

FOREWORD

Over the years, the Water Supplies Department (“WSD”) has been supplying drinking water in full compliance with the World Health Organization’s Guidelines for Drinking-water Quality (“WHO Guidelines”). In the wake of the excess lead in drinking water incident in 2015, the public has raised concern over the drinking water quality at consumers’ taps. The Secretary for Development appointed in June 2016 the International Expert Panel on Drinking Water Safety (“IEP”)¹ to provide advice on drinking water safety. After making reference to the experience and practice of other countries², and taking into account the recommendations of the Commission of Inquiry into Excess Lead Found in Drinking Water (“Col”)³ as well as the advice of the IEP, the Government critically and holistically reviewed the current drinking water safety regime and developed the Action Plan for Enhancing Drinking Water Safety in Hong Kong (“Action Plan”) to safeguard the drinking water quality in Hong Kong.

Under the Action Plan, the Government adopts WHO Guidelines as the drinking water standards and enhances the current water quality monitoring programme of WSD to collect water samples from drinking taps of randomly selected consumers of the territory for testing with a view to monitoring the drinking water quality in the territory. The six metals that could be present in the internal plumbing systems will be tested. The collected local water quality data will be used as a basis to review the Hong Kong drinking water standards including the appropriateness to adopt standards beyond WHO Guidelines (“WHO+”) for certain parameters. As the water quality at the consumers’ taps will be affected by the construction (including the materials used) as well as the subsequent operation and maintenance of the internal plumbing systems, the Action Plan also includes strengthening the regulatory control on plumbing materials; reviewing the legislation in order to explore the establishment of a registration regime for defining the participation and duties of the related persons (including plumbing contractors) designated for the design and construction of inside services; tightening the commissioning requirements for new plumbing installations; and promoting the development and implementation of Water Safety Plans for buildings to owners and property management agencies. In addition, we will enhance the publicity and public education on safe use of water as well as review Hong Kong’s water safety regulatory regime.

¹ The IEP consists of three overseas experts from the United Kingdom, Canada and Australia and two local experts. The overseas experts possess a wealth of relevant knowledge and experience and have involved in the work on water safety for WHO and international water industry associations. Besides, the two local experts are an experienced water quality expert and a medical professor on toxicology respectively.

² The review on overseas experience and practice was conducted by expert consultants appointed by the Government.

³ The Col was appointed by the Chief Executive in Council to inquire into the incident of excess lead found in drinking water with the terms of reference to, amongst others, make recommendations with regard to the safety of drinking water in Hong Kong.

5 COMPONENTS



1 DRINKING WATER STANDARDS AND ENHANCED WATER QUALITY MONITORING PROGRAMME

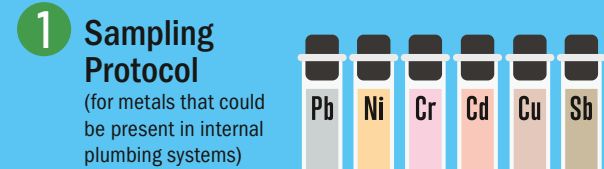
Hong Kong adopts GVs/PGVs of WHO Guidelines as the drinking water standards. The local water quality data collected under the enhanced water quality monitoring programme will be used to review the Hong Kong drinking water standards including the appropriateness to adopt standards beyond WHO Guidelines for certain parameters (“WHO+”).



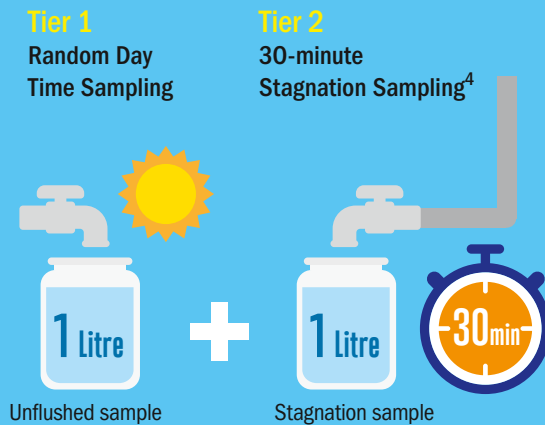
WHO Guidelines: World Health Organization’s Guidelines for Drinking-water Quality 2011
 GVs: Guideline Values
 PGVs: Provisional Guideline Values

In order to monitor the drinking water quality in the territory and to review the drinking water standards, the current water monitoring programme will be enhanced to extend its coverage to include drinking water at consumers’ taps.

