

Maeda Corporation

**Castle Peak Road
Improvement Between
Sham Tseng and Ka
Loon Tsuen,
Tsuen Wan
West Contract No.
HY/99/18**

Annual Environmental
Monitoring and Audit
Summary Report
February 2003 to
January 2004

First Issue

Maeda Corporation

**West Contract No. HY/99/18
Castle Peak Road Improvement Between
Sham Tseng and Ka Lung Tsuen, Tsuen Wan**

Environmental Monitoring and Audit

Annual Environmental Monitoring and Audit Summary Report

February 2003 to January 2004

February 2004

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16 February 2004

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Dear Mr. Tsoi

**Contract HY/99/18 West Contract
Castle Peak Road Improvement between Sham Tseng and Ka Loon Tsuen, Tsuen Wan
Annual EM&A Summary Report (Feb 03 – Jan 04)**

We refer to the electronic version of the captioned report submitted by your Mr. Laurent Cheung via e-mail on 10 February 2004 and subsequent submission. We have no comment and endorse the report.

Please do not hesitate to contact the undersigned on 2911-2719 if you wish to discuss any further issues.

Yours sincerely

Coleman Ng
Project Manager
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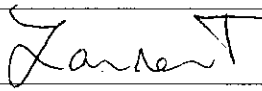
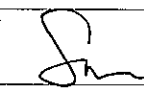
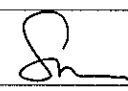
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ABBREVIATIONS AND ACTONYMS

A/L	Action or Limit Levels
AQO	Air Quality Objectives
Arup	Ove Arup & Partners Hong Kong Limited
ASR	Area Sensitive Rating
B&K	Brüel & Kjær
CFM	Cubic Feet per Minute
CNP	Construction Noise Permit
CT	Contractor
DO	Dissolved Oxygen
DGPS	Differential Global Positioning System
EA	Environmental Auditor
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EP	Environmental Permit
EPD	Environmental Protection Department
ER	Engineer / Engineer's Representative
ET	Environmental Team
HKPSG	Hong Kong Planning Standards and Guidelines
HKSAR	Hong Kong Special Administrative Region
HOKLAS	The Hong Kong Laboratory accreditation Scheme
HVS	High Volume Sampler
IEC	International Electrotechnical Commission Publications
K	Degrees Kelvin
MC	Maeda Corporation
MHJV	Mouchel Halcrow Joint Venture
NAMAS	National Measurement accreditation Service
NTU	Nephelometric Turbidity Unit
NSR	Noise Sensitive Receiver
SCFM	Standard Cubic Feet per Minute
SS	Suspended Solids
TSP	Total Suspended Particulates
Tby	Turbidity

EXECUTIVE SUMMARY

This is the second annual environmental monitoring and audit (EM&A) report summarising the site inspection findings, air quality, noise, marine water quality monitoring works, and landscape and visual monitoring and audit for the period from February 2003 to January 2004.

Monitoring works included air quality monitoring at 9 locations, noise monitoring at 13 locations, and marine water quality monitoring at 16 locations. Air quality was recorded in terms of 1-hour Total Suspended Particulates (TSP) and 24-hour TSP. Noise was measured in terms of $L_{eq(30min)}$ with L_{10} and L_{90} measurements as references. Water quality was measured in terms of Dissolved Oxygen (DO), Turbidity (Tby) and Suspended Solids (SS).

Air Quality

The highest 1-hour TSP level was $357.8\mu\text{g}/\text{m}^3$ recorded at Tsing Lung Tau Tin Hau Temple (WA6) on 24 April 2003 while the lowest 1-hour TSP level was $97.6\mu\text{g}/\text{m}^3$ recorded at Carpark of Sea Crest Villa Phase 2 Block 6 (WA9) on 16 May 2003. There was no exceedance on the Action and Limit (A/L) Levels during the monitoring period.

The highest 24-hour TSP level was $279.7\mu\text{g}/\text{m}^3$ recorded at G/F of Tsing Lung Tau Tin Hau Temple (WA6) on 26 April 2003 while the lowest 24-hour TSP level was $25.7\mu\text{g}/\text{m}^3$ recorded at Podium of Sea Crest Villa Phase 3 Block 8 (WA8) on 25 June 2003. Exceedance on Action Level was recorded at WA6 on 2 May 2003, WA8 on 27 December 2003, and WA4, WA5 and WA6 on 3 January 2004. Exceedance on Limit Level was found at WA6 on 26 April 2003.

