

**Advisory Committee on Water Resources and Quality of Water Supplies**  
**Minutes of Meeting No. 7**

**Date:** 13 October 2015 (Tuesday)

**Time:** 2:30 p.m.

**Venue:** Conference Room, Water Supplies Department, 48/F, Immigration Tower,  
7 Gloucester Road, Wan Chai, Hong Kong

**Present**

Dr CHAN Hon Fai	Chairman
Mr LAM Tin Sing, Enoch	Vice-Chairman (Water Supplies Department)
Dr CHEUNG Yun Hing, Richard	Member
Dr LAU Wai Neng, Michael	Member
Mr LAU Yuet Fan, Ivan	Member
Dr MAN Chi Sum	Member
Sr WONG Bay	Member
Mr CHIK Wai Keung	Member
Dr WONG Siu Wing, Eric	Member
Mr WONG Siu Wai, Kenny	Member
Ms SO Yee Ching, Phyllis	Member
Mr CHAN Kwok Wai	Member
Mr FORK Ping Lam	Member (Food and Environmental Hygiene Department)
Dr CHING Cheuk Tuen, Regina	Member (Department of Health)
Mr CHAN Siu Tack	Member (Housing Department)
Mr IP Chit Ki	Secretary (Water Supplies Department)

**Water Supplies Department Representatives in Attendance**

Mr CHAU Sai Wai	Assistant Director, Water Supplies Department (Ag.)
Mr CHAN Kin Man	Chief Chemist, Water Supplies Department
Mr CATLIN Kit Wai, Stephen	Senior Engineer, Water Supplies Department
Mr WONG Man Kei, David	Senior Engineer, Water Supplies Department
Mr CHEUNG Yip Kui	Senior Engineer, Water Supplies Department
Mr KWOK Kin Keung, Joseph	Engineer, Water Supplies Department (Notes Taker)

**Absent with Apologies**

Prof CHAU Kwai Cheong	Member
Prof CHAN Lung Sang	Member
Dr LEE Ka Yan, David	Member
Prof LO Man Chi, Irene	Member
Mr CHENG Man Chung	Member
Ms LAU Pui Yuk	Member

Ms TONG Po Chun	Member
Ms LI Chun Chau	Member
Ms LAU Mei Lo	Member
Mr YEUNG Wai Sing	Member
Mr MAK Shing Cheung, Vincent	Member (Development Bureau)
Mr WONG Tak Wai, David	Member (Environmental Protection Department)

## **Item**

### **Opening Remarks**

- 1.1 The Chairman welcomed all Members and representatives of Water Supplies Department (WSD) to the 7<sup>th</sup> Meeting of the Advisory Committee on Water Resources and Quality of Water Supplies (the Advisory Committee).
- 1.2 The Chairman informed the meeting that Prof CHAN Lung Sang, Prof CHAU Kwai Cheong, Dr LEE Ka Yan, David, Prof LO Man Chi, Irene, Mr CHENG Man Chung, Ms LI Chun Chau, Ms TONG Po Chun, Ms LAU Pui Yuk, Mr YEUNG Wai Sing, Ms LAU Mei Lo, Mr MAK Shing Cheung, Vincent of Development Bureau and Mr WONG Tak Wai, David of Environmental Protection Department had sent in their apologies for not being able to attend the meeting.
- 1.3 The Chairman extended his welcome to the representatives of WSD for attending the meeting, in particular Mr CHAU Sai Wai who took over the duties of Mr LAM Ching Man as Assistant Director/Development of WSD and Mr IP Chit Ki who took over the duties of Mr WONG Kwok Fai, Alfred as the Secretary of the meeting.

### **Agenda Items**

#### **Minutes of the 6<sup>th</sup> Meeting held on 26 June 2015**

- 2.1 The Chairman said that the draft minutes of the 6<sup>th</sup> Meeting were tabled to Members for comment and the updated minutes would be circulated to Members for confirmation after the meeting.

### **Matters Arising**

- 3 **Preliminary findings of investigation into cause of excessive lead content in drinking water**

**3.1** The Chairman presented the preliminary findings of investigation announced on 25 September 2015 by the task force set up by the Government to investigate the cause of excessive lead in drinking water in public rental housing estates with summary as follows:-

(a) Excessive lead in water

- (i) Lead-solder joints were the source of excessive lead in drinking water in Kai Ching Estate and Kwai Luen Estate Phase II.
- (ii) Copper alloy fittings also leached lead but did not result in excessive lead in drinking water.

The findings were confirmed by isotopic analysis, mathematic modelling, and comparison between the findings in Hong Ching House and Hung Hei House with very low lead content detected in drinking water for control purposes.

