12 OVERALL CONCLUSIONS

This EIA Study has assessed the potential environmental impacts during the construction and operation of the Sha Tin STW Stage III Extension (the Project). Key issues including odour, water quality, solid waste management, visual, landscape and landuse impacts have been addressed.

12.1 AIR QUALITY

12.1.1 Construction Phase

The construction phase assessment indicates that the Project will not cause major dust or water quality impacts, provided that good site construction practices are used. A comprehensive environmental audit program should be implemented to ensure that the recommended mitigation measures are followed and are effective.

12.1.2 Operation Phase

To control the potential for odour impacts during the operation of the Project, comprehensive mitigation measures are recommended. These mitigation measures include the use of oxygen/air injection or nitrate addition at the sewage pumping stations to achieve a significant reduction in predicted odour concentrations at the existing and committed future sensitive receivers in the Study Area. If the recommended mitigation measures are implemented, cumulative impacts are predicted to be in compliance with the 5 OU m^{-3} criterion as a 5 second average, as stipulated in the *EIAO TM*. An odour compliant registration system and odour monitoring programme are recommended during the operation phase of the Project in order to verify the predictions and to ensure that the performance of the proposed mitigation measures is sufficient.

12.2 WATER QUALITY

12.2.1 Construction Phase

The assessment indicates that the Project will not cause major water quality impacts during the construction phase, provided that good site construction practices are used. It is recommended that a comprehensive environmental audit programme should be carried out during the construction of the Project to ensure that the proposed good site construction practices are enforced and are effective.

12.2.2 Operation Phase

The treated effluent from the Sha Tin and Tai Po STWs is currently collected by the THEES and discharged into the Kai Tak Nullah, which drains into the Kwun Tong Typhoon Shelter. The treated effluent from the Sha Tin Stage III Extension will also be collected by the THEES. Following the completion of the Sha Tin STW Stage III Extension, the Kai Tak Nullah will be diverted as part of the South East Kowloon Reclamation project. This will result in the Nullah discharging directly into the Victoria Harbour, to the west of the Kai Tak runway.

Computer modelling of water quality was carried out to simulate a range of alternative flows and loads from the Project and differing background conditions. The results from the test of existing conditions showed that water quality within the Kwun Tong Typhoon Shelter was extremely poor; however, once the water exited the typhoon shelter there was good mixing with the waters in Victoria Harbour and water quality improved. The modelling exercise demonstrated that the highest flows and loads from the Sha Tin STW Stage III Extension would not result in adverse impacts in the Victoria Harbour if SSDS Stages I, II, III and IV have been implemented. Should the SSDS Stage I Interim Outfall still be in operation, a mixing zone for total inorganic nitrogen and ammonia would be formed along the face of the South East Kowloon Reclamation.

An assessment of the impacts to Tolo Harbour during closure of the THEES found that water quality could be protected by limiting the quantities of pollutants discharged and by restricting the closure to certain periods of the year.

Routine monitoring of the effluent quality of the Sha Tin STW is recommended to determine compliance with the EPD licensing standards. Performance monitoring of the impacts of the Kai Tak Nullah discharges on water quality in the Victoria Harbour is also recommended before and after the commencement of the operation of the Sha Tin STW Stage III Extension.

12.3 *SOLID WASTE*

12.3.1 *Construction Phase*

The results of the land contamination study indicate that relatively high levels of contamination are present in a confined area of the Project site. This area was formerly used for sludge disposal. Based on the results of the sample analyses, it is estimated that approximately 1,400 m^3 of contaminated soil will have to be excavated for off-site disposal to an approved landfill during the construction phase. These materials are confirmed to be acceptable for landfill disposal without any special treatment. The landfill utilised for disposal will be the South East New Territories (SENT) Landfill, pending prior approval from the Facility Management Division of EPD during the construction phase of the Project. Provided that the mitigation measures proposed for the control of the contaminated materials are adopted, the impacts associated with their excavation and disposal should be insignificant.

12.3.2 *Operation Phase*

The operation of the Stage III Extension will generate sludge arisings. These will only require minimal additional vehicle movements for off-site disposal per day. Provided that the mitigation measures proposed in this Study are adopted, the impacts associated with waste management during the operation of the Project should be minimal and will not pose a nuisance.

12.4 *VISUAL, LANDSCAPE AND LANDUSE IMPACTS*

According to the results of the visual and landscape impact assessment, the proposed Stage III Extension will not result in adverse visual and landscape impacts to the sensitive receivers in the visual envelope of the site. Nonetheless, proposed improvement measures, including comprehensive tree planting at the

periphery of the Stage III Extension as well as along the waterfront of the Shing Mun River, have been made in order to enhance the general landscape quality of the area.

The landuse impacts of the STW Stage III Extension are not likely to be significant, as the existing works have been in place for more than 17 years and the Project area was originally reserved for the expansion of the STW. The principal source of concern is related to off-site odour impacts but provided that the mitigation measures are implemented and perform in accordance with expectations, the Project is not expected to cause major adverse landuse impacts. It should be noted that the Project will enable the population growth in the area to be more adequately serviced through the provision of additional sewage treatment capacity.

12.5 *ENVIRONMENTAL MONITORING AND AUDIT*

In addition to the environmental audit programme proposed for the construction phase, it is recommended that the EM&A programme will focus on operational phase monitoring of odour and water quality. It is proposed that an odour complaint registration system be established and that the odour concentrations within the site and at sensitive receivers should be monitored.