



來函檔號 Your Ref: CB1/F/2/6(II)  
本署檔號 Our Ref: DSD T 8/4236DS  
電 話 Tel: (852) 2594 7007  
圖文傳真 Fax: (852) 2802 8194



Clerk to Public Works Subcommittee  
Legislative Council Secretariat  
Legislative Council Building  
8 Jackson Road, Central  
Hong Kong

(Attn: Ms Angel SHEK)

Dear Ms Shek,

**Public Works Subcommittee**  
**Follow-up to meeting on 20 May 2009**

**Supplementary information pertaining to item PWSC(2009-10)19**

We refer to your letter referenced CB1/F/2/6(II) of 22 May 2009 to the Secretary for Financial Services and the Treasury.

In considering the paper referenced PWSC(2009-10)19 on upgrading of 236DS “**Tai Po sewage treatment works, stage 5 phase 2B**” to Category A, the Public Works Subcommittee requested the Administration to provide information on the following –

- (a) the technology and standards of odour control facilities to be adopted by Tai Po sewage treatment works (TPSTW) vis-à-vis those used by existing sewage treatment works in, for example, Chai Wan and Siu Ho Wan; and
- (b) sectional plans showing the design of “covers” for the proposed TPSTW on inlet works and primary sedimentation tank etc.



We would like to provide the Administration's response as follows.

**The technology and standards of odour control facilities to be adopted by Tai Po sewage treatment works (TPSTW) vis-à-vis those used by existing sewage treatment works in, for example, Chai Wan and Siu Ho Wan**

The Drainage Services Department (DSD) adopts three types of proven measures and technologies in the management and control of odour in our sewage treatment works (STW). These include provision of different types of deodourisation units at appropriate locations like activated carbon system, chemical scrubbers and biofilters to clean up the collected foul gases in the plants. We also apply chemicals, like calcium nitrate, ferric chloride and other deodourising agents, at various spots to combat odour generation or suppress smell. Thirdly, sealing of odour sources by covering up channels and chambers are also commonly used. Depending on the type of treatment operation in an STW, and the characteristics of its surrounding and the incoming sewage flow, we would apply a combination of the above three types of measures, which are also internationally proven practices, in our STW to meet the current odour standard of five odour units (OU)<sup>1</sup> as measured at the surrounding air sensitive receivers. The above standard adopted in Hong Kong is more stringent than those adopted in Britain, Australia and New Zealand. The above measures are effective to mitigate odour nuisance in our STW.

In TPSTW, we have adopted all three types of odour control measures. We dose calcium nitrate at the upstream Tai Yuen sewage pumping station; install deodourising units of activated carbon system in various spots of the TPSTW; and have covers built at sewage intakes and the outlet weirs of primary sedimentation tanks.

During the operation stage, we carry out monitoring of the odour performance of our STW to identify if there is any operational abnormality and take prompt rectification action if necessary. In case when there are changes in external factors affecting the operation and odour characteristics of a plant, we will tighten odour

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<sup>1</sup> Odour is a perception of human and is measured by olfactometry involving a group of normal people selected and trained as panelists. Odour unit is defined as the dilution factor that is required for samples of odorous gases to be diluted with clean odour-free air to achieve the detection threshold. Hydrogen sulphide (H<sub>2</sub>S) has a strong correlation with the odour in STWs and therefore, it is measured and generally used to assess the odour problem. According to Environmental Protection Department's guidance notes for sewage pumping station, 1 OU is equivalent to 0.00047 parts per million by volume of H<sub>2</sub>S.

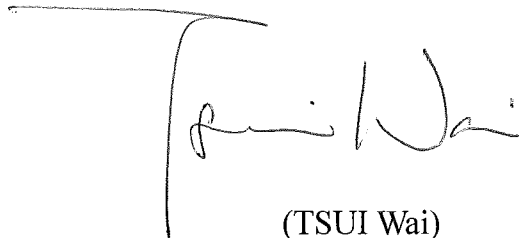
control measures or to provide additional odour control facilities to manage any potential odour nuisance. For this reason, we implemented additional odour control measures in Siu Ho Wan STW. We are also building additional deodourising units there. Similarly, we have planned to provide additional measures for Chai Wan STW, including covering up the pump sump in financial year 2009-10.

**Sectional plans showing the design of “covers” for the proposed TPSTW**

Sectional plans showing the design of ‘covers’ for TPSTW are at Enclosures 1 and 2.

We should be grateful if you would distribute this letter to PWSC Members.

