Drainage Services Department Contract No. DC/2006/01 Drainage Improvement Works in Sai Kung

Final Environmental Monitoring and Audit Review Report

Prepared for:

Sum Kee Construction Limited

Prepared by:

ENVIRON Hong Kong Limited

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Final Environmental Monitoring and Audit Review Report

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Pursuant to Condition 1.9 of Environmental Permit No. EP-217/2005, this Final EM&A Review Report has been certified by the Environmental Team Leader and verified by the Independent Environmental Checker as having complied with the requirements as set out in the EM&A Manual.

Certified by:

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Date 10 November 2011

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Executive Summary

This is the Final Environmental Monitoring and Audit (EM&A) Review Report for the Drainage Services Department (DSD) Contract No. DC/2006/01 Drainage Improvement Works in Sai Kung (the Project). This report documents the findings of EM&A works conducted in the entire construction period of the Project between July 2007 and January 2010 and the maintenance period thereafter.

The major construction activities undertaken in the entire construction period included the following:

- Construction of trapezoidal;
- Construction of culverts;
- Construction of rectangular channel by bored piling;
- Reprovisioning of pedestrian and vehicular crossing; and
- Construction of retaining walls.

Environmental Monitoring and Audit

The Project had commenced construction activities since July 2007. It was of main concern to ascertain if there was any undesirable effect of the construction activities on the air quality, noise level and water quality over the construction site and on nearby designated sensitive receivers. Impact environmental monitoring was undertaken in accordance with the requirement of the Project EM&A Manual throughout the construction period to acquire data for accessing any potential impact associated with the construction activities on the environment due to the Project.

The non-compliances of the impact environmental monitoring throughout the entire construction period are summarized in **Table 1** below.

Table 1 Summary of Non-Compliances of Impact Environmental Monitoring

Monitoring Parameter		No. of Monitoring Events	No. of Exceedances	
			Action Level	Limit Level
Air Quality	1-hr TSP	1	0	0
	24-hr TSP	1	0	0
Construction Noise	$L_{Aeq\ (30\ min)}$	HCM1: 125 HCM2: 125 PKM1: 127 PKM2: 127 SKM1: 129	3	0

Monitoring Parameter		No. of Monitoring Events	No. of Exceedances	
			Action Level	Limit Level
		SKM2: 128		
Water Quality	DO	W2: 253 W3: 251 W5: 253 W7: 253	W2: 0 W3: 0 W5: 3 W7: 0	W2: 0 W3: 0 W5: 0 W7: 0
	Turbidity	W2: 253 W3: 251 W5: 253 W7: 253	W2: 0 W3: 0 W5: 7 W7: 7	W2: 3 W3: 8 W5: 11 W7: 17
	SS	W2: 253 W3: 251 W5: 253 W7: 253	W2: 2 W3: 20 W5: 10 W7: 29	W2: 5 W3: 24 W5: 5 W7: 45

Air Quality

Ad hoc air quality monitoring at the project site will only be conducted by ET when instructed by the ER/IC(E) or on receipt of complaint. Nonetheless, the Contractor is advised to maintain the deployment of dust mitigation measures to minimize potential impacts from constructional works to a minimum, which include frequent water spraying at dust generation areas.

1 no. of 1-hr TSP and 1 no. of 24-hr TSP monitoring were conducted on 7 March 2008 due to the receipt of complaints on 22 January and 5 February 2008. No exceedances of the air quality monitoring were recorded.

Construction Noise

Construction noise monitoring was conducted at the 6 designated monitoring locations (HCM1, HCM2, PKM1, PKM2, SKM1, SKM2) at a frequency of once per week during the entire construction period.

No Limit Level exceedances for construction noise monitoring were recorded during the entire construction period. However, a total of 3 Action Level exceedances were recorded due to the receipt of 3 documented complaints regarding construction noise.

Water Quality

The water quality monitoring comprising monitoring of dissolved oxygen level, dissolved oxygen saturation, water temperature, turbidity, suspended solids and pH were conducted at the four designated monitoring locations (W2, W3, W5 and W7) at a frequency of twice per week in the first three months, and then once per week if no exceedances occured.

A total of 253 numbers of monitoring events were conducted for W2, W5 and W7 while 251 numbers of monitoring events were conducted for W3. Non-compliances of water quality monitoring were occasionally recorded.

Ecology Monitoring

Bird point count, macro-invertebrate and fish sampling was performed at four locations (two locations at Ho Chung River, and two locations at Sai Kung River) at a frequency for 3 times per year throughout the construction period.

In general, aquatic and riparian vegetation at the upper river section (outside works area) was similar to those recorded during baseline surveys.

Summary of Complaints, Notification of Summon and Successful Prosecution

There were two verbal and seven documented environmental complaints received in the entire construction period. Details of the documented complaints are shown in the complaint log in **Appendix H**.

A summon of notification was issued by the government of HKSAR to the Contractor on 24 January 2008.

There were two successful prosecutions concerning carrying out of regulatory work not in accordance with the Construction Dust Regulation on 13 August 2007 and 29 November 2007 recorded in July 2008 for the Project in the entire construction period.

1.0 Introduction

1.1 Project Background

The Drainage Services Department (DSD) of the Hong Kong Special Administrative Region Government has commissioned the drainage improvement works in Sai Kung under Contract No. DC/2006/01.

The location of the Project site is shown in **Figure 1**.

The Project commenced in July 2007 with the duration of the civil works for approximately 31 months for completion in January 2010.

The Contractor for the construction works under Contract No. DC/2006/01 was awarded to Sum Kee Construction Limited.

MateriaLab Division of Fugro Technical Services Limited, was appointed as the Environmental Team by Sum Kee Construction Limited to carry out the environmental monitoring and audit (EM&A) in connection with the construction phase of the project works.

The major works items under this contract comprise the following:

(A) Sai Kung River and Sha Ha Culvert :

(i) Construction of approximately 150m long of trapezoidal using gabion lining with planting pits and natural substrates and rip-rap bedding; and

(ii) Construction of approximately 280m long three cells 3m x 3m culvert to connect sai Kung River to the downstream box culvert.

(B) Ho Chung Channel :

(i) Construction of approximately 300m long of trapezoidal using gabion lining with planting pits and natural substrates and rip-rap bedding; and

(ii) Construction of approximately 350m long of rectangular channel by bored pile with natural substrates and rip-rap bedding; and

(iii) Reprovision of three pedestrian crossing;

(iv) Reconstruction of existing vehicular crossing and weir arrangement adjacent to WSD to Ho Chung Lowland Pumping Station.

(C) Pak Kong River :

(i) Reprovision of one pedestrian and one vehicular crossing to 3-cell box culvert.

(ii) Construction of approximately 100m long retaining walls to stabilize an existing river slope adjacent to the Hiram's Highway.

1.2 Project Organization

The project organization with respect to environmental protection works is shown in **Appendix A**, which indicates responsibilities and lines of communication of the various parties concerned.

1.3 Summary of Construction Works

The construction works undertaken by the Contractor during the construction phase of the Project are listed below:

- Construction of trapezoidal;
- Construction of culverts;
- Construction of rectangular channel by bored piling;
- Reprovisioning of pedestrian and vehicular crossing; and
- Construction of retaining walls.

The general layout plan showing the Project site is shown in **Figure 1**. The construction programme is provided in **Appendix B**.

2.0 Environmental Monitoring and Audit Requirements

2.1 Monitoring Parameters

The EM&A programme requires the monitoring of air quality, noise level and water quality at the pre-agreed monitoring stations prior to the commencement of construction activities at the project site. During the course of construction, impact monitoring of air quality, noise level and water quality had been undertaken at the designated monitoring stations in accordance to the active site works area(s). The monitoring parameters are summarised in **Table 2**.

Table 2 Summary of Environmental Monitoring Parameters

Parameters	Monitoring Items	Number of Monitoring Stations	Frequency	Requirements
Air Quality (Ad-hoc)	Total Suspended Particulates (TSP)	3	When required by the ER or IC(E) during the course of the works	1 x 24-hour sampling and 3 x 1-hour sampling
Noise	Daytime noise level of $L_{Aeq(30\ min)}$	6	Once per week	1 x $L_{Aeq\ (30\ min)}$ between 0700 and 1900 on normal weekdays.
Water Quality	DO, DOS, pH, Turbidity, Temperature, SS	4	Twice per week in the first three months, then once per week if no exceedances occur	A set of measurements on normal weekdays.
Ecology	Flora species, Avifauna, Aquatic macro benthos, fish species and Abiotic data	4	3 times a year	A set of monitoring during construction phase

2.2 Environmental Quality Performance Limit

Environmental auditing on the monitoring data had been undertaken via the establishment of a set of environmental quality performance limits known as Action / Limit (AL) levels for the environmental monitoring parameters to check against any exceedances.

The Action / Limit levels for air quality, noise and water qualities are summarised in **Table 3**, **Table 4** and **Table 5** respectively and their derivations are detailed in the Baseline Environmental Monitoring Report.

Table 3 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	1-hour TSP (μg/m^3)		24-hour TSP (μg/m^3)	
	Action Level	Limit Level	Action Level	Limit Level
HCAM	346	500	195	260
PKAM	293	500	160	260
SKAM	291	500	149	260

Table 4 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level , $L_{Aeq\ (30\ min)}$
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*

* reduced to 70dB(A) for schools and 65dB(A) during school examination periods

Table 5 Action and Limit Levels for Water Quality Monitoring

Parameter	Station	Action Level	Limit Level
DO in mg/L (mid-depth)	W2	5	4
	W3	5	
	W5	6	
	W7	5	
SS in mg/L (mid-depth)	W2	27	39
	W3	27	39
	W5	12	21
	W7	7	9
Turbidity in NTU (mid-depth)	W2	50	63
	W3	50	63
	W5	9	14
	W7	11	8

Remark:

1. For DO, Non-compliance occurs when monitoring result is lower than the limits.
2. For SS and turbidity, non-compliance occurs when monitoring result is higher than the limits.

2.3 Environmental Mitigation Measures

Should the monitoring results indicate any non-compliance of the concerned Action/Limit (AL) levels, actions according to the event and action plans for air, noise and water in **Appendix C** should be followed and appropriate environmental mitigation measures as shown in **Appendix D** are to be implemented to rectify the situation.

Advice in regard to the implementation status of the environmental protection and pollution control mitigation measures are shown in **Appendix D**.

3.0 Air Quality Monitoring Results

3.1 Monitoring Requirement

In accordance with the EM&A Manual, ad hoc air quality monitoring at the project site will only be conducted by ET when instructed by the ER/IC(E) or on receipt of complaint. Nonetheless, the Contractor is advised to maintain the deployment of dust mitigation measures to minimize potential impacts from constructional works to a minimum, which include frequent water spraying at dust generation areas.

3.2 Monitoring Equipment

The air quality monitoring was performed using High Volume Sampler (HVS) located at the designated monitoring station. The details of the air quality monitoring equipment are shown in **Table 6** below.

Table 6 Air Quality Monitoring Equipment

Equipment List	Model	Calibration Frequency
High volume sampler with flow controller, including : - motor/blower assembly - filter holder - G901 ET1 Elapsed time indicator - G310 Flow controller - G105 Flow recorder with cartridge and charts - G70 Seven-day mechanical timer - Aluminum shelter	GMW SA2310-105	One point calibration : every 600 hours of sampling or after replacement of motor/motor brushes
Variable Resistance Calibrator Orifice	Andersen G3357K S/N : 42J/74N	Annually
Anemometer	Hishimatsu TN-24	-

3.3 Monitoring Locations

Air quality monitoring was performed at three locations. The locations of the monitoring station selected as the nearest nearby air sensitive receivers are listed in **Table 7** below and shown in **Figure 2**.

Table 7 Air Quality Monitoring Locations

Designation	Air Quality Monitoring Station
HCAM	At the side of Ho Chung Store on Ho Chung Road roadside
PKAM	At the side of door No. 14 at Fung On Village, Tai Chung Hau
SKAM	At the side of door No. 17 at Wang Kong Village

3.4 Monitoring Parameter, Frequency and Duration

Table 8 below summarizes the monitoring parameters, frequency and duration of air quality monitoring.

Table 8 Air Quality Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameters	Frequency and Duration
HCAM	24-hr TSP and 1-hr TSP	When instructed by the ER/IC(E) or on receipt of complaint
PKAM		
SKAM		

3.5 Monitoring Methodology

The 1-hour and 24-hour TSP levels are measured with a high volume sampler following the standard method as set out in the Title 40 of the Code of Federal Regulations (U.S.), Chapter 1 (Part 50), Appendix B.

The total suspended particulate is sampled by drawing air through a piece of conditioned and pre-weighed filter paper inside the high volume sampler at controlled flowrate of about 40-60 c.f.m. After sampling, the filter paper with the retained particulate is then kept in a plastic bag and transported back to the laboratory for further conditioning and weighing. The TSP level is calculated from the ratio of the mass of particulate retained on the filter to the total volume of air sampled.

3.6 Review of Monitoring Results

In view of complaints regarding construction dust nuisance were received on 22 January 2008 and 5 February 2008, 1 number of 1-hr TSP and 1 number of 24-hr TSP monitoring were conducted on 7 March 2008 at ground level near House No. 35B of Ho Chung Village. The weather condition during the monitoring was fine. Compliance was achieved for both 1-hr and 24-hr TSP monitoring. Necessary mitigation measures had been implemented by the Contractor and proved to be effective on dust suppression. The graphical presentations of the air quality monitoring results are presented in **Appendix E**.

There was no Action and Limit level exceedance recorded for both 1-hr and 24-hr TSP monitoring during the course of the construction period of the Project.

4.0 Construction Noise Monitoring Results

4.1 Monitoring Requirement

In accordance with the EM&A Manual, construction noise monitoring should be obtained at six designated noise monitoring stations. Construction noise monitoring was conducted for at least once per week during the construction phase of the Project.

4.2 Monitoring Equipment

Integrating Sound Level Meter was employed for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (Leq) and percentile sound pressure level (Lx). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Portable combination anemometer was employed to check the wind speed. **Table 9** details the noise monitoring equipment used.

Table 9 Construction Noise Monitoring Equipment

Equipment List	Model	Calibration Frequency
Precision integrating sound level meter	B&K 2236, B&K 2238	Annually
Sound level calibrator	B&K 4230, B&K 4231	Annually
Microphone extension cable (3m)	B&K A00027 B&K A00185 B&K A00408	-
Portable Combination Anemometer	-	-

4.3 Monitoring Locations

Construction noise monitoring was performed at six locations. The locations of the monitoring stations selected as the nearest nearby noise sensitive receiver are listed in **Table 10** and shown in **Figure 3**.

Table 10 Construction Noise Monitoring Locations

Designation	Air Quality Monitoring Station
HCM1	In front of door No. 5B, 1st Lane at Ho Chung Village
HCM2	In front of door No. 107 at Ho Chung New Village
PKM1	At the side of door No. 14 at Fung On Village, Tai Chung Hau
PKM2	In front of Green House Nursery at Pak Kong Riverside
SKM1	In front of door No. 13 at Muk Min Shan
SKM2	In front of Waste Recycling Site at Muk Min Shan

4.4 Monitoring Parameter, Frequency and Duration

Table 11 below summarizes the monitoring parameters, frequency and duration of construction noise monitoring.

Table 11 Construction Noise Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameters	Period	Frequency
HCM1	Daytime noise level of $L_{Aeq(30\ min)}$	0700-1900 hrs on normal weekdays	Once per week
HCM2			
PKM1			
PKM2			
SKM1			
SKM2			

4.5 Monitoring Methodology

The construction noise monitoring was carried out at the six monitoring stations selected as the nearest nearby noise sensitive receiver (NSR). Measurement of one $L_{Aeq\ 30min}$ should be conducted at each of the monitoring stations on one occasion every week during normal construction working daytime hours (0700 to 1900 hours) (Monday to Saturday).

Noise measurement should be made in terms of the A-weighted equivalent continuous sound pressure level (Leq) measured with an integrating sound level meter complying with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1).

Where a measurement is to be carried out at a building, the assessment point shall normally be at a position 1 metre from the exterior of the building façade. The assessment point shall be at a position 1.2 metre above the ground at a place other than a building.

Immediately prior to and following each noise measurement, the accuracy of the sound level meter is checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurements agree to within 1.0 dB.

Noise measurement should not be made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10m/s. A summary table of the weather conditions during the monitoring period are provided in **Appendix F**.

4.6 Review of Monitoring Results

Construction noise monitoring was conducted once per week throughout the construction phase of the Project.

All measured construction noise levels were below the Limit Level. The range and variation of the measured results were comparable to the attained baseline data. Construction sourced activities were not considered causing major nuisance impact to the nearby sensitive receivers. The noise emanating from the vehicular road traffic was found to be the major influencing factor dominating the noise environment. The graphical presentations of the construction noise monitoring results are provided in **Appendix G**.

Three documented noise complaints were received throughout the construction phase of the Project, hence three Action Level exceedances were recorded.

The first and second documented noise complaints were received by the ER on 19 January and 15 February 2008 regarding construction noise on Sundays and from soldier piling works respectively. The third documented noise complaint was referred from EPD on 20 March 2008 regarding daytime construction noise at Ho Chung New Village.

Investigations were conducted by the ET and the Contractor was advised to implement the following mitigation measures:

- avoid construction works on Sundays / Public Holidays;
- no construction plant and vehicles should be operated on Sundays / Public Holidays;
- mobile plant, if any, should be sited as far from the noise sensitive receivers;
- machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- movable or temporary noise barrier should be used; and
- Minimize noisy construction activities in the morning and have prior arrangement with the complainant on any noisy activities.

5.0 Water Quality Monitoring Results

5.1 Monitoring Requirement

In accordance with the EM&A Manual, water quality monitoring should be conducted at the four designated water quality monitoring locations. Water quality monitoring was conducted at a frequency of twice per week in the first three months, and then once per week if no exceedances occured during the construction phase of the Project.

5.2 Monitoring Equipment

The details of the water quality monitoring equipment are shown in **Table 12** below.

Table 12 Water Quality Monitoring Equipment

Equipment List	Model	Calibration Frequency
Turbidity meter	HACH 2100P	3 months
Dissolved oxygen meter	YSI DO 200 with stirrer	3 months
Thermometer	Standard calibrated thermometer	6 months
pH meter	Hanna HI9024	3 months

5.3 Monitoring Locations

The monitoring work was carried out at the mid-water depth of the four impact monitoring stations downstream of the construction work, W2, W3, W5 and W7, at the Ho Chung River, Pak Kong River and Sai Kung River. The exact locations of the water quality monitoring stations are shown in **Figure 4**.

5.4 Monitoring Parameter, Frequency and Duration

Table 13 below summarizes the monitoring parameters, frequency and duration of water quality monitoring.

Table 13 Water Quality Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameters	Frequency	Duration
W2	DO, DOS, pH, Turbidity, Temperature, SS	Twice per week in the first three months, then once per week if no exceedances occur	Throughout the construction phase
W3			
W5			
W7			

5.5 Monitoring Methodology

Water quality monitoring is carried out twice a week at the first three months at four downstream monitoring stations (W2, W3, W5 and W7). Dissolved oxygen level, dissolved oxygen saturation, water temperature, pH value and turbidity (NTU) are measured in-situ at the monitoring stations, while the suspended solid level is ascertained by laboratory analysis.

Water samples are collected by the water sampler and filled into HDPE bottles for laboratory determination of suspended solids. Bottles are filled up to the rim, capped tightly and labeled immediately. The samples are delivered to the laboratory as soon as possible for subsequent analysis.

5.6 Review of Monitoring Results

Water quality monitoring of dissolved oxygen level, dissolved oxygen saturation, water temperature, turbidity, suspended solids and pH were conducted twice per week in the first three months, and then once per week if no exceedances occurred throughout the construction phase of the Project.

The majority of the monitoring results of dissolved oxygen were within the corresponding Action and Limit levels. A number of water quality exceedances of turbidity and suspended solid were also occasionally recorded. Despite some of these exceedances may be attributed by the prevailing water quality from external sources from upstream and surface runoff from raining, and may not be engendered by the construction activities, the Contractor had been advised to implement follow-up mitigation measures for these exceedances. The review of these exceedances is described in **Section 6.0**.

The graphical presentations of the water quality monitoring results are presented in **Appendix H**.

6.0 Ecology Monitoring Results

6.1 Monitoring Requirement

In accordance with Section 8.10 of the Final EIA Report for the Drainage Improvement of Sai Kung, the survey should consist of both biotic parameters (i.e. ecology of flora and fauna species) and abiotic parameters (i.e. water quality and sediment characteristics) in the vicinity of proposed project area.

6.2 Monitoring Locations

Bird point count, macro-invertebrate and fish sampling was performed at four locations (two locations at Ho Chung River, and two locations at Sai Kung River). The locations of the sampling stations selected along the belt transect and shown in **Figure 5 and 6**.

6.3 Monitoring Parameter, Frequency and Duration

The ecology monitoring programme should provide data on the re-establishment of aquatic/riparian communities in the channels, and allow an assessment of the relative success of mitigation measures to be made. Baseline data should be collected 2-3 months before the commencement of the construction phase, with monitoring conducted 3 times a year during the construction phase, and 3 times a year for 3 years after the completion of works. The data collected should include abiotic (e.g., water quality, sediment characteristics) and biotic (e.g., avifauna, macroinvertebrate and fish populations, aquatic, emergent and riparian vegetation) parameters.

6.4 Monitoring Methodology

Avifauna survey was conducted during designated monitoring period. Special attention was given to those river channel and riparian areas serving as feeding and foraging grounds for avifauna. In general, avifauna survey was carried out in the early morning or late afternoon when birds are the most active for feeding and foraging. Numerical abundance was recorded at fixed count points within fixed radium, e.g. 30-50 m according to landscape feature and visual penetration extent. The point count was conducted at two locations of the river channel with one located at the middle course (i.e. within construction area) and the other located at the upper course (i.e. outside the construction area). Duration of point count of birds was at 10 minutes interval at each location in order to obtain comparable results. Apart from this, qualitative survey was also conducted by transect count. Binoculars and digital camera were the main instruments in this survey. Nomenclature and protection status of the observed species followed those documented in the AFCD website (www.hkbiddiversity.net) and Carey et al., (2001).

Fish community, including Fung Shui fish, in Ho Chung River was investigated by live trapping, hand nets and direct observation. Sampling was carried out at two locations of the river channel withone at middle course (i.e. within construction area) and the other at upper course (i.e. outside of construction area). The relative abundance of identified fish species was estimated and recorded. Nomenclature and protection status of the species followed those documented in the AFCD website (www.hkbiddiversity.net) and Virginia et al (2004).

Macro-invertebrates in the likely affected rivers were surveyed. Two sampling sites along river channel were designed to collect necessary macro-invertebrate fauna for ecological monitoring Three replicates were taken at each sampling point by kick sampling and hand netting. Replicates were then pool together for further analysis. Dissection microscope, digital camera were the aiding tools for species identification and enumeration when necessary. Numerical abundance, species identity were recorded. Nomenclature and protection status of the species followed those documented in the AFCD website (www.hkbiodiversity.net) and other literatures such as Dudgeon (1999).

Aquatic plants and riparian vegetation were examined by line transects along the river channel and riparian habitat. Species identification and relative abundance were recorded as quantitative data. Vegetation survey by belt transects were also conducted at two selected locations with one at middle course (i.e. within construction area) and the other at upper course (i.e. outside of construction area). Nomenclature and protection status of the species followed those documented in the AFCD website (www.hkbiodiversity.net) and Hong Kong Herbarium (2004).

6.5 Review of Monitoring Results

Ecology monitoring was conducted three times per year throughout the construction phase of the Project and after the completion of works. The monitoring events are presented as follows:

Table 14 Monitoring events of Ecology Monitoring

Monitoring events	Duration
October 2007	Throughout the construction / maintenance period
February 2008	
June 2008	
October 2008	
February 2009	
June 2009	
October 2009	
February 2010	
June 2010	
October 2010	
July 2011	

In general, aquatic and riparian vegetation at the upper river section (outside works area) was similar to those recorded during baseline surveys. The water quality in the surveyed river was generally fair at upper and lower river sections without apparent domestic pollution as indicated by low concentration of nitrite and phosphates. The summary tables of the monitoring results are provided in **Appendix I**.

Further survey will be carried out and findings will be sent to AFCD for review or discussion. These results would be used to serve as a reference for future project of this kind.

7.0 Summary and Review of Non-compliance of Environmental Quality Performance Limits

7.1 Summary of Non-compliance

1-hr and 24-hr TSP Monitoring

There were no exceedances of 1-hr TSP and 24-hr TSP recorded during the course of the construction period of the Project.

Construction Noise Monitoring

There were no Limit Level exceedances of construction noise monitoring recorded during the course of the construction period of the Project.

However, 3 Action Level exceedances of construction noise were recorded due to 3 documented noise complaints were received during the course of the construction period of the Project. The summary of the complaints was given in **Section 8.0**.

Water Quality Monitoring

A number of non-compliances of water quality monitoring were recorded during the course of the construction period of the Project. The events of non-compliances are summarized in **Table 15** below.

Table 15 Summary of Non-compliances of Water Quality Monitoring

Monitoring Parameter	No. of Action Level Exceedances	No. of Limit Level Exceedances
Turbidity	14	39
Suspended Solid	61	79
Dissolved Oxygen	3	0

7.2 Review of Non-compliances

1-hr and 24-hr TSP Monitoring

No exceedances of 1-hr TSP and 24-hr TSP were recorded hence no review of non-compliances was applicable.

Construction Noise Monitoring

Review of Action Level exceedances of construction noise is given in **Section 8.0**.

Water Quality Monitoring

Non-compliance events of turbidity and suspended solids were recorded occasionally at the various water quality monitoring stations during the course of the construction period of the Project. The scenario was believed to be attributed mainly by the following reasons:

- The prevailing water quality in which soil or contaminants deposited along the riverside flushed out into the existing water body after heavy rainfalls or under the influence of tidal effect and natural seasonal variations;
- Influx of silty water discharged into the upstream of Ho Chung River (outside site boundary) which was originated from the surface runoff of another construction site;
- Release of the pre-accumulated / pre-settled silty matters in the river-bed which might probably be generated by the upstream pollution source (outside site boundary) or originated from the surface runoff of previous rainfall;
- Surface runoff along the river channel after raining;
- Disturbances by earth works

Three non-compliance events of dissolved oxygen were recorded W5 during the course of the construction period of the Project. The non-compliances were mostly likely attributed by the natural seasonal variations around the monitoring location.

7.3 Actions Taken in the Event of Non-compliance

1-hr and 24-hr TSP Monitoring

No relevant actions taken as no non-compliances were identified.

Construction Noise Monitoring

The actions taken in response to the documented noise complaints received were described in **Section 8.0**.

Water Quality Monitoring

In view of the non-compliances, the Contractor had been advised to conduct effective mitigation measures including providing covering for open stockpiles / exposed areas, installation of silt curtains or deploying sandbag barrier at site boundary areas to avoid potential surface runoff discharged into watercourses.

8.0 Summary of Complaints, Notifications of Summons and Successful Prosecutions

8.1 Summary of Complaints

There were two verbal and seven documented environmental complaints received in the entire construction period. Three of the documented complaints were related to construction noise, hence giving rise to three Action Level exceedances of construction noise. Summary of the complaints is given in **Table 16** below.

Table 16 Summary of Environmental Complaints

Date of Complaint	Nature of Complaint	Issues Complained
10 Aug 2007	Verbal	Waste
15 Nov 2007	Documented	Water quality
22 Nov 2007	Documented	Construction dust
19 Jan 2008	Documented	Construction noise
22 Jan 2008	Documented	Construction dust
5 Feb 2008	Documented	Construction dust and noise
20 Mar 2008	Documented	Water quality
20 Mar 2008	Documented	Construction noise
26 Jan 2009	Verbal	Construction noise

In response to the complaints, the ET had undertaken investigations and recommendations on enhanced environmental mitigation measures were given to the Contractor, additional environmental monitoring were conducted when necessary to review the effectiveness of the environmental mitigation measures. The details of the follow-up actions undertaken can be referred to the complaint log for the documented complaints in **Appendix J**.

8.2 Summary of Notifications of Summons and Successful Prosecutions

A notification of summon was received by the Contractor on 24 January 2008 regarding the contractor's execution of a regulatory work namely work involving power-driven drilling, cutting and polishing on 13 August 2007 at 11:15 a.m., where the Contractor failed to ensure that the work was carried out in accordance with section 22 of the Schedule of the Air Pollution Control (Construction Dust) Regulation by neither having sprayed with water or dust suppression chemical continuously on the surface where power-driven drilling operation that caused dust emission was carried out, nor having had the process accompanied by the operation of an effective dust extraction and filtering device.

The notification of summon is given in **Appendix K**.

Two successful prosecutions (concerning carrying out regulatory work not in accordance with the Air Pollution Control (Construction Dust) Regulation on 13 August 2007 and 29 November 2007) were recorded in July 2008.

9.0 Review of Validity of EIA Predictions

9.1 Comparison with EIA Prediction

9.1.1 The environmental impacts caused during the construction period were generally in line with the prediction of Environmental impact Assessment Report as no significant environmental impacts were expected due to limited scale of works as stipulated in the EIA report.

9.2 Environmental Acceptability of the Project

9.2.1 The environmental performance indicated that the construction activities in general complied with the relevant environmental requirements and were environmentally acceptable.

10.0 Comments and Conclusions

10.1 Comments

10.1.1 The environmental monitoring methodologies and procedures were regularly reviewed by the Environmental Team. No modification to the existing monitoring methodology was made during the construction period.

10.1.2 The EM&A programme and the effectiveness of the mitigation measures were successful during the construction period.

10.2 Conclusions

10.2.1 The baseline monitoring exercises for the Contract commenced on 3 May 2007 and was completed on 29 June 2007.

10.2.2 1 no. of 1-hr TSP and 1 no. of 24-hr TSP monitoring were conducted on 7 March 2008 due to the receipt of complaints on 22 January and 5 February 2008. No exceedances of the air quality monitoring were recorded.

10.2.3 The impact monitoring exercises for construction noise and water quality were conducted in the reporting period.

10.2.4 No Limit Level exceedances for construction noise monitoring were recorded during the entire construction period. However, a total of 3 Action Level exceedances were recorded due to the receipt of 3 documented complaints regarding construction noise.

10.2.5 A total of 253 numbers of monitoring events were conducted for W2, W5 and W7 while 251 numbers of monitoring events were conducted for W3. Non-compliances of water quality monitoring were occasionally recorded.

10.2.6 A summon of notification was issued by the government of HKSAR to the Contractor on 24 January 2008.

10.2.7 There were two successful prosecutions concerning carrying out of regulatory work not in accordance with the Construction Dust Regulation on 13 August 2007 and 29 November 2007 recorded in July 2008 for the Project in the entire construction period.

10.2.8 With the implication of ecological mitigations, ecological condition is generally restored to pre-construction level. Vegetation at various habitats with the associated fauna has been generally established and in healthy condition in terms of species diversity and abundance.

