2016 年 2 月 1 日

上午 10 時 04 分恢復聆訊

出席人士： 許偉強大律師及鄭欣琪大律師，為外聘律師，代表食水含鉛超標調查委員會

王鳴峰資深大律師、陳樂信大律師及羅頌明大律師，由律政司延聘，代表水務署署長

李柱銘資深大律師、譚俊傑大律師、吳思諾大律師及吳宗鑾大律師，由何謝韋、李偉業律師事務所延聘，代表啟晴邨及葵聯二邨公屋居民代表 Lee Pui Yi、Chong So Nga 及 Lui Hui Ping

麥高義資深大律師及許佐賓大律師，由的近律師行延聘，代表保華建築營造有限公司

何沛謙資深大律師及殷志明大律師，由羅夏信律師事務所延聘，代表香港房屋委員會

Mr Ian Pennicott 資深大律師及林定韻大律師，由孖士打律師行延聘，代表中國建築工程（香港）有限公司

林國輝大律師，由孖士打律師行延聘，代表瑞安承建有限公司

黃佩琪大律師、李頌然大律師及杜慧燃大律師，由顧增海律師行延聘，代表有利建築有限公司、明合有限公司及伍克明

許偉強先生：主席先生，就喺水務署傳召第一名證人之前，咁我就希望指出有幾點嘅，就係上個禮拜四，我哋就收到水務署就有多四份額外嘅證人口供，咁另外上個禮拜五亦都係收到水務署一啲...

主席：星期四收到咩嘢話？

許偉強先生：上個禮拜四就收到水務署係多四份額外嘅證人口供。

主席：係。

許偉強先生：係。咁就上個禮拜五亦都收到水務署一啲進一步嘅文件，咁最重要就係有一個係水務署就聲稱係一個專家證人嘅供詞嚟嘅。咁呢啲都係我哋去到禮拜四、禮拜五先至收到嘅文件同埋進一步嘅資料。

咁我都知道因為呢個委員會就唔係話即係受到任何即係既定嘅一啲程序約束嘅。咁不過我相信就即係喺一啲咁遲--如果我哋講緊水務署作為即係呢一個研訊入面咁重要嘅政府部門，即係喺傳召第一個證人之前一個工作天、兩個工作天之前先至遞交啲咁重要嘅文件，即係我就覺得唔係幾理想嘅，呢個做法。

因為點解我咁講呢，就係首先如果我哋睇番嗰四份新加入嘅證人口供，其中黃仲良第三份證人口供，佢係反駁呢個工程師學會報告入面尤其是係有關呢個 licensed plumber（持牌水喉匠）嗰個制度嗰啲缺點嘅。咁但係呢個報告我哋 11 月頭嗰陣時已經收到㗎嘞，而我哋當時喺盤問房委會嘅證人，Ada Fung 嘅時候都已經有提及過嗰份報有幾點嘅。

另外林正文第二份口供都係即係進一步說明咗水務條例第 15 條嗰個 licensed plumber 嗰個角色，同埋水務署就住呢一個制度下嘅參與。咁我哋每一個人都知道呢個係一個課題嚟㗎喇。咁水務署其實喺佢哋舊年 8 月份嗰個 statement 都已經提及過 licensed plumber 嗰一點㗎嘞。

另外有一位陳世偉（周世威？），一個水務署嘅新嘅證人，就解釋點解喺蘇格蘭、喺威爾斯嗰啲咁嘅食水，因為呢個含鉛嘅呢個 solder material，呢個焊料出現問題，一啲咁嘅資料喇，佢哋係唔知嘅，咁佢哋解釋番呢樣嘢。

但係就住蘇格蘭、威爾斯、美國嗰啲問題，亦都係我哋 11 月 2 號、3 號、4 號，喺聆訊入面都已經提及過嘅問題嚟㗎嘞，咁就唔知點解要即係等咗三個月先至作出呢個回應呢咁。咁呢個唔係淨係一個態度嘅問題，而係即係對於我哋準備盤問都係有一定嘅影響嘅。因為即係我相信每一方喺呢個調查委員會嘅聆訊入面都係就住都幾緊密嘅時間表去作出準備嘅。咁尤其是我哋首當其衝，每一個證人走出嚟嘅時候，我哋第一個係要盤問證人嘅。

咁所以，即係如果我哋喺今日，你話傳召第一個證人之前嘅一個或者兩個工作天之前先至遞交咁多嘅文件，即係確實令到我哋即係嗰個準備係有相當困難嘅。咁但係呢個我都唔去批評，因為即係我哋都要盡量做晒所有嘅嘢，但係我就覺得呢個做法似乎就即係有點兒說不

過去喇。

加上上個禮拜四畀我哋嗰個新、進一步嘅文件嘅時候，從來冇解釋點解咁遲。

委員會一早都已經就住證人口供嘅時間表作出咗命令㗎嘢。從來都冇向我哋提出申請話要求委員會批准加入呢啲咁嘅新嘅進一步嘅證人口供。咁我覺得係咪即係應該喺呢個規矩上，起碼喺一個法庭基本禮儀上都講聲畀我哋聽，等我哋知道有啲咁嘅情況。再加上喺呢四十幾日嘅聆訊，日日都見住咁多律師，會唔會通傳一聲話「喂，我哋有新文件喎，可能會遲啲畀你哋喎」，都冇。

另外新嗰個佢哋聲稱專家證人口供，簡先生嘅證人口供，我哋咁多日聆訊入面，聽咗所有 licensed plumbers 嘅證供，聽咗 VTC，聽咗 CIC，亦都聽咗呢個水喉潔具商會嘅證供，然後突然間，1 月 25 日，上個禮拜五，就遞交一份新嘅，咁你話點樣去處理呢個專家證人口供呢？

咁如果你話咁遲，最多係得兩個原因嘅嗰。一個原因就係可能慢，但係我相信一定咁大嘅律師團隊唔會係效率低。但係如果唔係效率低嘅，咁如果係睇咗咁多個證人同埋睇咗咁多文件先至作出一啲咁嘅回應嘅，又似乎對各方就唔係幾公允，所以我就即係希望帶出呢一點。

而我亦都希望唔好再喺呢個聆訊入面再有其他進一步嘅文件嘞。但係除非如果話就住呢個委員會，如果有啲咩新加入嘅文件，佢哋想回應嘅，咁呢個作別論。但係如果佢哋自己就住一直以嚟我哋探討緊嘅問題，再作啲新嘅回應，我就希望唔會再出現呢樣嘢。

王先生：主席同埋委員，就水務署提交嘅新證人口供，我想有一個解釋，向主席同埋委員，同埋各位參與呢個聆訊嘅各方面。

就嗰個新嘅證人口供，主要就係係有一啲需要澄清，例如嗰個 HKIE，我哋唔係反駁佢，而係有啲嘢，資料上嘅嘢，我哋需要澄清。咁嗰啲澄清其實我哋可以叫證人喺證人台嗰度澄清，或者經過我嘅主問去澄清。但係我哋諗過之後，就話為咗慳時間，就好過我哋要 call 個證人，然後通過證人嘅盤問，或者我去主問，去將嗰啲澄清嘅嘢攞出嚟。咁所以建基於咁嘅理由，所以我哋就為咗慳時間，就有一份文件，就將要澄清嘅內容寫出嚟。其實個目的就唔係想製造任何不便。其實目的係想製造方便。呢個係我哋第一嗰個即係重要考慮。我哋並唔係想有任何嘅 advantage take over others。呢個好緊要嘅。

主席：而家睇落去就係喎。

王先生：主席，如果有咁嘅觀感，如果各方面認為需要多啲時間嘅，我哋係願意畀多啲時間。

主席：我唔會畀多啲時間你呀，對唔住。

王先生：得，明白，明白。

主席：我唔會畀咁多時--因為我哋有我哋既定嘅時間表嘅，係咪先？

王先生：明白，明白。即係我嘅意思係話如果嗰個律師需要時間去準備，唔係我哋需要時間準備。

主席：呢啲議題，其實未開始嘅時候你都差唔多知㗎喇。

王先生：係，我知道，係。

主席：啱唔啱？點解要上個禮拜，禮拜尾先至突然之間入幾份嘅咁樣樣嘅證人供詞呢？

王先生：主席，好似我頭先咁講，我哋唔係話特登留到最後先入嘅，而係話即係我哋係要權衡兩樣嘢，一係就係經過證人嘅主問去澄清一啲問題，或者我...

黎先生：Hong Kong IE 嗰啲好耐㗎喇。

王先生：嗯？

黎先生：Hong Kong IE 嗰啲入咗好耐㗎喇。

王先生：我知道，我知道，我知道。

黎先生：你唔係要隔咁耐，然後先至突然間先至出現啲文件嘅，係咪？

王先生：我明白，明白，委員，我明白。即係我哋嗰個選擇，我...（聽不清）向你解釋，我哋嘅選項，一係就係唔入嗰啲證供，然後根據我用主問嘅方式嚟到叫佢澄清一啲問題，或者我哋用書面，我讀出嚟，我哋覺得咁樣會快啲，多過我去主問。其實嗰個原則係咁樣嘅啫，唔係話有咩嘢特別嘅理由想製造一個咁嘅觀感嘅。

主席：我又唔係好同意喎，因為我哋而家睇到嗰啲 witness

statements，即係差唔多逐點駁人哋嘅，根本就已經係 tailor 好晒嘅。

王先生：係。即係我同意主席你嘅講法，嗰個係我哋想逐點、逐點去澄清嘅。

主席：啱唔啱？

王先生：係。

主席：咁我哋最初訂立嘅規矩就話證人供詞幾時要入，除非有好特別嘅情況，譬如好似副署長，房署嗰啲，咁我哋叫佢返去搵啲文件，咁跟住佢又有一個 supplementary statement。咁嗰啲我哋認為冇問題。不過你呢啲咁樣樣，licensed plumber 喎，section 15 喎，呢啲咁樣，開宗明義，係人都知道講乜嘢㗎喇。

王先生：係。

主席：係咪吖？你而家聽晒所有嗰啲證供、證據之後，跟住就逐點喺度駁人哋。

王先生：唔係，我哋以為嗰個--主席，你係同埋呢個委員會係想聽到啲事實，咁所以我哋就想--即係唔係話特登想 take advantage，而係想將啲事實講出嚟。咁至於嗰啲事實，主席，你畀幾多 weight，當然係主席同埋委員你哋嗰個酌情權喇，咁但係我哋個目的都係希望將嗰啲嘢擺出嚟啫。

主席：總之就由今日開始，如果你哋任何一方要入任何嘅 witness statements，唔該事先向我申請。

王先生：主席，關於呢點，有一樣嘢我要喺呢度講嘅，既然委員會嘅律師提出呢點。有一份--多一份專家報告，關於個 water sampling，嗰個 water sampling 嗰個專家。咁我哋都等緊委員會嘅專家報告，即係個 final report，by 呢個 Professor Fawell 同埋 Joseph Lee 嗰個 final report 嘅。我嘅理解就係呢個禮拜三或者呢個禮拜中會有個 final report。咁我哋都會有一個係唔係水務署嘅專家，睇緊呢個問題。咁我哋係想睇埋嗰個專家報告，然後一次過回應嘅。咁呢個我哋希望禮拜五，最快禮拜五可以入到嗰份專家報告。

主席：咁如果你哋入到嗰份專家報告，咁你哋嘅專家又會幾時嚟畀證供呢，請問？

王先生：或者可以安排佢同呢個 Professor Fawell 出席前後，一次過畀。

主席：咁要幾耐呢？我哋位英國嘅專家就下個禮拜，即係--唔係下個禮拜，即係放完新年之後，農曆新年之後就開始畀口供㗎嘞，咁你係咪想聽晒人哋講嘅先，然之後你哋又 file 你哋嘅 expert 呢？

王先生：唔係，我哋希望呢個禮拜五 file 嘅。即係我哋希望見到個 report，然後我哋 comment on 個 report，rather than 我哋睇。因為如果唔係，我哋可能都入個 reply report 嘅。

主席：咁點解唔可以一早入呢？

王先生：因為我哋未見到嗰個 Professor Fawell...

主席：你使乜見啫。

黎先生：你哋嘅專家小組，個專家報告唔需要等人哋個 report 入咗嚟先至入㗎，你自己...

主席：你都知道人哋個 preliminary report 點寫㗎喇。

王先生：係，但係因為我哋唔知道個 preliminary report 嗰個...

主席：咁點解你唔可以畀個 preliminary report 我先呢？

王先生：即係...

黎先生：點解你每一次都係等咗人哋嘅 report，你先至交你嘅 report 呢？

王先生：唔係，即係咁樣，即係我哋--如果委員會認為我哋可以交兩浸 report，一個係我哋嘅 preliminary report，一個係我哋嘅 final report，我哋當然可以喇。

主席：啱唔啱？

王先生：我哋可以㗎，即係如果你認我哋可以入一份 preliminary report。

主席：交喇。

王先生：係。

主席：幾時交到吖？

王先生：禮拜五。

主席：交喇。

王先生：係。

主席：你唔使等人㗎嘛。

王先生：係，係，我哋原本就係 target 禮拜五入嘅。

主席：你知道，你話--譬如好簡單，你問咗你哋個 chief chemist，佢認為咁樣樣。佢話你哋，喂，老老實實--其實你一早都知喇，因為我哋上一次，一出咗個 preliminary expert report 嘅時候，你水務署夜晚黑十點幾、十一點鐘已經發呢個 press release 喇。

王先生：明白，明白。

主席：係咪？

王先生：明白。

主席：你哋話冇問題吖嘛。

王先生：我哋話冇衝突，兩個方法。

主席：咪係囉。

王先生：係。

主席：你憑乜嘢嘢講冇衝突呢？

王先生：係。

主席：咁你梗係攞咗 instructions，有人 back up 你哋，係咪？

王先生：係，係。

主席：咁你點解唔講畀我哋聽呢？

王先生：你其實喺陳健民...

主席：點解要 last minute 先至講呢？

王先生：唔係，主席，...

黎先生：你仲要再等埋人哋嘅 report，你先至再交添。

王先生：唔係，唔係。唔係，主席同埋委員，或者我解釋一下。喺陳健民嘅第四個 witness statement 其實已經我哋講解咗點解冇衝突㗎嘞，兩個。我哋已經喺陳健民嘅第四個--即係 chief chemist 個 witness statement 解釋咗㗎嘞。我哋而家只不過係想因應嗰個問題，搵多一個非水務署嘅專家去講呢樣嘢。

主席：非水務署嘅專家，咁即係點樣樣呢？幾時會嚟畀口供呢，畀幾耐呢？

王先生：諗，...

主席：對唔住呀，喂，我有個期限，我要交報告。你而家係咪即係話畀我聽，「啊，我都唔知㗎，總之凡係講一啲嘢，我水務署唔啱聽嘅呢，我就會有人出嚟駁你哋㗎嘞，不過就唔知搞幾耐」？

王先生：哦，唔係，唔係，主席，唔係咁嘅意思，唔係咁嘅意思。咁樣或者節省個時間喇，我哋嗰個 preliminary report 會係喺呢個禮拜五入。

主席：即係總之你嘅意思就即係你哋嘅 report 就有 final say，因為我哋啲證人就已經講晒嘞，係咪咁嘅意思？

王先生：唔係，即係嗰個係講嗰個 water sampling 啫，即係嗰個攞水辦嗰個方式，嗰個係一個專家嗰個意見嘅。

主席：咁點解唔可以一早攞呢？

王先生：係因為其實我哋原本嘅用意係想睇埋 Joseph Lee 同埋...

主席：Exactly 你就係想睇埋人哋講咩嘢吖嘛，係咪？

王先生：係，係。

主席：啱唔啱？

王先生：係。

主席：你講得好啱呀，跟住你就逐點駁吖嘛。

王先生：咁如果我哋再 file 一個 reply report，亦都會有咁嘅作用嘅。

主席：咁另外一件事。

王先生：係。

主席：啱唔啱？

王先生：唔係，即係而家我哋都願意係禮拜五入一個 preliminary report，and then 睇完 Professor Fawell 同埋 Joseph Lee 嗰個，如果我哋有咩嘢 reply，我哋可以入一個 reply report 咁樣嘅。

主席：總之由今日開始，任何人入任何嘅 statement、report，唔該一定要得到我哋委員會嘅批准。

王先生：明白。

主席：因為我唔想嗰時間同你喺呢度糾纏落去。

王先生：明白。

主席：你認為咁樣樣公唔公平呢？

王先生：主席，我就認為如果嗰個原則係將所有嘅嘢話畀個委員會知道，其實係通過呢個 witness statement 或者個證人台入面講嘅嘢，邊一樣係比較 efficient，同埋最終其實呢個委員會都可以決定到嗰啲問題嗰個重點喺邊度，所以...

主席：譬如好簡單，簡國樑嗰啲 so-called expert report，你話畀我聽有啲咩嘢新意呢，除咗反駁人哋嗰啲之外？話畀我聽。

王先生：簡先生嗰個 expert report 主要係想講，即係佢作為一個好 experienced 嘅 licensed plumber，佢自己嗰個...

主席：咁多 plumber 上嚟，你哋問過人哋幾多嘢？

王先生：有三個 licensed plumber 上嚟，主席，以我記憶冇錯嘅話，

三個 licensed plumber 我都有問過。

主席：我知你有問，係咪？

王先生：嗄。

主席：即係問咗幾多嘢？叫你第一個證人。

王先生：好。主席，我傳召第一個證人，係水務署嘅署長。

主席：請過去嗰面。

水務署第一證人：林天星（水務署署長）以本地話宣誓作供

主席：請坐林先生。

王先生：主席，林先生嘅證人口供係喺 C19.1 嘅 10279 頁，10279。

王先生主問

問：林先生，我想帶你睇你第一份嘅證人口供，係 c19.1 嘅 10279。

主席：開始，唔該。

王先生：好。

COMMISSION OF INQUIRY INTO EXCESS LEAD FOUND IN DRINKING WATER APPOINTED PURSUANT TO SECTION 2 OF THE COMMISSION OFINQUIRY ORDINANCE (CHAPTER 86) ON 13 AUGUST 2015

Witness Statement of LAM TIN SING, ENOCH

I, LAM Tin Sing, Enoch, the Director of Water Supplies of 48th Floor, Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong, do say as follows: -

A. I am the Director of Water Supplies ("**DWS**") and have held this position since 13 November 2013. The DWS is the head of the Water Supplies Department ("**WSD**") and the Water Authority ("**WA**") as defined under the Waterworks Ordinance (Cap. 102) ("**WWO**").

B. I make this statement pursuant to the request of the Commission of Inquiry into Excess Lead Found in Drinking Water ("**the Commission**"), conveyed in a letter from Messrs Lo & Lo to the Department of Justice dated 12 October 2015 ("**the 12 October Letter**"). Save where otherwise appears, the facts deposed hereto are within my personal knowledge or are derived from office files and records and sources to which I have access, and are true to the best of my knowledge, information and belief. Save as otherwise specified, this Statement adopts the same abbreviations and nomenclature as in the 12 October Letter.

C. In the 12 October Letter, various questions are raised to me by the Commission in relation to two main areas viz. (1) the supply of drinking water (including matters set out in the August Statement and (2) the licensing of plumbers. As DWS, my knowledge, expertise and attention are mainly focused on the policy and management level of matters. My statement covers Chapter 1 of the August Statement on the Water Supply System in Hong Kong and Chapter 2 on the Duties of the Water Authority under the WWO and WSD's work, with elaborations and supplements where appropriate, in compliance with para i.1 of the 12 October Letter. My statement also covers, from the policy and management angle, other matters in relation to the supply of drinking water and the licensing of plumbers

in Hong Kong.

D. As can be seen from Chapter 2 of the August Statement, much of the work of WSD is technical and specialised and each individual area pertains to technical and specialised expertise of individual officers. Thus, to best assist the Commission, I have requested WSD officers with direct knowledge, experience and expertise to make witness statements in respect of these other matters aforesaid including the remaining Chapters of the August Statement and matters in compliance with paras. i.2 to i.12 of the 12 October Letter, and to stand ready to give evidence to fully assist this Commission.

E. These witness statements, in conjunction with my present statement, aim to comprehensively and thoroughly respond to all matters raised in paragraph i of the 12 October Letter.

F. I wish to emphasize that my overriding objective in making this statement, and that of the WA and WSD as a whole, is to assist the Commission in the conduct of the Inquiry, and in particular to assist the Commission in understanding the role and duties of the WA under the present statutory regime in full and proper context. WSD stands ready to fully cooperate with the Commission and provide assistance to the Commission to facilitate its inquiry. WSD will carefully scrutinize the findings and recommendations as may be made by the Commission and work in consultation with the Development Bureau and stakeholders concerned towards early implementation of the recommendations as and when necessary and appropriate.

G. My statement is divided into five parts. Part One is related to Chapter 1 of the August Statement, to provide an overview on the current water supply system

in Hong Kong. Part Two is related to Chapter 2 of the August Statement, to outline the duties of the WA under the WWO and the work of WSD to support the WA to carry out his duties. Part Three covers the first main area raised in the 12 October Letter from a higher policy angle, on the supply of drinking water including its adequacy, reliability, affordability, smart technology and quality aspects. Part Four covers the second main area raised in the 12 October Letter relating to the licensing of plumbers. Finally, Part Five provides a summary of the WSD officers who will make statements to assist the Commission. My present statement is to be read alongside the said other statements.

Part One - Chapter 1 of the August Statement: Water Supply System in Hong Kong

H. Hong Kong has neither natural lakes nor large rivers and has only limited ground water resources. To secure adequate water resources in Hong Kong to sustain its growing population and economic development, WSD has over the years explored new water resources and built up its waterworks infrastructure for provision of water supply in a manner to keep pace with the development of Hong Kong.

I. WSD currently acquires raw water from two sources, viz. (1) local yield and (2) imported raw water from Dongjiang at Guangdong, which respectively contributes to meeting usually about 20 to 30% and 70 to 80% of the total fresh water demand today.

J. For local yield, since the first impounding reservoir built at Pokfulam in 1863, there are at present a total of 17 impounding reservoirs in operation with a total storage capacity of 586 million cubic metres (mcm). On the other hand, raw water from Dongjiang received at Muk Wu near the border is transferred to storage

and treatment facilities via extensive transfer facilities involving water mains, water tunnels and pumping stations. Raw water from impounding reservoirs is also similarly transferred to water treatment works for treatment. WSD has now 21 water treatment works.

K. The treated water is then distributed through 171 service reservoirs and 6,200 km of fresh water mains to the consumers (figures as at 31 Aug 2015). Please refer to the map below for the location of the treatment works and the major water supply routes. Over the years, an extensive fresh water supply system covering more than 99.9% of our population has been built.

L. The WSD installations from the collection of raw water in Hong Kong to connection points at lot boundaries of consumers, together with the gathering ground, are generally referred to as waterworks. The supply system (excluding those pipes and fittings for the purpose of fire-fighting) from connection point at the lot boundary up to the consumers' tap is generally referred to as the inside service. Please refer to the following diagram showing a schematic layout of the waterworks and the inside service. According to the WWO, the custody and control of the waterworks is taken by the WA which means the DWS (section 3 of the WWO), whilst the custody and maintenance responsibility of inside service rests with the agents and consumers (section 7 of the WWO).

M. Although the current water supply situation appears steady, WSD remains vigilant of the challenges ahead including the climate change and the keen competition amongst other regions and cities of the Guangdong Province for the Dongjiang water supply. In 2008, WSD promulgated a Total Water Management Strategy to combat against these water resource challenges to ensure water security. The essence of the strategy

is to put emphasis on containing the growth of the water demand through (i) promotion of water conservation by education and publicity , by way of the implementation of the Voluntary Water Efficiency Labelling Scheme, installation of water efficient appliances, issue of water conservation guidelines to trades of high water consumption etc., (ii) expansion of the salt water flushing system to reduce the use of fresh water for flushing and (iii) water loss management through the replacement and rehabilitation of aged water mains and the establishment of a water intelligent network ("**WIN**").

N. Alongside the management of demand, WSD 1s also strengthening its water supply management by developing alternative water resources, including seawater desalination by reverse osmosis and water reclamation, which are capable of withstanding impacts from the climate change.

Part Two - Chapter 2 of August Statement: Duties of the Water Authority under the Waterworks Ordinance

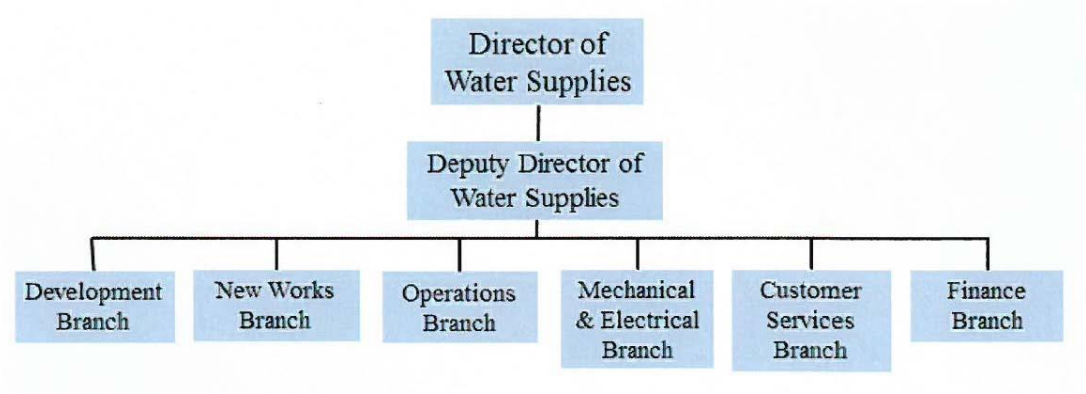
WA's duties

O. According to section 4(1) of the WWO, the duties of the WA are:

(a) to supply water from the waterworks in accordance with the WWO;
(b) to acquire and conserve water;
(c) to supervise and regulate consumption;
(d) to ensure the proper administration and management of the waterworks, and to make due provision for the security thereof;
(e) to require payment of any charge and take such steps as may be necessary to enforce such payment; and
(f) generally to administer the provisions of the WWO.

WSD's Work

P. WSD supports the WA in carrying out his duties under the provisions of the WWO. WSD has six Branches, each headed by an Assistant Director. The organization of WSD and major duties of each branch are outlined below:-



(i) Development Branch

Q. One major duty of the Development Branch is to acquire water including negotiation with the Guangdong authorities for the importation of Dongjiang water. Another duty of the branch is to formulate, review and implement the Total Water Management Strategy including developing schemes to increase new water resources and promote water conservation. The branch also devises measures to reduce water loss through water leakages in water mains by the establishment of the WIN. Last but not least, the branch via its Water Science Division assures quality and safety of water from its source, through water treatment processes and the distribution system up to the connection points at the lot boundary of consumers.

(ii) New Works Branch

R. The New Works Branch plans, designs and constructs new waterworks and replaces and reprovisions the existing aged water facilities such as water treatment works and water mains. One notable example of the latter

is the implementation of the territory-wide Replacement and Rehabilitation of water mains programme. The branch is also actively taking forward the design and construction of the first desalination plant using reverse osmosis technology in Hong Kong.

(iii) Operations Branch

S. The Operations Branch operates and maintains impounding reservoirs, water treatment works, service reservoirs and water mains for the supply of water. The branch protects water resources by keeping control the development in gathering ground and adopts a stringent policy to avoid the pollution of the water source. The branch also handles water mains bursts/leaks and the subsequent repair works all over the territory.

(iv) Mechanical and Electrical Branch

T. Regular inspection and maintenance works are carried out by the Mechanical and Electrical Branch on all electrical and mechanical plant and equipment in the waterworks . The branch pilots the use of smart meters to enable real-time monitoring of water consumption. Coupled with the establishment of the WIN, this supports the development of a water efficient smart city in Hong Kong. The branch also makes continuous effort to pursue high technology and energy efficient devices such as the hydropower plant in the Tuen Mun Water Treatment Works and a wave-powered cleaning device installed at intake of seawater pumping station.

(v) Customer Services Branch

U. The Customer Services Branch is responsible for handling applications for water supply for new and revised plumbing systems in the inside service. The WA has designated the branch head as the licensing

authority ("**LA**"). Pursuant to Part 5 of Waterworks Regulations (Cap.102A)("**WWR**"),the LA handles applications for issuance and renewal of plumbers' licences and takes appropriate action in respect of contravention of relevant provisions of the WWO. The branch also handles provision of metered supplies and customer enquiries and complaints regarding new connections, disconnections of water supplies, water quality and non-compliance incidents of inside service leading to waste, misuse and pollution of water supply.

(iv) Finance Branch

V. The Finance Branch of WSD is responsible for handling 2.8 million accounts, taking meter readings of these accounts, collection and refund of water deposits, taking debt recovery actions on unpaid water bills and collection of various fees and charges with a view to ensuring that the water revenues are timely and accurately collected. The branch regularly reviews the water tariff and various statutory fee items stipulated in the WWR in accordance with the Government-wide "user pays" principle which aims to recover the full cost of providing services.

Part Three - Supply of drinking water adequacy, reliability, affordability, smart technology and quality

W. WSD is dedicated to providing adequate, reliable, affordable and quality drinking water to consumers deploying smart technology.

Adequacy

X. It is a great challenge to WSD in providing an adequate water supply for Hong Kong because the territory has neither natural lakes nor large rivers, limited ground water resources and a high population density. The

annual local yield has also fluctuated from the lowest 103 mcm to the highest 336 mcm in the past 20 years against the annual total fresh water demand of 959 mcm in 2014. Thus, about 70 to 80% of demand is met by importing water from the Dongjiang at Guangdong. To ensure water security against the global climate change challenge and the keen competition for the Dongjiang water, WSD has since 2008 promulgated a Total Water Management Strategy. The strategy essentially consists of two limbs viz. (i) containment of water demand growth through promotion of water conservation, expansion of salt water flushing system and water loss management and (ii) development of new water resources which are capable of withstanding impacts from the climate change including seawater desalination and water reclamation.

Reliability

Y. WSD has been tasked to provide a round-the-clock water supply to its consumers throughout the year. In addition to the effort to ensure water security as mentioned above, a reliable water supply system entails proper maintenance and operation of the existing infrastructure including reservoirs, water treatment works, water mains and pumping stations. It also involves replacement and reprovisioning of the aged infrastructure like water treatment works and water mains in good time to enhance operational efficiencies and design and construction of new infrastructure to expand water supply capacity. Due to operational constraints, there are sometimes water supply interruptions arising from water main bursts. Over the past 15 years, WSD has made dramatic improvements in reducing the number of water main bursts from about 2,500 incidents in 2000-01 to 169 incidents in 2014-15 through the implementation of a programme of Replacement and Rehabilitation of 3,000 km of water mains.

Affordability

Z. Consumers m Hong Kong pay less for fresh water than their counterparts in most major cities around the world. Water charges have not been revised for 20 years and are maintained at a low level. During the year 2014-15, about 14% of domestic accounts are not required to pay water charges whilst 42% are paying the water charge rate of $4.16 per unit against the net unit production cost of $11. For the 2.6 million domestic accounts, the average monthly water charge in 2014-15 is $47. This amounts to about 0.3% of average monthly household expenditure. WSD has from time to time reviewed the water tariff with a view to achieving full cost recovery whilst due consideration will be given to the public affordability, the prevailing economic situation, the financial performance of the Waterworks Operating Accounts and the views of the Legislative Council members .

Smart technology

AA. WSD has strived to make use of the latest advanced technology to provide water supply in a most environmentally friendly and cost effective manner. The application of smart technologies includes the development of new water resources by seawater desalination using reverse osmosis technology ; the generation of renewable energy by hydropower plant in the Tuen Mun Water Treatment Works to reduce electricity consumption and carbon emission; the deployment of biosensing technology to enable 24-hour continuous water quality monitoring and the establishment of an intelligent water supply network including installation of sensors on water mains network and smart meters to help detect water leakage and foster good water conservation culture.

Quality

BB. Safe drinking water is essential to the protection of public health. WSD has all along been taking the production of quality water very seriously and striving to undertake it in a most professional and stringent manner.

Water quality in waterworks (from source to connection point)

CC. Under the existing statutory regime, neither WWO nor WWR specifies any standards or requirements. Notwithstanding that, WSD has pledged to supply water through its waterworks in full compliance with international guidelines, i.e. the World Health Organisation's Guidelines for Drinking-water Quality ("**WHO Guidelines**") to its consumers up to the connection points at the lot boundaries. This pledge has been made practicable given WSD has a full control over its waterworks as empowered under the WWO. In contrast, as reflected in the WWO and WWR, consumers and agents are responsible for the custody and maintenance of the inside service and keeping the inside service clean within the lot boundaries.

DD. To fulfil the pledge (in respect of drinking water up to the connection points), WSD has implemented a well-established system with detailed guidelines and requirements for the design, construction and maintenance of the waterworks to supply water from source through water treatment works to the distribution system. Mr. Leung Wing-lim, Assistant Director/New Works will provide details of the system on the design, construction and maintenance of the waterworks in his statement. Moreover, WSD has developed for implementation starting from 2007 water safety plans ("**WSPs**") to assure the safety of water from source, through water treatment to distribution system. The implementation of the WSPs involves protection of water quality at source, control of water

treatment processes and prevention of contamination during storage and distribution. In conjunction with this, WSD has put in place a comprehensive water quality regime for the monitoring and surveillance of water quality from source through treatment works to the distribution system. Details of the monitoring and control of water quality at waterworks, and the WSPs to develop the WSPs are set out in the 2nd witness statement of Mr. CHAN Kin-man, Chief Waterworks Chemist.

EE. The Commission may find it important to note that, to date, the system in respect of water supply in and through the waterworks has been proved reliable and effective.

Water quality in inside service (after connection point, to consumers' tap)

FF. The water quality in the inside service including consumers' taps depends on the proper construction, installation, etc. of the inside service at the stage of construction as well as regular maintenance and cleaning of the inside service after construction.

At the stage of construction of inside service

GG. On the question of what role the WA plays in relation to water quality in inside service, it is important to view the matter in its proper context, with reference to the essential rationale behind WSD's approach in monitoring and controlling the construction, etc. of the inside service. WA aside, the control regime involves many other stakeholders including developers, Authorized Persons, building contractors, plumbing subcontractors and licensed plumbers. It entails the co-operation and participation of all these stakeholders which interact with different aspects of the system at different stages. Details of the role and

responsibility of the key stakeholders are set out in the witness statement of Mr. LEUNG Wing Lim, Assistant Director/New Works.

HH. As far as the role of the WA is concerned, it essentially carries out a regulatory role via a number of measures to monitor and control the construction, etc. of the inside service. These measures include (a) licensing of plumbers and requirements for engagement of licensed plumbers to carry out work on the inside service; (b) requiring that pipes and fittings are of the British Standard ; (c) (for new building projects) confirmation by the Authorized Persons that pipes and fittings used and installed are in compliance with the waterworks standards and requirements; (d) inspection and approval of the inside service by the WA and (e) water samples tested to be in compliance with specified standards. Details of these measures are provided in the witness statement of Mr. LAM Ching Man, Assistant Director / Customer Services. The above measures applies to all the inside service in Hong Kong, not just public housing estates and the 11 Affected Estates.

II. In regard specifically to the inside service of the Affected Estates, details of the construction and use of Plumbing Materials in the inside service, the inspection and approval of the plumbing works and the taking and testing of water samples at the connection points for the purpose of effecting the water supply (and a guideline in relation to testing of water samples in the inside service within a building for the purpose of checking the effectiveness of cleansing and disinfection of the inside service) will be set out in the respective witness statement of Mr. CHAN Hing, Assistant Secretary (Lantau), Mr. CHEUNG Yip Kui, Senior Engineer/Customer Services (Technical Support)2, Mr. LAM Ching Man, Assistant Director /

Customer Services, and Mr. CHAN Kin-man, Chief Waterworks Chemist.

After construction -regular maintenance and cleaning of inside service

JJ. Proper maintenance and cleaning of inside service is essential to maintaining water quality in the inside service. Whilst maintenance and cleaning of the inside service is the responsibility of agents and consumers, WA has adopted a multi-pronged approach to regulate and encourage parties concerned to duly discharge their responsibilities. These involve measures including proactive attendance to public complaints on water quality at inside service, monitoring of water quality at consumers taps, and promotion of the proper maintenance and cleaning of inside service through the launching of the Quality Water Supply Scheme for Buildings. As at October 2015, 45% of the total residential households in Hong Kong are covered by the Scheme. Details of these measures are provided in the respective witness statement of Mr. CHAN Kin-man, Chief Waterworks Chemist (in respect of the monitoring of water quality at consumers taps) and Mr. LAM Ching Man, Assistant Director/Customer Services (in respect of the maintenance of the inside service, complaint handling and promotion of proper maintenance and cleaning of the inside service through the Quality Water Supply Scheme for Buildings).

After discovery of the excess lead in drinking water incident

KK. In the wake of the excess lead in drinking water incident in the 11 Affected Estates, WSD has proactively taken actions in various fronts to address concerns of residents of the Affected Estates as well as the public and implemented a number of enhancement measures on top of the existing overall control regime and additional to the statutory requirements

stipulated in the WWO, which governs the WSD's essential role within the overall regime.

LL. Firstly, since the occurrence of the excess lead in drinking water incident in Kai Ching Estate in July 2015, WSD has been making due diligence to assist the Housing Department in taking water samples and carrying out the water sampling tests in all other public rental housing ("**PRH**") estates. As on 30 October 2015, about 6,000 water samples have been taken and tested . In the event of discovery of excess lead in drinking water in an estate, WSD has mobilised resources for the urgent supply of clean fresh water through standpipes to residents of all affected residents at each block of the estates. WSD has also taken part in the subsequent joint departmental press conferences and subsequent residents' meetings arranged for each Affected Estate to explain the water sampling test results and follow up on water supply arrangements to the affected residents.

MM. Secondly, in order to investigate into the cause of the excess lead in drinking water at PRH estates, a Task Force headed by WSD was established on 15 July. The Task Force completed the investigation and submitted a final report with findings and recommendations to the Secretary for the Development on 31 October 2015. WSD will duly follow up on the recommendations made by the Task Force.

NN. Thirdly, WSD has worked in collaboration with other government departments for the publication of education pamphlets to provide advice to the public on the precautionary measures in response to the excess lead in water incident.

OO. Fourthly, WSD has set up an inter-departmental Review Group to review the existing system on inspection and approval of the inside service and the licensing of

plumbers. Since the occurrence of the excess lead in water incident, a number of enhancement measures on top of the existing regime have been devised and implemented via the issue of a number of WSD Circular Letters to the licensed plumbers and the Authorised Persons including the stipulation of requirements for carrying out tests on solder pipe joints and testing of water samples for lead at final inspection of newly installed fresh water inside service. Details of these enhancement measures are provided in the witness statement of Mr. CHEUNG Yip Kui, Senior Engineer / Customer Services (Technical Support)2.