Yours sincerely,



(TSUI Wai)

for Director of Drainage Services

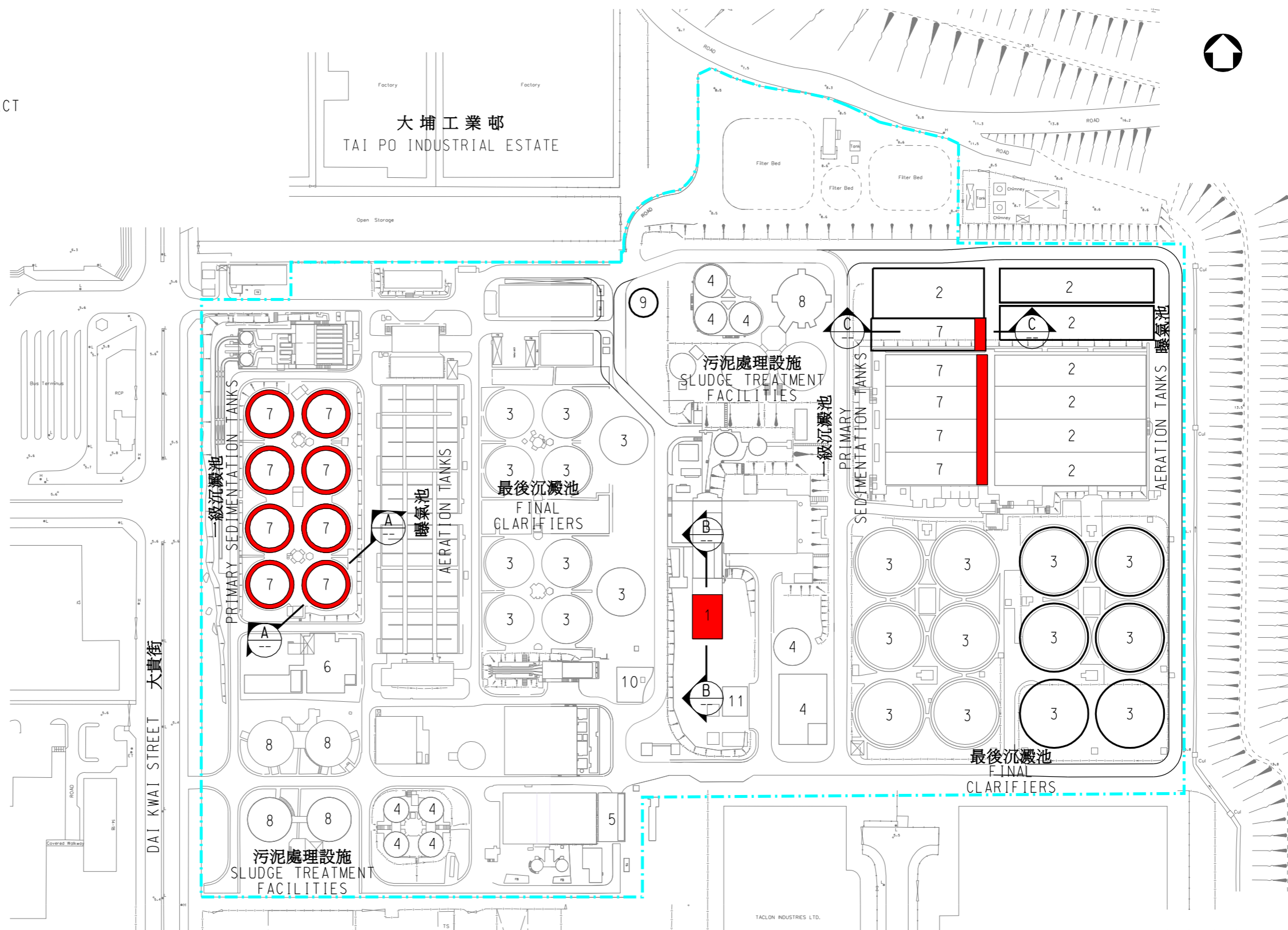
|      |      |                          |                   |
|------|------|--------------------------|-------------------|
| c.c. | SFST | (Attn.: Miss Sandra Lam) | (Fax.: 2147 5240) |
|      | SEN  | (Attn.: Mr Elvis AU)     | (Fax.: 2575 3371) |
|      | SDEV | (Attn.: Mr KC LAM)       | (Fax.: 2537 1961) |

圖例：  
LEGEND :

第5階段工程污水入口設施  
及一級沉澱池上蓋安裝  
COVERS INSTALLED AT  
INLET WORKS AND  
PRIMARY SEDIMENTATION  
TANKS UNDER STAGE 5 PROJECT

