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Panel on Development

Meeting on 28 November 2017

**Background brief on follow-up work on
the incidents of excess lead found in drinking water**

Purpose

This paper provides background information on the key follow-up work undertaken by the Development Bureau ("DEVB") and the Water Supplies Department ("WSD") on the incidents of excess lead found in drinking water in 2015 ("the incidents"), and the major views and concerns expressed by Members of the Legislative Council ("LegCo") on the subject.

Background

Incidents of excess lead found in drinking water

2. Between July and November 2015, it was revealed that the lead level in the drinking water supply at consumers' taps in 11 public rental housing ("PRH") developments and some private residential buildings did not comply with the "Guidelines for Drinking-Water Quality" of the World Health Organization ("WHO").¹ Besides, excess lead was also found in drinking water samples taken from insider services, water dispensers or wall-mounted dispensers from three secondary schools and eight kindergartens.

¹ The provisional guideline value of WHO's "Guidelines for Drinking-Water Quality" (2011) is 10 micrograms per litre for lead in drinking water.

Investigations into the incidents and review recommendations

3. The incidents have aroused wide public concerns over drinking water safety. To investigate into the incidents to ascertain the causes and identify measures to prevent recurrence of similar incidents in future, DEVB established a Task Force on Investigation of Excessive Lead Content in Drinking Water ("the Task Force") led by WSD. The Hong Kong Housing Authority ("HA") also formed a Review Committee on Quality Assurance Issues Relating to Fresh Water Supply of Public Housing Estates ("the Review Committee"). The final report of the Task Force was submitted to the Secretary for Development on 31 October 2015,² and the [final report](#) of the Review Committee was submitted to and accepted by HA in January 2016.

4. A Commission of Inquiry into Excess Lead Found in Drinking Water ("CoI") was set up on 13 August 2015 under the Commissions of Inquiry Ordinance (Cap. 86). The terms of reference of CoI were to (a) ascertain the causes of excess lead found in drinking water in PRH developments; (b) review and evaluate the adequacy of the present regulatory and monitoring system in respect of drinking water in Hong Kong; and (c) make recommendations with regard to the safety of drinking water in Hong Kong.³

5. CoI submitted its report to the Chief Executive on 11 May 2016 ("the CoI Report"). The Administration published a [redacted version](#)⁴ of the CoI Report on 31 May 2016. In the CoI Report, it was concluded that the use of leaded solder materials was the direct cause for excess lead found in drinking water in the 11 affected PRH estates. The CoI Report recommended that the Administration should, inter alia, review the existing legislative and regulatory system, and establish the "Hong Kong Drinking Water Standards" with reference to overseas experience and practices. The recommendations in the CoI Report are extracted at **Appendix I**.

² The [full report \(English version only\)](#) with a [Chinese summary](#) of the Task Force is available at DEVB's website.

³ Source: [Website](#) of the Commission of Inquiry into Excess Lead Found in Drinking Water

⁴ With a view to avoiding any prejudice (actual or perceived) to the relevant criminal investigations and criminal prosecutions (if so decided to be justified after the relevant investigations), a minimal part of the CoI Report has been redacted.

Major views and concerns expressed by Members

6. The views and concerns expressed by members of the Panel on Development ("the Panel") on the follow-up work undertaken by DEVB and WSD on the incidents are summarized in the ensuing paragraphs.

Progress of follow-up work on the review recommendations

7. Panel members expressed concern about the progress of the follow-up actions taken by DEVB and WSD in response to the recommendations of the CoI Report.

8. According to the Administration,⁵ DEVB set up an International Expert Panel on Drinking Water Safety on 1 June 2016 comprising experts from Australia, Canada, United Kingdom and local experts to provide advice on issues related to drinking water safety. It had also established an inter-bureau and inter-departmental working group and engaged a consultant to study the water safety regimes of leading jurisdictions. Based on the findings of the consultancy studies, DEVB would, in consultation with the working group, explore the water safety regulatory regime, including deliberating on the need for introducing legislation on drinking water safety and developing a water quality regulatory framework which would involve the establishment of a Water Quality Regulator.

9. In the formulation of drinking water standards, sampling protocols and enhanced drinking water quality monitoring programme, WSD had engaged expert consultants to study WHO's "Guidelines for Drinking-Water Quality" and the drinking water quality standards and sampling protocols in overseas countries. It had also engaged an expert consultant to provide advice with regard to the development of Water Safety Plans. Moreover, WSD was drafting a Code of Practice for the plumbing industry with recommendations of engaging qualified personnel for site supervision and conducting random sample tests for material delivered to site.

