Introduction

Section 48(5) of the Child Care Licensing Regulation requires a Licensee to ensure that safe drinking water is available to children. Lead may be ingested from many sources such as food, soil, paint, dust and water. Even low levels of lead may be harmful to the brain development of infants and children. Children are more vulnerable to the harmful effects of lead than adults are. Applicants/Licensees must take steps to reduce children's exposure to lead from all sources, including drinking water. Health Canada set a Maximum Allowable Concentration (MAC) of lead in drinking water at 0.005mg/l; however lead levels should be kept as low as reasonably achievable as there is no known safe exposure level to lead.

Testing

In 2020, Island Health participated in a project to support the directive by the Ministry of Health and Provincial Health Officer to test the lead levels in the drinking water of all licensed child care facilities. This project was completed in May 2020, and as a result, facilities with lead levels above MAC levels were required to submit a Corrective Action Plan (CAP) to ensure the health and safety of children in care.

Subsequent to the project, the Community Care Facilities Licensing Program requires that all Applicants conduct an initial water quality test for lead in order to receive a Community Care Facilities licence.

In July 2022, the Ministry of Health provided a recommendation that licensed child care facilities develop a long term plan for routine lead monitoring and that lead in water testing ideally be completed annually. Higher risk facilities where lead in water testing has resulted in above MAC levels may require more frequent testing than facilities where lead in water testing has resulted in below MAC levels.

Effective September 2022, the Community Care Facilities Licensing Program will be providing education to Applicants/Licensees regarding the above recommendation from the Ministry of Health. Licensing Officers will inquire with Applicants and Licensees about the development of a long term monitoring plan and annual lead in water testing during the Initial Inspection and Routine Inspection process.

To assist child care facilities in developing a long term plan and complete regular testing, the Ministry of Health has developed policies regarding expectations for lead sampling, reporting and mitigation. Applicants and Licensees can refer to the resource 'Guidelines on Evaluation and Mitigation Lead in Drinking Water Supplies, Schools, Child Care Facilities and Other buildings'.

Some Applicants/Licensees may wish to conduct additional testing when remedial work or upgrades to the plumbing are completed at the facility. Eligible licensed child care providers can now apply for funding through the ChildCareBC Maintenance Fund to help address the necessary repairs or to replace items due to emergency circumstances that directly impact children's health and safety and/or may result in immediate facility closure including lead in water mitigation measures. The ChildCareBC Maintenance Fund now includes coverage of an "initial purchase of a NSF/ANSI certified faucet mount filter for lead treatment in drinking water" (see Eligible expenses - safety equipment).

To conduct testing at the facility, Licensees can use any **qualified lab** of their choosing with a **scope of proficiency to test for lead**. The qualified lab list is located on the Directory of Qualified Laboratories at https://www.nrs.gov.bc.ca/qualified-labs/. Lead in water test results from labs that do not have this scope of proficiency to test for lead will not be approved by the Community Care Facilities Licensing program and Licensees may need to re-test their lead in water at their own expense. Licensing Officers are available to assist

Licensees in advance for questions regarding whether the lab you have chosen has a scope of proficiency to test for lead. Please note, Bureau Veritas (BV) Labs and M.B. Laboratories Ltd., both hold this scope of proficiency to test for lead and are located on Vancouver Island:

- Bureau Veritas (BV) Labs and can be reached at customersolutionswest@bvlabs.com; and
- M.B. Laboratories Ltd. can be reached at info@mblabs.com.

Instructions for Testing Lead in Water

Qualified laboratories will assist Applicants/Licensees with the lead in water testing process and with pricing information. Qualified laboratories can ship sample bottles or depending on the chosen laboratory, pick up locations may be available around Vancouver Island.

