

**Drinking Water Safety Advisory Committee  
Twelfth Meeting**

**Date** : 22 May 2023 (Monday)  
**Time** : 2:30 pm – 4:30 pm  
**Venue** : Conference Room 4, G/F, Central Government Offices,  
2 Tim Mei Avenue, Tamar, Hong Kong / Video conferencing

**Minutes of Meeting**

**Members Present**

Ir LEUNG Kwong Ho, Edmund	Chairman
Ir Dr CHAN Hon Fai	Vice Chairman
Dr CHUI Ting Fong, May	
Ir CHUNG Chi Ming	
Dr CUNLIFFE David Anthony	(via video conferencing)
Dr HO Koon Sing, Gray	
Mr HO Kui Yip, Vincent	
Prof LEE Wing Yan, Vivian	
Ir Prof LO Man Chi, Irene	
Ir TANG Ming Sum, Michelle	
Dr TO Kai Wang, Kelvin	(via video conferencing)
Prof WONG Kong Chu, Chris	
Dr WONG Siu Ming, Raymond	
Dr WONG TAAM Chi Woon, Vivian	
Dr HO Ka Wai, Rita	Head, Non-Communicable Disease Branch, Department of Health (“DH”)
Mr CHAU Sai Wai	Deputy Director of Water Supplies
Mr KAN Yim Fai, Fedrick	Secretary Team Leader (Water Safety), Development Bureau (“DEVB”)

### **Members Absent with Apology**

Prof HO Kin Chung

Dr MA Yiu Wa, Anthony

Prof TSE Lap Ah, Shelly

Mr CHAU Siu Hei, Francis

Deputy Secretary for Development (Works) 3

### **In Attendance**

Ms KWAN Kai Yin, Janice

Assistant Secretary (Water Safety) 1, DEVB

Mr KWOK Yau Ting, Kelvin

Project Assistant Secretary (Water Safety) 2, DEVB

Ms YEUNG Man Yan, Didi

Executive Manager (Water Safety), DEVB

Mr MA Hon Wing, Wilson

Assistant Director/Development, Water Supplies Department (“WSD”)

Mr CHOY Tak Yip

Chief Chemist, WSD

Ms LAM Lai Hang, Mable

Chief Engineer/Technical Support, WSD

Mr IP Wing Cheong, Ricky

Senior Mechanical Engineer/Material Control & Testing, WSD

Mr LI Ting Lun, Jerry

Senior Mechanical Engineer/On-site Chlorine Generation, WSD

Ms SO Lai Wah, Florence

Senior Chemist (6), WSD

Mr YU Chi Wing, Albert

Senior Chemist/Water Quality (Standards and Monitoring), WSD

Ms CHAN On Yee, Anna

Chemist/Planning (2), WSD

### **Action by**

1. At the request of the Chairman, the Secretary reported that WSD had issued a press release in January 2023 providing a brief recap for the 2022 Enhanced Water Quality Monitoring Programme (“Enhanced Programme”) and the investigation finding of the lead exceedance case found in June 2022. With reference to Members’ advice in the eleventh meeting, WSD had in the press release appealed to property owners and consumers to note the importance of proper installation, use and maintenance of water dispensers and water filters.

2. The Secretary further reported that DWSAC Paper No. 1/2023 concerning the annual drinking water quality statistics under the Enhanced Programme in 2022 had been circulated to Members in February 2023 and no comment had been received from Members. The annual statistics had been uploaded to WSD's website.

3. The Secretary advised that no comment on meeting materials including DWSAC paper No. 2/2023 had been received from Members absent from this meeting.

#### **Agenda Item 1: Confirmation of Minutes of the Last Meeting**

4. The minutes of the eleventh meeting were confirmed.

#### **Agenda Item 2: Matters Arising from Last Meeting**

5. There was no matter arising from last meeting.

#### **Agenda Item 3: Updates on Use and Operation of Onsite Chlorine Generation Plants for Drinking Water Treatment in Hong Kong** (DWSAC Paper No. 2/2023)

6. Ms Florence SO, Senior Chemist (6) of WSD updated Members on the latest arrangement and programme on the use and operation of on-site chlorine generation ("OSCG") plants in 12 large water treatment works ("WTWs") for oxidation, disinfection and provision of residual disinfectant (collectively called "chlorination") in drinking water treatment, as well as the strengthened control measures in place on the use of sodium hypochlorite ("NaOCl") solution for chlorination.