Holistic review of the Waterworks Ordinance (Cap. 102) and the Waterworks Regulations (Cap. 102A)

10. Members also enquired about the progress of reviewing the adequacy of the existing legislative framework and the regulatory regime in

⁵ [LC Paper No. CB\(1\)618/16-17\(01\)](#)

safeguarding the quality of drinking water in Hong Kong, as recommended in the CoI Report.

11. The Administration advised that while it was holistically reviewing the Waterworks Ordinance (Cap. 102) ("WVO") and the Waterworks Regulations (Cap. 102A) ("WVR"), in view of CoI's recommendations, it had decided to prioritize legislative amendments to WVO and WVR in respect of the duties of licensed plumbers and standards of plumbing materials. In this regard, the Administration introduced the Waterworks (Amendment) Bill 2017 ("the Bill"), which received its First Reading at the Council meeting of 26 April 2017, to amend WVO and WVR to revise the requirements relating to the carrying out of works on fire services and inside services.⁶ The Waterworks (Amendment) Regulation 2017 (L.N. 81 of 2017) ("the Amendment Regulation") was gazetted on 19 May 2017 to revise the requirements in relation to pipes or fittings installed in fire services or inside services.⁷

12. While expressing support for enhancing the water safety regime for Hong Kong and introducing legislation for safeguarding the quality of drinking water, members called on the Administration to also put in place a comprehensive programme for monitoring the safety and quality of drinking water from the source to consumers' taps. There was also a view that the Administration should explore introducing legislation for regulating wall-mounted thermostatic electric kettles, of which the inlet hose was connected to the inside service.

Council motions and questions

13. At the Council meeting of 28 October 2015, Members passed a motion on "Legislating for safety of drinking water" urging the Government to, among others, immediately legislate for the safety of drinking water. Four questions relating to the incidents and drinking water safety were raised at Council meetings of 4 and 18 November 2015,

⁶ The Bill is currently under the scrutiny of a Bills Committee.

⁷ A Subcommittee was formed to study the Amendment Regulation. Taking into account the views and suggestions of the Subcommittee members, the Administration proposed some amendments to the Amendment Regulation. However, the Administration's motion to propose the amendments could not be dealt with by the Council before the expiry of the period which LegCo might amend the Amendment Regulation. The Administration then gazetted the Waterworks (Amendment) (No. 2) Regulation 2017 (L.N. 165 of 2017) on 13 October 2017 to incorporate the amendments originally proposed to the Amendment Regulation.

30 November 2016 and 14 December 2016 respectively. The relevant hyperlinks are in **Appendix II**.

Latest developments

14. On 21 September 2017, the Administration launched the Action Plan for Enhancing Drinking Water Safety In Hong Kong ("Action Plan") to further safeguard drinking water quality in Hong Kong through a multi-pronged approach. The Action Plan comprises five components, namely "Drinking water standards and enhanced water quality monitoring programme", "Plumbing material control and commissioning requirements for new plumbing installations", "Water safety plans", "Water safety regulatory regime" and "Publicity and public education". The Action Plan aims at:

- (a) establishing a set of drinking water standards tailored for Hong Kong and monitoring consumers' drinking water quality so as to review the drinking water standards;
- (b) strengthening regulation on plumbing materials and the commissioning requirements for new plumbing installations;
- (c) actively promoting the implementation of Water Safety Plan for buildings to facilitate proper cleansing and maintenance of pipes and fittings by property management agents;
- (d) enhancing public education and publicity on safe use of drinking water;
- (e) setting up an independent dedicated team in DEVB to take up the role of a water quality regulator, and conducting detailed study to establish a drinking water safety regulatory regime suitable for Hong Kong; and
- (f) setting up an Advisory Committee on Drinking Water Safety to advise DEVB on water safety issues and studies related to water safety regime.

15. WSD has launched a [dedicated webpage](#) on the Action Plan for the public to download leaflets and relevant information.

16. At the Panel meeting to be held on 28 November 2017, the Administration will brief the Panel on the details of the Action Plan, and the staffing proposal of DEVB and WSD in taking forward the drinking water safety initiatives, including the implementation of the Action Plan.