Figures

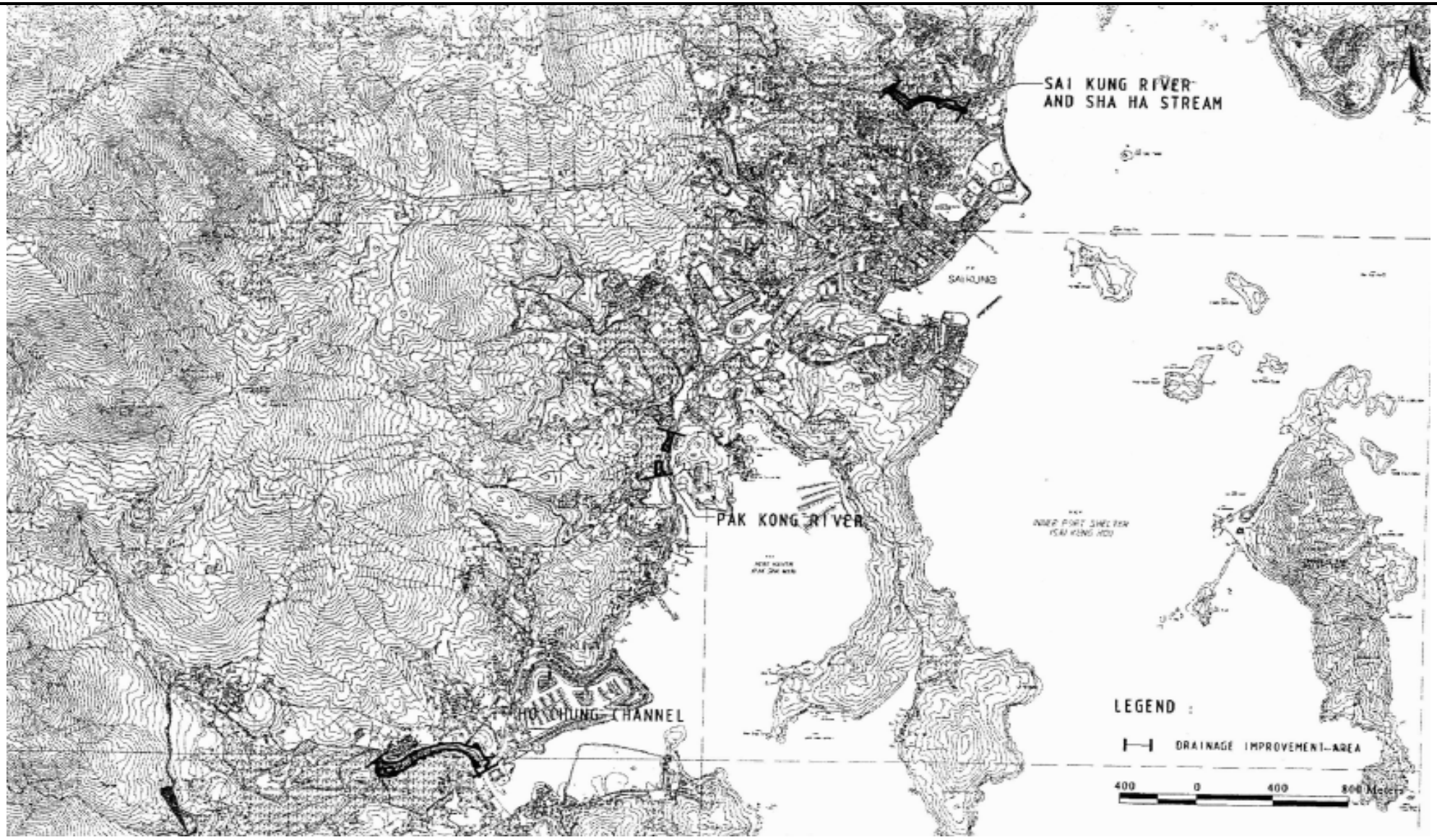


Figure: 1	ENVIRON
Title: Location Plan of Sai Kung River and Sha Ha Stream, Pak Kong River and Ho Chung Channel	Prepared By: CC Checked By: DY
Project: Drainage Services Department Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung	Revision: 1.0 Date: Jun 2011

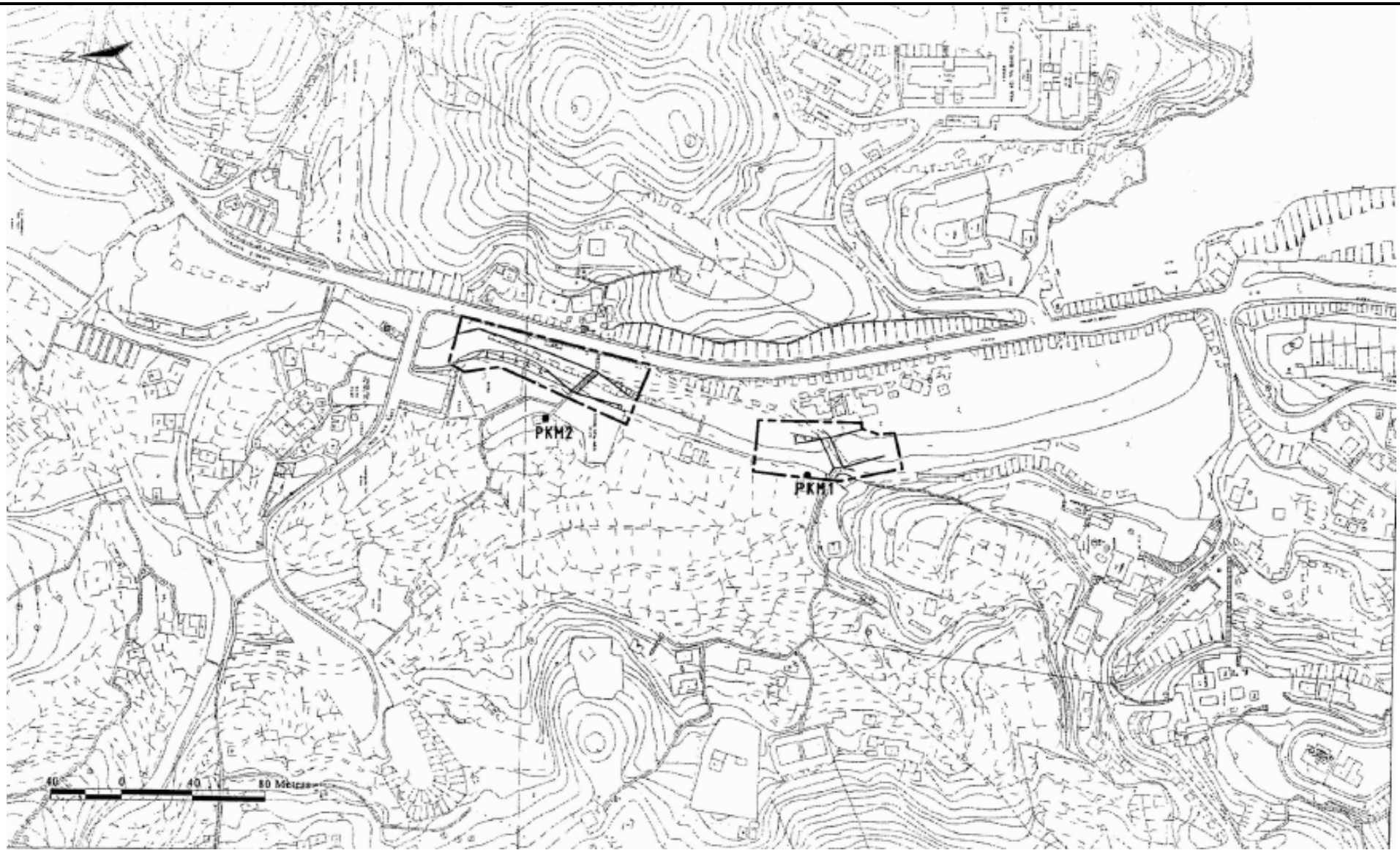


Figure: 2	ENVIRON
Title: Noise Monitoring Stations (Pak Kong River)	Prepared By: CC Checked By: DY
Project: Drainage Services Department Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung	Revision: 1.0 Date: Jun 2011

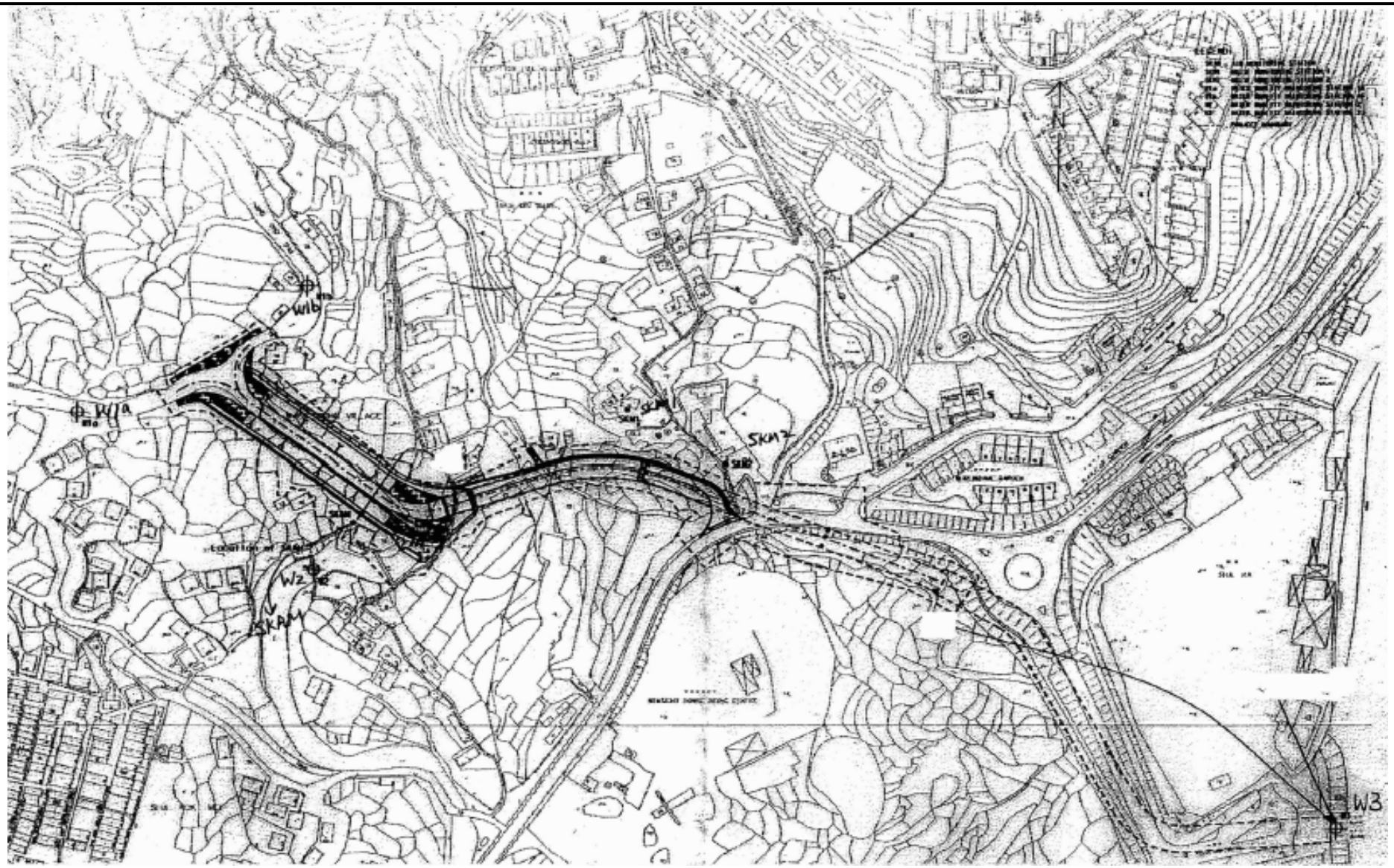


Figure:	3	ENVIRON
Title:	Noise & Water Quality Monitoring Stations	Prepared By: CC Checked By: DY
Project:	Drainage Services Department Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung	Revision: 1.0 Date: Jun 2011

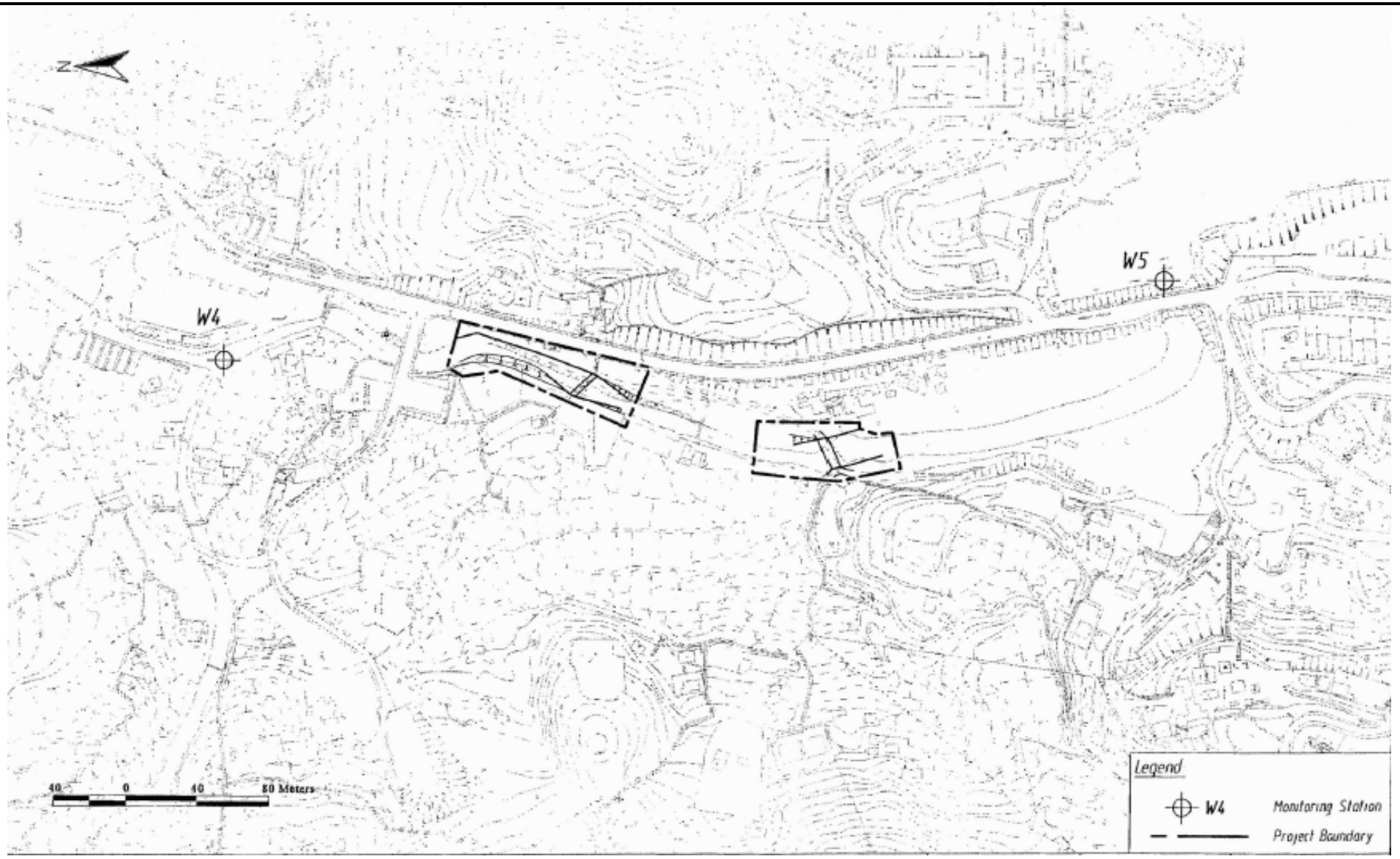


Figure: 4	ENVIRON
Title: Water Quality Monitoring Stations (Pak Kong River)	Prepared By: CC Checked By: DY
Project: Drainage Services Department Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung	Revision: 1.0 Date: Jun 2011

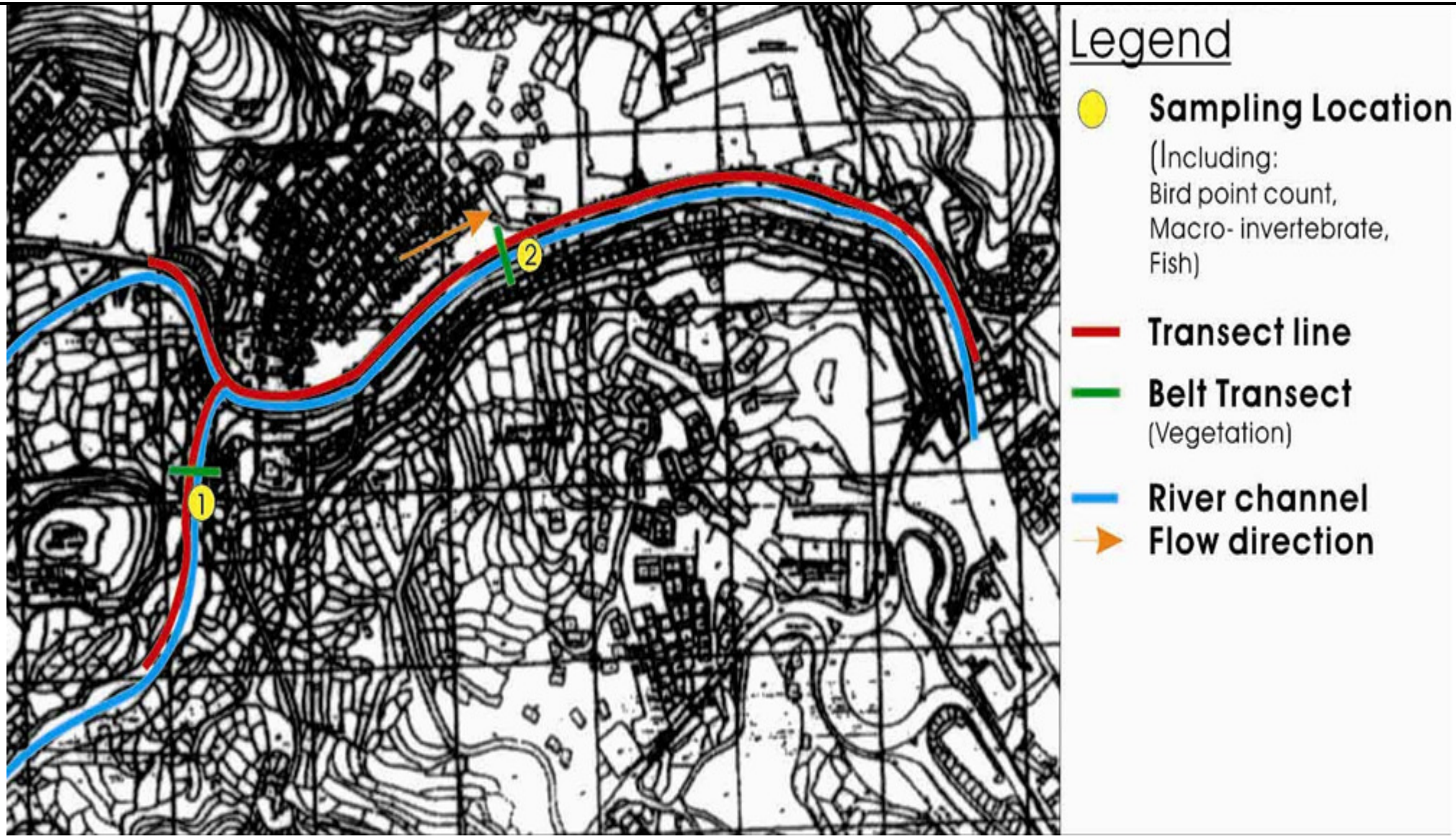


Figure: 5	ENVIRON
Title: Ecology sampling locations and transect at Ho Chung River	Prepared By: CC
	Checked By: DY
Project: Drainage Services Department Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung	Revision: 1.0
	Date: Sep 2011

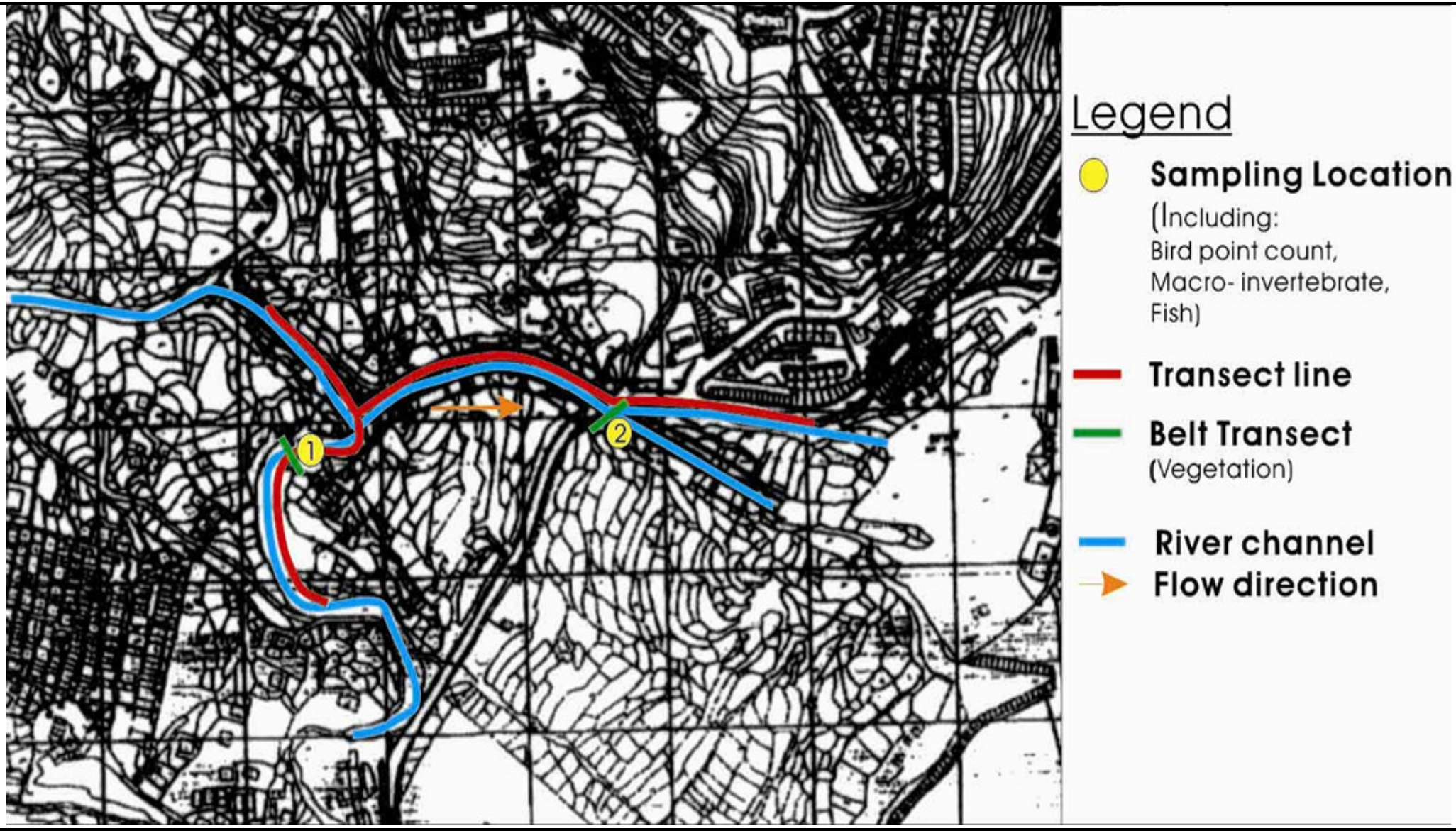
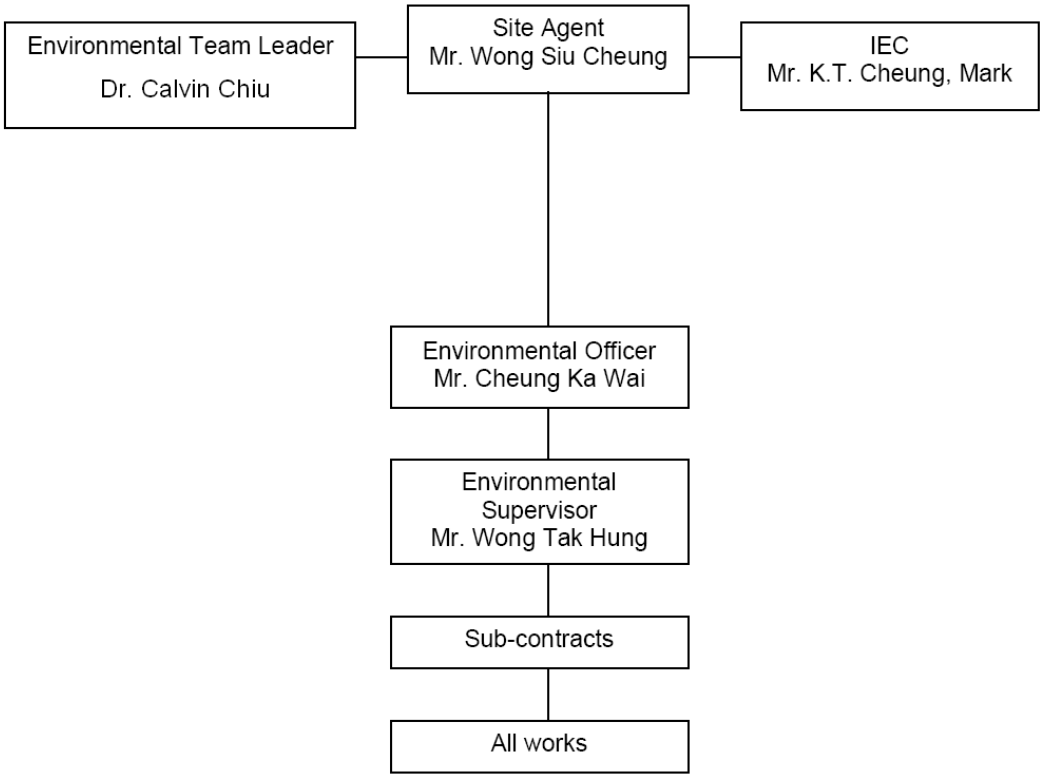


Figure: 6	ENVIRON
Title: Ecology sampling locations and transect at Sai Kung River	Prepared By: CC
	Checked By: DY
Project: Drainage Services Department Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung	Revision: 1.0
	Date: Sep 2011

Appendix A:
Project Organization

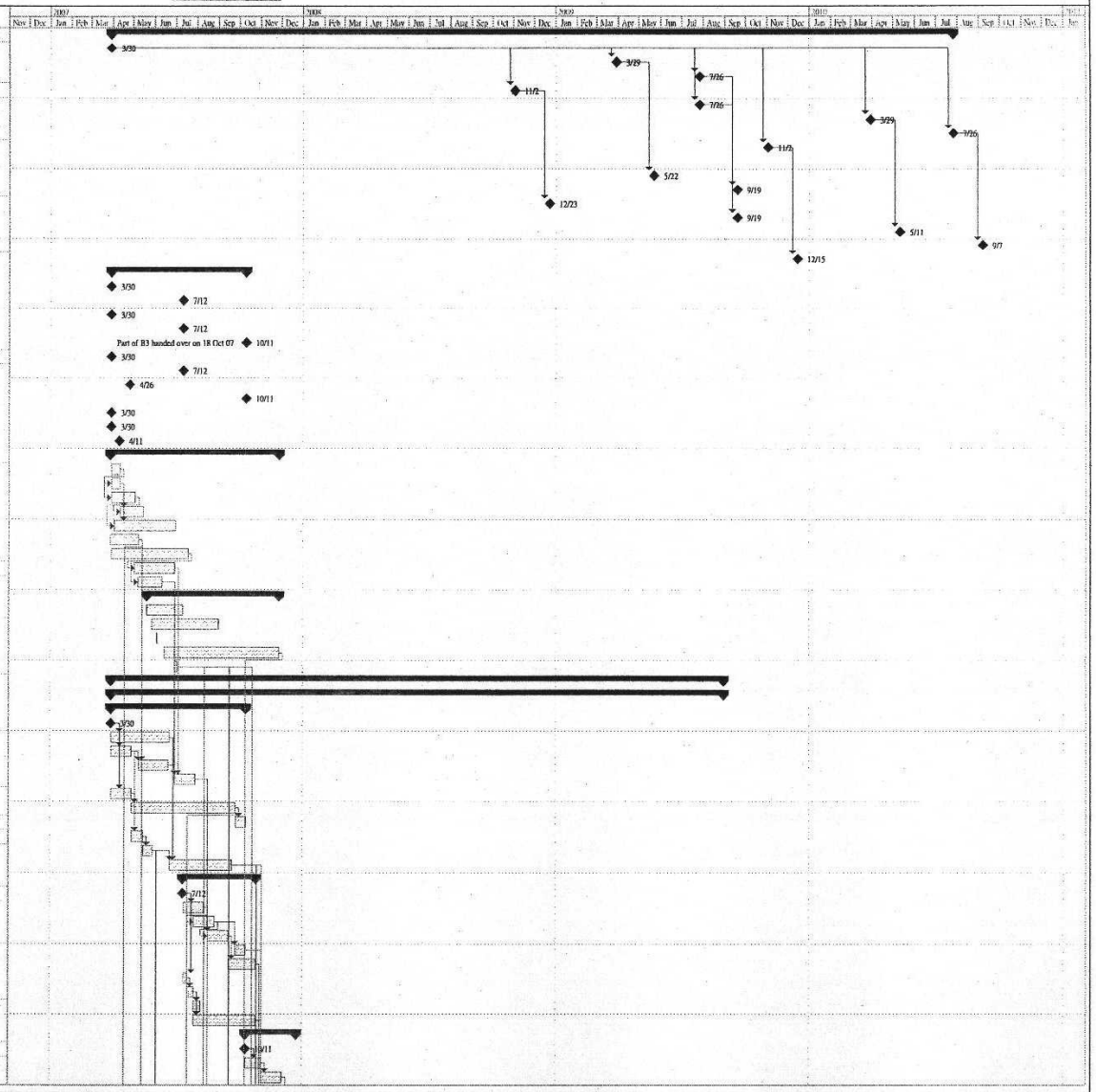

Environmental Team Leader
Dr. Calvin Chiu
Site Agent
Mr. Wong Siu Cheung
IEC
Mr. K.T. Cheung, Mark
Environmental Officer
Mr. Cheung Ka Wai
Environmental
Supervisor
Mr. Wong Tak Hung
Sub-contracts
All works

Appendix B:
Construction Programme

Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung

Master Programme

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Contract Key Dates**	**1215 days**	**07/3/30**	**10/7/26**	
2	Commencement of the Works	0 days	07/3/30	07/3/30	
3	Completion of Section I of the Works	0 days	09/3/29	09/3/29	2FS+731 days
4	Completion of Section II of the Works	0 days	09/7/26	09/7/26	2FS+850 days
5	Completion of Section III of the Works	0 days	08/11/2	08/11/2	2FS+584 days
6	Completion of Section IV of the Works	0 days	09/7/26	09/7/26	2FS+850 days
7	Completion of Section V of the Works	0 days	10/3/29	10/3/29	2FS+1096 days
8	Completion of Section VI of the Works	0 days	10/7/26	10/7/26	2FS+1215 days
9	Completion of Section VII of the Works	0 days	09/11/2	09/11/2	2FS+949 days
10	**Extended Completion Dates**				
11	Completion of Section I of the Works	0 days	09/5/22	09/5/22	3FS+54 days
12	Completion of Section II of the Works	0 days	09/9/19	09/9/19	4FS+54.5 days
13	Completion of Section III of the Works	0 days	08/12/23	08/12/23	5FS+50.5 days
14	Completion of Section IV of the Works	0 days	09/9/19	09/9/19	6FS+54.5 days
15	Completion of Section V of the Works	0 days	10/5/11	10/5/11	7FS+42.5 days
16	Completion of Section VI of the Works	0 days	10/9/7	10/9/7	8FS+42.5 days
17	Completion of Section VII of the Works	0 days	09/12/15	09/12/15	9FS+42.5 days
18	**Possession of Site**	**195 days**	**07/3/30**	**07/10/11**	
19	Portion A1	0 days	07/3/30	07/3/30	
20	Portion A2	0 days	07/7/12	07/7/12	
21	Portion B1	0 days	07/3/30	07/3/30	
22	Portion B2	0 days	07/7/12	07/7/12	
23	Portion B3	0 days	07/10/11	07/10/11	
24	Portion C1	0 days	07/3/30	07/3/30	
25	Portion C2	0 days	07/7/12	07/7/12	
26	Portion C3	0 days	07/4/26	07/4/26	
27	Portion C4	0 days	07/10/11	07/10/11	
28	Portion C5	0 days	07/3/30	07/3/30	
29	Portion D	0 days	07/3/30	07/3/30	
30	Portion E	0 days	07/4/11	07/4/11	
31	**Preliminary works**	**244 days**	**07/3/29**	**07/11/27**	
32	Handover of Portions D & E	13 days	07/3/30	07/4/11	
33	Portions D & E site clearance + Initial Survey	13 days	07/3/30	07/4/11	32
34	Prepare site offices layout for approval	15 days	07/3/30	07/5/3	32
35	Erection of Contractor's site office	34 days	07/4/12	07/5/15	34,33
36	Erection of ERS site office	80 days	07/4/3	07/6/30	34,33
37	Collect existing records from FTS	41 days	07/3/29	07/5/8	
38	Coordination with Villagers	111 days	07/3/30	07/7/18	
39	Environmental Baseline Monitoring	58 days	07/5/3	07/6/29	38
40	Condition Survey Proposal	35 days	07/5/8	07/6/11	38
41	**Submission under Environmental Permit**	**191 days**	**07/5/21**	**07/11/27**	
42	Commencement Date Notification (Item 1.11)	52 days	07/5/21	07/7/11	
43	Detailed Fish Ladder Design (Item 3.1)	96 days	07/5/28	07/8/31	
44	Stream Design Proposal (Item 3.2)	1 day	07/6/4	07/6/4	
45	Detailed Transplantation Proposal for Elmetia acuminata (Item 3.4)	166 days	07/6/15	07/11/27	
46	Baseline Monitoring Report (Item 4.3)	4 days	07/6/29	07/7/3	
47	**Section I**	**885 days**	**07/3/30**	**09/8/30**	
48	**Works in Portion B at Sha Ha**	**885 days**	**07/3/30**	**09/8/30**	
49	**Preliminary work at Portion B1**	**195 days**	**07/3/30**	**07/10/10**	
50	Handover of Portion B1	0 days	07/3/30	07/3/30	
51	Coordination with Villagers	85 days	07/3/30	07/6/22	50
52	Site clearance + Initial Survey	30 days	07/3/30	07/4/28	50
53	Utilities Detection	43 days	07/5/9	07/6/20	37,52
54	Erection of Hoarding	30 days	07/6/30	07/7/29	53,39,40
55	Preparation for G.I. works	30 days	07/3/30	07/4/28	50
56	NP Application (for G.I.)	150 days	07/4/29	07/9/25	55
57	G.I. & Instrument Installation	15 days	07/9/26	07/10/10	56
58	Trees Survey & Reporting	17 days	07/4/29	07/5/15	52
59	RE Comments on Tree Survey Report	14 days	07/5/16	07/5/29	58
60	Transplanting	90 days	07/6/23	07/9/20	51,59
61	**Preliminary work at Portion B2**	**106 days**	**07/7/12**	**07/10/25**	
62	Handover of Portion B2	0 days	07/7/12	07/7/12	
63	Site clearance + Initial Survey	30 days	07/7/13	07/8/11	62
64	Utilities Detection	30 days	07/7/28	07/8/26	63FS-15 days
65	Erection of Hoarding	30 days	07/8/17	07/9/15	64FS-10 days,54
66	G.I. & Instrument Installation	15 days	07/9/26	07/10/10	64
67	Demolish existing structures	40 days	07/9/16	07/10/25	65
68	Trees Survey & Reporting	5 days	07/7/13	07/7/17	62
69	RE Comments on Tree Survey Report	10 days	07/7/18	07/7/27	68
70	Trees Felling	10 days	07/7/28	07/8/6	69
71	Transplanting	90 days	07/7/28	07/10/25	69
72	**Preliminary work at Portion B3**	**74 days**	**07/10/11**	**07/12/23**	
73	Handover of Portion B3	0 days	07/10/11	07/10/11	
74	Site clearance + Initial Survey	23 days	07/10/11	07/11/2	73
75	Utilities Detection	30 days	07/11/3	07/12/2	74