7. A Member enquired about the criteria for classifying the 12 large WTWs into two groups, viz. Group A and Group B, in the arrangement. Mr Jerry LI, Senior Mechanical Engineer/On-site Chlorine Generation of WSD replied that several factors had been taken into account including the capacities of WTWs and OSCG plants, as well as the term contractor's resources such as local competent persons and overseas experts from the OSCG plant manufacturers. He added that the

total design capacities of OSCG plants in Group A WTWs could support the normal daily chlorine requirement in Hong Kong and would even have some spare capacity to cope with plant breakdown. The Member also enquired why the time for training sufficient competent operation and maintenance (“O&M”) personnel had been longer than originally expected, and how confident was WSD in completing the necessary training to enable targeted migration to full operation of OSCG plants in all the 12 large WTWs by end 2025. Mr Jerry LI responded that the O&M of the OSCG plants had been found to be far more complicated than originally envisaged during plant installation stage and from the O&M term contractors’ experience, it would usually take several months for newcomers to get familiarised. To achieve the targeted migration by end 2025, WSD had formulated a systematic comprehensive training programme for OSCG O&M personnel. The training programme comprised classroom training, on-site demonstration, and on-site job attachment with the engagement of O&M term contractors and overseas manufacturers.

8. In response to a Member’s question about the monitoring frequency of chlorate level in the drinking water in the WTWs, Ms Florence SO advised that the monitoring frequency was monthly if chlorine was used and weekly if NaOCl solution was used for chlorination. Mr TY CHOY, Chief Chemist of WSD, supplemented that WTWs generally used two batches of NaOCl solution per week and the chlorate level in drinking water would be monitored on the last day of use of any batch of NaOCl solution. If necessary, the testing frequency of the chlorate level in drinking water could be once every three to four days. The Member further enquired if WSD had formulated any action level for disinfection by-products (“DBPs”) other than chlorate and the total DBPs level allowed. Mr TY CHOY replied that based on the figures collected in the past few years about the formation of DBPs when using NaOCl solution, the other DBPs had been continuously maintained at very low or even undetected level.

9. Noting from Annex 2 of DWSAC Paper No. 2/2023 that there had been a maximum chlorate level of 110 µg/L which exceeded the action level of 100 µg/L, the Chairman invited WSD to explain what actions had been taken and the effectiveness of such actions. Ms Florence SO advised that the water sample concerned was collected on the last dosing day of the subject batch of NaOCl solution and a new batch of fresh NaOCl solution was put in use instead thereafter. Nevertheless, WSD would conduct a review for every exceedance case of chlorate action level. For the subject case, WSD found the control measures had been implemented properly. She further shared that minor fluctuations in raw water quality might cause some slight deviation between the estimated and actual

chlorate level; and the deviation was considered acceptable as the actuals were still well below the standard value of 300 µg/L.

10. The Chairman concluded that the Committee took note of WSD's interim O&M plan for the OSCG plants so as to ensure a steady supply of chlorination agent for drinking water treatment during the interim period up to end of 2025, as well as WSD's confirmation of implementing stringent monitoring and control to ensure the levels of DBPs in drinking water would comply with the Hong Kong Drinking Water Standard ("HKDWS"). To this end, WSD was requested to continue exercising the stringent monitoring and control procedures when NaOCl solution was used, so that while sufficient disinfection was maintained, the levels of DBPs in drinking water could be minimised and comply with the HKDWS. In particular, the Committee noted the prudent chlorate action level set by WSD would enable actions to be initiated at an early juncture well before the standard value was reached. In the long run, WSD was expected to take all steps to nurture the required in-house expertise and experience, so as to meet the targeted full operation of OSCG plants at Group B WTWs by end 2025.

#### **Agenda Item 4: Updates on Implementation of Action Plan for Enhancing Drinking Water Safety in Hong Kong ("Action Plan")**

11. Ms Anna CHAN, Chemist/Planning 2, and Mr Ricky IP, Senior Mechanical Engineer/Material Control & Testing, of WSD, updated Members on the implementation of the Action Plan.