Part Four - Licensing of plumbers

PP. The WA has designated the Assistant Director/Customer Services of WSD as the LA to issue and renew plumber's licenses in accordance with the qualifications, requirements and criteria stipulated in the existing legislation. The WA has also appointed an advisory board currently consisting of members from outside professionals, plumbing trade, property management etc. to advise the LA on the licensing of plumbers. Details of the work of the LA and the qualifications, etc. for granting a plumber's licence are provided in the witness statement of Mr. CHAN Hing. There are at present about 2,950 licensed plumbers , among which about 1,300 are active. On the ground, it has been a long established practice of the trade that licensed plumbers engage plumbing workers to assist them in carrying out plumbing works undertaken by them. As on 31 October 2015, there are about 8,330 workers registered in the plumber trade under the Construction Workers Registration Ordinance, Cap 583, whilst the plumber trade is included in the latest list of trades experiencing manpower shortage compiled by the Construction Industry Council. Details of the construction of the inside service in the Affected Estates by the licensed plumbers are provided in the

witness statement of Mr. LAM Ching Man, Assistant Director/Customer Services.

Part Five -Other statements of WSD officers

QQ. A summary of the officers of WSD with direct knowledge I expertise authorized by me to make witness statements to assist the Commission is provided as follows:

	Witness	***Areas***
A.	Mr LEUNG Wing Lim Assistant Director/ New Works	• The stakeholder theory • The design, construction and maintenance of the waterworks (answering in part paras i.2 and i.3)
B.	Mr CHAN Kin Man, Chief Waterworks Chemist (2nd Statement)	• Overview of monitoring and control of water quality at waterworks including the development of the Water Safety Plan (Ch 3 of Aug Statement in para.i.1) • Water sampling and testing by WSD in respect of inside service including monitoring of water quality at consumer taps (from perspective of WHO guidelines /chemical aspects) (para i.8) • Rationales for testing eight parameters for newly constructed inside service (para. i.7 (c) and (d)) and testing seven

		parameter s for Quality Water Supply Scheme for Buildings (para. i.8). (Part of the above areas also incidentally cover paras. i.2 and i.3 of the 12 October Letter)
C.	Mr LAM Ching Man Assistant Director/Customer Services	• Monitoring and control of construction, etc. and maintenance of inside service; complaint handling and promotion of Quality Water Supply Scheme for Buildings for the safety and quality of drinking water at inside service (Ch 4 of Aug Statement in para.i.1) • Water treatment plant through which water is supplied to each Affected Estate(para i.5) • Approach to taking and testing of water samples from inside service before connection of water supply to Affected Estates(para i.7 (a)and (b)) • Inspection and testing of water samples in inside service (from perspective of Quality Water Supply Scheme for Buildings) (para.i.8) • Construction of inside

		service in Affected Estates by licensed plumbers (para i.12))
D.	Mr CHAN Hing, Assistant Secretary (Lantau)	• Regulations, etc. pertaining to construction of the Affected Estates and Prohibiting the use of Plumbing Materials from which lead may leach into water (para.i.4) • Work of Licensing Authority and qualifications etc. for granting a plumber's licence (para. i.10 and i.11)
E.	Mr CHEUNG Yip Kui, Senior Engineer/Customer Services (Technical Support)2, WSD	• Existence of lead in Plumbing Materials; Use of Deviated Plumbing Materials; and Inspection and approval in respect of the Affected Estate (para i.6) • Steps and measures by WSD after discovery of excess lead incidents (para i.9)

RR. I confirm the contents of this Witness Statement to be true to the best of my knowledge, information and belief.

Dated this 6th day of October 2015.

問：署長，以上就係我讀出嚟關於你嘅證人口供。喺最後嗰頁個簽名，係

咪你嘅簽名？

答：係

問：你同唔同意將你嗰個我讀出嚟嘅證供成為你嘅呈堂證供？

答：係，同意。

問：你有冇其他嘢需要補充？

答：係。主席，就剛才律師所宣讀嘅供詞，我想有幾點補充。首先，我非常之多謝有機會就畀水務署，包括我同埋我嘅團隊可以嚟呢個調查委員會嚟到協助進行呢個調查。

我想喺呢度就容許我重申，水務署就非常之關注，同埋重視呢個水質嘅安全。就呢一樣嘢，我會解釋一下，水務署喺過去幾十年喺水質安全嘅工作。

要確保呢個水質安全，有兩件好關鍵嘅事項。第一，就係水務署所供應嗰個食水係需要合乎一個嘅標準；第二，就係內部供水系統係由呢個私人住戶去負責，佢是否會污染到嗰個水源，污染到呢個嘅食水。呢個污染係包括微生物嘅污染、同埋化學嘅污染。

就住水務署所供應嘅食水嘅安全，首先，要做好呢個工作，我哋認為一定要由源頭開始。自從 1965 年，香港嘅食水嘅來源主要有兩方面；第一，就係自己嘅雨水；第二方面，就係內地所供應嘅東江水。

就住自己嘅雨水，我哋係喺按照呢個嘅《水務設施條例》，將我哋所需要收集雨水嘅地就界定為一個集水區，並且好嚴格咁去施行一啲監管，同埋控制嗰個發展嘅工夫。以至嗰啲食水係能夠符合一定嘅標準。

至於有關東江水，其實喺過去咁多年，水務署一直都同內地嘅廣東省嘅當局去施行各方面嘅措施，去監管控制東江水嘅水源。尤其喺 2003 年興建咗一條專用嘅水道，水管道嚟到將呢個東江水送到嚟香港。以至東江水嘅水質係可以符合內地嗰個嘅地表水、飲用水嘅最高嘅標準。

當我哋處理好水源之後，其實關鍵就係跟住嗰啲嘅來源嘅水，我哋係需要處理。一直喺我哋各大嘅濾水廠，我哋都致力就以呢個先

進、嚴謹、同埋科學嘅儲水嘅方法，將呢啲嚟嘅水呢，嚟到去處理到去符合呢個世界標準。並且我哋係抽取大量嘅水辦，嚟到去驗證我哋所處理嘅水係符合呢啲嘅標準。

處理咗嘅水，跟住就會入去一個好龐大嘅供水嘅系統。喺呢方面，我哋係引用呢個世界衛生標準，嚟到去以風險為本，去睇一睇嗰個水質，係喺呢一個嘅供水系統裏面仍然係咪可以維持。

如果根據世衛嘅標準，其實就如果係微生物嘅污染，基本上係用水樣本嚟到去檢驗。但係至於係一啲他學嘅污染，呢一個就會係用物料監控呢一個嘅方式嚟到去處理。

就住呢個物料監控呢一方面，當我哋去興建政府嗰個供水網絡嘅時候，我哋係用呢個嘅建造業，一般係持份者各施其職嘅概念，呢個理念。最重要就係當我哋水務署喺我哋嗰個嘅招標合約裏面，我哋係註明好清楚，我哋所需要每一個嘅水喉裝置物料嗰個嘅規格。並且我哋係派足夠嘅專業人士，喺地盤去監察呢一個嘅興建。

並且我哋喺個合約裏面，亦都要求承建商嚟到去肯定、確定佢所採購嗰啲物料係按照我哋合約嘅要求。亦都有一定嘅合資格人員去監察所進行施工嘅工程工作。

喺呢一方面，當嗰個供水網絡完成咗之後，每一個工程我哋都會抽一啲嘅水辦。正如頭先我講，係會根據呢個世衛用呢個微生物嗰啲風險，我哋係抽水辦去睇一睇，嗰啲嘅水樣本嗰個嘅微生物係咪滿足到世界嗰個標準。

雖然喺我哋嘅《水務設施條例》，我哋係並冇訂明呢個水質嘅標準。但係自從喺 1995 至 95 年，水務署係承諾，我哋所供應嘅食水係完全符合世界衛生標準嘅。我哋並且係每年抽取 16 萬嘅水樣本，嚟到去檢驗每一方面嗰個嘅水質，係咪都可以符合呢個世衛嘅標準。

而且喺 2007 年，我哋按照世衛 2004 版嚟到去制訂，並且係施行一個食水安全嘅計劃。呢個計劃喺 2012 年，當我哋分享畀世衛組織，佢都覺得我哋所制訂嘅食水安全計劃，係可以作為其他一啲嘅國家一個好榜樣。

講完呢一個我哋自己所供應水食嗰個嘅安全，我跟住係想講一講，就係點樣去睇內部供水系統係唔會污染到呢啲乾淨嘅食水。呢個必須係分開兩個階段去處理。第一個階段，就係建造階段；第二個階段，係保養階段。

建造階段嗰方面，我哋仍然都係用呢個世衛嘅準則，以風險為本嘅方法。即係話如果係關於生物嗰方面，微生物嘅污染，我哋係用水樣本；如果係一啲化學嘅污染，我哋係用呢個物料監控。

喺物料監控嗰方面，我哋而家個做法，係同我先前所講嘅，即係話喺建造業各施其職嗰個嘅理念嚟到進行。但係今次我哋係--水務署作為一個監管者嘅角色。我哋而家嘅做法係按照喺 2001 年，建造業呢個檢討委員會，佢頒佈有一本係叫做《建業圖新》一個嘅報告。並且係根據 2011 年，世界佢亦都有頒佈，喺一個樓宇食水安全，係必須要點樣去注重內部嗰個供水系統嘅一個準則。

換句話講，亦都係按照一個嘅持份者各施其職呢一個重要嘅準則去進行。喺呢一方面，水務署作為一個監管者，我哋必須要制訂清楚我哋所要求物料嗰個嘅規格；並且有一個專業持牌嘅一個制度，去進行呢啲嘅工程。

至於係其他嘅持份者，包括係發展商、承建商。即係如果我哋其他嗰啲建造業嘅工程一樣，我哋都知道佢哋係會，係派遣足夠嘅一啲監管人員喺地盤監察呢個施工。我亦都好清楚列明我哋嘅要求，亦都希望發展商、承建商等等，佢哋係確認佢哋所採購嘅物料係按照個規格。

其實喺呢方面我哋認為，如果要做好監察呢個物料嘅工作，最重要係喺源頭做起。即係話當你採購物料嘅時候，係要注重呢個規格；亦都喺施工階段裏面，去確保呢一啲嘅工程係按照呢個規格嚟到進行。如果係去到最後由水務署去睇呢啲工程嘅時候，嗰個嘅效益相對係比較低。

喺呢一方面，我哋都係同過去--同呢個持份者一路都係喺呢方面嘅工作。但係自從喺 1982 年開始，因為水務嘅工程其實都比較繁複，所以我哋除咗我哋所--喺法例裏面，有個持牌水喉匠去確保呢啲水喉嘅工程係按照規格嚟到去進行。我哋都有呢個持牌--另外有一個嘅認可人士，佢都可以確認佢所睇嗰個嘅工程，所用嘅物料係根據我哋《水務設施條例》嚟到去進行。呢一個雙重保險嘅制度，我哋認為係喺一個可以確保我哋所要求嗰個嘅物料嚟到去進行。

我再想講講就係，除咗我頭先所提嗰個嘅制度，我哋自己亦都有參考過外國一啲嘅做法。我哋參考過譬如有美國、加拿大、澳洲、英國、同埋星加坡，佢哋點樣去監管內部供水系統。頭先我所講嘅一個制度，亦都同佢哋係大致相同。

但係我哋都有一啲特別，或者係稍為先進嘅方。如果係以控制呢個鉛呢方面，有冇釋放落水呢一個，我哋其實喺香港，喺 1938 年開始，已經係禁用一個鉛喉；相對英國喺 1970 年、美國喺 1980 年，我哋其實好早已經係禁用呢個鉛喉。

第二方面，我哋自己嘅食水嗰個酸鹼度係去到 8.2 至到係 8.8。比起世衛 8.0 至 8.5，我哋係為高。呢一個係可以防止嗰啲金屬係比較容易釋放落去水嗰度。

第三方面，我哋都有留意到其他國家，佢都係用一個持牌嘅水喉匠呢一方面嘅制度，嚟到去搵一啲專業嘅人士去監管工程。但係大部分嘅國家，佢哋都係會用一個自我監--嚟到去證明嗰啲水管工程係按照規格。

香港係每一個嘅工程，當佢完工嘅時候，我哋都會親自派人落去地盤嚟到去監管，去睇嘅。當然呢一個係--頭先我已經提到，呢個唔係可以做到--代替到呢個持份者每個方面嘅工作。

另一方面，至於嗰個樓宇嘅內部系統完成之後，大部分國家都唔會話抽一個水辦嚟到去驗下究竟嗰個供水系統有冇一啲金屬嚟到釋放。喺呢方面，我哋完善咗呢個嘅工作。

當嗰個嘅內部供水系統係能夠按照《水務設施條例》去興建嘅時候，我另一方面關注嘅地方，當然就係之後嗰個嘅保養，同埋嗰個嘅清潔。根據現時嘅條例，嗰個嘅責任係擺喺住戶嗰方面。雖然係咁樣，水務署過去亦都係用多管齊下嘅一啲方式，嚟到協助同埋去監督呢一方面嘅保養工作。呢度我想分三方面嚟到講。

第一方面，我哋喺 2002 年推行一個計劃，我睇睇個名，叫做「食水系統優質維修認可計劃」，因為褸屘我哋改咗個名。其實我哋係鼓勵嗰啲嘅管理公司，能夠定期去清潔，同埋維修嗰個內部嘅供水系統。到現時為止，喺住宅嘅用戶，已經去到百分之四十五嘅住戶，亦都已經係參加咗呢個計劃。

喺去年嘅 12 月，我哋將呢個計劃提升到大廈優質食水計劃嘅 2.0 版。我哋喺個抽水樣本嗰方面，我哋係加插咗有四個重金屬；包括有鉛、有鎳、鎘、同埋仲有一個嘅。

第二方面，我想講呢，就水務署係持續去監控內部供水系統嗰個嘅食水。呢方面我哋每年係抽取有萬六組嘅一啲水辦，去進行各方面嘅測試。包括有微生物嘅測試，同埋一般物理，同埋化學嘅測試。我

哋所抽嘅萬六個組嘅水辦，比較世衛按照香港七百幾萬人嘅嗰個要求，我哋係為多。佢哋如果我冇記錯係二千零嗰個水樣本。

第三方面，我哋就住每一個用戶，佢對一個水質有任何嘅投訴，我哋都係好積極去跟進。如果我哋發現內部供水系統係有一啲唔啱我哋規格嘅時候，我哋係會進行調查，並且要求住戶嚟到去處理，同埋去改善。

鉛水事件發生之後，水務署係非常之關注。我哋即時就係由水務署成立咗一個嘅專責小姐；係確認咗呢個鉛水超標嘅成因係因為喺個軟焊接位係用咗啲含鉛嘅一啲焊物。

第二方面，我哋都係積極去配合其他一啲嘅政府部門，去抽取一啲嘅水樣本。睇下佢哋嘅住所，或者係佢哋負責嗰啲嘅單位，嗰個水質係是否安全。

喺過去五個月，我哋係為咗一啲嘅公共嘅屋邨、一啲嘅幼稚園、一啲嘅幼兒園、同埋一啲社福嘅單位，抽取接近一萬個嘅水樣本，並且聯同政府化驗所進行呢個測試。按照測試嘅結果，其實我哋可以睇到，如果你純粹係以公共屋邨嚟睇，如果係全部嘅水辦嗰個結果作為一個基數，我哋睇到係有百分之九十九嘅水樣本，喺鉛嗰方面係符合世衛標準。

如果係以 2005 年後落成嗰啲嘅租住公屋嚟到做一個基數嘅話，嗰個嘅--可以按照呢個世衛含鉛嗰個標準係百分之九十八。至於其他幼稚園、幼兒園所抽取嘅水辦係百分之百。佢哋嘅內部供水系統嘅鉛嗰個成份，係按照呢個世衛嘅標準。

除此之外，當每一個屋邨係發現到嗰個嘅鉛係超標嘅時候，我哋水務署係即時安排有一啲清潔嘅水，並且係出席居民大會解釋出事嗰個嘅結果，同埋嗰個供水嘅安排。

喺最近肇事嘅幾個承建商，我哋都配合佢哋去推行一啲食水嘅水費，同埋排污費嗰個資助嘅計劃。我亦都聯同其他嘅政府部門去印刷一啲教育宣傳嘅小冊子。目的係希望能夠去介紹點樣去預防呢個鉛水係會超標，佢有啲咩嘢工作係--一啲措施係可以做。

主席，水務署係非常之關注呢一個嘅鉛水事件。我哋都希望能夠盡量協助調查委員會能夠盡快完成個工作。我知道頭先有討論到話我哋最近有一啲嘅供詞係比較遲嚟到去交上呢個委員會，喺呢方面我真係致歉。我哋係會以專業同埋積極嘅態度，嚟到去希望能夠盡快完成

呢個調查嘅工作。

當調查委員會有任何嘅建議，我哋都係會細心研究、跟進。喺2016年嘅施政綱領清楚指出，政府係決定會去加強內部供水系統嘅監管工作。呢個當然係包括先前我提到喺水樣本裏面，我哋增加有四個嘅重金屬，包括鉛嗰個嘅測試。亦都喺一啲軟嘅焊接位裏面去測試有冇呢個鉛嘅含量。我哋都會研究海外一啲食水安全嘅一啲經驗；亦都會去翻查、檢討我哋現時《水務設施條例》，同埋規格，睇下點樣去加強呢一方面嘅工作。

最後我哋係一直都係同呢個水務業界嚟到去--用一個精益求精嘅精神，希望能夠將我哋提供畀市民嗰個食水嘅水質係保持呢個優質。嗯，我嘅補充完畢。多謝主席。

王先生：主席，我冇其他問題。

許偉強先生：係咪而家作一個早休先？

主席：我哋休息二十分鐘先。

上午11時19分聆訊押後

上午11時41分恢復聆訊

出席人士如前。

水務署第一證人：林天星（水務署署長）宣誓繼續作供
許偉強先生盤問

問：林先生，係，早晨。就我睇番你嘅口供裏面，一開始都有提到就係就你本人嘅口供，就代表水務署，就都係盡量從啲比較即係 high policy 個 angle 去睇嘅，即係喺你嗰個口供度。咁我都知道有好多細節就會喺你同事嘅口供嗰度就有概括到嘅。咁嗰啲細節，我可能就會同你啲同事再跟進。

咁我都想同你討論一下，即係有關 policy，即係比較 high

level 少少個 policy 嘅制訂，就住有啲議題，我會同你跟進一下。

答：好。

問：咁就首先我想問一問林生，你個證人口供嗰度都講到你就係 13 年 11 月開始就係擔任水務署署長呢一個職位嘅。我想問一問你幾時加入水務署㗎？

答：如果係以水務署作為個工作人員，即係同事，我係 2013 年 11 月。

問：都係 13 年 11 月？

答：係。

問：之前你係從事咩嘢工作㗎？

答：我之前，13 年之前嗰六年就喺發展局嘅。

問：係。咁我想問一問，就係首先即係從啲即係大原則講起先。咁因為我哋都知道例如成個供水個系統即係都有唔同嘅持份者，咁水務署係其中一個。咁就唔好理話每一個持份者扮演咩嘢角色先。咁我相信你都會同意即係水務署嗰個即係首要嗰個責任都係確保食水安全，同埋嗰個食水嘅即係個質素，呢樣嘢你唔會反對嘅？

答：我頭先我喺個補充嗰度講得好清楚，我哋非常之關注同埋重視呢個食水嘅安全嘅。

問：係。咁至於你話公眾嗰方面，即係對於食水個信心，即係佢哋個健康，都係你哋即係首要嘅考慮嚟嘅，係咪？同意嘛？

答：咁其實喺 2016 嗰個嘅施政綱領都講得好清楚，即係公眾對於食水安全嗰個信心係好重要，所以我哋都決定咗係會採取一啲嘅措施係加強呢方面嘅監管嘅工作。

問：明白。咁水務署即係話要確保食水安全，質量係即係好喇，咁亦都係需要去睇下啲國際標準，呢樣嘢都係大家都知㗎喇，你同意嘛？

答：頭先喺我嘅補充嗰度都講咗，就係話當我哋去制訂一個食水嘅安全，呢個嘅系統嘅時候，我哋係會就參照呢個世衞一啲嘅指引，亦都會睇一睇第二啲國家佢喺呢一方面嘅工作會進行成點。

問：明白。

答：不過呢個我想補充一點，即係頭先講食水安全，如果根據而家個設施條例都講得好清楚，水務署負責供應嘅食水，我哋係1994年、95年就係承諾會係按照呢個世衞嘅標準。至於話係去到呢個嘅私人嘅一個嘅供水系統，我哋嘅扮演嘅一個角色就係一個水務監督嘅角色，因為唔係我哋親自去供水。

咁我喺頭先嘅補充都講得好清楚，我哋去著重就係喺兩方面嘅工作，咁呢個亦都需要，真係好需要，就係每一個嘅持份者，佢哋要做好佢嘅工作，特別就係喺呢個保養嗰個階段。因為喺過去十幾、二十年，特別喺2000年嘅時候，我哋好關注到就係一啲私人嘅水，嗰個水質，我哋發覺就係有一個污染嘅問題。咁所以點解喺2002年我哋推出呢個--而家個名叫做大廈優質食水計劃，就係希望就係鼓勵或者係幫助一啲嘅住戶，特別係一啲管理處，能夠就係好好咁樣保養同埋清潔嗰個嘅內部供水系統。即係呢方面係好重要。

主席：我想簡單啲咁問一問啫，咁你同唔同意你哋有責任確保香港市民嘅食水安全呢？

答：係。呢個責任其實就喺我頭先嗰個補充點，要分開兩邊嚟講。

主席：得，好，我明，唔使重複嘅。

答：得，哦，okay。

主席：得。咁我想問下，咁你嘅意思係咪即係你哋水務署確保香港市民嘅食水安全就只係去到呢一個入屋之前嘅所謂你哋嘅 lot boundaries 呢，呢個係咪你嘅睇法呢？

答：主席先生，就應該係咁講喇，就係話我哋係好希望就係話喺內部供水系統嗰個食水都能夠就係符合一個一定嘅標準。呢個係我哋一路工作嗰個目標。但係正如我頭先講，呢個確保性就有一個限制，就係因為去到內部供水系統嗰度，我哋係唔可以完全去代替現在嗰啲嘅住戶，佢按照個法例佢嗰個嘅基本嘅責任。我只可做就係一啲嘅頭先我提嗰三方面嘅一啲嘅工作去幫助，希望呢一個嘅住戶嗰個責任能夠履行到。

主席：即係入咗屋之後就係住戶嘅責任喇，係咪咁嘅意思？即係你哋就只不過係...

答：如果係根據個法例，就係咁嘅意思。不過我哋自己都有一啲嘅責任就係去幫助呢啲嘅住戶能夠係可以保養同埋清潔佢哋嗰個嘅供水系統。

問：好。咁如果，我想問一問，就係就住水務署嚟講，要確保食水安全，確保食水質量係即係符合一定嘅規格嘅，咁就如果係外地所發生嘅一啲即係例如供水系統嘅事故，咁即係水務署都應該要即係睇一睇，即係都係重要嘅一啲嘅資訊，即係你哋都要睇一睇，嚟到確保睇下有冇自己個不足，或者好似你咁講，精益求精；呢個你同意嘛？

答：我哋其實喺呢方面有一定嘅工作嘅。正如頭先我講，即係如果係講個水質，其實世衞，世界衞生組織，呢個係一個好重要嘅一個世界組織，係幫助到我哋去了解其他嗰啲嘅國家，佢哋如果出現到有水質一啲重要嘅事項，我係需要知道，並且會按照香港嘅情況，有冇地方我哋係需要改善同埋去加強監管嘅。

問：如果有啲國家係因為嗰個供水系統出現咗問題，可能係因為咁，係需要即係修改法例嘅。咁嗰啲你哋係咪都會有啲認知㗎？即係會睇下其他國家，如果有供水系統出現問題，而需要修改法例，咁呢樣嘢你哋係咪都會即係有啲意識...

答：係，我諗呢係因果嘅關係。因為佢--我頭先聽講，就係你講到係第二啲國家，因為一啲重要嘅事故，佢需要修改法例。咁正如我講，如果有重要事故嘅發生，我相信喺世界衞生組織，佢有一個嘅好清楚嘅一個嘅即係告示，話畀所有嘅有關嘅國家都知道，即係有呢件咁嘅事，我哋係會進行一啲嘅加強嘅措施。至於需唔需要修改個法例，就要睇下嗰樣嘢我哋需唔需要嘞。因為有啲情況底下，我都可以喺法例以外嚟到去進行嘅。

問：即係睇情況喇，都係，係咪？

答：係嘞。

問：好。咁我哋就前幾日都收到即係你哋有個同事...

主席：對唔住，我想問一問先。

答：係，請，主席。

主席：咁你頭先嘅答案嘅意思，就即係如果世衞唔通知你嘅，你就唔會覺得有問題㗎嘞，係咪咁嘅意思？

答：我頭先就係點睛式就講如果係水質嘅問題，我哋係好緊張呢個世衞。我哋自己都有另外一啲嘅渠道去睇一睇，會唔會有一啲嘅事項，譬如關於水質，我哋知道。咁當然我相信就係世衞會係一個其中一個好主要嘅一個渠道。其他嗰啲嘅渠道，包括我哋水質科學部嘅同事亦都會去有一個留意，究竟喺我哋嘅世界其他嘅國家，會唔會有一啲水質嘅問題。不過我自己都有一個相信，就係如果真係一啲重大關於水質嘅事故，世衞會係好重要，但係我哋--頭先答主席，就係話我哋自己都有一啲嘅呢個水質化驗嗰啲嘅同事，佢都會好留意嘅。

譬如我哋都有一啲嘅--我哋會出席一啲嘅會議喇，...

主席：即係換句話嚟講，除咗世衞之外，你哋自己水務署本身亦都有人係睇全世界有冇一啲地方係出現問題嘅，係咪咁嘅意思？

答：你可以咁講。不過就我哋都會有一啲嘅外渠道。譬如我哋會靠一啲嘅會議，出席一啲世界會議，或者睇一啲嘅期刊，咁就呢個會有一個局限性，就係話我哋會盡我哋嘅能力，就我哋所知嘅嚟到去了解，喺世界其他地方會唔會出現一啲咁嘅事故。

但係我想強調就係，主席，你頭先講，世衞嗰個會係我哋一個好重要嘅一個關注嘅一個嘅組織嚟嘅。

主席：唔一定世衞㗎嘛。譬如好似最近，上個月或者呢個月，咁美國，咁世衞有冇通知你吖？

答：頭先我講，世衞會係其中一個。

主席：咁咪係囉。

答：咁另外就係如果第二啲國家發生一啲嘅事，我哋都會留意到。頭先頭先你講美國嗰件事，我哋都知道嘅。

主席：係囉。

答：嗄。

主席：咁即係唔好純粹就講，「世衞通知我，我先知」。其實你話「我哋水務署裏面都有人知嘅。」

答：同意。

問：喺你嘅同事前幾日呈交嘅一份證人口供嗰度，第一次，就有講到你哋嗰個研發部，即係 R&D，所做嘅工作。或者我請你睇一睇佢嗰個證人口供其中有幾段。C21。C21，18919。

答：係，係，請講。

問：嗰度就有個"Overview of R&D work by different disciplines"，咁其中你有介紹到個 civil engineering 嘅 discipline，喺 18919 嘅第 5 段嗰度。另外就 18920，就有個 water science discipline，即係剛才你有提到個水科學嗰個部門，咁佢就係負責即係特別係就住一啲 WHO，有關水質嘅一啲問題，就去即係做一啲研究嘅。咁另外 18921，就講一個 mechanical & electrical engineering discipline。咁呢個就係就住啲 technical advisory、support service 等等。

第 12 段就係咁講嘅嘅；第 12 段，呢度就話"On top of the above"，即係之前，除咗之前講嗰啲，"WSD also keeps itself updated on the latest technology and enriches its knowledge of overseas developments and international practices in the water industry"，咁就透過就係有啲你剛才講，participation in conferences；另外一啲嘅經驗分享，就同其他國家啲人；第 (iii)，international magazines、journals、publications；第 (iv)，arrangement of technology transfer workshops。我就想知道呢一啲咁譬如話要即係去認識外國嗰啲經驗，或者係講緊一啲外國嘅 practice，喺呢方面嘅，呢度係你哋水務署又有邊一個 division 負責嘅？

答：唔好意思，即係我想講一講就係喺我--頭先你提到第 18919 嗰個第 4 段嗰度，其實就我哋就提出就係--啊，對唔住，18918，第 3 段。其實嗰度就講水務署其實就分開幾個唔同嘅專業嘅。

問：啱吖，係吖。

答：咁所以答你嗰個問題，就要睇係邊個專業嘞。譬如有啲係關於土木工程嗰方面嘅專業，我哋係會好倚靠土木工程嗰啲嘅同事，係當佢去接觸外國同樣呢一方面專業嘅一啲嘅專家嘅時候去交流。咁如果你講緊係一啲機電工程嘅，咁喺機電工程亦都有好多嘅專業。咁所以就唔係

單一一個嘅專業或者單一一個科去幫助水務署去了解同埋去交流外國一啲嘅經驗嘅。

問：或者我哋講得簡單啲，如果我哋第 13 段嗰度講，18922，就話"Through the above channels ... internet research conducted as and when necessary, WSD maintains its alertness to significant internationally resonant water quality issues."

即係話你哋個署就有人會不時做一啲 internet research。我想知道例如你哋嗰啲 internet research，係邊個部門嗰啲人做呢，就係就住外國嗰啲水質嘅問題，想要多啲資訊，喺你哋署方面係邊一個部門或者邊個 division，邊一個 team 或者邊一個人去負責嘅呢？

答：係如果你講係關於水質，就係我哋就係嗰個水質科學部，即係喺 18920，第 9 段嗰度，"Water Science Division"。

問：即係佢哋會去做呢一方面嘅 internet research 嘅，係咪？

答：如果係就住水質嗰方面。

問：好。咁如果你話，如果外國有啲乜嘢經驗分享，或者外國出現啲咩嘢事故，你哋有人去做啲調查嘅，internet research 又好，或者聯絡當地嘅水務署又好，即係呢方面都係 Water Science Division 嘅工作，係咪？

答：即係如果係我哋知道有啲外國一啲水質嘅事故，我哋係知道嘅，就跟進嘅嗰個部門就會係水質科學部。

問：係。因為我哋就--如果--除咗呢啲水質嘅問題之外，如果就住例如外國，可能因為有供水嘅問題或者水質嘅問題，而需要改變個法例嘅，呢方面你哋有冇人睇住、檢視住呢方面嘅工作？

答：我唔知唔有冇誤會咗你嗰個問題，即係意思都係講話如果外國有一啲事故發生，佢哋嗰個國家改法例，又或者佢哋冇改法例，我哋知道咗之後，我哋會唔會改我哋自己嘅法例？係，我唔知有冇理解錯。

問：即係話如果外國...

答：外國。

問：...係有啲法例，係因為某啲事故而改咗，咁可能嗰啲事故，你哋都需要知道嘅，有冇話同事係特別睇住，係外國有冇啲法例嘅更改，就住供水系統等等嘅，有冇呢方面嘅研究呢？

答：如果以我，署長嚟講，我估計啫，因為我唔敢肯定，不過我估計就係如果係外國有啲事故發生，我哋係知道嘅時候，我哋會去跟進嘅。咁但係會唔會就住外國咁多條法例，當佢一更改嘅時候，我哋就會去追查呢？我相信我哋就唔係一個咁樣嘅做法。我哋係根據個事故嚟到去睇一睇嗰個事故嘅跟進工作，...

問：冇問題。

答：...我哋有冇一啲嘅參考嘅一啲嘅地方。

問：好。我哋喺盤問房委會嘅代表嘅時候都有同佢哋傾過，即係例如一啲有關喺外國，喺蘇格蘭，喺威爾斯或者喺美國，即係有關一啲嘅供水系統問題出現咗，而亦都係同呢個焊料係有關嘅，即係我哋都問過佢有關嘅問題。

我都想畀你即係睇有幾份即係有關嘅文件，睇完之後，我再向你問啲問題。如果你睇下 A1，A1，134 頁，呢個就唔係啲咩嘢好深奧嘅 journal，或者係啲咩嘢一啲 review 咁嘅，即係只不過係 BBC 嘅一啲新聞嚟嘅啫，咁係就住當年即係蘇格蘭因為有食水含鉛嘅問題係做咗啲訪問嘅。咁或者我係帶你去睇一睇幾段嘅啫，就係 144 頁。144，就上面，嗰個訪問其中就有間公司，嗰間公司係蘇格蘭其中一間最大嘅水喉嘅公司，就係叫 Worthingway。咁就 Worthingway 就係其中佢嘅代表就走出嚟講幾樣嘢嘅，佢話 basically 有兩種 solders，"produce lead-free solder for use on the water system in the house, ... they supply leader solder for use on heating systems. One of our operatives used the wrong solder on the water side."

咁呢度都係講出咗話，即係如果用錯咗一啲有鉛嘅焊料就會影響到個食水系統嘞。

咁如果你睇一睇 145 頁，145 頁，最屘二嗰段，有寫住"Reporter"嗰度，就係咁講嘅，佢話"But given the results of our own random survey, and that of Greater Glasgow Health Board it's clear that that Worthingway were by no means alone in illegally using leaded solder. And when you think that 19,000 new homes are built in

Scotland each year the scale of the problem could be enormous."

咁跟住呢度就講嘞，"I think it's probably much more widespread. We don't have any reason to suggest that it's simply a Glasgow problem. But here we have evidence that many different plumbing contractors, and many different builders are involved with this problem.

And we know that these plumbing contractors and builders work across the country. So there's no reason to think that only when the work in Glasgow are they more likely to use leaded solder."

咁跟住就再講下面，個 reporter 亦都話嘞，"Like the Plumbers Federation"，咁其中一個講者都講，"wants leaded solder to be banned so the financial temptations of using it are taken out of the equation. Germany and Holland banned it more than twenty years ago.

The UK Government committed itself to a ban back in 1992, but as yet hasn't done so. The Scottish Executive promised a nation-wide survey after" 其中一個 scandal，"It still hasn't happened."

咁呢度就似乎都講出咗好重要嘅就係話嗰個含鉛嘅焊料對於食水嗰個供應有啲咩嘢影響，同埋亦都講出咗就係話要考慮可能係全面禁止呢一個使用含鉛嘅呢啲咁樣嘅焊料嘅。

呢度就係 2002 年，即係 BBC，咁有一個咁樣嘅訪問，帶出咗呢個問題。咁我想問一問林生你，你當時就即係應該喺你--呢個鉛水事件發生之前，你係咪都唔知道有呢一個情況㗎嘛，係咪？

答：唔知，唔知道。

問：如果我哋再睇一睇呢一個事件帶出你--嗰啲咁嘅調查嘅結果，可能都幾重要嘅。我想你睇一睇同樣嘅文件夾，235 頁。235 頁就講番話呢成個調查，最後就--第一、第二段，就確實咗呢個"lead solder misuse in new house construction is a common problem [through] Scotland. The Scottish New Homes Lead

Survey" 就 identify 咗九十九個 houses "from a random samples of 661 homes completed [before] 1997 ... 2000 with excess lead levels in the water supply consistent with the use of lead solder on the copper plumbing system."

跟住下面亦都係講番即係同樣嘅問題嘞，即係話呢個 lead solder 嘅 use 係一個幾即係嚴重嘅問題嚟嘅。

咁跟住我哋睇一睇236嗰度，就有帶出咗WHO嗰個問題嘞，"This is of importance given that the rationale for adopting this WHO derived lower guideline value is specifically to prevent children from being exposed to levels of lead sufficient to cause bioaccumulation in soft tissues such as the brain and storage in other sites such as bonds and teeth. This survey therefore provides justification for the need to consider how best to advise occupants of new houses on the safe use of tap water for human consumption."

咁跟住後面都係再講，就係話要即係多啲嘅措施嚟到確保嗰個 "existing ban on lead solder is enforced ... provides evidence of the need to examine other options in order to prevent the [use] of lead solder on a permanent basis."

即係要永遠希望杜絕對呢啲咁嘅問題嘅。呢個就係當年即係蘇格蘭嗰個事故發生咗之後，政府做出咗調查，咁就所有嘅呢個--一啲嘅建議同埋佢嗰個結論嘅。

咁而跟住佢哋--除跟住呢一個結論之外，就仲有一樣嘢係帶出咗嘅，就係改變嗰個法例嗰個問題嘞。如果我哋睇下 A1 嘅 159 先喇。等等先。

或者我哋睇一睇 A1 嘅 256 先。256 嗰度就--睇下先，A1 嘅--應該係 259，唔好意思。259 嗰度就講出咗我啱啱同你講嗰個蘇格蘭嗰個調查，咁嗰個係 Stage 1 嘅 results 嚟嘅。咁另外佢就講嘞，喺 259 最後一段，"On the basis of the Stage 1 results," 佢哋個有關部門 "initiated a publicity campaign designed to alert consumers to the risks of lead in drinking

water. Changes were ... made to the Water Bylaws, to increase the penalty for contravening the ban on the use of lead, including leaded solder, on domestic water plumbing systems."

咁呢度即係話個調查做完之後，亦都係對法例做咗啲更改嘅，就係喺佢哋嘅水務嘅規則入面都係話要增加嗰個罰款，對於如果係即係違反咗個條例，用咗啲有鉛嘅焊料嘅人士嗰個懲罰就會係加大力度嘅。咁呢度就係咁講。

咁最後一個，我想你睇一睇，就係嗰個威爾斯所出現嘅問題，即係A1，第195頁。A1，195頁，冇錯。咁呢度就係威爾斯都有個同樣類似嘅問題嘞。我哋睇下195頁一開頭嗰度，就係講個"incident highlights that some property developers of new houses continue to use lead solder in the plumbing of drinking pipes, despite its use for this purpose being illegal. Lead solder is easily available, being sold in most DIY stores, and its use is not illegal for central heating pipes. It is also less expensive than the legal alternative by" 幾多個per cent "per roll"咁樣。"Water pipes are not fully covered in the building regulations ..."

咁後面，如果我哋睇第二段，就即係我--同埋第三段都幾值得注意嘅，"Following the work done by the Scottish Centre for Infection and Environmental Health in 2003," 即係我哋剛才睇過嗰個stage 2嘅調查，"the issue of [the] use of lead solder in the plumbing of new homes was highlighted as an important public health issue ... New housing developments are popular with families with young children" 等等，亦都佢話當局highlight咗就係"high lead water levels owing to this cause represents an avoidable and unacceptably high source of lead for vulnerable people such as young children and pregnant women. There needs to be consideration by local authorities as to their inspection and monitoring strategies for lead, not only in new housing development but in schools, childcare centres and other children settings. This is a priority of the Children's Environment and Health Action Plan ...

This is particularly important in anticipation of the revised drinking water quality standard for lead that will come into force in 2013."

咁呢度都帶出咗話係幾咁重要呢，呢個問題，同埋必須係一個首要嘅任務嚟嘅。

呢度就係"This incident did not come to light as a result of routine monitoring but as a result of the investigation of an unrelated complaint by a resident. Following this complaint and opportunistic testing, the extent of the problem was greater than first anticipated. As a direct result of this incident," 佢哋當局，個水務當局，"has now included"，included，"in its routine inspections of newly built properties" 一個"'lead check'"嘅，一個"swab test for the detection of lead solder on the drinking water plumbing and services and continues to carry out random lead sampling on new developments."