Revision: 0.3c
Date: 19 Nov 08

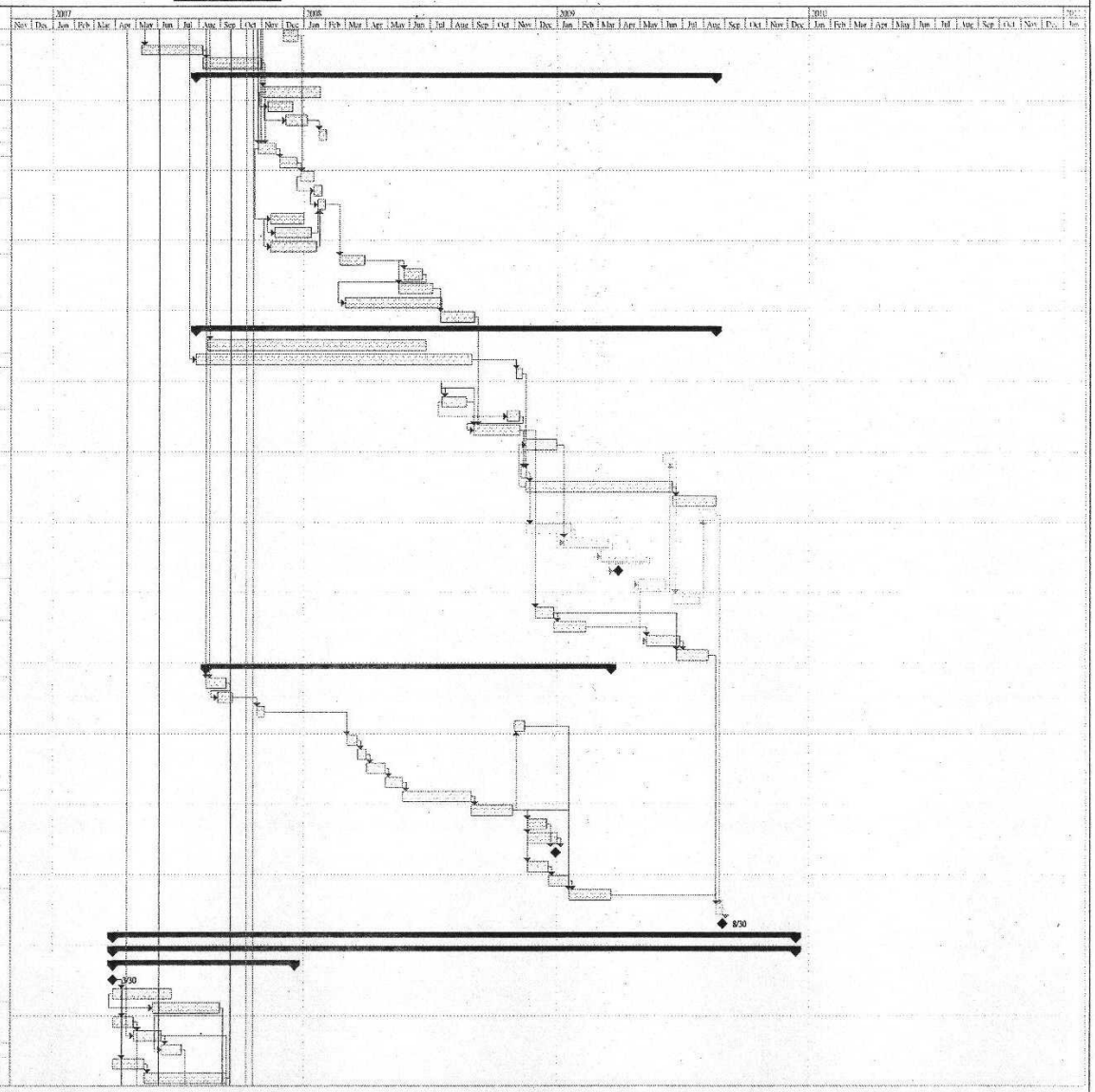
Task | Critical Task | Milestone | Summary

Sum Kee Construction Limited

Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung

Master Programme

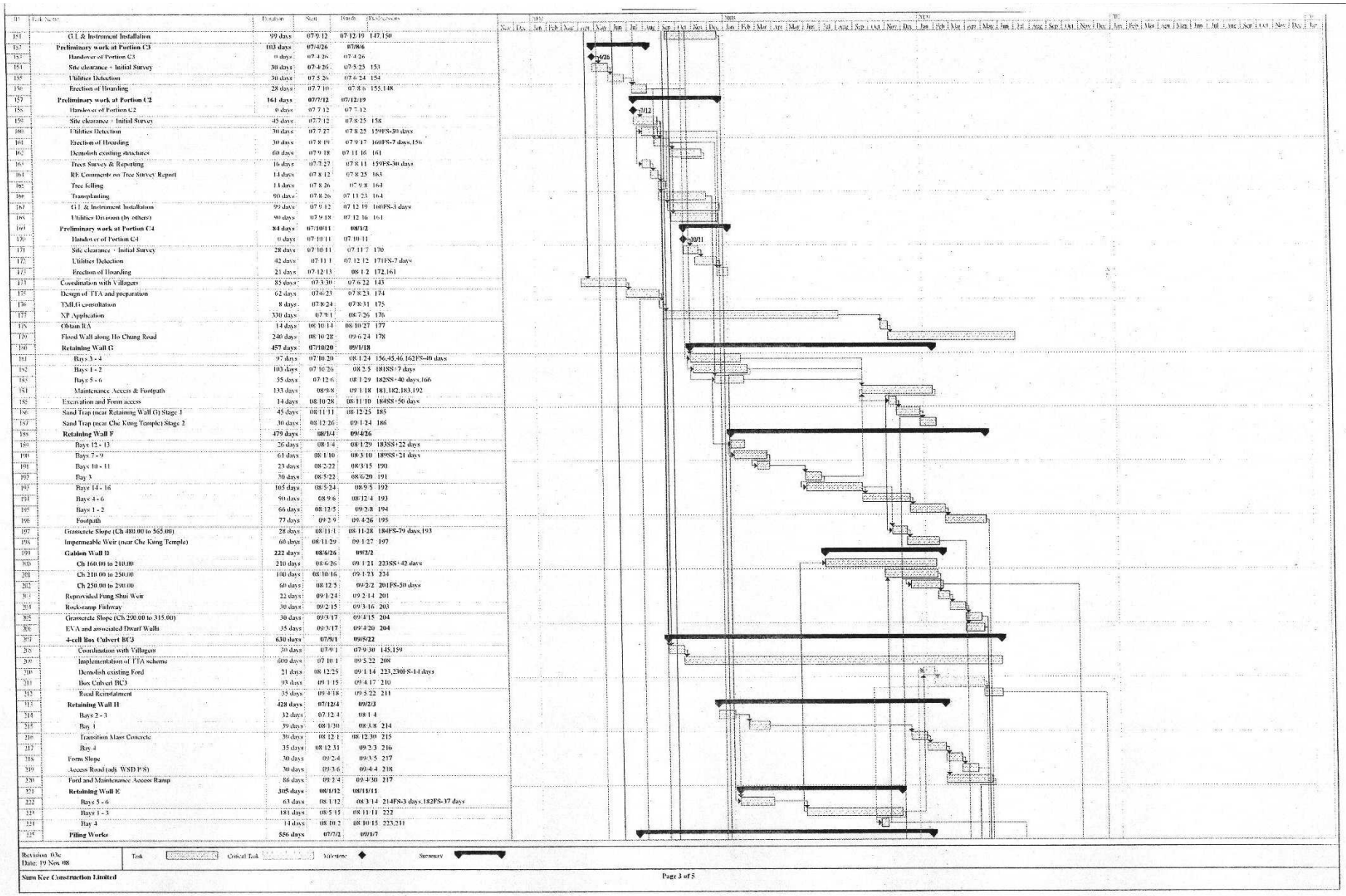
ID	Task Name	Duration	Start	Finish	Predecessors
76	Demolish existing structures	21 days	07/12/3	07/12/23	75
7	Coordinate & Prepare Utilities Diversion schemes	90 days	07/5/9	07/8/6	37
78	Utilities Diversion (by others)	86 days	07/8/7	07/10/31	77
79	**3-cells Box Culvert**	**754 days**	**07/7/28**	**09/8/19**	
80	Bay 19	83 days	07/11/3	08/1/24	71,66,60
81	Bay 18	36 days	07/11/10	07/12/15	80SS+10 days
82	Bay 17	31 days	07/12/6	08/1/5	81SS+21 days
83	Bay 16	11 days	08/1/23	08/2/2	82FS+4 days
84	Bay 2	26 days	07/10/27	07/11/21	78,71FS+4 days,67FS+4 days,60
85	Bay 3	25 days	07/11/27	07/12/21	84FS+4 days
86	Bay 4	19 days	07/12/27	08/1/14	85FS+4 days,76FS+2 days
87	Bay 5	12 days	08/1/15	08/1/26	86SS+10 days
88	Bay 6	11 days	08/1/21	08/1/31	87SS+10 days,91FS+12 days,90FS+2 days
89	Bay 9	48 days	07/11/14	07/12/31	84SS+21 days
90	Bay 7	52 days	07/11/20	08/1/10	89SS+3 days
91	Bay 8	66 days	07/11/14	08/1/18	89SS+3 days
92	Bay 1	36 days	08/2/22	08/3/28	88
93	Sand Trap	27 days	08/5/24	08/6/19	92
94	Bay 10	49 days	08/5/17	08/7/4	92
95	1-cell Box Culvert & Inlet Channel at Ch 50	139 days	08/3/1	08/7/17	93
96	Bay 11	50 days	08/7/16	08/9/3	94
97	**Temporary Traffic Diversion**	**754 days**	**07/7/28**	**09/8/19**	
98	TFA schemes preparation and coordination	316 days	07/8/14	08/6/24	63
99	XP Application	400 days	07/7/28	08/8/30	56
100	Obtain RA	9 days	08/11/3	08/11/11	99
101	Site clearance for V.O. 22	1 day	08/7/17	08/7/17	
102	Transplanting (V.O. 22)	36 days	08/7/18	08/8/22	101
103	Utilities Diversion (Street Lighting)	18 days	08/10/21	08/11/7	102SS
104	Form temporary road (Stage 1)	67 days	08/9/3	08/11/8	101,102,103,96FS-10 days
105	Utilities Diversion (Watermains, Sewer)	45 days	08/11/17	08/12/31	108SS
106	Form temporary road (Stage 2)	14 days	09/6/3	09/6/16	115FS-5 days
107	Inspection by TD RMO and Trial Run	8 days	08/11/10	08/11/17	104,100
108	Implementation of TFA (Stage 1)	212 days	08/11/17	09/6/16	107
109	Implementation of TFA (Stage 2)	64 days	09/6/17	09/8/19	106,108
110	Road reinstatement and Resume TFA	28 days	09/7/23	09/8/19	116FS-4 days
111	Bay 15	65 days	08/11/18	09/1/21	107
112	Bay 14	65 days	09/1/11	09/3/16	111FS-11 days,105
113	Bay 13	65 days	09/3/6	09/5/9	112FS-11 days
114	Provision of Flow to Downstream	1 day	09/3/31	09/3/31	113FS-40 days
115	Bay 12b	40 days	09/4/29	09/6/7	113FS-11 days
116	Bay 12a	40 days	09/6/17	09/7/26	106
117	Footpath diversion at Bay 2	27 days	08/12/1	08/12/27	104
118	Access Road (stage 1)	46 days	08/12/28	09/2/11	117
119	Access Road (stage 2)	48 days	09/5/11	09/6/27	118,115FS-28 days
120	Landscaping Works	47 days	09/6/23	09/8/8	117,119FS-5 days
121	**Widening and Deepening of Sai Kung River**	**587 days**	**07/8/12**	**09/3/20**	
122	Form access	30 days	07/8/12	07/9/10	63,46
123	Demolish existing structures	22 days	07/8/29	07/9/19	122
124	Gabion Wall A (Layers 1-2)	11 days	07/10/26	07/11/5	123
125	Gabion Wall A (Layers 3-4)	15 days	08/11/1	08/11/15	131
126	Dry Weather Flow Intereceptor (Bays 1 - 6)	15 days	08/3/4	08/3/18	124
127	Forming new River Bed	13 days	08/3/19	08/3/31	126
128	Grasscrete Slope (Ch -150.00)	27 days	08/4/1	08/4/27	127
129	Grasscrete Slope (Ch -120.00 to -145.00)	24.5 days	08/4/28	08/5/22	128
130	Gabion Wall B (Layers 1-2)	100 days	08/5/23	08/8/30	129
131	Gabion Wall B (Layers 3-4)	60 days	08/8/31	08/10/29	130
132	Dry Weather Flow Intereceptor (Bays 7 - 8)	28 days	08/11/20	08/12/17	131
133	Low Flow Diversion Dam	43 days	08/11/20	09/1/1	131
134	Limit Water Flow to Sai Kung River (Downstream)	1 day	08/12/31	08/12/31	133,132
135	Grasscrete Slope (Ch 0.00 to -35.00)	30 days	08/11/20	08/12/19	131
136	Landscaping Works	30 days	08/12/20	09/1/18	135
137	2m Verge and 225 U-channel	61 days	09/1/19	09/3/20	125,131,136
138	Site Clean up	10 days	09/8/20	09/8/29	120,137,110
139	Handover	1 day	09/8/30	09/8/30	138
140	**Section II**	**990 days**	**07/3/30**	**09/12/13**	
141	**Works in Portion C at Ho Chung**	**990 days**	**07/3/30**	**09/12/13**	
142	**Preliminary work at Portions C1 & C5**	**265 days**	**07/3/30**	**07/12/19**	
143	Handover of Portions C1 & C5	0 days	07/3/30	07/3/30	
144	Consultation with Villagers	85 days	07/3/30	07/6/22	143
145	Relocation of Fung Shui Fish (by Villagers)	98 days	07/5/26	07/8/31	144SS+50 days
146	Site clearance + Initial Survey	30 days	07/3/30	07/4/28	143
147	Utilities Detection	40 days	07/4/29	07/6/7	37,146
148	Erection of Hoarding	30 days	07/6/8	07/7/7	147,145
149	Preparation for G.I. works	45 days	07/3/30	07/5/13	143
150	XP Application (for G.I.)	121 days	07/5/14	07/9/11	149



Revision: 0.1c
Date: 19 Nov 08

Task | Critical Task | Milestone | Summary

Sum Kee Construction Limited



ID	Task Name	Duration	Start	Finish	Predecessors
151	G I & Instrument Installation	99 days	07/9/12	07/12/19	147,150
152	**Preliminary work at Portion C3**	**103 days**	**07/4/26**	**07/8/6**	
153	Handover of Portion C3	0 days	07/4/26	07/4/26	
154	Site clearance + Initial Survey	30 days	07/4/26	07/5/25	153
155	Utilities Detection	30 days	07/5/26	07/6/24	154
156	Erection of Hoarding	28 days	07/7/10	07/8/6	155,148
157	**Preliminary work at Portion C2**	**161 days**	**07/7/12**	**07/12/19**	
158	Handover of Portion C2	0 days	07/7/12	07/7/12	
159	Site clearance + Initial Survey	45 days	07/7/12	07/8/25	158
160	Utilities Detection	30 days	07/7/27	07/8/25	159FS-30 days
161	Erection of Hoarding	30 days	07/8/19	07/9/17	160FS-7 days,156
162	Demolish existing structures	60 days	07/9/18	07/11/16	161
163	Trees Survey & Reporting	16 days	07/7/27	07/8/11	159FS-30 days
164	RE Comments on Tree Survey Report	14 days	07/8/12	07/8/25	163
165	Tree felling	14 days	07/8/26	07/9/8	164
166	Transplanting	90 days	07/8/26	07/11/23	164
167	G I & Instrument Installation	99 days	07/9/12	07/12/19	160FS-3 days
168	Utilities Diversion (by others)	90 days	07/9/18	07/12/16	161
169	**Preliminary work at Portion C4**	**84 days**	**07/10/11**	**08/1/2**	
170	Handover of Portion C4	0 days	07/10/11	07/10/11	
171	Site clearance + Initial Survey	28 days	07/10/11	07/11/7	170
172	Utilities Detection	42 days	07/11/1	07/12/12	171FS-7 days
173	Erection of Hoarding	21 days	07/12/13	08/1/2	172,161
174	Coordination with Villagers	85 days	07/3/30	07/6/22	143
175	Design of TTA and preparation	62 days	07/6/23	07/8/23	174
176	TMLG consultation	8 days	07/8/24	07/8/31	175
177	NP Application	330 days	07/9/1	08/7/26	176
178	Obtain RA	14 days	08/10/14	08/10/27	177
179	Flood Wall along Ho Chung Road	240 days	08/10/28	09/6/24	178
180	**Retaining Wall G**	**457 days**	**07/10/20**	**09/1/18**	
181	Bays 3 - 4	97 days	07/10/20	08/1/24	156,45,46,162FS+40 days
182	Bays 1 - 2	103 days	07/10/26	08/2/5	181SS+7 days
183	Bays 5 - 6	55 days	07/12/6	08/1/29	182SS+40 days,166
184	Maintenance Access & Footpath	133 days	08/9/8	09/1/18	181,182,183,192
185	Excavation and Form access	14 days	08/10/28	08/11/10	184SS+50 days
186	Sand Trap (near Retaining Wall G) Stage 1	45 days	08/11/11	08/12/25	185
187	Sand Trap (near Che Kung Temple) Stage 2	30 days	08/12/26	09/1/24	186
188	**Retaining Wall F**	**479 days**	**08/1/4**	**09/4/26**	
189	Bays 12 - 13	26 days	08/1/4	08/1/29	183SS+22 days
190	Bays 7 - 9	61 days	08/1/10	08/3/10	189SS+21 days
191	Bays 10 - 11	23 days	08/2/22	08/3/15	190
192	Bay 3	30 days	08/5/22	08/6/29	191
193	Bays 14 - 16	105 days	08/5/24	08/9/5	192
194	Bays 4 - 6	90 days	08/9/6	08/12/4	193
195	Bays 1 - 2	66 days	08/12/5	09/2/8	194
196	Footpath	77 days	09/2/9	09/4/26	195
197	Grasscrete Slope (Ch 480.00 to 565.00)	28 days	08/11/1	08/11/28	184FS-79 days,193
198	Impermeable Weir (near Che Kung Temple)	60 days	08/11/29	09/1/27	197
199	**Gabion Wall B**	**222 days**	**08/6/26**	**09/2/2**	
200	Ch 160.00 to 210.00	210 days	08/6/26	09/1/21	223SS+42 days
201	Ch 210.00 to 250.00	100 days	08/10/16	09/1/23	224
202	Ch 250.00 to 290.00	60 days	08/12/5	09/2/2	201FS-50 days
203	Reprovided Fung Shui Weir	22 days	09/1/24	09/2/14	201
204	Rock-ramp Fishway	30 days	09/2/15	09/3/16	203
205	Grasscrete Slope (Ch 290.00 to 315.00)	30 days	09/3/17	09/4/15	204
206	EVA and associated Dwarf Walls	35 days	09/3/17	09/4/20	204
207	**4-cell Box Culvert BC3**	**630 days**	**07/9/1**	**09/5/22**	
208	Coordination with Villagers	30 days	07/9/1	07/9/30	145,159
209	Implementation of TTA scheme	600 days	07/10/1	09/5/22	208
210	Demolish existing Ford	21 days	08/12/25	09/1/14	223,230FS-14 days
211	Box Culvert BC3	93 days	09/1/15	09/4/17	210
212	Road Reinstatment	35 days	09/4/18	09/5/22	211
213	**Retaining Wall H**	**428 days**	**07/12/4**	**09/2/3**	
214	Bays 2 - 3	32 days	07/12/4	08/1/4	
215	Bay 1	39 days	08/1/30	08/3/8	214
216	Transition Mass Concrete	30 days	08/12/1	08/12/30	215
217	Bay 4	35 days	08/12/31	09/2/3	216
218	Form Slope	30 days	09/2/4	09/3/5	217
219	Access Road (adj. WSD P/S)	30 days	09/3/6	09/4/4	218
220	Ford and Maintenance Access Ramp	86 days	09/2/4	09/4/30	217
221	**Retaining Wall E**	**305 days**	**08/1/12**	**08/11/11**	
222	Bays 5 - 6	63 days	08/1/12	08/3/14	214FS-3 days,182FS-37 days
223	Bays 1 - 3	181 days	08/5/15	08/11/11	222
224	Bay 4	14 days	08/10/2	08/10/15	223,211
225	**Piling Works**	**556 days**	**07/7/2**	**09/1/7**	

Revision 03e
Date: 19 Nov 08

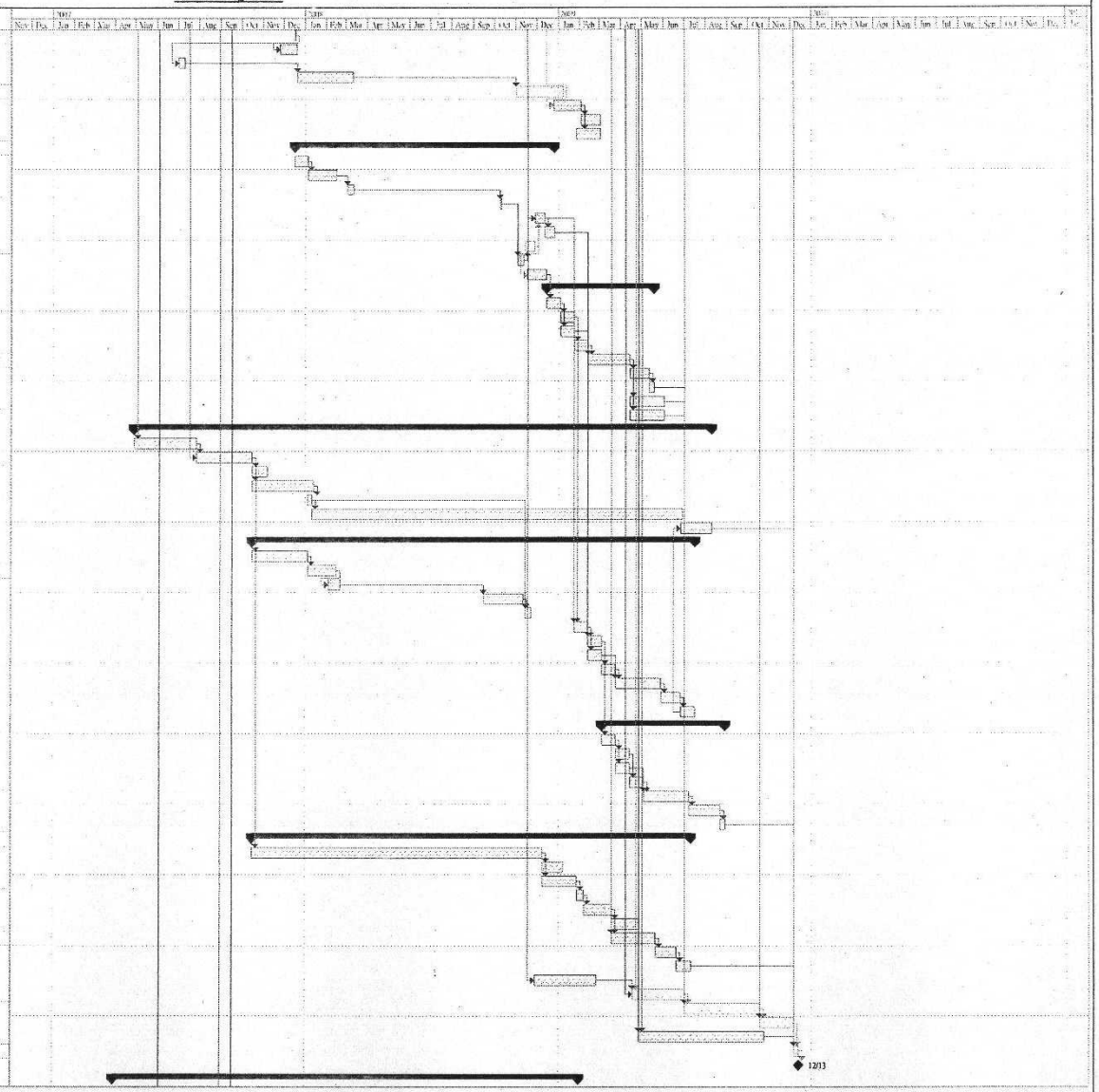
Task | Critical Task | Milestone | Summary

Sum Kee Construction Limited

Contract No. DC/2096/01 - Drainage Improvement Works in Sai Kung

Master Programme

ID	Task Name	Duration	Start	Finish	Predecessors
226	Confirmation of Alignment	1 day	07/12/18	07/12/18	160,151
227	Erection of temporary working platform	25 days	07/11/26	07/12/20	226
228	Utilities Diversion (by others)	9 days	07/7/2	07/7/10	226
229	Soldier Pile Wall	82 days	07/12/21	08/3/11	228
230	Lagging Wall & Capping Beam	68 days	08/1/1	09/1/7	229
231	Impermeable Weir (adj. WSD P/S)	40 days	08/12/25	09/2/2	230FS-14 days
232	Permeable Weir (adj. WSD P/S)	28 days	09/2/3	09/3/2	231
233	Inlet Channel (adj. WSD P/S)	35 days	09/1/27	09/3/2	231FS-7 days
234	**Mini-Piles for Footbridges**	**375 days**	**07/12/17**	**08/12/25**	
235	Pre-drilling (6 nos.) & Reporting	19 days	07/12/17	08/1/4	
236	Confirmation of Tentative Rockhead Level	42 days	08/1/5	08/2/15	235
237	Mini-piles (4 nos.) FB1 Cap 2	10 days	08/3/3	08/3/12	236
238	Mini-piles (4 nos.) FB1 Cap 1	2 days	08/10/9	08/10/10	237
239	Mini-piles (4 nos.) FB2 Cap 1	14 days	08/11/28	08/12/11	241,201FS-57 days
240	Mini-piles (4 nos.) FB2 Cap 2	14 days	08/12/12	08/12/25	239
241	Mini-piles (8 nos.) FB3 Cap 1 (V.O. 42)	14 days	08/11/14	08/11/27	242
242	Mini-piles (4 nos.) FB3 Cap 2 (V.O. 42)	9 days	08/11/3	08/11/11	238
243	Mini-piles Load Testing (2 nos.)	28 days	08/11/17	08/12/14	241
244	**Footbridge FB1**	**155 days**	**08/12/15**	**09/5/18**	
245	Pile Cap 1	20 days	08/12/15	09/1/3	243
246	Pile Cap 2	20 days	09/1/4	09/1/23	245
247	Pier (Cap 1)	20 days	09/1/4	09/1/23	245
248	Pier (Cap 2)	20 days	09/1/24	09/2/12	246
249	Bridge Deck	60 days	09/2/13	09/4/13	248,247
250	Utilities Remove / Diversion (by others)	28 days	09/4/14	09/5/11	249
251	Demolish Existing Footbridge	7 days	09/5/12	09/5/18	250
252	Footpath	50 days	09/4/14	09/6/2	249
253	Grasscrete Slope (Ch 0.00 to 30.00)	50 days	09/4/14	09/6/2	249
254	**Temporary Traffic Diversion (for FB2)**	**834 days**	**07/4/29**	**09/8/9**	
255	Coordination with Public (incl. Green Minibus)	90 days	07/4/29	07/7/27	146
256	Design of TTA and preparation	80 days	07/7/28	07/10/15	255,175
257	TMLG consultation	22 days	07/10/16	07/11/6	256
258	XP Application	90 days	07/10/16	08/1/13	256
259	Obtain RA	7 days	08/1/4	08/1/10	258
260	Implementation of TTA schemes	535 days	08/1/11	09/6/28	259
261	Road reinstatement and Resume TTA	45 days	09/6/26	09/8/9	274SS
262	**Footbridge FB2 (V.O. 20)**	**640 days**	**07/10/16**	**09/7/16**	
263	Design of Temporary Pipe Bridge	81 days	07/10/16	08/1/4	256
264	Off-site Pre-fabrication of Temporary Pipe Bridge	42 days	08/1/5	08/2/15	263
265	Erection of Temporary Pipe Bridge	18 days	08/2/4	08/2/21	264
266	Utilities Remove / Diversion (by others)	57 days	08/9/15	08/11/10	265
267	Demolish Existing Footbridge	9 days	08/11/14	08/11/22	266,259
268	Pile Cap 1	20 days	09/1/24	09/2/12	246,249
269	Pile Cap 2	20 days	09/2/13	09/3/4	268,240
270	Pier (Cap 1)	20 days	09/2/13	09/3/4	268
271	Pier (Cap 2)	20 days	09/3/5	09/3/24	269
272	Bridge Deck	65 days	09/3/25	09/5/28	270,271
273	Permanent Utilities Diversion (by others)	28 days	09/5/29	09/6/25	272
274	Remove Temporary Footbridge	21 days	09/6/26	09/7/16	273
275	**Footbridge FB3 (V.O. 42)**	**177 days**	**09/3/5**	**09/8/28**	
276	Pile Cap 1	20 days	09/3/5	09/3/24	269
277	Pile Cap 2	20 days	09/3/25	09/4/13	276
278	Pier (Cap 1)	20 days	09/3/25	09/4/13	276
279	Pier (Cap 2)	20 days	09/4/14	09/5/3	277
280	Bridge Deck	65 days	09/5/4	09/7/7	278,279
281	Utilities Remove / Diversion (by others)	45 days	09/7/8	09/8/21	280
282	Demolish Existing Footbridge	7 days	09/8/22	09/8/28	281
283	**Associated Drainage Pipes**	**634 days**	**07/10/16**	**09/7/10**	
284	Design of TTA and preparation	420 days	07/10/16	08/12/8	256
285	TMLG consultation	30 days	08/12/9	09/1/7	284
286	XP Application	50 days	08/12/9	09/1/27	284
287	Obtain RA	10 days	09/1/28	09/2/6	286
288	Concrete pipe (dia. 1650mm) laying	40 days	09/2/7	09/3/18	287
289	Modify Existing Manhole (near Ch. 360)	40 days	09/3/19	09/4/27	288
290	Twin concrete pipes (dia. 1650mm) laying	63 days	09/3/19	09/5/20	198,288
291	Headwall (near Che Kung Temple)	30 days	09/5/21	09/6/19	290
292	Road Reinstatement	21 days	09/6/20	09/7/10	291
293	Removal of Haul Road to Form New River Bed (Stage 1)	89 days	08/11/28	09/2/24	186FS-28 days
294	Removal of Haul Road to Form New River Bed (Stage 2)	75 days	09/4/18	09/7/1	211,293,220FS-30 days
295	Removal of Haul Road to Form New River Bed (Stage 3)	108 days	09/7/2	09/10/17	294,251,252,253,224
296	Removal of Haul Road to Form New River Bed (Stage 4)	49 days	09/10/18	09/12/5	202,295
297	Landscaping Works	180 days	09/4/27	09/10/23	196,205FS-13 days,206FS-18 days,219
298	Site Clean up	7 days	09/12/6	09/12/12	297,282,292,261,212,296
299	Handover	1 day	09/12/13	09/12/13	298
300	**Section III**	**673 days**	**07/3/30**	**09/1/30**	