12. A Member enquired about the proportion of General Acceptance ("GA")\* products in the market and WSD's measures to enhance their market shares. Mr Ricky IP responded that about 20% of GA products had been approved as GA\* products. Ms Mable LAM, Chief Engineer/Technical Support of WSD, supplemented that WSD would appeal to suppliers to submit application for the GA\* scheme during relevant stakeholder meetings in preparation for the legislative amendment of the Waterworks Ordinance ("WWO"). On the Registered Plumbing Contractor ("RPC") system which would be introduced as a statutory requirement, the Member suggested WSD encourage the Architectural Services Department ("ArchSD") and the Housing Department ("HD") to arrange more pilot projects to participate in the Stage 2 of the voluntary RPC scheme for better adaptation. Ms Mable LAM said that WSD had regularly met with them and encouraged them to arrange more projects to join. Mr SW CHAU, Deputy

Director of Water Supplies, added that WSD would convey the Committee's suggestion to ArchSD and HD.

**WSD**

13. A Member enquired whether there would be any recertification process for a RPC. Ms Mable LAM replied that WSD was still developing the requirement for RPC system for incorporation in the new WWO. On the Member's enquiry regarding the building age of the 3000 residential buildings with water safety plans implemented, Ms Mable LAM would provide the information after the meeting. The Member also enquired about the languages available for the promotional materials of drinking water safety and the media used for promotion. Ms Mable LAM advised that promotional materials were prepared in bilingual and WSD had promoted through social media such as Facebook, Instagram, as well as traditional paper-form leaflet.

**WSD**

*[Post-meeting note: WSD provided the breakdown of buildings with water safety plans implemented by building age to Members on 11 July 2023.]*

*[Ir Dr CHAN Hon Fai joined at this juncture.]*

14. A Member remarked that the multi-pronged approach to improving the plumbing control had been impressive. He enquired if the compliance rate of 99.9% in the no. of water samples under the commissioning for new plumbing installations for the reporting period of October 2022 to March 2023 had represented an improvement as compared with previous periods. Ms Mable LAM advised that the compliance rate had been maintained at over 99%, while the result of the latest reporting period had shown improvement in comparison with the compliance rate of 99.7% (in terms of no. water samples) reported in the last meeting. The Member further shared that Australia had earlier promulgated the policy of using low-lead products with a 3-year transition period. In this connection, Australia was looking into those lead-replacement elements (e.g. silicon and selenium) on any potential impact, though he believed that these elements would unlikely give rise to any issue. Ms Mable Lam responded that enhanced plumbing material control would be introduced via the amendment of WWO, and WSD would discuss and finalise the details with the Working Group and its sub-group on plumbing materials established for the purpose of legislative amendment.

15. In response to the Chairman's observation that approval had only been issued to around half of the eligible buildings applying for the Water Safety Plan Subsidy Scheme, Ms Mable LAM explained that building owners had to go through various

building management procedures including convening owners' meetings to confirm their official consensus to joining the Scheme, which had been affected by COVID-19. WSD could only proceed with the vetting procedure and grant approval upon receiving the record of relevant owners' meeting.

## **Agenda Item 5: 2022 Annual Report on Drinking Water Quality in Hong Kong**

16. Ms Janice KWAN, Assistant Secretary (Water Safety) 1, and Mr Kelvin KWOK, Project Assistant Secretary (Water Safety) 2 of DEVB, briefed Members about the 2022 Annual Report on Drinking Water Quality in Hong Kong prepared by the Drinking Water Safety Unit ("DWSU") of DEVB, which would be published at DEVB's website after the meeting.

17. A Member asked about the Surprise Check frequency and the difference amongst the three categories of audit findings, i.e. Non-conformity ("NC"), Opportunity For Improvement ("OFI") and Observation ("OBS"). Mr Kelvin KWOK replied that one Surprise Check would generally be conducted every quarter. Regarding the three categories of audit findings, (i) NC meant an item which had not complied with the documented requirement in the Drinking Water Quality Management System ("DWQMS") or relevant guidelines; (ii) OFI referred to a finding which might have affected the operations or had some risk/impact on the drinking water safety but such requirement had not been specified in the relevant documents; while (iii) OBS was related to some sort of nice-to-have or good practice. The Member further enquired about the timeframe for the audited Region to respond to the audit findings. Mr Kelvin KWOK expressed that for simple issue, the Region concerned would take corrective action immediately after the field check. For more complicated issue, the Region would inform DWSU about its implementation plan with a target completion date in the audit report.