咁 conclusion 都係講番就係話即係呢個 lead 喺--就住呢個 lead solder 嚟講，就已經係 identify 為一個重要嘅 health hazard 嚟嘅，咁係要多方面注意，要加強 risk assessment，加強個 risk communication，咁同埋即係要各部門要多啲溝通。呢度就帶出咗呢啲種種嘅問題，其中都包括咗一個叫做'lead check'嘅 swab test。

我首先我想問下林生，喺呢個鉛水事件發生之前，有冇聽過一啲即係啲所謂嘅'lead check'個 swab test 呢樣嘢？即係...

答：我本人就冇。

問：冇聽過？

答：我本人冇，可能我啲同事有。

問：你本人冇聽過，係。咁呢度就係即係我哋所講喺蘇格蘭同埋喺威爾斯都發生咗個問題喇。

喺你同事陳（周？）先生嘅口供，18928 段-- 18928 頁，第 31 段，就嘗試去解釋點樣呢兩個咁嘅事故係即係你哋水務署係即係冇留

意到嘅。咁佢喺 31 段就係咀講話"To the understanding of WSD, these 2 incidents at Scotland and Wales were regarded as local news only, without leading to ... major reporting in leading international magazines" 同埋"journals published by international water associations and professional institutions; ... widespread attention of leading international organizations, including the WHO, one of whose essential functions is global co-ordination and communication in respect of significant health issues; ..."

咁跟住你哋繼續講話"Scottish event could not be located in any headline or feature stories in ... international journals" 同埋喺 "magazines ..."

咁而呢個 Welsh 嗰個 event，33 段，就話"could not be located in any headline or feature stories in relevant leading magazines / journals subscribed by WSD."

即係你呢度就話「喂，我哋所 subscribe 嗰啲咁樣嘅 journals、magazines 係又冇提到呢度，世衞又冇講，咁所以咪冇睇到囉。」

其實我想同你講一講就係呢啲咁嘅資料，關於蘇格蘭、威爾斯啲資料，其實都係即係我哋代表委員會嘅律師團隊，即係用一個好簡單嘅 internet search 就搵到出嚟嘅，呢啲資料。咁變咗我就想問一問，就係話即係如果你呢啲重--比較我哋覺得都幾重要，對於水質嗰個供應，係幾重要嘅事故，都似乎你哋當時就冇特別去睇到。咁我想問下即係會唔會覺得即係你哋喺搜集資料嗰方面嚟講做得唔係好到位呢？

答：我諗如果知道咗有一件事，譬如話即係關於某一個--因為有好多種嘅金屬嘅。如果知道某個金屬係有出事，你要就住呢個主題去做一個研究，同就你係即係就住世衞裏面，佢有九十幾個參數，你就咁去做研究，就有一個分別喺度。我相信就同事而家嗰個嘅網絡，佢會係關注就係譬如會唔會有第二啲地方，有一啲嘅水質事故，即係用一個我會覺得 incident-based 嘅。但係如果你話純粹一個--譬如一個參數，一個 parameter base 嚟到做呢個研究，我相信就當時同埋而家我諗都唔會特登去咁樣去跟進。

但係如果有啲相關嘅事件發生嘅時候，我相信佢哋係會研究嘅。咁所以你話係咪即係佢有一啲嘅--呢個系統有啲不足嘅地方呢，我會覺得就會睇一睇嗰件事，係咪真係發現喇。因為如果唔係，你會係喺個網嗰度走去查，我相信係會比較失去嗰個焦點嘅。

或者我想都提出一點，我唔知啱唔啱喇，我理解就算喺 Scotland 所發生嗰件事，就算喺威爾斯，我理解佢哋都唔係好知道有呢件事嘅發生。咁就同埋而家我睇到英國，我哋都有去聯絡當地嗰啲嘅專家，佢哋都冇就呢一啲咁嘅事去做任何一啲即係好大型嘅一啲嘅措施。譬如頭先你講就係話就算喺威爾斯，佢哋當去搵一啲嘅--驗收一啲新樓嘅時候，佢哋會做一啲佢哋叫'lead check'。呢個我理解，我都唔知係係咪--呢個我唔係好清楚喇，即係佢係咪發生咗件事之後，即係每一個物業，當佢驗收嘅時候都會做呢個'lead check'。我嘅理解，譬如喺 Scotland，佢都唔係全面譬如話件事發生喺 Glasgow，我理解 Glasgow 亦都冇抽一啲嘅水辦去驗有冇鉛嘅。咁所以就我哋會去檢討我哋嗰個--不時檢討我哋嗰個系統，不過就我都會留意到就係你講緊喺蘇格蘭或者係威爾斯所發生嘅事，我哋喺個鉛水事件之前，根據我哋嗰個網絡系統，我哋真係唔知嘅。

問：係。咁呢次事件發生咗之後，咁我哋都知道話，啊，你哋水務署就冇特別話當時有睇到有關蘇格蘭同埋威爾斯嗰個問題。咁我就想問一問你，而家鉛水事件發生咗之後，有冇檢視過你哋個 R&D Department 嘅工作呢？有冇話應該要加強啲個闊度，去睇多少少，就係話外國有關嘅經驗呢，咁樣？

答：我哋自己內部都的而且確都有傾過嘅。我哋其實就會係--如果係以--因為我哋嗰個嘅--關於嗰個研究嚟講，R&D，其實我哋就個網絡就好闊嘅。如果你純粹係以水質嚟講，我哋其實就住呢一方面，我哋係真係多啲係要同呢個嘅--我哋自己會睇一睇我哋而家個系統，有冇啲嘅地方我可以加強。但係暫時我哋而家睇到我哋嘅系統都會喺度運作，不過我哋同同事講要特別去留意呢個水質嘅事件。至於喺世衞嗰度，我都係會--頭先提喇，世衞嗰個係好重要，其中一個好重要一個組織，我哋係需要同佢加強聯絡嘅，咁喺呢方面我哋會做多啲嘅工夫。

問：喺陳（周？）生嘅 33 段嗰度，另外仲有一點我想問下你嘅。喺 33 段都去解釋，就係話點解嗰個威爾斯嗰個事故會走漏眼呢，咁佢話其中一個原因就係佢話，啊，你哋冇 subscribe 到嗰個 Journal of Environmental Health Research 嗰樣嘢嘅。咁嗰個 journal 就係由嗰個 Chartered Institute of Environmental Health 所發布嘅。呢度你係咁解釋嘅--即係你同事咁解釋咗喇，中間嗰度，

"WSD understands that the said journal covers a range of issues in the field of public and environmental health, such as occupational health and safety, environmental protection, health promotion, housing and health, public health ..., environmental health education, ..., environmental health management and policy, environmental health law and practice, sustainability and methodological issues arising from the design and conduct of studies etc. Given the considerable difference in focus of this journal and WSD's duties, WSD has not subscribed to the concerned journal."

即係我嘅睇法，呢度就係話，啊，即係因為佢哋--好廣闊，所以你哋就冇特別話去 subscribe 到呢個 journal 嘞。咁但係似乎呢個 journal 入面所覆蓋嘅範圍，例如 environmental health、protection、housing and health 呢啲，即係都係你哋需要注意嘅事項嚟個喎。

答：或者咁講，我哋會比較就睇喺世界裏面出現有好--印製好多嗰啲嘅期刊，我哋會係比較專注啲，即係譬如話我哋會揀一啲嘅我哋專注嘅題目，我哋會訂嗰方面嘅某個國家嗰啲嘅期，就多過就係譬如話--因為其實呢啲咁嘅期刊就係好多嘅，咁我哋就個選擇就會係比較專注一啲。咁我諗喺呢個期刊，我哋當時譬如訂嗰陣時，可能啲同事睇到個範疇咁闊，倒不如我哋會專注啲咁去訂，可能呢個係咁嘅原因，呢個我估計啫。

主席：想問下你哋，R&D 有幾多人呀，請問？

答：其實如果係專職真係做 R&D 嘅人數就好少嘅啫，但係我哋每個同事其實就...

主席：即係幾多個呢？冇...

答：頭先我就講有唔同嘅專業。如果你講水質科學嗰度，我理解係一至兩位，都可能係兼職嘅同事。如果係講緊土木工程，如果我冇記錯，都係兩位至三位嘅同事，咁佢都有其他嘅工作一齊做嘅。咁如果係機電嗰度，佢都係大約係一、兩位嘅同事嚟做，咁但係佢就...

主席：水質就一至兩位，不過都係兼職嘅？

答：都唔係專職嘅，佢都有第二啲嘅工作做。

主席：唔係專職嘅，咁佢兼職，用喺 R&D 嘅時間有幾多？即係 check 即係...

答：其實佢哋嘅主職就--我唔知理解 R&D 係咩嘢喇，R&D 係會做埋研究嘅。

主席：唔係，你--我唔知呀，係你話畀我聽㗎嘛，你哋裏面有 R&D 吖嘛，我--所以我問你之嘛。

答：哦，okay。

主席：係。

答：其實佢嗰個--水質科學部嗰個佢唔係叫 R&D 嘅，不過就如果真係叫 R&D，我哋就有一個科，喺發展科嗰度，佢個名就叫 R&D。

主席：唔係，頭先係咪陳--其中一份 witness statement 裏面講咗 R&D 㗎嘛，係咪？唔係--我唔係喺水務署做嘅，我唔知喎。即係你水質嘅就一至兩位，就係仲有其他嘅主職嘅，即係如果佢有多餘嘅時間，有空，咁就去睇下啲期刊咁樣樣，係咪咁嘅意思？

答：我--或者我--對唔住。我諗我嘗試去解答喇，因為我都唔係好實際知道佢真係具體啲嘢。我理解係咁嘅。水質科學部其實佢嘅工作範圍就好闊嘅，咁每個同事佢都會去留意究竟喺第二啲國家、第二啲地方出現有冇啲水質嘅情況，會唔會--佢基本上係冇一個嘅單住叫做 R&D Unit 咁樣嘅。因為頭先我嚟講就係 R&D 嘅工作，咁就每個同事就都會有--有一啲嘅同事會比較專職啲，有啲同事就喺平時日常工作同埋同其他嘅機構或者係其他嘅國家去交流嘅時候佢都會留意到嘅。咁如果都係有一啲咁嘅事件發生呢，佢都會將有關嗰個事故會同嗰個嘅主管嚟到去提出。

主席：即係咁你個水質科學部有幾多位同事呀？

答：水質科學部，你容許我搵一搵資料先。

主席：好呀。

答：水質科學部就我哋大約有--如果係指專職嚟講，大約就有幾十位嘅同

事。

主席：幾多十位呢？

答：因為佢係入咗落去嗰個發展科嘅，咁係同埋其他一啲嘅土木工程一齊。嗰個成個發展科就六十位嘅專業同事喺度。咁我估計係少過一半嘅喇。

主席：即係你暫時答唔到畀我，係咪？

答：嗄，嗄。

主席：得。咁其實--如果我咁講公唔公平呢，實際上就係冇一個人...

答：對唔住，我聽唔到。

主席：實際上就係冇一個特別嘅指定嘅人士係做呢啲咁樣樣嘅工作嘅，呢啲所謂 research、R&D 嘅工作，只不過如果--譬如好簡單，譬如好似律師，都係一樣喇，我諗；啊，要睇呢條法例，咁佢於是就望下外國嘅法例咁；咁上下嘅啫，其實？

答：或者我咁講喇，就因為水質科學係比較係啲係專業嘅一啲嘅科學嘅同--做化學嘅同事，佢哋其實就--你話冇一個專職，即係我冇特別一個--成立一個單位，專門係做 R&D，呢個就冇嘅。

主席：冇嘅。

答：但係我哋就有搵一啲同事，叫佢留意就係其他地方有冇一啲水質嘅事故。

我都想補充有三點嘅。第一點，我哋睇呢啲嘅水質亦都唔係淨係睇外國嗰啲新聞嘅。譬如講本地嚟講，我哋都有定期去睇下一啲嘅市民對於水質嘅投訴。因為你睇到喺第二啲國家發生呢啲事故，發現呢啲事故，都係基於一個市民投訴開始。咁所以我哋都有去跟進呢啲投訴嘅事項。如果係牽涉到水質嘅問題嘅時候，我都會將呢個問題就喺個水質料學部嗰度去研究嘅。

咁第二...

主席：唔係，我想問一問--呢啲唔好--不如大題目，我想問下你。2015年 7 月呢個鉛水事件爆發之前，請問你哋水務署從來有冇收過任何嘅資訊，係關於全世界任何一筲地方，原來呢一個含鉛嘅焊料係出現過

問題呢？知唔知道呢一個 issue 呢？

答：我本人唔知喇。我管理層嗰啲都唔知。但係我相信如果有咁嘅事發生嘅時候，如果係嚴重呢，同事會話畀我哋知道嘅。咁喺 2015 年 7 月之前，我哋冇聽到有第二啲國家有一啲嚴重嘅關於用一啲非法嘅焊物。

主席：即係換句話嚟講，喺 2015 年之前，7 月之前，就你所知，水務署係從來都唔知道呢個含鉛焊料係曾經係出過事嘅，喺一啲地方，係令到一啲居民嘅食水或者啲食水水質上高係出現過問題，係唔知嘅？

答：或者咁講，我本人同埋我啲管理同事就冇收到呢一方面嘅資訊。成個水務署有冇啲同事真係知道呢？我覺得，我應該只可以咁講喇，即係如果水務署有啲同事係知道有咁嘅事故發生，係嚴重呢，佢哋會話畀佢上屬嘅一啲嘅管理層知道，而我哋係會知道。咁用呢個基礎底下，我可以答就係我哋唔知道呢件事。

主席：你哋唔知道？

答：嗄。

主席：我哋而家知道 1998 年，我哋啱啱聽完呢個渠咩嘢？嗰個潔具商會，就出咗個 notice 畀--喺邊一度可以搵到呀？

許偉強先生：AB，Bundle AB。

主席：畀佢啲會員。咁你又知唔知道咩嘢原因呢？

答：我哋其實唔知道佢 98 年係出咗呢一份嘅通告。我估就--我唔知有冇嗰份嘢畀我望一望？

許偉強先生：93。

主席：哦，可以。

許偉強先生：93頁。

答：如果個問題係問，即係佢哋出呢一份嘅文件嗰個嘅背後嗰個原因，我諗我答唔到。

主席：唔係，佢哋都話唔記得。我即係--因為你代表水務署上嚟畀口供吖嘛。

答：係。

主席：係咪？咁所以我就想問下，即係我哋而家知道1998年佢就出咗一封咁樣樣嘅通函畀佢啲會員，咁你哋都唔知道咩嘢原因嘅？

答：第一，我哋唔知有呢個通函出過喇。

主席：唔知有咁嘅通函？

答：第二，我哋都唔知佢背後嗰個原因。

主席：得，好嘞。2001年，ACQWS --係咪ACQWS呀？

許偉強先生：ACQWS。

主席：2001年，我哋成日講嗰個paper，Paper No. 7，2001年，咁就有講過話「啊，我哋而家conduct個USA同埋UK嗰啲咁嘅internet research，就搵到呢啲咁樣樣嘅嘢嘞。」咁你有睇過喇，我相信嗰份文件，你都。

答：我睇過。

主席：係囉。咁你又點樣樣，有冇咩嘢任何嘅解釋呢，即係2001？

答：2001年嗰個7號嘅文件，其實我有同啲同事去了解過。當時其實預備呢個文件嗰個嘅背景同埋究竟個重點喺邊度。我理解就...

主席：唔係，我哋知道個重點㗎嘞。

答：哦。

主席：即係嗰啲唔好花時間。我哋知道係同呢個黃水有關。但係個問題就即係根據嗰度，嗰個 minutes 咁講，佢話「喂，我哋係咁意上去 internet search 呢，都知道有呢啲咁嘅問題嘞。」咁係咪即係你嘅意思就即係話喺--因為我第一個問題就問你吖嘛，2015 年 7 月之前，你哋水務署係完全唔 aware 呢個 lead solder 有問題？

答：或者我可以解釋下。其實--如果我冇理解錯呢，主席你頭先嗰個問題，2015 年 7 月之前我哋知唔知道有一啲地方，佢係用一啲非法嘅焊--用鉛嘅焊料...

主席：我唔理佢非唔非法嘅。

答：嗄。

主席：我唔知道佢非法抑或唔非法。我從來冇講過非法，抑或呢樣嘢。我淨係問知唔知道有用過含鉛嘅焊料啫。

答：哦，對唔住，咁可能我理解錯。

主席：所以千祈唔好--係，我冇講過非法、合法用。

答：如果喺 2001 年嗰個文件其實--如果冇記錯呢，有一段係提到就係當時做一個研究，當佢上網睇嘅時候係發現到有美國同埋英國，佢哋用子多--喺早期嘅階段係用咗好多鉛嘅喉同埋用一啲鉛嘅焊料。

主席：係呀。

答：係，我哋理解當時其實就係--因為係發展嘅早期階段，都係可以用呢啲咁嘅鉛嘅喉同埋鉛嘅焊料嘅。咁變咗我哋...

主席：2001，2001 年發展，邊一度發展嘅階段，早期發展嘅階段呀？

答：或者我想解釋下喇。其實如果你--有冇嗰個 7 號嘅文件？

黎先生：我諗我哋 show 番嗰份出嚟畀佢先。

許偉強先生：Y1 嘅第 5 頁。

答：Okay。第 9 段，就 7 號文件，第 9 段，如果你容許我呢--因為用英文嘅，我讀一讀喇。

主席：好呀。

答：佢呢度就寫就係"In the UK and USA, the most common problem is the presence of lead in water since during their development stage, lead pipes and lead-soldered copper pipes were widely used." 呢個 development stage，我哋都了解過嘅。佢講緊 development stage，係講緊早期英國同埋美國發展嘅。英國--頭先我喺個補充嗰度講咗喇，因為英國...

主席：係乜嘢話，係乜嘢 stage 話？係乜嘢...

答：Development stage，...

主席：係乜嘢...

答：...即係話係講緊佢哋發展呢一個嘅水喉業。即係話喺早期佢哋--呢個國家發展嘅時候，佢哋係用呢個鉛喉同埋用啲有鉛嘅焊物做呢個銅--接駁呢個銅喉。所以呢個 development stage，我哋問過啲同事，佢係講緊係早期階段，係可能係講緊係七零或者係八零之前嘅年代嘅。咁所以呢度講緊就唔係講緊就係話當英國同埋美國喺後期，譬如英國係喺 1970 年就禁用咗呢個鉛喉，美國喺 1980 年。如果係鉛用呢個嘅焊料，係去到 1986、87 嘅時候嘅。咁佢唔係講緊呢啲階段，佢係講緊早期嘅階段。咁所以當我哋去理解嘅時候，早期嘅階段，呢啲國家係用呢個鉛喉同埋...

黎先生：我諗呢度唔係講早期階段，係"since during their development stage"嘅，"since during"，唔係"during development stage"嘅。

主席：係咪講緊起屋嗰個階段呀？

黎先生：唔係"during development stage"，係"since during development stage"。

答：或者呢個呢--呢度咁樣讀喇，但係我就係同過出呢份文件嘅同事去了解，佢哋當時嘅意思就係話喺美國同埋英國，喺早期嘅階段，佢哋係用呢啲鉛喉同埋鉛水喉。因為如果當時...

黎先生：自從係喺係開始發展嗰陣時到而家，喺當時嗰陣時嘅lead-soldered copper pipes 係 widely used，唔係淨係during development stage。自從開始發展嗰陣時開始都有呢一個問題出現，咁然後後屘嗰個解決方法就係要 prohibit 咗-- inhibit 咗嗰個 chemical additives。

答：呢個"since"我哋理解係因為喇。即係其實個意思即係話喺美國同埋英國最普遍嘅問題係鉛，因為喺佢早期發展嘅時候，佢哋係用咗好多鉛喉同埋鉛--有鉛焊物嘅一啲嘅銅喉。即係呢個係我哋同個同事理解，就係咁意思。

主席：唔係，你嘅而家個答案亦都係一樣嘞，okay，即使有第 9 段呢一度，你哋水務署亦都唔知道有呢一個-- 2015 年 7 月之前都唔知道有呢一個 lead solder 呢一樣個 issue 喺外面，喺英國或者喺美國有發生，都唔知嘅，係咪咁嘅意思？

答：唔係，呢度寫咗喇，當時有同事係知道喇。即係話喺當佢預備呢個文件嘅時候，係知道喺外國有用呢個鉛喉，亦都有用呢個有鉛嘅焊物。但係當時嘅理解，就係話因為當時嘅國家係容許呢一樣嘢。正如香港，其實之前，如果我冇記錯，好似係 83 或者 84 之前，我哋都係可以喺個焊物裏面有超過百分之 50 嘅鉛嘅。咁所以喺嗰一刻裏面，响嗰個階段嚟講其實就我哋唔為意有啲咩嘢特別嘅大嘅問題喺度。

主席：得。咁我又有啲嘢想問下，奇怪，咁因為我哋知道 2001 年開始 VTC 嘅 syllabus 就取消，取消咗講呢個 tin lead 呢一個 solder。2001 年。VTC 嘅 syllabus，我諗你哋水務...

答：我未必--對唔住，你可唔可以-- 01 年 VTC...

問：2001 年 VTC 個 syllabus。或者我哋--我冇記錯吖嘛，係 2001 年

吖嘛？2001 同埋 2004 吖嘛，我記得，就已經--之前 VTC 就話「啊，我哋一路都有講 tin lead solders 嘅，因為其實呢啲係抄我哋以前嗰啲 syllabus，喺一九八幾年一路抄、抄、抄、抄，抄到去 2001 年，我哋突然之間就決定唔再用嘞，因為我哋要改嘞，2001 年。」

你又知唔知一件咁嘅事呢？2001 年 VTC 因為呢一個-- obviously 係因為呢一個焊料含鉛係唔批准，所以就要改佢哋嘅 syllabus，咁你又知...

答：我唔掌握呢個資料。不過就我哋喺個法例嗰度，其實應該--如果我冇記錯，應該喺 1987 年就係話應該係用呢啲無鉛嘅焊料嘅。咁會唔會係--因為我哋係靠呢個職業訓練局去訓練呢啲持牌水喉匠，因此佢哋喺佢嘅課程裏面，就住呢一樣嘢嚟到有啲跟進。

主席：職業訓練局，咁你哋水務署有份坐㗎嘛，嗰啲 board，嗰啲 syllabus，係咪？

答：係，我有--我即係我頭先我講就係有同事係喺嗰度，...

主席：係喇。

答：...但係我冇同過同事溝通，我唔知係咪係--因為喺 2001 年有件咁嘅事發生。

主席：二零...

答：不過我相信亦都係--係會因為呢個嘅...

主席：即係你唔知道咩嘢原因 VTC 要改喇，係咪？

答：我本人唔知。

主席:2004 年嘅 minutes。2004 年個 minutes,有人 express concern 嗰個...

許偉強先生：W1，482 頁。

主席：有人 express concern，8.1。

答：係，我見到。

主席：我諗你都知道有呢個議題嘅。Mr Ho 就係水務署嘅 engineer。

答：呢個係 2004 年。

主席：係呀。

答：2004 年，我褸屘--呢個鉛水發生之後，我聽同事有提到，喺 2004 年佢哋出席一啲有關呢個嘅職訓嘅會議有提出呢一點。

主席：係呀。

答：但係 01 年嗰個我就唔係好清楚嘞。

主席：04 年咁都知個囉喎。

答：04 年知呢，就係話其實你用一啲--做一啲食水嘅內部供水系統，你係要根據個規例係教嗰啲嘅持牌水喉匠，你係要留意唔可以用一啲有鉛嘅焊物。

主席：係呀。唔係，即係我想問個問題，就係 2015 年 7 月之前其實水務署已經有無數咁多次嘅機會知道呢個含鉛焊料係一個令到食水水質變壞嘅一個其中一個問題嘅癥結嚟個囉喎。

答：係，我哋其實係好關注就係食水嗰個嘅安全。當然，如果嗰個--一啲嘅水喉同埋裝置，嗰個規例、規格係改咗或者提升咗嘅時候，我哋當然就係喺我哋嗰個嘅有關嘅一啲嘅規例裏面會係講清楚。我哋都相信業界其實都知道呢件事嘅，譬如--你理解房委會其實喺--大約係咪 2000 年嗖？佢哋都喺佢嘅文件裏面、合約裏面去更改咗呢一樣嘢。

主席：我知。唔係，我嘅意思即係其實你 2001、2004，其實，老老實實，2014/15，我哋見到呢個潔具商會又再出個囉喎，又話畀你哋聽鉛係-- lead solder 係有問題個喎。

答：對唔住，你講喺...

主席：係再--我又唔記得咩嘢...

答：二零...

主席：第幾頁呀，2014/15？

黎先生：嗰個 14/15，嗰個有個 journal，個 annual report。

問：二零一--呢個潔具總商會。

許偉強先生：2014 年，應該係 95 頁，

主席：2014。

答：主席，就係我冇理解錯，2014/15 佢係講緊嗰啲嘅水喉嘅裝置。即係佢主要係講緊嗰啲 fitting，就係話佢睇到第二啲國家似乎有個趨勢佢會將嗰個嘅含鉛量會收緊。咁所以佢哋就關注到如果香港...

主席：2015。

許偉強先生：97 頁。

主席：都有講 lead-free water supply system。

答：2015 嗰份，我而家睇緊喇，即係佢都係講緊嗰個水喉裝置嘅，fitting。

主席：唔係，我知。所以我就話其實呢個美國嘅 Safe Drinking Water Act，老老實實，都已經行咗成好多年㗎喇，個目的就係要減少水裏面含鉛，其中一個目的，係咪？咁另外仲有咩嘢 reduction in lead contents，又有一啲新嘅 Act 出嚟，即係我嘅意思即係其實水務署應該有好多好多機會係去處理，或者 tackle 呢一個咁樣樣嘅 issue 個囉喎。

答：或者我喺度回應一下喇。第一呢，就外國呢其實就有鉛呢個問題呢，正如喺水諮會嘅輯錄文件都講咗喇，外國包括英國同埋美國呢，佢哋

係有鉛嗰個問題，我哋理解呢，佢哋有鉛嘅問題呢，最主要嘅原因呢就係因為佢哋一路都係容許就係用一個鉛嘅水喉，同埋用一啲有鉛嘅焊物嘅。咁同香港嘅情況呢就好唔同嘞，譬如我攞兩--攞三個數字嚟比較，香港係 1930 年--1938 年嘅呢，我哋已經係禁咗呢個鉛喉，而喺英國係 1970，美國係 1980，咁所以呢我哋對於呢個鉛呢個會有一個影響個水質嘅問題呢，我哋覺得又不可以呢就係相題並論㗎，譬如喺外國嚟講呢，如果你睇番佢好多舊樓呢，而家都有好多鉛嘅問題，所以佢自己本身呢就用一啲嘅方法，譬如話加一啲嘅化合物喺佢哋嘅處理廠去處理呢個問題。咁所以呢我哋就--亦都我頭先有提過喇...

主席：唔係，即係我而家想淨係知道，即係你嘅意思係咪即係話喺 2015 年 7 月之前呢，就係水務署，因為你代表水務署吖嘛，水務署嘅立場就係呢從來都唔覺得係呢個鉛喺--鉛即係--從來都唔覺得呢個水裏面嗰啲鉛超標係一個問題嚟嘅，係咪咁嘅意思呀？

答：我哋唔覺得嗰個係一個好高風險囉，嗄。呢個鉛...

主席：你有冇做過風險先？你有冇做過風險評估先？

答：我哋呢就去睇一啲客觀嘅事喇，因為我哋見到譬如你頭先提到，有啲國家佢有鉛嗰個問題呢，最主要就係佢用嗰啲鉛嘅喉料，而香港嗰個水質呢，我哋畀水衛嗰個嘅酸鹼值呢，我哋都係比較高，我哋係 8.2 至 8.8 呢，呢個亦都係減低嗰個鉛會，或者其他金屬會釋放落去水嗰個嘅風險嘅，咁變咗呢，我哋睇到呢就外國...

主席：你有冇做過吖？抑或冇考慮過呀？完全冇考慮過。

答：我哋冇去數量化呢個，不過呢，我哋睇到呢就係如果我哋喺個法例裏面，已經係...

主席：唔係，你有冇做過任何嘅重金屬嘅 risk 呢，請問？

答：重金屬嘅...

主席：任何一隻重金屬。

答：係。

主席：有冇呢？

答：如果你講一啲嘅金屬喇，譬如我哋當時呢，喺 1995 年呢，我哋留意

到有一啲嘅鉛水管呀，galvanized iron 呢，...

主席：係呀。

答：...佢哋呢對嗰個水質係有影響㗎。

主席：係呀。

答：咁所以當時呢，我哋做咗一啲嘅研究，包括喺--如果我冇記錯，喺 87 呢，89 年等等呢，我哋都研究下嗰隻鉛水喉係咪適合嚟到繼續喺香港用。

主席：係呀。

答：咁我哋最後呢，我哋諮詢咗業界呢，就係 1995 年呢，亦都係立例呢就係禁止咗鉛水喉。

主席：啱吖。

答：咁所以呢，你話我哋過去有冇就住金屬嚟到嗰個釋放落水嗰度有冇研--有冇去研究呢，我哋係有嘅，咁但係你講...

主席：有冇咩嘢話？一樣，一次，就係呢個 GI pipe 就係嗰啲鐵呀，鐵鏽嘞，...

答：係嘞。

主席：...即係基本上，啱唔啱呀？

答：嗰個其實有個原因呢，就係因為我哋當時睇番呢，的確亦都有好多市民係投訴...

主席：唔係，我哋明㗎嗰啲，嗰啲我哋明㗎喇其實，所以唔需要...

答：其實最主要呢，我哋都有個渠道去睇到有個問題存在，包括呢就係頭先我提嗰幾樣嘢喇，即係喺個水質嗰個監控喇，投訴喇，或者外國一啲嘅例子畀我哋知道有某個風險，我想強調呢，其實喺世衛裏面呢，如果你講金屬呢，有好多種㗎佢，我哋喺呢個鉛水事件發生之前呢，我哋係唔會知道呢呢個鉛釋放喺水以致超標呢，係一個好高風險嘅情況，因為呢我哋有一套嘅--頭先我哋都簡單介紹過，一套嘅制度去盡量呢去保障呢一方面嗰個嘅監管工作㗎，嗄，如果你根據世衛嗰個嘅指引呢，其實最重要呢就喺物料監控嗰度。

主席：最重要就係物料監管？

答：係，物料監控，即係話呢，如果你喺施工階段嘅時候，你係需要呢就係...

主席：唔係，我明嘅。

答：嗄，嗄。

主席：咁點解你哋啲 86--仲係用 864 呢？你哋個 British Standard，你個 water--waterworks 嘅 ordinance，咁重要嘞，物料監控，點解唔改嘅？

答：你講英國標準 864？

主席：係呀。

答：其實我哋就係--基本上係跟呢個最新嗰個英國標準，即係話呢如果係用嗰個嘅...

主席：最新嗰個 1998 年喇，1254。

答：我哋其實呢喺我哋個規例裏面呢...

主席：唔係，我知你個規例講乜嘢嘢，係咪，你個規例話要用最新吖嘛。

答：嗄，嗄。

主席：咁但係點解唔改呢？

答：你講唔改係喺我哋嗰個...

主席：Regulation 裏面呢。

答：Regulation 或者我喺度解釋下喇，我哋喺嗰個嘅規例裏面呢，我哋有啲附件會列明嗰啲嘅英國標準。

主席：係呀。

答：但係因為英國標準呢其實都有時不時嗰啲嘅跟進嘅。

主席：咁冇...

答：更改㗎。

主席：咁唔需要寫㗎，咁唔好寫，你可以唔寫㗎嘛。

答：你講係之前嘅--喺嗰個規例，你寫咗落去...

主席：你寫咗落去，你唔改嘅？

答：...英國標準，嗄，或者咁講喇，我哋睇到呢就係個法例呢，喺--因為呢個法例呢係已經係之前修訂嘅時候呢，擺咗呢啲嘅英國標準喇，而喺個定義嗰度都寫咗係跟最新嘅標準，所以呢，我哋呢亦都冇刻意每次當個--某一個嘅英國--因為我哋有好多呢啲水喉裝置物料嗰個英國標準，咁如果將呢一啲...

主席：你唔係--對唔住，署長，你可能係有好多物料係有英國嘅標準，不過你寫落去個規例嗰度就唔係寫好多隻英國標準。

答：唔，唔。或者我想解釋一下呢，就係如果喺個規例寫咗個英國標準，如果係有更改呢，我哋都唔一定呢就會係喺嗰個規例，因為亦都需要去立法會嗰度嚟到去更改過。

主席：咁有啲咩嘢咁大嘅問題呢？

答：主要呢就係我哋其實就...

主席：要--要改條規例，要改個 BS Standard，我諗唔會有人拉布啩？

答：或者咁講喇，我哋覺得呢，如果係喺個規例裏面有一啲嘅英國標準呢，我哋都係會跟--一般嘅情況我哋會跟新嗰個嘅標準，以至呢就係話喺我哋同業界嘅--嘅溝通，或者我哋有啲嘅文件呢，我哋都會話畀業界知，我哋用乜嘢嘅標準㗎，咁所以呢我哋就冇特別呢，就係每一次，當有英國...

主席：呢--其實而家反而係調轉呀，而家係業界話畀你聽呀，如果我哋睇番 1998 年嗰個，業界話畀你聽有啲咩嘢問題，唔係你話畀佢哋聽有啲咩嘢問題呀，2014 年係業界話畀你聽有啲咩嘢問題呀，2015 年係業界話畀你聽有啲咩嘢問題。

答：2014 你講頭先嗰兩個期刊嗰邊？

主席：係囉。

答：其實嗰兩個--兩份文件呢，如果我冇睇錯呢，佢係講緊外國有一啲嘅國家...

主席：唔係，如果你要好--對唔住，如果你要去 narrow-minded 去睇嘅話，咁我都幫你唔到，不過好似唔係咁樣樣講。

答：唔。

主席：署長，對--我知道你 2013 年先至做，所以我唔係--因為你代表水務署，所以我要問你。

答：唔係，我--我同意嘅，不過主席，唔知我可唔可以真係講講 14、15 嗰個文件喇。

主席：係呀，唔。

答：因為嗰個文件其實佢如果我冇搞錯呢，就水喉商會呢，其實佢係就住外國，佢哋--我諗佢主要係講美國喇，佢就住有一啲嘅裝置，佢哋要求嗰個嘅鉛嗰個成分呢，係有一個新嘅一啲嘅規例。

主席：啱呀。

答：佢係擔心呢，就係話，如果係咁樣嘅時候...

主席：係呀。

答：香港會唔會跟隨呢個新嘅規例嚟到去做。

主席：啱。

答：因為佢哋係供應香港嘅一啲嘅水喉裝置，所以佢會去睇一睇呢個影響有幾大，而去做出呢一個嘅一個--你可以話係一個預告喇，但係呢就同--話正式喺個英國標準，將呢個規例改咗呢，就兩件事嚟嘅。

主席：嗰個 technical director 其實都講好多一啲呢個 lead solder 嗰啲嘢個喎，唔係純粹係淨係話因為...

答：如果係 14、15 嗰兩份商會講個文件呢，...

主席：係囉。

答：...佢針對係裝置嘅，就唔係特別講嗰個焊物嘅。

主席：好，得，唔該。

問：想問番呢個 14、15 嗰兩份文件呢，W1/95 先喇。2014 年嘅。我哋從呢個水喉同埋潔具商會嗰個口供入面呢，就得知呢，呢一個 2014 年嘅文件呢，就係喺 2014 年當時佢哋喺一個週年晚會度派發嘅，林生你都係有出席到個週年晚會㗎，係咪呀？

答：你講 14 嗰個？

問：係嘞。

答：14 嗰個我諗我有出席，我記得好似有出席。

問：係，咁你都即係有出席，你一定有收過呢一份文件喇。

答：唔，唔。

問：係咪呀？收到呢一份文件之後，你返番水務署，咁樣點樣去跟進呢份文件呢？

答：其實呢個文件呢，佢只係一個預告式㗎，佢有關注呢就話如果將來香港嗰個嘅法例，或者香港嘅英--嗰個水喉裝置嗰個要求係會遵隨美國嗰個嘅規例呢，佢哋係有啲關注。

問：唔。

答：咁但係事實上呢，我哋就冇特別呢就係會為譬如美國呢個嘅做法，或者係有一啲嘅國家，佢哋做咗一啲研究，我哋就會立即呢，就係會去跟隨，而當時呢，如果係--我哋係有啲任何嘅決定呢，我哋都會同業界有一個好嘅溝通。

問：係，同唔同意呢，呢一個文件我就咁表面嚟睇呢，講緊話係"development of lead-free copper alloy for use in drinking water application in EUR"，咁你一開始嘅時候都有講過話，你哋都要即係達到國際嘅水平㗎嘛，咁你同唔同意例如呢啲咁嘅課題呢，係水務署係都係值得關注？

答：我哋對於呢一啲嘅物料嗰個嘅規格呢，我哋當然係關注喇，咁但係正如我講喇，呢度所講嗰啲呢，係講緊第二啲國家，佢所做一啲嘅研究，或者甚至乎有一啲嘅措施，喺香港你個適用性呢，其實而家暫時都未

有嘅，我理解呢，英國呢，而家個標準都係未更改嘅。

問：咁我想問一下，你攞咗呢份文件先之，返番水務署呢，有冇就住呢份文件，話畀過第二啲人睇呀，作出討論咁樣呀？

答：我冇嘅。

問：好嘅，得。即係冇任何跟進嘅跟住。2015 嗰份呢，97 頁嗰度呢...

答：但係同樣都係，因為佢本身...

問：同樣都係，等等先吓，同樣都係喺嗰個週年聚餐嗰度派㗎喇。

答：係。

問：呢個你都有出席嘅？

答：我有。

問：係咪呀？咁呢度呢亦都係都幾好係講嗰個有關鉛有啲咩嘢問題，最--我想你睇一睇嘅呢，就係喺 98 頁。最頂頂嗰度呢，佢就講出咗喺美國呢，由 2010 年開始呢，就有一啲法例呢，係就住即係規管呀，或者監控呀，呢個 lead content of water supply system，咁跟住佢下面就講有關 solder 呀、flux 呀等等呢啲物料喇。我首先呢想問一問你，你知唔知道有關美國喺 2010 年呢，就話即係開始就住呢啲監控有鉛嘅物料呢，就係即係推行咗法例呢樣嘢。

答：我之前唔知嘅。

問：之前唔知嘅，好嘞，同樣地，你攞住呢一份文件喇，咁呀返番水務署呢，都係冇再作出任何跟進㗎，係咪呀？

答：其實坦白呢就出席一啲咁嘅宴會呢，佢係派一啲嘅期刊，或者係一啲嘅--佢有其他一啲嘅文--一啲嘅刊物喇，我都未必會每一份呢我係會詳細睇，我冇印象係見過呢兩份文件。

問：唔，即係你自己冇仔細地睇過呢兩份？

答：冇。

問：好，好嘞，講番嗰個 Paper No.7，我想跟進一點嘅。

答：唔。

問：我哋睇到呢，如果我哋睇番嗰個 Paper No.7 嘅第 9 段呢，唔好理佢啲文法上面係點講先喇。

答：唔好意思，可唔可以...