大埔污水處理廠範圍  
EXTENT OF TAI PO  
SEWAGE TREATMENT WORKS

1. 污水入口設施  
INLET WORKS
2. 曝氣池  
AERATION TANKS
3. 最後沉澱池  
FINAL CLARIFIERS
4. 污泥濃縮設施  
SLUDGE THICKENING  
FACILITIES
5. 污泥脫水設施  
SLUDGE DEWATERING  
FACILITIES
6. 濾液處理設施  
FILTRATE TREATMENT  
FACILITIES
7. 一級沉澱池  
PRIMARY SEDIMENTATION  
TANKS
8. 污泥消化池  
SLUDGE DIGESTION TANKS
9. 氣體貯存缸  
GAS HOLDER
10. 紫外光消毒設施  
ULTRAVIOLET DISINFECTION  
FACILITIES
11. 變壓房  
TRANSFORMER HOUSE

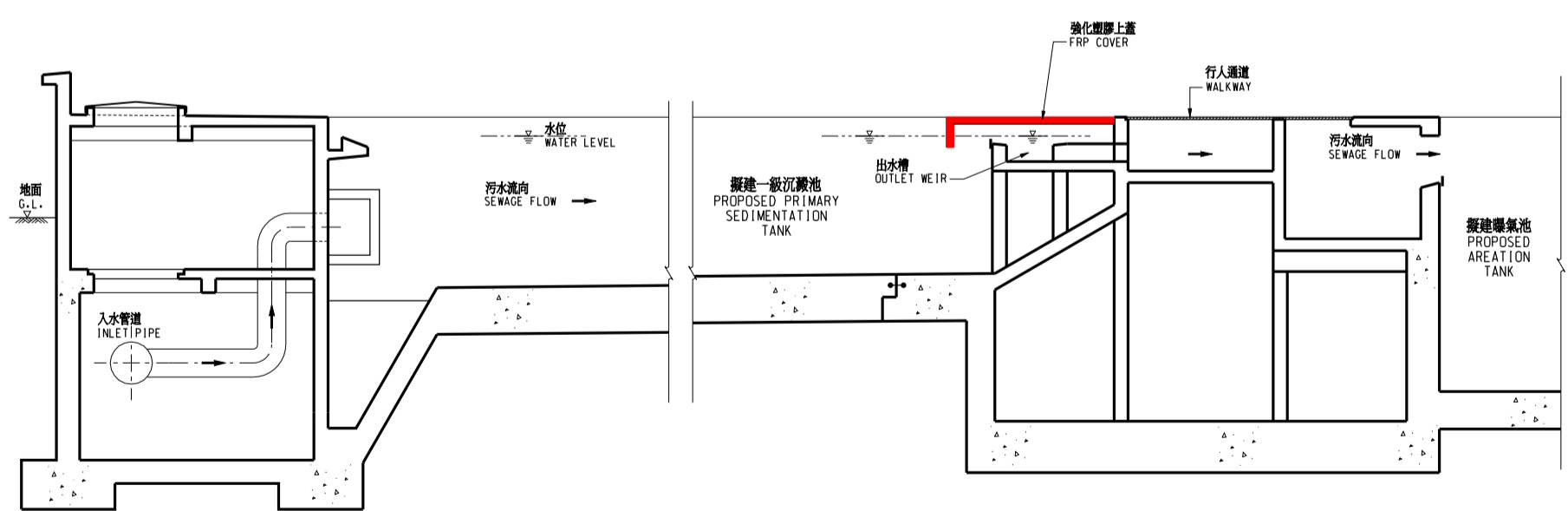
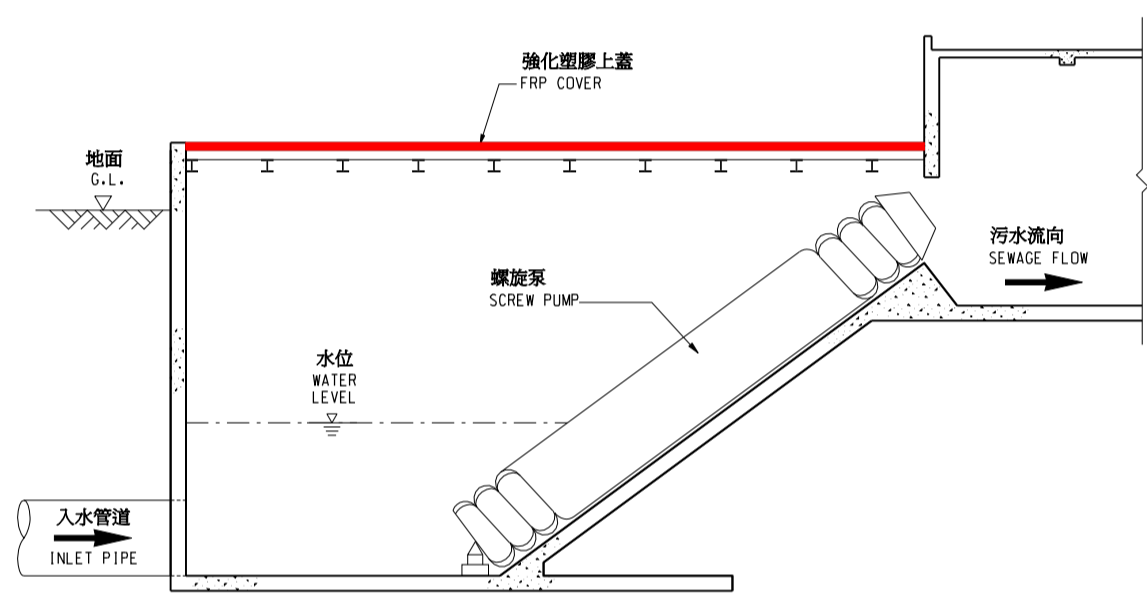
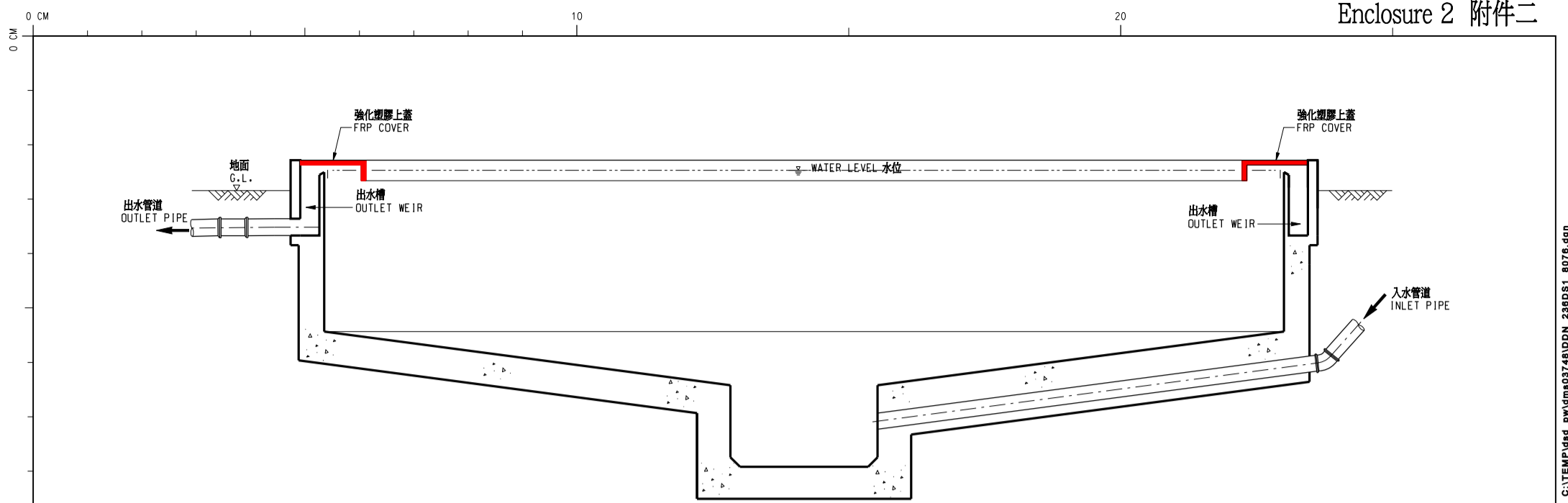


