APPENDIX 4.4B

ASSESSMENT OF WATER QUALITY IMPACT DUE TO POSSIBLE CHANGE IN COASTLINE CONFIGURATION FOR 2016

Appendix 4.4B
Assessment of Water Quality Impact due to Possible Change in Coastline Configuration for 2016

As the reclamation limits for some planned coastal developments such as the Revised South East Kowloon Development, Central Reclamation Phase III and Wan Chai Development Phase II are not yet confirmed and still subject to change at the time when this EIA was prepared, sensitivity test was conducted under this Study to investigate the effect of possible changes in coastline configuration in Victoria Harbour on the overall conclusion of the water quality impact assessment. Additional modelling was undertaken for Scenarios 3b (refer to **Table 4.8**) using an alternate coastline configuration (**Figure 4.6b**) as sensitivity test. This sensitivity run, namely Scenario 3c, has excluded the following reclamation projects.

- Revised South East Kowloon Development (SEKD);
- Yau Tong Bay Reclamation;
- Sham Tseng Further Reclamation;
- Central Reclamation Phase III (CRIII); and
- Wan Chai Development Phase II (WDII).

Same as Scenario 3b, Scenario 3c represents normal operation of TPSTW and STSTW in 2016 after Project commission where the effluent flow from TPSTW would reach its full capacity (13,000 m^3/day). Under this sensitivity test (Scenario 3c), the Project effluent was discharged into the Kai Tak Approach Channel (KTAC). This is different from Scenario 3b where the Project effluent was discharged at the coastline of Kowloon Bay after completion of the SEKD.

The water quality contour plots for Scenario 3c (using alternative 2016 coastline in **Figure 4.6b**) are shown in **Figures 3c1** to **3c10**. **Tables 3c1** and **3c2** summarised the modelling results at identified water sensitive receivers. The results for Scenario 3b (using original 2016 coastline in **Figure 4.6a**) are also included for comparison. All the results are presented as annual average.

The results for Scenario 3c indicated non-compliance of the marine WQO for depth-averaged (DA) DO (4 mg/L), bottom DO (2 mg/L), TIN (0.4 mg/L) and NH_3–N (0.021 mg/L) within KTAC and at existing Kwun Tong Typhoon Shelter (KTTS) both of which have very weak tidal circulation (**Figures 3c1 to 3c3, 3c5 to 3c6**). High levels of BOD_5 (> 3 mg/L) and SS (> 10 mg/L) were also predicted within KTAC and existing KTTS (**Figures 3c4 and 3c8**). High *E.coli* level (> 500 count/100mL) were predicted at the upper part of KTAC. As compared to other parameters, the *E.coli* plume caused by the Project was smaller and confined within the KTAC and did not reach the existing KTTS. As shown in **Figure 3c7** and **Table 3c1**, the *E.coli* level at the new KTTS location was much higher under Scenario 3b (with the SEKD reclamation) as compared to Scenario 3c (without the SEKD reclamation).

The coastline at Kowloon Bay would be streamlined with the SEKD reclamation. There would be less embayment areas under Scenario 3b. Although the Project effluent would be diverted to Kowloon Bay and a larger amount of pollution load would be discharged into the Kowloon Bay under Scenario 3b, the predicted water quality at Kowloon Bay under Scenario 3b (with SEKD reclamation) was still better than that