問：好呀，唔好意思，你等等。唔好理佢啲文法係點講先喇，第 9 段呢好清楚講到明呢，就係話食水含鉛嗰個問題喇起碼，你同意嗎？即係呢一度。

答：唔，唔。

問：係咪呀？

答：嗄。

問：你就話同當時準備呢份文件嘅同事都有跟進過嘅，喺你畀口供之前，我想問下係邊位同事負責處理呢份文件㗎當時？預備呢個 Paper No.7㗎？

答：唔，我應該當時有一個--我了解番喇，當時有一個高級嘅工程師係負責嘅，嗄。

問：而家都仲喺水務署做嘅？

答：係。

問：係咪呀？

答：嗄。

問：咁我見到例如呢位係唔係陳世偉（譯音）先生本人？

答：唔係。

問：唔係。

答：周世威（譯音）。

問：周世威，好。你同佢跟進過喇，咁然後陳世偉先生呢，就喺佢嘅證人口供--唔好意思，周世偉（譯音）先生...

答：周世威。

問：周世威先生，喺佢嘅證人口供嗰度呢，就有提及過呢一份 Paper No.7 如果我哋睇下 C12。1893 頁。

答：係。

問：如果我哋睇下第 43 段第 1 句先喇，咁佢話"Paper No.7 was prepared with focus of concern on the proper maintenance and cleansing of the plumbing system of existing buildings...

主席：等我一陣先，Mr Khaw，未搵到。

許偉強先生：哦，唔好意思呀。C21，18932。

問：唔該。呢度講到呢，就 43 段呢，第 1 句先喇，"Against the above background, Paper No.7 was prepared with focus of concern on the proper maintenance and cleansing of the plumbing system of existing buildings."如果我哋先跳一跳去第 44 段睇一睇，44 段呢就咁講嘅，佢話有一個係美國嘅即係環保署喇，發出嘅一份 leaflet，"Lead in Your Drinking Water issued in 1993 was referred by counsel for the Commission during the hearing on"十一月二號。According to 水務署嘅資料呢，嗰個 leaflet 呢，"was within the research materials leading to the preparation of Paper No.7" 咁樣。如果我哋睇下嗰一份美國環保署嗰個有關嘅資料呢。A1/399 呀。

答：唔該。

問：399 呢就係呢一份就係我哋講嗰個 leaflet 嘞，咁就 399 嗰頁呢，都係講出咗鉛有啲乜嘢壞處喇，如果我哋睇下中間對落少少呢，見唔見到"Sources of Lead in Drinking Water"嗰度呀？

答：見到。

問：係嘞。咁呀見到"Lead levels in your drinking water are

likely to be highest if:”等嘅唔同嘅情況喇，咁其中呢包括咗“your home has copper pipes with solder”，咁跟住又幾多年呀等等喇，咁然後就講出咗點解鉛係一個問題喇，“Why is lead a problem”喇，咁同埋係對邊啲人嘅影響比較深遠喇咁樣，嗄。咁好嘞，到400頁嘞，上面。“lead in your home's water is most likely pipe”或者“solder in your home's own plumbing. The most common cause is corrosion, a reaction between the water and the lead pipes or solder.”咁跟住最後呢，我哋睇下401頁，第2嗰--即係最頂頂，由2嗰點開始嘞，佢就話1986年6月份呢，President Reagan呢，當時就簽咗一個Safe Drinking Water Act嘅amendments，“These amendments require the use of "lead-free" pipe, solder, and f1ux in the installation or repair of any public water system”同埋“any plumbing in a residential”或者“non-residential facility”嘅。“Under the provisions of these amendmen4ts, solders and f1ux will be considered “lead-free””，如果佢哋contain幾多個per cent以下，“Pipes and fittings will be considered “lead-free””等等。“These requirements went into effect in June 1986. The law gave state governments until June 1988 to implement and enforce these new limitations. Although the states have banned all use of lead materials in drinking water systems, such bans do not eliminate lead contamination within existing plumbing. Also, in enforcing the ban, some states have continued to find illegally used lead solder in new plumbing installations.”好嘞，我哋就咁睇呢份文件呢，呢份文件呢就二零--呢個2000年呢個第7號嘅report寫嘅時候呀，就有參閱過呢份文件嘅。

答：唔。

問：咁如果我咁理解啱唔啱呢，好明顯當時你嘅同事呢，第一，係清楚知道食水含鉛其中一個呢，係可以係呢個焊料導致嘅，即係呢個文件好清楚咁寫出嚟嘅，你同意嗎？

答：呢個喺佢嗰個文件都有寫到喇。

問：係嘞。

答：唔。

問：咁呀第二呢，你剛才講話係咪非法呀，定係合法用呢，咁呢度都有講到話，如果非法用咗啲含鉛嘅焊料呢，都會導致呢個問題個喎。

答：唔。

問：咁應該當時，即係你哋嘅同事，都會有清楚知道，如果非法用咗一啲有鉛嘅焊料呢，都會令到個食水呢出現問題。

答：呢個我有保留喇，我唔知道嗰個同事呢，究竟係咪真係有睇到呢度，因為呢，其實嗰陣時預備個--呢個 7 號文件呢，佢係睇好大量嘅--上網去搜集到嘅嗰啲文件，亦都嗰陣時個專注點呢，主要就睇呢，啲現成嘅樓有冇一啲嘅水黃呀，或者有啲嘅水質嘅一啲嘅問題。

問：係，佢可能...

答：佢有冇睇到呢一度睇得咁清楚，以致到佢知道有呢個咁嘅非法用一啲焊--有鉛嘅焊料喺個水喉導致有個食水含鉛嘅問題呢，我相信未必一定嘅。

問：如果我哋就咁睇呢一份文件，如果當時個同事係睇咗呢份文件，了解咗個內容嘅，咁應該都知道，即係有嗰個危機呢，就係食水含鉛可能係由嗰個非法用嗰個焊料，有鉛個焊料引致嘅，同意嗎？

答：或者咁講喇，即係如果我同事真係，呢個係一個假設性喇，即係如果同事真係睇到呢一度呢，佢會睇到外國呢有一個咁嘅問題存在，咁至於香港嘅環境係咪同外國係一樣呢，有冇一個適切性嗰度呢，我相信呢，當時呢係會有一個嘅討論。

問：我哋知道呢，從房委會嘅口供呢，佢哋大概 2000 年年頭呢，就開始研究，就話畀承建商多一個選擇，就係選擇用銅喉，呢樣嘢你知唔知呀？

答：我--即係最近呢年發生呢件事我就知嘞。

問：哦，之前就...

答：之前係唔知嘅。

問：...唔知嘅。

答：唔知。

問：咁你亦都知唔知道其實銅喉呀，即係作為食水喉嘅用途呢樣嘢呢，銅喉其實喺 2000 年之前呢，都有畀--係廣泛被使用㗎嘞已經，你知道嗎？

答：呢個我知。

問：呢個你知。

答：嗄。

許偉強先生：好，咁跟住落嚟嘅問題或者我留待午飯返嚟先。

主席：食完飯先，係咪呀？好唔好？咁我哋晏晝兩點半再繼續。唔該。

下午 01 時 02 分聆訊押後

下午 2 時 30 分恢復聆訊

出席人士如前。

水務署第一證人：林天星（水務署署長）宣誓繼續作供
許偉強先生繼續盤問

問：林生，喺食晏之前，我就問咗你有關 2000 年之前，就住使用銅喉嗰個普遍性，你都係知道嘅，係咪呀？即係用銅喉做食水嘅水喉嘅呢樣嘢，2000 年之前都係有用銅喉呢樣嘢，你係知道㗎嘛？

答：2000 年前，其實就喺我哋嘅規例係准許用銅喉嘅。

問：係，冇錯，我亦都知道銅喉喺個業界都係有普遍使用嘅，呢樣嘢你都知道？

答：普遍性呢個就要考究，即係佢係合法可以用嘅。

問：有用喇，呢樣你知，係咪呀？

答：係，係。

問：如果我哋睇番 C21 18932 43 段，都係講番個 paper No. 7 嗰度嘅，因為我想了解下你哋嗰個--即係你哋對呢份文件當時嗰個參與程度，如果我哋呢度講話--第一句我同你講咗，第三行開始，"Based on the literature research at that time, lead pipes and leaded-solder copper pipes were widely used in the UK and USA during their development stages and consequently the most common problem was the presence of lead in water at the material time. In contrast, the use of leaded pipes was banned in Hong Kong since as early as 1938, followed by the ban of leaded solder in 1987. Further, before the ban of unlined GI pipes in December 1995, unlined GI pipes were commonly used in Hong Kong for fresh water inside service in the then existing buildings."，最後呢度，我真係唔係好明白，我等陣要問番你。

"Given the different historical backgrounds, the risk of presence of lead in water in the UK and USA had no direct application to Hong Kong."，呢度係咁講嘅，佢話因為大家有啲唔同嘅歷史背景，所以"the risk of presence of lead in water"喺其他地方就"no direct application to Hong Kong."。

首先我想問下你，你同唔同意就係話唔好理嗰啲歷史背景先，我哋做咗呢個研究，當時 paper No. 7，知道咗食水含鉛呢一個風險，呢樣嘢你唔會否認㗎，知道有呢個風險吖起碼？

答：你喺 2000 年做呢個研究嗰陣時？

問：冇錯，即係做咗呢個 paper No. 7 嗰陣時，知道食水含鉛呢個風險先，係咪呀？呢個你同意㗎嘛？

答：唔。

問：亦都知道呢個風險其中一個可能嘅呢個誘因就係用咗一啲有鉛嘅焊料，呢樣嘢都係喺嗰個 research，當時嘅研究嗰度都有睇過呢個問題㗎？

答：個關鍵就我哋嗰陣時嘅或者我而家嘅理解，因為嗰個文件佢係講緊英

國同埋美國佢哋早期發展階段，佢哋係可以用一啲鉛喉同埋有鉛嘅焊料，所以普遍性，其實鉛喺水嗰個問題係存在一個好長嘅時間，所以當你去睇一啲嘅資料，你睇到相對香港，外國即係包括英國、美國，甚至加拿大，佢都有呢個問題存在嘅。

問：但係我個問題就係起碼你做嗰個研究，睇咗美國嗰個 leaflet，都會知道食水含鉛其中一個誘因，就係呢啲咁樣嘅焊料嘅使用嘅問題吖嘛，即係呢個你唔會否認，當時知道，係咪呀？

答：係。

問：你亦都知道 2000 年之前，做食水喉有用銅管呢樣嘢，係咪呀？

答：唔。

問：你覺得係咪唔係好啱呀？即係如果知道晒呢啲咁嘅嘢嘢，但係你又覺得呢個美國同埋英國食水含鉛呢個風險，同香港冇直接關係？

答：可能我都係解釋得唔清楚，我諗個關鍵就係究竟當時做呢個研究嘅時候，佢睇到外國呢啲問題係因為佢哋係好遲佢先至禁用呢個鉛喉，所以變咗佢嘅問題喺 70 -- 80 年代都係好普遍，但係香港因為已經喺 30 年代已經禁咗，所以當時，我相信我同事去睇到嘅時候，就覺得從來香港唔會有一個所謂鉛呢一個嘅問題，因為如果相對香港係一直以嚟都會有鉛呢個問題，喺我哋過去咁多十年，我哋有一個嘅機制，譬如話去睇下有冇一啲嘅市民投訴嗰個水質，又或者我哋去睇到一啲嘅水辦嘅結果，我哋都睇唔到有呢個咁大嘅問題。

再加上，如果你容許我加多少少，因為香港其實我想再重複講一講，香港嗰個情況同外國係有幾個唔同嘅，除咗我哋嘅鉛喉好早已經禁咗之後，我哋嗰個嘅水質嗰個酸鹼度係同外國唔同嘅，我哋嗰個嘅鹼性係比較高啲，如果以世衛佢話「你要減少嗰啲嘅金屬係蝕化落水，係講緊 8.0 至 8.5。」我哋香港係 8.2 至 8.8，所以呢個係一個好重要嘅，另外我哋有一個好好嘅基...

主席：對唔住，點解香港啲食水要個 pH 咁高呢？

答：恐怕我未必係一個專家答到你，不過呢個我...

主席：唔係，香港食水個 pH 咁高就係要防止一啲 corrosive 嘅 metal

走出嚟吖嘛？

答：係，即係我頭先就係講呢一點。

主席：如果你話香港啲水喉真係完全冇問題，安全到係冇得頂嘅，仲使乜要加高呢？

答：我諗--或者我嘗試答呢個問題，因為除咗水管以外，一啲裝置我哋都係容許有一啲金屬嘅，嗰啲金屬都有可能會有一啲微量嘅釋放都唔出奇。

主席：有啲乜嘢話？

答：吓？

主席：有啲乜嘢釋放話？

答：譬如話我哋一啲嘅銅合金，銅合金喺我哋而家嘅英國標準係容許百分之四至百分之六嘅鉛嘅，呢個係一個可能性，又或者有其他一啲嘅--譬如我哋有一啲嘅水龍頭，我哋都有一啲嘅電鍍，裏面都可能會有一啲嘅金屬嘅，所以就...

主席：唔係，如果你覺得一向都冇問題嘅，所以啲嘢，我哋啲水質冇問題嘅，無論水管又冇問題，水嘅部件又冇問題嘅，唔需要調高個 pH㗎？

答：或者我喺呢度補充兩點，第一點...

主席：唔係，有啲乜嘢嘢令到香港啲水咁特別係要調高個 pH 呢？

答：呢個我就係正正初頭就我答唔到嘅地方就係點解早期係好耐以前點解要將香港嘅水質嗰個嘅酸鹼值係調高，我嘅理解最主要就係去增加嗰個水管嗰個嘅承受嗰個腐蝕嘅能力嘅，我頭先想講嗰點就係話香港比起外國--因為頭先我講緊外國，因為外國嗰個酸鹼值同香港係唔同嘅，所以我想講一講點解我哋香港嘅情況同外國係有一個差異喺度，除咗係我哋用嗰個鉛喉我哋好早已經禁止，我哋本身嗰個水質嗰個酸鹼值係同外國有啲唔同。

另外我哋香港其實就喺 1982 年開始除咗個持牌水喉匠，我亦都有一個嘅專業人士係負責去確認嗰啲嘅水喉料係啱規格。如果你相對睇下第二啲國家，譬如英國、美國、加拿大、澳洲，佢哋基本上都係--但係主要係一個持牌水喉匠嗰類嘅專業人士。除咗係星加坡，星加坡佢除咗持牌水喉匠，如果喺一啲比較複雜啲嘅水管工程，佢係要求

有工程師嘅。所以香港如果係相對比第二啲國家，我哋嗰個情況其實就我哋會覺得就係嗰個風險係比較低啲。

而且我哋一套嘅安排，一套嘅制度，喺我今朝嗰個嘅補充嗰度都提出，就係我哋沿用就係世衛標準嗰個指引嚟到去進行嗰個嘅風險嘅監管嘅，而呢個制度，我哋相對睇下第二啲國家，我哋真係睇唔到我哋係有個好大嘅出入，甚至有啲地方我哋覺得係相對係比較係嗰個風險係低嘅。

問：而家睇番轉頭，睇番嗰個 paper No. 7，又睇番當時做 paper No. 7 嗰陣時有睇過外國因為食水含鉛係由呢個焊料引致嘅，但係當時就水務署又冇進一步再跟進，而家睇番轉頭，你認唔認同當時個警覺性係低？

答：如果當時個同事佢見到外國，譬如美國同埋呢個英國佢嗰個水有鉛呢個問題，就去理解個原因係因為佢係嗰陣時准許用一啲鉛喉同埋一個鉛嘅焊料，我覺得嗰陣時其實佢真係可能係冇察覺到呢個問題會喺香港嚟講係有一個直接嘅應用性嘅，呢個我嘅估計。

問：好，我哋去另外一個課題，講下呢個 inside service 嗰樣嘢同埋嗰個供水系統嗰個分別，首先我想同你睇一睇你個證人口供入面係 C19.1 10282，10282 第 12 段亦都係講番就係"WSD installations from the collection of raw water in Hong Kong to connection points at lot boundaries of consumers"就係叫做 Waterworks，我哋叫做供水系統，"supply system"，"from connection point to"嗰個 consumer tap 就"generally referred to as the inside service."嘅。

你後面嗰度就講一講個法例嗰度，喺個圖入面就有講到，according to 嗰個條例，"custody and control of the waterworks is taken by" Water Authority，即係你本人，"whilst the custody and maintenance responsibility of inside service rests with the agents and consumers."，呢個就係你講呢個第 7 條嗰個界定，就係供水系統同埋呢個內部嘅供水系統嗰個不同嘅。

我想問一問，就係首先就係以水務署嚟講，即係你哋嘅立場唔係話供水去到 connection point，就同責任講 bye-bye，唔係咁嘅，係咪呀，你哋？

答：正如我講，我哋都係關注喺嗰個內部供水系統嗰個供水嘅情況。

問：冇錯，即係你哋都會關注內部供水系統有可能出現嘅問題㗎嘛？

答：或者我呢度可以講兩點，第一點，喺建造階段，我哋水務監督有一個監管嘅角色，如果係個水務嗰個嘅--我哋已經供應咗呢個水畀呢個內部供水系統之後，其實喺個法例裏面係除咗嗰個嘅住戶，佢當然有個清潔同埋保養嘅責任，就當佢睇到水質係有一啲嘅問題嘅時候，佢亦都可以將個問題係轉介畀我哋，我哋都會有跟進嘅。

問：冇錯，所以正如你嗰個口供第 34 段所講，10291，即係就住內部供水系統，水務署都有佢嘅責任嘅，係咪呀？其中就包括持牌水喉匠嗰個發牌，係咪呀？內部嗰啲喉管、部件要符合標準，同埋都要適當嘅人員去簽署嗰啲喉管係達標嘅，另外都有 inspection and approval of the inside service 同埋 water sample tested to be in compliance with the specified standards 呢幾樣嘢。

我問一問你，剛才你都帶出呢個問題，就係如果一個用戶，佢覺得自己個食水嗰個質量有問題，佢向水務署投訴，水務署都會作出跟進，係咪？即係唔會因為話呢個係屬於 inside service，所以叫佢搵管理處算喇，你哋唔會理嘅，唔係咁㗎嘛？

答：當然如果--而家事實上過去我哋都收到好多關於水質嘅投訴，我哋都會去調查究竟嗰個問題喺邊度嘅。

問：我想問一問你，就係講關於驗水，就係喺嗰個 connection points 嗰度，呢度你就喺你哋處方都有唔少解釋嘅，或者我哋睇一睇其中一個講法，睇一睇 19.1 10500 第 6 段，呢度就係講話你哋喺 94 至 95 年，你哋就有個承諾，就話你哋嗰個供水系統就會去到個 connection point 嗰度嘅，我想問一問，就係你有冇查番你哋水務署嘅紀錄，有冇曾經就呢個話供水系統達致標準去到 connection points 呢樣嘢，你哋處方以前有冇做過呢方面嘅討論，即係點解係去到 connection points？

答：我諗呢度都解釋咗，就係基本上我哋可以--呢度跟住嗰句，就係其實我哋基本上就係可以做到就係因為我哋係自己有全權嘅...

主席：聽唔到，對唔住，你大聲啲。

答：對唔住，其實喺呢個文件跟住嗰句有提到，就係話點解我哋可以做到呢個承諾，就係因為我哋喺就住個水務設施，我哋有絕對嘅監控權，我哋自己興建，亦都自己保養，呢個我哋係可以有呢個咁嘅承諾，而去到過咗嗰個接駁點，嗰個嘅內部供水系統，我哋相對嗰個嘅控制權係冇咁多嘅。

問：相對冇咁多控制權，我想問下，如果你睇番呢一個水務條例第 12 條，G1 225，第 12 條(1)嗰度就咁講嘅，就話水務監督或者他以書面授權嘅任何人，可以在任何合理時間或者喺緊急情況之下都進入嗰個處所，就係確定用水量；同埋(e)就係安裝、檢查、測試、調節、更改、修理同埋移動該處所內嘅水務設施同埋任何部分嘅任何嘅消防供水系統及內部供水系統。即係你哋有權其實係就住內部供水系統，如果你哋需要去檢視、去做檢查嘅，喺呢個條例度你哋有權咁做嘅？

答：如果你係睇 12(1)，其實佢嗰度寫住就係「在符合第(2)款的規定下」，即係佢有一個第(2)款嘅，如果你睇第(2)款，嗰個權力係有一啲嘅限制嘅，除非你係一啲緊急嘅情況，如果唔係，你係需要得到就係嗰個該處嘅佔用人同意，又或者就係去攞一個嘅搜令嘅。

問：冇錯。

答：即係話唔係隨意冇一啲特別嘅原因底下，亦都唔係一啲緊急嘅情況你可以入去。

問：好，我想問一問，就係你話呢個內部供水系統你話有一個咁嘅分野，即係話你哋嗰個符合個規格係去到 connection points 呢個問題有冇喺你哋處方曾經有講過如何去決定呢樣嘢？有冇翻閱過呢啲咁嘅文件？

答：你講緊係喺 1994、95 年之前？

問：唔，或者喺嗰陣時候。

答：因為我都係相信喇，我自己就唔係好記得有冇睇過嗰啲文件，我相信當時，如果 94、95 年，係喺嗰個嘅公開承諾嗰個水質係去到嗰個供水點係滿足世衛嘅標準，水務署內部一定有一個咁嘅討論。

問：今日喺讀咗你嘅證人口供之後，你都附加咗好多資料，其中一個你就講話--如果我冇抄錯，你就話平均你哋一年有大概十六萬個水辦，你

哋都係有攞大概十六萬嘅水辦嘅，你有講過呢樣嘢，係咪呀？

答：有。

問：呢個咁嘅水辦，係咪你係講緊內部供水系統個水辦嚟？

答：唔係。

問：唔係嘅？

答：全部供水系統，包括水務設施。

問：有冇內部供水系統？

答：有。

問：有嘅？

答：有嘅。

問：你哋點樣去到界定，問內部供水系統係攞水辦嚟做檢查？

答：你可唔可以再講講？你嗰個界定係指界定乜嘢？

問：攞水辦就可以係 connection points？

答：係。

問：亦都有包括內部供水系統入面嘅水辦，即係剛才你講？

答：係。

問：即係呢十六萬係包括咗有 connection points，亦都有內部供水系統嘅，係咪？

答：係。

問：Connection points 我哋知道，即係點解你會去驗，內部供水系統如果要攞水辦嘅，即係問啲住戶或者問嗰個管理處要攞水辦嘅，你哋係根據乜嘢問你哋攞水辦嘅呢？

答：你講係根據咩嘢權定咩嘢？

問：即係喺乜嘢條件之下，喺咩嘢情況下會問佢哋攞水辦？

答：或者我嘗試答，可能詳細啲我化驗師會答到，我理解，其實就係我哋嗰十六萬嘅嗰個水辦都有好多係喺嗰個濾水廠，喺我哋嘅供水系統嗰度攞，唔係淨係喺個接駁點嘅，至於喺個內部供水系統我哋攞呢，我哋其實又--我理解係有一套嘅規則佢哋係有啲隨機去取樣，就係攞到某一啲嘅單位，佢要喺嗰度攞水辦，攞水辦呢佢又進行唔同嘅測試嘅，譬如有一啲可能係微生物嘅測試，有啲係物理嘅測試，有啲係某一啲嘅化學嘅測試，亦都有一啲就係幅射性嘅測試，加加埋埋就連埋頭先我講嘅濾水廠、供水系統，總共係十六萬。

問：我想問下你，呢啲咁樣嘅攞內部供水系統嘅水辦係你哋每年會抽樣咁去攞吖，定係你哋既定咗例如每年係要有幾密--去做得幾密咁樣，你有冇呢啲咁樣嘅...

答：我未必可以詳細答到你，我淨係知道佢每年就有十六萬嘅水辦，有一部分就係來自內部供水系統嘅。

問：好，你內部供水系統嘅水辦，你又知唔知係咪來自用戶佢自己攞嚟嘅呢？係咪用戶佢自己攞嚟？

答：我哋去攞。

問：你哋去攞嘅？

答：應該唔係用戶畀我哋，我理解係咁。

問：哦，明白，即係...

答：亦都我知道，喺過去都有試過，譬如話我哋想入去一啲嘅用戶攞啲水辦，亦都有個困難嘅，所以我哋主要就就住一啲我哋可以攞到水辦嘅地方。

問：明白，即係表示話你哋都會派人走去用戶嗰度去攞水辦嘅，即係走入個單位嗰度攞水辦嘅？

答：「用戶」呢個字要小心喇，你講緊可能一般你諗你係住戶，用戶好多嘅，譬如話喺一個商場個洗手間，嗰個亦都係一個用戶嚟嘅，嗰啲我諗--我知道啲同事同我提，就有啲譬如佢走去問個管理處可唔可以畀佢攞水辦，如果管理處係同意，我哋都有試過咁攞嘅，但係就未必係上到去--你一般可能諗就係上去樓上某一啲嘅住戶單位入去攞喇。

問：以你知唔知，有冇上去用戶嗰度攞水辦？

答：我只係知道有好大嘅困難，但係有冇曾經過去咁多年有冇攞過一個，我唔敢肯定。

問：即係起碼嚟講，超越咗 connection point，你哋都會攞水辦嘅，係咪？

答：係。

問：呢個亦都係顯示到你哋對於除咗話 connection points 之餘，你哋對於真係話真係去到用家擰個水喉出嚟飲嗰啲水，你哋都係關注㗎嘛？

答：呢個係。

問：係咪呀？你哋都關注嘅？

答：係，頭先我喺個補充都講咗，有三點我哋係關注喺內部供水系統嗰個水質，其中一個就係我哋係每年有去攞呢個水辦，我亦都講過，如果你喺水龍頭攞個水辦係萬六組嘅，一萬六千組，呢個比起如果以世衛嗰個標準，我如果冇記錯，好似係二千二百幾嘅水辦嘅數量，我哋係多嘅。

問：係，明白。但係我想問一問，如果新建落成嘅大廈，一般嚟講，你哋如果落成咗之後，你哋就只會喺 connection points 嗰度攞水辦，啱唔啱？

答：呢個睇下邊個年份，如果你係講緊 2012 年之前，我哋基本上就喺嗰個接駁點嗰度就攞個水辦，睇一睇嗰個水質有冇問題嘅，但係自從 2012 年開始，我哋就因為有一啲嘅退伍軍人菌嗰件事件，我哋就出過一個指引畀一啲嘅住戶，就話當佢起好個內部供水系統之後，佢係需要進行呢個消毒同埋清洗，但係佢哋未必知道要清洗消毒到咩嘢地步，佢先至係可以停嘅，所以當時我哋有個指引，就叫佢哋喺佢個內部供水系統裏面，即係唔係淨係嗰個接駁點，都攞一個水辦去睇一睇嗰個水質嘅情況。

呢個咁嘅做法，去到 2015 年有呢個鉛水事件之後，我哋就將佢就正規化，就係話如果我哋收樓嘅時候，我哋一定會喺個內部供水系統攞呢個嘅水辦，驗咗，包括嗰四個重金屬，然後我哋先至會出一張水紙或者供水畀佢哋。

問：冇錯，2015 年之後，你哋就改咗，就話呢一個喺內部供水系統攞水辦係一個你供水之前一個先決條件嚟，而家係，係咪呀？

答：係，同埋我哋將嗰個參數係增加到去十二個。

問：參數我再同你講。我想問一問你嘅，就係話 2012 年有呢個退伍軍人個問題，即係喺呢個--應該係嗰個添馬嗰個--即係 Tamar 嗰個 Central Government Office 嗰度發生嘅問題，當時你哋係有考慮到就係話應唔應該要去內部供水系統嗰度去驗嘅，係咪呀？當時係有考慮到呢個問題？

答：當時其實我哋主要係出個指引就畀啲住戶，正如我頭先講，因為佢哋唔知道要消毒到咩嘢地步先至係叫做滿意，所以我哋出咗個指引，叫佢哋就要將嗰個嘅內部供水系統抽一個水辦，去按照嗰啲參數嚟到去驗。

問：睇一睇 C3 2215，如果我哋睇番 C3 2215，就呢個 circular 就應該係你所講話出現咗嗰個退伍軍人症之後你哋所出嘅 circular，係有關一啲清洗嗰個同埋消毒嗰個內部供水系統嘅指引，係咪呀？

答：係。

問：當時出現咗呢個問題嘅時候，你哋都關注到嗰個內部供水系統佢嗰個供水嗰個水質嘅安全同埋個質量嘅問題，呢樣嘢你當時有關注，係咪？

答：係，呢個係關注。

問：當時我想問下，點解就冇話討論到--有呢個問題發生咗，有冇討論到話就住驗呢個內部供水系統係作為一個你供水之前嘅一個先決條件呢？

答：我未必可以答到呢個問題，因為要真係睇番個檔案，不過我想喺呢度提出一點，就係話如果你根據嗰個嘅世衛嗰個嘅準則，牽涉到係關於一啲微生物嘅污染，譬如話如果你知道真係有啲微生物嘅污染係以前我哋唔知嘅，係有一啲新嘅，即係話嗰個風險程度係高咗嘅時候，我哋要求去特別驗呢啲咁嘅--喺水辦裏面驗呢個參數係好合理嘅，但係如果係牽涉到，如果嗰個風險係一啲金屬嘅風險，如果根據呢個世衛嘅準則，其實就係盡量係唔需要用，或者唔應該用呢個水辦嚟測試，而應該係用物料嗰個監控。

所以答你個問題，就係當時 2012 年出現到係關於都係生物學、微生物學嗰方面，所以我哋係建議住戶能夠去就住嗰啲嘅水辦驗呢啲嘅參數。你話當時有冇討論到係作為一個先決條件，我冇睇過嗰個文件，我相信而家出咗呢一個文件，係冇話到呢個係一個必須嘅條件，可能個結論就--但係你話有冇討論到，我就唔敢肯定。

問：或者我哋再睇番呢個話喺 connection points 攞水辦呢個問題，喺你哋啲同事嘅口供嗰度都有作進一步解釋嘅，或者我哋睇一睇 C19.5...

主席：唔係，我想澄清一樣嘢啫，就係你頭先所講嘅，如果喺啲水嗰度出現咗呢個重金屬嘅話，你就話唔需要做水辦嘅測試，就應該做物料嘅監控，即係你嘅意思就即係話水辦就做嚟都用處都唔係好大，係咪咁嘅意思？

答：唔係，我唔係咁嘅意思，對唔住。我想講一講，即係話如果我哋認知重金屬或者金屬係會導致嗰個食水係污染，呢一個風險係存在嘅話，如果係根據世衛嗰個嘅準則，係應該係先考慮就係用呢個物質嘅監控嘅，當然今次...

主席：咪住先，咪住先，呢個係你已經知道咗重金屬已經污染咗水吖，抑或未知道？

答：已經知道有呢個風險，即係知道金屬--即係某一隻金屬係會污染食水呢個係風險係存在。

主席：如果呢個風險存在嘅話，就點樣唔需要做水辦嘅測試，就要...

答：先係考慮你喺個物料監控嗰度會做多啲嘅工夫，但係如果去到一個--其實我個理解，世衛其實就唔係好鼓勵你係喺個水樣本去測試一啲嘅金屬嘅，但係如果你去到一個地步你發覺淨係用呢個物料...

主席：唔係，對唔住，你唔好講咁快住先，如果你已經知道係有重金屬污染水嘅風險，就唔需要做水辦嘅測試？

答：或者我講一講，如果係知道重金屬或者金屬係有污染食水嗰個風險，如果根據世衛嘅準則，我嘅理解就係先係考慮可唔可以喺物料監控嗰度做工夫，如果發覺嗰度係唔可以處理到呢個問題，我哋另外一個選擇就需要喺個水辦測試嘅參數裏面係加含呢一啲嘅金屬，所以今次

嘅...

主席：完全唔明，對唔住，可能我蠢，不過我唔明。

答：可能我講得唔清楚，對唔住。

主席：講多次，唔該。

答：呢個係我就我自己對呢個世衛嗰個理解，即係話佢哋喺風險嗰個監控方面，如果係微...

主席：即係你已經知道有呢一個風險嘅存在，係咪咁嘅--首先個大前提係咪咁樣樣嘅先？

答：即係話如果--呢個我諗睇下嗰個程度，如果你係--因為所有物料會釋喺水嘅，都有一個風險嘅，係高低嘅問題。

主席：啱。

答：即係話如果你知道有一個風險存在，未必一定係好高，即係知道有一個存在，你應該先係諗就係用物料嚟到監控，但係如果個風險係好高嘅話...

主席：唔係，咪住先，點樣樣--如果你知道有一個風險嘅存在，首先就用物料嘅監控，即係換句話嚟講，如果你知道鉛係有一個風險嘅話，首先你就要監控嗰啲有鉛嘅物質，係咪咁嘅意思？

答：如果知道鉛係有機會--呢個風險即係有機會啫，有機會釋放喺水嗰度，我哋都係喺嗰個監控嗰個措施嗰度要去處理呢一個問題，即係...

主席：得，等陣。即係如果你知道譬如啲部件係有機會含鉛嘅，你就首先就要控制嗰啲部件嘅成分，係咪咁樣樣？

答：係，啱。

主席：跟住呢？

答：控制嗰個成分，並且要確立有一個制度係嗰個嘅持份者係按照呢個規格嚟到去採購同埋安裝呢啲咁嘅物料，合規格嘅物料。

主席：即係你嘅意思就即係如果有呢個風險，呢啲咁嘅風險嘅存在嘅話，即係有機會呢啲--譬如啲重金屬係會污染食水嘅話，第一個要做監控

嘅就唔係你哋--第一個要監--第一樣要監控嘅就係嗰啲物料？

答：呢個我理解嗰個世衛個準則，因為其實而家你睇番第二啲國家，基本上佢收樓嘅時候...

主席：唔好講住先。

答：Okay。

主席：唔好講第二啲先，因為我唔係好明。跟住又點解又唔使查水辦？

答：你意思喺水辦裏面就驗嗰啲金屬，係咪呀？

主席：唔係，署長，你再講多次，係可能我慢啲，你再講多次。

答：我唔係好清楚個問題，係咪意思即係話點解...

主席：唔係，而家我就係跟番你頭先所講嘅嘢，quote 番出嚟嘅嘅啫，你就話如果就啲重金屬會污染食水嘅話，第一樣嘢要做嘅就係做呢個物質嘅控制，就唔需要做呢個水辦嘅測試，所以我就唔係好明呢一樣嘢啫。

答：或者我講一講，即係話我理解世衛嗰個準則就係話水喉裝置係大大小小會有唔同嘅一啲嘅金屬嘅，有唔同嘅成分，佢哋都係有一個風險，有一個機會係會釋出落去水嗰度，而導致有一個唔同程度嘅污染，佢唔係一定係會導致會超過某一個嘅標準，但係有一個風險嘅存在，呢一種嘅我哋叫做化學監控嘅--風險嘅監控，佢主張就係用呢個物料監控呢個方法嚟到去處理，而唔建議即時你係將嗰啲嘅嘅有可能會釋落去水嘅金屬作為一個參數擺落去抽水樣本嘅系列裏面。

主席：咁你點知超唔超標呢？因為你准㗎嘛，你唔係話零㗎嘛，你好多參數。

答：呢個就係都係一個--永遠都係一個風險評估，因為如果你跟世衛，佢有...

主席：咁你唔係做咗一個水辦測試，睇下佢係咪超標先咩？如果佢唔超標嘅，你都唔使控制啲物料喇，個 logic 我唔係好明。

答：或者我解一解，或者我呢個第一，就係如果根據世衛嗰個嘅準則，佢有唔同嘅水質裏面嗰個嘅風險嘅處理嘅，如果我哋試想一下，我哋將所有喺世...

主席：不如你話畀我聽世衛喺邊度搵到，等我睇下。

黎先生：個條文係咪--世衛個條文喺邊度？

主席：係，邊一度？

答：我未必而家即刻可以吵到一啲，我睇一睇先。

許偉強先生：或者我問一問佢，世衛嗰度有一段就同佢講嘅有少少唔同。

主席：唔係，唔係，唔係，等佢搵咗世衛嗰段嘢出嚟先。

許偉強先生：好，好，搵咗世衛先。

主席：因為我都叫做睇過下世衛嘅標準。

答：譬如我而家手上有一啲--我唔知係咪以前曾經提交過嘅，就係有一份係"Chemical safety of drinking-water: Assessing priorities for risk management"。

主席：我喺邊度可以睇到？

答：我冇嗰個 bundle 嘅 number。

許偉強先生：C2。

主席：Page 幾？

答：2007。

許偉強先生：C19.1 10550。

主席：C19.1。

許偉強先生：應該係 10589 嗰頁。

主席：10...

許偉強先生：589。

答：10589，喺 3/3/2，最尾嗰段，或者我讀出嚟，"Unless there is strong evidence that particular chemicals are currently found or will be found in the near future, at levels that may compromise the health of a significant proportion of the population, the inclusion of those chemicals in drinking-water monitoring programmes is not justified, particularly where resources are limited. It is often more effective to maintain an ongoing programme of pollution control and risk assessment in the catchment."

另外就有--我睇下搵唔搵到，呢度係都有提到如果係一啲 chemical contamination 嘅 risk，都盡量就係用 material control 嘅。10639，喺同一個文件，8/1，尾二嗰段，第二句"It is important that water supply agencies properly manage any chemicals that they use. In many cases, the best method of control is through management practices, such as optimisation of the treatment process, and regulation of materials and chemicals that come into contact with drinking water, rather than through monitoring and chemical analysis."

主席：呢個好似唔係好關係嘅，係咪呀？呢個，呢個係講緊嗰啲 water treatment 嘅時候用嗰啲 chemicals 啫，係咪呀？

答：除咗 water treatment，亦都係講緊一個 regulation of materials 嘅。

主席：但係呢度--對唔住。呢度完全唔係講我哋要討論嗰啲嘢喎，好似，呢度係純粹講呢一個喺呢個 water treatment 裏面，如果你要用 chemicals 嘅時候應該點樣樣用咋喎，係咪呀？

答：另外一個喺 distribution system...

主席：唔係。

答：...8/4，10642，10642，8/4，最屘嗰句，"chemical monitoring of drinking water is not normally considered to be appropriate and the most suitable method of management is by product specification, as indicated above for other materials."，主席，或者咁，呢方面我真係...

主席：你等一陣先，因為你求其搵一句出嚟就冇乜意思嘅，就一定要 in context 嘅啲嘢，你畀啲機會等我消化咗頭先嗰句，最屘嗰句係咩嘢，我都--等一陣先。呢個係講緊呢個 PVC 嘅 plastic pipes，係咪？

佢嘅意思就係話有啲情況之下，呢個意思呢一個咁樣樣嘅 molecules "remaining in the plastic have been higher"，"However, chemical monitoring of drinking-water is not normally considered to be appropriate"，呢度嘅意思就係講緊呢啲咁樣樣嘅水喉喺咁嘅情況之下要測試佢嘅 chemical composite --或者嗰個 chemical 就唔係 normally 咁做啫，係咪咁嘅意思？呢度係講緊呢一隻嘢。

答：主席，容許我就--我真係唔係呢方面嘅專家，不過就我理解，就係...