Relevant papers

17. A list of relevant papers with their hyperlink is in **Appendix II**.

Council Business Division 1
Legislative Council Secretariat
23 November 2017

Extract from the Report of the Commission of Inquiry into Excess Lead Found in Drinking Water

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VI. RECOMMENDATIONS

487. The following are measures we would recommend in order to prevent the recurrence of similar incidents in future –

- (1) Given the inadequacy of the sampling protocol adopted by WSD and in order to put the minds of all PRH residents at ease, the Government should undertake to test the drinking water of all PRH estates again using an appropriate sampling protocol that would include the testing of stagnant water as well.
- (2) Given the ever increasing complexity of modern buildings, the Government should, at the policy level, review the adequacy of the existing legislative framework and regulatory regime in safeguarding the safety and quality of drinking water in Hong Kong. The review should cover :
 - (i) the need for delineating the role of WA (as regulator of water quality) and the role of WSD (as water supplier); and
 - (ii) WSD's roles and responsibilities in effectively safeguarding the quality and safety of drinking water in Hong Kong, in particular whether its responsibilities are only confined to the quality of drinking water up to the connection points.

- (3) The Government should set up an independent body to overlook the performance of WSD and water quality in Hong Kong generally. This body should be empowered to conduct independent inspections and auditing when necessary.
- (4) We support WA/WSD's proposal to set up an international expert panel on water safety to provide expert advice to Hong Kong on matters including water quality standard, water quality regulatory and monitoring regime, water sampling protocol etc.
- (5) WA/WSD should undertake a comprehensive study with a view to establishing the "Hong Kong Drinking Water Standards", taking into account overseas experience and practices.
- (6) WA/WSD should define, preferably by way of legislation, the roles, involvements and responsibilities of other parties such as developers, contractors and APs who are in practice involved in the design, construction and maintenance of inside service but are currently not prescribed with any duties under WWO and WWR.
- (7) With the involvement of all relevant stakeholders including experts, professionals of different related disciplines and the general public, WA/WSD should establish and implement a WSP for Hong Kong in general and WSPs specifically for other developments in Hong Kong (e.g. public and private housing

developments, hospitals, elderly homes, schools), with clear indication of :

- (i) how to identify potential hazards and conduct risk assessment of contamination at different sections of the water distribution system, i.e. waterworks, communal service and inside service; and
 - (ii) the responsibilities of stakeholders at different sections of the water distribution system.
- (8) WA/WSD should set out clearly, in the legislation or appropriate medium, the latest approved pipes and fittings as well as the latest standards for all plumbing material and components to be used in the construction of inside service, and update the same regularly and periodically.
- (9) WA/WSD should devise and uphold a robust licensing / registration regime for parties responsible for plumbing installations, including to:
- (i) define the duties of LPs under WWO, taking into account the relevant provisions of the Construction Workers Registration Ordinance (Cap. 583) (CWRO) which allows skilled workers to perform plumbing installations;
 - (ii) review the adequacy of the existing arrangement where an individual LP can be responsible for

plumbing installations of any scale (e.g. up to thousands of household units) at any given time;

- (iii) review the competency and manpower development of LPs, and consider the need for continuous professional education for LPs on a compulsory basis as part of the conditions for renewal of licences;
 - (iv) ensure that LPs and skilled plumbing workers under CWRO would be taught in their training, certification and professional development the potential causes and hazards of drinking water contaminations, and precautionary measures; and
 - (v) consider the need and feasibility to include other professionals (such as building services engineers) and specialised contractors (such as in the form of a registration system for plumbing contractors) in the design and construction of inside service.
- (10) HA should review its control mechanism on the construction projects with emphasis not only on the functionality of the plumbing system but also the quality and safety of water.
- (11) HA should equip its CA (Design and Standard) with necessary expertise on plumbing installations and strengthen its research capability to identify the existing

and emerging risks to the quality and safety of water in developing and managing PRH estates.

- (12) HA should, in consultation with WSD, review all the materials to be used in the construction of PRH estates with a view to identifying the potential hazards and contamination in the drinking water, and revising the project specifications as necessary.
- (13) HA should put in place a robust system to monitor the compliance of the plumbing installations with the project specifications by main contractors and their subcontractors.
- (14) We support all the control measures put forward by the Review Committee regarding the purchase, use and testing of solder in the construction of all new PRH projects. It is important not to relegate these control measures into yet another document check exercise.
- (15) HA should contribute proactively to the establishment of a WSP for PRH estates under (7) above.
- (16) At all times and especially before the establishment of a WSP for PRH estates, HA should ensure all its staff, in particular all the CAs who are responsible for signing WWO certifications and documents, are aware of all the potential causes and hazards of drinking water contamination and precautionary measures.