18. A Member asked if the Third Party Audit ("TPA") or Surprise Checks had looked into the possibility of the infiltration of *burkholderia pseudomallei* into fresh water service reservoirs ("FWSRs"). Mr Kelvin KWOK pointed out that as *burkholderia pseudomallei* was sensitive to residual chlorine, the audit team had included the checking of the adequacy of residual chlorine in all FWSRs and fresh water tanks during the audit exercise. The Secretary supplemented that the Centre for Health Protection ("CHP") of DH and medical experts had conducted an investigation on the melioidosis cluster last year. They considered that there

had been no evidence to suggest the infection cases were related to the drinking water supplied by the FWSRs and concluded that the drinking water supplied by WSD was safe. Mr TY CHOY added that WSD had nonetheless implemented prudent measures including raising the residual chlorine level to 1.2 mg/L to reassure the members of the public against the melioidosis cases and would liaise with the CHP on the suitable time to lift such prudent measure.

19. A Member enquired if the Government had any plan to conclude the findings obtained from the Enhanced Programme which had been operating for five years since December 2017. In response, Ms Janice KWAN said that the review of HKDWS underway would take into account the water quality data collected from the Enhanced Programme, and the review results would be reported to the Committee for discussion. The Member recommended WSD to make use of the collected data to review the scope of the Enhanced Programme, so as to focus the resources on key parameters (e.g. removing parameter(s) constantly at undetected level, and including new parameters of emerging concerns such as antibiotics and pesticides). Mr TY CHOY responded that WSD would review the test results concerned to consider if certain parameters might suitably be taken out which aligned with the principle that monitoring at consumers' taps would not be needed if the level of a parameter would not change in the distribution system.

20. In response to a Member's enquiry on water discolouration incident in the Ma On Shan area, Mr TY CHOY explained in details on the cause of clogging of fittings and subsequent transient instability in the manganese removal process.

21. A Member observed that the Surprise Checks had identified more audit findings than the TPA, and enquired if DWSU would streamline or modify the scope of the auditing exercises to enhance the audit efficiency. Mr Kelvin KWOK explained that the TPA and Surprise Checks served different purposes, i.e. TPA involved a non-local technical expert auditing from a macro view for the implementation of DWQMS while the Surprise Checks focused on specific areas which were complicated and likely to have problems. The Secretary supplemented that three TPAs had been conducted so far and the gradual decrease in number of findings reflected that WSD had made continuous improvement.

22. The Chairman concluded that the Committee acknowledged the Government's continued effort in ensuring drinking water safety, and generally agreed with the comments made by DWSU on WSD's performance in 2022.



## **Agenda Item 6: Summary on International and Local Water Quality Incidents**

23. Ms Anna CHAN gave a brief account of WSD’s review on major international water quality incidents for the period from July to December 2022. Of the three incidents more relevant to Hong Kong, she deliberated why their risks of occurrence in the local context were low and Members raised no specific comments. She also reported that there had not been any significant water quality incident in Hong Kong since last meeting.

24. The Chairman reminded WSD to continue upkeeping their operational controls from source through treatment to distribution, so as to prevent water quality incidents from occurring. For the overseas incident in relation to *Legionella*, the Chairman suggested WSD share the information with the Prevention of Legionnaires’ Disease Committee (“PLDC”) so that the PLDC could also be kept abreast.

**WSD**

*[Post-meeting note: WSD shared the overseas water quality incident on Legionella to the PLDC at its meeting held on 7 June 2023.]*

25. The Chairman invited Members to raise to the Committee for discussion should they become aware of any international water quality incidents or issues that were of interest or relevance.

## **Agenda Item 7: Any Other Business**

26. There being no other business, the meeting adjourned at 4:30 p.m.