Revision 03c
Date: 19 Nov 08

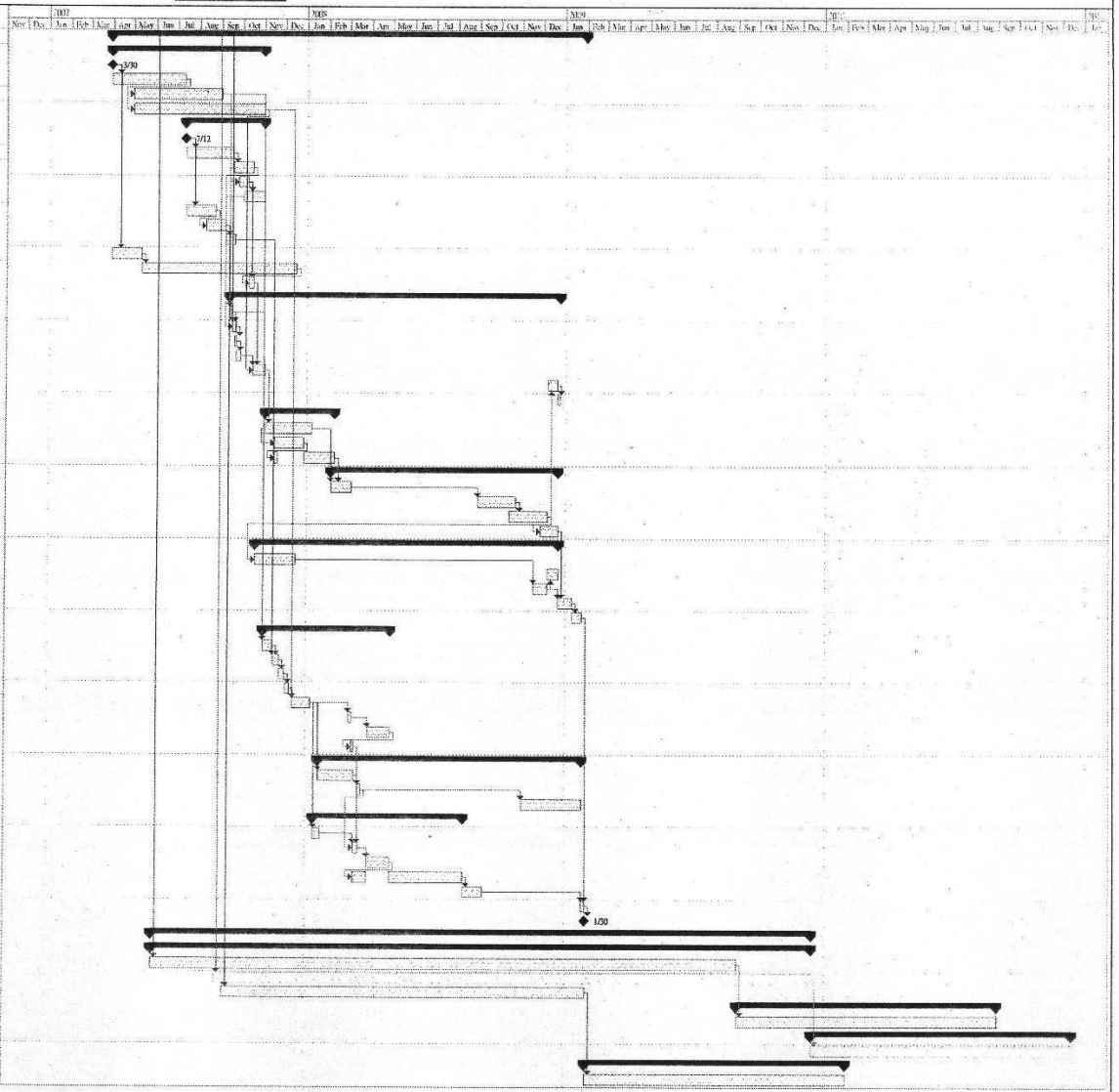
Task | Critical Task | Milestone | Summary

Sum Kee Construction Limited

Contract No. DC/2006/01 - Drainage Improvement Works in Sai Kung

Master Programme

ID	Task Name	Duration	Start	Finish	Predecessors
301	**Works in Portion A at Pak Kong**	**673 days**	**07/3/30**	**09/1/30**	
302	**Preliminary work at Portion A1**	**216 days**	**07/3/30**	**07/10/31**	
303	Handover of Portion A1	0 days	07 3 30	07 3 30	
304	Consultation with Villagers	104 days	07 3 30	07 7 11	303
305	Design of temporary bridges	124 days	07 4 30	07 8 31	304
306	Design of temporary drainage diversion schemes	185 days	07 4 30	07 10 31	304
307	**Preliminary work at Portion A2**	**112 days**	**07/7/12**	**07/10/31**	
308	Handover of Portion A2	0 days	07 7 12	07 7 12	
309	Pending for Removal Abandon Cars	67 days	07 7 13	07 9 17	308
310	Site clearance + Initial Survey	28 days	07 9 18	07 10 15	309
311	Utilities Detection	14 days	07 9 25	07 10 8	310SS+7 days
312	Erection of Hoarding	30 days	07 10 2	07 10 31	311FS+7 days
313	Trees Survey & Reporting	42 days	07 7 13	07 8 21	308
314	RE Comments on Tree Survey Report	28 days	07 8 10	07 9 6	313
315	Tree felling	14 days	07 9 7	07 9 20	314
316	Preparation for G.I. works	43 days	07 3 30	07 5 11	303
317	NP Application (for G.I.)	219 days	07 5 12	07 12 16	316
318	G.I. & Instrument Installation	7 days	07 10 10	07 10 16	311,317
319	**3-cell Box Culvert BC1**	**469 days**	**07/9/13**	**08/12/24**	
320	Off-site Pre-fabrication of Temporary Footbridge	3 days	07 9 13	07 9 15	305
321	Erection of Temporary Footbridge	5 days	07 9 17	07 9 21	310FS-5 days,320,312SS+6 days,46
322	Temporary Utilities Diversion (by others)	3 days	07 9 20	07 9 22	321
323	Demolish Existing Footbridge	7 days	07 9 22	07 9 28	322
324	Box Culvert BC1	18 days	07 10 16	07 11 2	323,306,318FS-25 days
325	Permanent Utilities Diversion (by others)	14 days	08 12 7	08 12 20	334
326	Remove Temporary Footbridge	4 days	08 12 21	08 12 24	325
327	**Retaining Wall B**	**98.2 days**	**07/11/3**	**08/2/9**	
328	Bays 1 - 2	67 days	07 11 3	08 1 8	324FS-9 days
329	Bays 3 - 4	42 days	07 11 16	07 12 27	328SS+15 days
330	Transition Mass Concrete	38 days	07 11 16	08 2 9	329
331	**Retaining Wall A**	**322 days**	**08/2/4**	**08/12/21**	
332	Bays 7 - 8	29 days	08 2 4	08 3 3	328,330
333	Bays 5 - 6 (V.O. 26)	55 days	08 8 29	08 10 22	332
334	Bays 1 - 4	55 days	08 10 13	08 12 6	333FS-25 days
335	Transition Mass Concrete	25 days	08 11 27	08 12 21	334FS-10 days
336	**Gabion Wall C**	**430 days**	**07/10/20**	**08/12/22**	
337	Transition Mass Concrete (to Retaining Wall B)	58 days	07 10 20	07 12 16	334
338	Transition Mass Concrete (to existing)	16 days	08 12 7	08 12 22	339
339	Bays 1 - 4	20 days	08 11 17	08 12 6	337
340	Grasscrete Slope	20 days	08 12 22	09 1 10	339,335
341	Landscaping Works	14 days	09 1 11	09 1 24	340
342	**3-cell Box Culvert BC2**	**180 days**	**07/11/1**	**08/4/28**	
343	Off-site Pre-fabrication of Temporary Vehicle Bridge	14 days	07 11 1	07 11 14	303,320
344	Erection of Temporary Vehicle Bridge	9 days	07 11 15	07 11 23	343,315
345	Temporary Utilities Diversion (by others)	8 days	07 11 24	07 12 1	344
346	Demolish Existing Vehicle Bridge	6 days	07 12 3	07 12 8	345
347	Box Culvert BC2	26 days	07 12 13	08 1 7	346,306
348	Road Reinstatement	5 days	08 3 1	08 3 5	347
349	Permanent Utilities Diversion (by others)	32 days	08 3 28	08 4 28	348
350	Remove Temporary Vehicle Bridge	4 days	08 3 5	08 3 8	349
351	**Retaining Wall D**	**372 days**	**08/1/19**	**09/1/24**	
352	Bay 2 and Transition Mass Concrete	50 days	08 1 19	08 3 8	347
353	Bay 1	5 days	08 3 14	08 3 18	352,350
354	Mass Concrete Wall (V.O. 18)	85 days	08 11 1	09 1 24	353
355	**Retaining Wall C**	**211 days**	**08/1/12**	**08/8/9**	
356	Bay 1	10 days	08 1 12	08 1 21	347FS-3 days
357	Bay 2	7 days	08 3 8	08 3 14	356,353,350
358	Permanent Utilities Diversion (by others)	32 days	08 3 28	08 4 28	357
359	Transition Mass Concrete	123 days	08 3 8	08 8 9	358
360	Landscaping Works	28 days	08 8 10	08 9 6	359
361	Site Clean up	5 days	09 1 25	09 1 29	360,341,354
362	Handover	1 day	09 1 30	09 1 30	361
363	**Section IV**	**929 days**	**07/5/30**	**09/12/13**	
364	**Preservation and Protection of Existing Trees**	**929 days**	**07/5/30**	**09/12/13**	
365	Sha Ha area	824 days	07 5 30	09 8 30	59
366	Ho Chung area	840 days	07 8 27	09 12 13	164
367	Pak Kong area	512 days	07 9 7	09 1 30	314
368	**Section V**	**365 days**	**09/8/31**	**10/8/30**	
369	Establishment Works for Sha Ha area	365 days	09 8 31	10 8 30	365
370	**Section VI**	**365 days**	**09/12/14**	**10/12/13**	
371	Establishment Works for Ho Chung area	365 days	09 12 14	10 12 13	369
372	**Section VII**	**365 days**	**09/1/31**	**10/1/30**	
373	Establishment Works for Pak Kong area	365 days	09 1 31	10 1 30	367



Revision 03c
Date: 19 Nov 08

Task | Critical Task | Milestone | Summary

Sum Kee Construction Limited

Appendix C:
Event and Action Plan

Event/ Action Plan for Air Quality

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
1. Receipt of complaint related to construction dust	1. Identify source, investigate the causes of complaints and propose remedial measures; 2. Inform IC(E) and ER; 3. Conduct *ad hoc* monitoring to confirm finding; 4. Carrying out investigation to identify the source /reasons of complaints. Investigation shall be completed within 1 weeks; 5. Rectify any unacceptable practice; 6. Amended working methods if required; 7. Correspond to the complainant within 10 days to inform the cause of the nuisance and action taken.	1. Supervise Investigation process; 2. Check monitoring data submitted by ET; 3. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Assist ET to find the root cause of the complaint; 3. Amend working methods if appropriate.
LIMIT LEVEL				
1. Exceedance for two *ad hoc* monitoring sample or more complaints in 3 months	1. Identify source, investigate the causes of exceedance/complaints and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Carrying out investigation to identify the source /reasons of complaints. Investigation shall be completed within 1 weeks; 5. Correspond to the complainant within 10 days to inform the cause of the nuisance and action taken; 4. Increase monitoring frequency to daily; 6. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; 7. If exceedance stops, cease *ad hoc* monitoring.	1. Supervise Investigation process; 2. Check monitoring data submitted by ET; 3. Check Contractor's working method; 4. Discuss with ET and Contractor on possible remedial measures; 5. Advise the ER on the effectiveness of the proposed remedial measures; 6. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented; 4. If exceedance continues, consider what portion of the work is responsible and instruct the contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
	1. Undertake measurement to establish validity of complaint. 2. Identify the source(s) of the complaint. 3. Inform ER & IC(E) in writing. Discuss remedial actions required with ER & IC(E). 4. Increase monitoring frequency to assess efficacy of remedial measures. 5. If exceedance continues, meet with ER&IC(E) to review implementation of appropriate mitigation measures. 6. If exceedance stops, cease additional monitoring.	1. Review the analyzed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the ER & ET accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of complaint and notify Contractor if proven. 2. Check monitoring data trends and Contractor's working methods. 3. Remind the Contractor of his contractual obligations and discuss with ET, IC(E) and Contractor on proposed remedial actions. 4. Assess the efficacy of remedial actions and keep the Contractor informed. 5. Inform complainant of actions taken.	1. Submit proposals for remedial actions to ER within three working days of notification. 2. Amend proposals if required by the Engineer. 3.Implement the remedial actions immediately upon instruction. 4. Liaise with the ER to optimise the effectiveness of the agreed mitigation. 5. Amend proposals if appropriate.
LIMIT LEVEL				
	1.Repeat measurement to confirm findings. 2. Identify the source(s) of impact. 3. Inform ER, IC(E) and EPD in writing. 4. Discuss remedial actions required with ER & IC(E). 5. Increase monitoring frequency to assess efficacy of remedial measures. 6. If exceedance continues, meet with ER&IC(E) to identify appropriate mitigation measures. 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET. 2. Review Contractor's remedial actions to assure their effectiveness and advise the ER & ET accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance and notify Contractor. 2. Check monitoring data trends and Contractor's working methods. 3. Discuss with ET, IC(E) and Contractor on proposed remedial actions to be implemented. 4. Assess the efficacy of remedial actions and keep the Contractor informed. 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to ER within three working days of notification. 3. Amend proposals if required by the ER. 4. Implement the remedial actions immediately upon instruction. 5. Liaise with the ER to optimise the effectiveness of the agreed mitigation. 6. Resubmit proposals if problem still not under control. 7. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event/Action Plan for Water Quality Monitoring

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
Action Level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IC(E) and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IC(E) and Contractor; 6. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E) on the proposed mitigation measures; 2. make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IC(E) and propose mitigation measures to IC(E) and ER; 6. Implement the agreed mitigation measures.
LIMIT LEVEL				
Action Level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IC(E) and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IC(E) and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E) on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IC(E) and propose mitigation measures to IC(E) and ER within 3 working days; 6. Implement the agreed mitigation measures.

Event/Action Plan for Water Quality Monitoring(continued)

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
Limit Level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IC(E), Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IC(E), ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E), ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IC(E) and ER and propose mitigation measures to IC(E) and ER within 3 working days; 6. Implement the agreed mitigation measures.
LIMIT LEVEL				
Limit Level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IC(E), Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IC(E), ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E), ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IC(E) and ER and propose mitigation measures to IC(E) and ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the ER, to slow down or to stop all or part of the marine work or construction activities.

Appendix D:
Implementation Schedule of Environmental Mitigation Measures

Environmental Mitigation Measures Implementation Schedule

Air Quality

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S3.8.4	Sai Kung River ▪ Twice daily watering of the work site with active operations (material handling and haul roads) when the weather and the work site are dry. Ho Chung Channel and Pak Kong River ▪ Twice daily watering of the work site with active operations (material handling) when the weather and the work site are dry. ▪ Extensive watering of the haul roads (at least every two hours daily) to keep the haul roads in wet condition	Work site / During construction period	Contractor		✔		Air Pollution Control (Construction Dust) Regulation
S3.8.6	Dust mitigation measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* shall be incorporated to control dust emission. Notice shall be given to the authority prior to commencement of works.	Work site / During construction period	Contractor		✔		Air Pollution Control (Construction Dust) Regulation
S3.8.7	The speed of haul road traffic should be limited to 10 kph..	Work site / During construction period	Contractor		✔		Air Pollution Control (Construction Dust) Regulation
S3.8.8	To minimise odour nuisance at nearby ASRs, the following odour control measures are recommended: ▪ any odorous dredged material should be placed remote from air sensitive receivers; ▪ any odorous permitted stockpiled material should be removed within two days of work to reduce the amount of time available for decomposition; and ▪ any odorous permitted stockpiled material should be covered with plastic tarpaulin sheets..	Work site / During construction period	Contractor		✔		Air Pollution Control (Construction Dust) Regulation

All recommendations and requirements resulted during the course of EIA/EA Process, including ACE and / or accepted public comment to the proposed project.
* Des - Design, C - Construction, and O – Operation, and Dec - Decommissioning

Noise Level

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S 4.8.1-S4.8.3	Use of quiet PME	Work site / During the construction period	Contractor		✔		ProPECC PN2/93 and Noise Control Ordinance
S 4.8.4-S4.8.10	Use of movable noise barriers and temporary noise barrier	Work site / During the construction period	Contractor		✔		ProPECC PN2/93 and Noise Control Ordinance
S 4.8.11	*Good Site Practice* ▪ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; ▪ Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; ▪ Mobile plant, if any, should be sited as far from NSRs as possible; ▪ Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; ▪ Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and ▪ Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Work site / During the construction period	Contractor		✔		ProPECC PN2/93 and Noise Control Ordinance
S4.10.1	Environmental Monitoring and Audit (EM&A) programme is recommended to be implemented during the construction stage.	Work site / During the construction period	Contractor		✔		-

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Water Quality

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S5.8.2 –S5.8.3	Channel Excavation Works ▪ Excavation to can be carried out in dry condition (even in wet season) by diverting the stream flow from upstream by a temporary drainage channel or narrowing the river/stream with a temporary earth bund or barrier. Containment measures such as bunds and barriers should be used within the river/stream to prevent water from entering the excavation area. ▪ Tightly sealed closed grab excavators should be employed in river sections where material to be handled is wet. Where material is dry and in non-river sections, conventional excavations can be used.	Work site / During the construction period	Contractor		✔		-
S5.8.5	Construction Runoff and Drainage ▪ Before commencing any site formation work, all sewer and drainage connections should be sealed to prevent debris, soil, sand etc. from entering public sewers/drains. ▪ Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond. ▪ Boundaries of earthworks should be marked and surrounded by dykes or embankments for flood protection, as necessary. ▪ Sand/silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the WPCO. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. ▪ Water pumped out from foundation excavations should be discharged into silt removal facilities. ▪ Careful programming of the works to minimise surface excavations for the drainage improvement works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces should be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarised in ProPECC PN 1/94. ▪ Exposed soil areas should be minimised to reduce potential for increased siltation and contamination of runoff. ▪ Earthwork final surfaces should be well compacted and subsequent permanent work should be immediately performed. ▪ Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.	Work site / During the construction period	Contractor		✔		ProPECC PN 1/94; WPCO

Water Quality (continued)

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
S5.8.6-S5.8.7	General Construction Activities ▪ Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the adjacent watercourses. Stockpiles of cement and other construction materials should be kept covered when not being used. ▪ Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the river/streams, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.	Work site / During the construction period	Contractor		✔		ProPECC PN 1/94; WPCO
S5.8.8	Sewage from Construction Workforce ▪ Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities.	Work site / During the construction period	Contractor		✔		WPCO

Water Quality (continued)

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
S5.8.10-S5.8.12	Accidental Spillage of Chemicals on Site ▪ In case of the occurrence of accidental spillage of chemicals, it is required to take immediate actions to control the release of chemicals into the nearby water bodies. It is recommended that the contractor of the project should develop an emergency plan to deal with accidental spillage of chemicals in the construction site. ▪ Good site practices would avoid the accidents to occur. Areas for chemical storage should be securely locked and kept as far from the drainage systems or stream courses as possible. The storage area should have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest, to minimise the impacts from any potential accidents. ▪ Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: ➢ Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; ➢ Chemical waster containers should be suitably labelled to notify and warn the personnel who are handling the wastes to avoid accidents; ➢ Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Work site / During the construction period			✔		WPCO
S5.10.1	▪ Water quality monitoring requirements and regular audit during construction phase should be carried out.	Drainage channel / During the operation period	Contractor		✔		-

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Waste Management

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S6.5.2 – S6.5.3	Good Site Practices and Waste Reduction Measures Good site practices during the construction activities include: ➢ Nomination of approved personnel, such as a site manager, to be responsible for good site practices and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility. ➢ Training of site personnel in proper waste management and chemical waste handling procedures. ➢ Provision of sufficient waste disposal points and regular collection for disposal. ➢ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. ➢ Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. ➢ Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. ➢ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) shall be proposed. ➢ A Waste Management Plan shall be prepared and submitted to the Engineer for approval. One may make reference to ETWB TCW No. 15/2003 for details. ➢ In order to monitor the disposal of C&D materials at landfills and public filling areas, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements. One may make reference to ETWB TCW No. 321/20042 for details.	Work site / During the construction period	Contractor		✔		Waste Disposal Ordinance (Cap.54), WBTC No.21/2002, ETWB TCW No. 15/2003, ETWB TCW No. 31/2004
S6.5.9	Excavated Riverbed Material Use of water-tight trucks for the transportation of excavated riverbed material to the designated barging point for disposal at the designated public filling area, or transported directly to the public filling area. General Refuse	Work site / During the construction period	Contractor		✔		WDO

Waste Management (continued)

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S6.5.11	General Refuse General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.	Work site / During the construction period	Contractor		✔		Public Health and Municipal Services Ordinance (Cap. 132)
S6.5.10	Chemical Waste If chemical wastes are produced at the construction site, the Contractor shall register with the EPD as a Chemical Waste Producer and follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes shall be used, and incompatible chemicals shall be stored separately. Appropriate labels shall be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes generated at the Chemical Waste Treatment Centre at Tsing Yi, or other licencedlicensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During the construction period	Contractor		✔		Waste Disposal (Chemical Waste) (General) Regulation

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Land Contamination

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S.7.7.2 – S.7.7.3	Land Contamination Assessment A full site inspection is required by the future Environmental Team immediately after the site was resumed should be undertaken to review the validity of the preliminary CAP and define the exact sampling locations and sampling parameters for further site investigation. An updated CAP shall then be prepared after the site inspection in accordance with EPD's "*Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops*" and submitted to EPD for approval endorsed by EPD prior to commencement of the site investigation. Upon receipt of EPD's approval on the updated CAP, the actual site investigation for land contamination impact assessment shall be conducted according to the approved CAPly before any construction work started at the identified contaminated sites. A Contamination Assessment Report (CAR) shall be compiled to document the findings and shall include interpretation of laboratory testing results in accordance with the *ProPECC Note No. 3/94* and comparison of the findings with relevant standards, such as the Dutch guidelines or other international practices as appropriate. If land contamination is confirmed, a Remediation Action Plan (RAP) shall be drawn up to formulate necessary remedial measures and potential water quality impact to the river shall be also addressed if necessary in the remediation measures. The subsequent CAR and RAP shall be endorsed by EPD before implementation of any remedial technology. The contaminated sites should be remediated before commencement of any construction work at the concerned sites which may disturb the ground. The duration of remediation should be taken into account by the Project Proponent or the Contractor as part of the construction programme.	Identified areas which require specific contamination investigation /After land resumption and during construction period	Contractor		✔		ProPECC PN3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of: Petrol Filling Stations, Boatyards, and Car Repair / Dismantling Workshops

Land Contamination (continued)

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S.7.9.1	Mitigation Measures Mitigation measures for handling of the the identified areas contaminated materials are recommended to minimise the potentially adverse effects on the health and safety of construction workers and the impacts arising from the disposal of potentially contaminated materials. These measures include: ➢ Construction workers' potential contact with contaminated materials should be minimised by using bulk earth-moving excavator equipment; ➢ Exposure to any contaminated materials should be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (when interacting directly with suspected contaminated material), providing adequate hygiene and washing facilities and preventing smoking and eating during such activities; ➢ Stockpiling of contaminated excavated materials on site should be avoided as far as possible; ➢ The use of contaminated soil for landscaping should be prohibited unless there is proper treatment of soil; ➢ Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions; ➢ Only licensed waste haulers should be used to collect and transport any contaminated material to an appropriate disposal site and procedures should be developed to ensure that illegal disposal of waste does not occur; ➢ The necessary waste disposal permits should be obtained, as required, from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 35), as required; ➢ Records of the quantities of wastes generated and disposed of should be maintained; and ➢ In accordance with good construction practice, silt traps should be used to reduce the impact to drainage caused by suspended solids arising from disturbed ground, or any construction materials such as cement and gravel. Wastewater, surface runoff or extracted groundwater should be disposed of in accordance with the WPCO.	Contaminated sites identified in the CAR / During construction period	Contractor		✔		Waste Disposal Ordinance, Waste Disposal (Chemical Waste) (General) Regulation.

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Ecological Requirements

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S8.7.2 & S8.7.5	▪ For the Sai Kung River, the base of the improved channel should be lined with natural substrates (e.g., gravel, cobbles and boulders). Substrates found in the existing river section should be used to line the new channel. Substrates lining the improved channel should be arranged to re-create the existing riffle-pool sequence found in the river. Pits would be provided in the gabion to allow planting of herbaceous riparian vegetation. ▪ For the Ho Chung River, newly widened sections of riverbed should be lined with natural substrates (e.g., cobbles and boulders), with the size and arrangement of these substrates selected to complement adjacent areas of the existing riverbed. The substrates should be sourced as far as practicable from materials excavated during the river widening. Pits should be provided in the gabion to allow planting of herbaceous riparian vegetation.	Work site / During planning & design stage, construction stage	Contractor	✔	✔		-
S8.7.10 & S8.8.5	▪ At the Sai Kung and Ho Chung Rivers the following measures would be implemented: ▪ Drainage improvement works would be limited to downstream sections of the existing rivers. ▪ Within the proposed works areas, drainage improvement works would be conducted in sections (approximately 250m in length) along only one bank of the river at a time. Excavation works would be restricted to an enclosed dry section of the river, with containment measures such as bunds and barriers used within the river to minimise the impacts upon the downstream water body. Using this approach to construction works, only localised areas of the river would be subject to disturbance at any one time, and flow would be maintained within the rivers. ▪ The excavation works for channels should be carried out in the dry condition, with construction carried out by land-based plant. Excavation works should be restricted to an enclosed dry section of the river, with containment measures such as bunds and barriers used within the river to minimise the impacts upon the downstream water body. Site runoff should be directed towards regularly cleaned and maintained silt traps and oil/grease separators to minimise the risk of sedimentation and pollution of river water. The silt and oil/grease separators should be appropriately designed for the local drainage and ground conditions. To minimise leakage and loss of sediments during excavation in narrow channels, tightly sealed closed grab excavators should be deployed where material to be handled is wet	Work site/during construction phase	Contractor		✔		-

Ecological Requirements (continued)

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S8.8.6	Noise mitigation measures including the use of quiet construction plant and temporary noise barriers (Section 4 of the EIA report refers) should be implemented to minimise disturbance to habitats adjacent to the works areas. In particular, measures such as noise barriers should be used to minimise disturbance to the bat roost identified close to the Pak Kong works area.	Pak Kong/during construction phase	Contractor		✔		-
S8.8.7	Two small trees and six seedlings of the rare tree species Ehretia acuminata recorded on the southern bank of the existing Ho Chung River to be transplanted to another area within the Ho Chung site boundary before the commencement of construction phase activities. The exact location for transplantation would be confirmed during the design stage. Fencing would be erected around the transplanted trees/seedlings to minimise potential construction phase disturbance.	Ho Chung works site/before construction phase	Contractor		✔		-
S8.8.9	Seeds from the existing Ehritia acuminata trees should be collected and propagated. The seeds should be collected from mature fruits (the fruiting period of E. acuminata is from May to September) prior to transplantation, and germinated in containers under suitable conditions. Following germination and growth, the seedlings should be planted at suitable locations within the Ho Chung Works Area (to be determined during the detailed design stage). The survival of newly planted seedlings should be monitored. Seed collection, propagation, planting and monitoring of E. acuminata should be undertaken by a suitably qualified botanist/horticulturalist appointed by the Project Proponent. A detailed methodology for these works should be formulated during the detailed design stage of the Project, in consultation with AFCD.	Ho Chung works site/before construction phase	Contractor		✔		-
S8.8.14	The improved Ho Chung River is expected to provide a suitable habitat for fish communities previously recorded from the river. To further increase the value of the River for fish communities, it is recommended thatS small fish ladders are to be constructed over the weirs along the river channel. Existing weirs within the river currently impede the movement of fish between upstream and downstream sections of the river. The fish ladders would facilitate movement past these obstacles, extending the range of fish communities in both upstream and downstream areas. The detailed design of the ladders would be submitted to AFCD for comment and approval before finalisation.	Work site / During planning & design stage, and construction stage	Contractor	✔	✔		-

Ecological Requirements (continued)

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S8.8.15-S8.8.16	▪ Extensive planting of trees and other vegetation along the banks of the newly created channels would be implemented ▪ Compensatory planting should make use of native plant species with flowers/fruits attractive to wildlife.	Works site/during construction phase	Contractor		✔		-
S8.10.1	The proper implementation of ecological mitigation measures should be audited. Details are provided in the EM&A Manual.	Works site/during construction phase	Contractor/ET	✔	✔		-
S8.10.2-S8.10.3	▪ A specific monitoring programme of channels constructed to replace Sai Kung and Ho Chung Rivers is recommended. Details are provided in the EM&A Manual. ▪ Contingency plan should be implemented if the post-construction phase monitoring demonstrates that re-colonisation is unsuccessful. Details are provided in the EM&A Manual.	Works site/before and during construction phase, operation phase	Contractor /Ecologist appointed by Project Proponent (DSD)	✔	✔	✔	-
S8.10.4	Rregular monitoring of the trees and seedlings covering the 12-month period following transplantation and planting should be conducted by a suitably qualified botanist/horticulturalist appointed by the Project Proponent. Details are provided in the EM&A Manual.	Ho Chung works site/before and during construction phase	botanist/ horticulturalist appointed by the Project Proponent (DSD)	✔	✔		-

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Landscape and Visual

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
Fig A9.12A	*LMM 1 - Gabions with Pits to Plant Riparian Vegetation* ▪ During detailed design, there should be co-ordination between the designers to ensure that pits are allowed in gabions with sufficient soil for the planting of riparian vegetation.	Works site/during construction phase	12 months establishment period: Contractor Operation: DSD		✔	✔	DSD Particular Specification WBTC 2/2004
Fig A9.12A	*LMM 2 - Rip Rap and Riffles Treatment to Channel Base* ▪ The channel base should be covered in rip-rap which is considered to be more aesthetically appropriate than fair-faced concrete. Riffles with different water depths should be created incorporating aquatic plants.	Works site/during construction phase	12 months establishment period: Contractor Operation: DSD		✔	✔	DSD Particular Specification
Fig A9.12A	*LMM 3 – Surface Treatment of Flood Walls and Retaining Walls* ▪ At the design stage, there should be comprehensive planning by the designers to ensure that the appearance of flood walls incorporate aesthetic treatments which is considered to be aesthetically appropriate than fair-faced concrete.	Works site/before and during construction phase	12 months establishment period: Contractor Operation: DSD		✔	✔	DSD Particular Specification
Fig A9.12B	*LMM 4 – Compensatory Planting along Drainage Channel* ▪ At the detailed design stage, tree and shrub planting should be included by the designer using amenity species along footpath areas or woodland seedling tree and shrub on slopes.	Works site/during construction phase	12 months establishment period: Contractor Operation: DSD		✔	✔	WBTC 14/2002 WBTC 2/2004
Fig A9.12B	*LMM 5 – New Roadside Tree Planting along Access Roads* ▪ Allowance should be made for planting of heavy standard size trees in the ratio of one tree planted every tree felled	Works site/during construction phase	12 months establishment period: Contractor Operation: DSD		✔	✔	WBTC 14/2002 WBTC 2/2004
Fig A9.12B	*LMM 6 - Grass Concrete Slabs* ▪ Grass concrete slabs should be used in maintenance access over covered culverts and access ramps to produce a more pronounced greening effect.	Works site/during construction phase	12 months establishment period: Contractor Operation: DSD		✔	✔	DSD Particular Specification

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Cultural Heritage

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
S10.10.1	The Contractor should report to the Engineer, DSD and the AMO immediately for any discovery of the Antiquities or supposed antiquities during the course of the construction works.	Work site /during construction phase	Contractor		✔		Antiquities and Monuments Ordinance
S10.10.2	Mitigation Measures during Construction Stage ▪ *Higher earth god shrine:* Protective measures should be provided for the shrine if works are taken place in close proximity. The protective measures should consist of the following: (1) High visibility fencing at a distance of one meter around the shrine; and (2) Heavy duty plastic sheeting to be placed over the exterior surfaces of the shrine for duration of ongoing works. ▪ A pedestrian access path to the shrine should be maintained through out the construction period. As the shrine is located within the works area, for purposes of public safety, the path should be marked with a temporary fence and the access route clearly marked by signage. ▪ *The Che Kung Temple, Ho Chung:* Vehicle parking is currently available in an open lot directly to the northwest of the temple. If the works area infringes on the parking area, alternative parking facilities should be made available. Clear signage for directions to the temple should be provided from Hiram's Highway. ▪ *Mature Trees along the banks of all three rivers:* The felling of mature trees should be avoided. If it is unavoidable, any trees that are removed from the area should be replaced by trees of the same species.	Specified Resources / during construction phase	Contractor		✔		-

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Other EIA Requirements

EIA Ref #	Environmental Mitigation Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation and Guidelines
				Des	C	O	
-	Environmental Monitoring and Audit (EM&A) ▪ Site inspection shall be carried out regularly by the Environmental Team (ET) to inspect construction activities to ensure that the recommended environmental protection and pollution control mitigation measures are properly implemented. Details of the requirements and procedures in conducting site inspections are given in the EM&A Manual. ▪ On the receipt of any complaints, the Environmental Team Leader (including co-operation s required from other parties) shall promptly undertake investigation work and the necessary actions carried out as based on the results of the investigation. Details of the recommended complaints handling procedures and actions are given in the EM&A Manual.	Work site /during construction phase	Contractor and ET		✔		-