Noise

The highest noise level was 75.0dB(A) recorded at House 1, Tsing Lung Tau Village (WN9) on 3 June 2003, at House 60-64, Tsing Lung Tau Village (WN10) on 10 April 2003 and 16 June 2003 while the lowest noise level was 59.0dB(A) recorded at Carpark (L3) of Sea Crest Villa Phase 2 Block 6 (WN14) on 4 February 2003. There was no exceedance on the A/L Levels during the monitoring period.

Marine Water Quality

DESIGNATED PROJECT – Marine water quality monitoring had been undertaken at 16 monitoring locations, 9 for impact and 7 for control during the mid-ebb and mid-flood tidal cycles for period from 4 February 2003 to 10 February 2003.

The new marine water quality monitoring programme was commenced from 12 February 2003 as agreed by the IC(E) and EPD. A total of twelve locations, 8 for impact and 4 for control were selected for the new marine water quality monitoring programme.

EPD and IC(E) agreed on 10 April 2003 to apply the “Direct Comparison” method for evaluation of the marine water quality exceedance. In order to better differentiate between exceedance caused by the contract works and elevated readings arising from causes unrelated to contract works, all parties had agreed to introduce a term “Reaching of Trigger Value” to represent the scenario where the A/L levels were exceeded by the “Direct Comparison” evaluation method.

Upon the detection of “Reaching of Trigger Value”, an initial analysis would be carried out to determine whether it was caused by contract works. Exceedance and non-compliance should only be recorded in case where the “Reaching of Trigger Value” was caused by the contract works.

As reported by the Contractor, major sea works at level below +2.5mPD was completed in July 2003. The proposal on suspension of marine monitoring was submitted to IC(E), HyD, EPD and AFCD for comments on 25 September 2003. It was confirmed with IC(E) and AFCD that suspension of marine monitoring was acceptable if there is no “active” marine work being carried out. In future, if there is any marine work on or below +2.5mPD, the Contractor shall notify the relevant parties one month in advance and resume the marine monitoring. Subsequently, as instructed by the Contractor/ HyD, the marine monitoring had been suspended since 10 October 2003.

Summary of Mid-Ebb Tide from 4 February 2003 to 10 February 2003 (Old Monitoring Programme)

The lowest Dissolved Oxygen (DO) levels of impact stations at surface & middle and bottom positions were 6.03mg/L at WW8 on 10 February 2003, and 6.11mg/L at WW5 on 10 February 2003 respectively.

The highest depth-averaged Turbidity (Tby) result of impact stations was 3.6 Nephelometric Turbidity Unit (NTU) at WW8 on 6 February 2003.

The highest depth-averaged Suspended Solids (SS) result of impact stations was 6.5mg/L at WW6 on 6 February 2003.

Summary of Mid-Flood Tide from 4 February 2003 to 10 February 2003 (Old Monitoring Programme)

The lowest DO levels of impact stations at surface & middle and bottom positions were 5.96mg/L at WW7 on 10 February 2003, and 6.09mg/L at WW5 on 10 February 2003 respectively.

The highest depth-averaged Tby result of impact stations was 6.8 NTU at WW2 on 4 February 2003.

The highest depth-averaged SS result of impact stations was 16.0mg/L at WW3 on 4 February 2003.

Summary of Mid-Ebb Tide from 12 February 2003 to 8 October 2003 (New Monitoring Programme)

The lowest Dissolved Oxygen (DO) levels of impact stations at surface & middle and bottom positions were 2.89mg/L at WW1 on 24 September 2003, and 2.74mg/L at WW4 on 24 September 2003 respectively.

The highest depth-averaged Turbidity (Tby) result of impact stations was 28.0 Nephelometric Turbidity Unit (NTU) at WW1 on 21 March 2003.

The highest depth-averaged Suspended Solids (SS) result of impact stations was 34.8mg/L at WW1 on 21 March 2003.

Summary of Mid-Flood Tide from 12 February 2003 to 30 April 2003 (New Monitoring Programme)

The lowest DO levels of impact stations at surface & middle and bottom positions were 2.82mg/L at WW8 on 22 September 2003, and 2.78mg/L at WW6/7 on 22 September 2003 respectively.

The highest depth-averaged Tby result of impact stations was 24.0NTU at WW5 on 29 September 2003.