1. Test Your Taps
• Applicants/Licensees will collect two samples from at least one tap: a stagnant sample and a flush sample. • A **stagnant** sample tests the first water that comes out of the tap after a period of inactivity (minimum 8 hours). • A **flush sample** collects water after the tap has been running for **two minutes**.
• It is important that Applicants/Licensees **do not use any water in the facility for at least 8 hours before collecting the samples**.
• Do not run any water from sinks, taps, toilets, showers, outside faucets, etc. for at least 8 hours before collecting samples. This will test the water left sitting in the pipes leading to the faucet over an 8-hour period.
2. Prepare and Collect Stagnant Sample
• Test any taps used for drinking and food preparation (i.e. kitchen sink). • If a tap has a filter attached to it, leave the filter in place to take both the stagnant and flush samples.
• **Do not use any water for at least 8 hours before collecting the water sample.**
• The water has to sit in the pipes **for 8-12 hours** to get a stagnant water sample. • ***Tip*****:** Collect water first thing in the morning.
• Fill in the information on the sample bottle (Faucet A, Location, Stagnant, Facility Name & Date). • *Example*: Kitchen Faucet, Multipurpose Room, Stagnant, Child Care Facility Name, September 7, 2022.
• Remove the sample bottle cap making sure not to touch the inside of the cap or mouth of the water sample bottle.
• Before turning on the water, place the opened sample bottle below the tap.
• Slowly turn on cold water and bring it to a normal flow rate, similar to filling a glass of water. • **Catch all the water in the sample bottle** – do not let any water go down the drain.
• Fill the sample bottle to the line and screw the cap on tightly.
3. Prepare and Collect Flush Sample
• After completing the stagnant sample, a **flush sample** can be collected.
• Run cold water **flow for two minutes**. • Turn up to a normal flow rate to take the sample, similar to filling a glass of water.
• Fill in the information on the sample bottle (Faucet A, Location, Flush, Facility Name & Date). • *Example*: Kitchen Faucet, Multipurpose Room, Stagnant, Child Care Facility Name, September 7, 2022.
• Remove the cap making sure to not touch the inside of the cap or mouth of the water sample bottle.
• Fill the sample bottle to the line and screw the cap on tightly.
4. Stagnant and Flush Sample Bottles
• Complete the forms enclosed from the qualified laboratory and ensure all sections are completed in full.

Frequently Asked Questions	
How can I make sure I submit a sample that is acceptable for testing?	• Submit your samples in the water sample bottles supplied to you. • Fill out the enclosed form. • Be sure the sample **gets to the laboratory within seven days** from the time you filled the water sample bottles.
In which order should we take our samples?	• To get accurate results, take **stagnant** samples on the tap(s) first, and then go back around and take **flush** samples.
How many taps do I need to test?	• You will need to test two samples from at least one tap: a stagnant sample and a flush sample. • Choose a tap to be used for potable water (for drinking, cooking, brushing teeth, etc.). ○ Facility policies/planning should include which taps are potable water sources.

Interpreting Lead in Water Test Results

- The Maximum Allowable Concentration (MAC) of lead is less than 0.005 mg/L.
- If lead levels are above MAC, Applicants/Licensees will be required to submit a Corrective Action Plan (CAP) to the Community Care Facilities Licensing Program.

Example A (BV Labs) – Above MAC for Stagnant Water but below MAC for Flush Water

BV Labs ID			XN1001	XN1002	XN1003	XN1004
Sampling Date			2020-02-19	2020-02-19	2020-02-19	2020-02-19
COC Number			XXX	XXX	XXX	XXX
	UNITS	**MAC**	**SAMPLE A (STAGNANT) -KITCHEN**	**SAMPLE A (2 MIN FLUSH) - KITCHEN**	**SAMPLE B (STAGNANT- SINK**	**SAMPLE B (2 MIN FLUSH) - SINK**
Elements						
Total Lead (Pb)	mg/L	0.005	**0.0063**	0.0031	**0.0056**	0.00094

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

Grey shaded box represents above MAC

***A corrective action plan must be submitted for both locations and may include a plan to flush water for two minutes prior to use.**

Example B (BV Labs) – Above MAC for Flush and Stagnant Water

Sampling Date			2020-02-28	2020-02-28	2020-02-28	2020-02-28
	UNITS	**MAC**	**SAMPLE A (STAGNANT) KITCHEN**	**SAMPLE A (2 MIN FLUSH) KITCHEN**	**SAMPLE B (STAGNANT) BATHROOM**	**SAMPLE B (2 MIN FLUSH) BATHROOM**
Elements						
Total Lead (Pb)	mg/L	0.005	**0.016**	**0.0055**	**0.0093**	**0.011**

***Flushing sinks for two minutes prior to use will not be an option. Corrective action plan must be submitted for kitchen and bathroom.**

Grey shaded box represents above MAC

Example C (BV Labs) – Above MAC for Stagnant and Flush Water at One Location and Below MAC for Stagnant and Flush Water at Another Location.