(b) Leaching of other heavy metals

- (i) Kitchen taps and washing machine taps in Kai Ching Estate leached nickel (under 24-hour stagnation condition).
- (ii) Taps contained very few amount of water (less than 150 ml), water with nickel could be flushed away in 1 to 2 seconds after turning on the tap.
- (iii) Leaching test results for chromium and cadmium contents were undetectable, i.e. lower than 1 ug/L.

(c) Fittings non-complying with British Standard  
(Elemental analysis of fittings installed on site in Kai Ching Estate)

- (i) Some valves and taps installed were not those submitted to the Water Authority (WA), but they were on the directory list accepted by the WA and chemical composition of some valves and taps installed did not comply with BS requirement in respect of lead content.
- (ii) Despite non-compliance with BS requirement, leaching test results of valves and taps not complying with BS requirement were similar to those complying with BS requirement. That was, they did not contribute to excessive lead in water.

(d) Recommendations

- (1) Prevent recurrence of similar incidents in future

- (i) Prevent use of leaded solder material

An enhanced system for site inspection and testing during construction of plumbing works:-

- Qualified persons (e.g. building services engineer/building services inspector) to carry out adequate field inspection on the plumbing works.
- Conduct systematic non-destructive test to soldering joints during construction (e.g. quick lead test or x-ray forensic spectrometer).
- Arrange random sampling and testing of soldering materials delivered to site.

- (ii) Stipulate the testing of four additional heavy metals (lead, chromium, cadmium and nickel) for water samples and testing of solder joints samples in newly completed inside service by Authorised Person and Licensed Plumber (WSD Circular Letters 1/2015 & 5/2015 already issued).

- (2) The WA to explore the use of pipe materials free from the risk of misuse of leaded solder joints in the plumbing works, e.g.:

- use of silver brazing or compression joint for copper pipes
- use of stainless steel pipes

- (3) The Housing Authority to consider requiring the adoption of central procurement for soldering materials in new construction projects.

- (4) The WA to consider reviewing relevant legislations.

**3.2** Mr LAM Tin Sing, Enoch remarked that WSD had drinking water standards and quality tests for water delivered to the connection points of inside service. However, unlike some other countries, there were at present no stipulated standards for water quality at consumer taps. He suggested the Advisory Committee to consider if such standards should be pursued. The Chairman welcomed Mr LAM's remark and suggested further discussion on this subject would be made under the below item on proposed enhancement measures to strengthen the management of inside services.

**3.3** On the Chairman's presentation on excessive lead content in drinking water, Mr WONG Siu Wai, Kenny commented that the public may be easily confused in the use of different units by the task force for concentration of lead in water and that used by WHO. In addition, he asked if the lead/ lead

particles being carried away by water and deposited on the inside surfaces of mains and fittings found by the task force could lead to further dissolution of lead into water.

**3.4** The Chairman noted Mr WONG Siu Wai, Kenny's above comment and advised that he had made every opportunity to make the public media aware of the use of different units. For the lead/ lead particles deposited on the inside surfaces of mains and fittings, the Chairman commented it was difficult to remove all the deposited lead/ lead particles and it was therefore essential to avoid using material which caused excessive lead in water.

**3.5** Mr CHIK Wai Keung noted that there was a public view that the excessive lead was more likely caused by the pipe fittings other than the copper pipe. The Chairman explained that the contribution of lead in water by copper pipe, solder joints and fittings were carefully considered and investigated before arriving at the findings in the above item 3.1.

**3.6** On the issue of taking water samples, Mr CHAN Kin Man of WSD explained that different countries adopted different procedure for taking water samples (e.g. with/ without flushing of mains before taking water samples) which depended on the pipe material and purpose of tests. To check the quality of water under normal use, WSD followed ISO 5667 Part 5 which required flushing of inside services for about 2-5 minutes before taking water samples. Mr CHAN further explained that water samples obtained without prior flushing of mains only represented the content of dissolved metal in water but such should not be compared with WHO standards.

#### **4 Proposed enhancement measures of "Quality Water Supply Scheme for Building - Fresh Water" (the Scheme)**

**4.1** The Chairman commented that the Scheme was not satisfactory as it did not ensure water of good quality at consumers' water taps, like the case for Kai Ching Estate. The Advisory Committee would consider possible enhancement in this aspect.