主席：唔係，因為--唔緊要，你唔係呢方面嘅專家唔緊要，不過因為你講咗出嚟，我就要明你講嘅嘢係究竟有幾準確，因為你某程度上你係唔單只代表你自己講嘢，你代表緊水務署講嘢，所以我一定要明你講咩嘢嘅。

答：係，明白。

主席：係咪？

答：唔。

主席：即係你撤回番你頭先所講嗰句嘅說話？

答：好。

主席：因為房屋署嗰啲，房委會嗰啲一聽落去就礙耳嘅，佢哋就即係話「你而家即係話畀我哋聽我哋負責第一道嘅防線，如果有重金屬嘅話，你哋就乜都唔使做。」你頭先咁講嘅，佢哋就會咁樣聽，所以我就問清楚你，係咪咁？

答：不過我又調番轉，我想提一提，點解我都係想提番一個世界嗰個標準係好緊要，如果另外一個做法，喺世衛裏面有嘅金屬嗰個參數，如果我冇記錯，係六、七十以上嘅。

主席：唔係，我明，即係個問題係咁樣樣，如果你發覺譬如你喺呢啲水裏面搵到有呢個重金屬超標，假設係鉛又好，乜都好，超標，我諗世衛嗰個意思就即係話如果喺咁嘅情況之下，你第一樣要做嘅就係要控制啲物料，唔好畀啲物料繼續走落去呢個水裏面，呢個先至係嗰個primary 個 barrier，或者我哋叫做咩嘢都好，或者 primary 嘅 preventive measures，因為你不斷咁樣樣去驗水，驗下啲水裏面究竟有幾多鉛，其實呢個唔係解決嘅方法嚟嘅。

答：係，或者咁講，即係如果...

主席：我呢啲純粹 common sense approach 嘅咋，可以錯㗎，不過我就覺得一定係咁㗎喇，唔係咁，點樣樣呢？

答：主席，即係如果係已經知道譬如話嗰啲嘅鉛嘅含鉛已經係超標，即係已經出現咗呢件咁嘅事，譬如而家我哋嘅做法，亦都係喺個水樣本嗰度加插呢個鉛嗰個嘅參數，亦都睇有冇其他一啲可能嘅金屬都會有咁嘅風險，我哋都係做咗嘅，呢樣。

主席：啱，我明。

答：我係想講之前，可能我表達得唔係好清楚，我係講之前，如果當我哋設計一個系統嘅時候，一般如果你係講緊水裏面嗰個水質有兩種嘅風險，一種係微生物嘅風險，一個係化學嘅風險，如果根據世衛嘅準則，如果係微生物嘅風險，我哋係會用水樣本嚟到去測試，但係如果係講緊化學嘅風險，佢會覺得係用一個物質嗰個監控係為主。

主席：如果你咁講，我就完全明白，不過頭先就似乎唔係咁講。

答：對唔住，可能我表達得唔係好清楚，我意思係咁。

主席：啱唔啱呀？因為你老老實實，bacteria、viruses，你點樣樣控--你梗係惟有係攞水辦嘅啫，唔係，你仲可以做到啲咩嘢呢？繼續。

答：係，我頭先嘅意思係咁。

問：我想同你探討一下就係你剛才講嗰一點，就話如果係微生物嘅話，咁就驗水，如果係化學嗰啲風險，就要睇下物料嗰個監控？

答：嗰個係最先嗰個做法。

問：最先要喇，但係...

答：係喇，係喇，如果出咗事，咁就另外一樣處理。

問：冇錯，但係世衛都冇話到係只需要做物料監控，就就住啲化學嘅嗰啲危險，只係做物料嘅監控，而唔係水辦嘅測試喎，你同唔同意？

答：呢個我未必答到你，我理解就係話如果你一般嘅情況下，如果係化學嘅一啲監控，係用呢個嘅物料個監控嗰個做準則，但係如果你有一啲事發生咗，譬如你已經知道有一隻嘅金屬係釋放喺水嗰度，正如喺去年嘅 7 月發生咗鉛水超標嘅事件，我哋都會喺水辦嗰度加呢個參數。

不過我都想--容許我再重複講一講，其實你即係睇番世界，佢都有一啲嘅收樓個程序，你睇到就算喺美國、英國，一般嘅國家，佢都唔係喺水辦裏面去測嗰啲嘅重金屬究竟有冇超過嗰個世衛嘅標準，即係收樓嘅過程。

問：或者我畀你睇一睇世衛嗰個建議，如果你睇下 C2 1288，1288 頁，如果你睇到-- 1288 嗰度就有兩頁喺度，一個 66，一個 67，睇到嘛？1288 嗰一頁。

答：哦，66 頁，okay。

問：喺左邊嗰度。

答：得。

問：左邊下面最後嗰段，或者我哋睇一睇，呢度就係講緊 chemical water quality 嘅，呢度就係講緊 sampling locations，"Sampling locations will depend on the water quality

characteristics being examined. Sampling at the treatment plant or at the head of the distribution system may be sufficient for constituents whose concentrations do not change during delivery. However, for those constituents whose concentrations can change during distribution, sampling should be undertaken following consideration of the behaviour or source of the specific substance. Samples should include points near the extremities of the distribution system and taps connected directly to the mains in houses and large multi-occupancy buildings. Lead, for example, should be sampled at consumers' taps, as the source of lead is usually service connections or plumbing in buildings."

呢度講得好清楚，就係話如果睇鉛嗰啲咁嘅化學嘅成分，就係要睇嗰個 consumer tap，...

答：我哋而家都係做緊...

問：...唔係就咁睇嗰個 waterworks 或者就咁睇個 connection points，你同唔同意呢個講法？

答：唔係，我諗正如頭先主席都講，即係你呢段嗰個背景，如果你好似我哋而家嘅做法，我哋亦都喺個水喉嗰度係攞水辦驗有冇鉛，我哋除咗驗咗鉛之外，我哋而家都驗埋鎳、鎘同埋鉻嘅，所以就睇下你講緊係乜嘢嘅情況底下，即係都冇衝突嘅兩樣嘢。正如我講，而家...

問：佢而家似乎就係針對性地講出咗 chemical，其中佢特別抽咗 lead 出嚟去講，就話如果要係--你要去睇下嗰個風險，就要喺個 consumer tap 嗰度攞水辦嘅，呢個同你嘅講法似乎有相違背。

答：冇--或者個理解，就係話如果你發現到鉛釋放喺水呢個風險係好高嘅時候，或者已經有啲事故發生嘅時候，你係喺嗰個水辦嗰度要加插呢一個驗鉛呢一個參數。而家香港出現咗呢件事，我哋都係做咗呢個，所以係冇衝突。

不過你可以睇番，其實如果呢個世衛嗰個標準好似一個演繹到所有嘅水龍頭嘅水辦都必需要驗鉛，而係冇一個鉛嘅污染嗰個嘅事故，你睇到好多第二啲國家佢收樓亦都係冇驗鉛嘅，就你可以睇到個問題就個解讀唔係話逢親你一定要喺水龍頭攞個水辦一定要驗鉛。

問：我都想同你探討一下就係呢一個 connection points 呢一個咁嘅理論嗰個背後個目的，如果我哋睇一睇你嘅同事林正文先生所寫嘅供詞，喺 C19.5 13486，13486 第 41 段，第 41 段佢就講到有八個參數等等，或者我哋去一去中間，呢部分嘅中間嗰度，見唔見到 "The purpose of the testing of water"，睇唔睇到，林生？中間...

答：睇到。

問："The purpose of the testing of water samples near the connection point at this juncture was not for identifying the presence of non-compliant materials in inside service as an end product test but more to guard against contamination to the government water supply by the inside service."

跟住我再讀埋下面嗰句，"Taking indirect water supply system as an example, the water sample near the connection point can only check the water quality for the pipe between sump tank and the connection point but not the entire inside service system (i.e. the communal service and inside service after and including the sump tank)."

如果我哋睇下呢幅圖，13487 嗰幅圖，13487 嗰幅圖我哋可以睇到個"sump tank"嗰度，睇到嘛？下面嗰個四方嗰個，"sump tank"，林生，睇到嘛？

答：睇到。

問：跟住亦都佢指出咗個 connection points，如果我哋咁理解，呢一個咁嘅 connection points 個 test，佢所驗到個範圍嗰個供水嗰個覆蓋嘅範圍，似乎你呢度都解釋咗 41 段，就係由個 sump tank 就去到個 connection point 呢一橛，好少嘅咋喎，係咪呀？

答：容許我講一講，好唔好呀？

問：我首先理解我個理解啱唔啱先，就係話你個 connection point 嗰個 sampling 嗰個水辦，驗嘅時候，我哋 check 嘅就係講緊個 sump tank 去到 connection point 呢一段，同意嘛？

答：呢個係講緊 2012 年之前嘅。

問：係，我係講緊...

答：即係你講緊 2012 年之前？

問：係，而家講緊嗰個時間先喇。

答：如果 2012 年之前，我哋關注嘅就係我哋供水畀個內部供水系統，佢嗰個嘅內部嗰個系統會唔會污染到政府嗰個水源，的確當時嘅目的係咁嘅。

問：係喇，如果我哋睇多一份證人口供入面再詳細少少嘅解釋，就係 19.5，都係同一個文件夾，13792 頁。

答：13792，係咪呀？

問：係喇，13792，第 27 段，okay。同樣引述，即係提到呢個林先生嘅口供，呢度都講，"the main purpose of the water testing for samples collected near the connection points is to prevent contamination of the government water supply through backflow at the connection point whilst that of the water testing at the inside service within a building is to check the effectiveness of the cleansing and disinfection of the inside service."

所以呢度就講得好清楚，就係話你哋喺個 connection points 嗰個抽水辦嗰個檢驗，就係去睇防止嗰個 backflow，退流，而會退流番--如果有啲污染物，會倒流到影響你哋嗰個供水系統，呢個就係你哋當時選擇去驗...

答：12 年前，係。

問：...connection points 嗰個原因，係咪呀？

答：啱，係。

問：我想問一問你，因為我哋都問過我哋啲專家有關呢方面，你哋嗰個供水系統應該都有啲掣閘係去防止倒流，係咪呀？你知唔知？

答：會有一啲咁嘅掣閘嘅。

問：係咪呀？

答：係。

問：所以其實你話去驗呢啲咁嘅 connection points 嘅水辦，話防止倒流呢樣嘢，其實閘掣係有佢嘅功用喺度，即係佢掣閘本身就防止咗倒流。

答：我明白。

問：係咪呀？

答：你想問咩嘢呀？

問：你同唔同意就係如果有閘掣防止倒流嘅情況之下，你只係 connection points，其實根本係驗唔到啲咩嘢喎？

答：但係我哋一般嘅情況，呢個係冇嗰個閘掣，頭先你講係防止倒流嘅閘掣吖嘛？

問：係，冇錯。

答：我哋唔會喺一般嘅系統我哋會安呢個防止倒流嘅閘掣嘅。

問：你哋一般系統唔會安防止倒流閘掣？

答：如果係呢啲咁嘅情況底下，你講緊嗰個，即係話啲水會倒流番吖嘛？

問：係。

答：我理解係，但係詳細啲，我諗都係要問一問我啲同事。

問：詳細都係問番技術人員，係咪呀？

答：係。

問：好。

許偉強先生：主席，我想睇下需唔需要休息十分鐘先？

主席：休息十分鐘，好呀。不過以現時嘅進度嚟講，因為下個禮拜就放假，跟住就我哋嘅專家證人嚟，似乎睇嚟，我哋可能都要有啲趕工嘅時間要做，所以就有--不如我開宗明義講，由聽日開始，我哋提早開庭，

九點半，直至到係呢個 5 點鐘，其他就時間照舊，即係聽多一個鐘頭每日，如果我哋嘅進度理想，就放完假之後就回復舊有時間。

許偉強先生：好。

主席：但係如果我哋個進度唔理想嘅話，就可能會更加長啲添，不過暫時就係咁樣樣訂定。

許偉強先生：好。

主席：我哋而家休息十分鐘。

下午 3 時 29 分聆訊押後

下午 3 時 41 分恢復聆訊

出席人士如前。

水務署第一證人：林天星（水務署署長）宣誓繼續作供
許偉強先生繼續盤問

問：林生，講番 2012 年之前，即係嗰個退伍軍人嗰件事件之前，你都同意就係話攞水辦，水務署嚟講，就係 connection points 嘅啫，就冇要求到去睇嗰個內部供水系統入面會唔會有啲唔妥當嘅地方，係咪呀？

答：係。

問：呢個係咁喇。2012 年有咗嗰個退伍軍人症嗰個問題，亦都只係建議話可以就住內部供水系統攞啲水辦，亦都冇將呢樣嘢強制化佢嘅，即係冇強制到...

答：其實喺嗰個指引，我哋--因為頭先都有拎出嚟睇，其實嗰度好清楚講到就係指出就係我哋提醒就係內部供水系統嗰個嘅清潔同埋保養基本上係住戶嘅責任，但係我哋有--水務監督就有幫助，即係畀一啲指引，就係話縱然佢哋係想清潔同埋保養得好佢個內部供水系統，但係應該點樣做先至係--點樣先至可以能夠畀佢哋就係一個清楚嘅指引，因為通常就佢會沖洗同埋消毒嗰個嘅內部供水系統，嘅次數可能

唔止一次至兩次，但係到到咩嘢嘅地步先至係叫做係乾淨，我哋當時係畀一個咁嘅指引佢嘅。

問：即係你哋有畀指引，但係就住呢一個退伍軍人症嘅事件發生咗之後，你哋都冇話考慮到話要行前多一步，由水務署佢哋嚟到去進行一啲內部供水系統水辦嘅測試，都冇咁做到？

答：我哋 12 年之後冇出過一啲嘅通告去再進一步做呢一樣嘢。

問：好。想問下有關嗰八個參數嗰個問題，如果我哋睇一睇有關嘅證人口供，陳健民先生嗰個比較詳盡啲，就係佢嘅第三份證人口供，C19.110502 嘅第 10 段，呢度就講話"Currently, WSD monitors the quality of drinking water supply in the waterworks"，呢度都講 waterworks 嘅，就"with reference to the latest (4th) edition of Guidelines published in 2011."，其中包括咗有幾樣嘢嘅，10503 嗰度就講出咗有九十二個參數。

如果我哋睇番陳健民先生佢證人口供入面嘅附件 1，喺 10527 頁，附件 1 嗰度就講及呢個世衛個標準，就就住其中係包括呢個金屬嘅，睇到嘛？

答：睇到。

問：喺第二項嗰度有金屬，我數過，大約應該有十二種金屬嘅總共，包括咗有鉛嘅，呢個就係你哋內部供--即係喺--對唔住，係你哋嗰個 waterworks，即係你哋嗰個水務設施要做 treatment 嘅時候或者你哋嘅鑑定入面就包括咗呢十二種重金屬嘅，係咪呀？

答：唔。

問：我想問一問，首先就係你知唔知道就住呢啲十二種重金屬，水務署係咪每日驗吖，定係抽樣檢查，你知唔知？

答：第一，就呢個係金屬，即係唔係一定係重金屬，第二，就我相信應該唔會每日，我冇準確數字，應該唔會每日，...

問：知唔知...

答：...但係我知道會係抽樣嘅，有抽樣嘅成分。

問：知唔知平均係幾耐抽一次，有關呢啲金屬？

答：我唔可以準確答到你。

問：好喇，但係我哋喺呢一個--我哋見到有關呢一個 connection points 嘅呢啲咁樣嘅水辦嘅檢測，就如果我冇錯，就呢十二種重金屬就冇包括在內嘅，即係除咗如果你話食水優質計劃入面有包括到鐵，其他都冇包到嘅？

答：嗰八個參數應該冇包金屬。

問：係喇，係喇，嗰八個參數就冇包金屬嘅？

答：嗰八個參數最主要就係喺微生物嗰個風險嘅。

問：冇錯，冇錯。我想知道嘅就係話當年，即係我知道其實嗰八個參數都沿用咗好耐，我見到就係大概喺 2000 年年頭都一路有用呢八個參數，係咪呀？

答：唔。

問：我想問一問，就係就住決定呢八個參數，邊八樣嘢，當時你哋署方有冇一啲--即係你有冇查過有啲紀錄係當時討論過呢個問題？

答：我答唔到，我答唔到。

問：冇查過呢方面，係咪呀？

答：唔係，我答唔到，我唔知道個檔案裏面有冇記載當時點樣選擇呢八個參數。

問：你有冇話查閱過關於呢八個參數當時係點樣制定？

答：我本人冇。

問：冇？

答：係。

問：我哋如果睇番即係你哋一路都講緊就話其實你哋嘅標準都主要係跟世衛嗰個標準喇？

答：唔。

問：我都想同你睇一睇個世衛有關個標準，有幾項畀你睇一睇嘅，睇一睇C2。等等。如果睇番 C2 嘅 1251 頁，喺右手邊嗰個 column，就喺屘三嗰一點嗰度，就都寫住"those key chemicals responsible for large-scale health effects through drinking-water exposure"，呢度就講咗幾個例子嘅，arsenic, fluoride, lead, nitrate, selenium 同埋 uranium 嘅，呢度有講出幾種，佢話金屬嚟講，係比較喺食水入面係造成比較大嘅健康問題嘅。

另外睇多一點，就係喺呢一個--係喇，喺第 1263 頁，1263 頁第一段--右手邊嘅第一段嗰度，第一段中間有講到 plumbing materials 嘅，"Plumbing materials, pipes, fittings and coatings can result in elevated heavy metal (e.g. lead) concentrations in drinking-water, and inappropriate materials can be conducive to bacterial growth."，呢度亦都係講出咗尤其是同鉛有關嘅。

最後一點我想你睇一睇嘅就係 1349 頁，1349 頁第一個表，Table 8.16，第三項見唔見到"Contaminants from pipes and fittings"？即係呢度好清楚嘅，係講緊水喉同埋部件嘅污染物，入面都講咗大概一、二、三、四、五，六樣嘢，都唔係話好多嘅，六樣嘢，其中就包括咗鉛嘅，睇到嘛？

答：睇到。

問：似乎即係我睇呢一個世衛嘅標準嚟講，即係對鉛呢樣嘢，尤其是牽涉到喺嗰個水喉同埋部件嗰個使用係有特別嘅說明，我想問下，即係你哋話一路都係跟住個世衛標準去做，即係而家你哋睇番轉頭，嗰個當時同埋有冇考慮清楚話世衛裏面講過有關呢個水喉嘅部件同埋一啲嘅水喉嘅物料可能會引致食水含鉛呢樣嘢係一個幾大嘅危機嚟㗎喎？

答：我諗你頭先睇嗰度就係講出世衛係有一啲嘅篇幅講到關於金屬污染，亦都有一啲嘅相關一啲的金屬嘅參數，呢個知道嘅，即係喺世衛係有咁嘅標準。所以喺我哋自己負責供應嗰個水務設施裏面，我哋有抽取足夠嘅水樣辦，去睇一睇係咪滿足到呢個標準。

問：冇錯。

答：至於入到去大廈嗰度，其實呢個就係要處理，因為大廈其實有好多種唔同嘅類型，有唔同嘅持份者喺度，我都係想講，就係話世衛如果係講到喺大廈裏面嗰啲譬如你講緊水龍頭嗰啲嘅水質會唔會有啲金屬

污染，個方法唔應該一開始嘅時候你就話要攞個水辦，因為頭先你都見到有--如果我冇記錯，好似係有八十幾隻金屬嘅參數，你冇可能喺個住戶嗰個水龍頭攞水辦嗰陣時候驗八十幾隻參數，最近...

問：係，但係我哋--對唔住，你繼續。

答：最近我哋其實而家加咗四個參數，都知道業界都有一啲嘅關注嘅，所以我覺得...

主席：大聲啲，唔該，聽唔到。

答：最近我哋喺鉛水超標事件之後，我哋喺個驗樓嗰度我哋加咗幾個重金屬嘅參數，業界都有關注嘅，所以我覺得世衛--呢個都係我嘅理解，世衛其實都係話冇錯，金屬污染係一個存在嘅風險，但係喺一般嘅情況下，處理嘅方法，最佳佢都係覺得喺物料嗰個監控，如果唔係，你會導致一個情況，就係當你去驗水辦嘅時候，你就每一種參數你都要驗。

呢度我嘅有限知識，就係話你攞個水辦，你都唔係可以驗到幾多個參數，即係你要攞好大量嘅水辦，你先可以驗到究竟係咪完全滿足到世衛嗰個嘅金屬嗰方面嘅參數標準嘅。

問：我諗唔可以咁誇大咁講嘅，即係唔可以話所有參數你都要驗嘅，如果你睇下 1349 頁，我哋剛才睇嘅，就住 pipes and fittings，其實得六種金屬之嘛，我哋講緊六種嘅污染物之嘛，署方有冇曾經考慮過就住呢六種污染物，嚟到作一個水辦檢測呢？

答：我諗呢度好似冇包 cadmium 添，我諗咁喇，我諗要了解成個系統，即係話當我哋係去跟呢個世衛嗰個準則去處理呢個水質嗰個情況嘅時候，我哋係會睇嗰個嘅世衛嘅指引係啲乜嘢，個指引好清晰就話如果你係講緊微生物嘅污染，你基本上就係用某一啲嘅水辦參數嘅測試，如果你係金屬嘅污染，或者化學嘅污染，你係用呢個嘅物料嘅監控，但係而家譬如話你有啲已知嘅事，即係發現到個高風險，有事故發生，你個處理嘅手法會有啲唔同。

如果當我哋係冇呢個嘅事故，亦都冇特別嘅情況出現嘅時候，我哋就將所有呢啲--頭先我都提，呢個都未必可能齊嘅，嘅參數攞落去嗰個水樣本嘅抽查裏面，我可想到就係如果我哋將呢個做法係帶出去嘅時候，我哋一定要自己有一個嘅評估，平衡嗰個需要性，如果唔係，

會對嗰個嘅業界或者對嗰個水務工程會有影響嘅。

問：我哋睇到陳健民先生嘅口供入面都講，就住水務設施，你哋就參照世衛十二種金屬都會驗嘅，但係去到呢個 connection points 嘅時候，我哋而家見到嘅就係一種金屬都冇驗㗎喎，你自己而家睇番轉頭，係咪覺得有一個好大嘅 disconnect 呢？

答：呢個我頭先講咗，因為如果你睇世衛，佢有一度--我未必可以即刻指到畀你，即係佢有一度講到你可以入到大廈嗰個嘅水質監控唔同一般供水公司，佢對於供水公司嗰個嘅水質嘅要求係高嘅，即係話如果你係供水畀一個住戶嘅時候，你本身嗰個供水出嚟嗰個水質，你係需要有一個比較詳細嘅檢驗。

但係當你入到去大廈，我哋所謂嗰個叫做就係水質安全喺大廈裏面嗰個標準，因為我頭先都提過，呢個牽涉到好多唔同種類嘅大廈，亦都有唔同嘅持份者，係咪可以將我哋要求水務供應公司佢去監管嗰個嘅水質嗰個要求付諸於所有呢啲咁嘅大廈嗰度，我相信呢個一定要三思。

亦都要睇番--我都覺得係要參考下第二啲國家嘅做法，因為呢個係牽涉到嗰個資源、風險評估同埋嗰個對業界嗰個影響。

問：如果你而家睇番嗰八個參數，你同唔同意係當時係做得唔足夠呢？即係一種金屬都冇驗到。

答：如果當時我哋好清楚有個好高嘅風險，有事故發生，而唔採取一個適當嘅行動，我認為係唔足夠嘅。

問：我哋睇一睇另外一個課題...

主席：唔係，實際個情況就係你哋都冇做過任何嘅風險評估。

答：我哋冇數量化，應該咁講，但係我哋係有一啲...

主席：吓？

答：我哋冇數量化嗰個風險，但係...

主席：唔係，冇吖直情，你有冇做過？

答：如果你話一啲數量化嘅風險評估我哋係冇做到嘅，但係我哋睇一啲客觀嘅...

主席：咁高、中、低都冇，你有冇做過高、中、低嗰啲咁樣樣？

答：我哋有啲客觀嘅評估，譬如話...

主席：乜嘢？

答：...我哋一般要知道就係我哋--頭先我講我哋香港用嗰啲嘅材料...

主席：唔係，你有冇啲 documents 做過出嚟話我哋係--即係你有冇做過一啲 risk assessment，係我睇到可以--譬如好簡單，lead 你冇問題，okay，因為 historically 你冇做--一九三幾年已經...

答：1938 年。

主席：...ban 咗，唔准用，好喇，copper 你有冇做呢？

答：我答唔到你。

主席：唔係，你...

答：我唔係好知道，不過我估計 copper...

主席：呢度寫世衛要㗎嘛，世衛話係其中一個 contaminant。

答：但係就住 copper，我有問過我化驗師啲同事，或者我講一講。關於銅嗰方面，因為銅其實基本上係有色嘅，如果嗰個銅係釋放落去水，係嗰個水會有啲顏色我哋可以睇到，因為我哋驗水嘅時候，我哋會驗顏色。另外如果你睇世衛嗰個標準，其實銅係去到 2,000 微克一公升係相對比較高嘅，咁所...

主席：我知，我明，你有冇做過先得㗎？

答：佢做咗一個評估畀我，但係佢有冇...

主席：唔係，幾時做先得㗎？

答：有冇文件或者有冇數量化，我真係答唔到你。

主席：你而家今日上嚟話「我做過」，因為今日你上嚟，我哋問你，你梗

係話做過喇，係咪先？嗰陣時，譬如好簡單，我一九八幾年引進銅喉，2002 年房委會引進銅喉，大規模使用，之前可能你話「因為少人用，我哋認為個 risk 細，唔需要做。」2002 年房委會，全香港最大嘅發展商，最大嘅建築商，佢話「我哋而家要用銅喉。」係咪？我哋而家聽到嘅證供就話房委會「話我哋乜都唔識，水務嗰啲嘢靠」你哋，你哋，咁你哋做過啲咩嘢呢？

答：我都係請--可能由我化驗師答，因為去到細節，當時--你講緊咁多年前佢哋有冇做過一啲評估，我就唔知。我只係最近有問過佢關於銅嗰方面嘅...

主席：我都知道銅會變色，係咪呀？鐵都會變色，啱唔啱？咁你...

答：同埋佢同我提過話香港如果係嗰個酸鹼度係去到 8.2 至 8.8，佢話銅釋放嗰個機會又係細，另外佢就話係嗰個世...

主席：如果佢係啱嘅話，理論上 lead solder 都唔會放出鉛添，因為如果佢係啱嘅話，鉛喉都唔會放出鉛，lead solder 更加唔會放出鉛喇？

答：我答唔到你。

主席：咁咪係囉，即係...

答：要問一問化驗師。

主席：...如果你話「我要提高個 pH 去到八點幾，因為防止有啲 corrosions、有啲 heave metal 會 leach 出嚟。」咁理論上冇問題添。

答：我諗減低嘅，佢又唔可以防止，減低個風險。

主席：唔係，理論上冇問題添喇，如果係咁樣樣。即係我而家想問番你，因為我聽到你哋嘅證供就似乎好 content，「我去到個 connection point 就 that's it，finish，我嘅責任就 rest 咗喺嗰度，beyond 嗰啲唔關我哋事。」你哋有冇諗過行多一步嘅呢？

答：其實我哋離開咗嗰個接駁點，我哋認為我哋行咗幾步嘅，譬如話我哋有 2002 年推出個大優質食水計劃，嚟到鼓勵嗰啲嘅物業公司嚟到去定期去檢查同埋清洗個水箱，因為當時我睇番文憲，當時有啲住戶嘅水質有問題主要就係因為個水箱冇清潔，所以我哋睇到呢個係好重要

嘅一步，到到舊年我哋就再整一個 2.0 版，所以呢個係有一點我哋有做。

另外我哋亦都係就住所有市民對於嗰個水質有一啲嘅投訴或者關注，我哋係進行調查，亦都係有需要嘅時候，我哋係出一啲嘅通知，要求嗰個住戶係去維修同埋去清潔嗰個嘅內部供水系統。亦都頭先我都講咗...

主席：呢啲全部都係你哋嘅 advice 嚟嘅，即係呢啲就係你哋「我而家畀啲良好嘅建議你哋喇。」係咪？

答：如果係我哋發現到嗰個水質有問題，我哋跟進嗰個唔係 advice，嗰個係一個執法㗎喇，因為我哋係有權叫佢去...

主席：我知，你都要嗰個人話畀你哋聽，你哋先至去做啫？

答：另外我哋有監察住戶，我哋抽水辦，有萬六組嘅水辦喺個水龍頭嘅，即係呢個亦都當我哋...

主席：其實我嘅理解，就係你嗰啲所謂室內，啲 inside service，抽水辦，就其實我嘅理解就唔係去到人哋屋企嗰度抽嘅，好多時候喺商場或者一啲比較--即係總之你根本就唔會 intrusive 到去人哋個屋企裏面去抽。

答：管理處喇。

主席：咪係囉。

答：因為我哋試過係去...

主席：公用...

答：...入屋係有困難嘅，即係住戶未必畀我哋入去。

主席：所以我唔係問你行多一步就係畀 advice，你譬如你點解唔可以行多一步，去到人哋屋企嗰度 ensure 人哋屋企裏面嗰啲水係安全嘅呢？

答：呢個需要有一定嘅權力，就譬如話你可以--因為個法例...

主席：唔係，我知，我知，梗係需要一定嘅權力，人哋唔畀你入，我譬如如果--你水務署，你嘅 number one objective 係乜嘢嘢？你作

為水務署個署長，你認為水務署嘅成立，存在喺我哋香港政府架構裏面個目標係做咩嘢？

答：我哋最重要就係我哋自己能夠持續有足夠嘅供水，而供水嗰個嘅水質係有一定嘅保障。

主席：Exactly，啱唔啱呀？你個目的係想我哋香港嘅市民有一啲安全嘅食水可以喺呢個地方生活落去，呢個係你個...

答：我哋都好希望做到。

主席：對唔住，呢個係 number one 你個 priority 嚟㗎嘛？

答：呢個都係我哋希望做得到嘅，但係都要睇個實際嘅情況。

主席：咪係囉，但係我而家聽落去，你似乎就係好--即係你個 comfort zone 就係去到個 connection point，你再行 beyond 個 comfort zone，再行 beyond 個 connection point，你就覺得非常之 unease。

答：或者咁喇，我哋可以做到嘅就係用多管齊下嘅方法，第一，就真係鼓勵，鼓勵啲住戶。同埋我哋其實都有好多嘅教育性宣傳性嘅講座，佢哋係喺法律上，佢哋有個責任去清潔同埋監管嗰個嘅--保養嗰個嘅內部供水系統嘅，如果你話將呢個責任係畀番水務署，如果喺個法例裏面改變呢個嘅方針，呢個係另外一個處理方法。

其實都可以睇番外國，佢哋都有法例裏面去講明水質嘅標準，亦都有講明係包埋喺內部供水系統，但係如果你睇番佢哋嘅法例，亦都有可能保障到所有水龍頭開嘅水嗰個水質係百分之百係符合世衛標準，我相信呢個將來如果我哋有空間檢討法例，都要睇下外國個經驗，都有個困難喺度，有個限制喺度。

譬如我知道英國佢哋有個水質標準，佢都係好想就係水龍頭嘅水係滿足到世衛，但係當佢哋遇到譬如話佢驗咗水辦，發覺係唔滿足到世衛，佢可以做都係一啲嘅勸戒性，直至到除非嗰啲水係供應畀市民用嘅，佢哋會有一啲比較強烈啲嘅一啲執法。

我相信呢個係一個課題我哋要去諗嘅，如果將來香港嘅食水係要去到水龍頭，而由政府去負責擔保，嗰個係要真係要參考--我哋其實研究緊海外嗰個食水安全法嘅，即係睇一睇嗰個嘅做法係點樣，同埋影響有幾大。因為特別我比較關注啲舊樓，現有嘅樓係有困難。

問：跟進多幾個問題，你剛才講就係話如果你要去住戶嗰度攞水辦，可能會有一定嘅不便，可能對佢哋造成滋擾，同埋你哋可能個權力都未曾有咁大，有冇考慮過話喺一個大廈落成嘅時候，啲住戶未入伙之前，你哋水務署都可以去個單位嗰度取啲水辦嚟檢驗？

答：呢個分開兩個層面，第一個層面當然我哋而家收樓畀水之前，我哋有驗水辦，但係最重要我哋睇到第二啲嘅經驗就係當供水之後，嗰個嘅內部供水系統有冇好好嘅保養同埋維修，呢個亦都係關注。

問：得。

答：特別嗰個係會有一啲嘅細菌嗰方面嘅風險。

問：得。我想問多你兩個問題，就住呢一點，喺 Y1 嗰度，Y1 第 33 頁，亦都係嗰個 ACQWS 嗰個諮詢委員會，2001 年嗰陣時，2001 年，十五年前就討論過嘅問題嚟嘅，我哋睇下第 33 頁 6.5.1 就有講及呢樣嘅，就係話當時，"In response to enquiries on Singapore's practice"，即係睇嗰啲星加坡嘅做法，"WSD informed members that the building management was required to engage water analysts to take samples regularly in a prescribed way from the tap and from the water tank, and to submit periodic checking reports to ensure proper water quality."

跟住就"WSD undertook to gather more information on the practices adopted by Singapore and other Asian Cities for Members' reference and for formulating the detailed specification of the submissions such as frequency and parameters for testing."

呢度就係當時大家睇過例如一啲亞洲嗰啲例子，係咪呀？你哋署方就同當時嗰啲成員就講及，就話都係要大廈佢哋向你哋不時咁樣提供一啲從呢個水喉同埋或者從個水缸入面抽出嚟嗰啲水辦畀你哋去檢視喎咁。我想問下呢個討論你哋有冇話再查番就係話跟住有冇啲咩嘢跟進嘅工作做過？

答：我睇到就係你頭先講嗰個會議紀錄討論 7 號文件。

問：係，冇錯。

答：如果你睇 8 號文件，嗰個係叫 quality water in building supplementary paper No. 1，不過我冇詳細研究，不過嗰度裏面有提到就係做咗一啲嘅問卷調查，就去深圳、台北、星加坡、吉隆坡同埋東京嘅，我相信當時係有一個嘅跟進嘅，不過要詳細研究下當時嗰個嘅討論。

問：得。或者我哋睇一睇 34 頁，最後，6.5.5，佢呢度就話當時有位成員就"expressed great concern on the proposal to include chemical and bacteriological analyses as statutory requirements. There might not be enough accredited laboratories to do the required tests and the tests might be very expensive. He suggested that WSD should look for the minimum requirements. Members agreed."

呢度似乎帶出咗當時曾經有一個建議，就係去包括呢啲化學同埋一啲嘅呢啲 bacteriological 嘅測試或者分析，係直情擺喺個法例度，作為一個法例嘅一個標準嚟嘅，係咪有個呢啲咁嘅建議？有冇查番？

答：我都係睇呢個文件，我睇呢個文件嗰個會議紀錄係咁寫嘅，我諗當時--我即係呢個都係推算，當時個討論應該都係環繞如果我哋立法，就係話我哋所有用戶，水龍頭嗰啲水辦係需要就係做一啲嘅嚴謹嘅化學測試，包括微生物同埋呢個化學等等嘅測試，呢個除咗你需要改法例，另一方面，當然呢個資源，即係話換句話講，我哋香港所有嗰啲嘅住戶佢個水龍頭裏面嘅水辦都要經--驗呢一個咁嘅測試。

即係話我哋係要諗下究竟我哋係咪會行呢一步，即係做多呢一步去保障嗰個供水嘅安全，呢個牽涉到嗰個資源，我諗唔係淨係化驗所嘅，呢個牽涉嘅資源係好大。

問：好，想同你討論下嗰個英國標準，今朝主席都有問過你關於嗰個英國標準嘅問題，想先你睇一睇 G1，G1 304 頁，304 第 17 點嗰度，呢個係一個 Schedule 2 Part 1 嘅，就講話有啲喉管物料部件嗰啲規格。第 17 嗰度就講一啲"capillary fittings or compression fittings shall comply with BS 864"，我哋知道 864 就應該係 1983 年嗰個出版嘅英國標準嚟嘅，"Part 2 for capillary and compression fittings of copper and copper alloy and compression fittings for pipes laid under the ground shall be Type B."

今朝主席都問過你，就係就住呢個法例，似乎就係冇話因應嗰個英國標準轉咗，而你哋作出任何更新嘅，你今朝你都作出咗個回應，記得嘛？

答：嗰個因為喺個第(2)個條款講明英國標準係跟最新嗰個，即係如果我哋冇特別更新。

問：冇錯，冇錯。我就想問一問，就係我哋都知道英國標準可能隔幾年都會有更新，有改變，水務署同埋你哋其他啲持份者，水務署有冇話發出一啲文件，或者係 circular 又好，信又好，乜都好，就係去同番其他嘅持份者講番話「英國標準又唔同咗，改咗，你哋唔該留意下。」有冇呢一啲咁樣嘅做法嘅呢？

答：如果有一個英國嘅標準係比較重要嗰啲，我哋就會喺--而家我哋喺個網頁嗰度好清晰指出就係嗰個嘅轉變。

問：呢個做...

答：當然轉動之前，我哋都有個規矩，就係因為當你一個英國嘅標準轉變，你未必一定係即刻會跟嗰個嘅標準，要睇一睇嗰個標準嘅轉變有幾大、有影響幾多，亦都睇下業界係咪可以適應到，呢個係包括譬如話有一啲嘅裝置佢轉咗個英國標準，但係個化驗所未必有嗰個規格去驗嗰個嘅最新嗰個標準，亦都可能業界已經有好大量嘅裝置已經係喺香港嗰度，我哋係咪就當一個新嘅標準一轉變，唔睇一睇個實際嘅內容，我哋就會去轉呢？唔一定嘅，我哋會同業界會去傾一傾，然後我哋先至會採取一啲嘅行動。

問：你講話而家喺...

主席：我唔係好明白，再講多次。

答：係，即係話當英國有個標準佢改咗嘅時候，我哋唔會話即刻就一定就係會轉動嘅，我哋會睇一睇實際上嗰個轉變對於業界帶嚟有幾大嘅影響，包括就化驗所有冇嗰啲嘅設備去驗，跟嗰個最新嗰個標準，亦都睇下香港會唔會有一啲嘅裝置已經係用咗舊嗰個嘅標準，我哋要睇一睇個標準實際嘅內容嚟到係去處理呢個課題，呢個我係需要同化驗所同埋業界有溝通嘅。

主席：咁我就唔係好明喇，如果係原來有機會有啲舊嘅 BS 係會繼續用嘅，

你個法例咪完全唔啱囉，因為你又話要人哋遵守最新嘅 BS 法例，一陣間你又可以用舊嘅，人哋點跟呀？

答：喺個法例裏面係容許有一啲嘅情況底下，水務監督係可以將嗰個--即係跟最新嗰個嘅英國標準嚟到去有一啲嘅鬆動嘅，有一個 relaxation。

主席：譬如好似好簡單，我今日如果睇呢個法例，究竟 864 仲適唔適用嘅呢？

答：我哋會喺我哋嗰個網頁即係講清楚我嘅要求。

主席：唔係，點解要用網頁呢？

答：因為嗰個轉變會有好多物料不斷喺度轉，所以我哋就用網頁話畀佢聽。

主席：我同意有好多物料會轉，但係你喺呢個規例，你個 regulation 裏面寫到明嘅物料就唔係咁多嘅啫，點解呢啲就唔轉呢？

答：我哋其實用一個比較彈性嘅方法，我哋實際上就係當有啲物料轉變嘅時候，我哋會用另外一啲嘅通告或者我哋有一啲手冊會通知一啲嘅有關嘅持份者嘅。

主席：即係你而家--署長，我嘅理解有冇錯呢？就即係你而家話呢個 regulation 17 呢一樣--呢度呢樣嘢係依然係 updated 嘅，係咪咁呀？

答：我又唔可以咁講嘅，即係話呢個 17 嗰度就係寫咗個 BS 864，但係如根據 regulation 2 就係用最新嗰個標準，咁睇當時最新係啲乜嘢，而我...

