

**Legislative Council Panel on Housing
Special Meeting on 22 July 2015**

Excessive Lead in Fresh Water in Public Housing Estates

Supplementary Information

At the special Panel on Housing meeting held on 22 July 2015, Members requested the Government to provide supplementary information on matters relating to the incident of excessive lead content in fresh water in public housing estates, as well as the motion passed at the same meeting. The supplementary information is set out below.

Existing Guidelines and Specifications

2. Fresh water supply systems are regulated by the Waterworks Ordinance. For installation of fresh water supply systems, the Hong Kong Housing Authority (HA)'s main contractors shall, according to the requirements of the Water Supplies Department (WSD) and the Waterworks Ordinance, appoint a Licensed Plumber, who shall construct and install the fresh water supply system in compliance with drawings approved by the WSD, the Waterworks Ordinance and the contract specifications. The Authorized Person and the Licensed Plumber shall confirm that the system complies with the Waterworks Ordinance, and shall attend the necessary inspection and testing.

Water sampling work

3. Given public concern over the incident, HA Chairman announced on 24 July 2015 that the scope of water sampling in public rental housing (PRH) estates would be expanded. Housing Department (HD) and WSD are now systematically taking water samples in batches from PRH estates completed between 2005 and 2010 for testing. Test results will be announced once available. Thereafter, HA will, based on experience and data, consider how to conduct water sampling tests for PRH estates completed before 2005.

4. Some Members have expressed views on WSD's current sampling procedure. Currently, different countries have adopted different sampling procedures for monitoring the lead content in fresh water arising from the use of lead pipework in public and private water supply systems, having regard to the sampling objectives. If samples are taken in the morning without flushing the pipes, such samples can only represent the quality of stagnant water in the pipes for a certain period of time (e.g. overnight), and not that of water supplied to the consumers throughout the day. Furthermore, the quality of stagnant water in the pipes will vary with the stagnation time, hence affecting the overall comparability of water quality results. As WSD's sampling objective is to check the quality of water at consumer taps after passing through its private plumbing system, routine water sampling procedures established with reference to the international standard ISO 5667 (Part 5) are followed, to ensure that the water samples taken are representative of the quality of water supplied to the consumers for compliance checking against the provisional guideline value for lead in drinking water recommended in the World Health Organization's "Guidelines for Drinking-water Quality".

5. Apart from water sampling, the Task Force on Excessive Lead Content in Drinking Water established by the Development Bureau has also been conducting testing of individual components in the water supply chain, including water taps and solder joints for tracing the cause of excessive lead in water. Sample collection and testing work are now in progress. Interim findings are expected to be available in mid-September. Up to now, samples of individual components in the water supply chain, including solder joints and water taps, had been taken from relevant flats in Kwai Luen Estate Phase 2 and Kai Ching Estate for testing.

Temporary measures to assist affected tenants

6. As it will take some time for the replacement of water pipes with solder joints which do not meet the standard in the affected estates, HA has asked the main contractors concerned to make good and take necessary remedial measures, including extending connection pipes from the roof-top water tanks to each floor of the building, and to install water filters with U.S. National Sanitation Foundation (NSF) 53 certification for affected households in the estates. Regarding the connection pipes, for Kai Ching Estate, the first estate found with excessive lead content in drinking water, the temporary water points were put into use on 16 August 2015. The temporary water points at Kwai Luen Estate Phase 2

were put into use on 21 August 2015, while those at Wing Cheong Estate and Lower Ngau Tau Kok Estate Phase 1 are expected to be put into use within September. As for the six remaining estates, construction of the temporary water points will begin in September. Regarding the water filters, Shui On Building Contractors Limited and Yau Lee Construction Company Limited have begun to install filters for Kwai Luen Estate Phase 2 and Lower Ngau Tau Kok Estate Phase 1 respectively. For the remaining eight estates, the main contractors are expected to begin installation of filters around end August.

7. Some affected tenants are concerned about compensation for costs arising from purchasing bottled water, water charges, the treatment of excessive lead level in blood etc. We consider that the most urgent and pressing issue is to find out the cause of the excessive lead in drinking water and to take necessary follow-up actions, including the provision of safe drinking water to affected tenants and follow-up on cases with excessive blood lead level. If anyone makes legal claims against HA, HA will seek legal advice and take necessary action depending on the actual circumstances.

Blood testing

8. In accordance with scientific data, the Department of Health (DH) has defined the more easily affected groups as children under six, lactating mothers and pregnant women. For PRH estates found to have water samples with excessive lead content, if there are households members belonging to the more easily affected groups, they will receive an invitation for whole blood lead testing (“blood testing”). For water samples with excessive lead content, the affected households will be approached individually for a quick health assessment and advice on safe water use. Blood testing for lead will also be offered to these households upon request. On 21 July 2015, the Government announced that the scope of blood testing would be expanded to children who had not reached six years of age when moving into Kai Ching Estate, Kwai Luen Estate Phase 2 and Wing Cheong Estate. Subsequently, the Government announced on 3 August 2015 that children under the age of eight living in the affected estates would be eligible for the blood tests. To meet the rising demand for blood tests, the Government will endeavour to increase the capacity of blood taking and testing in hospitals and laboratories respectively, by procuring portable lead level examination equipment, expanding the blood test service to more hospitals, and sending blood samples to overseas accredited laboratories for analysis, etc.

