

Mott MacDonald HK Consulting Engineers 20th Floor, Two Landmark East 100 How Ming Street Kwun Tong, Kowloon, Hong Kong	Contract: Agreement No. CE 45/2004 (CE) Liantang/Heung Yuen Wai Boundary Control Point and Associated Works - Investigation		Job Ref: 255228
	Subject: Estimation of Pollutant Loadings Discharge to Deep Bay After Reuse		Calc.Sheet No. Page
	Drawing Ref.	Calculations by WT	Checked by JC

Ref.

Appendix 6.5 Estimation of Pollutant Loadings Discharge to Deep Bay After Reuse

1. Calculation of Sewage Load from Treated Effluent from STP

Assumptions:

- The treatment performance is as follows:-

Load Type	Treatment Performance
SS (mg/L)	< 2
BOD (mg/L)	< 10
TN (mg/L)	< 8
NH ₃ N (mg/L)	< 1
E. Coli. (CFU/100mL)	< 10

2. Estimation of volume of treated effluent for Reuse

Reuse for Irrigation

Assumptions for Irrigation

- Water consumption rate for the irrigation = 6 -10 litres/d/m² and 120 day per year
- The open landscaping area for the development = 56,400 m²

The volume of treated effluent for Irrigation

$$= 6 \times 56400 \times 120 / 365 / 1000$$

$$= 111.25 \text{ m}^3/\text{d}$$

3. Estimation of pollutant loadings to be discharged after Reuse

The total treated effluent to be discharged to deep bay after Reuse

$$= 327.56 - 111.25$$

$$= 216.31 \text{ m}^3/\text{d}$$

Based on the treatment performance,

Treatment Performance

Load Type	Treatment Performance
SS (mg/L)	< 2
BOD (mg/L)	< 10
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Ref.	<p style="text-align: center;">The pollutant loadings to be discharged is summarized as below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Load Type</th> <th style="text-align: center;">Loading</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">SS (kg/d)</td> <td style="text-align: center;">< 0.43</td> </tr> <tr> <td style="text-align: center;">BOD (kg/d)</td> <td style="text-align: center;">< 2.16</td> </tr> <tr> <td style="text-align: center;">TN (kg/d)</td> <td style="text-align: center;">< 1.73</td> </tr> <tr> <td style="text-align: center;">NH₃N (kg/d)</td> <td style="text-align: center;">< 0.22</td> </tr> <tr> <td style="text-align: center;">E. Coli. (no./d)</td> <td style="text-align: center;">< 2.16E+07</td> </tr> </tbody> </table>	Load Type	Loading	SS (kg/d)	< 0.43	BOD (kg/d)	< 2.16	TN (kg/d)	< 1.73	NH ₃ N (kg/d)	< 0.22	E. Coli. (no./d)	< 2.16E+07
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