Managing Lead in Drinking Water Systems - Phase 1

Plan, assess and implement lead management programs

FACT SHEET

Background

In March 2019, a new lead limit was published under the Guidelines for Canadian Drinking Water Quality, lowering the maximum acceptable concentration (MAC) from 0.010 mg/L (10 µg/L) to 0.005 mg/L (5 µg/L) and changing the point of compliance to the customer's tap. Fetuses, infants and children are most at risk for neurodevelopmental adverse health effects from lead.

As a result, Alberta Environment and Parks (AEP) requires waterworks systems to implement a Lead Management Program in two phases:

- Phase 1 – Planning, assessment & implementation (2020-2024)
- Phase 2 – Mitigation (2025 onwards)

Referred to here as the Phase 1 Document, the complete *Guidance Document for Managing Lead in Municipal Drinking Water Systems in Alberta* (as amended) is available at: open.alberta.ca/publications/guidance-document-for-managing-lead-in-municipal-drinking-water-systems. Tables, Figures and Sections referenced are from the Phase 1 Document.

Get to Know Your System

Step 1 – Planning

- Develop a records management system
- Map zones based on lead risk (Section 4.1)
- Prepare a sampling plan with priority given to highest risk zones
- Develop a FOIP/Privacy clause to obtain informed consent from customers at sampled locations
- Train staff
- Develop "lead in drinking water" customer communication strategy to provide
  - information on health effects and steps customers can take to reduce exposure including point-of-use (POU) filters
  - outreach to residential owners/occupants of potential sampling locations
  - sampling and sample pick up/delivery instructions for volunteer home samplers (if used) and
  - lead results to the customer.

Step 2 – System assessment

Collect samples to fulfil the system assessment sampling requirements (Section 4) and number (Table 2).

Population Served by the Drinking Water Distribution System	Total number of sites to be sampled between 2020 and 2021
100,000 or more	100
50,000 - 99,999	80
10,000 - 49,999	60
3,300 - 9,999	40
500 - 3,299	20
100 - 499	10
50 - 99	5
< 50	10% of number of population served

- Approximately 10% taken from large residential buildings (if applicable)
- Approximately 50% of samples from highest-risk locations
- Protocols used for sampling and analysis meet the requirements of Section 4 and Appendix A

Location	Sampling Protocols for System Assessment	
Single- and multiple-family (less than 8 units). Choose RDT-1L or 30MS-2L.	RDT-1L	Samples collected randomly during the day (unknown stagnation and flushed conditions). Do not flush. Collect 1 L.
	30MS-2L	2 to 5-minute flush. 30-minute stagnation. Collect first two litres in two 1-L bottles.
Large residential buildings	RDT-2x125mL	Samples collected randomly during the day (random stagnation and flushed conditions) without prior flushing. Collect two 125-mL samples.

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- Collection over one or two sampling periods
  - May 1, 2020 to September 30, 2020
  - May 1, 2021 to September 30, 2021
- Obtain informed consent from owner/occupant to report data to AEP
- Residential lead sample results shared with the customer within 14 days after receipt from the laboratory