主席：你有冇出過一張 circular 或者--唔係你，你哋水務署有冇出過一張 circular 話呢個 864 唔啱，1254 先啱咁樣樣？

答：我 check 一 check 先，我唔敢肯定係咪真係有一張咁嘅文件，但係...

主席：唔係，你普通水喉匠可能知道，我哋如果譬如好簡單，我假設係做一個奉公守法嘅市民真係去睇你呢一個咁樣樣嘅 regulation 嘅，咁點搞呀？

答：我哋而家就喺我哋嗰個嘅網頁，我哋就會更新嘅，過往嗰個嘅措施，我哋係比較同呢個業界溝通多嘅，但係有冇真係出一份通告去更新，

呢個我要 check check。

主席：係喇，即係你知我講緊咩嘢，係咪先？

答：我知，即係有冇一份通告通知其他嘅...

主席：因為你嗰啲通告冇法律效力㗎嘛？

答：唔。

主席：呢度改就有法律效力。

答：如果我哋冇特別去改變嗰個要求，如果根據個法例，就用最新嗰個標準，即係如果有啲情況底下，我哋發覺嗰個標準...

主席：唔係，個問題就係根本都冇人知道，你頭先講，啱唔啱呀？你原來又有好多 exceptions，又要睇下啲 lab 究竟追唔追得上，又要睇下究竟有冇呢啲咁嘅材料諸如此類，你先至行新嗰個，人哋譬如好簡單，864，而家 1254，可能 1254 都未得㗎，咁究竟行 864...

答：或者我對唔住，我就畀唔到嗰個通告或者嗰啲嘅方式，但係事實上你睇番，事實上業界係知道我哋用嗰個要求係--用料嘅要求。

主席：你唔可以咁樣樣講，我都話我唔係業界，咁點呢？

答：唔係，即係話我講唔到嗰個通告或者係嗰個方式啫，我意思即係話睇結果，其實部門係有同呢個嘅業界...

主席：你明唔明？太多 flexibilities，或者太 wide 嘅 discretion 畀咗一個 executive 嘅時候，就變咗係鍾意點做都得嘅囉喎。

答：所以我主張就係將最新嗰個要求不如就喺網頁，就變咗所有人都可以睇到嗰個要求係啲乜嘢，特別係持份者或者係其他有需要用呢啲器具嘅人，所以網頁呢個係一個好嘅方法，係通告天下。

問：呢個網頁嘅做法都係 2015 年鉛水事件爆發之後嘅做法嚟嘅，係咪呀？

答：係。

問：因為之前連你哋嘅網...

主席：其實我覺得唔係一個好嘅方法喎，即係而家換句話嚟講，寫條法例出嚟「署長你有絕對權力鍾意點做就點做」？

答：我諗我哋個點做就係都係有個諮詢，都要睇一睇業界...

主席：唔係，個問題就係當然喇，如果係一個--我哋而家成日講法治重要吖嘛，係咪？既然法治咁重要，梗係要喺呢個法律框架裏面規限啲權力，唔可以話只要我哋寫條法例出嚟話署長有絕對權力，喺網上高只要一講，就係喇，唔係好得㗎喎。

答：因為調番轉一個情況，我又想睇，即係話如果冇一個酌情權畀水務監督，逢親有一個嘅英國標準就係更新，你即刻要用嘅，如果你話要就住嗰啲嘅標準去立法會去將佢改，呢個亦都需要時間嘅。

主席：你可以話「我哋而家通過咗，跟住我哋遲啲 by notice 幾時生效。」都得㗎，冇人話一定要即刻生效㗎？

答：但係呢個可能你要去一個法定嘅機構去改，即係呢個會有個時差喺度，因為佢出呢，其實佢出咗之後，如果根據英--即係而家個法例，就係要即刻用，我哋都睇到其他嘅一般嘅做法，都會係同業界會有個討論，究竟係咪適當嘅時候先至做。

主席：我唔知你知唔知，我就最熟呢個--都唔係最熟嘅其實，少少熟，啲藥成日都改㗎喇，今日有隻新藥就入咗去 Schedule 1，聽日有隻新藥入咗 Part 1，後日有一隻又變咗 Part 2，幾個月就轉一次，有咩嘢咁困難呢？我又唔係好明。

答：因為我唔係好熟悉嗰個藥物，係咪即係...

主席：唔係，都係改規例之嘛，都係改規例嘅之嘛，成日都改㗎喇。

答：即係當嗰個藥物一有新嘅，即刻就去立法會度改？

主席：成日都有㗎喇，藥物，有新嘅藥物，成日都出㗎喇。

答：我睇到個問題就係第一，就係有新嘅標準，我哋都係需要去睇一睇實際個情況係咪需要用嘅，第二，就係如果真係要更新嘅時候，根據個法例...

主席：唔係，你知道你嘅矛盾喺邊度嘛？因為譬如一隻新藥係冇矛盾嘅，

因為佢有就有，冇就冇，唔會話「我而家最新嘅 British Standard 嘅。」但係你嗰度 definitions 就話你所有嘅嘢就一定要跟最新嘅 British Standard，原來你哋又唔係一定要執行㗎喎。

答：呢個唔係執行，我哋都經過一個機制嘅，即係討論新嗰啲嘅物料我哋係咪需要即刻執行，而且我哋會通告，即係當然呢個系統有改善嘅空間嘅，我哋要睇一睇將來如果係嗰個法例裏面會唔會可以喺呢方面可以補足。

問：或者我哋睇一睇，除咗法例之外，如果我哋睇一睇個水務署制訂嘅文件，包括 WWO46 嗰啲 form，我哋睇一睇 B15.1 37621，呢個我哋睇過好多次，都係講緊一個 part I of 呢一張 form 嘅，喺 part I 嗰度，喺第二欄嗰度，個持牌水喉匠同埋個則師都需要就喺呢度就係話聲明就係話用嗰啲物料係符合水務規則嘅咁樣，即係呢個係 2 嘅，上面寫"PURPOSE OF SUBMISSION"嗰度嘅。

但係呢個唔緊要，我哋睇一睇 37627 嗰度，見到 37627，如果你睇下最底下，左下角嗰度，我哋見到呢個表應該係 2012 年嗰個版本嚟嘅，呢個都係。喺第 7 段就係講出咗一啲 fittings、taps、valves、combination fittings 等等，佢哋所有關嘅英國標準嚟嘅。

但係我哋都睇過工程師學會嘅報告，佢其中一個批評，就係話你連水務署你自己所制訂呢啲咁嘅表格入面所列出嚟嘅英國標準，都係得三個標準係當時適用嘅啫，其他全部都已經係過晒時，你知唔知有咁嘅情況？

答：我都睇到嗰個報告。

問：即係呢樣嘢你冇異議？即係關於好大部分嘅英國標準嗰個規格，喺呢個表格入面所講嘅就已經係過咗時，係咪呀？

答：過咗時，但係我哋都有睇番過時嗰啲嘅英國標準嗰個影響性有幾大，發覺其實大部分嗰啲都係啲好少用嘅一啲嘅喉料嚟嘅，如果牽涉到裝置嗰啲，基本上，我哋睇番過去二十年，英國標準，就住呢啲裝置嘅改變，其實喺嗰個水質安全嗰方面個影響相對少嘅。

問：唔好講個影響有幾大先，我哋講下嗰個實行上嗰個問先，因為呢一個表格就其中持牌水喉匠要簽嘅，佢要簽就係話嗰啲部件、物料係符合

你哋水務規則，即係話要符合適用嘅英國標準嘅。我想問一問，就係你期望嗰啲持牌水喉匠如何得知當時適用嘅英國標準係啲乜嘢？

答：正如我頭先講，如果係一啲過咗時嘅英國標準，有一個構通嘅機制，就係水務署同業界係有一個嘅機會嚟到將嗰個實際嗰個佢哋嗰個嘅要用嗰啲嘅喉料嗰個標準係有個溝通嘅，...

問：但係...

答：...我都同意呢一個嘅做法唔係最好嘅，所以喺新嘅表格裏面我哋已經將佢改咗，我亦都頭先聽到主席嘅講法，我哋而家係用一個網頁嘅制度，呢個可能亦都有一啲地方係需要改善嘅，呢個亦都可能牽涉到我哋要檢討現時嗰個嘅法例。

問：因為點解我帶出呢個問題呢？就係我哋委員會律師當時去想攞啲英國標準嘅時候，每一份英國標準嗰個機構都話「你要畀千幾鈘先可以畀你嘅。」所以我就想問一問你嘅，就係你當時係咪--即係水務署係咪期望嗰啲持牌水喉匠佢哋自己去攞啲英國標準嚟自己去睇呢？

答：實際上嘅做法佢主要同化驗所嘅，化驗所就有嗰個標準，我個理解，運作上就當佢有一啲嘅水喉嗰啲嘅裝置，佢需要係得到我哋嘅批准。我想喺呢度提一提，呢度嘅批准只係局限於某幾種嘅一啲嘅水喉嘅裝置，佢會向嗰啲化驗所嚟到講，就係話佢要想某一隻牌子嗰個嘅裝置得到水務監督個批准，佢需要有一個驗證，就由嗰個嘅化驗所嚟到同佢處理佢應該點樣去攞到呢個測試嘅報告。

正如我頭先講，我哋經常就同呢個化驗所有一個溝通嘅，我哋會將我哋嘅要求都講畀化驗所知，呢一個嘅做法亦都係過往一路嘅安排，而家我哋係有一啲嘅改善嘅地方。

問：無論如何，即係你都同意就係呢個英國標準冇話作出一啲適時嘅更新公告天下呢樣嘢係需要改變，你同意？

答：我其實已經改咗喇而家。

問：係喇，你同意。

答：所以點解喺新嗰個表格已經改咗，係。

許偉強先生：跟住我想問一問就係有關嗰個持牌水喉匠呢幾十年嗰個訓練

嗰個演變嘅，我睇下會唔會我留待聽日開始，九點半？

主席：聽朝九點半，係咪呀？

許偉強先生：係。

主席：聽朝九點半喇。仲有幾耐問呀？

許偉強先生：我諗我大概一個鐘頭嘅。

主席：其他各位律師，李大律師會有問題，何大律師都會有問題，仲有邊啲人有問題？冇？好。

李柱銘先生：我會相當多嘅，好多嘅。

主席：你會相當多，得，得，冇問題。唔係，我喺度諗緊啲時間啫，得。九點半，聽朝早。

2016年2月1日

下午4時31分聆訊押後

修訂日期:二零一六年二月四日

以下為修改前的部分:

頁 1C 行至 1N 行

2016 年 2 月 1 日

上午 10 時 04 分恢復聆訊

出席人士： 許偉強大律師及鄭欣琪大律師，為外聘律師，代表食水含鉛超標調查委員會

王鳴峰資深大律師、陳樂信大律師及羅頌明大律師，由律政司延聘，代表水務署署長

李柱銘資深大律師、譚俊傑大律師、吳思諾大律師及吳宗鑾大律師，由何謝韋、李偉業律師事務所延聘，代表啟晴邨及葵聯二邨公屋居民代表 Lee Pui Yi、Chong So Nga 及 Lui Hui Ping

麥高義資深大律師及許佐賓大律師，由的近律師行延聘，代表保華建築營造有限公司

何沛謙資深大律師及殷志明大律師，由羅夏信律師事務所延聘，代表香港房屋委員會

Mr Ian Pennicott 資深大律師及林定韻大律師，由孖士打律師行延聘，代表中國建築工程（香港）有限公司

黃佩琪大律師、李頌然大律師及杜慧燃大律師，由顧增海律師行延聘，代表有利建築有限公司、明合有限公司及伍克明

Monday, 1 February 2016

(10.04 am)

(Transcript of simultaneous interpretation
except where otherwise specified)

MR KHAW: Mr Chairman, before the Water Supplies Department calls its first witness, I want to point out that last Thursday, we received four additional witness statements from the WSD. Last Friday, I also received --

CHAIRMAN: Sorry, what did you get on Thursday?

MR KHAW: Last Thursday, we received four additional witness statements from the WSD.

Last Friday, again from the WSD, we have also received further documents. In particular, the WSD has said that there is a statement from an expert witness -- we got them on Thursday and Friday last week -- in relation to additional witness statements and additional documents. I understand that this Commission is not bound by any particular procedures. However, in relation to such late submissions -- the Water Supplies Department is a very important government department in this Inquiry. The submission of such documents just one or two working days before its first witness I don't think is satisfactory.

I say this because if we are to take a look at the four additional witness statements, among them, for the

3rd witness statement of Wong Chung Leung, in that statement he rebutted the report of the Hong Kong Institution of Engineers, in particular the deficiencies in the system in licensing plumbers.

In fact, that particular IE report was received in November, and when we examined the Housing Department witness, namely Ms Ada Fung, reference was made to that report, and also section 15 of the WWO in relation to the licensing of plumbers, the role of the WSD, et cetera, were also referred to in one of the witness statements of Mr Lam.

In fact, licensed plumbers is one of the issues mentioned in the August statement. Then we have Mr Chau Sai Wai. He explained why in Scotland and Wales, as a result of the leaded solder materials and the problems thereof, it is said that they didn't know it and they were giving an explanation.

Regarding the problems in the US and Wales -- in fact, when we ask questions of the second, third and fourth witnesses, they were mentioned. I don't know why they only referred to them so late. It isn't just a matter of attitude. It will also affect our examination. All parties to the Commission are working to a very tight schedule and have been making preparations accordingly. We are at the forefront.

Whenever a witness is presented, we are the first to ask questions.

Just one or two working days before we see the first witness from the WSD, we are flooded with so much information, it will create difficulties for us.

I'm not going to criticise this, because we are supposed to make full preparation, but to me I think this is not desirable.

Moreover, on Thursday, we were given additional documents, but no explanation has been forwarded as to why the submission was made so late.

The Commission has always been making orders concerning the timetable of witnesses. Never have we seen an application to ask for approval of the Commission to allow for the inclusion of such additional witness statements.

So I think that as far as etiquette is concerned, I think we should have been informed of such an arrangement. Moreover, we have been meeting the lawyers day in, day out, for the past four days. We should have been notified that there would be additional documents, but never have we been told about that.

Then, for the new witness, that is a Mr Kan, we have been listening to the views of the CIC, VTC, and also the views of the Hong Kong Plumbing and Sanitary Ware

Trade Association. All of a sudden, on Friday last week, we were given this additional expert witness statement.

Why is it so late? Probably, there are only two reasons. First of all, being slow, but I'm afraid, given with such a large team of lawyers, they would not be working at a very low level of efficiency. But then, if they are only able to come up with such a reply after listening to other witnesses, I'm afraid this is not quite fair to other parties and I hope that, as we move on, we won't be having such late papers.

If anybody would like to give further information to reply to what has been said, that's fine. That's another matter.

But then for what is going on, if somebody else would like to give additional documents, I just hope that this won't happen again.

DR WONG: Mr Chairman, for the new witness statements submitted by the WSD, I would like to forward an explanation, for the sake of the Commission as well as parties to the Commission.

For the new witness statements, there are issues that we need to clarify, like the HKIE. We are not trying to rebut their report but then we need to clarify. We could have done so by asking the witness to

do so in the witness box, or I can put the questions to the witnesses. To save time, instead of letting me ask the witness, so as to clarify the position, I think it's better, for time management, to have the issues to be clarified being contained in the witness statements. The purpose isn't so much to create inconvenience. Rather, we would like to facilitate everybody. This is for everybody's convenience. We don't want to take any advantage over others. This is very important.

CHAIRMAN: But on the face of it, it appears to be so.

DR WONG: Mr Chairman, if the perception is as such, if all parties would like to have more time, we are willing to give more time.

CHAIRMAN: I am not willing to give you more time.

DR WONG: I understand.

CHAIRMAN: We have our own timetable. We have already set down the timetable.

DR WONG: If lawyers need time to prepare --

CHAIRMAN: For such issues, I'm sure you would have known about them even before everything started.

DR WONG: Yes.

CHAIRMAN: How come towards the end of last week, all of a sudden, you submitted a number of witness statements?

DR WONG: Mr Chairman, as we have said, it is not that we tried to do so at such a late moment. We had to strike

a balance. First of all, we can get the information by way of examination-in-chief.

COMMISSIONER LAI: But the HKIE report has been submitted a long time ago, so how come you had to submit the information so suddenly?

DR WONG: Our options were either we don't put in the witness statement and then by way of examination I can have it clarified; or we can have it written down and allow me to read it out. That would be quicker.

So that's the point of consideration. We don't want to create such an impression.

CHAIRMAN: I don't quite agree. For the witness statements that we have read, it seems that they are trying to rebut others point by point, so it has all been tailored.

DR WONG: Yes. I agree that I would like to seek clarification point by point.

CHAIRMAN: So are we right: we have set out a rule in the outset, that is there is a deadline for submission of witness statements? Unless there are special circumstances, like the deputy director of the Housing Department, we have asked for her to get more information, so she gave a supplementary witness statement. That's fine. But then for yours, that's about licensed plumbers, section 15, et cetera --

I think from the outset everybody knew what it was all about.

Now, you have read all the statements, you have listened to other witnesses. You are trying to rebut others.

DR WONG: We would like to get the facts, Mr Chairman, so we don't want to take advantage. We just want to set out the facts.

Mr Chairman, as to the weight you give to the facts, it is up to the chair and the member of the Commission, it is at your discretion, but still we would like to present the information to you.

CHAIRMAN: All right. From today onwards, if any party to like to put in any witness statement, please apply to me in advance.

DR WONG: On this point, Mr Chairman, I would like to point out one point. There is an expert witness statement concerning water sampling. For that expert, we are also waiting for the final report of the expert of the Commission. That is the report from Prof Joseph Lee and Prof Fawell. We are told that we can expect them in the middle of the week.

There is also one other expert not from the WSD assisting us, so we would like to get your expert reports first. We would hope that by Friday this

week -- the earliest is Friday that we can submit our expert report.

CHAIRMAN: When will your expert be testifying, if you can give us the witness statement as you have said?

DR WONG: Before or after Prof Fawell.

CHAIRMAN: So how long will it take? Our UK expert will be testifying after the Chinese New Year. Would you like to hear what he would like to say before you call your expert witness?

DR WONG: We would like to see the report before we comment on the report, or we can submit a reply report.

CHAIRMAN: Why can't you do it earlier?

DR WONG: We haven't seen Prof Fawell's report.

COMMISSIONER LAI: An expert report doesn't have to be submitted after the other expert's report has been presented.

CHAIRMAN: Why can't you give us a preliminary report?

COMMISSIONER LAI: So why is it that every time you wait until the other side's report is presented before you present yours?

DR WONG: Of course, we can certainly present one preliminary report and then a final report.

CHAIRMAN: Yes. When? When can you do that?

DR WONG: Friday.

CHAIRMAN: Don't wait for the other side. Let's say, if you

ask your chief chemist and he says this should be done -- you know what we are driving at. Last time, we issued a statement, and at 10 or 11 pm at night you issue a press release saying there's no problem. Of course, you must have been given instructions. Why didn't you tell us? Why do you have to tell us at the very last minute, and you only submit your report only after the other side's report is ready?

DR WONG: We have explained why there's no conflict in Chan Kin Man's statement, the chief chemist's statement. We explained in paragraph 4. We would like to get an expert who is not from the WSD.

CHAIRMAN: So when will the witness be testifying and for how long? I have a time schedule to meet. I have to submit my report. Are you saying that you don't know how long it will take? So whatever is said that is not to the liking of the WSD, there will be someone coming out to rebut them but you don't know how long the procedure will take?

DR WONG: No, no, no, that's not what I am suggesting. The preliminary report will be submitted this Friday.

CHAIRMAN: So you mean you must have the final say, after our witnesses have testified?

DR WONG: I'm just talking about water sampling, the technique of water sampling, and the expert witness

statement on that.

CHAIRMAN: Why can't you take that statement earlier?

DR WONG: We would like to see what Joseph Lee and the other --

CHAIRMAN: Exactly. That's what you are trying to do. You want to hear what other experts have to say and then you want to have a point-by-point rebuttal.

DR WONG: I can do this through examination-in-chief.

CHAIRMAN: That's another matter.

DR WONG: We can submit a preliminary report, and then, if we have to reply to the expert witnesses, we will submit a final report.

CHAIRMAN: All right. From today onwards, if anyone wants to submit any additional statement or documents, you must get the approval of the Commission first, because I don't want to spend time arguing about this. Don't you think this is fair?

DR WONG: I think if the principle is that the Commission should be informed of everything that the Commission needs to know -- and then we go for the efficient mode of communication.

CHAIRMAN: For example, the so-called expert witness report from Kan Kwok Leung, what's new in that report, apart from the rebuttal? Tell me.

DR WONG: Mr Kan's expert report, he is an experienced

licensed plumber. He will be telling --

CHAIRMAN: There have been so many plumbers. How many questions have you put to them?

DR WONG: Three licensed plumbers have given evidence.

CHAIRMAN: I know. You did ask questions. How many subjects have you covered in those questions?

Please call your first witness.

DR WONG: Mr Chairman, the first witness I would like to call is the director of Water Supplies.

MR ENOCH LAM TIN SING (sworn)

CHAIRMAN: Please take a seat, Mr Lam.

Examination-in-chief by DR WONG

DR WONG: Chairman, Mr Lam's witness statement can be found at bundle C19.1, page 10279.

Mr Lam, please may I refer you to your first witness statement. Page 10279 in C19.1.

CHAIRMAN: You may begin.

DR WONG: (Paragraphs 1 to 12 were read in English)

Please refer to the following diagram showing a schematic layout of the waterworks and inside service.

(Paragraphs 12 to 16 were read in English)

The organisation chart as follows: Director of Water Supplies; under him, Deputy Director of Water Supplies; and below him there are six divisions: Development Branch, New Works Branch, Operations Branch, Mechanical

and Electrical Branch, Customer Services Branch and Finance Branch.

(i) Development Branch.

(Paragraphs 17 to 43 were read in English)

A. Mr Leung Wing Lim, assistant director/New Works. Areas covered: The stakeholder theory; The design, construction and maintenance of the waterworks (answering in part paragraphs i.2 and i.3).

B. Mr Chan Kin Man, chief waterworks chemist (2nd statement). Overview of monitoring and control of water quality at waterworks including the development of the Water Safety Plan (chapter 3 of August statement in paragraph i.1); Water sampling and testing by WSD in respect of inside service including monitoring of water quality at consumer taps (from perspective of WHO Guidelines/chemical aspects) (paragraph i.8); Rationales for testing eight parameters for newly constructed inside service (paragraphs i.7 (c) and (d)) and testing seven parameters for Quality Water Supply Scheme for Buildings (paragraph i.8).

(Part of the above areas also incidentally cover paragraphs i.2 and i.3 of the 12 October letter.)

C. Mr Lam Ching Man, assistance director/customer services. Monitoring and control of construction, et cetera and maintenance of inside service; complaint

handling and promotion of Quality Water Supply Scheme for Buildings for the safety and quality of drinking water at inside service (chapter 4 of August statement in paragraph i.1); Water treatment plant through which water is supplied to each affected estate; Approach to taking and testing of water samples from inside service before connection of water supply to affected estates (paragraph i.7(a) and (b)); Inspection and testing of water samples in inside service (from perspective of Quality Water Supply Scheme for Buildings (paragraph i.8); Construction of inside service in affected estates by licensed plumbers (paragraph i.12).

(Part of the above areas also incidentally cover paragraphs i.2 and i.3 of the 12 October letter.)

D. Mr Chan Hing, assistant secretary (Lantau). Regulations, et cetera pertaining to construction of the affected estates and prohibiting the use of plumbing materials from which lead may leach into water (paragraph i.4); Work of Licensing Authority and qualifications et cetera for granting a plumber's licence (paragraphs i.10 and i.11).

E. Mr Cheung Yip Kui, senior engineer/customer services (technical support)2, WSD. Areas to be covered: Existence of lead in plumbing materials; use of deviated plumbing materials; and inspection and approval

in respect of the affected estates (paragraph i.6);

Steps and measures by WSD after discovery of excess lead incidents (paragraph i.9).

44. I confirm that the contents of this witness statement to be true to the best of my knowledge, information and belief.

Dated this 6th day of October 2015."

Director, I have just read out your witness statement. Is it your signature on the last page?

A. Yes.

Q. Do you agree to have the statement that I have read out to be adopted as your evidence?

A. Yes, I agree.

Q. Anything to add?

A. Mr Chairman, as to the statement read out by the lawyer, I would like to add a few points.

First of all, I am very grateful that the WSD, myself and my team be given the opportunity to come here to assist in the Inquiry of the Commission.

Let me repeat once again that the WSD is very concerned and attaches as lot of importance to the quality and safety of drinking water.

I would like to explain the work of the WSD in the past few decades. To ensure that water is safe, I think there are two important points. First of all, the

drinking water supplied by the WSD has to be up to a particular standard. Second, for the inside service system, it is the responsibility of the private households to prevent it from being contaminated by chemicals and also bacteria.

As to the supply of water and making sure it is safe, we have to start with the source. In 1965, we started to have two sources for our water: first of all, local yield from rainwater; second, Dongjiang River water from the mainland.

For the local yield, under the Waterworks Ordinance, we have defined areas from which we gather our water as gathering grounds, and we have been very stringent in monitoring and controlling the developments therein, so that the drinking water will be up to a particular standard.

For Dongjiang water, over the years the WSD has been liaising with the Guangdong authorities to put in place measures to monitor and control the quality of Dongjiang River water. In particular, in 2003, a dedicated water mains was constructed to carry the water from Dongjiang to Hong Kong, so as to make sure that the quality of the water will be up to the standards on the mainland.

Then we have to treat the water from the sources. At various water treatment works, we have been using

an advanced and scientific and stringent way to treat the water, and the water has been treated up to world standards. Moreover, we have been drawing a large number of water samples to certify that the water that we supply is up to standard.

For treated water, it will then go into a few distribution systems. In this regard, we have been relying on the World Health Organization guidelines. It is a risk-based approach, to see whether we are able to maintain the standards. According to the WHO Guidelines, as far as microbiological contamination, basically we will be testing the water samples for chemical analysis. It is by way of material monitoring. That would be the approach.

In relation to monitoring of materials, when we construct the government's water supply system, we have the concept that the different stakeholders of the construction industry will be discharging their respective responsibilities. Therefore, in our tender document, we will specify the specifications for the waterworks, including the pipes and fittings, and we have also got professionals on site to monitor the construction.

Moreover, in the contract documents, we have also asked the contractors to confirm the materials procured

are in line with the contract specifications, and there are also qualified persons monitoring the work carried out.

In this regard, when the water supply system has been completed, we will be drawing water samples. As I have said, this will be in line with the risk-based approach of the WHO in relation to bacteriological risks. We will try to see whether the bacteriological contents are up to the WHO Guidelines requirements.

Yes, under the WWO, we haven't got any standards for water quality. But since the year 1994-95, the WSD has pledged that the water that we supply will be totally in line with the WHO requirements.

Moreover, every year, 160,000 water samples are being drawn, to test for the water quality, to make sure that it is up to WHO Guidelines. In the year 2007, in accordance with the 2004 Edition of the WHO Guidelines, we have been devising and also implementing Water Safety Plans. In 2012, when we shared our information with the WHO, we have been told that the Water Safety Plans that we have drawn up could be a good example for other countries.

Having covered about the safety aspect of our water supply, I would like to turn to what we do to make sure that the inside service system is clean and safe. First

of all, the construction stage; second, the maintenance and repair stage. At the construction stage, we are still adhering to the WHO Guidelines, still having a risk-based approach. That is, as far as bacteriological contamination is concerned, we rely on water sample testing, and then for chemical contamination, we rely for material monitoring.

For the materials, what we have been doing, when compared with what I have been referring to, that is the concept of division of labour within the construction industry, they are the same.

Then for the WSD, we are the regulator. What we are doing is that in accordance with what was said by the Construction Industry Review Committee in 2001, there was a report in that year, and then in 2011 the WHO also published a document as to how the inside service of buildings should be made sure that it is clean, and also in line with the very important concept of division of labour and each discharging his or her own responsibilities.

For the WSD, we are a regulator; we have to make sure that we specify the materials. Moreover, we have a professional licensing system to carry out the work. For other stakeholders, like the developers, the contractors, just like any other construction industry

projects, we understand that sufficient supervising staff members will be sent to the construction site to monitor the construction.

We have also set out clearly our requirements. We hope that the developers and the contractors can confirm with us that they have been procuring the materials in line with the specifications. In fact, we believe that to be able to do it properly, we should do it at source, when it comes to procurement. Also, during the construction stage, we have to make sure that the work is carried out in line with the specifications.

For the WSD to have the final inspection, if we rely on that, at that stage, relatively speaking the efficiency will be low. In the past, we are been liaising with the stakeholders and working on this all the time.

Since 2008, the waterworks projects have become more and more complicated. Other than relying on the licensed plumbers to make sure that the waterworks projects are done according to the requirements, we have also got this, that is the authorised person, that is the AP, will also certify that the project that he oversees is using the materials specified by the WSD. We have this double requirement.

We believe that in this way the materials that we

require for the works will surely be those to be used.

Other than the system that I have referred to, we have also made reference to some overseas practices, say for example, that in the US, in Canada, in Australia and in Singapore. We tried to see how they have been monitoring their inside service systems. Well, the system that I have described is more or less what they have been practising.

I would also like to refer to more advanced practices. When it comes to the question of lead and whether lead will be leached into the water, starting in 1978 we banned lead pipes. When compared to the 1970s in the UK and the 1980s in the US, we acted much earlier, and the alkaline degree, the pH value is 8.2 to 8.8, higher than the 8.0 to 8.5 laid down by the WHO. In this way we can prevent metals being more easily leached into the water.

Secondly, we have paid attention to overseas practices. We have also got a system for licensed plumbers, so that professionals will be overseeing the projects. But then, for the majority of the countries, they have also used a self-regulatory system, to make sure that the works are up to the required standards. In Hong Kong, upon completion of each project, we will send somebody to go to the site to exercise our

monitoring role. But of course we have said that we cannot replace the work of the stakeholders.

After the building work has been completed, the majority of them will get samples to check for the heavy metals. If the water supply system can be constructed in line with the WWO, even after that we have to be sure about the post-completion maintenance and cleansing. According to the law, the duty rests with the consumer, but still, we have been adopting a multipronged approach to assist and monitor the maintenance work.

I would like to go into that by way of three points. In 2002, we have been launching a scheme. We changed the name of that scheme later on. It is now call Quality Water Supply Scheme for Buildings. It was called the FWPQMRS. We understand that 45 per cent of the domestic users are being covered. As of December last year, we have upgraded it to version 2.0 and we have included four heavy metals: lead, chromium, cadmium and also nickel. The WSD has been monitoring continuously the quality of the water. Every year, 16,000 sets of water samples have been drawn, for chemical and bacteriological examinations.

Given a population of 7 million, the WHO has only asked for about 2,000 samples only.

Thirdly, when we receive a complaint from

a consumer, we would seriously look into that. If there are irregularities in the water supply system, we will carry out investigation and will ask the consumer to make necessary improvements.

After this incident of contaminated water, the WSD has attached importance to the water. We instantly set up a task force in the WSD, to look into the cause, and that is, it is caused by leaded soldering material in the joints. We also tie in with the efforts of other government departments. We took water samples, to test if the water quality is up to a safe standard. We have also done this for public rental housing estates, kindergartens and also welfare facilities. We took more than 10,000 samples and we asked Government Laboratory to carry out the tests.

If you look at the public rental housing estates, if you look at the entire sample set, you can tell that 99 per cent of the samples conformed to the WHO 2005 criteria. If you look at the post-2005 estates, then the relevant percentage is 1998 per cent. For kindergarten samples, 100 per cent of them conformed to the WHO standards.

When we discovered that there were cases in PRHs with lead contamination, we would provide safe drinking water. We explained to the residents the findings of

the test and also explained to them how we are going to supply drinking water. And together with other departments we have been providing subsidy in tariff and effluent charges. We have also published public education leaflets and other materials, to inform the public on how to prevent excessive lead being found in drinking water and what they should do if they have contamination of water by lead.

Chairman, the WSD attaches as lot of importance to the lead in water incident. We hope the Commission can complete its work as soon as possible. I know a moment ago there was some discussion on the late submission of the statements from my department. For this, I would like to offer my apologies. We would continue to act in a most professional manner in assisting the Commission's work. When the Commission completes its work and if it has any recommendations, we will take serious efforts to implement that.

In the Policy Agenda 2016, we have already set out that we would step up internal monitoring of waterworks. For example, we are going to test four heavy metals in our samples, including lead, and we are also going to test for the presence of lead in soldering joints. We are also going to look into overseas experience in respect of lead contamination, and we are also going to

look at the WWO and the relevant standards and specifications, with a view to enhancing our work and monitoring. And also, together with the trade, we have been trying to achieve continuous improvement, so as to maintain the supply of quality and safe drinking water to our consumers.

DR WONG: No further questions.

MR KHAW: (Chinese spoken).

CHAIRMAN: Thank you. Let's take a 20-minute break.

(11.20 am)

(A short adjournment)

(11.41 am)

Cross-examination by MR KHAW

MR KHAW: Mr Lam, your statement started with the following. That is, your statement represents the Water Supplies Department, and it is from a higher level, that is the policy level.

I understand that the details, a lot of them can be found in the statements of your colleagues, so I may have to follow up with your colleagues.

I would also like to talk about your policies as well as how policies have been devised.

Mr Lam, in your witness statement, you have said that you have been holding the position of director of Water Supplies since November 2013. When did you join

the department?

A. As a member of the WSD? 13 November 2013.

Q. What about before that?

A. For the six years before joining the WSD, I was with the Development Bureau.

Q. Let me talk about the broad principles. For the water supply system, there are different stakeholders. The WSD is one of them. Let's not talk about the roles to be played by individual stakeholders. I think you would agree with me that for the WSD, their first and foremost duty is to ensure that the water is safe, and also you have to assure the water quality?

A. Yes. I have said we are very concerned about the safety of drinking water.

Q. What about the public confidence in drinking water? I think you have also said that it is of foremost importance to you as well?

A. Yes. In 2016, in the Policy Agenda, this has been set out very clearly. Public confidence in drinking water is important, so we have decided to adopt a number of measures to enhance our monitoring work.

Q. All right. Understood.

For the WSD, for you to assure the quality and safety of water, you have to look at the international standards; I think this is known to everybody.

A. Yes. In my supplementary remarks, I have said that when we devise a safe water supply system, we will be making reference to WHO Guidelines. We will also draw reference from international practices.

If I may supplement, when it comes to the safety of drinking water, the current rules and regulations have already said that for the water supplied by the WSD, in 1994-1995 we pledged that we would follow the WHO requirements. But then, when it comes to the inside service of the private sector, we play the role of a regulator, because we are not the supplier.

We focus on two areas, and indeed we require each and every stakeholder to do their own part, in particular, when it comes to the maintenance stage. In the past 10-20 years, especially after the year 2000, we have begun to be concerned about water quality in private installations, and there was a problem with contamination. We have this Quality Water Supply Scheme for Buildings, to encourage consumers and property management people to properly maintain their water facilities.

CHAIRMAN: Let me put a simple question to you. Do you agree that you have a duty to ensure the drinking water consumed by the Hong Kong public is safe?

A. As I have stated in my supplementary statement, it has

two parts.

CHAIRMAN: In other words, when it comes to the WSD ensuring safe drinking water for the public, you mean you are responsible for the part before the inside service system?

A. Up to the boundary of the relevant lot. We also hope that the inside service will be up to a certain standard. This has always been our work objective. But there's a constraint to what we can assure when it comes to internal or inside service. We cannot take the place of the behaviour of the consumers, and I have said we can only do three things that I have set out to help the consumer, users, to comply with the relevant standards.

CHAIRMAN: So you mean the consumer would also have to play a part?

A. Yes, if we look at the law, but we have a duty to help the consumer to maintain their water supply facilities.

MR KHAW: On the part of the WSD, you have certain specifications and standards which you would like to achieve and adhere to. If there's an incident outside Hong Kong, you certainly would have a duty to have a look, to see if there are deficiencies on our part; right?

A. Yes. We have some duties to discharge. On water quality, an important organisation in this regard is the

WHO. If there are major water quality incidents in other countries, we have a duty to know and to ask ourselves whether we need to make certain improvements.

Q. If there's a problem in another country with respect to the water supply systems and improvements would require legislative amendments, you are also duty-bound to look into those as well; right?

A. Well, that's a question of the causal relationship. As you have said, in another country, they may need to amend their law in the wake of a major incident, and I believe the WHO would issue notices to inform all countries concerned that some enhanced measures will be called for.

As regards whether it would take the form of legislative amendments -- well, it depends, because sometimes things can be done outside the law.

CHAIRMAN: Sorry, let me ask a question first. What you are saying, that is, if the WHO doesn't inform you, you don't feel there is a problem out there?

A. I was just highlighting that in terms of water quality, we are very concerned about whether the WHO has got anything to say, and through other channels we can also know whether there are matters on water quality that we need to pay attention to.

The WHO is an important channel for us, but there

are other channels. Our colleagues working on water quality would also pay attention to what is happening in other countries, whether there are water quality incidents in those countries. But if there are major incidents, of course the WHO would be an important information channel, but we also have other colleagues working on water sample tests and water quality tests.

CHAIRMAN: Apart from the WHO, in the WSD you have other people looking around, paying attention to what's happening in other countries?

A. Well, you can put it like that. There are other channels. For example, we have people attending conferences in other countries, we have people reading journals and publications. But there are constraints. But what I am saying is that we would do our best to understand what is happening around the world. As the chairman puts it, the WHO is an important organisation.

CHAIRMAN: It doesn't have to be the WHO. What about the recent US water quality incident? Has the WHO informed you of that?

A. Apart from the WHO, we are aware of the recent US incident.

CHAIRMAN: So you shouldn't say that you would know if the WHO has notified you; you should say the WSD has got people paying attention to what's happening outside

Hong Kong.

A. Right.

MR KHAW: You have the R&D division. Please refer to C21 and I would like you to look at a number of paragraphs.

C21, page 18919.

A. Yes.

Q. "(In English) Overview of R&D work by different disciplines", including "(In English) Civil engineering discipline", paragraph 5 of page 18919. Also, page 18920, there's the water science discipline, Water Science Division.

The division will carry out some research in respect of WHO information, and also there's the mechanical and electrical engineering discipline, about technical matters.

Paragraph 12:

"(Partially in English) On top of the above, WSD also keeps itself updated on the latest technology and enriches its knowledge of overseas developments and international practices in the water industry ..."

It's done through what you have told us: participation in conferences, experience sharing, interaction with people outside Hong Kong, international journals, magazines and publications, arrangement of technology transfer workshops.

So when it comes to knowing or getting access to overseas experience and practice, which division or divisions in the WSD will be responsible for that?