**4.2** Mr LAM Tin Sing, Enoch remarked that at present there were no specified standards in regulations for quality of inside service water. In view of this, it may be more appropriate and practical to adopt a voluntary rather than mandatory approach on water quality for inside service water, similar to the Voluntary Water Efficiency Labelling Scheme (WELS) and the voluntary Energy Efficiency Labelling Scheme adopted by Electrical and Mechanical Services Department. WSD had held some preliminary discussions with property management offices and noted that they had concerns about the willingness of flat owners to allow taking of water samples in their flats; the costs of testing and also that the certificate under the present scheme only covered inside service located in the public areas of buildings. Mr LAM invited Members to consider the possible use of different certificates for Basic

Plan (water sampling at communal system) and Extended Plan (water sampling at individual households) as enhancement measures for the present scheme, in order to offer more incentive for the public to make effort to work towards Extended Plan achieving better quality for inside service water.

**4.3** The Chairman invited Mr IP Chit Ki of WSD to report on the proposed enhancement measures of the Scheme. Mr IP reported the proposed measures as follows:-

- (a) WSD launched “Quality Water Supply Scheme for Buildings – Fresh Water” since July 2002 to encourage the property maintenance agents to properly maintain their systems within the areas under their jurisdiction.
- (b) Assessment criteria of the scheme included inspection of plumbing system and cleansing of water tanks at least once every 3 months, and compliance with the prescribed limits for the testing parameters (pH value, colour, turbidity, conductivity, Iron, E. Coli and Total Coliform) of water quality examination.
- (c) In view of the recent incident of excessive lead content in potable water found in public rental housing estates, the aspect of water quality examination was reviewed for enhancement measures. WSD tabled a discussion paper entitled “Enhancement of the Quality Water Supply Scheme for Buildings – Fresh Water” for discussion and collection of views in the meeting with the Working Group on Quality of Water in Buildings (WG) on 21 August 2015. The proposed enhancement measures included additional testing of 4 heavy metals (Lead, Cadmium, Chromium and Nickel); extension of the scope and quantity in the sampling process; requirement of taking, collecting and testing of water samples by accredited laboratory, and audit checking on the applications by WSD; and the mechanism of returning the awarded certificates should the non-compliance with the assessment criteria of the enhanced scheme was not rectified within three months.
- (d) WSD also sought the views of the major property management companies on 8 September 2015 and revised the proposed enhancement measures for further discussion with the WG on 9 October 2015. WG advised that the existing Scheme should be suspended and a new scheme should be formulated to specify the water sampling, with adequate nos., be carried out at individual household irrespective the maintenance responsibility of the water supply system within the household.
- (e) WSD would consider WG’s advice and submit the revised proposal.

**WSD**

**4.4** Following on Mr IP Chit Ki’s report, the Chairman emphasized the importance of inclusion of the testing of consumers’ tap water quality into the Scheme in order to make the scheme meaningful and also favoured the use of different certificates as suggested in the above item 4.2.

- 4.5 Mr CHAN Siu Tack of Housing Department (HD) expressed that HD would support in principle the idea proposed by WSD.
- 4.6 Sr WONG Bay supported the basic plan and suggested to also include the efficient use of water in the different certificates of the scheme.
- 4.7 Ms SO Yee Ching, Phyllis opined that small estates were not eager to join the Scheme. She suggested promoting the concept of water safety also in addition to water quality to encourage more estates to join the Scheme.
- 4.8 Mr LAM Tin Sing, Enoch echoed that the enhanced scheme would be implemented in stages and obtaining the support of large estates in the early stage of the enhanced scheme was important. Offer of assistance to estates with difficulty in implementation of the Scheme may be considered in the later stage.
- 4.9 The Chairman advised that the WG would work out the enhanced scheme with WSD including details, e.g. percentage of testing, etc.
- 4.10 Dr LAU Wai Neng, Michael suggested to also allow re-testing in the enhanced scheme if rectification/ improvement work were made by estates after initial failure of the test results.

## **5 Proposed enhancement measures to strengthen the management of inside services including proposed leak detection of inside service**

- 5.1 The Chairman invited Mr CHEUNG Yip Kui of WSD to report the proposed enhancement measures to strengthen the management of inside service including proposed leak detection of inside service. Mr CHEUNG reported as follows:-
- (a) To enhance awareness of proper maintenance and minimise leaks in underground private water mains, WSD would extend the scope of the existing “Quality Water Supply Schemes for Buildings – Fresh Water and Flushing Water” by formulating a new scheme to cover leak detection of the underground private water pipes.
  - (b) Certificates would be awarded to buildings fulfilling the stipulated requirements of the proposed scheme. Prior to implementation, pilot trials of leak detection had been/would be conducted for buildings in public sector (selected government buildings/facilities and public housing estates) and private sector (residential buildings). Meetings were held with Architectural Services Department and Housing Department together with one of major private property management companies to collect their views on the proposed leak detection measures and to identify suitable buildings/estates for the pilot trials. Similar

meetings with other major private property management companies would also be shortly arranged.