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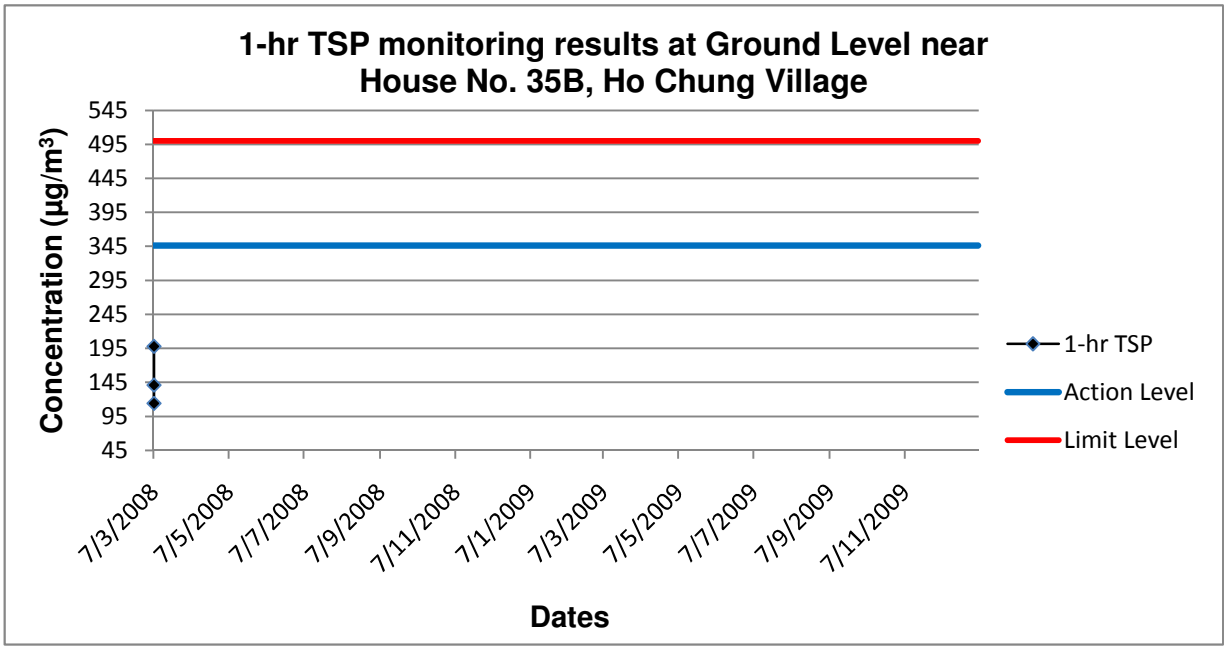
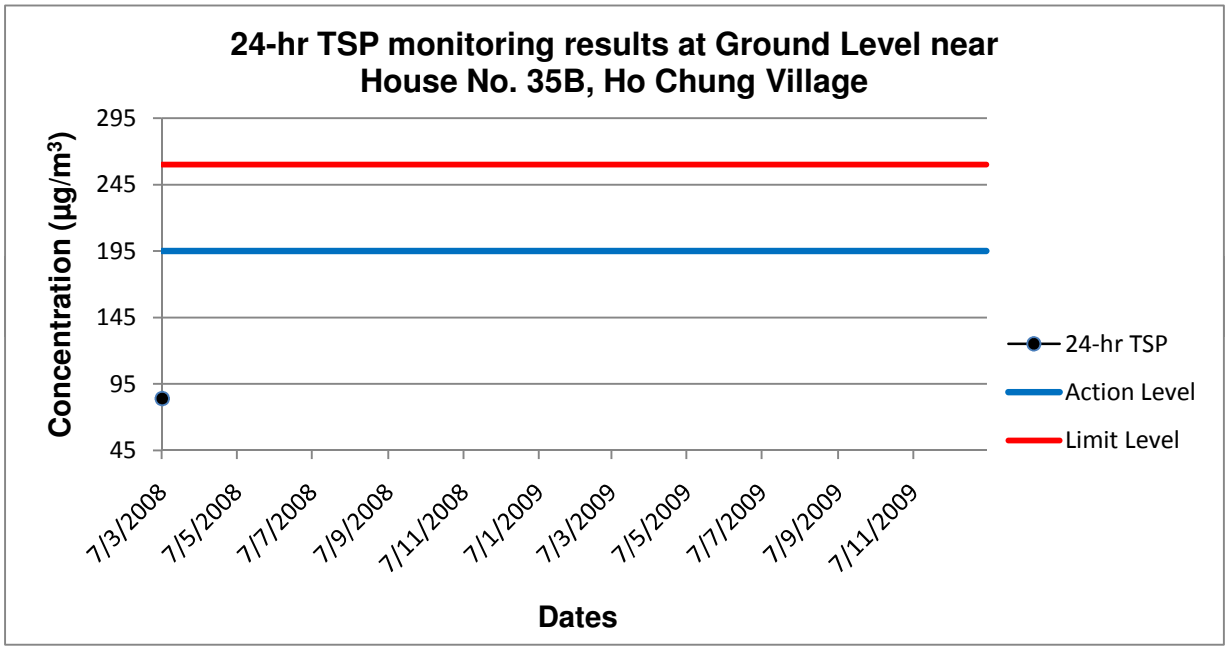
Appendix E:
Graphical Presentations of Air Quality Monitoring Results


1-hr TSP monitoring results at Ground Level near House No. 35B, Ho Chung Village
Concentration (µg/m³)
545
495
445
395
345
295
245
195
145
95
45
7/3/2008
7/5/2008
7/7/2008
7/9/2008
7/11/2008
7/1/2009
7/3/2009
7/5/2009
7/7/2009
7/9/2009
7/11/2009
Dates
1-hr TSP
Action Level
Limit Level


24-hr TSP monitoring results at Ground Level near House No. 35B, Ho Chung Village
Concentration (µg/m³)
295
245
195
145
95
45
7/3/2008
7/5/2008
7/7/2008
7/9/2008
7/11/2008
7/1/2009
7/3/2009
7/5/2009
7/7/2009
7/9/2009
7/11/2009
Dates
24-hr TSP
Action Level
Limit Level

Appendix F:
Summary of Weather Conditions during Noise monitoring

Appendix F Summary of Weather Conditions during Noise monitoring

Monitoring dates	Weather Condition	Wind Speed (m/s)	Site Condition
31/7/2007	Fine	<1	Site clearance
10/8/2007	Cloudy	2	No special site activities
14/8/2007	Cloudy	<1	Hoarding erection
16/8/2007	Cloudy	<1	No special site activities
21/8/2007	Cloudy	<1	No special site activities
28/8/2007	Cloudy & Fine	<1	Excavation
30/8/2007	Fine	<1	Excavation
4/9/2007	Cloudy	<1	Excavation
11/9/2007	Fine	<1	No special site activities
13/9/2007	Fine	1-2	Excavation
18/9/2007	Fine	<1	Excavation
20/9/2007	Fine	<1	Excavation
24/9/2007	Cloudy	<1	No special site activities
28/9/2007	Fine	<1	Excavation
3/10/2007	Cloudy	<1	No special site activities
5/10/2007	Fine	<1	No special site activities
9/10/2007	Fine	<1	Excavation
11/10/2007	Fine	<1	Excavation
15/10/2007	Fine	<1	Excavation
17/10/2007	Cloudy	<1	Excavation
23/10/2007	Hazy	<1	No special site activities
25/10/2007	Fine	<1	Demolition works, truck transportation
30/10/2007	Cloudy	<1	Excavation
2/11/2007	Hazy	1-2	Concrete breaking
6/11/2007	Fine	<1	Excavation & truck transportation
13/11/2007	Fine	<1	Welding, excavation & truck transportation
16/11/2007	Fine	1-2	Hoarding erection
20/11/2007	Fine	<1	Excavation & concrete breaking
23/11/2007	Fine	<1	Excavation
27/11/2007	Fine	<1-2	Excavation
30/11/2007	Fine	<1	Excavation & truck transportation
4/12/2007	Fine	<1	Excavation and concrete breaking
7/12/2007	Fine	<1	Excavation
11/12/2007	Fine	<1	No special activities
14/12/2007	Fine	<1	Excavation

18/12/2007	Cloudy	<1	Carpentry work
21/12/2007	Fine	<1	Earthmoving
28/12/2007	Fine	<1-2	Excavation
2/1/2008	Fine	<1	Steel bar fixing
4/1/2008	Fine	1-2	Excavation
8/1/2008	Cloudy	<1	Carpentry work
11/1/2008	Cloudy	<1	Excavation
15/1/2008	Cloudy	<1	Concrete breaking
18/1/2008	Cloudy	1-2	Excavation
22/1/2008	Fine	<1	Trench work
25/1/2008	Cloudy	<1	Steel bar fixing
26/1/2008	Cloudy	<1	Excavation and crane operating
29/1/2008	Cloudy	1-2	Trench work
1/2/2008	Cloudy	<1	No special activities
5/2/2008	Cloudy	1-2	Placing and Transporting Asphalt truck
12/2/2008	Cloudy	<1	Trench work
15/2/2008	Fine	<1	Excavation
19/2/2008	Fine	<1	Truck transporting & excavation
23/2/2008	Cloudy	<1	Concrete breaking
26/2/2008	Cloudy	<1	Trench works
29/2/2008	Cloudy	<1	Truck transporting & Filing works
4/3/2008	Fine	<1	Excavation
7/3/2008	Fine	<1	Crane operation
11/3/2008	Fine	<1	Concreting
14/3/2008	Cloudy	1-2	No special activities
18/3/2008	Cloudy	<1	Excavation
28/3/2008	Cloudy	<1	No special activities
1/4/2008	Cloudy	<1	Excavation
3/4/2008	Cloudy	<1	No special activities
8/4/2008	Fine	2-3	No special activities
11/4/2008	Cloudy	<1	Concrete breaking
15/4/2008	Cloudy	<1	No special activities
18/4/2008	Cloudy	<1	No special activities
22/4/2008	Fine	<1	No special activities
25/4/2008	Cloudy	<1	No special activities
29/4/2008	Cloudy	<1	Excavation
2/5/2008	Cloudy	<1	Excavation

6/5/2008	Cloudy	1-2	Excavation
9/5/2008	Fine	<1	No special activities
13/5/2008	Fine	<1	No special activities
16/5/2008	Fine	<1	Trench work
21/5/2008	Cloudy	<1	Excavation
23/5/2008	Cloudy	<1	Concreting
27/5/2008	Fine	<1	No special activities
30/5/2008	Cloudy	<1	No special activities
3/6/2008	Cloudy	<1	No special activities/ excavation
5/6/2008	Cloudy	<1	Excavation
11/6/2008	Cloudy	2-3	Excavation & concrete breaking
13/6/2008	Cloudy	2-3	No special activities
19/6/2008	Fine	<1	Trench work
24/6/2008	Fine	1-2	Excavation/ carpentry work
2/7/2008	Fine	1-2	No special activities
3/7/2008	Fine	<1	Trench work
5/7/2008	Fine	<1	No special activities
8/7/2008	Cloudy	<1	Trench work
10/7/2008	Cloudy	<1	No special activities
12/7/2008	Cloudy	<1	Sheet piling & excavation
15/7/2008	Cloudy	<1	No special activities
17/7/2008	Fine	1-3	Excavation
22/7/2008	Cloudy	<1	No special activities
24/7/2008	Fine	1-3	Concrete breaking & concreting
29/7/2008	Cloudy	<1	No special activities
31/7/2008	Cloudy	<1	Excavation
7/8/2008	Cloudy	1-2	Excavation
12/8/2008	Cloudy	1-2	No special activities
14/8/2008	Fine	1-2	No special activities
19/8/2008	Fine	<1	Trench work
21/8/2008	Fine	1-2	Excavation
26/8/2008	Fine	<1	Trench work
28/8/2008	Fine	1-2	Excavation
4/9/2008	Cloudy	<1	Piling & concreting
9/9/2008	Fine	<1	Excavation
11/9/2008	Fine	<1	Trench work
17/9/2008	Fine	<1	Trench work

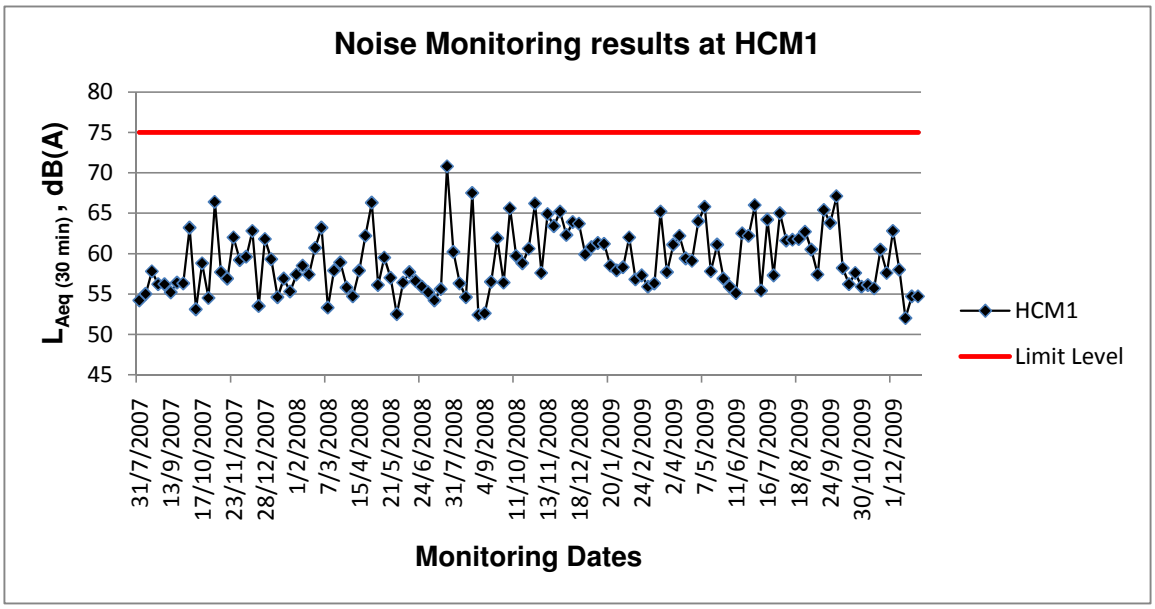
19/9/2008	Cloudy	<1	Excavation
23/9/2008	Cloudy	2-3	Trench work
.25/9/2008	Cloudy	<1-3	Excavation
29/9/2008	Fine	<1-3	Trench work
3/10/2008	Cloudy	1-2	Excavation
9/10/2008	Fine	<1	No special activities
11/10/2008	Fine	1-2	Excavation
14/10/2008	Fine	<1	Trench work
16/10/2008	Fine	<1	Excavation
21/10/2008	Fine	<1	Trench work & excavation
23/10/2008	Sunny	<1	No special activities
28/10/2008	Cloudy	<1	No special activities
30/10/2008	Hazy	1-2	Excavation & piling
4/11/2008	Cloudy	<1	Excavation
6/11/2008	Cloudy	<1	No special activities
11/11/2008	Cloudy	<1	No special activities
13/11/2008	Fine	<1	Excavation
18/11/2008	Fine	1-3	Concrete breaking & excavation
20/11/2008	Fine	1-2	Trench work
25/11/2008	Fine	2-3	Trench work
27/11/2008	Fine	1-3	Trench work
2/12/2008	Fine	<1	Trench work
4/12/2008	Cloudy	<1	Excavation
9/12/2008	Fine	<1	Excavation & trench work
11/12/2008	Fine	1-2	Piling
16/12/2008	Fine	<1	Trench work
18/12/2008	Fine	<1	Trench work
23/12/2008	Fine	<1-2	Excavation & trench work
30/12/2008	Cloudy	<1	Trench work
3/1/2009	Fine	<1	No special activities
6/1/2009	Fine	1-2	Excavation & concrete breaking
8/1/2009	Fine	<1-3	Excavation, carpentry works & transporting
13/1/2009	Fine	<1	Trench work
15/1/2009	Fine	1-2	Trench work
20/1/2009	Cloudy	1-2	Concrete breaking & excavation
29/1/2009	Fine	<1	No special activities
31/1/2009	Fine	1-2	Trench work

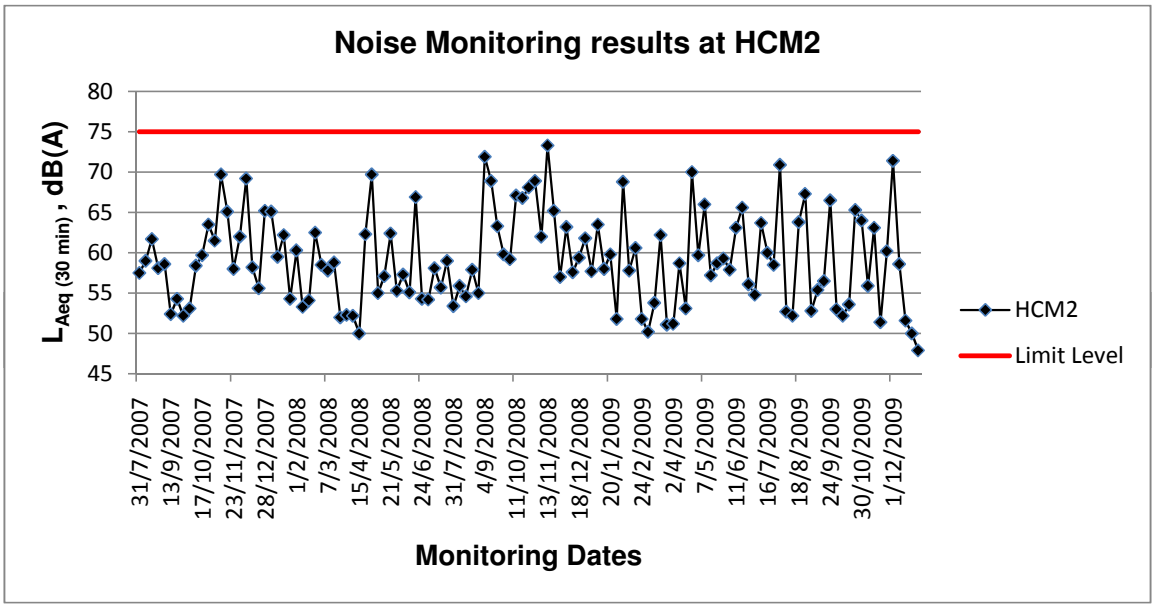
3/2/2009	Fine	<1	No special activities
5/2/2009	Fine	<1-2	Excavation
10/2/2009	Cloudy	<1-2	Trench work
12/2/2009	Fine	1-2	Excavation
17/2/2009	Cloudy	1-2	Concrete breaking
19/2/2009	Cloudy	<1	Excavation & concrete breaking
24/2/2009	Cloudy	<1	Trench work
26/2/2009	Cloudy	1-2	Trench work
3/3/2009	Cloudy	<1	Excavation
5/3/2009	Cloudy	<1	Excavation
10/3/2009	Cloudy	<1	Trench work
12/3/2009	Cloudy	<1	Trench work
17/3/2009	Fine	1-2	Excavation
19/3/2009	Cloudy	<1	Excavation & concrete breaking
24/3/2009	Cloudy	<1	Trench work
26/3/2009	Cloudy	<1	Trench work
31/3/2009	Cloudy	<1-2	Excavation & concrete breaking
2/4/2009	Cloudy	1-2	Excavation
7/4/2009	Cloudy	<1	No special activities
9/4/2009	Fine	<1	Trench work
15/4/2009	Cloudy	1-2	Excavation
17/4/2009	Cloudy	1-2	Concreting
22/4/2009	Cloudy	<1	Trench work
24/4/2009	Cloudy	<1	Trench work
28/4/2009	Fine	<1-2	No special activities
30/4/2009	Cloudy	1-2	Excavation
5/5/2009	Fine	<1	Trench work
7/5/2009	Fine	<1	Trench work
12/5/2009	Fine	1-3	Carpentry work
14/5/2009	Cloudy	1-2	Excavation
19/5/2009	Fine	<1-2	Trench work
21/5/2009	Cloudy	<1	Trench work
26/5/2009	Cloudy	<1-2	Excavation
30/5/2009	Cloudy	<1	Excavation
2/6/2009	Cloudy	<1	Excavation
4/6/2009	Fine	<1	Trench work
9/6/2009	Cloudy	<1-2	No special activities

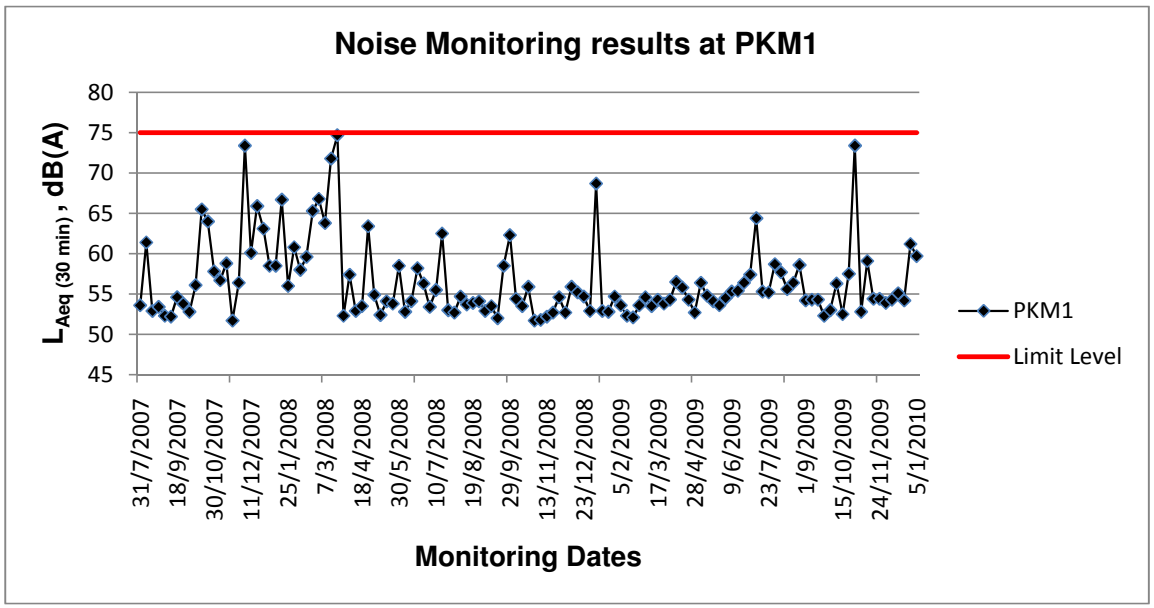
11/6/2009	Cloudy	<1	Excavation
16/6/2009	Cloudy	<1	Trench work
18/6/2009	Fine	<1	Trench work
23/6/2009	Fine	<1-2	Excavation
25/6/2009	Fine	1-2	Excavation
29/6/2009	Fine	1-2	Trench work
3/7/2009	Cloudy	<1-2	Trench work
7/7/2009	Fine	<1-2	Concreting & excavation
9/7/2009	Fine	<1	No special activities
14/7/2009	Cloudy	<1	Trench work
16/7/2009	Cloudy	<1-2	Trench work
21/7/2009	Fine	1-2	Excavation
23/7/2009	Fine	<1-2	Excavation
28/7/2009	Cloudy	<1	Trench work
30/7/2009	Cloudy	<1	Trench work
4/8/2009	Cloudy	1-2	No special activities
6/8/2009	Cloudy	1-3	Excavation
11/8/2009	Cloudy	<1	Trench work
13/8/2009	Cloudy	<1	Trench work
18/8/2009	Fine	<1-2	Trench work
20/8/2009	Fine	1-2	Excavation
25/8/2009	Cloudy	<1	Excavation
27/8/2009	Fine	1-2	Concrete breaking
1/9/2009	Fine	<1	Trench work
3/9/2009	Fine	<1	Trench work
8/9/2009	Fine	<1-2	Excavation
10/9/2009	Cloudy	1-2	Excavation
15/9/2009	Cloudy	<1	No special activities
17/9/2009	Fine	<1	Trench work
22/9/2009	Cloudy	<1-2	Excavation
24/9/2009	Fine	1-2	Excavation & concrete breaking
2/10/2009	Fine	<1	Excavation & roller compaction
6/10/2009	Fine	<1	No special activities
8/10/2009	Fine	<1	Trench work
13/10/2009	Fine	1-2	Excavation
15/10/2009	Cloudy	1-2	Excavation
20/10/2009	Cloudy	1-2	Concreting

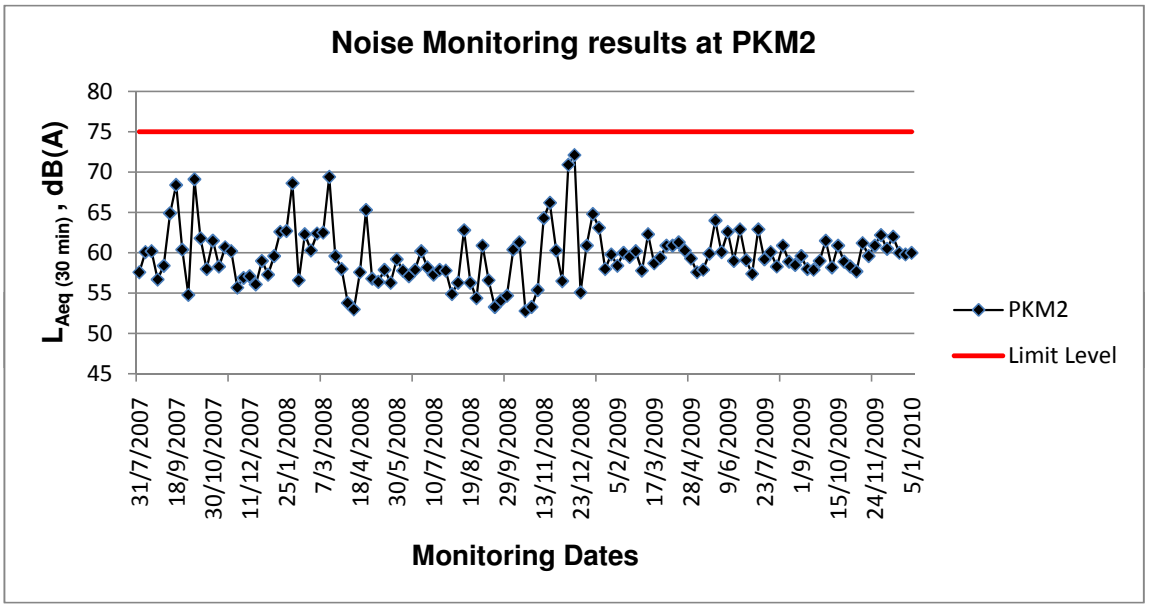
22/10/2009	Fine	<1	Trench work
28/10/2009	Fine	<1	Concrete breaking
30/10/2009	Fine	1-2	No special activities
3/11/2009	Fine	<1-2	Excavation
5/11/2009	Fine	<1	Trench work
10/11/2009	Fine	<1-2	Excavation
12/11/2009	Cloudy	<1	Excavation
17/11/2009	Cloudy	1-2	Planting
19/11/2009	Fine	<1-2	Trench work
24/11/2009	Fine	<1	No special activities
26/11/2009	Cloudy	<1	Trench work
1/12/2009	Fine	1-2	Excavation
8/12/2009	Cloudy	<1	Trench work
10/12/2009	Fine	<1-2	Welding
15/12/2009	Cloudy	1-2	No special activities
17/12/2009	Cloudy	<1	Excavation
22/12/2009	Fine	<1	No special activities
24/12/2009	Fine	<1	No special activities
28/12/2009	Cloudy	<1-2	No special activities
30/12/2009	Cloudy	<1	No special activities
5/1/2010	Cloudy	<1-3	No special activities

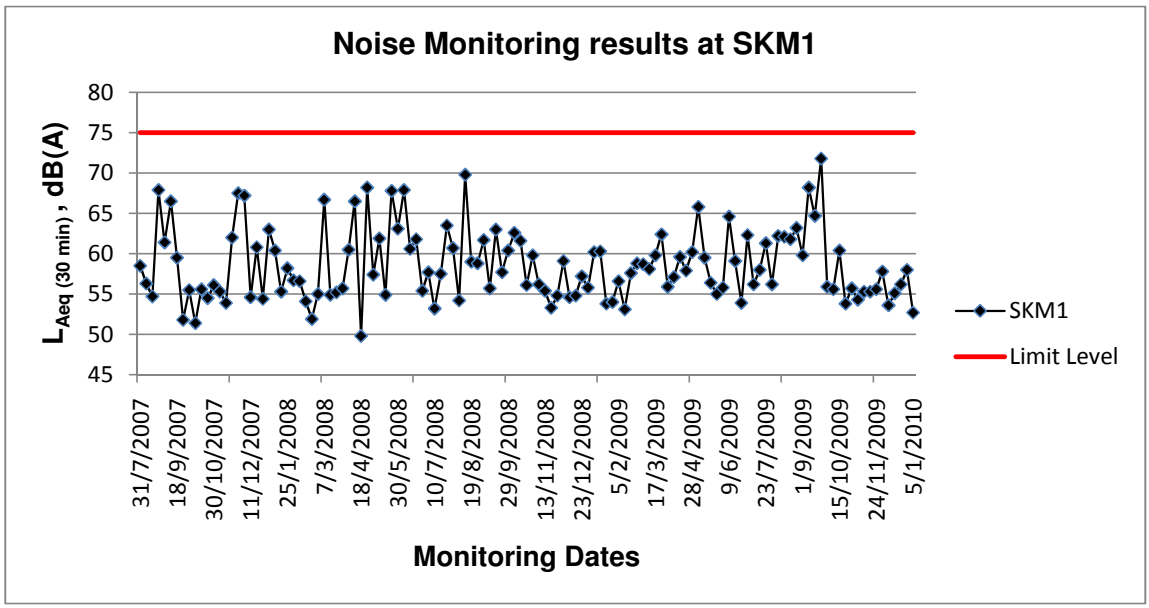
Appendix G:
Graphical Presentations of Construction Noise Monitoring Results

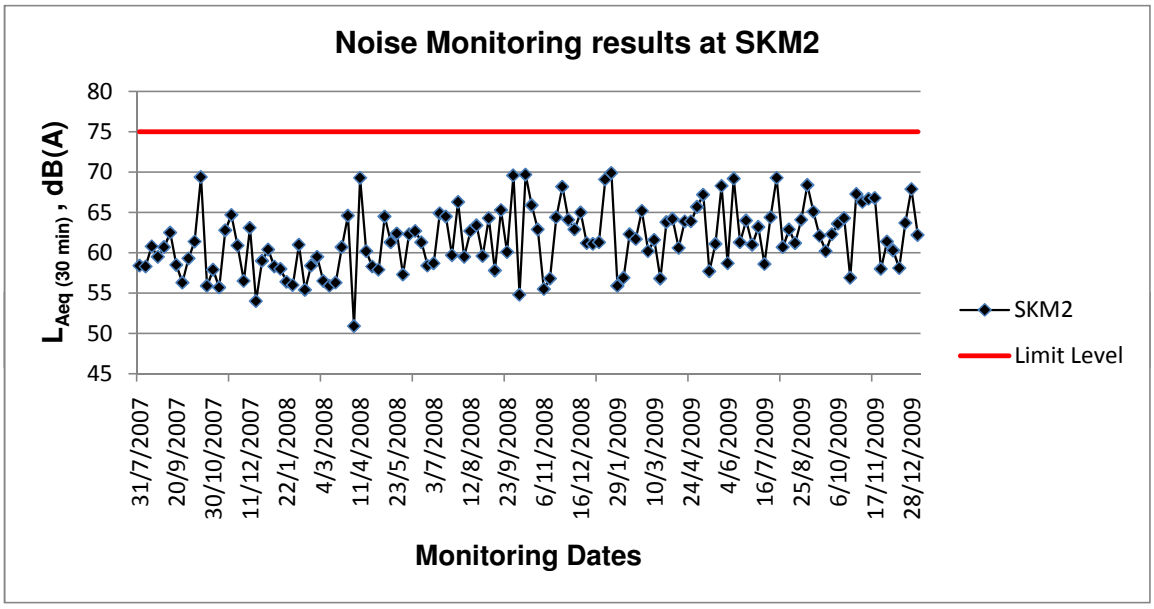

Noise Monitoring results at HCM1
$L_{Aeq\ (30\ min)}$, dB(A)
80
75
70
65
60
55
50
45
31/7/2007
13/9/2007
17/10/2007
23/11/2007
28/12/2007
1/2/2008
7/3/2008
15/4/2008
21/5/2008
24/6/2008
31/7/2008
4/9/2008
11/10/2008
13/11/2008
18/12/2008
20/1/2009
24/2/2009
2/4/2009
7/5/2009
11/6/2009
16/7/2009
18/8/2009
24/9/2009
30/10/2009
1/12/2009
Monitoring Dates
HCM1
Limit Level


Noise Monitoring results at HCM2
$L_{Aeq\ (30\ min)}$, dB(A)
80
75
70
65
60
55
50
45
31/7/2007
13/9/2007
17/10/2007
23/11/2007
28/12/2007
1/2/2008
7/3/2008
15/4/2008
21/5/2008
24/6/2008
31/7/2008
4/9/2008
11/10/2008
13/11/2008
18/12/2008
20/1/2009
24/2/2009
2/4/2009
7/5/2009
11/6/2009
16/7/2009
18/8/2009
24/9/2009
30/10/2009
1/12/2009
Monitoring Dates
HCM2
Limit Level