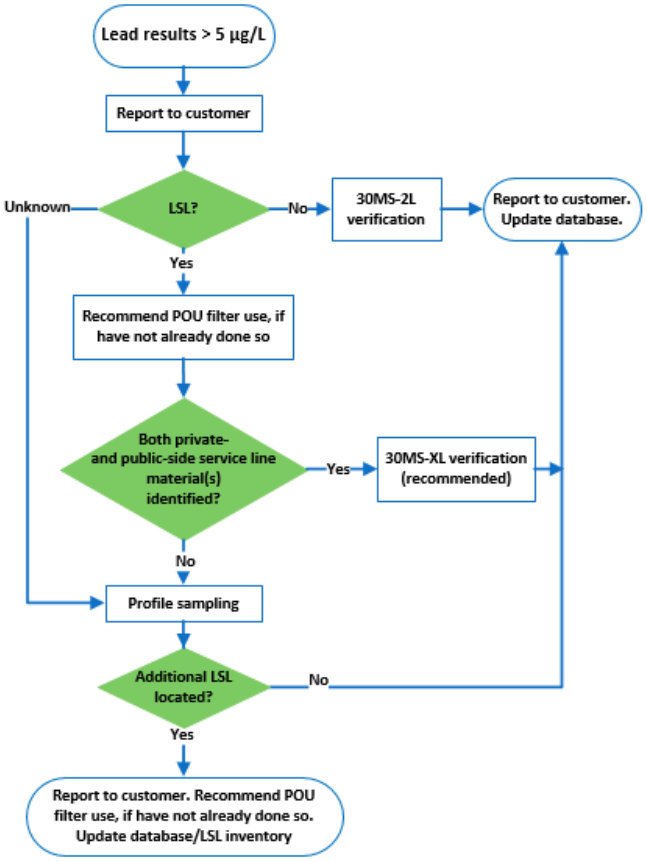
Evaluation and Follow-up

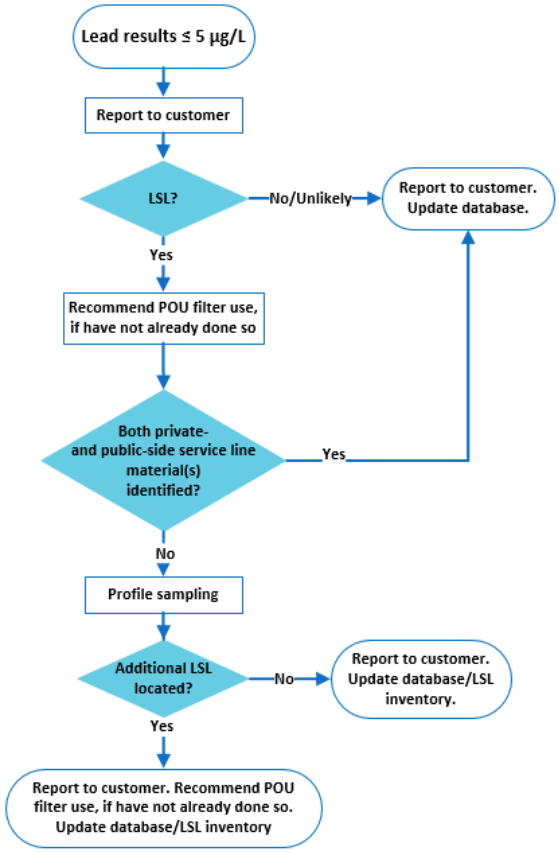
Step 3 - Investigative & Verification Sampling

These samples are in addition to the system assessment samples and may be required to identify source(s) of lead or verify lead results.

Large building residences' lead results are verified by the same sampling protocol used in the system assessment and are necessary only if the initial result was > 5 µg/L. The actions and protocols for **single- and multi-family residences** (less than 8 units) are outlined in the following flowcharts (Section 5).

Properties with known or suspected LSLs should be provided information on an annual basis about the presence of an LSL, lead hazards and steps that can be taken to reduce lead exposure (Section 7).





LSL replacement

The ultimate long term goal is for the removal of most lead service lines with customer taps otherwise having POU filters until replacement. Guidance on POU filters, LSL replacement communications, post-replacement flushing and verification sampling is available in Section 7. More information will be forthcoming in the *Phase 2 – Mitigation Document*.

AEP Regulatory Reporting

Compliance – exceedance of the lead MAC at the tap sampled according to the RDT, 30MS or profile protocol is not considered a regulatory contravention. Follow-up sampling is described in Section 5 and in the flowcharts on this page.

Operations Program – add a Lead Management section with lead monitoring; LSL inventory; and financial planning for LSL replacement, sampling, lab analysis and, if included, POU filters.

Drinking Water Safety Plan – update risks and action plans with respect to lead.

Annual Performance Report including:

- lead management plan with program progress and next steps, and
- lead results and sample information submitted as a separate digital Excel file in the format of the file attached to the Phase 1 document.

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