9. In terms of health, when lead is absorbed into the body in excessive amount, it will affect many organs and body systems. Depending on the lead level inside the body, effects may include neurodevelopmental effects, anaemia, high blood pressure, gastrointestinal symptoms, impaired renal function, neurological impairment, impaired fertility and adverse pregnancy outcomes. Infants, young children (especially those under six years of age), pregnant women and lactating mothers are more likely to be affected by its adverse effects. Whole blood lead level is the most accurate, reliable and internationally recognised method of screening and diagnosis, for assessing the risk of lead on health. For more easily affected groups, namely children, pregnant women and lactating mothers, a blood lead level of equal to or more than 5 microgram per deciliter (microgram/dL) requires further assessment. For adults, a blood lead level of equal to or more than 10 microgram/dL requires further assessment. Hair and urine tests for lead are not suitable for screening and diagnosis. They are therefore not advisable. The most important management of lead exposure is to identify and remove the source. When exposure stops, lead in the body will be gradually reduced through excretion in urine and bile. A balanced diet with adequate amounts of calcium and iron can also lower the amount of swallowed lead that is absorbed into the bloodstream.

Dissemination of information

10. Members were also concerned about the provision of support and dissemination of information to tenants of affected PRH estates. Once an estate is announced to have water samples with excessive lead content, representatives from relevant departments (HD, WSD and DH) will hold a residents' forum in the affected estate that night to provide tenants with the latest updates on matters relating to water quality; supply of bottled water; temporary water supply (water tanks or water wagons), health information and blood test appointments etc. Property Service Management Offices of the affected estates will distribute a health information factsheet published by DH to each tenant's mailbox, and deliver bottled water to households with special needs. In addition, HD has put in place communication channels to maintain close contact with affected tenants. For example, tenants can visit or call their estate offices for enquiries, or call HA's hotline (2712 2712) for referral to relevant staff for a response to their enquiries or concerns.

11. DH has set up a hotline since 10 July 2015 to provide affected tenants with health information and appointment booking for blood tests for lead. DH and the Hospital Authority also provide relevant information on their respective websites. In addition, DH organises

community health talks for tenants in the affected estates to explain the potential health impact of excessive lead consumption on health and offer psychological health advice. In addition to the health information factsheet distributed to each household of affected estates as mentioned in paragraph 10 above, DH and the Hospital Authority have prepared a set of “Frequently Asked Questions on Voluntary Blood Lead Level Screening”, which is posted onto the Hospital Authority’s website and distributed to those attending the Hospital Authority’s blood taking sessions. DH has also produced a leaflet on “Health Advice on Lead in Drinking Water” and uploaded other frequently asked questions onto the Centre for Health Protection’s thematic webpage. Moreover, the Information Services Department (ISD) has launched a thematic website to disseminate health information and the latest updates in relation to the excessive lead content in drinking water incident to the general public.

Private housing estates

12. If residents of private housing estates are concerned about the presence of lead in the water delivered via their private plumbing systems, they can arrange to have their water sampled and tested by a laboratory accredited for lead testing. If necessary, they can discuss with the estate management offices/ owners’ corporations to engage qualified persons (e.g. licensed plumbers, building services engineers or building surveyors etc.) to inspect their private plumbing systems, for identifying the source of the problem, and recommend corresponding remedial measures. We understand that some estate management offices/ owners’ corporations have already made arrangements to have their water sampled and tested.

13. Members of the public may also purchase and install water filters. Regarding the types of water filters for lead reduction, members of the public may install those with U.S. NSF 53 certification for lead reduction. Such filters can effectively reduce the lead content in water. However, as the water filter will remove residual chlorine along with lead from the tap water, thus reducing the residual chlorine’s ability to suppress bacterial growth, the filtered water should be boiled before consumption. Unfiltered tap water can still be used for other domestic purposes, e.g. washing vegetables and dishes, bathing, etc. Hot water should not be filtered as this will affect the performance of the filter and water quality.

14. If members of the public install faucet filters or countertop filters with no stop valve downstream, the installation work does not require approval by the Waterworks Authority. In this case, users should strictly follow the manufacturer's instructions on the use of the water filter and properly maintain the water filter as directed by the manufacturer. This

includes establishing how frequent the filter cartridge needs to be replaced, in accordance with the daily water consumption, to ensure proper performance of the filter and its lead-reducing effectiveness. If there are plans to install water filters other than the above types (e.g. the in-line filter), these should be installed by licensed plumbers, who shall submit applications to the WSD on behalf of the consumers, according to the Waterworks Regulation. Relevant details are available on the WSD's website. As for the list of accredited laboratories, filters and other related issues, they can be found on ISD's thematic website.

15. In respect of item 5(1a) on the list of supplementary information requested by Members, the major events have already been set out in chronological order as per Annex 1 of LC Paper No. CB(1)1133/14-15(01). We do not have anything further to supplement.

**Transport and Housing Bureau
Development Bureau
Food and Health Bureau**

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