A. You have referred to 18919, paragraph 4. No, it's 18918, paragraph 3. There are a number of disciplines. So we have to look at the discipline when we answer the question.

For civil engineering discipline, we depend on civil engineering professional colleagues, that will interact with overseas experts. If it's about E&M, it's another discipline. So it will not just be the job of one discipline to help the WSD in understanding or in having exchanges with overseas countries.

Q. Let's have a look at paragraph 13, page 18922:

"(In English) Through the above channels and internet research conducted as and when necessary, WSD maintains its alertness to significant internationally resonant water quality issues."

So you have people doing internet research from time to time. By "internet research", which division will be doing this? In respect of water quality matters in other countries, which team, which colleague?

A. If it is about water quality, it will be the Water Science Division. Page 18920, paragraph 9. If it's about water quality, then it's them.

Q. If you want to look into overseas incidents or you want to have people sharing experience with you, then the liaison and the internet research will be done by the Water Science Division?

A. If we are aware of certain water quality incidents in other countries, then the Water Science Division will take the necessary follow-up action.

Q. Apart from water quality matters, let's say if in another country there's a problem with water supply or water quality necessitating legislative amendments, do you have anyone monitoring such matters?

A. I don't know if I understand your question correctly. If there's an incident in another country and that country amends its law or does not want to amend the law, then will we be looking into the incident and decide whether we should amend our law?

Q. Well, if there's an incident and then subsequently there were legislative amendments, do you have colleagues monitoring the trend and decide whether we should amend our laws?

A. I am not sure, but my estimate, my guesstimate, is that if there's an incident in another country, we will take some follow-up action to look into that. But are we going to look into their legislative amendments? I don't think that would be done. We will look at the

nature of the incident, to see if we need to take any follow-up action, whether there's anything for us to learn from that experience.

Q. When I asked the Housing Authority witnesses, I put questions to them concerning overseas experience, Scotland, Wales, the US, and problems involving the water supply system in those countries, and some are related to soldering materials.

I would like to refer you to a number of documents and then I have some questions for you. Let's have A1, page 134. This is not a journal or very sophisticated journal. This is just a news report from the BBC, concerning Scotland. They had an incident of lead contamination. Please look at page 144.

There's a company here. It's one of the biggest plumbing businesses in Scotland. It's called Worthingway.

Its representative says:

"(Partially in English) Basically there's two solders, they produce lead-free solder for use on the water system in the house, and they supply leaded solder for use on heating systems. One of our operatives used the wrong solder on the water side."

So if the wrong solder, ie leaded solder, is used, the water system would be adversely affected.

Please look at page 145. The last paragraph, the reporter says:

"(In English) But given the results of our own random survey, and that of Greater Glasgow Health Board it's clear that Worthingway were by no means alone in illegally using leaded solder. And when you think that 19,000 new homes are built in Scotland each year the scale of the problem could be enormous."

It went on to say:

"(In English) I think it's probably much more widespread. We don't have any reason to suggest that it's simply a Glasgow problem. But here we have evidence that many different plumbing subcontractors, and many different builders are involved with this problem.

And we know that these plumbing contractors and builders work across the country. So there's no reason to think that only when they work in Glasgow are they more likely to use leaded solder."

It went on. The reporter said:

"(Partially in English) Like the Plumbers Federation Helene Irvine wants leaded solder to be banned so the financial temptations of using it are taken out of the equation. Germany and Holland banned it more than 20 years ago.

The UK government committed itself to a ban back in 1992, but as yet hasn't done so. The Scottish Executive promised a nationwide survey after the Calder Gardens scandal. It still hasn't happened."

So it appears that it brings out a very important point. That is, for leaded solder, it will have an impact on the supply of drinking water. It has also said that perhaps it should be considered that there should be an overall ban on the use of leaded solder.

So that's what happened in year 2000, there was this interview by the BBC, bringing out this issue.

Mr Lam, I think before the discovery of lead in water incident, you weren't aware of it?

A. No.

Q. I think this is quite important for the findings. In the same bundle, page 235, it says that ultimately, finally, in the first and second paragraphs:

"(Partially in English) The study confirms that lead solder misuse in new house construction is a common problem throughout Scotland. The Scottish New Homes Lead Survey (stage 1) identified 99 houses (15 per cent) from a random sample of 661 homes completed between 1997 and 2000 with excess lead levels in the water supply consistent with the use of lead solder on the copper plumbing system."

In the following paragraph, the same problem has been outlined, that is lead solder is quite a serious problem.

Let's turn to page 236. It brings on the point about WHO:

"(In English) This is of importance given that the rationale for adopting this WHO derived lower guideline value is specifically to prevent children from being exposed to levels of lead sufficient to cause bioaccumulation in soft tissues such as the brain and storage in other sites such as bones and teeth. This survey therefore provides justification for the need to consider how best to advise occupants of new houses on the safe use of tap water for human consumption."

What follows is the same point; there should be more measures to make sure that the existing ban on lead solder is enforced and provides evidence of the need to examine other options in order to prevent the misuse of lead solder on a permanent basis. In other words, it is hoped that the problem should be eradicated once and for all.

So this is the investigation carried out by the government after the discovery. This is the conclusion and the recommendations.

Other than the conclusion, I think there is one

other point that has been brought out. That's about the change of the regulation. Page 159 in A1, please.

Let's go to page 259 of A1 first.

I have just referred to the Scottish investigation. That's the stage 1 result. Here, the last paragraph of page 259:

"(Partially in English) On the basis of the stage 1 results, the [relevant department] initiated a publicity campaign designed to alert consumers to the risks of lead in drinking water. Changes were also made to the Water Byelaws, to increase the penalty for contravening the ban on the use of lead, including leaded solder, on domestic water plumbing systems."

In other words, it says here that upon completion of the investigation, there has been amendment to the law. That is, for the Water Byelaws it was found necessary to increase the penalty for contravening the ban on the use of lead, so the offenders should receive a heavier penalty.

Lastly, I would like to invite you to look at the problem in Wales. A1, page 195. A similar problem in Wales.

"(Partially in English) This incident highlights that some property developers of new houses continue to use lead solder in the plumbing of drinking water pipes,

despite its use for this purpose being illegal. Lead solder is easily available, being sold in most DIY stores, and its use is not illegal for central heating pipes. It is also less expensive than the legal alternative by [a particular per cent] per roll. Water pipes are not fully covered in the building regulations ..."

Further down, if we move on to the second as well as the third paragraphs, it should receive our attention here:

"(Partially in English) Following the work done by the Scottish Centre for Infection and Environmental Health in 2003 [that is the stage 2 investigation we just read a moment ago], the issue of the use of lead solder in the plumbing of new homes was highlighted as an important public health issue. New housing developments are popular with families with young children, and the [authority] highlighted that high lead water levels owing to this cause represents an avoidable and unacceptably high source of lead for vulnerable people such as young children and pregnant women. There needs to be consideration by local authorities as to their inspection and monitoring strategies for lead, not only in new housing developments but in schools, childcare centres and other children's settings. This

is a priority of the Children's Environment and Health Action Plan. This is particularly important in anticipation of the revised drinking water quality standard for lead that will come into force in 2013."

So it brings out the significance of the problem and it should be regarded as a priority task.

"(Partially in English) This incident did not come to light as a result of routine monitoring but as a result of the investigation of an unrelated complaint by a resident. Following this complaint and opportunistic testing, the extent of the problem was greater than first anticipated. As a direct result of this incident, [the water authority] has now included in its routine inspections of newly built properties ... a 'lead check' swab test for the detection of lead solder on the drinking water plumbing and services and continues to carry out random lead sampling on new developments."

Again, the conclusion is that as far as lead solder is concerned, it has been identified as an important health hazard, and it requires attention. There should be more communication and assessment, and departments should communicate more with each other. So many issues have been brought up, and they talk about a lead check swab test.

Mr Lam, before the discovery of lead in water, have you heard about the lead check swab test?

A. I myself didn't. Maybe my colleagues.

Q. So in Scotland and in Wales, they have detected the problem. In your colleague's statement, that is Mr Chau's statement, page 18928, paragraph 31, he tried to explain why those two incidents had not attracted the attention of the WSD:

"(In English) To the understanding of WSD, these 2 incidents at Scotland and Wales were regarded as local news only, without leading to (i) major reporting in leading international magazines and/or journals published by international water associations and professional institutions; (ii) widespread attention of leading international organisations, including the WHO, one of whose essential functions is global co-ordination and communication in respect of significant health issues ..."

He goes on to say:

"(In English) The Scottish event could not be located in any headline or feature stories in leading international journals and magazines ..."

For the Welsh event, in paragraph 33, it "could not be located in any headline or feature stories in relevant leading magazines/journals subscribed by WSD."

So here what you are saying is for the journals or magazines that you have subscribed, nothing of that sort has been mentioned therein and the WHO has neither.

My question is, information like this pertaining to Scotland and Wales -- well, in fact the lawyers' team representing the COI used a very simple search engine and we were able to get at the information. To us, we believe it is an important matter for quality of drinking water, but it appears that at that time you didn't pay much attention.

So my question is, would you agree that when it comes to the gathering of information, there has been inadequacies?

A. Well, when we become aware of an incident -- well, there are different kinds of metals. If we know there is an incident about a particular metal and then you work on it as a theme, vis-a-vis 90-plus parameters, under the WHO framework, they are different. I believe that currently the colleagues' network would be such that they would pay attention to possible water quality incidents, so it will be quality incident based. But if you just base on the parameters, I think both at the time and currently, I don't think we would pay special attention to this.

When something happens, we will study the matter.

So if you want to know whether the system has got some inadequacies, it depends on whether that incident has been detected. Otherwise, it will be lacking a focus if we simply surf the internet.

Then my understanding -- I don't know whether it is correct or not -- but so far as the incident is Scotland, I think even Wales wasn't quite aware of that incident. I understand that for the UK expert that we liaised with, they didn't have any major measures as a result of such incidents. In Wales, when they have to check their newly completed homes, it is said that they carry out a lead check. I am not sure whether this will be done for each and every newly completed home. My understanding is that in Scotland, what happened took place in Glasgow, but I don't think that they are taking water samples to check for lead. We will be regularly reviewing our own system. But I have also noted that in Scotland or in Wales, something happened. Before the discovery of lead in water incident, our department weren't aware of that.

Q. So, at that time, the WSD did not look into these incidents of Wales and Scotland. Now we have an incident here. Have you reviewed your R&D to look at the breadth of your survey, to see whether you should monitor overseas experience more extensively?

A. Actually, we have a very wide scope in R&D. If you look at water quality, we look at our system to see whether we should enhance anything. For the time being, our system is working, but I have reminded our colleagues to pay particular attention to water quality incidents. As I've said, the WHO is one of the important organisations with which we need to step up our liaison.

Q. Actually, Mr Chau's statement, paragraph 33, offers another point, and that is why they omitted to pay attention to the Wales incident. It's about the Journal of Environmental Health Research, published by the Chartered Institute of Environmental Health. It says:

"(In English) WSD understands that the said journal covers a range of issues in the field of public and environmental health, such as occupational health and safety, environmental protection, health promotion, housing and health, public health and epidemiology, environmental health education, food safety, environmental health management and policy, environmental health law and practice, sustainability and methodological issues arising from the design and conduct of studies et cetera. Given the considerable difference in focus of this journal and WSD's duties, WSD has not subscribed to the concerned journal."

As I see it, it says that the journey covers a very

wide range of issues, and your department has not subscribed to the journal. But there are topics such as environmental health, housing and health; they are all matters that you need to pay attention to?

A. There are many journals published around the world. We would focus more on those with subjects that we want to pay attention to. There are many journals like this. So we need to be focused.

At that time -- well, the colleague might think that it covered so many issues, so we would go for others.

CHAIRMAN: How many people do you have in R&D?

A. Not many.

CHAIRMAN: How many?

A. As I have said, there are different disciplines in Water Science. We have one to two working on a part-time basis. If we are talking about civil engineering, two to three colleagues. They have other duties to attend to. On E&M, one to two colleagues as well.

CHAIRMAN: Water quality, one to two week, part-time people?

A. Yes. They have other duties.

CHAIRMAN: How much time is spent on R&D for these part-time colleagues?

A. I think R&D should cover research.

CHAIRMAN: I don't know. You tell me. That's why I asked you this question.

A. Well, the one in the Water Science Division is not really doing R&D. In the development branch --

CHAIRMAN: Well, that's in one of the witness statements from your department, talking about R&D. I'm not working in the WSD.

So one or two people on water quality, they also have other duties. If there is spare time, they would be reading journals; is that what you are telling us?

A. No. Let me try to explain. I don't know the specifics. The Water Science Division has a wide range of responsibilities. They will pay attention to whether there are water quality problems in other countries. They don't have an R&D unit as such. We are talking about R&D work. Some colleagues will be dedicated more to this and some other colleagues would, in their daily work, in having exchanges with other organisations, pay attention to such matters, and when there's an incident, they would bring it up with their supervisors.

CHAIRMAN: What about the colleagues working in the Water Science Division?

A. Give me a second to find the records.

Water Science Division, approximately, dedicated people -- we have scores of people.

CHAIRMAN: How many? How many? Tens?

A. It's within the relevant branch, together with the civil

engineering people, for the entire development branch, we have 60 professional colleagues. I would guess it's half of that number.

CHAIRMAN: So you cannot give me the answer here and now?

Is it fair for me to say this. In fact, there's no dedicated staff working on this side of work, the so-called research or R&D. It's just that if -- just like lawyers, I think it's like lawyers -- if you want to read up a piece of legislation, you look at overseas laws for reference.

A. For water science, it's a specialised field for chemists. I don't have a dedicated unit just for R&D, that's correct, but we have asked our colleagues to pay attention to water incidents elsewhere.

I want to make three more points. When we look at water quality, we don't just read overseas news reports. We have also people dealing with complaints from people in Hong Kong. Because in many overseas incidents, they all started with complaints from individual residents. So, when we have knowledge about that, we would ask our Water Science Division people to conduct a study.

CHAIRMAN: Before the lead in water incident in July 2015 in Hong Kong, had the WSD received any news that in other countries there had been problems with the use of leaded solder?

A. I didn't know personally, and neither did those in the management. But when there was a serious incident, our colleagues would inform us. Before July 2015, we had not heard about serious incidents of using unauthorised solder, illegally.

CHAIRMAN: So, before July 2015, as far as the WSD was concerned, it did not know that in other places there had been incidents involving the use of leaded solder leading to the water quality problem for residents there?

A. I myself or my colleagues in the management did not receive any such information.

CHAIRMAN: Were there people in the WSD who know?

A. What I can say is if the WSD colleagues are aware of serious incidents like those, they would have informed senior management and we would have known. In other words, we didn't know.

CHAIRMAN: We know that in 1998 -- we have heard from the trade association -- where can we find it? About the notice, we heard from the Hong Kong Plumbing & Sanitary Ware Trade Association Ltd, issuing notice to their members. Do you know why they did that?

A. We were not aware of that. Can I have a look at the relevant document?

MR KHAW: Page 93.

A. If the question is why they issued this document, I don't think I can give you an answer.

CHAIRMAN: Neither could they remember why.

You are here representing the WSD so I want to ask you -- now we know that in 1998, they issued this circular notice to their members, and you don't know why they did it?

A. Well, we were not aware of this circular notice.

CHAIRMAN: All right. In 2001, ACQWS -- is it ACQWS? 2001, there's a paper No. 7, in 2001, which states that there was internet research of US and UK and they found something. I believe you have read that document. So can you offer any explanation for the 2001 document?

A. I did try to understand what it was about with my colleagues, and the focus and the emphasis of the paper.

CHAIRMAN: Well, we know the emphasis or the salient points. Don't waste time on this. We know that it's about turbid water. But according to the minutes, it states that they were able to find such issues and information just simply by internet research. So that's why I was asking you, is it the case that the WSD was not aware of problems with lead solder prior to 2001?

A. If I understand your question correctly, you were asking whether, before July 2015, we were aware of the illegal use of solder in --

CHAIRMAN: Well, I don't know whether it's illegal or not. I didn't use the word "illegal". I just asked whether you were aware of the use of leaded solder -- I didn't say whether it's legal or illegal.

A. For the 2001 document, if I remember correctly, there's a paragraph on a study carried out back then. It was internet research, and it was found that in the UK and US, they used lead pipes extensively earlier on. It was in an early stage of development and leaded pipes and leaded solder were permitted.

CHAIRMAN: 2001, the development stage? You call it an early stage?

A. Do we have paper 7?

COMMISSIONER LAI: Yes. I think we can show it.

MR KHAW: Y1, page 5.

A. Paragraph 9 of No. 7 -- allow me to read it out in English.

"(In English) In the UK and USA, the most common problem is the presence of lead in water since during their development stage, lead pipes and lead-soldered copper pipes were widely used."

For development stage, it talks about the development stage in the UK and the USA.

CHAIRMAN: What did you say?

A. The development stage. It means, when they were

developing the plumbing industry -- that is, in the early days when they developed, they used lead pipes and also leaded solder. So, for development stage, we have asked our colleagues. They were talking about the early stage, that is before -- the 1970s or the 1980s.

So, later on, say for example in 1970, the UK banned the use of lead pipes, and for the USA, the 1980s. For the use of leaded solder, it would be in the years 1986-87. So they were talk about the earlier stage.

Our understanding of the early stage means that they used lead pipes.

COMMISSIONER LAI: I think, "since during their development stage", rather than "during their development stage".

CHAIRMAN: Would it be talking about the construction of the houses?

COMMISSIONER LAI: Not "during their development stage" but "since during their development stage".

A. I tried to understand it with the colleague writing this paper. In the early stage of the UK and USA, they used lead pipes.

COMMISSIONER LAI: No, no. Since development, up to that stage, lead pipes and leaded soldered copper pipes were widely used, not just during the development stage but since development, this problem has been with them, and then the solution aligned with prohibiting the chemical

additives.

A. "Since during their development stage", I think at that time the most common problem was lead. That's because in the early development stage, they used lead pipes and also leaded solder materials. I think that's how we understood it from that colleague.

CHAIRMAN: Your answer is the same. If, despite paragraph 9, you of the WSD have said that prior to July 2015, you weren't aware of the issue of lead solder -- in the US and the UK, you weren't aware of that; do you mean that?

A. It is already written here. That is, of course some colleagues knew it. That is, when this paper was drawn up, they were aware of the use of lead pipes and leaded solder in overseas countries, but then at that time those countries permitted the use of such of materials.

Like in Hong Kong, I think before 1983-84, the solder could contain 50 per cent lead. So, at that time, we didn't feel that there was a major issue.

CHAIRMAN: I have some questions. We understand that in 2001, the VTC deleted from their syllabus concerning tin lead solder. So the VTC syllabus -- 2001, the VTC syllabus -- maybe I can -- do I remember it correctly? In 2001 and 2004 -- prior to that, according to the VTC, we have been told that they have always been talking

about tin-lead solders, because they are sort of taking it out from the additions in the 1980s, all the way up to 2001 when all of a sudden the VTC decided against that, because they had to change -- so 2001.

Were you aware that in the year 2001, the VTC obviously -- leaded solder was no longer permitted, so they had to change the syllabus.

A. I am not aware of this piece of information, but then, if I remember it correctly, it was in 1987 that the law said that lead-free solder should be used. We relied on the VTC to train the licensed plumbers. Therefore, in their syllabus, they would follow this up.

CHAIRMAN: The Training Council. But then the WSD sits on the board concerning the syllabus; right?

A. Yes. As I have said, we have colleagues with them. I'm not sure whether there was this happening in the year 2001.

CHAIRMAN: So you don't know why the VTC had to make a change?

A. I myself didn't know.

CHAIRMAN: The minutes for 2004, somebody expressed concern.

MR KHAW: W1, page 482.

CHAIRMAN: Somebody expressed concern.

8.1.

A. Yes, I see it.

CHAIRMAN: I think you know this. Mr Ho was an engineer from the WSD. That is for 2004.

A. In 2004, after the discovery of lead in water, I learned from my colleagues that in the year 2004, somebody attended a VTC meeting. For the one in 2001, I don't know. In 2004, it was said that for potable water supply, according to the rules, the licensed plumbers should be taught that they have to pay attention to the solder materials.

The question I want to ask is that prior to July 2015, there were numerous opportunities for the WSD to learn that leaded solder would cause problems with the quality of water, that would be crucial to that?

A. Yes. We were very concerned about the safety of drinking water. Of course, if the water pipes at the installations had their specifications enhanced or changed, then the relevant rules and regulations will make it clear. We believe that the industry was aware of it.

I understand that the Housing Department, round about the year 2000, in their contract documents they have made a change.

CHAIRMAN: Yes, I know it. What I mean is that in 2001-2004 -- to be frank, in 2014-2015, according to the Hong Kong Plumbing and Sanitary Ware Trade Association,

they issued the document again, saying that leaded solder would be a problem.

A. Sorry --

CHAIRMAN: I can't recall the page.

COMMISSIONER LAI: There was a journal. That is the annual report.

CHAIRMAN: That is from the Hong Kong Plumbing and Sanitary Ware Trade Association.

A. For 2014-2015, I think they were talking about the fittings. It is said that they learned from overseas experience that there would be the trend to tighten up the lead content. So they were concerned.

CHAIRMAN: 2015. "Lead Free Water Supply".

A. For the one in 2015, I am reading it. That's about the fittings.

CHAIRMAN: Yes, I know. For the US Safe Drinking Water Act -- well, to be frank, it has been in place for many years, and the purpose of which is to reduce the content of lead in water. That's one of the reasons. So there's this reduction of lead content.

My point is that the WSD has had many, many opportunities to tackle -- to handle this issue.

A. Allow me to give a reply here. Overseas, the question of lead, as paper No. 7 of the Advisory Committee -- well, our understanding is that lead was found in their

water because all along they had permitted the use of lead pipes as well as leaded solder.

This is very different from the case in Hong Kong. Let me compare three sets of figures. In about 1938, we started to ban the use of lead pipes, but in the US and the UK, they did so respectively in the 1970s and 1980s. Therefore, for the impact on water quality, I don't think the situation is comparable. In overseas countries, for many old buildings, they still have lead pipes. They have to rely on their own ways; say, for example, using the addition of chemicals in the treatment plants.

CHAIRMAN: I just want to know whether you mean that prior to July 2015, the WSD, since you represent the WSD -- the WSD's position is that you have never regarded excessive lead in water was an issue.

A. We don't think that it was a high risk.

CHAIRMAN: Did you carry out a risk assessment?

A. We looked at the objective facts. Just now, you referred to lead found in overseas water. That's mainly because of the use of lead pipes. But in Hong Kong, for the quality of our water, when compared with the WHO Guidelines, our pH value is higher, that is 8.2 to 8.8. This will reduce the risk of lead and other heavy metals being released into water.

CHAIRMAN: Have you done this or have you ever considered it?

A. We haven't quantified it, but we believe that.

CHAIRMAN: But have you ever carried out any risk assessment of heavy metals, any of the heavy metals, any of them?

A. Regarding heavy metals, in 1995 we knew that water quality was affected by galvanised iron pipes. We conducted some studies. Also, in 1987 and 1989, we conducted studies to decide whether GI pipes should continue to be allowed.

So, if you ask whether we have conducted any study of metal release into water, yes, we did.

CHAIRMAN: So once, one study, concerning GI pipes and the rust problem?

A. Many residents complained.

CHAIRMAN: We understand that problem. No need to repeat.

A. Well, we have channels to understand where there are problems. We have a system to monitor the risk and also to handle complaints. The WHO Guidelines cover many metals. Before the lead in water incident, we did not realise that lead-contaminated water has a high risk.

We had a system to ensure proper monitoring. According to the WHO Guidelines, the important thing is to monitor the use of materials. That is to say, during the construction phase --

CHAIRMAN: I understand that as well. Why do you still use 864, the Waterworks Ordinance, still use the British Standards, since the monitoring and use of material is so important?

A. You mean BS 864?

CHAIRMAN: Yes.

A. Well, we follow the latest British Standards. The latest one should be BS 1254.

CHAIRMAN: I know your regulation. The regulation talks about the latest British Standard. Why didn't you change the law?

A. You mean the regulations? In the schedule to the regulations, we set out the British Standards, but there are amendments from time to time. You could have done away with the details, because you put in the details and you didn't change them.

The British Standards were put in the regulation in the prior exercise, and the regulation says the latest British Standards should be complied with.

CHAIRMAN: Sorry, Director. Yes, there are many British Standards concerning many materials, but not many are contained in your regulations.

A. Well, if the regulations specify certain British Standards, where there are changes to the British Standards, we may not change the regulations because it

requires legislative approval from LegCo.

CHAIRMAN: If you introduce an amendment to the regulations, with regard to British Standards, I don't think any member would filibuster for that purpose.

A. Generally, we will follow the latest British Standards. If there are new standards, we follow the new standards. In our communication with the trade, we also talk about the British Standards that we adopt.

CHAIRMAN: Now it's the other way around. It's the trade telling you what they are doing. If you look at the 1998 circular, they told you where there were problems. In 2014, the trade told you that there were problems. In 2015, they told you there were problems.

A. 2014 -- you are referring to the two documents from the association?

CHAIRMAN: Yes.

A. They were referring to overseas experience.

CHAIRMAN: Well, if you are very narrow-minded about this, I can't help you, but I think that's the right thing to do.

Director, I know you became the director in 2013, but you represent the WSD. That's why I have to ask you questions.

A. Maybe I can say something about the documents issued in 2014 and 2015. The trade association, Hong Kong

Plumbing and Sanitary Ware Trade Association, was mainly referring to the case of the US. Then, for certain fittings, in respect of lead content, new requirements were introduced, and they were expressing concerns whether Hong Kong would be following the new requirements, because they were supplying major fittings and sanitaryware to Hong Kong. So that was sort of a heads-up, a warning, to see what should be done.

CHAIRMAN: There's a technical director, technical adviser, talking about leaded solder and not just about fittings.

A. The two documents from the trade association in 2014 and 2015 were mainly about fittings rather than solder.

MR KHAW: All right. Let's look at 2014 and 2015 documents W1. The 2014 paper first.

From the evidence given by the Hong Kong Plumbing and Sanitary Ware Trade Association, this 2014 document was distributed in their annual meeting in 2014, a dinner party. Did you attend that?

A. 2014? I believe I attended that meeting.

Q. So you would have received this document. But what follow-up action did you take after you had received the document?

A. It was just an advance warning that if Hong Kong were to follow the US latest standards, they had certain concerns. So it was not our practice to follow the new

requirements or specifications in the US. If we were to do that, we would first of all communicate with the trade first.

Q. It's about the use of lead-free alloy in drinking water systems, very much like the EU. You have been saying that you need to comply with international standards. Do you agree that these cases should have been looked into by the WSD?

A. Well, here, we are talking about the studies and the measures taken by other countries. The feasibility of doing the same in Hong Kong is not clear.

Q. I understand the UK requirements have not been updated as a result of that. Did you share this document with other colleagues?

A. No.

Q. So there was no follow-up action after that.

What about the 2015 document? Again, it's the annual dinner gathering. You attended that as well?

A. Yes.

Q. The contents are about the problems caused by lead.

I would like you to look at page 98. They talk about that starting from 2010, the US, in relation to monitoring the lead content in the water supply system, and there were other measures on solder and flux.

Do you know that in the US, starting from 2010, when

it comes to the control of lead content, there were new laws enacted?

A. I didn't know.

Q. So you received this document and there was no follow-up action in the WSD after that?

A. Well, it was a dinner gathering, and they distributed publications and documents like this. I would not read the documents in great detail.

Q. So you didn't read it, read this one, in detail?

A. No.

Q. Let me follow up on one particular issue. Paragraph 9 on page 7 of paper No. 7. Let's not look at the grammar of the paragraph. Paragraph 9 states -- it's about lead-contaminated water; do you agree? You have talked to the colleague who prepared this document before you came.

Who was responsible for this paper, paper No. 7? Who wrote this?

A. There was a senior engineer who wrote this.

Q. Is he still working in the WSD?

A. Yes.

Q. Is he Mr Chan Sai Wai?

A. No, he is Chau Sai Wai.

Q. Sorry, Mr Chau Sai Wai, in his witness statement, mentions this paper No. 7.

Please refer to C12/1893. The first sentence of paragraph 43:

"(Partially in English) Against the above background, paper No. 7 was prepared with the focus of concern on the proper maintenance and cleansing of the plumbing system of existing buildings."

CHAIRMAN: Please wait. We haven't got there.

MR KHAW: C21, page 18932. Paragraph 43, the first sentence:

"(In English) Against the above background, paper No. 7 was prepared with the focus of concern on the proper maintenance and cleansing of the plumbing system of existing buildings."

Then let's go to paragraph 44:

"(Partially in English) The USEPA's leaflet 'Lead in your drinking water' issued in 1993 was referred by counsel for the Commission during the hearing on 2 November 2015. According to WSD's available records, the said leaflet was within the research materials leading to the preparation of paper No. 7."

Let's look at the USEPA's leaflet. A1/399. This is the leaflet we have been talking about. Page 399. It's about the harmful effect of lead. In the middle part, "(In English) Sources of Lead in Drinking Water":

"(In English) Lead levels in your drinking water are

likely to be highest if [certain things happen]:

... your home has copper pipes with solder ...", of a certain age, and why is lead a problem and who would be more seriously affected.

Then page 400:

"... the source of lead in your home's water is most likely pipe or solder in your home's own plumbing. The most common cause is corrosion, a reaction between water and the lead pipes or solder."

Page 401, point 2 on this page:

"(Partially in English) In June 1986, President Reagan signed amendments to the Safe Drinking Water Act. These amendments require the use of 'lead-free' pipe, solder, and flux in the installation or repair of any public water system, or any plumbing in a residential or non-residential facility ...

Under the provisions of these amendments, solders and flux will be considered 'lead-free' when they contain not more than 0.2 per cent lead. Pipes and fittings will be considered 'lead-free' ...", and so on and so forth.

"(Partially in English) These requirements went into effect in June 1986. The law gave state governments until June 1988 to implement and enforce these new limitations. Although the states have banned all use of

lead materials in drinking water systems, such bans do not eliminate lead contamination within existing plumbing. Also, in enforcing the ban, some states have continued to find illegally used lead solder in new plumbing installations."

This document, leaflet, was in report No. 7. You referred to this leaflet when you wrote paper No. 7 in 2000. So your colleague, I would say, understood at that time that lead in water could be caused by solder. So the paper was clear about this?

A. Yes, in this paper.

Q. Secondly, as to whether it was used legally or not, here it says that if leaded solder used illegally would cause lead in the water, so at that time your colleague should know that illegal use of leaded solder would cause lead in drinking water?

A. I have reservation here. I don't know whether the colleague did read this point. When they prepared paper No. 7, a lot of documents were read. After searching the internet, his focus was on the discoloration and other water quality problems.

As to whether he went into such details, and observed this point, that is the illegal use of leaded solder in the water supply system causing excess lead in drinking water, I'm not sure.

Q. But then by reading this document, and had that colleague read this document and understood the paper, then he would be aware of the risk, that is lead in water could be due to use of leaded solder?

A. Well, this is a hypothetical question. Had the colleague read this point, he would have observed that there was a problem in overseas countries.

As to whether it applied to Hong Kong as well, I'm not sure.

Q. According to the HD's evidence, starting from the year 2000, they would like to give an additional option to the contractors. That is, the use of copper pipes. Were you aware?

A. I didn't know it before, but with this incident I became aware.

Q. Do you know that for the use of copper pipes in water supply systems, prior to 2000, it was already widely used?

A. Yes, I was aware of that.

MR KHAW: For the other questions, maybe I can keep them for the afternoon?

CHAIRMAN: Yes. We will resume at 2.30 pm, after lunch.

(1.02 pm)

(The luncheon adjournment)

(2.31 pm)

MR KHAW: Mr Lam, before the lunch break, I asked you about the extensiveness of the use of copper pipes before 2000. You were aware of that. So, prior to 2000, copper pipes were already used?

A. Yes, prior to the year 2000, our regulations did permit the use of copper pipes.

Q. So you knew that it was commonly used. As to whether it was common, it is arguable, but then it had been in use and it was lawful.

Let's look at C21, page 18932, paragraph 43. Again, we are talking about paper No. 7.

I want to understand your degree of participation in this paper. Now, for the first sentence, I have read that out to you. Starting from the third line:

"(In English) Based on the literature research at that time, lead pipes and leaded-solder copper pipes were widely used in the UK and USA during their development stages and consequently the most common problem was the presence of lead in water at the material time. In contrast, the use of leaded pipes was banned in Hong Kong since as early as 1938, followed by the ban of leaded solder in 1987. Further, before the ban of unlined GI pipes in December 1995, unlined GI pipes were commonly used in Hong Kong for fresh water inside service in the then existing buildings."

Towards the end, I don't quite understand:

"(In English) Given the different historical backgrounds, the risk of presence of lead in water in the UK and USA had no direct application to Hong Kong."

This is how you have presented it. So you are saying that due to the different historical backgrounds, the risk of presence of lead in water elsewhere had no direct application to Hong Kong.

First of all, do you agree that irrespective of the historical backgrounds, setting aside the historical backgrounds, now that No. 7 was drawn up and the risk of lead in water was known, so you won't disagree that there was this understanding?

A. You mean --

Q. At the time of the writing of No. 7.

A. Yes.

Q. You know that for the risk, one of the contributing factors may be the use of leaded solder? I think, during the research at that time, the question was looked at.

A. Well, my understanding is that that paper was about the early development stages of the UK and the USA; lead pipes and leaded solder were permitted. Therefore, it was widespread. Therefore, the presence of lead in drinking water had been in existence for a long time.

Therefore, when we look at the information, by comparison, in the UK, the US and Canada, they had this problem.

Q. But my question is -- you carried out research, you read the leaflet from the USA. One of the contributing factors of lead in drinking water was use of leaded solder. You won't disagree; right?

A. You are correct.

Q. Prior to 2000, copper pipes had been used in water supply system; right?

A. Yes.

Q. Don't you think that it is not right, having known all this, and then for the USA and the UK, they had this problem and still you are saying that it had no direct application to Hong Kong?

A. I think the explanation is not clear. I think the crux of the matter is, at the time the research was carried out, they noticed the problem. It was all because the banning of the use of lead pipes took place much later. So even in the 1970s and 1980s, the problem was still widespread, but in Hong Kong, in the 1930s, we started to ban the material, and therefore the colleagues didn't think that there would be the problem with lead.

Had we been having the problem of lead all the time, and in fact for the past decade we did have the

mechanism; that is, we tried to see whether anybody from the community had been complaining about the quality of drinking water. And also, from the findings of the water samples, we didn't see that there was such a problem. And if you permit me to add a few more words -- in Hong Kong, let me repeat this point, Hong Kong is different from the overseas experience in a few areas. First of all, we had banned lead pipes a long time ago, and then the pH value of our drinking water is different. We had a higher alkaline value, and when compared with the WHO, our pH value is 8.2 to 8.8, but for the WHO it's 8.0 to 8.5.

CHAIRMAN: Why is it that in Hong Kong we want the pH value to be so high?

A. I'm afraid I have no expertise to answer this question.

CHAIRMAN: No, the pH value of Hong Kong drinking water is so high, this is to prevent the release of corrosive metal. Now, if you say that the pipes in Hong Kong are problem-free, it is safe, so how come we still have to raise the pH value?

A. Let me try to answer this question. Other than the water pipes, there are also other fittings and we do allow the presence of metal, and such metal may be released in minute amounts.

CHAIRMAN: What was released?

A. Say, for example, for copper alloys, for the existing British Standards, we did allow for the presence of lead up to 4 to 6 per cent. That's the case of the UK. Then, for our water taps, we have electroplating and it might also contain metal.

CHAIRMAN: If all along you think that there is no problem, the water quality is fine, water pipes, water fittings are all fine, then there is no reason to raise the pH value.

A. Let me supplement two points.

CHAIRMAN: How come the water in Hong Kong is so special that we need to raise the pH value?

A. I was trying to say why. At a very early stage, for the quality of drinking water in Hong Kong we had to raise the pH value.

My understanding is we would like to enhance the capacity of water pipes to withstand corrosion.

Just now we were talking about the overseas experience. In overseas countries, the pH value is different from that in Hong Kong. I want to say that the Hong Kong situation is different from that in overseas countries. First of all, early banning of lead pipes, and our pH value is a little bit different. Moreover, starting from 1982, other than licensed plumbers, we have also asked professionals to certify

the materials of the water pipes are up to the requirements. In the USA, UK, Canada and Australia, basically they have got professionals like licensed plumbers doing the work. In Singapore, other than more complicated piping installation, when they need an engineer -- by comparison, I think our risk is lower. Moreover, we have a set of measures in the mechanism.

As mentioned in my supplementary remarks this morning, we have been following the WHO Guidelines when it comes to risk monitoring. When compared with other countries, really we don't see that we are different from others. On the other hand, our risk is in some cases lower.

MR KHAW: Going back to paper No. 7 and going back to the time when No. 7 was prepared. Overseas incidents in which lead was found in drinking water and due to solder containing lead -- looking back, would you agree that at the time, your alertness was low?

A. Well, regarding the presence of lead in drinking water, I think the reason was that lead pipes were allowed and leaded solder was allowed. I think really, at that time, there was no awareness that there would be direct relevance to Hong Kong.

Q. Let's take a look at the question of the inside service, as far as the water supply system and the difference

between the two.

First of all, let me take you to your witness statement. C19.1, page 10282.

Paragraph 12:

"(Partially in English) The WSD installations from the collection of raw water in Hong Kong to connection points at lot boundaries of consumers ... generally referred to as waterworks. The supply system ... from connection point ... to the consumers' tap is generally referred to as the inside service."

Then you talk about the legal requirement, under the diagram:

"(Partially in English) According to the WWO, the custody and control of the waterworks is taken by the WA ... whilst the custody and maintenance responsibility rests with the agents and consumers."

So you are talking about the definition under section 7 of the Ordinance in relation to the inside service as well as the waterworks, and they are different.

Now let me ask this question. As far as the WSD is concerned, it won't be your position that you say goodbye to your responsibility when the water is supplied up to the point of connection point?

A. In fact, I have said that we are also concerned about

the water supply within the inside service.

Q. Correct. You are also concerned about the possible problems within the inside service.

A. Let me say a few words here. During the construction stage, the Water Authority has a regulatory role beyond the connection point. The position of the law is that of course the consumer has the duty to clean and maintain the system, and if they see any problem they can refer the case to us and we will follow up.

Q. Correct. As you have mentioned in paragraph 43 of your statement, that is page 10291, you talk about your responsibilities: licensing the plumbers and also the pipes and fittings are of British Standard, and then confirmation by the authorised persons that pipes and fittings used are installed in compliance. You also talk about inspection and approval of the inside service by the WA and water sample tested to be in compliance with the specified standards.

If a consumer thinks that the quality of his drinking water has a problem and he would like to complain to the WSD, the WSD will follow this up; right? You won't say this belongs to the inside service and he had better go to the property management office; I don't think so, correct?

A. In the past, we received complaints about water quality

and we started investigation to look into the problem.

Q. All right. For water sample testing, it's done at the connection point. Your department has offered quite a few explanations about that. Let's look at C19.1, page 10500, paragraph 6. Here, it says in 1994-95, there's a pledge of your department that compliance is up to the connection points.