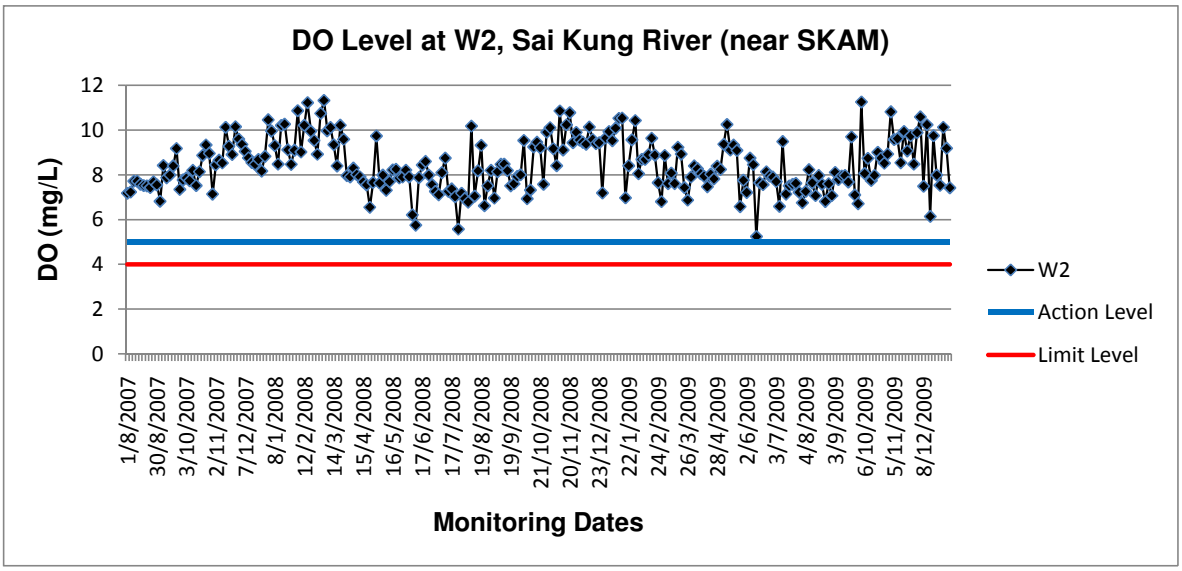

Noise Monitoring results at PKM1
$L_{Aeq\ (30\ min)}$, dB(A)
80
75
70
65
60
55
50
45
31/7/2007
18/9/2007
30/10/2007
11/12/2007
25/1/2008
7/3/2008
18/4/2008
30/5/2008
10/7/2008
19/8/2008
29/9/2008
13/11/2008
23/12/2008
5/2/2009
17/3/2009
28/4/2009
9/6/2009
23/7/2009
1/9/2009
15/10/2009
24/11/2009
5/1/2010
Monitoring Dates
PKM1
Limit Level

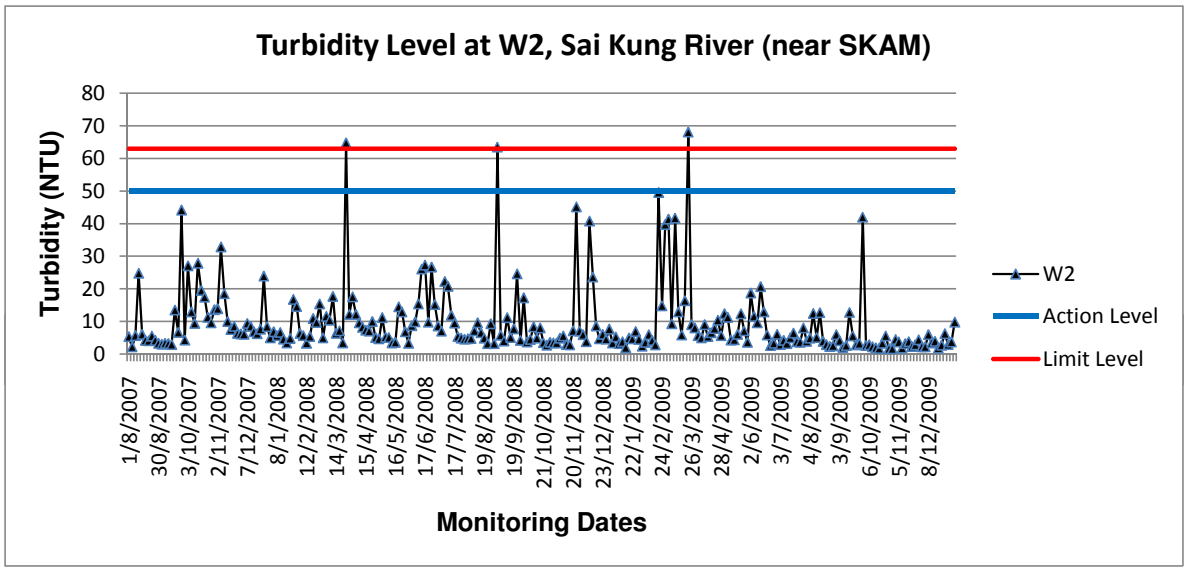

Noise Monitoring results at PKM2
$L_{Aeq\ (30\ min)}$, dB(A)
80
75
70
65
60
55
50
45
31/7/2007
18/9/2007
30/10/2007
11/12/2007
25/1/2008
7/3/2008
18/4/2008
30/5/2008
10/7/2008
19/8/2008
29/9/2008
13/11/2008
23/12/2008
5/2/2009
17/3/2009
28/4/2009
9/6/2009
23/7/2009
1/9/2009
15/10/2009
24/11/2009
5/1/2010
Monitoring Dates
PKM2
Limit Level

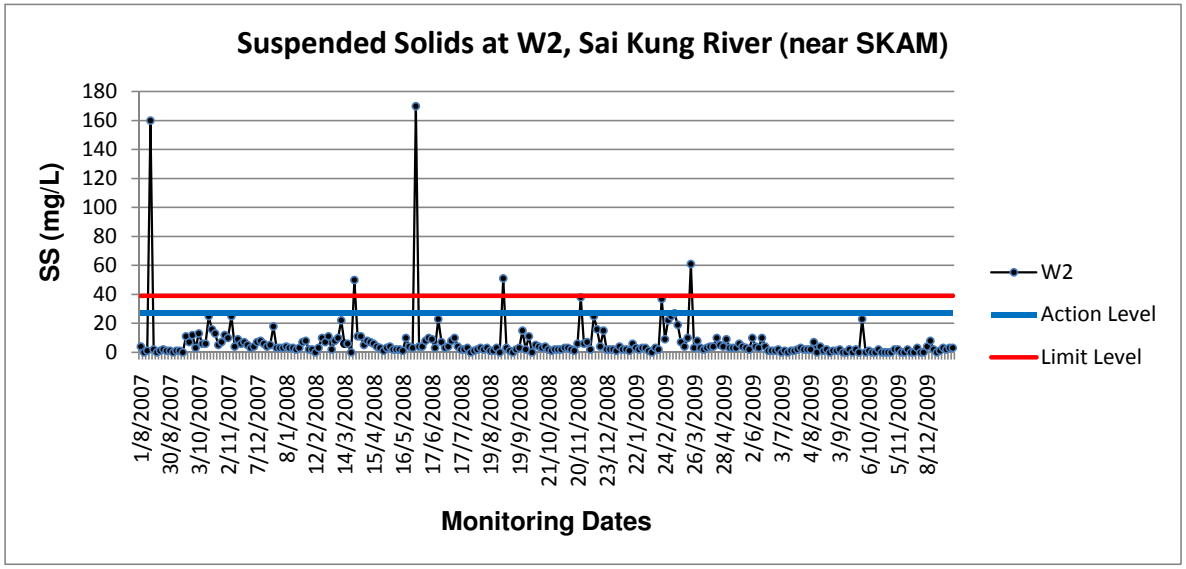

Noise Monitoring results at SKM1
$L_{Aeq\ (30\ min)}$, dB(A)
80
75
70
65
60
55
50
45
31/7/2007
18/9/2007
30/10/2007
11/12/2007
25/1/2008
7/3/2008
18/4/2008
30/5/2008
10/7/2008
19/8/2008
29/9/2008
13/11/2008
23/12/2008
5/2/2009
17/3/2009
28/4/2009
9/6/2009
23/7/2009
1/9/2009
15/10/2009
24/11/2009
5/1/2010
Monitoring Dates
SKM1
Limit Level

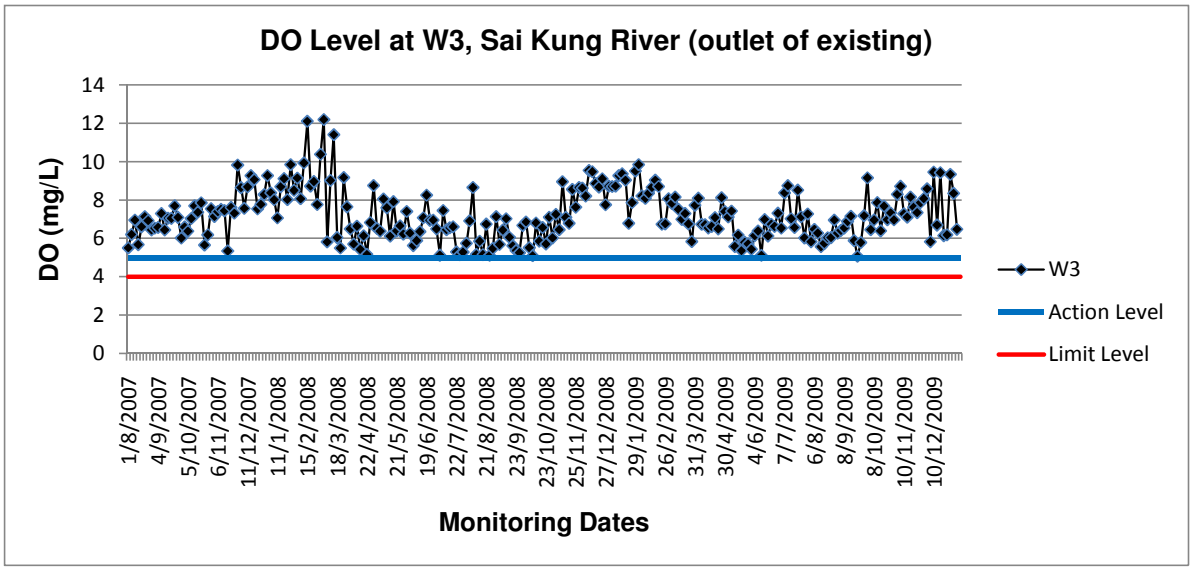

Noise Monitoring results at SKM2
$L_{Aeq\ (30\ min)}$, dB(A)
80
75
70
65
60
55
50
45
31/7/2007
20/9/2007
30/10/2007
11/12/2007
22/1/2008
4/3/2008
11/4/2008
23/5/2008
3/7/2008
12/8/2008
23/9/2008
6/11/2008
16/12/2008
29/1/2009
10/3/2009
24/4/2009
4/6/2009
16/7/2009
25/8/2009
6/10/2009
17/11/2009
28/12/2009
Monitoring Dates
SKM2
Limit Level

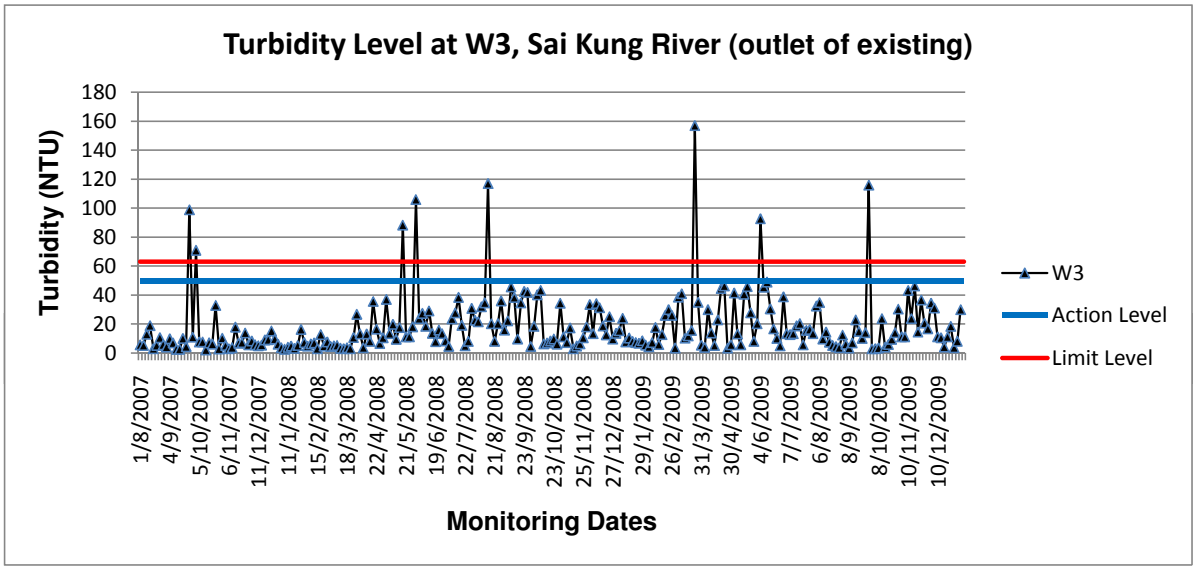
Appendix H:
Graphical Presentations of Water Quality Monitoring Results

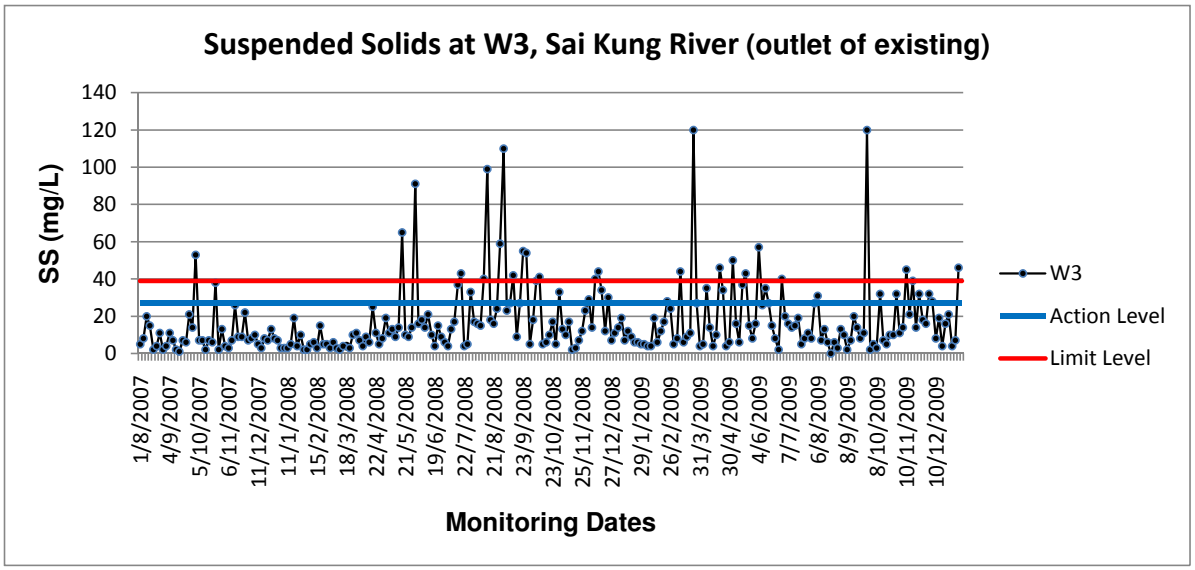

DO Level at W2, Sai Kung River (near SKAM)
DO (mg/L)
0
2
4
6
8
10
12
1/8/2007
30/8/2007
3/10/2007
2/11/2007
7/12/2007
8/1/2008
12/2/2008
14/3/2008
15/4/2008
16/5/2008
17/6/2008
17/7/2008
19/8/2008
19/9/2008
21/10/2008
20/11/2008
23/12/2008
22/1/2009
24/2/2009
26/3/2009
28/4/2009
2/6/2009
3/7/2009
4/8/2009
3/9/2009
6/10/2009
5/11/2009
8/12/2009
Monitoring Dates
W2
Action Level
Limit Level

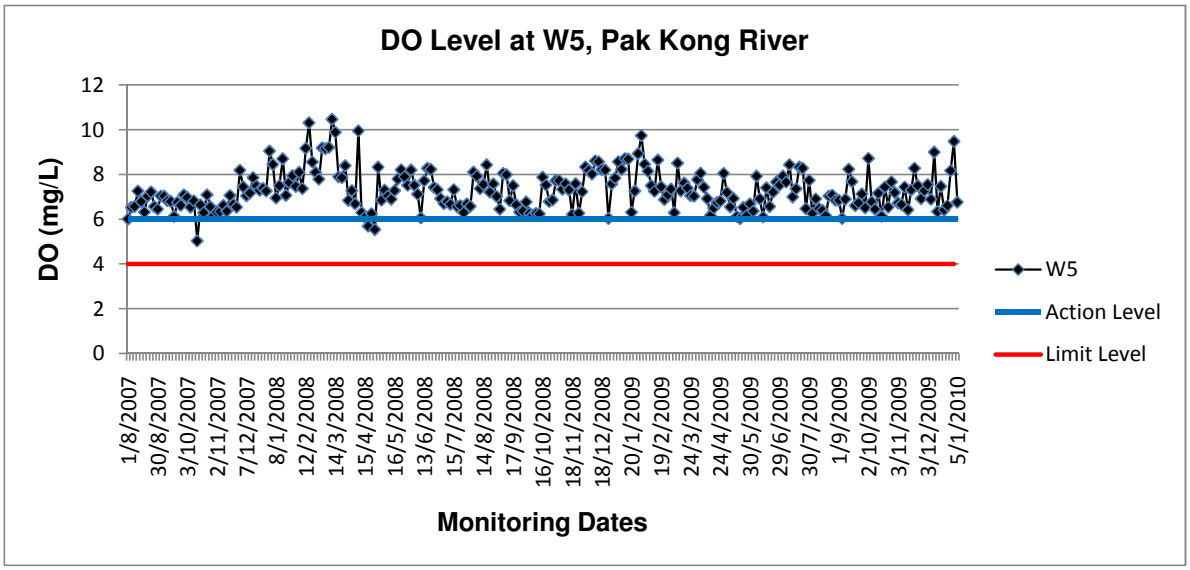

Turbidity Level at W2, Sai Kung River (near SKAM)
Turbidity (NTU)
0
10
20
30
40
50
60
70
80
1/8/2007
30/8/2007
3/10/2007
2/11/2007
7/12/2007
8/1/2008
12/2/2008
14/3/2008
15/4/2008
16/5/2008
17/6/2008
17/7/2008
19/8/2008
19/9/2008
21/10/2008
20/11/2008
23/12/2008
22/1/2009
24/2/2009
26/3/2009
28/4/2009
2/6/2009
3/7/2009
4/8/2009
3/9/2009
6/10/2009
5/11/2009
8/12/2009
Monitoring Dates
W2
Action Level
Limit Level

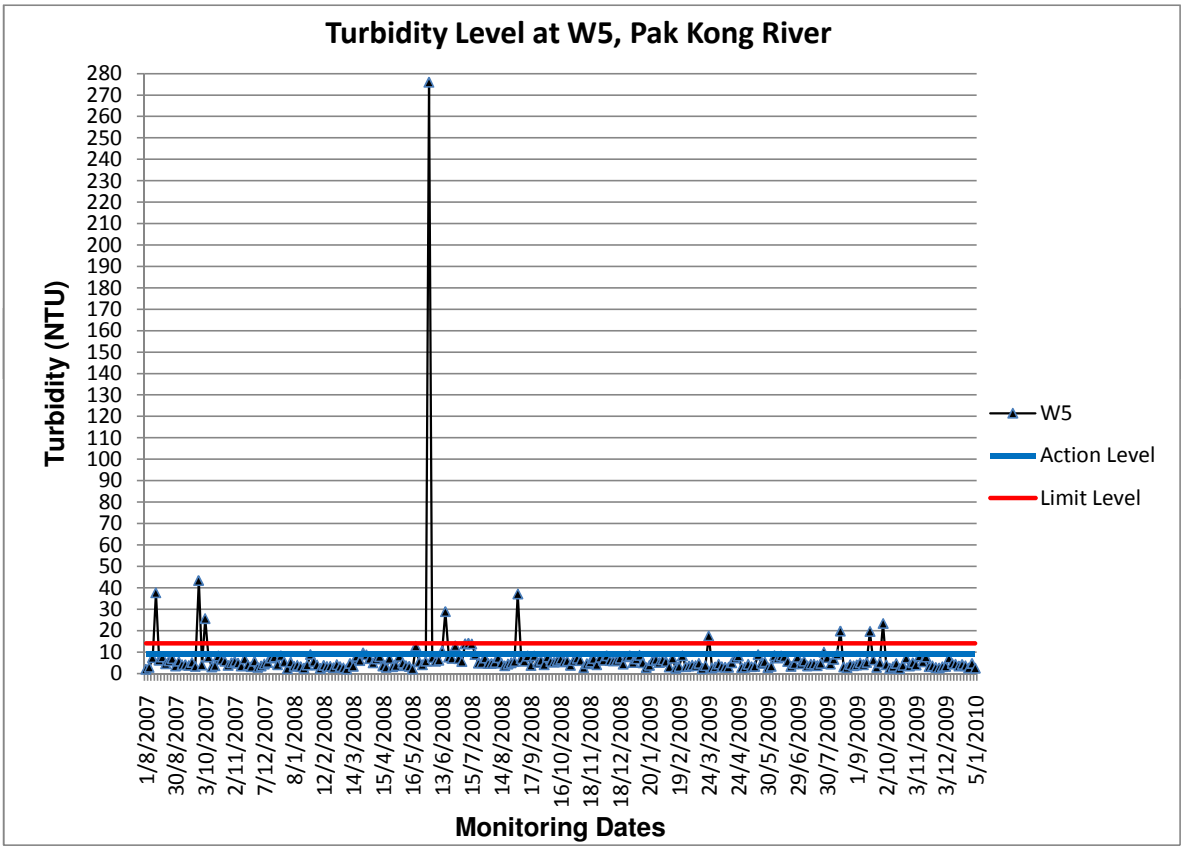

Suspended Solids at W2, Sai Kung River (near SKAM)
SS (mg/L)
0
20
40
60
80
100
120
140
160
180
1/8/2007
30/8/2007
3/10/2007
2/11/2007
7/12/2007
8/1/2008
12/2/2008
14/3/2008
15/4/2008
16/5/2008
17/6/2008
17/7/2008
19/8/2008
19/9/2008
21/10/2008
20/11/2008
23/12/2008
22/1/2009
24/2/2009
26/3/2009
28/4/2009
2/6/2009
3/7/2009
4/8/2009
3/9/2009
6/10/2009
5/11/2009
8/12/2009
Monitoring Dates
W2
Action Level
Limit Level

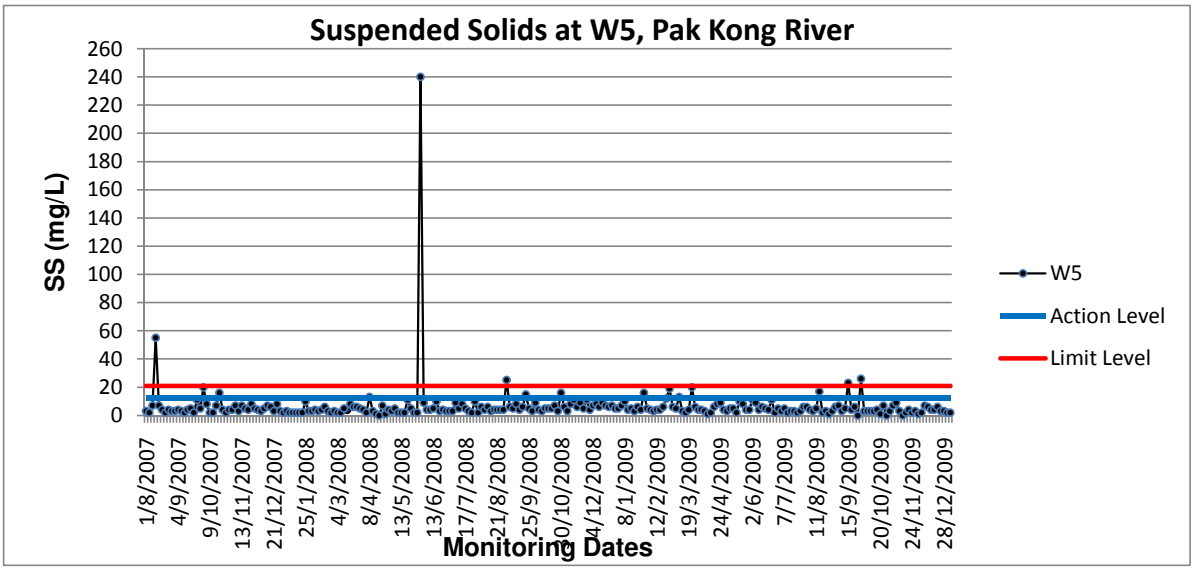

DO Level at W3, Sai Kung River (outlet of existing)
DO (mg/L)
14
12
10
8
6
4
2
0
1/8/2007
4/9/2007
5/10/2007
6/11/2007
11/12/2007
11/1/2008
15/2/2008
18/3/2008
22/4/2008
21/5/2008
19/6/2008
22/7/2008
21/8/2008
23/9/2008
23/10/2008
25/11/2008
27/12/2008
29/1/2009
26/2/2009
31/3/2009
30/4/2009
4/6/2009
7/7/2009
6/8/2009
8/9/2009
8/10/2009
10/11/2009
10/12/2009
Monitoring Dates
W3
Action Level
Limit Level

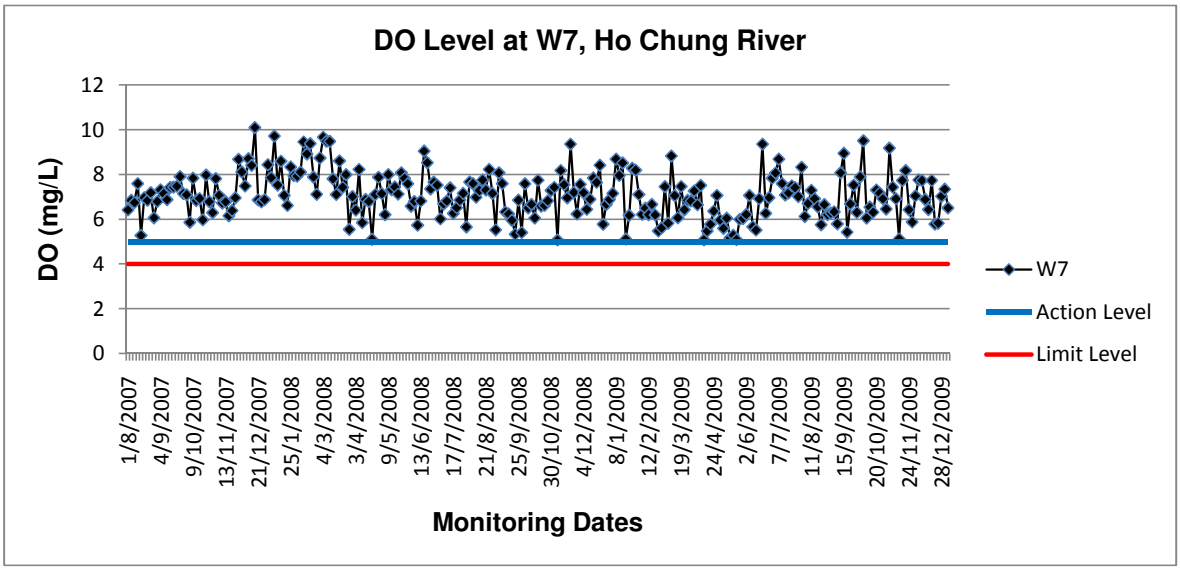

Turbidity Level at W3, Sai Kung River (outlet of existing)
Turbidity (NTU)
180
160
140
120
100
80
60
40
20
0
1/8/2007
4/9/2007
5/10/2007
6/11/2007
11/12/2007
11/1/2008
15/2/2008
18/3/2008
22/4/2008
21/5/2008
19/6/2008
22/7/2008
21/8/2008
23/9/2008
23/10/2008
25/11/2008
27/12/2008
29/1/2009
26/2/2009
31/3/2009
30/4/2009
4/6/2009
7/7/2009
6/8/2009
8/9/2009
8/10/2009
10/11/2009
10/12/2009
Monitoring Dates
W3
Action Level
Limit Level

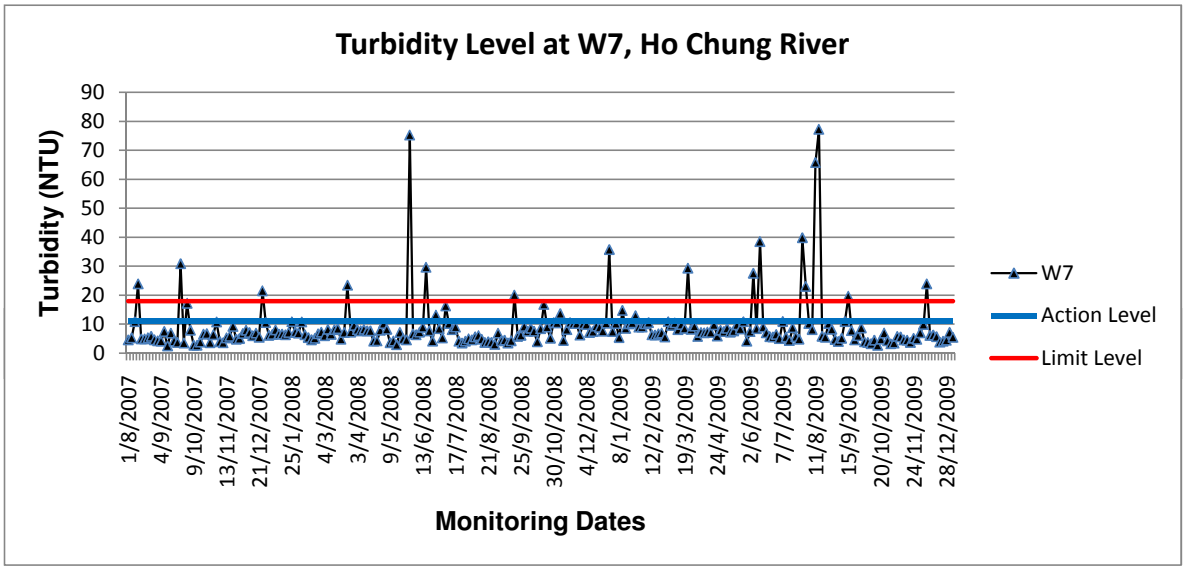

Suspended Solids at W3, Sai Kung River (outlet of existing)
SS (mg/L)
140
120
100
80
60
40
20
0
1/8/2007
4/9/2007
5/10/2007
6/11/2007
11/12/2007
11/1/2008
15/2/2008
18/3/2008
22/4/2008
21/5/2008
19/6/2008
22/7/2008
21/8/2008
23/9/2008
23/10/2008
25/11/2008
27/12/2008
29/1/2009
26/2/2009
31/3/2009
30/4/2009
4/6/2009
7/7/2009
6/8/2009
8/9/2009
8/10/2009
10/11/2009
10/12/2009
Monitoring Dates
W3
Action Level
Limit Level

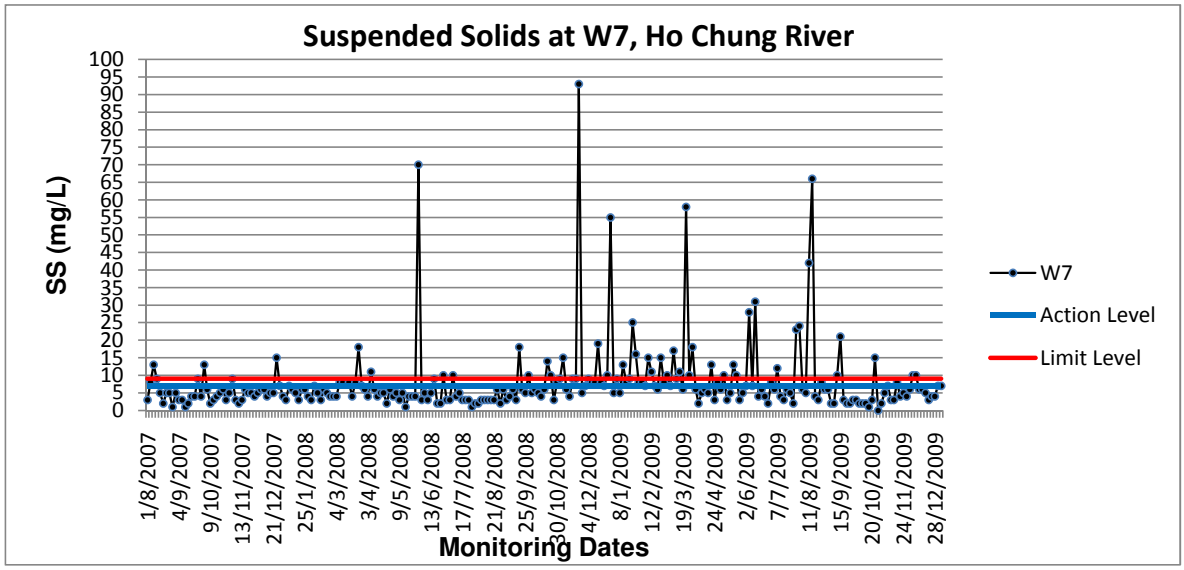

DO Level at W5, Pak Kong River
DO (mg/L)
12
10
8
6
4
2
0
1/8/2007
30/8/2007
3/10/2007
2/11/2007
7/12/2007
8/1/2008
12/2/2008
14/3/2008
15/4/2008
16/5/2008
13/6/2008
15/7/2008
14/8/2008
17/9/2008
16/10/2008
18/11/2008
18/12/2008
20/1/2009
19/2/2009
24/3/2009
24/4/2009
30/5/2009
29/6/2009
30/7/2009
1/9/2009
2/10/2009
3/11/2009
3/12/2009
5/1/2010
Monitoring Dates
W5
Action Level
Limit Level


Turbidity Level at W5, Pak Kong River
Turbidity (NTU)
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1/8/2007
30/8/2007
3/10/2007
2/11/2007
7/12/2007
8/1/2008
12/2/2008
14/3/2008
15/4/2008
16/5/2008
13/6/2008
15/7/2008
14/8/2008
17/9/2008
16/10/2008
18/11/2008
18/12/2008
20/1/2009
19/2/2009
24/3/2009
24/4/2009
30/5/2009
29/6/2009
30/7/2009
1/9/2009
2/10/2009
3/11/2009
3/12/2009
5/1/2010
Monitoring Dates
W5
Action Level
Limit Level