RANDOMLY SELECTED CONSUMERS’ PREMISES



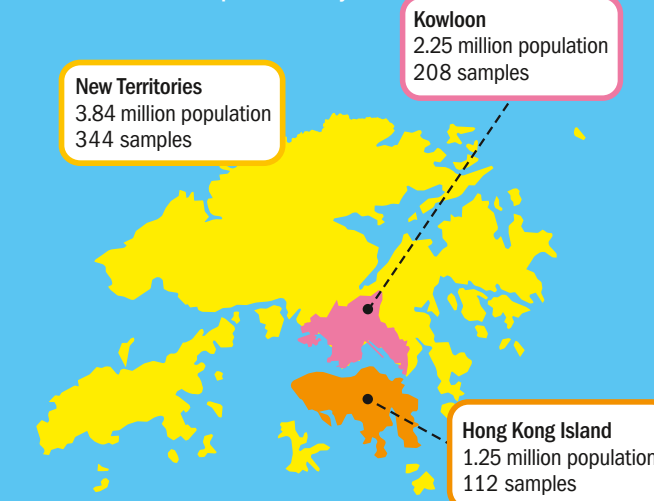
Six metals (lead, nickel, chromium, cadmium, copper and antimony)



⁴ Tier 2 sample will only be tested if Tier 1 sample exceeds the drinking water standards for verification of metal exposure to consumers.

2 Sampling Programme (for 18 District Council Districts)

Six metals⁵
664 samples annually⁶



⁵ will review the need for inclusion of other parameters in future
⁶ based on statistics on mid-year population for 2016 from the Census and Statistics Department

3 Publication of Testing Results Statistics

Statistics of water quality monitoring results of the six metals to be published on WSD’s website weekly



CURRENT WATER QUALITY MONITORING PROGRAMME

about **15 000** samples taken annually from raw water at the Muk Wu Pumping Station receiving Dongjiang water, impounding reservoirs and catchment areas

about **90 000** samples taken annually from different stages of treatment at water treatment works

about **55 000** samples taken annually from treated water at service reservoirs, connection points and publicly accessible consumers’ taps⁷

⁷ shopping centres, clinics, community facilities, sports grounds, markets, government offices and estate management offices

2 PLUMBING MATERIAL CONTROL AND COMMISSIONING REQUIREMENTS FOR NEW PLUMBING INSTALLATIONS

More stringent control measures and guidelines over plumbing materials, design, construction and commissioning of new plumbing systems have been implemented progressively since 2015 to strengthen water safety in inside service.

PLUMBING MATERIAL CONTROL AND DESIGN

- 1 WSD has updated the plumbing material standards in the Waterworks Regulations for implementation with effect from July 2017.
- 2 The General Acceptance (GA) system of WSD which pre approves plumbing products based on statutory material standards has been updated by:
 - imposing a five year validity period of GA for water supply pipes and fittings since August 2015;
 - launching the voluntary labelling scheme in stages for consumers' easier identification of GA products with water taps and mixers introduced at the first stage in April 2017; and
 - launching a surveillance programme in October 2017 to spot check the plumbing products with GA by verification test.

- 3 WSD will compile a technical handbook on plumbing works in early 2018 to provide more comprehensive information in a user friendly manner for reference by the plumbing industry in the design of plumbing installations.

CONSTRUCTION

- 4 WSD has proposed legislative amendments in April 2017 to define the duties of licensed plumbers (LPs), including setting out clearly the persons designated for carrying out plumbing works (including plumbing workers) and their responsibilities, for consideration by the Legislative Council.
- 5 LPs' knowledge and professionalism have been enhanced by:
 - strengthening the syllabi of LP training courses since September 2016 by covering the potential causes and hazards of drinking water contaminations as well as the associated precautionary measures; and
 - implementing the voluntary Continuing Professional Development Scheme for LPs since October 2016 in collaboration with the plumbing industry stakeholders.

