cost of a water service replacement in the road allowance portion of an existing street is in the range of $3,000.00 and depends on the location of the watermain relative to the location of the curb stop, the need for the replacement of the water valve and the amount of road restoration. The

2007 water operating budget for water service repairs and renewals including valve box replacements is $174,500.00. The expenditure incurred for this operations activity during 2006 is $166,000.00. These budgets do not reflect the cost of any additional lead service replacement work. The replacement of the portion of the water service from the water valve into the home can also vary depending on the length of service, the amount of restoration and any needed pipe replacement beyond the water metre in the home. A typical homeowner cost would be less than $3,000.00. A further report on the remediation phase of this program, including its estimated cost will be prepared in the future.

Respectfully submitted

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Environmental Services

Reviewed By: _____ Treasury _____ Env Services _____ Planning _____ City Clerk _____ HR _____ Other

cc: Elgin-St. Thomas Health Unit, MaryLynn Maerten
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