The highest depth-averaged SS result of impact stations was 30.9mg/L at WW5 on 29 September 2003.

There were occasional “Reaching of Trigger value” of DO, Tby and SS of marine water quality monitoring from February 2003 to October 2003. These exceedance were likely caused by the natural variation of marine water quality rather than the marine works of West Contract, as relatively low DO, high Tby and SS results were recorded at all other control and impact stations. There was one exceedance on Action Level of Tby and SS recorded at WW4 during mid ebb tide on 15 March 2003 which was suspected to be caused by construction works.

Landscape and Visual

A total of 26 times of landscape and visual monitoring and audits had been carried out on a biweekly basis from February 2003 to January 2004 by a Registered Landscape Architect. No non-conformity regarding the landscape and visual issues was recorded.

Waste Disposal

A total of 309 loads of Construction & Demolition (C&D) waste had been disposed of at WENT Landfill in the period from February 2003 to January 2004. A total of 33,212 loads of C&D fill materials (Public Fill) had been disposed of at Public Filling Area in Tuen Mun by dump trucks in the period from February 2003 to January 2004. A total of 29 drums (5,072L) of spent lube oil and 3 drums (600L) of sludge contaminated with spent lube oil had been collected by licensed collector from February 2003 to January 2004.

Complaint Records

A total of 21 environmental complaints were received from February 2003 to January 2004. Four of them were concerned about traffic noise from construction site; three regarded daytime construction noise; three for construction noise during restricted hours. Two of the complaints were about construction dust emission; one was regarding both construction noise and dust emission from the construction works at Seawall B. Regarding the complaints for water quality impact, four were concerned about stagnant water arising from construction activities, one about water leakage and one about the muddy water on the beach opposite to Sea Crest Villa Phase III. Other complaints were one regarding the felling of all old trees along section of Castle Peak Road near Ma Wan Pier and one regarding accumulation of general refuse on pedestrian walkway. All had been solved after investigation.

Non-compliance

Exceedance of 24-hour TSP on Action Level was recorded at WA6 on 2 May 2003, WA8 on 27 December 2003, and WA4, WA5 and WA6 on 3 January 2004; and on Limit Level at WA6 on 26 April 2003 (Refer to Section 9.2.1 for details).

There were seven documented complaints regarding construction noise which had triggered the Action Level of construction noise (Refer to Section 9.2.2 for details).

DESIGNATED PROJECT - There was one “Reaching of Trigger value” of DO, Tby and SS of marine water quality monitoring from February 2003 to October 2003. (Refer to Section 9.2.3 for details).

Notification of Summons and Successful Prosecutions

The Contractor had convicted an offence on 29 May 2003 regarding the discharge of effluent on 6 January 2003 with BOD and E. coli exceeding the maximum standards as stated in the Discharge Licence.

Comparison of EM&A Data with EIA Predication

Apart from occasional exceedance of air quality and one exceedance of marine water quality monitoring, the environmental monitoring data (i.e. air quality and construction noise) collected in the period from February 2003 to January 2004 were generally in line with the prediction of the EIA Report as the monitoring results were within the acceptable levels as stipulated in the EIA Report. No marine water assessment/modelling was undertaken during the EIA stage and therefore, comparison with the marine water quality monitoring results was not feasible.

Review of Environmental Monitoring Methodology and EM&A Programme

The environmental monitoring methodologies and procedures had been regularly reviewed by the Environmental Team (ET). No modification to the existing monitoring methodology was recommended except for the relocation of the marine water quality monitoring station.

EPD and IC(E) had agreed to apply the “Direct Comparison” method for evaluation of the marine water quality exceedance during the reporting period. All parties had agreed to introduce a term “Reaching of Trigger Value” to represent the scenario where the A/L levels were exceeded by the “Direct Comparison” evaluation method. In general, EM&A programme had been conducted as planned for the reporting period.

The EM&A programme and the implementation of the mitigation measures were successful for the period from February 2003 to January 2004.

Environmental Acceptability of the Project

Even though occasional exceedances of air quality and marine water quality were detected, the environmental monitoring results had indicated that the operation of the site activities by the CT in the period from February 2003 to January 2004 generally comply with the relevant environmental requirements.