Suspended Solids at W5, Pak Kong River
SS (mg/L)
260
240
220
200
180
160
140
120
100
80
60
40
20
0
1/8/2007
4/9/2007
9/10/2007
13/11/2007
21/12/2007
25/1/2008
4/3/2008
8/4/2008
13/5/2008
13/6/2008
17/7/2008
21/8/2008
25/9/2008
30/10/2008
4/12/2008
8/1/2009
12/2/2009
19/3/2009
24/4/2009
2/6/2009
7/7/2009
11/8/2009
15/9/2009
20/10/2009
24/11/2009
28/12/2009
Monitoring Dates
W5
Action Level
Limit Level


DO Level at W7, Ho Chung River
DO (mg/L)
0
2
4
6
8
10
12
1/8/2007
4/9/2007
9/10/2007
13/11/2007
21/12/2007
25/1/2008
4/3/2008
3/4/2008
9/5/2008
13/6/2008
17/7/2008
21/8/2008
25/9/2008
30/10/2008
4/12/2008
8/1/2009
12/2/2009
19/3/2009
24/4/2009
2/6/2009
7/7/2009
11/8/2009
15/9/2009
20/10/2009
24/11/2009
28/12/2009
Monitoring Dates
W7
Action Level
Limit Level


Turbidity Level at W7, Ho Chung River
Turbidity (NTU)
0
10
20
30
40
50
60
70
80
90
1/8/2007
4/9/2007
9/10/2007
13/11/2007
21/12/2007
25/1/2008
4/3/2008
3/4/2008
9/5/2008
13/6/2008
17/7/2008
21/8/2008
25/9/2008
30/10/2008
4/12/2008
8/1/2009
12/2/2009
19/3/2009
24/4/2009
2/6/2009
7/7/2009
11/8/2009
15/9/2009
20/10/2009
24/11/2009
28/12/2009
Monitoring Dates
W7
Action Level
Limit Level


Suspended Solids at W7, Ho Chung River
SS (mg/L)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
1/8/2007
4/9/2007
9/10/2007
13/11/2007
21/12/2007
25/1/2008
4/3/2008
3/4/2008
9/5/2008
13/6/2008
17/7/2008
21/8/2008
25/9/2008
30/10/2008
4/12/2008
8/1/2009
12/2/2009
19/3/2009
24/4/2009
2/6/2009
7/7/2009
11/8/2009
15/9/2009
20/10/2009
24/11/2009
28/12/2009
Monitoring Dates
W7
Action Level
Limit Level

Appendix I:
Summary of Ecology Monitoring Results

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Oct-07

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Aloeaceae	*Aloe vera chinensis*	芦荟	+					
Amaranthaceae	*Achyranthes aspera*	土牛膝				+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Amaryllidaceae	*Crinum asiaticum*	文殊蘭	+					
Anacardiaceae	*Mangifera indica*	杧果	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+	+	
Araliaceae	*Schefflera heptaphylla*	鴨腳木	+			+		
Arecaceae	*Chrysalidocarpus lutescens*	散尾葵	+					
Asteraceae	*Bidens alba*	白花鬼針草	+++	++	++	++	+++	+
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	+	+	+	+
Asteraceae	*Mikania micrantha*	薇甘菊	++	+++	+	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		
Athyriaceae	*Callipteris esculenta*	菜蕨	+	+		+	+	
Boraginaceae	*Ehretia thyrsiflora*	厚殼樹	+					
Caesalpiniaceae	*Bauhinia variegata*	宮粉羊蹄甲						
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caricaceae	*Carica papaya*	番木瓜	+					
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+					
Commelinaceae	*Tradescentia zebrina*	水竹草	++	+++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	++	++	++	+
Cyperaceae	*Carex sp.*	苔草	+			+		
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Aporusa dioica*	銀柴	+					
Euphorbiaceae	*Bridelia tomentosa*	土密樹	+					
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Euphorbiaceae	*Mallotus paniculatus*	白楸	+			+		
Euphorbiaceae	*Sapium sebiferum*	烏桕	+			+		
Euphorbiaceae	*Euphorbia thymifolia*	千根草	+			+		
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Fabaceae	*Sesbania cannabina*	田菁	+	+		+		
Fabaceae	*Tadehagi triquetrum*	葫蘆茶	+					
Gramineae	*Chrysopogon aciculatus*	竹節草	+			+		
Gramineae	*Eleusine indica*	牛筋草	+	+	+	+		
Gramineae	*Cynodon dactylon*	狗牙根						
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Liliaceae	*Asparagus cochinchinensis*	天门冬	+					
Lygodiaceae	*Lygodium japonicum*	海金沙	+					
Magnoliaceae	*Michelia alba*	白蘭	+			+		
Mimosaceae	*Acacia confusa*	台灣相思	+			+		
Mimosaceae	*Leucaena leucocephala*	銀合歡	+			+		
Moraceae	*Ficus superba*	筆管榕	+					
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	+++		+++	+++	
Myrtaceae	*Syzygium jambos*	蒲桃	+					
Polygonaceae	*Polygonum chinense*	火炭母	+			+		
Portulacaceae	*Portulaca oleracea*	馬齒莧	+			+		
Rutaceae	*Citrus reticulata*	柑（桔）				+		
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Simaroubaceae	*Brucea javanica*	鴉胆子	+					
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Sterculiaceae	*Sterculia lanceolata*	假蘋婆	+			+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Feb-08

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Anacardiaceae	*Mangifera indica*	杧果	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araliaceae	*Schefflera heptaphylla*	鴨腳木	+			+		
Arecaceae	*Chrysalidocarpus lutescens*	散尾葵	+					
Asteraceae	*Bidens alba*	白花鬼針草	+++	++	++	++	+++	+
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	+	+	+	+
Asteraceae	*Mikania micrantha*	薇甘菊	++	+++	+	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		
Caesalpiniaceae	*Bauhinia variegata*	宮粉羊蹄甲						
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caricaceae	*Carica papaya*	番木瓜	+					
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+					
Commelinaceae	*Tradescentia zebrina*	水竹草	++	+++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	++	++	++	+
Cyperaceae	*Carex sp.*	苔草	+			+		
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Aporusa dioica*	銀柴	+					
Euphorbiaceae	*Bridelia tomentosa*	土密樹	+					
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Euphorbiaceae	*Mallotus paniculatus*	白楸	+			+		
Euphorbiaceae	*Sapium sebiferum*	烏桕	+			+		
Euphorbiaceae	*Euphorbia thymifolia*	千根草	+			+		
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Fabaceae	*Tadehagi triquetrum*	葫蘆茶	+					
Gramineae	*Chrysopogon aciculatus*	竹節草	+			+		
Gramineae	*Eleusine indica*	牛筋草	+	+	+	+		
Gramineae	*Cynodon dactylon*	狗牙根						
Gramineae	*Panicum repens*	牯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Liliaceae	*Asparagus cochinchinensis*	天門冬	+					
Lygodiaceae	*Lygodium japonicum*	海金沙	+					
Magnoliaceae	*Michelia alba*	白蘭	+			+		
Mimosaceae	*Acacia confusa*	台灣相思	+			+		
Mimosaceae	*Leucaena leucocephala*	銀合歡	+			+		
Moraceae	*Ficus superba*	筆管榕	+					
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	+++		+++	+++	
Myrtaceae	*Syzygium jambos*	蒲桃	+					
Polygonaceae	*Polygonum chinense*	火炭母	+			+		
Portulacaceae	*Portulaca oleracea*	馬齒莧	+			+		
Rutaceae	*Citrus reticulata*	柑（桔）				+		
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Simaroubaceae	*Brucea javanica*	鴉胆子	+					
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Sterculiaceae	*Sterculia lanceolata*	假蘋婆	+			+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Jun-08

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Anacardiaceae	*Mangifera indica*	杧果	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araliaceae	*Schefflera heptaphylla*	鴨腳木	+			+		
Arecaceae	*Chrysalidocarpus lutescens*	散尾葵	+					
Asteraceae	*Bidens alba*	白花鬼針草	+++	+++	++	+++	+++	+++
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	++	+	+	++
Asteraceae	*Mikania micrantha*	薇甘菊	++	+++	++	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		+
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caricaceae	*Carica papaya*	番木瓜	+					
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+	+				
Commelinaceae	*Tradescentia zebrina*	水竹草	++	+++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	++	++	++	+
Cyperaceae	*Carex sp.*	苔草	+			+		
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Aporusa dioica*	銀柴	+					
Euphorbiaceae	*Bridelia tomentosa*	土密樹	+					
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Euphorbiaceae	*Mallotus paniculatus*	白楸	+			+		
Euphorbiaceae	*Sapium sebiferum*	烏桕	+			+		
Euphorbiaceae	*Euphorbia thymifolia*	千根草	+			+		
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Fabaceae	*Tadehagi triquetrum*	葫蘆茶	+					
Gramineae	*Chrysopogon aciculatus*	竹節草	+			+		
Gramineae	*Eleusine indica*	牛筋草	+	+	+	+		
Gramineae	*Cynodon dactylon*	狗牙根						
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Liliaceae	*Asparagus cochinchinensis*	天门冬	+					
Lygodiaceae	*Lygodium japonicum*	海金沙	+					
Magnoliaceae	*Michelia alba*	白蘭	+			+		
Mimosaceae	*Acacia confusa*	台灣相思	+			+		
Mimosaceae	*Leucaena leucocephala*	銀合歡	+			+		
Moraceae	*Ficus superba*	筆管榕	+					
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	+++		+++	+++	
Myrtaceae	*Syzygium jambos*	蒲桃	+					
Polygonaceae	*Polygonum chinense*	火炭母	+			+		
Portulacaceae	*Portulaca oleracea*	馬齒莧	+			+		
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Sterculiaceae	*Sterculia lanceolata*	假蘋婆	+			+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Oct-08

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Anacardiaceae	*Mangifera indica*	杧果	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araliaceae	*Schefflera heptaphylla*	鴨腳木	+			+		
Arecaceae	*Chrysalidocarpus lutescens*	散尾葵	+					
Asteraceae	*Bidens alba*	白花鬼針草	+++	+++	++	+++	+++	+++
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	++	+	+	++
Asteraceae	*Mikania micrantha*	薇甘菊	++	+++	++	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		+
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caricaceae	*Carica papaya*	番木瓜	+					
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+	+				
Commelinaceae	*Tradescentia zebrina*	水竹草	++	+++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	++	++	++	+
Cyperaceae	*Carex sp.*	苔草	+			+		
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Aporusa dioica*	銀柴	+					
Euphorbiaceae	*Bridelia tomentosa*	土密樹	+					
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Euphorbiaceae	*Mallotus paniculatus*	白楸	+			+		
Euphorbiaceae	*Sapium sebiferum*	烏桕	+			+		
Euphorbiaceae	*Euphorbia thymifolia*	千根草	+			+		
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Fabaceae	*Tadehagi triquetrum*	葫蘆茶	+					
Gramineae	*Chrysopogon aciculatus*	竹節草	+			+		
Gramineae	*Eleusine indica*	牛筋草	+	+		+		
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Liliaceae	*Asparagus cochinchinensis*	天门冬	+					
Magnoliaceae	*Michelia alba*	白蘭	+			+		
Mimosaceae	*Acacia confusa*	台灣相思	+			+		
Mimosaceae	*Leucaena leucocephala*	銀合歡	+			+		
Moraceae	*Ficus superba*	筆管榕	+					
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	+++		+++	+++	
Myrtaceae	*Syzygium jambos*	蒲桃	+					
Polygonaceae	*Polygonum chinense*	火炭母	+			+		
Portulacaceae	*Portulaca oleracea*	馬齒莧	+			+		
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Sterculiaceae	*Sterculia lanceolata*	假蘋婆	+			+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Feb-09

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+	+	
Asteraceae	*Bidens alba*	白花鬼針草	+++	++	+++	++	+++	+
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	+	+	+	+
Asteraceae	*Mikania micrantha*	薇甘菊	++	+++	++	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		
Athyriaceae	*Callipteris esculenta*	菜蕨	+	+		+	+	
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+					
Commelinaceae	*Tradescentia zebrina*	水竹草	++	+++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	++	++	++	+
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	+++		+++	+++	
Polygonaceae	*Polygonum barbatum*	毛蓼	+			+		
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Jun-09

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Acoraceae	*Aloe vera chinensis*	芦荟	+					
Amaranthaceae	*Achyranthes aspera*	土牛膝				+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+			+		
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+		
Asteraceae	*Bidens alba*	白花鬼針草	+++	+++	+++	+++	+++	++
Asteraceae	*Ageratum conyzoides*	勝紅薊	+++	+	+	++	++	++
Asteraceae	*Mikania micrantha*	薇甘菊	+++	+++	++	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		+
Athyriaceae	*Callipteris esculenta*	菜蕨	+	+		+	+	
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	++		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+			+		
Commelinaceae	*Tradescentia zebrina*	水竹草	++	+++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	+++	++	+	++	++	
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	++		+++	++	
Polygonaceae	*Polygonum barbatum*	毛蓼	+			+		
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	++	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Oct-09

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Acoraceae	*Aloe vera chinensis*	芦荟	+					
Amaranthaceae	*Achyranthes aspera*	土牛膝				+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+			+		
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+		
Asteraceae	*Bidens alba*	白花鬼針草	++	++	++	++	++	++
Asteraceae	*Ageratum conyzoides*	勝紅薊	++	+	+	++	++	++
Asteraceae	*Mikania micrantha*	薇甘菊	+++	+++	++	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		+
Athyriaceae	*Callipteris esculenta*	荣蕨	+	+		+	+	
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	++		++	++	
Commelinaceae	*Commelina communis*	鴨跖草	+			+		
Commelinaceae	*Tradescentia zebrina*	水竹草	++	++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	+	++	++	
Cyperaceae	*Cyperus flabelliformis*	風車草	++	++		+	+	
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	++		+++	++	
Polygonaceae	*Polygonum barbatum*	毛蓼	+			+	+	
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	++	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Feb-10

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+	+	
Asteraceae	*Bidens alba*	白花鬼針草	++	++	++	++	++	+
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	+	+	+	+
Asteraceae	*Mikania micrantha*	薇甘菊	++	++	++	++	+	
Asteraceae	*Wedelia chinensis*	鱧埼菊	+			+		
Athyriaceae	*Callipteris esculenta*	菜蕨	+	+		+	+	
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++		
Commelinaceae	*Commelina communis*	鴨跖草	+					
Commelinaceae	*Tradescentia zebrina*	水竹草	++	++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	+	++	+	+
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Gramineae	*Panicum repens*	枯骨草	+	+	+	+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	++	++		++	++	
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Jun-10

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Achyranthes aspera*	土牛膝				+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+	+		+		
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+		
Asteraceae	*Bidens alba*	白花鬼針草	++	+++	+++	++	++	++
Asteraceae	*Ageratum conyzoides*	勝紅薊	++	++	+	++	++	++
Asteraceae	*Mikania micrantha*	薇甘菊	+++	+++	+	++	++	+
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			++		+
Athyriaceae	*Callipteris esculenta*	菜蕨	+	+		+	+	
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	++		+	+	
Commelinaceae	*Commelina communis*	鴨跖草	+			+		
Commelinaceae	*Tradescentia zebrina*	水竹草	++	++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	+	++	++	
Cyperaceae	*Cyperus flabelliformis*	風車草	++	++				
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Gramineae	*Panicum repens*	枯骨草	+	+		+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	++	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	+++	++		+++	++	
Polygonaceae	*Polygonum barbatum*	毛蓼	+			+	+	
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	++	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Oct-10

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	*Acorus tatarinowii*	石菖蒲	+	+		+	+	
Amaranthaceae	*Alternanthera philoxeroides*	空心蓮子草	+					
Araceae	*Alocasia odora*	海芋	+	+		+	+	
Araceae	*Colocasia esculenta*	芋	+	+		+	+	
Asteraceae	*Bidens alba*	白花鬼針草	++	++	++	++	++	+
Asteraceae	*Ageratum conyzoides*	勝紅薊	+	+	+	+	+	+
Asteraceae	*Mikania micrantha*	薇甘菊	++	++	++	++	+	
Asteraceae	*Wedelia chinensis*	蟛蜞菊	+			+		
Athyriaceae	*Callipteris esculenta*	菜蕨	+	+		+	+	
Caprifoliaceae	*Viburnum odoratissimum*	珊瑚樹	+			+		
Caryophyllaceae	*Drymaria diandra*	荷蓮豆草	++	+		++		
Commelinaceae	*Commelina communis*	鴨跖草	+					
Commelinaceae	*Tradescentia zebrina*	水竹草	++	++		+	++	
Convolvulaceae	*Ipomoea cairica*	五爪金龍	++	++	+	++	+	+
Cyperaceae	*Cyperus flabelliformis*	風車草	+++	++		+	+	
Euphorbiaceae	*Macaranga tanarius*	血桐	+	+		+	+	
Fabaceae	*Pueraria lobata*	野葛	+	+		+	+	
Gramineae	*Panicum repens*	枯骨草	+	+	+	+	+	
Gramineae	*Microstegium ciliatum*	剛秀竹	+	++	+	+	+	
Gramineae	*Pennisetum purpureum*	象草	+			+		
Gramineae	*Coix lacryma-jobi*	薏苡	+	+		+		
Gramineae	*Phragmites karka*	卡開蘆	+			+		
Lauraceae	*Cinnamomum camphora*	樟樹	+			+		
Lauraceae	*Litsea glutinosa*	潺槁樹	+	+		+	+	
Moraceae	*Ficus hispida*	對葉榕	+	+		+	+	
Musaceae	*Musa paradisiaca*	大蕉	++	++		+		
Myrtaceae	*Psidium guajava*	番石榴	+			+		
Myrtaceae	*Cleistocalyx operculatus*	水翁	++	++		++	++	
Rutaceae	*Clausena lansium*	黃皮	+	+		+	+	
Sapindaceae	*Dimocarpus longan*	龍眼	+	+		+	+	
Sapindaceae	*Litchi chinensis*	荔枝	+	+		+	+	
Solanaceae	*Solanum torvum*	水茄	+	+		+	+	
Sterculiaceae	*Sterculia lanceolata*	假蘋婆	+			+		
Thelypteridaceae	*Cyclosorus parasiticus*	華南毛蕨	+	+		+	+	
Ulmaceae	*Celtis sinensis*	朴樹	+	+		+	+	
Urticaceae	*Boehmeria nivea*	苧麻	+	+		+	+	
Verbenaceae	*Lantana camara*	馬纓丹	+	+	+	+	+	

Flora species recorded by line and belt transects along Ho Chung River (HCR) and Sai Kung River (SKR). (Note: +, occurred; ++, common; +++, abundant)

Jul-11

			HCR	HCR	HCR	SKR	SKR	SKR
Family	**Species name**	**Species name in Chinese**	**Line transect**	**Site 1**	**Site 2**	**Line transect**	**Site 1**	**Site 2**
Acoraceae	Acorus tatarinowii	石菖蒲	+	+		+	+	
Amaranthaceae	Alternanthera philoxeroides	空心蓮子草	+				+	
Araceae	Alocasia odora	海芋	+	+		+	+	+
Araceae	Colocasia esculenta	芋	+	+		+	+	+
Asteraceae	Bidens alba	白花鬼針草	++	++	++	++	++	+
Asteraceae	Ageratum conyzoides	勝紅薊	+	+	+	+	+	+
Asteraceae	Mikania micrantha	薇甘菊	++	++	++	++	+	
Asteraceae	Wedelia chinensis	蟛蜞菊	+			+		
Athyriaceae	Callipteris esculenta	菜蕨	++	+		+	++	
Caprifoliaceae	Viburnum odoratissimum	珊瑚樹	+			+		
Caryophyllaceae	Drymaria diandra	荷蓮豆草	++	+		++		
Commelinaceae	Commelina communis	鴨跖草	+					
Commelinaceae	Commelina nudiflora	竹節草	+			+		
Commelinaceae	Tradescentia zebrina	水竹草	++	++		+	++	
Convolvulaceae	Ipomoea cairica	五爪金龍	++	++	+	++	+	+
Cyperaceae	Cyperus flabelliformis	風車草	+++	++	+	+	+	+
Euphorbiaceae	Macaranga tanarius	血桐	+	+		+	+	
Fabaceae	Pueraria lobata	野葛	+	+		+	+	
Gramineae	Panicum repens	枯骨草	+	+	+	+	+	
Gramineae	Microstegium ciliatum	剛秀竹	+	++	+	+	+	+
Gramineae	Pennisetum purpureum	象草	+	+		+	+	
Gramineae	Coix lacryma-jobi	薏苡	+	+		+		
Gramineae	Phragmites karka	卡開蘆	+			+		
Lauraceae	Cinnamomum camphora	樟樹	+			+		
Lauraceae	Litsea glutinosa	潺槁樹	+	+		+	+	
Moraceae	Ficus hispida	對葉榕	+	+		+	+	
Musaceae	Musa paradisiaca	大蕉	++	++		+		
Myrtaceae	Psidium guajava	番石榴	+			+		
Myrtaceae	Cleistocalyx operculatus	水翁	++	++		++	++	
Rutaceae	Clausena lansium	黃皮	+	+		+	+	
Sapindaceae	Dimocarpus longan	龍眼	+	+		+	+	
Sapindaceae	Litchi chinensis	荔枝	+	+		+	+	
Solanaceae	Solanum torvum	水茄	+	+		+	+	
Sterculiaceae	Sterculia lanceolata	假蘋婆	+			+		
Thelypteridaceae	Cyclosorus parasiticus	華南毛蕨	+	+		+	+	
Ulmaceae	Celtis sinensis	朴樹	+	+		+	+	
Urticaceae	Boehmeria nivea	苧麻	+	+		+	+	
Verbenaceae	Lantana camara	馬纓丹	+	+	+	+	+	

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-07

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Black Drongo	*Dicrurus macrocercus*	黑卷尾	R	C	+			+		
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪鳥	R	C	+	3		+		
Black Kite	*Milvus lineatus*	麻鷹	R	C	+			+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	+			+		
Cattle Egret	*Bubulcus ibis*	牛背鷺	R	C				+		
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	1	1	++	3	
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+	1				
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C	+					
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+			+	1	
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++	1		++	1	3
Domestic pigeon	*Columba sp.*	鴿	R	C	+			+		
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	2		+		
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+		1
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C		1		+		
Magpie	*Pica pica*	喜鵲	R	C				+		
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+	1	1
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+	1	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+		1	+		1
Spotted Munia	*Lonchura punctulata*	斑文鳥	R	C	+			+		
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+	2	
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+	1		+		1
White Backed Munia	*Lonchura striata*	白腰文鳥	R	C				+		
No. of bird						12	3		10	7
No. of species					19	9	3	21	7	5

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-08

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR
					T	PC1	PC2	T
Black capped kingfisher	*Halcyon pileata*	藍翡翠	R	C	+			
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	+	1		+
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	1		++
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+		1	
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C				+
Common Sandpiper	*Actitis hypoleucos*	磯鷸	WV&PM	C	+			
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+			+
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++			++
Daurian redstart	*Phoenicurus auroreus*	北紅尾鴝	WV	U	+			
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+			
Grey Wagtail	*Motacilla cinerea*	灰鶺鴒	WV	C	+	1	1	+
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	4		+
Jungle Crow	*Corvus macrorhynchus*	大嘴烏鴉	R	C				+
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C		1		+
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+		1	+
Spotted Munia	*Lonchura punctulata*	斑文鳥	R	C	+			
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+
White Backed Munia	*Lonchura striata*	白腰文鳥	R	C				+
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+			+
Yellow Bellied Prinia	*Prinia flaviventris*	灰頭鷦鶯	R	C	+			+
No. of bird						10	4	
No. of species					20	7	4	17

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-08

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Barn Swallow	*Hirundo rustica*	家燕	**SpM**	C	+			+		1
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪	R	C	+			+		
Black Kite	*Milvus lineatus*	麻鷹	R	C	+			+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	+	2		+		
Blue Magpie	*Urocissa erythrorhyncha*	紅咀藍鵲	R	U		1				
Cattle Egret	*Bubulcus ibis*	牛背鷺	R	C				+		
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	2		++		2
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+		1			
Common Koel	*Eudynamys scolopacea*	噪鵑	R	C	+			+		
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+	1		+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	3		+	1	
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++	4	3	++		1
Domestic pigeon	*Columba sp.*	鴿	R	C	+			+		
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+					
Great Egret	*Casmerodius alba*	大白鷺	R	C	+					
Grey Heron	*Ardea cinerea*	蒼鷺	R	C	+		1			
Indian Cuckoo	*Cuculus micropterus*	四聲杜鵑	SpM	C	+			+		
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	5		+	3	
Jungle Crow	*Corvus macrorhynchus*	大咀烏鴉	R	C				+		
Large Hawk Cuckoo	*Cuculus sparverioides*	鷹鵑	SpM	C				+		
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+	1	1
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1	1	+		1
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C		1		+		
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+		1	+	1	
White Backed Munia	*Lonchura striata*	白腰文鳥	R	C				+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+		1	+		1
White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	R	C	+					
No. of bird						20	9		8	7
No. of species					22	9	7	22	6	6

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-08

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Black Drongo	*Dicrurus macrocercus*	黑卷尾	R	C	+	1		+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	++			++		
Cattle Egret	*Bubulcus ibis*	牛背鷺	R	C				+		
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	2		++	3	
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+		1			
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C	+			+		
Common Sandpiper	*Actitis hypoleucos*	磯鷸	WV&PM	C	+		1			
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+			+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	2		+	1	
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	+		3	+		
Domestic Duck	*(maybe released by Buddhist)*	鴨	R	C	+					
Domestic pigeon	*Columba sp.*	鴿	R	C				+		1
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+					
Grey Heron	*Ardea cinerea*	蒼鷺	R	C	+					
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	4		+	3	
Jungle Crow	*Corvus macrorhynchus*	大咀烏鴉	R	C				+		
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+	1	1
Magpie	*Pica pica*	喜鵲	R	C				+		
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+		1
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C				+		
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+	1	1	+	1	
Spotted Munia	*Lonchura punctulata*	斑文鳥	R	C	+			+		
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+		2	+		
White Backed Munia	*Lonchura striata*	白腰文鳥	R	C				+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+		1	+		1
Yellow Bellied Prinia	*Prinia flaviventris*	灰頭鷦鶯	R	C	+			+		
No. of bird						11	10		11	4
No. of species					20	6	7	22	7	4

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-09

Common Name	**Species name**	**Species name in Chinese**	**Status**	**Com ***	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Black Kite	*Milvus lineatus*	麻鷹	R	C	+			+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	++			++		
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	1		++		
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+	1				
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C	+					
Common Sandpiper	*Actitis hypoleucos*	磯鷸	WV&PM	C	+					
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+	1		+	1	
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++		2	++		
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+					
Grey Wagtail	*Motacilla cinerea*	灰鶺鴒	WV	C	+	1		+	1	
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	3		+	2	
Little Egret	*Egretta garzetta*	小白鷺	R	C	+					1
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C		1		+		
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+	2	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+		1	+	1	
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+			+		
White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	R	C	+					
Yellow Bellid Prinia	*Prinia flaviventris*	灰頭鷦鶯	R	C	+			+		
No. of bird						10	3		9	1
No. of species					21	8	2	15	7	1

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Co, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-09

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Barn Swallow	*Hirundo rustica*	家燕	**SpM**	C	++	1	2	+		
Black Drongo	*Dicrurus macrocercus*	黑卷尾	R	C				+		
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪□	R	C	+			+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	++	2		++	1	
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	1		++		2
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+		1			
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C	+					
Common Koel	*Eudynamys scolopacea*	噪鵑	R	C	+			+		
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+	1		+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+	2	
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++		2	++		3
Domestic pigeon	*Columba sp.*	鴿	R	C	+			+		
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+					
Grey Heron	*Ardea cinerea*	蒼鷺	R	C	+					
Indian Cuckoo	*Cuculus micropterus*	四聲杜鵑	SpM	C	+			+		
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	3		+		
Large Hawk Cuckoo	*Cuculus sparverioides*	鷹鵑	SpM	C				+		
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+		1
Magpie	*Pica pica*	喜鵲	R	C				+		
Magpie Robin	*Copsychus saularis*	鶇鴝	R	C	+	1		+	1	
Night Heron	*Nycticorax nycticorax*	夜鷺	R	C	+					
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C				+		
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+	2	1	+	1	
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+					
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+		1	+		1
White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	R	C	+			+		
No. of bird						12	8		7	7
No. of species					22	8	6	21	6	4

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-09

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Black Drongo	*Dicrurus macrocercus*	黑卷尾	R	C	+			+	2	
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪鳥	R	C				+		
Black Kite	*Milvus lineatus*	麻鷹	R	C				+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	+	2		+		
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	3	1	++		1
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+	1	1			
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+			+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+		
Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	R	R				+		
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++	4		+		
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+					
Great Egret	*Casmerodius alba*	大白鷺	R	C	+					
Grey Heron	*Ardea cinerea*	蒼鷺	R	C	+					
Grey Wagtail	*Motacilla cinerea*	灰鶺鴒	WV	C	+	1				
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	5		+		
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+		1
Magpie	*Pica pica*	喜鵲	R	C				+		
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+	2	1
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+		
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+		1	+	1	
Spotted Munia	*Lonchura punctulata*	斑文鳥	R	C				+		
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+	2	
White Backed Munia	*Lonchura striata*	白腰文鳥	R	C				+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+	1		+		1
Yellow Bellied Prinia	*Prinia flaviventris*	灰頭鷦鶯	R	C				+		
No. of bird						19	4		8	4
No. of species					18	9	4	20	5	4

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-10

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪	R	C	+					
Black Kite	*Milvus lineatus*	麻鷹	R	C	+					
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	+	2		+		
Blue Magpie	*Urocissa erythrorhyncha*	紅咀藍鵲	R	U	+					
Chinese Bulbul	*Pycnonotus sinensis*	白頭鴝	R	C	++	3		++	1	2
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+	1				
Common Bazard	*Buteo buteo*	普通鵟	WV	C				+		
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C	+			+		
Common Sandpiper	*Actitis hypoleucos*	磯鷸	WV&PM	C	+					
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+	1		+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鴝	R	C	+	1		+	2	
Crested Goshawk	*Accipiter trivirgatus*	鳳頭鷹	R	R				+		
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	+		5	++	2	2
Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	R	R	+					
Domestic pigeon	*Columba sp.*	鴿	R	C	+					
Great Egret	*Casmerodius alba*	大白鷺	R	C	+					
Grey Wagtail	*Motacilla cinerea*	灰鶺鴒	WV	C	+	1		+	1	
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	4				
Jungle Crow	*Corvus macrorhynchus*	大咀烏鴉	R	C				+		
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+		1
Magpie	*Pica pica*	喜鵲	R	C				+		
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+	1	
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C		1		+		
Pacific swift	*Apus pacificus*	白腰雨燕	R&PM	C				+		
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Silky Starling	*Sturnus sericeus*	絲光椋鳥	WV	U	+					
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C			1	+	1	
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+			+	1	1
Yellow Bellied Prinia	*Prinia flaviventris*	灰頭鷦鶯	R	C	+			+		
No. of bird						15	7		11	6
No. of species					23	9	3	20	9	4

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-10

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Barn Swallow	*Hirundo rustica*	家燕	**SpM**	C	+		1			
Black capped kingfisher	*Halcyon pileata*	藍翡翠	R	C	+					
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪□	R	C				+		
Black Kite	*Milvus lineatus*	麻鷹	R	C				+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C	+			+		
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	3		++	1	1
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+	1	1			
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+			+	1	
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+		
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	+		1	+		
Domestic pigeon	*Columba sp.*	鴿	R	C	+			+		
Great Coucal	*Centropus sinensis*	褐翅鴉鵑	R	C	+					
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	3		+	2	
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+	1	1
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+	1	
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+	2	1	+	1	
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+			+		1
White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	R	C	+					
No. of bird						11	5		8	3
No. of species					18	6	5	15	7	3

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-10

Common Name	Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR
					T	PC1	PC2	T	PC1	PC2
Black faced Laughing Thrush	*Garrulax perspicillatus*	黑臉噪鳥	R	C				+		
Black Kite	*Milvus lineatus*	麻鷹	R	C				+		
Black-necked Starling	*Sturnus nigricollis*	黑領椋鳥	R	C				+		
Blue Magpie	*Urocissa erythrorhyncha*	紅咀藍鵲	R	U		2				
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	R	C	++	3		++	1	2
Chinese Pond Heron	*Ardeola bacchus*	池鷺	R	C	+	1	1		1	
Common Kingfisher	*Alcedo atthis*	普通翠鳥	R	C	+					
Common Sandpiper	*Actitis hypoleucos*	磯鷸	WV&PM	C	+					
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	R	C	+	1		+		
Crested bulbul (Red-whiskered Bulbul)	*Pycnonotus jocosus*	紅耳鵯	R	C	+	1		+		
Crested Myna	*Acridotheres cristatellus*	八哥	R	C	++	2		++		2
Domestic pigeon	*Columba sp.*	鴿	R	C	+			+		
Grey Heron	*Ardea cinerea*	蒼鷺	R	C	+					
Grey Wagtail	*Motacilla cinerea*	灰鶺鴒	WV	C	+	1	1	+	1	
Japanese White Eye	*Zosterops japonica(simplex)*	暗綠繡眼鳥	R	C	++	2		+	4	
Little Egret	*Egretta garzetta*	小白鷺	R	C	+		1	+		1
Magpie Robin	*Copsychus saularis*	鵲鴝	R	C	+	1		+	1	1
Olive Backed Pipit	*Anthus hodgsoni*	樹鷚	WV	C				+	2	
Rufous-backed Shrike	*Lanius schach*	棕背伯勞	R	C	+			+	1	
Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	R	C	+	1	1	+	1	
Tree Sparrow	*Passer montanus*	麻鵲	R	C	+			+		
White Backed Munia	*Lonchura striata*	白腰文鳥	R	C				+		
White Wagtail	*Motacilla alba*	白鶺鴒	WV	C	+			+		1
Yellow Bellied Prinia	*Prinia flaviventris*	灰頭鷦鶯	R	C	+			+		
No. of bird						15	4		12	7
No. of species					18	10	4	19	8	5

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Avifauna recorded by line transects and point count locations along Ho Chung River (HCR) and Sai Kung River (SKR)

Jul-11

Species name	Species name in Chinese	Status	Com *	HCR	HCR	HCR	SKR	SKR	SKR	
				T	PC1	PC2	T	PC1	PC2	
Black faced Laughing Thrush	Garrulax perspicillatus	黑臉噪□	R	C	+			+		
Black Kite	Milvus lineatus	麻鷹	R	C				+		
Black-necked Starling	Sturnus nigricollis	黑領椋鳥	R	C	+			+		
Blue Magpie	Urocissa erythrorhyncha	紅咀藍鵲	R	U				+		
Chinese Bulbul	Pycnonotus sinensis	白頭鵯	R	C	++	2		++	3	1
Chinese Pond Heron	Ardeola bacchus	池鷺	R	C	+	1			1	1
Common Kingfisher	Alcedo atthis	普通翠鳥	R	C	+			+		
Common Sandpiper	Actitis hypoleucos	磯鷸	WV&PM	C	+					
Common Tailorbird	Orthotomus sutorius	長尾縫葉鶯	R	C	+			+		
Crested bulbul (Red-whiskered Bulbul	Pycnonotus jocosus	紅耳鵯	R	C	+	1		+	2	
Crested Myna	Acridotheres cristatellus	八哥	R	C	++	4		++	2	
Domestic pigeon	Columba sp.	鴿	R	C				+		
Grey Heron	Ardea cinerea	蒼鷺	R	C	+					
Japanese White Eye	Zosterops japonica(simplex)	暗綠繡眼鳥	R	C	++	3		+		
Little Egret	Egretta garzetta	小白鷺	R	C	+	1		+		
Magpie Robin	Copsychus saularis	鵲鴝	R	C	+	1		+	1	1
Olive Backed Pipit	Anthus hodgsoni	樹鷚	WV	C				+		
Rufous-backed Shrike	Lanius schach	棕背伯勞	R	C	+			+		
Spotted Dove	Streptopelia chinensis	珠頸斑鳩	R	C	+	2		+	1	2
Tree Sparrow	Passer montanus	麻鵲	R	C	+	3		+		3
White Backed Munia	Lonchura striata	白腰文鳥	R	C				+		
White Wagtail	Motacilla alba	白鶺鴒	WV	C	+			+	1	1
Yellow Bellied Prinia	Prinia flaviventris	灰頭鷦鶯	R	C	+			+		
No. of bird						18			11	9
No. of species					18	9		20	7	6

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon;
Com, Commonness
SpM – Spring migrant; T – transect count; PC1 – Point count location 1; PC2 – Point count location 2
Abundance: +, no. of individual < 5; ++, no. of individual > 5.

Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-07

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				Site 1	Site 2	Site 1	Site 2
Biomphalaria sp.	--	NP	C	+		+	
Brotia hainanensis	--	NP	C	++		++	
Gyraulus sp.	--	NP	C	+		+	
Melanoides tuberculata	瘤擬黑螺	NP	VC	+			
Pomacea canaliculata	蘋果螺	NP	VC	+	+	+	+
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC			+	
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Insecta							
Anisocentropus sp.		NP	C	+			
Baetis sp.	--	NP	VC	+		+	+
Cheumatopsyche sp.		NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++		+	
Copera marginipes		NP	VC	+		+	
Electrogena sp.		NP	VC	+			
Euphaea decorata	--	NP	C	+			
Gerris sp.		NP	C	+		+	
Hydropsyche sp.		NP	C	+		+	
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC	+		+	
Orthetrum sp.	--	NP	VC	+		+	
Orthorcladinae		NP	VC	+++	+	+++	+
Paegniodes cupulatum		NP	C	+			
Psephenoides sp.		NP	C	+		+	
Tanipodinae		NP	C	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Parazacco spilurus	異鱲	V and NP	C	++		+	
Poecilia reticulata	孔雀花魚將	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+	+	+	+

Note: NP – Not protected in Hong Kong
"VC" – Very Common; "UC" – Uncommon; "C" - Common
"+" – Species exists in the survey site
"++" – Species common in the survey site
"+++" – Species abundance in the survey site
V – Listed as vulnerable in China Fish Red Data Book

Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-08

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				Site 1	Site 2	Site 1	Site 2
Biomphalaria sp.	--	NP	C	+		+	
Brotia hainanensis	--	NP	C	++		++	
Clithon sowerbianus	多色彩螺	NP	VC		+		
Pomacea canaliculata	蘋果螺	NP	VC	+	+	+	
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC			+	
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*			+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Insecta							
Cheumatopsyche sp.		NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	+		+	
Choroterpes sp.		NP	VC	+			
Electrogena sp.		NP	VC	+			
Euphaea decorata	--	NP	C	+		+	
Gerris sp.		NP	C	+			
Hydropsyche sp.		NP	C	+			
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC			+	
Orthetrum sp.	--	NP	VC			+	
Orthorcladinae		NP	VC	+++	+	+++	+
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	+
Parazacco spilurus	異鱲	V and NP	C	++		+	
Poecilia reticulata	孔雀花魚將	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+	+	+	+
Schistura fasciolata	橫紋南鰍	NP	C	+		+	

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-08

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				Site 1	Site 2	Site 1	Site 2
Brotia hainanensis	--	NP	C	+		++	
Clithon sowerbianus	多色彩螺	NP	VC		+		
Pomacea canaliculata	蘋果螺	NP	VC	+		+	
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC	+		+	
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	+		+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Insecta							
Cheumatopsyche sp.		NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	+		+	
Electrogena sp.		NP	VC	+			
Gerris sp.		NP	C	+		+	
Hydropsyche sp.		NP	C	+			
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC			+	
Orthetrum sp.	--	NP	VC			+	
Orthorcladinae		NP	VC	++	+	++	+
Fish							
Rhinogobius spp.	鰕虎魚	NP	C	+	+	+	+

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-08

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				Site 1	Site 2	Site 1	Site 2
Biomphalaria sp.	--	NP	C	+		+	
Brotia hainanensis	--	NP	C	+		+	
Clithon oualaniensis	奧萊彩螺	NP	VC		++		
Clithon sowerbianus	多色彩螺	NP	VC		++		
Gyraulus sp.	--	NP	C			+	
Pomacea canaliculata	蘋果螺	NP	VC	+		+	
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC			+	
Insecta							
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++		+	
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC	+		+	
Orthetrum sp.	--	NP	VC			+	
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Fish							
Poecilia reticulata	孔雀花魚將	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Schistura fasciolata	橫紋南鰍	NP	C	+			

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-09

Species	Chinese name	Status	Commoness	HCR		SKR	
Invertebrates				Site 1	Site 2	Site 1	Site 2
Pomacea canaliculata	蘋果螺	NP	VC	+		+	
Melanoides tuberculata	瘤擬黑螺	NP	VC	+			
Radix plicatulus	羅白螺	NP	VC	+		+	
Biomphalaria sp.	--	NP	C	+		+	
Brotia hainanensis	--	NP	C	++		++	
Gyraulus sp.	--	NP	C			+	
Clithon sowerbianus	多色彩螺	NP	VC		++		
Clithon oualaniensis	奧莱彩螺	NP	VC		++		
Sinotaia quadrata	田螺	NP	VC			+	
Pseudocloeon sp.	--	NP	C	+		+	
Indobaetis sp.	--	NP	VC	+		+	
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++		+	
Mnais sp.	--	NP	VC	+		+	
Orthetrum sp.	--	NP	VC			+	
Euphaea decorata	--	NP	C	+			
Crustacea							
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Caridina contonensis	廣東米蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Poecilia reticulata	孔雀花魚將	NP	VC	+		+	
Schistura fasciolata	橫紋南鰍	NP	C	+			
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Parazacco spilurus	異鱲	V and NP	C	+			

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-09

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				**Site 1**	**Site 2**	**Site 1**	**Site 2**
Biomphalaria sp.	--	NP	C	+		+	
Brotia hainanensis	--	NP	C	+++		++	
Clithon oualaniensis	奧萊彩螺	NP	VC		+		
Gyraulus sp.	--	NP	C			+	
Melanoides tuberculata	瘤擬黑螺	NP	VC	+		+	
Pomacea canaliculata	蘋果螺	NP	VC	+		+	+
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC			+	
Insecta							
Anisocentropus sp.	--	NP	C	+		+	
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++		+	
Euphaea decorata	--	NP	C			+	
Hydropsyche sp.	--	NP	C	+			
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC	+		+	
Orthetrum sp.	--	NP	VC	+		+	
Pseudocloeon sp.	--	NP	C	+			
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	+		+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Poecilia reticulata	孔雀花魚將	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-09

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				Site 1	Site 2	Site 1	Site 2
Biomphalaria sp.	--	NP	C	++		+	
Brotia hainanensis	--	NP	C	+		++	
Clithon oualaniensis	奧萊彩螺	NP	VC		+		
Clithon sowerbianus	多色彩螺	NP	VC		+		
Melanoides tuberculata	瘤擬黑螺	NP	VC	+		+	
Pomacea canaliculata	蘋果螺	NP	VC	+		+	+
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC	+		+	
Insecta							
Anisocentropus sp.	--	NP	C			+	
Cheumatopsyche sp.	--	NP	C	+		+	
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++		+	
Euphaea decorata	--	NP	C			+	
Gerris sp.	--	NP	C	+		+	
Hydropsyche sp.	--	NP	C	+			
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC			+	
Pseudocloeon sp.	--	NP	C	+			
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	++		+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-10

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				**Site 1**	**Site 2**	**Site 1**	**Site 2**
Biomphalaria sp.	--	NP	C	+			
Brotia hainanensis	--	NP	C	++		++	
Clithon oualaniensis	奧莱彩螺	NP	VC		+		
Clithon sowerbianus	多色彩螺	NP	VC		+		
Melanoides tuberculata	瘤擬黑螺	NP	VC	+		+	
Pomacea canaliculata	蘋果螺	NP	VC	+	+	+	+
Radix plicatulus	羅白螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC	+		+	
Insecta							
Cheumatopsyche sp.	--	NP	C	+		+	
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	+++		++	
Euphaea decorata	--	NP	C			+	
Gerris sp.	--	NP	C	+		+	
Hydropsyche sp.	--	NP	C	+			
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC			+	
Pseudocloeon sp.	--	NP	C	+			
Orthetrum sp.	--	NP	VC	+			
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	++		+	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-10

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				**Site 1**	**Site 2**	**Site 1**	**Site 2**
Biomphalaria sp.	--	NP	C	+			
Brotia hainanensis	--	NP	C	+		+	
Clithon oualaniensis	奧萊彩螺	NP	VC		+		
Clithon sowerbianus	多色彩螺	NP	VC		+		
Melanoides tuberculata	瘤擬黑螺	NP	VC	+		+	+
Pomacea canaliculata	蘋果螺	NP	VC	+		+	+
Sinotaia quadrata	田螺	NP	VC	+		+	
Insecta							
Cheumatopsyche sp.	--	NP	C	+		+	
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++		+	
Euphaea decorata	--	NP	C	+		+	
Gerris sp.	--	NP	C	+		+	
Hydropsyche sp.	--	NP	C	+			
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC	+		+	
Orthetrum sp.	--	NP	VC	+		+	
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	++		++	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Poecilia reticulata	孔雀花魚將	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-10

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				**Site 1**	**Site 2**	**Site 1**	**Site 2**
Brotia hainanensis	--	NP	C	++		++	
Clithon oualaniensis	奧莱彩螺	NP	VC		+		
Clithon sowerbianus	多色彩螺	NP	VC		+		
Gyraulus sp.	--	NP	C	+		+	
Melanoides tuberculata	瘤擬黑螺	NP	VC	+		+	
Pomacea canaliculata	蘋果螺	NP	VC	+		+	
Sinotaia quadrata	田螺	NP	VC	+		+	
Insecta							
Agapetus sp.	--	NP	C			+	
Anisocentropus sp.	--	NP	C	+		+	
Cheumatopsyche sp.	--	NP	C			+	
Baetis sp.	--	NP	VC	+			
Chironomus sp.	蠓幼虫	NP	VC	++		++	
Gerris sp.	--	NP	C			+	
Hydropsyche sp.	--	NP	C	+		+	
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC			+	
Orthetrum sp.	--	NP	VC	+		+	
Ptilostomis sp.	--	NP	VC	+			
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	++		++	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	

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Aquatic macro benthos recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Jul-11

Species	Chinese name	Status	Commonness	HCR		SKR	
Mollusca				**Site 1**	**Site 2**	**Site 1**	**Site 2**
Brotia hainanensis	--	NP	C	++		++	+
Clithon oualaniensis	奧莱彩螺	NP	VC		+		
Clithon sowerbianus	多色彩螺	NP	VC		+		
Gyraulus sp.	--	NP	C	+		+	
Melanoides tuberculata	瘤擬黑螺	NP	VC	+		+	
Pomacea canaliculata	蘋果螺	NP	VC	+	+	+	+
Sinotaia quadrata	田螺	NP	VC	+	+	+	+
Insecta							
Agapetus sp.	--	NP	C	+		+	
Anisocentropus sp.	--	NP	C	+			
Cheumatopsyche sp.	--	NP	C	+		+	
Baetis sp.	--	NP	VC	+		+	
Chironomus sp.	蠓幼虫	NP	VC	++	+	++	+
Gerris sp.	--	NP	C	+		+	
Hydropsyche sp.	--	NP	C	+		+	
Indobaetis sp.	--	NP	VC	+		+	
Mnais sp.	--	NP	VC	+		+	
Rhinocypha perforata perforata	三斑鼻蟌	NP	C	+		+	+
Neurobasis chinensis chinensis	華麗色蟌	NP	VC			+	
Orthetrum sp.	--	NP	VC	+		+	
Ptilostomis sp.	--	NP	VC	+			
Crustacea							
Caridina contonensis	廣東米蝦	NP	VC	++		++	
Macrobrachium hainanense	海南沼蝦	NP	VC	+		+	
Cryptopotamon anacoluthon	鰓刺溪蟹	*NP*	*C*	+		+	
Fish							
Gambusia affinis	食蚊魚	NP	VC	+		+	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Parazacco spilurus	異鱲	V and NP	C	+			

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Fish species recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-07

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Cirrhina molitorella	土鯪魚	NP	C		*		
Cyprinus carpio	鯉魚	NP	C		*		
Cyprinus carpio var. viridiviolaceus	錦鯉	NP	C		*		
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Gambusia affinis	食蚊魚	NP	VC	+++		+++	+
Gerres filamentosus	長棘銀鱸	NP	C		+		
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		++		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	莫桑比克口孵非鯽	NP	C		++		
Parasilurus asotus	鯰魚	NP	C		*		
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Scatophagus argus	金錢魚	NP	C		+		
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

Feb-08

				HCR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**
Eleotris oxycephala	尖頭塘鱧	NP	C		+
Gambusia affinis	食蚊魚	NP	VC	+++	
Liniparhomaloptera disparis	擬平鰍	NP	C	+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+	
Mugil cephalus	烏頭	NP	C		+
Ophicephalus maculatus	生魚	NP	C	+	
Oreochromis mossambicus	莫桑比克口孵非鯽	NP	C		++
Parazacco spilurus	異鱲	V and NP	C	+++	
Poecilia reticulata	孔雀花魚將	NP	C	++	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+	
Puntius semifasciolatus	七星魚	NP	C	++	
Rhinogobius spp.	鰕虎魚	NP	C	+	
Schistura fasciolata	橫紋南鰍	NP	C	+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+
Xiphophorus hellerii	劍尾魚	NP	C	++	
Xiphophorus variatus	雜色劍尾魚	NP	C	+	

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Fish species recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Jun-08

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Gambusia affinis	食蚊魚	NP	VC	+++		+++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		+		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	莫桑比克口孵非鯽	NP	C	+	++		+
Parazacco spilurus	異鱲	V and NP	C	++		++	
Poecilia reticulata	孔雀花魚將	NP	C	+		+	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

Oct-08

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Gambusia affinis	食蚊魚	NP	VC	++		++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		+		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	莫桑比克口孵非鯽	NP	C	+	++		+
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	+		+	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

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Fish species recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-09

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Xiphophorus hellerii	劍尾魚	NP	C	++		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Gambusia affinis	食蚊魚	NP	VC	+++		+++	
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Gerres filamentosus	長棘銀鱸	NP	C		+		
Mugil cephalus	烏頭	NP	C		++		
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Oreochromis mossambicus	莫桑比克口孵非鯽	NP	C		++		
Scatophagus argus	金錢魚	NP	C		+		

Jun-09

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Xiphophorus hellerii	劍尾魚	NP	C	++		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Gambusia affinis	食蚊魚	NP	VC	+++		+++	
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Mugil cephalus	烏頭	NP	C		++		
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Oreochromis mossambicus	莫桑比克口孵非鯽	NP	C		++		
Scatophagus argus	金錢魚	NP	C		+		

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Fish species recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-09

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Cirrhina molitorella	土鯪魚	NP	C		*		
Cyprinus carpio	鯉魚	NP	C		*		
viridiviolaceus	錦鯉	NP	C		*		
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Gambusia affinis	食蚊魚	NP	VC	+++		+++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		++		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	非鯽	NP	C		++		
Parasilurus asotus	鯰魚	NP	C		*		
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Rhinogobius spp.	鰕虎魚	NP	C	+		+	
Scatophagus argus	金錢魚	NP	C		+		
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

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Fish species recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-10

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Cirrhina molitorella	土鯪魚	NP	C		+		
Cyprinus carpio	鯉魚	NP	C		+		
Cyprinus carpio var. viridiviolaceus	錦鯉	NP	C		++		
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Gambusia affinis	食蚊魚	NP	VC	++		++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		++		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	非鯽	NP	C		++		+
Parasilurus asotus	鯰魚	NP	C		+		
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	+
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Rhinogobius spp.	鰕虎魚	NP	C	+	+	+	+
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	+
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

Jun-10

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Cyprinus carpio	鯉魚	NP	C		+		
Cyprinus carpio var. viridiviolaceus	錦鯉	NP	C		++		
Eleotris oxycephala	尖頭塘鱧	NP	C		+		
Gambusia affinis	食蚊魚	NP	VC	++		++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		++		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	非鯽	NP	C		++		+
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	+
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		+	
Rhinogobius spp.	鰕虎魚	NP	C	+	+	+	+
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	+
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

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Fish species recorded in Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-10

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Chelon spp.	鱗鯔魚	NP	C		++		
Cyprinus carpio	鯉魚	NP	C		+		
Cyprinus carpio var. viridiviolaceus	錦鯉	NP	C		++		
Gambusia affinis	食蚊魚	NP	VC	++		++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		++		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	非鯽	NP	C		++		+
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	+
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		+	
Rhinogobius spp.	鰕虎魚	NP	C	+	+	+	+
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Therapon jarbua	細鱗魚刺	NP	C	+			
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	+
Xiphophorus variatus	雜色劍尾魚	NP	C	+		+	+

Jul-11

				HCR		SKR	
Species		**Status**	**Commonness**	**Site 1**	**Site 2**	**Site 1**	**Site 2**
Chelon spp.	鱗鯔魚	NP	C		++		
Cyprinus carpio	鯉魚	NP	C		++		
Cyprinus carpio var. viridiviolaceus	錦鯉	NP	C		++		
Gambusia affinis	食蚊魚	NP	VC	++		++	+
Liniparhomaloptera disparis	擬平鰍	NP	C	+		+	
Misgurnus anguilicaudatus	泥鰍	NP	C	+		+	
Mugil cephalus	烏頭	NP	C		+++		
Ophicephalus maculatus	生魚	NP	C	+			
Oreochromis mossambicus	非鯽	NP	C	+	++		+
Parazacco spilurus	異鱲	V and NP	C	+++		+++	
Poecilia reticulata	孔雀花魚將	NP	C	++		+	+
Pseudogastromyzon myersi	麥氏擬腹吸鰍	NP	C	+		+	
Puntius semifasciolatus	七星魚	NP	C	++		++	
Rhinogobius spp.	鰕虎魚	NP	C	++	+	+	+
Schistura fasciolata	橫紋南鰍	NP	C	+		+	
Therapon jarbua	細鱗魚刺	NP	C	+			
Tridentiger trigonocephalus	紋縞鰕虎魚	NP	C		+		
Xiphophorus hellerii	劍尾魚	NP	C	++		++	+
Xiphophorus variatus	雜色劍尾魚	NP	C	+	+	+	+

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Abiotic data from Ho Chung River (HCR) and Sai Kung River (SKR)

Oct-07

Stream	HCR		SKR	
Replicate	**Site 1**	**Site 2**	**Site 1**	**Site 2**
DO (mg/L)	8.7	8.3	8.4	8.5
pH	6.6	7.4	6.5	6.8
Nitrate (mg N/L)	<0.1	0.1	<0.1	<0.1
PO4-P (mg P/L)	<0.1	<0.1	<0.1	0.1
Sand (%)	8	12	5	6
Stone (%)	82	78	90	90
Mud (%)	10	10	5	4

Feb-08

Stream	HCR		SKR	
Replicate	**Site 1**	**Site 2**	**Site 1**	**Site 2**
DO (mg/L)	8.5	8.1	8.2	8.3
pH	6.8	7.7	6.7	6.9
Nitrate (mg N/L)	<0.1	0.1	<0.1	<0.1
PO4-P (mg P/L)	<0.1	<0.1	<0.1	<0.1
Sand (%)	8	12	5	6
Stone (%)	82	78	90	90
Mud (%)	10	10	5	4

Jun-08

Stream	HCR		SKR	
Replicate	**Site 1**	**Site 2**	**Site 1**	**Site 2**
DO (mg/L)	8.2	8	8.1	7.8
pH	6.9	7.5	6.9	7.1
Nitrate (mg N/L)	<0.1	0.2	<0.1	0.1
PO4-P (mg P/L)	<0.1	<0.1	<0.1	<0.1
Sand (%)	5	15	3	8
Stone (%)	85	75	92	86
Mud (%)	10	10	5	6

Oct-08

Stream	HCR		SKR	
Replicate	**Site 1**	**Site 2**	**Site 1**	**Site 2**
DO (mg/L)	8.4	8.3	8.3	8.1
pH	7.1	7.7	6.6	7
Nitrate (mg N/L)	<0.1	0.1	<0.1	<0.1
PO4-P (mg P/L)	0.1	0.1	<0.1	0.1
Sand (%)	5	15	3	8
Stone (%)	85	75	92	86
Mud (%)	10	10	5	6

Abiotic data from Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-09

Stream	HCR		SKR	
Replicate	Site 1	Site 2	Site 1	Site 2
DO (mg/L)	8.5	8	8.6	-
pH	6.9	7	6.8	-
Nitrate (mg N/L)	<0.1	0.1	<0.1	-
PO4-P (mg P/L)	<0.1	<0.1	<0.1	-
Water flow at pool (m/s)	0.01-0.2	0.01-0.1	0.01-0.2	-
Water flow at riffle (m/s)	0.2-0.5	-	0.2-0.5	-
Sand (%)	8	12	6	5
Stone (%)	82	78	89	93

Jun-09

Stream	HCR		SKR	
Replicate	**Site 1**	**Site 2**	**Site 1**	**Site 2**
DO (mg/L)	8.6	8	8.4	7.8
pH	7.2	7.5	6.9	7.1
Nitrate (mg N/L)	0.1	0.2	<0.1	<0.1
PO4-P (mg P/L)	<0.1	0.1	<0.1	<0.1
Sand (%)	5	15	5	8
Stone (%)	85	70	90	90
Mud (%)	10	15	5	2

Oct-09

Stream	HCR		SKR	
Replicate	**Site 1**	**Site 2**	**Site 1**	**Site 2**
DO (mg/L)	8.5	8.3	8.6	8.2
pH	7	7.3	7.1	7.3
Nitrate (mg N/L)	0.2	0.2	0.1	0.2
PO4-P (mg P/L)	<0.1	<0.1	<0.1	<0.1
Sand (%)	5	15	5	8
Stone (%)	85	70	90	90
Mud (%)	10	15	5	2

Abiotic data from Ho Chung River (HCR) and Sai Kung River (SKR)

Feb-10

Stream	HCR		SKR	
Replicate	Site 1	Site 2	Site 1	Site 2
DO (mg/L)	8.7	8.5	8.5	8.4
pH	7.3	7.6	7.3	7.5
Nitrate (mg N/L)	0.1	0.2	0.2	0.2
PO4-P (mg P/L)	<0.1	0.1	<0.1	<0.1
Sand (%)	5	15	5	8
Stone (%)	85	70	90	90
Mud (%)	10	15	5	2

Jun-10

Stream	HCR		SKR	
Replicate	Site 1	Site 2	Site 1	Site 2
DO (mg/L)	8.2	8.1	8	8.2
pH	7.4	7.3	7.1	7.2
Nitrate (mg N/L)	0.1	0.1	0.1	<0.1
PO4-P (mg P/L)	<0.1	<0.1	<0.1	<0.1
Sand (%)	5	15	5	8
Stone (%)	85	70	90	90
Mud (%)	10	15	5	2

Oct-10

Stream	HCR		SKR	
Replicate	Site 1	Site 2	Site 1	Site 2
DO (mg/L)	8.7	8.3	8.2	8.5
pH	7.2	7	7.3	7.4
Nitrate (mg N/L)	0.2	0.2	0.1	0.1
PO4-P (mg P/L)	0.1	<0.1	<0.1	<0.1
Sand (%)	5	15	5	8
Stone (%)	85	70	90	90
Mud (%)	10	15	5	2

Jul-11

Stream	HCR		SKR	
Replicate	Site 1	Site 2	Site 1	Site 2
DO (mg/L)	8	8.1	7.8	7.2
pH	6.6	7	6.5	6.5
Nitrate (mg N/L)	<0.1	0.2	<0.1	0.1
PO4-P (mg P/L)	<0.1	<0.1	<0.1	<0.1
Sand (%)	5	10	5	5
Stone (%)	85	70	85	90
Mud (%)	10	20	10	5

Appendix J:
Complaint Log
Summon of Notification

Appendix J Complaint Log

Log Ref.	Location	Date of Complaint	Nature of Complaint	Details of Complaint	Investigation/ Mitigation Action	Status
C001	Site area of Sai Kung River	10 Aug 2007	Verbal	The verbal complaint was recorded on 10 August 2007 which Typhoon signal no. 8 was hoisted. Livestock waste was observed at the site area of Sai Kung River. The ET reported that exposed area was covered with imperious sheets by the Contractor in the due course.	A follow up site visit carried out by the ET on 11 August 2007 regarding the new arrangement was found to be satisfactory. EPD had also conducted a site inspection on 13 August 2007 and no comment was received by the Contractor.	Closed
C002	Ho Chung River and Tai Chung River	15 Nov 2007	Documented	The complaint was recorded on 15 November 2007 regarding muddy water was found in Ho Chung River and Tai Chung River. The Contractor had enforced currently mitigation measures (i.e. increase the number of silt curtains or enclose the active working areas with silt curtains) to minimize water pollution impact.	The Contractor was advised to enclose the active working areas near band with silt curtains. Maintain integrity of silt curtains installed at watercourses, and enhance the number of silt curtain deployed when necessary at appropriate locations.	Closed
C003	Marine access road near Ho Chung River	22 Nov 2007	Documented	The complaint was recorded on 22 November 2007 regarding dust nuisance observed along the main access road leading to the site entrance.	The Contractor was advised to increase the frequency of water spraying along access road particular in dry period, and imposition of speed control for vehicles on the access road.	Closed
C004	Site area near Muk Mun Shan Road, Sha Ha	19 Jan 2008	Documented	The complaint was recorded on 19 January 2008 regarding noise nuisance on non-weekday hours and movement of construction vehicles from the site.	The Contractor was advised to avoid construction works undertaken and operation of construction plants on Sunday or public holidays.	Closed
C005	House 105 of Ho Chung New Village	22 Jan 2008	Documented	The complaint was recorded on 22 January 2008 regarding dust nuisance during unloading of earth materials.	Ad-hoc air quality monitoring was performed by ET on 7 March 2008 subsequently. No	Closed

Log Ref.	Location	Date of Complaint	Nature of Complaint	Details of Complaint	Investigation/ Mitigation Action	Status
					exceedance was recorded during the ad-hoc monitoring. The Contractor was advised to provide tarpaulin sheeting coverage for earth materials, erection of hoarding along the site boundary.	
C006	Site area at Ho Chung River	5 Feb 2008	Documented	The complaint was recorded on 5 February 2008 regarding dust nuisance generated during grout-mixing and noise nuisance from the soldier piling works.	Ad-hoc air quality monitoring was performed by ET on 7 March 2008 subsequently. No exceedance was recorded during the ad-hoc monitoring. The Contractor was advised to provide impervious sheeting coverage for grout-mixing works and stocks of cement bags (>20 nos.), locate mobile plant far from the sensitive receivers as possible, throttle down machineries which are intermittent use, and deploy movable noise barriers.	Closed

Log Ref.	Location	Date of Complaint	Nature of Complaint	Details of Complaint	Investigation/ Mitigation Action	Status
C007	House 107, Ho Chung New Village	20 Mar 2008	Documented	The complaint was recorded on 20 March 2008 through the EPD regarding noise nuisance generated from the construction of retaining wall.	The ET had reviewed the noise monitoring results conducted recently on 13, 20 and 26 February 2008, and revealed all results complied with the Limit Level. The construction of retaining wall had been suspended till April 2008 and the Contractor would closely liaise with the complainant and closely monitor the noise results.	Closed
C008	Ho Chung River	20 Mar 2008	Documented	The complaint was recorded on 20 March 2008 through the EPD regarding muddy water observed along Ho Chung River. After investigation, the muddy water was considered to be attributed from the other construction site located at upstream and pre-accumulated silt in the river bed.	The ET had reviewed the water quality monitoring results conducted recently on 11, 13 and 14 March 2008, and revealed the SS results exceeded the Action Level but comply with the Limit Level. The ET reported that no direct pollution source was observed during the monitoring periods and weekly inspections conducted on 7 and 14 Mar 2008. The ET advised that additional silt curtain should be deployed at the upstream end of the site to minimize the influx of pollutant into the site.	Closed

Log Ref.	Location	Date of Complaint	Nature of Complaint	Details of Complaint	Investigation/ Mitigation Action	Status
C009	Ho Chung Village	22 Jan 2009	Verbal	A verbal complaint was recorded on 22 January 2009 from a villager from Ho Chung Village was on regarding hammering noise from formworks on 26 December 2008.	The ET reported that hammering noise was produced by a carpenter when strengthening the spacing to the formwork of box culvert BC3 near Ho Chung village. The carpenter suspended hammering work immediately. The Contractor was urged to avoid construction works on Sunday or public holidays.	Closed

Appendix K:
Summon of Notification

ss. 8 & 72, Form 1

Reg No. KTCT022/2008

SUMMONS TO DEFENDANT

HONG KONG SPECIAL ADMINISTRATIVE REGION
Kwun Tong MAGISTRATES' COURTS
Kwun Tong Law Courts Building, 10 Lei Yue Mun Road, Kwun Tong

TO:

SUM KEE CONSTRUCTION LIMITED

BRC : 18787991

KT

ROOM 9, 2/F, GOLDFIELD INDUSTRIAL CENTRE,
1 SUI WO ROAD, SHATIN, N.T.

Sex :
Age :

0584 4/EP/AC/11/COMP/R&E/SK-CICP22

Information has been laid THAT YOU on 13 August 2007 at 11:15 a.m. being the contractor responsible for a construction site at the junction of Tai Mong Tsai Road and Muk Min Shan Road, Sai Kung, N.T. (DSD Contract No. DC/2006/01) where a regulatory work namely work involving power-driven drilling, cutting and polishing was being carried out did fail to ensure that the work was carried out in accordance with section 22 of the Schedule of the Air Pollution Control (Construction Dust) Regulation by neither having sprayed with water or dust suppression chemical continuously on the surface where power-driven drilling operation that caused dust emission was carried out, nor having had the process accompanied by the operation of an effective dust extraction and filtering device..

Contrary to : Regulations 5(1) and 5(2) of the Air Pollution Control (Construction Dust) Regulation made under section 43 of the Air Pollution Control Ordinance, Cap 311

The information was laid by DIRECTOR OF ENVIRONMENTAL PROTECTION of Environmental Protection Department on 23 January 2008

THIS SUMMONS THEREFORE REQUIRES YOU TO APPEAR on 21 February 2008 at 9:30 a.m. in Court No. 1 Kwun Tong Magistrates' Courts

before the magistrate presiding there to answer to the information and to be further dealt with according to law.

Your representative should bring proof that you have duly appointed him / her to represent your corporation. Personal appearance is required, even if you intend to plead guilty.

This Summons is issued under the Magistrates Ordinance (Cap. 227) by a magistrate or an officer of a magistrate's court who is authorized under Section 8(1) of that Ordinance.

Dated : 24 January 2008

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