- 6 WSD has stepped up the regulatory control of new plumbing installations by carrying out pilot scheme for random inspection of fresh water plumbing works under construction with effect from April 2017 on a risk based approach taking into account the risk factors and consequence of non compliance.

- 7 WSD and the Construction Industry Council jointly published the "Good Practice Guide on Plumbing Works" in March 2017, which recommends good practice to relevant stakeholders for carrying out design and construction of different types of plumbing works, and places emphasis on the importance of plumbing material control during procurement, supervision and on site material checking and testing.

- 8 WSD has set forth a holistic review of the Waterworks Ordinance on, inter alia, considering defining the roles, involvements and responsibilities of relevant parties responsible for the design, construction and maintenance of inside services, including possible introduction of a registration regime for plumbing contractors in the legislation to undertake more complex and larger plumbing works.

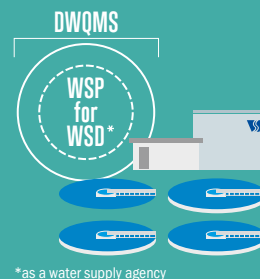
COMMISSIONING

- 9 WSD has stipulated the requirements for carrying out non destructive tests on solder pipe joints and water sampling tests for four heavy metals including lead since August 2015 to enhance the inspection and approval of inside services.
- 10 WSD introduced a systematic flushing protocol in July 2017 for new plumbing installations with a view to reducing metal leaching from new pipes and fittings.
- 11 To ensure that the new plumbing installations have been adequately flushed, WSD introduced the six hour stagnation water sampling test and two new metal testing parameters in October 2017.
- 12 With effect from January 2018, WSD will make the systematic flushing and six hour stagnation water sampling test results as the commissioning requirements.

3 WATER SAFETY PLANS (WSPs)

WSD'S DRINKING WATER QUALITY MANAGEMENT SYSTEM (DWQMS)

As a water supply agency, WSD has developed the DWQMS as an overarching water quality management framework to assure drinking water quality in the water supply system for protection of public health. The WSP for the WSD has been incorporated as a central component of the DWQMS.



WSP FOR BUILDINGS AND QUALITY WATER SUPPLY SCHEME FOR BUILDINGS - FRESH WATER (MANAGEMENT SYSTEM)

WSD helps building owners and property management agencies to develop and implement their own WSP for buildings with a view to preventing contamination of their inside services.

- 1 The following tools are provided for adoption:
 - general guidelines templates
- 2 The Quality Water Supply Scheme for Buildings Fresh Water (Management System) will be launched in 2017 Q4 to encourage development and implementation of WSP for buildings
- 3 A help desk has been set up to provide technical advice and assistance



For more details, please visit WSD's website www.wsd.gov.hk or use a smart phone to scan the QR code.



4 WATER SAFETY REGULATORY REGIME

The Development Bureau (DEVB) will set up a dedicated and independent team to perform the role of Water Quality Regulator. Also, DEVB will conduct studies in early 2018 to formulate a suitable water safety regulatory regime for Hong Kong, including examining the need to enact a water safety legislation.

An Advisory Committee on Drinking Water Safety will be set up with members from relevant sectors such as the academics, medical experts, etc. to give advice to DEVB on the development of the water safety regulatory regime and on various drinking water safety issues.



5 PUBLICITY AND PUBLIC EDUCATION

WSD will boost consumers' awareness of drinking water safety through publicity.

- 1 **Dedicated Webpages**
- 2 **TV and Radio Announcement in the Public Interests**
- 3 **Posters and Leaflets**
 - Enhanced Water Quality Monitoring Programme
 - Water Use Tips
 - WSP for Buildings
- 4 **Seminars**
- 5 **Hotline and Help Desk⁸**
 - Hotline for Action Plan: **2824 5000** (press 05 after language selection)
 - Help Desk for Water Safety Plan for Buildings:
 - Hotline: 2829 5696
 - Fax: 2877 4935
 - E-mail: wspb_help_desk@wsd.gov.hk

⁸ Please refer to WSD's website www.wsd.gov.hk/en/contact-us for the services hours of the hotline and helpdesk.

ACTION PLAN FOR ENHANCING DRINKING WATER SAFETY IN HONG KONG