Sampling Date			2020-02-27	2020-02-27	2020-02-27	2020-02-27
	UNITS	**MAC**	**SAMPLE A (STAGNANT) KITCHEN**	**SAMPLE A (2 MIN FLUSH) KITCHEN**	**SAMPLE B (STAGNANT) BATHROOM BOYS**	**SAMPLE B (2 MIN FLUSH) BATHROOM BOYS**
Elements						
Total Lead (Pb)	mg/L	0.005	**0.0075**	**0.0068**	0.0050	0.0018

Grey shaded box represents above MAC

***May use bathroom sink (sample B). Corrective action plan must be submitted for kitchen sink (sample A).**

Example D (BV Labs) – Below MAC for Flush and Stagnant Water at Both Locations

Sampling Date			2020-02-16 04:00	2020-02-16 04:08	2020-02-16 04:05	2020-02-16 04:12
COC Number			08479089	08479089	08479089	08479089
	UNITS	**MAC**	**SAMPLE A (STAGNANT) KITCHEN**	**SAMPLE A (2 MIN FLUSH) LOWER**	**SAMPLE B (STAGNANT) KITCHEN**	**SAMPLE B (2 MIN FLUSH) UPPER**
Elements						
Total Lead (Pb)	mg/L	0.005	0.0043	0.00064	0.0020	0.0012

Below MAC for both samples do not require a CAP.

Corrective Action Plans

Section 48(5) of the Child Care Licensing Regulation requires a Licensee to ensure that safe drinking water is available to children. Each facility is unique and may have multiple options to consider if a CAP is required to address contraventions to the legislation.

A CAP must address how children in care will not be exposed to harmful levels of lead from any source, including water used for drinking, cooking, brushing teeth, or any other activity where water may be consumed. Licensing Officers will assess the CAP at each routine inspection to ensure the health and safety of children in care. An updated CAP may be submitted to the Community Care Facilities Licensing Program at any time.

The facility should consider their unique infrastructure, population, staffing, and the feasibility of any plan submitted to the Community Care Facilities Licensing Program. The following examples of solutions may be helpful when submitting a plan to address above MAC levels of lead in drinking water:

- For facilities with lead levels above MAC in flush samples, a two minute flush of water after every period of six or more hours of no water use prior to operation;

- Replacement of specific plumbing fixtures or components. For example, lead may be concentrated in an old faucet. Applicants/Licensees may wish to consult with a water treatment company before completing any upgrades at the facility;

- Filtration systems (carbon-based, reverse osmosis or distillation type filters that are certified to the NSF international standard for removing lead are effective) – see link regarding NSF Certified Lead Reduction Filters below;

    - Applicants/Licensees may also refer to the ChildCareBC Maintenance Fund to help address the necessary repairs or replacement;

- Replacing water service lines connecting to the facility. Applicants/Licensees can contact local governments to find out if any programs exist in the community to replace service lines;

- Use of bottled water rather than tap water;

    - If Applicants/Licensees chooses bottled water as a corrective action plan, the plan must clearly identify all uses of water including drinking, food preparation and oral hygiene; and

- To ensure lead levels have been addressed, re-testing of lead in water must be completed when:
    - Sampling errors are suspected or identified; and/or
    - Facility updates, such as installation and/or use of filters, has been completed.

Recommendation of Annual Testing of Lead in Water

Community Care Facilities Licensing will be providing education to Applicants/Licensees regarding the recommendation by the Ministry of Health to develop a long term monitoring plan and ideally complete annual testing as part of the Initial Inspection process and any subsequent Routine Inspections.

More Information

Applicants/Licensees who need assistance in understanding and interpreting lead in water test results should contact the chosen qualified laboratory with the scope of proficiency to test for lead. For questions regarding options related to reducing lead levels, Applicants/Licensees can contact a Licensing Officer.

Resources

- Government of British Columbia: *Directory of Qualified Laboratories* - https://www.nrs.gov.bc.ca/qualified-labs/
- Government of British Columbia (2017). BC Health Files: *Lead in Drinking Water* https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/child-day-care/fact_sheet_-_lead_in_drinking_water_2017.pdf
- Government of British Columbia (2019). HealthLinkBC File Number 49e: *Lead in Drinking Water* https://www.healthlinkbc.ca/healthlinkbc-files/lead-drinking-water
- Government of British Columbia. *Guidelines on Evaluation and Mitigation Lead in Drinking Water Supplies, Schools, Child Care Facilities and Other Buildings* – https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/how-drinking-water-is-protected-in-bc/dwog_part_b_-_12_evaluating_and_mitigating_lead.pdf
- Government of Canada (2019). *Guidelines for Canadian Drinking Water Quality: Summary Tables* https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html
- Island Health (2020). *Lead in Water* https://www.islandhealth.ca/learn-about-health/drinking-water/lead-water
- NSF Certified Lead Reduction Filters: https://www.nsf.org/newsroom/concerned-about-lead-drinking-water-choose-filter-certified-to-reduce-lead
- Government of British Columbia. *Maintenance Fund Emergency Repair and Replacement - Province of British Columbia* - https://www2.gov.bc.ca/gov/content/family-social-supports/caring-for-young-children/childcarebc-programs/maintenance-fund