PROVISIONAL  
SUBJECT TO AMENDMENT

drawing title

大埔污水處理廠第5階段工程 - 氣味控制設施 (污水入口設施及一級沉澱池)  
TAI PO SEWAGE TREATMENT WORKS STAGE 5 - ODOUR CONTROL FACILITIES  
(INLET WORKS AND PRIMARY SEDIMENTATION TANKS)

| no.                          | date                       | description   | initial |
|------------------------------|----------------------------|---|---------|
| drawn                        | SIGNED 22 MAY 2009         | M.W. CHEUNG   |         |
| checked                      | SIGNED 22 MAY 2009         | Ir C. Y. CHUNG  |         |
| approved                     | SIGNED 22 MAY 2009         | Ir S. K. IP   |         |
| office                       | SEWERAGE PROJECTS DIVISION |   |         |
| drawing no.                  |                            | DDN/236DS1/8075   | scale   |
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| DRAINAGE SERVICES DEPARTMENT |                            | GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION |         |



PROVISIONAL  
SUBJECT TO AMENDMENT

drawing title  
大埔污水處理廠第5階段工程上蓋安裝 - 污水入口設施及一級沉澱池  
TAI PO SEWAGE TREATMENT WORKS STAGE 5  
COVERS INSTALLATION -  
INLET WORKS AND PRIMARY SEDIMENTATION TANKS

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| drawn    | SIGNED Y. K. FAN           | date | 22 MAY 2009 | drawing no.        | DDN/236DS1/8076 | scale | NTS |
| checked  | SIGNED Ir C. Y. CHUNG      | date | 22 MAY 2009 |                    |                 |       |     |
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