Have you checked your department's records on this point of "full compliance with the guidelines up to the connection points"? Has there been any discussion about this point? Why is it up to the connection points?

A. You can see the following sentence. (Chinese spoken).

CHAIRMAN: I can't hear you. Please speak up.

A. In the following sentence, it is stated that why we can achieve this pledge: because we have full control over the waterworks. We built them, we maintain them. That's why we could give this pledge. Beyond the connection points, for the inside service, relatively speaking, we didn't have as full a control.

MR KHAW: If you look at section 12 of WWO, G1/225, section 12, 12(1):

"... [WA], and any person authorised by him in writing, may enter at any reasonable time, or in case of urgency at any time, any premises to --

...

(e) install, inspect, test, regulate, alter, repair or remove any part of the waterworks or any fire service or inside service therein."

So you had powers in respect of inside service to do inspection. You are authorised under the Ordinance to do this.

A. Well, 12(1), it says, "Subject to subsection (2)", so we have to look at subsection (2). Also, in subsection (2), there is some restriction to the power. "Except in case of urgency", otherwise you must have the consent of the occupier or you have to obtain a warrant. So you cannot enter without any good reason or in any of something other than an emergency.

Q. All right. So you make this distinction for inside service, your compliance is up to the connection points. Has your department had any discussion on why the decision is made for this particular coverage?

A. You are talking about 1994 or 1995 or thereabouts? I cannot remember whether I read anything. I believe, back in 1994-1995, there was an open pledge made on the water quality up to the connection points, in compliance with the WHO standards. Prior to that, there had to be some discussion in the WSD.

Q. You have provided us with some supplementary information. It is said that, on average, you would

take 160,000 water samples, on average, every year.

A. Yes.

Q. Are you talking about Water Supplies, from the Water Supplies?

A. No.

Q. Any samples from inside service?

A. Yes.

Q. How do you decide whether the samples should be taken from the inside service?

A. Please repeat your question.

Q. You have to take samples. It can either be from the connection points or from the inside service. 160,000 samples, including those taken at the connection points and those taken at the inside service. I understand why you would not do that for connection points. For inside service, if you are to take samples from inside service, either from the residents or from the property management office, on what basis can you ask for that? Under what circumstances would you be asking for sampling from these parties?

A. I think our chemist can answer the question in more detail. My understanding is that the 160,000 samples would include samples taken at the treatment works and not just at the connection points.

As regards samples taken at internal service, we

have a rule to go by. We take random samples from certain units. They will be taken for different purposes. Some will be more microbiological, some for physical tests or chemical tests and some for radioactive tests.

So taken together, including those taken at the water treatment works and plants, 160,000 is the total.

Q. So annually, you would do it randomly, or do you have a certain regularity, certain intervals, that you would adhere to?

A. I'm afraid I cannot answer the question. We would take 160,000 samples, and some would be from inside service.

Q. Are they provided by the consumers?

A. We took the samples. My understanding is they were not provided by consumers. Sometimes, when we wanted to take samples from a unit, we encountered problems. So mainly the samples were taken from locations where we could take the samples.

Q. So you would send someone to the consumer's unit?

A. We have to be careful. In using the "consumer", you think the residents, but there are many types of consumer. For example, in the toilet of a shopping centre, it's a consumer in this sense, and if we ask the management office for consent, we may be given consent to take samples. We might not have to enter actually

residents' residential units.

Have you encountered problems?

A. I know that there are problems, but --

Q. Beyond the connection point you would also take samples; right?

A. Yes.

Q. So apart from the connection points -- if we are talking about the tap in the consumer's unit -- you are also concerned about the water coming out from the tap; correct?

A. Well, we are concerned about the water quality within inside service in three aspects. We take water samples annually. We have 16,000 samples. According to the WHO standards, which requires only 2,200, we are taking much more.

Q. For newly completed buildings, you would only take water samples from the connection points; is that correct?

A. That depends on which period you are talking about. If you are talking about the period before 2012, basically we will take the water sample at the connection points to see if there's any problem with water quality. But since 2012, because of the Legionnaires' disease, we issued a notice to residents, saying that after the inside service is completed, there's a need to do cleansing and sanitation, but they did not know how to

do it, so we started to take water samples not just beyond the connection points to check the quality. And in 2015, after the lead in water incident, the practice has been regularised. That is, when we conduct the acceptance test, we will take water samples from within the inside service and test the samples for the four metals, before we issue the certificate.

Q. So, after 2015, you changed the system, taking water sample from inside service would be a prerequisite for the water supply permit to be issued?

A. We also have changed the parameters.

Q. I will talk about parameters later.

In 2012, you had a problem with Legionnaires' disease. I think it's about the Tamar Central Government Office problem. So you did at the time consider whether you should go to the inside service part of the system to take samples?

A. At the time, we issued guidelines to residents, because they did not know the extent of sanitation required, so issued the guidelines to advise them to take water samples from the inside service of the building and test them for parameters.

Q. Please refer to C3, page 2215. This is a circular. This is the one you have been talking about, that after the exposure of the Legionnaires' disease episode, you

issued guidelines on disinfection of fresh water inside service.

So you were concerned about the water quality within inside service?

A. Yes.

Q. There was no discussion -- well, you had a problem. Did you discuss that in respect of checking fresh water inside service? Should that be made a prerequisite for the permit?

A. I may not be able to answer this question. I have to check the files.

But here I wish to make a point. If you look at the WHO standards, when it comes to microbiological contamination, when the risks are higher it would be reasonable to test the sample for certain parameters, but for heavy metal contamination, according to the WHO, we should not go by the route of relying on sample testing, but we should do it through the monitoring of material used.

So, at that time, we asked for certain parameters to be tested. As for whether we discussed the question of this should be made a prerequisite, I don't have any file. That is the conclusion but I cannot say for sure whether there was any discussion about this turning into a prerequisite.

Q. Let's look at C --

CHAIRMAN: Sorry, let me clarify a point about what you have said.

If there are heavy metals in the water, you are saying that you should not conduct a water sample test; you should do material monitoring -- monitoring of material used. So you are saying that testing the water samples would not be very useful?

A. No, that's not what I meant. If there is a risk that heavy metals will contaminate the drinking water, then according to the WHO Guidelines, first of all, consideration should be given to monitoring the materials.

CHAIRMAN: No, no. Pause. It is when you know that heavy metals are already contaminating the water?

A. Aware of the risk; that is a particular heavy metal will contaminate the drinking water.

CHAIRMAN: When there is such a risk, then what would you do? It means you can dispense with the water sample testing?

A. We should start with more work with monitoring the material. My understanding is that the WHO doesn't encourage the test for heavy metals in drinking water.

CHAIRMAN: Sorry, sorry, sorry. Slow down, please.

If you already know that heavy metals are posing

a risk to contaminate the drinking water, then there is no need to test the water samples; right?

A. Let me say this. When it is known that heavy metals or metals will contaminate the drinking water and pose a risk, according to the WHO Guidelines, consideration should first of all be given to monitoring, regulating the materials. If it cannot be handled in this way, then for the examination parameters for water samples, then the metals should be included.

CHAIRMAN: Sorry. Maybe I am not clever enough to understand you. Please say it again.

A. Sorry. This is my understanding of the WHO Guidelines. That is, as far as risk monitoring is concerned --

CHAIRMAN: That is when you are aware of the risk, is that the starting point?

A. It depends on the magnitude. There is always a risk of leaching of metals into water.

When you are aware of the risk, you should first of all consider regulating the materials.

CHAIRMAN: Sorry, stop. If you are aware of the presence of risk, then first of all you will monitor and regulate the materials. In other words, if you know that there is a risk with lead, then first of all you should control the leaded materials?

A. If it is known that there is a possibility that lead may

be leached into the water, then, for the regulatory measures, that should be the channel to deal with the problem.

CHAIRMAN: Pause. Say, for example, if you know that the components may contain lead, then first of all you want to control the composition of the components; right?

A. Correct. We need to control the components' composition, and then there should be a system to make sure that the stakeholders would be following the specifications in the procurement and installation of the parts.

CHAIRMAN: So what you mean is when there is a risk, when you are aware of the presence of risk; that is, there is the possibility that, say for example, heavy metals may contaminate the drinking water, then the first task in relation to control -- the first thing to control is the materials?

A. Yes. This is the WHO's requirement. In other countries --

CHAIRMAN: Let's not go to other issues because I don't quite understand. Why is it that there's no need to test the water samples?

A. You mean testing the drinking water samples for metals?

CHAIRMAN: Sorry, director, maybe I am slow, so please repeat it.

A. I don't quite understand the meaning of the question.

CHAIRMAN: I am just trying to quote from your answers. You are saying that if heavy metals may contaminate the drinking water, then the first thing to do is to control the materials and there is no need to test the water samples. I don't understand this point.

A. My understanding is that the WHO's requirements are as follows.

For the pipes and fittings, they are of different sizes, they are of different compositions and they contain different sorts of metals. They may all have the possibility of releasing materials into the water, causing contamination. There is this risk. So we are talking about control of chemical risk. It is said that we should monitor the materials. The advice is not to include this as a parameter in the water sample examination.

CHAIRMAN: Then how do you know whether there is any exceedance because you have many parameters and then the threshold is not always zero?

A. This is always a matter of risk assessment.

CHAIRMAN: Won't you start with a water sample test, and if it is not in exceedance then there is no need to control the materials? I don't quite understand the logic.

A. If I may try to explain. According to the WHO criteria,

they do deal with the risk of copper in drinking water.

CHAIRMAN: Why don't you tell me where I can get the information about the WHO?

COMMISSIONER LAI: Where in the WHO Guidelines?

A. I may not be able to get the information off the cuff.

MR KHAW: I think there is one paragraph in the WHO which is different.

CHAIRMAN: No, wait for him to get the WHO information. I think I can claim myself to have read the WHO guidelines.

A. Say, for example, I have something here, I don't know whether it has already been admitted, "Chemical safety of drinking water".

CHAIRMAN: Where can we find it?

A. I don't have the bundle number.

MR KHAW: C2.

CHAIRMAN: Page number, please?

MR KHAW: C19.1. I think it's 10589.

A. The last paragraph, 3.3.2:

"(In English) Unless there is strong evidence that particular chemicals are currently found or will be found in the near future, at levels that may compromise the health of a significant proportion of the population, the inclusion of those chemicals in drinking-water monitoring programmes is not justified,

particularly where resources are limited. It is often more effective to maintain an ongoing programme of pollution control and risk assessment in the catchment."

Somewhere it is mentioned that for chemical contamination risk, we should as much as possible rely on material control.

The same document, 10639. 8.1, the second-last paragraph, the second sentence:

"(In English) It is important that water supply agencies properly manage any chemicals that they use. In many cases, the best method of control is through management practices, such as optimisation of the treatment process, and regulation of materials and chemicals that come into contact with drinking water, rather than through monitoring and chemical analysis."

CHAIRMAN: Well, I don't think it is quite relevant. This is about water treatment and the use of chemicals.

A. Well, other than water treatment, we are also talking about regulation of chemicals and materials.

CHAIRMAN: I'm sorry. Here, I don't think it is at all relevant to what we are discussing. I think here it is only talking about the use of chemicals in the process of water treatment. Do you agree?

A. Distribution system, page 10642, 8.4, the last sentence:

"(In English) However, chemical monitoring of

drinking water is not normally considered to be appropriate and the most suitable method of management is by product specification, as indicated above for other materials."

Mr Chairman --

CHAIRMAN: Pause. Just a moment, please. If you just take a sentence out of context, it would not be meaningful. You need to read things in context.

Give me a moment, please. Let me digest what was mentioned a moment ago, the very last sentence.

I think this is about the PVC, plastic pipes. I think what is meant here is that in some cases, the PVC molecules will remain in the pipes, "(In English) However, chemical monitoring of drinking water is not normally considered to be appropriate".

What is meant here is that for such pipes, under such a scenario, testing for the chemical composition would not be the normal method. I think this is about this particular thing.

A. Sorry, Mr Chairman, I am no expert in this field, but my understanding is that --

CHAIRMAN: It doesn't matter if you are not an expert in this field. It doesn't matter. But since you have made such a statement, I have to understand what you were saying and how accurate it is, because you don't just

speak in your personal capacity; you are also giving evidence on behalf of the WSD, so you had better withdraw what you just said.

Now, for Housing Department, for Housing Authority, I think they will make exception to what you are saying, because they will say that you are telling us that we should be at the frontline and you don't need to do anything, even when there are heavy metals. I think this is tantamount to what you are saying and they will get such an impression and that's why I have to check with you whether you would agree.

A. Let me say it from the other sort of angle. I mentioned the World Health Organization standards, and it is important. For the metal parameters, in the WHO Guidelines, I think there are 60 or 70 of them.

CHAIRMAN: Yes, I can understand this point. Now, if it is found that heavy metals are found to be of an excessive level in the drinking water, be it lead or some other, I think the WHO is saying that for this case, the first thing to do is to exercise material control, so that the materials will not continue to go into the water. I think that's the primary barrier or the primary preventive measure. Because if you constantly test for the presence of lead in water, it is not a solution. Just adopting a common-sense approach. I may be wrong.

But it must be the case.

A. Well, if you know that the lead level is excessive, and what we are now doing is to add lead as a parameter, and then we have also done the same for other metals which may pose a risk.

Maybe I haven't expressed myself clearly. When we design a system, when you talk about water quality risk, we have two kinds of risk: microbiological and chemical risk. According to the WHO Guidelines and standards, for microbiological risk we would rely on water sample testing. But for chemical, the WHO would say we should have material control.

CHAIRMAN: If you had said that, I would have understood you perfectly well.

You cannot control bacteria and viruses in water other than through taking water samples. What else can you do?

MR KHAW: On the last point, if it's biological or microbiological, you do water tests. For chemical risk, you should do bacteria control.

A. Well, that's the first defence.

Q. But the WHO doesn't say that you can only do material control and you should not do water sample testing.

A. I am afraid I cannot answer this question. For chemical surveillance, the standard approach is bacterial

control, but if you know that a metal is released into drinking water -- for example, in view of what happened in July 2015, we have now added lead as a parameter for testing.

In other places, in the US and the UK, when it comes to acceptance tests of new buildings, they do not take water samples to check for exceedance of metal content.

Q. If we look at the WHO Guidelines, C2, page 1288. There are two pages here, 66 and 67. On the left-hand side, lower part, last paragraph, "(In English) Chemical water quality":

"Sampling locations will depend on the water quality characteristics being examined. Sampling at the treatment plant or at the head of the distribution system may be sufficient for constituents whose concentrations do not change during delivery. However, for those constituents whose concentrations can change during distribution, sampling should be undertaken following consideration of the behaviour or source of the specific substance. Samples should include points near the extremities of the distribution system and taps connected directly to the mains in houses and large multi-occupancy buildings. Lead, for example, should be sampled at consumers' taps, as the source of lead is usually service connections or plumbing in buildings."

So it's clear here, for lead, you should sample at consumer taps, not just at the waterworks or the connection points. Do you agree with this interpretation?

A. We have to look at the background to this paragraph. We also take samples from taps, not just test for lead; we also test for cadmium, chromium and nickel. So it is not in any way contradictory to the current practice.

Q. You are now talking about chemicals, and now they have highlighted lead in this paragraph. If you want to assess the risk of lead, you should take samples from consumers' taps. It seems to go against what you have said.

A. If the risk of lead in water is high, or after an incident, then in taking water samples you should add lead as a parameter. We have had an incident, we have added lead to the risk of parameters. According to these WHO Guidelines, if you interpret this as requiring taking samples from consumer taps, you are reading too much into that. It doesn't mean that you must take samples at consumers' taps for lead.

Q. All right. With regard to the concept of connection point and the purpose behind this standard, according to your colleague, Mr Lam -- C19.5, page 13486, Mr Lam Ching Man, paragraph 41. Eight parameters are set out

in paragraph 41.

Let's look at the middle part. Do you see, "(In English) The purpose of the testing of water samples" in the middle part?

"(In English) The purpose of the testing of water samples near the connection point at this juncture was not for identifying the presence of non-compliant materials in inside service as an end product test but more to guard against contamination to the government water supply by the inside service. Taking indirect water supply system as an example, the water sample near the connection point can only check the water quality for the pipe between sump tank and the connection point but not the entire inside service system (ie the communal service and inside service after and including the sump tank)."

If you look at this plan, page 13487, you can see the sump tank at the lower part. Can you see that? And the connection point is indicated. So the test and connection point can only cover, as explained in paragraph 41, from the sump tank to the connection point, a very small section here.

I just want to test if my understanding is correct. The water sampling taken at the connection point is to check the section from the sump tank to the connection

point?

A. That's what it was like before 2012.

Q. Okay. Before 2012?

A. Before 2012, we were concerned about the water supply and whether the inside service would contaminate the water supply. That's the main concern.

Q. All right. If we look at the witness statement, C19.5, page 13792, paragraph 27. It refers to the witness statement of Mr Lam. It says:

"(In English) ... the main purpose of the water testing for samples collected near the connection points is to prevent contamination of the government water supply through backflow at the connection point whilst that of the water testing at the inside service within a building is to check the effectiveness of the cleansing and disinfection of the inside service."

So you take water samples at the connection point, and it's done to prevent backflow and contamination of your water supply system. That's why you wanted to do this, wanted them to do the test at the connection point.

We have asked our experts some questions. There must be some valve to prevent back flow in the system; right?

A. Yes.

Q. So if you say checking for water quality at the connection points is to prevent contamination, and we know valves can prevent backflow.

A. I understand that. So what's your question?

Q. Do you agree if we have valves to prevent backflow and you only take the tests at the connection point, you will not be able to find anything?

A. You are talking about valves to prevent backflow, but in an ordinary system, there's no valve to prevent backflow. My understanding is that there are valves to prevent backflow, but for details you have to ask our professional colleagues.

MR KHAW: Chairman, do we need to take a break?

CHAIRMAN: Ten minutes.

As things go, and since we are going to have a holiday next week, and then we are going to have our expert witnesses, it seems that we have to rush a bit. So starting from tomorrow, let's start earlier, 9.30, until 5 pm. So we are going to have one additional hour every day. If we progress smoothly, after the holiday we revert back to the old timetable. If progress is not good, maybe we will have longer days.

Now let's take a ten-minute break.

(3.29 pm)

(A short adjournment)

(3.41 pm)

MR KHAW: Mr Lam, before 2012, when we had the Legionnaires' disease, you said that for the water samples, they were taken up to the connection point, then you wouldn't be interested in the inside service, as to whether it was okay.

In 2012, there was the Legionella disease, but still the advice was that for the inside service, water samples could be taken, but it wasn't made mandatory.

A. Well, for the guidelines, as it has been sort of read out a moment ago, we would like to remind the consumers that the cleansing and maintenance of the inside service was their responsibility. But then the WSD has this to say. As to what should be done, even though they would like to clean and maintain the inside service well, we would like to give them clear guidance. This is because usually they would cleanse and disinfect the inside service -- maybe they would do it once or twice, but as to the extent of the work and what would be regarded as clean, at the time we gave guidelines.

Q. Yes, you produced guidelines. But after the Legionella disease, despite that you didn't take a step further so that the WSD would be taking water samples from the inside service?

A. Post-2012, we didn't issue further guidelines to do

that.

Q. I would like to ask a question about the eight parameters. Please take a look at the relevant witness statement, that is the witness statement from Mr Chan Kin Man. C19.1, page 10502. Paragraph 10:

"(In English) Currently, WSD monitors the quality of drinking water supply in the waterworks with reference to the latest edition of Guidelines published in 2011."

It talks about 92 monitoring parameters.

From Mr Chan Kin Man's statement, please go to annex 1, and you will find it at page 10527. Annex 1. It's about the WHO Guidelines, and you can see "Metals", the second item. There are 12 metals altogether, and lead is included. So, when you have to do the treatment in your waterworks, you have to check for these 12 metals; right?

A. (Nodded head).

Q. Do you know that for these 12 heavy metals, do you have tests every day, or it's just random sample tests?

A. Well, here are metals. They are not necessarily heavy metals. I don't think we do it regularly. I think it's a sample test.

Q. How regularly did you test?

A. I cannot give you an accurate answer.

Q. You took water samples at connection points, and if I'm

not mistaken, you didn't test for these 12 heavy metals, unless under the Quality Water Supply Accreditation Scheme you would cover iron?

A. The eight parameters do not include metals. They are mainly about microbiological risk.

Q. I know the eight parameters have been put in place for a long time, starting from early 2000. Have you checked your department's record about the discussion of setting out or going for the eight parameters?

A. I don't know. I don't know whether there's anything in the files as regards why we chose the eight parameters.

Q. Were you involved in setting the eight parameters?

A. No, not personally.

Q. You have been saying that you mainly follow the WHO Guidelines in setting your parameters.

Let's look at the WHO Guidelines in question. C2. Let's look at C2, page 1251. On the right-hand side, the right-hand column, the last-but-three bullet points:

"(In English) those key chemicals responsible for large-scale health effects through drinking water exposure ..."

And some examples are given: arsenic, fluoride, lead, nitrate, selenium and uranium. And there are a number of metals which may be responsible for large-scale effects through drinking water.

Page 1263. On the right-hand side, the first paragraph, the middle paragraph of that paragraph:

"(In English) Plumbing materials, pipes, fittings and coatings can result in elevated heavy metal (eg lead) concentrations in drinking water, and inappropriate materials can be conducive to bacterial growth."

So it's lead-related.

Please look at the last point. Page 1349. The first table, 8.16, "(In English) Contaminants from pipes and fittings". There are six contaminants, including lead. So, as far as WHO Guidelines go, and in particular when it involves pipes and fittings and lead, they have been given special mention. You say you have been following the WHO Guidelines. Now, looking back, in retrospect, did you look into the WHO Guidelines and the reference in the guidelines to the risk posed by the pipes and fittings containing lead?

A. Well, there are some paragraphs of the guidelines talking about metal contaminations and some relevant parameters. Well, we were aware of such standards adopted by the WHO, so in our own waterworks we have been taking sufficient number of water samples to ensure compliance.

As for what's done within buildings, there are

different stakeholders. According to the WHO, if you want to find whether there is metal contamination at the tap, then the first thing to do is not to take water samples. As we have been seeing in the guidelines, there are more than 80 metal-related parameters, so we cannot check all those at the tap level. And we have added three or four --

CHAIRMAN: Sorry, please speak up. I cannot hear you.

A. In the recent excessive lead incident, after that incident we have added a number of parameters, and the trade has expressed concern about that.

According to the WHO, metal contamination is a known risk, but the best practice to deal with this is material control. Otherwise, if you take samples for testing, then you have to test for many parameters, and a sample can only allow you to test for a number of parameters. You have to take a lot of samples in order to fully comply with the parameters mentioned in the WHO Guidelines.

Q. We are not saying that every parameter must be tested. If you look at page 1349, in respect of pipes and fittings, there are only six contaminants, six metals.

Has the department considered that you should take water samples for the purpose of testing for these six parameters?

A. I don't think cadmium is here. Maybe we should understand the full system, the system as a whole. When we deal with water quality issues in accordance with WHO Guidelines, we look at the guidelines, and the guidelines are clear. If it's microbiological contamination, you have to take water samples and test for certain parameters. For chemical or metal contamination, you go for material control. But if there are some known incidents, some known risk has been exposed, then you may wish to adopt a special approach. If there's no special incident, no special situation, then adding these contaminants in the parameters for sample testing -- we can only do this after assessment. There's a need to conduct a balancing exercise, otherwise it may have an effect on waterworks.

Q. According to Mr Chan Kin Man's statement, you make reference to WHO Guidelines. For waterworks water quality, you conduct a test for 12 metals, but beyond the connection point, not even one will be tested. Don't you think there is a big disconnect between the two?

A. I may not be able to pinpoint the location, where we can find this reference. There may be different water suppliers, and if you supply water to a residential unit, then you need to conduct follow-up tests for water

quality control.

But within a building, as I have said, we are talking about different stakeholders, different buildings. So can we impose the same requirements on the water supplier to all the stakeholders within the building? We have to think carefully before doing that. We can certainly also make reference to overseas practice. We have to consider the availability of resources, the impact on the trade, and works.

Q. Would you say that it was not good enough to cover none of the eight parameters, back then?

A. It would be insufficient if there had been an incident and no action was taken to tackle that.

CHAIRMAN: The reality is that you didn't conduct any risk assessment?

A. Not quantitative assessment of risk.

CHAIRMAN: No risk assessment whatsoever? Did you do any?

A. We didn't do any quantitative risk assessment.

CHAIRMAN: Have you done anything to confirm whether this is a low, medium or high risk?

A. (Chinese spoken).

CHAIRMAN: Do you have any documents? Have you produced any documents telling us that this is risk assessment -- there's no problem with lead. Historically, 1938, it was banned. What about copper, did you do any study or

assessment for copper?

A. I can't answer this question.

CHAIRMAN: According to the WHO Guidelines, it's one of the contaminants.

A. I have asked our chemist colleagues. Copper is a non-ferrous metal. It would add some colour to the water, if found. So the WHO level is rather high.

CHAIRMAN: I understand that. Has there been any assessment?

A. That's in a paper.

CHAIRMAN: Do you have any document to show us? We asked you if any assessment was done. Of course, you say yes. In the 1980s, copper pipes were introduced to Hong Kong, and the HA did the same. Copper pipes were commonly used since 2000 by the HA, or 2002. The biggest developer, the biggest construction company, the Housing Authority decided to use copper pipes.

From the evidence we have heard, the Housing Authority said they knew nothing about these things. They had to rely on you.

So the question is what did you do? What have you done?

A. I think I need to defer it to our chemist. When you come to such details as to whether such assessments have been carried out, I don't know.

CHAIRMAN: I also know that for copper and iron, that would cause discoloration. They have also told me that the pH value in Hong Kong is 8.2 to 8.8, so the leaching of copper would be less likely. Had they been right, in theory, lead solder would not have released lead into the water.

So even in the case of lead pipes --

A. I can't answer you. You have to ask --

CHAIRMAN: Well, if you want to raise the pH value to 8-point-something so as to prevent corrosion, so as to prevent leaching of heavy metals --

A. Well, in theory, the problem will not be with us. I think it will be reduced.

CHAIRMAN: I think in theory there will be no problem.

I want to put this question to you. It seems your evidence is you are quite content, that is you are content with whatever is up to the connection point and that's it; beyond that, it's none of your business. Have you ever taken a step further?

A. Well, after the connection point, we believe that we have already taken a few steps. Say, for example, in the year 2002, we had the quality water in buildings, so as to encourage the property management companies to regularly cleanse and maintain their water tanks. I have read the literature. At that time, there were

problems with the quality of drinking water in the inside service. It was all because of lack of cleansing of the water tanks, and later on we had come up with version 2.0 for the Quality Water Supply Scheme for Buildings, and we have also carried out investigation into complaints by the citizens and where necessary, we have issued circulars and asked the consumers to maintain and cleanse their inside service.

CHAIRMAN: But then this is just advice. You are giving advice or good practices; right?

A. When we find there is a problem with water quality, then it would be more than advice. We can enforce the law. We have the power.

CHAIRMAN: But of course you have to count on that person to tell you there is a problem and then you will act on it.

A. We also monitor. We have 16,000 sets of water samples from the taps.

CHAIRMAN: My understanding is that the so-called water samples from the inside service -- my understanding is that you don't actually go to the households to get the water samples and saying, on many occasions, it's just from the shopping malls. In any event, you won't be so intrusive as to go to their households?

A. We went to the property management office. We did encounter difficulties going into the households.

CHAIRMAN: I was asking whether you would take a step further and do more than just giving advice. Why can't you go one step further and try to get the water samples from the household taps so as to ensure it is safe.

A. We need the powers.

CHAIRMAN: Yes, I know. Of course I know you have to be empowered, because people will deny you entry.

For the WSD, your number one objective, what is it? As the director of Water Supplies, what do you think is the objective of having the WSD within the government structure? What is the most important one?

A. We need to have a sustainable source of drinking water and we must assure the quality of drinking water.

CHAIRMAN: Exactly. So your purpose is to provide safe drinking water to the citizens of Hong Kong so they can continue to live here. I think that is your number 1 priority.

A. This is what we strive to achieve, but it depends on the circumstances.

CHAIRMAN: On the face of it, having heard what you said, in fact your comfort zone stops at the connection point. For you to step beyond your comfort zone, for you to step beyond the connection point, it seems you feel a great sense of unease.

A. Perhaps what we can do is to adopt a multipronged

approach. We can encourage the consumers. In fact, we have a lot of publicity and educational talks. At law, they have the duty to clean and maintain their own inside service.

If the duty shifts back to the Water Supplies Department, that would mean a change in the law. In overseas countries, they have also included the water quality standards in their laws and that would also cover the inside service. But if you read their documents, there's no way they can ensure that the water from the tap can be 100 per cent in compliance with the WHO Guidelines.

In future, even when we have the opportunity to review the law, we have to be aware of the constraints. In the UK, they have got the water quality standards, but when the water sample is found to be not in compliance with WHO Guidelines, they can only give advice.

It's when water is supplied to the public, then they can enforce the law more vigorously. I think this is a topic that we have to consider. In future, if we say that the government should bear the responsibility of assuring the quality of water all the way up to the water tap, of course we can consider a safe drinking water regulation but there are many implications, in

particular older buildings.

MR KHAW: You have said that if you want to go to a household to get water samples, there will be a certain degree of inconvenience, it will be intrusive, and you may not have the powers to do so.

Have you ever considered the following: at the time of completion of a building, before the intake of population, can the WSD go to individual units to get water samples?

A. Two points here. Before we can provide water supply, we take water samples. But our experience is after water has been supplied, whether the inside service is properly cleaned and maintained, that is crucial, in particular in relation to bacteriological or microbiological examination.

Q. Let me refer you to Y1, page 33. Again, this is ACQWS. In the year 2001, that is 15 years ago, there was this discussion.

Let's turn to page 34, point 6.5.1:

"(In English) In response to enquiries on Singapore's practice, WSD informed members that the building management was required to engage water analysts to take samples regularly in a prescribed way from the tap and from the water tank, and to submit periodic checking reports to ensure proper water

quality.

WSD undertook to gather more information on the practices adopted by Singapore and other Asian cities for members' reference and for formulating the detailed specification of the submissions such as frequency and parameters for testing."

At that time, we looked at the Asian examples, and your department told the members, saying that it would be up to the building owners or occupants to provide samples to you regularly, and samples would come from the taps and the water tanks.

I would like to know whether you have searched for any follow-up work on this point?

A. Well, you talked about the minutes of paper No. 7. Please go to paper No. 8. I think there was a survey covering Shenzhen, Taipei, Singapore and Kuala Lumpur. I think we need to see whether there was any detailed discussion.

Q. 6.5.5. Here it says:

"(Partially in English) A member [at that time] expressed great concern on the proposal to include chemical and bacteriological analyses as statutory requirements. There might not be enough accredited laboratories to do the required tests and the tests might be very expensive. He suggested that WSD should

look for the minimum requirements. Members agreed."

It seems that there was this advice, at one stage, to cover chemical and bacteriological analysis and have it included as a statutory requirement.

I want to know whether, and if so, at what stage there was such a suggestion.

A. According to the minutes here, that was the case, but of course I can only deduce it from this document. It was about legislating for it. Now, it was said that perhaps there should be stringent chemical analysis, as well as bacteriological analysis, of water from the taps of the consumers. But we have to change the law and there will be a claim on the resources.

In other words, according to the suggestion, consumers' water and water taps would have to undergo such tests. But then we have to consider whether we should take such a step, whether we should take such an additional step, to assure water safety. I think it involves a lot of resources, far more than just the laboratory.

Q. If I may discuss with you about the UK standards. I think the chairman had a discussion with you this morning. Let's go to G1.

G1, page 304, point 17, schedule 2, part 1. That's about the specifications for the pipes and fittings.

Point 17:

"(In English) Capillary fittings or compression fittings shall comply with BS 864 ..."

BS 864 was the British Standard issued in 1983.

"(In English) ... part 2 for capillary and compression fittings of copper and copper alloy and compression fittings for pipes laid under the ground shall be type B."

This morning, the chairman asked you that in this piece of legislation, it was not amended in line with the change to the British Standards. You gave an answer this morning.

A. Because we have another provision saying that we should follow the latest British Standard.

Q. We know that over the years, British Standards would be amended and updated and improved. But will the WSD issue some documents, circulars, letters, whatever, to tell the stakeholders that "Now the British Standards have been changed, please pay attention?" Do you have such a practice in the department?

A. If a British Standard is rather important, we would inform the public through our website. Even if the British Standard has been updated, we may or may not follow suit immediately; that would also have to look at the capacity of the trade. For example, we have to look

if the latest parameter is something that our laboratories can handle in the test.

So the question is should we change as soon as the British Standard is updated? Well, we will talk to the trade first.

CHAIRMAN: I don't quite understand that answer. Could you please repeat that?

A. When the British Standard is changed, we will not necessarily make a similar change right away. We will look at the implication for the trade first, and also whether our laboratories are equipped with the necessary capacity to do the tests. So we will deal with the new standard, British Standard, after talking to the trade.

CHAIRMAN: So there are chances that some older version of BS would continue to be applied in Hong Kong, so it will not be in line with the law, because according to the law, the regulations, you want people to comply with the latest British Standards, and sometimes you will just go for the older version. So what should people do?

A. In some cases, the Water Authority can have some leeway with regard to the compliance with the latest British Standards.

CHAIRMAN: If I read the regulation today, can I really know whether BS 864 is applicable in Hong Kong now?

A. You have to go to our website because there are a lot of

changes in regard to many materials.

CHAIRMAN: I know, but in the regulations, there are not many specified materials, so why don't you change these regulations?

A. So we have a flexible approach. When materials are the subject of change, we would issue notices.

CHAIRMAN: Director, let's see if my understanding is correct. You are saying that regulation 17 here is the updated one?

A. I can't say that. Regulation 17 sets out that it's BS 864. But according to regulation 2, we have to use the latest BS.

CHAIRMAN: But have you issued -- not you -- has the WSD has issued any notice that BS 864 is no longer current and it should be BS 1254?

A. I have to check whether we have issued such a notice.

CHAIRMAN: Plumbers may know, but let's see. If I am a law-abiding citizen and I read up the regulations, what can be done?

A. We would provide updates on our website, and in the past we rely on communication with the trade. I have to check if there was any notice issued to that effect.

CHAIRMAN: So you know what I am asking? Your notices carry no legal effect, but if you change the regulations, there will be legal effect.

A. If the requirements are not really changed, because according to regulation 2, you have to use the latest BS.

CHAIRMAN: But no one knows. There are exceptions. We just learned that you have to see whether the lab can catch up, whether you have the resources, before you adopt the new standards.

So simply, instead of 864, it's 1254. So which should apply?

A. The trade knows the requirements.

CHAIRMAN: You can't say that. What if I'm not in the trade?

A. I cannot really tell you whether the trade was informed through a notice or through other means.

CHAIRMAN: There's too much flexibility here or you have too wide a discretion. The executive is given too wide a discretionary power. Simply you can do whatever you want.

A. We will inform the trade of the latest requirements, the stakeholders and other people who need to have access to such information. So it's done through the website.

MR KHAW: But this approach involving your website was adopted after the 2015 lead in water incident. So we are now having a piece of legislation saying that as a director, you can do whatever you can; you have every

discretionary power you want.

CHAIRMAN: There will always be consultation. People have been talking about how important the rule of law is, so we must have some powers as defined in the law. We cannot have a piece of legislation saying that the director enjoys full discretionary power and can just make announcements on the website.

A. But if there's no discretionary power for the Water Authority, and if the BS is updated, we have to go for the new one, and then we need time to have legislative amendments.

CHAIRMAN: I'm not saying it should take immediate effect. You can have a later commencement date.

A. But it's up to the legislature. There will be a time-lag. According to the regulations, according to the law, you have to use the latest BS. In the past, there will be some discussion with the trade before adoption.

CHAIRMAN: Well, I don't know. I'm quite familiar with, say, drugs. Today, this drug is in schedule 1; tomorrow it's in part 1, and then there's another one in part 2. A few months, and you have another change. I just don't see how come it's so difficult. It's all about amending the regulations.

A. I'm not familiar with drugs.

CHAIRMAN: There are always changes about new drugs.

A. The problem is that even with new standards, we have to assess the actual situation to see if we have to adopt it.

CHAIRMAN: You see the contradiction here. A new drug is a new drug, but in your definition, in your regulation, you want to have the latest British Standard, but not in reality. You are not doing this in implementation.

A. There's a mechanism. We had to have a discussion on whether, for new materials, we need to go for the latest standard. Of course, there's room for improvement, and we hope that in the future we can provide for this in the amended regulations.

MR KHAW: Apart from law, let's look at WWO46. It's a form of the WSD. B15.1, page 37621.

We have looked at this form many times. Part I, the second part -- the licensed plumber and the architect both have to declare that the materials are in conformity with the WW regulations.

Please now look at page 37627. On the left-hand side, there's a table. It's the 2012 version.

Paragraph 7 -- pipes, fittings, valves and other parts, and the relevant British Standards, combination fittings included.

One criticism is that even for your WSD form, only

three were current at the time. Others were all outdated. Do you know that?

A. I have read that report.

Q. So there's no dispute that the majority of BS, in the form, referred to in the form, were outdated at that time?

A. For those outdated, yes, we looked into the implications. Most of them were seldom used or rarely used pipes.

For major fittings, for the past 20 years, the changes to the BS had very little impact on water quality.

Q. Let's not look at the impact. For this form, the licensed plumber has to sign on it, to certify that the pipes and fittings are in conformity with the relevant BS. What do you expect from the licensed plumbers, as for the current BS that will be applied?

A. As I've said, there's a mechanism in respect of outdated BS between WSD and the trade, but there will be occasions and opportunities for the relevant standards to be communicated to the trade. I agree that this might not be the best practice. So in the new form, we have already made all the amendments. I have heard from the chairman -- at present, we give information through our website; there may be a need to make improvements

and that may mean changing the law.

MR KHAW: When our lawyers wanted to get the relevant BS, we were asked to pay a few thousand dollars for each BS. So did the WSD expect the licensed plumbers to get the BS?

A. They can get information from the laboratories. Some fittings had to be approved by the WSD, and this is limited to a small number of pipes and fittings. They can tell the labs that for certain brands of fittings, accreditation would be required, and the lab would be doing the tests and produce the test report for them.

We also communicated with the labs with regard to our requirements. That was what we did in the past, and now we have improved the arrangement.

Q. So you agree that you did not update the relevant BS in a timely manner.

A. We have changed them in the new form now.

MR KHAW: Next I would like to ask about the licensed plumbers. I would hike to talk about the evolution of their training over the decades.

It's now 4.30.

CHAIRMAN: So 9.30 tomorrow morning.

MR KHAW: Yes, 9.30 tomorrow.

CHAIRMAN: How much longer?

MR KHAW: About an hour.

CHAIRMAN: How about the other lawyers? Mr Lee and Mr Ho, I think you have questions. Who else would like to ask questions? No? All right.

MR LEE: I will have quite a lot.

CHAIRMAN: Okay. Fine. It doesn't matter. I am just thinking about the time needed.

9.30 tomorrow morning.

(4.31 pm)

(The hearing adjourned until 9.30 am on the following day)

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