(17) At all times and before WA/WSD has defined the specific roles of all involved parties, the developers and main contractors, when contracting out the plumbing work, should devise and execute an effective management plan for making sure that :

(i) only the approved/compliant materials would be used in plumbing installations; and

(ii) the plumbing work would be carried out under appropriate supervision and inspection by competent personnel;

so that the control measures would not be relegated into another document check exercise.

488. We believe that if these recommendations are implemented, not only PRH estates, but also other developments in Hong Kong and our community as a whole will be benefited.

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Appendix II

Follow-up work on the incidents of excess lead found in drinking water

List of relevant papers

Council/ Committee	Date of meeting	Paper
House Committee	1 September 2015 (Special meeting)	<p>Administration's paper on "Lead in drinking water incidents" [LC Paper No. CB(2)2051/14-15(01)]</p> <p>Background brief on lead in drinking water incidents prepared by the Legislative Council Secretariat [LC Paper No. CB(2)2051/14-15(02)]</p> <p>Verbatim record of the proceedings [LC Paper No. CB(2)2185/14-15]</p>
House Committee	8 October 2015 (Special meeting)	<p>Administration's paper on "Lead in drinking water incidents" [LC Paper No. CB(2)2195/14-15(01)]</p> <p>Updated background brief on lead in drinking water incidents prepared by the Legislative Council Secretariat [LC Paper No. CB(2)2195/14-15(02)]</p> <p>Verbatim record of the proceedings [LC Paper No. CB(2)287/15-16]</p>
Council	28 October 2015	<p>Motion on "Legislating for safety of drinking water"</p> <p>Progress report</p>
Council	4 November 2015	<p>Hansard — written question (No. 7) on "Incidents of excessive lead content in drinking water" (p. 1019-1028)</p>

Council/ Committee	Date of meeting	Paper
Council	18 November 2015	Hansard — written question (No. 10) on "Safety of drinking water from wall-mounted kettles" (p. 1699-1701)
House Committee	11 July 2016 (Special meeting)	<p>Administration's paper on "Lead in drinking water incidents" [LC Paper No. CB(2)1866/15-16(01)]</p> <p>Updated background brief on lead in drinking water incidents prepared by the Legislative Council Secretariat [LC Paper No. CB(2)1866/15-16(02)]</p> <p>Report of the Commission of Inquiry into Excess Lead Found in Drinking Water</p> <p>Verbatim record of the proceedings [LC Paper No. CB(2)2023/15-16]</p>
Council	30 November 2016	Hansard — written question (No. 9) on "Follow-up actions on incidents of excess lead in drinking water" (p. 1519-1524)
Council	14 December 2016	Hansard — written question (No. 18) on "Water resources management and drinking water safety" (p. 2507-2517)
Panel on Development	24 January 2017	<p>Administration's paper on "Initiatives of Development Bureau in the 2017 Policy Address and Policy Agenda" [LC Paper No. CB(1)439/16-17(03)]</p> <p>Administration's paper on "Proposed amendments to the Waterworks Ordinance (Cap. 102) and the Waterworks Regulations (Cap. 102A)" [LC Paper No. CB(1)439/16-17(05)]</p>

Council/ Committee	Date of meeting	Paper
		<p>Minutes of meeting [LC Paper No. CB(1)700/16-17]</p> <p>Follow-up paper [LC Paper No. CB(1)618/16-17(01)]</p>
Panel on Development	24 October 2017	Administration's paper on "Initiatives of Development Bureau in the Chief Executive's 2017 Policy Address and Policy Agenda" [LC Paper No. CB(1)57/17-18(01)]
Bills Committee on Waterworks (Amendment) Bill 2017	-	<p>Legislative Council Brief [File Ref.: DEVB(CR)(W)1-10/49]</p> <p>Legal Service Division Report [LC Paper No. LS56/16-17]</p>
Subcommittee on Waterworks (Amendment) Regulation 2017	-	<p>Legislative Council Brief [File Ref. : DEVB(CR)(W)1-10/49]</p> <p>Legal Service Division Report [LC Paper No. LS69/16-17]</p> <p>Report of the Subcommittee [LC Paper No. CB(1)1255/16-17]</p>
Subcommittee on Waterworks (Amendment) (No. 2) Regulation 2017	-	<p>Legislative Council Brief [File Ref. : DEVB(CR)(W)1-10/49]</p> <p>Legal Service Division Report [LC Paper No. LS3/17-18]</p>