- (c) Construction Industry Council would also be approached to arrange appropriate training course on the skill of leak detection for the stakeholders. In particular, the curriculum for the training course was drafted for discussion with Construction Industry Council.
- (d) Details of the proposed new scheme would be discussed in the future meeting with the WG on Quality of Water in Buildings.

**WSD**

- 5.2 Mr LAU Yuet Fan, Ivan asked if there were any existing mandatory requirements to deal with leakage or pipe bursts for inside service. Mr LAM Tin Sing, Enoch explained that in accordance with Waterworks Ordinance, WSD would issue letters to the owners requesting them to make good the leakage/ pipe bursts within specified time or otherwise water supply may be suspended.
- 5.3 Sr WONG Bay suggested enhancing the education of the public in their awareness for carrying out preventive and maintenance measures for inside service. Mr LAU Yuet Fan, Ivan commented that it may however be difficult for small estates to take such action, especially those without Owners' Corporations.
- 5.4 Dr MAN Chi Sum noted that management offices were generally not aware of the importance and means for preventive/maintenance works for inside service and suggested arrangement of workshops for property management offices
- 5.5 In response to the Chairman's query on the proposed plan, Mr CHEUNG Yip Kui explained that some estate management offices wished to have their own staff trained for the works and Construction Industry Council was approached for provision of appropriate training courses. Mr CHEUNG also added that the proposal would be submitted to WG for discussion while pilot scheme for two estates was under trial.
- 5.6 Dr CHING Cheuk Tuen, Regina of Department of Health asked about the details of the plan, e.g. required frequency of leakage testing, qualifications of the personnel carrying out the leakage tests and costs. Mr CHEUNG Yip Kui replied that the details of the plan were being worked out at present. Mr LAM Tin Sing, Enoch remarked that this plan for detection of underground inside service was a plan of its own not forming part of the "Quality Water Supply Scheme for Building - Fresh Water". Mr LAM added that the scope, frequency and costs of leakage detection could be different for different estates depending on their sizes and characteristics.

## **6 Integrated Education Programme on Water Conservation (IEP)**

**6.1** The Chairman invited Mr CATLIN Kit Wai, Stephen of WSD to brief Members on IEP. Mr CATLIN reported the progress as follows:-

- (a) The Cherish Water Campus Integrated Education Programme was rolled out in September 2016, i.e. at the 2015/16 school year.
- (b) IEP aims to enhance students' knowledge about protection of water resources and the global water situation, and encourages them to adopt water conservation practices at school and at home, as well as to spread the water-saving message to their peers, families and the community.
- (c) IEP comprises 3 phases, namely Stage 1 - Exploring new knowledge (探知・探究), Stage 2 - Taking actions (行動・實踐) and Stage 3 - Knowledge sharing (延伸・分享). According to students' progress in learning, schools may participate in activities in any phase with a view to enhancing students' knowledge about water resources in a step by step way and establishing their positive attitude towards water conservation.
- (d) A four-part teaching kit and an activity tool set covering 21 activities and 18 games had been compiled and were being distributed to all primary schools in Hong Kong.
- (e) As at the day of the meeting, some 130 primary schools had joined IEP.
- (f) Kick-off meetings were being held with participating schools.

**6.2** Mr LAM Tin Sing, Enoch added that meetings were held with primary schools and noted that it might be more effective if teachers were also equipped with the knowledge in water conservation, facilitating them to educate more students directly. IEP was a large programme which helped to train up primary school teachers in water conservation by provision of training courses and training material.

**6.3** Dr MAN Chi Sum suggested some awards might be made to encourage students to practice of what they had learned. Mr CATLIN Kit Wai, Stephen added that some awards for performance had been included in the programme.

**6.4** Dr CHING Cheuk Tuen, Regina of Department of Health raised comments on the training material tabled in the Meeting. She highlighted the need for different departments to develop and communicate consistent educational messages to students with respect to handwashing. Mr LAM Tin Sing, Enoch noted and remarked that the material would be sent to relevant departments for comment.

**WSD**

**6.5** Mr CATLIN advised that Water Conservation Week had been postponed to next year.

**7 Visit to Guangdong in 2015**

**7.1** The Chairman invited Mr CHAU Sai Wai of WSD to brief Members on the visit to Guangdong in 2015. Mr CHAU reported that the annual visit to Guangdong was being worked out between WSD and Guangdong Water Resources Department (廣東水利廳) and Members would be informed of the details shortly. **WSD**

**7.2** Dr MAN Chi Sum suggested if outsiders (e.g. teachers) may also be included in the visit to Dongjiang to promote public education. Mr LAM Tin Sing, Enoch welcomed the suggestion and which may be further considered under the IEP. **WSD**