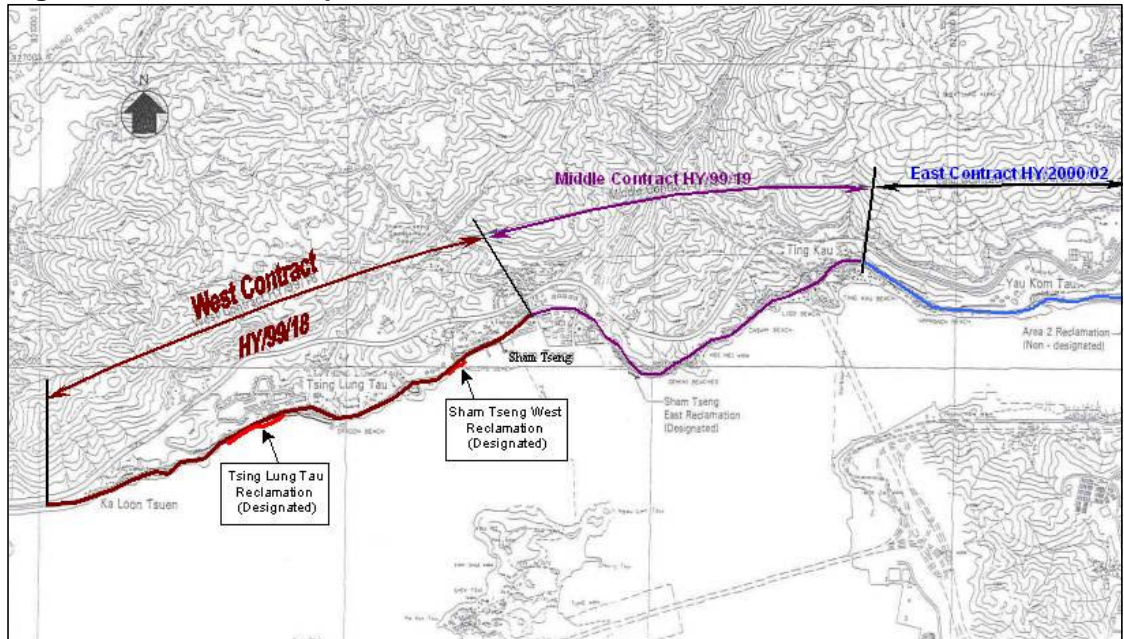
1. INTRODUCTION

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by the Contractor - Maeda Corporation (MC) as the Environmental Team (ET) for *Contract No. HY/99/18 Castle Peak Road Improvements between Sham Tseng and Ka Loon Tsuen, Tsuen Wan* (hereafter called the “Project”). Environmental parameters including air quality, construction noise, water quality and landscape & visual issues were selected for impact monitoring for the Project. The contract period of the Project are anticipated as 36 months from December 2001 to November 2004.

1.1 Project Background

The Castle Peak Road improvements works consists of upgrading the existing Castle Peak Road to provide a dual two-lane carriageway of “Rural Road A” classification between Area 2, Tsuen Wan and Ka Loon Tsuen, and all associated utility, junction and pedestrian facilities. The Castle Peak Improvement project is divided into three contracts. This Environmental Monitoring and Audit (EM&A) exercise only concerns the West Contract No. HY/99/18 between Sham Tseng and Ka Loon Tsuen, Tsuen Wan. Figure 1-1 shows the site location plan.

Figure 1-1 Site location plan



The scope of the construction work includes:

- Improvement to Castle Peak Road between Area 2 and Ka Loon Tsuen, Tsuen Wan to a dual two-lane carriageway;
- Provision of pedestrian facilities in the form of footpaths, subways, footbridges and Crossings;
- Road junction and signal design and the re-provision of access roads and connections to existing road networks;
- Construction of associated drainage and landscaping works;
- Environmental mitigation measures;
- Design and construction of watermains;
- Construction of entrusted sewerage works; and
- Dredging and reclamation (designated project – see also Section 1.2)

1.2 Designated Project

The marine reclamation and the construction of the associated seawall at Tsing Lung Tau and Sham Tseng West within Contract No. HY/99/18 are classified as designated projects under the Environmental Permits No. EP-093/2001 and EP-094/2001 respectively.

1.3 Impact EM&A Requirements

The impact environmental monitoring and audit included air quality monitoring (both 1-hour and 24-hour TSP), noise, water quality, landscape and visual monitoring, and environmental audit.

1.4 Purpose of the Report

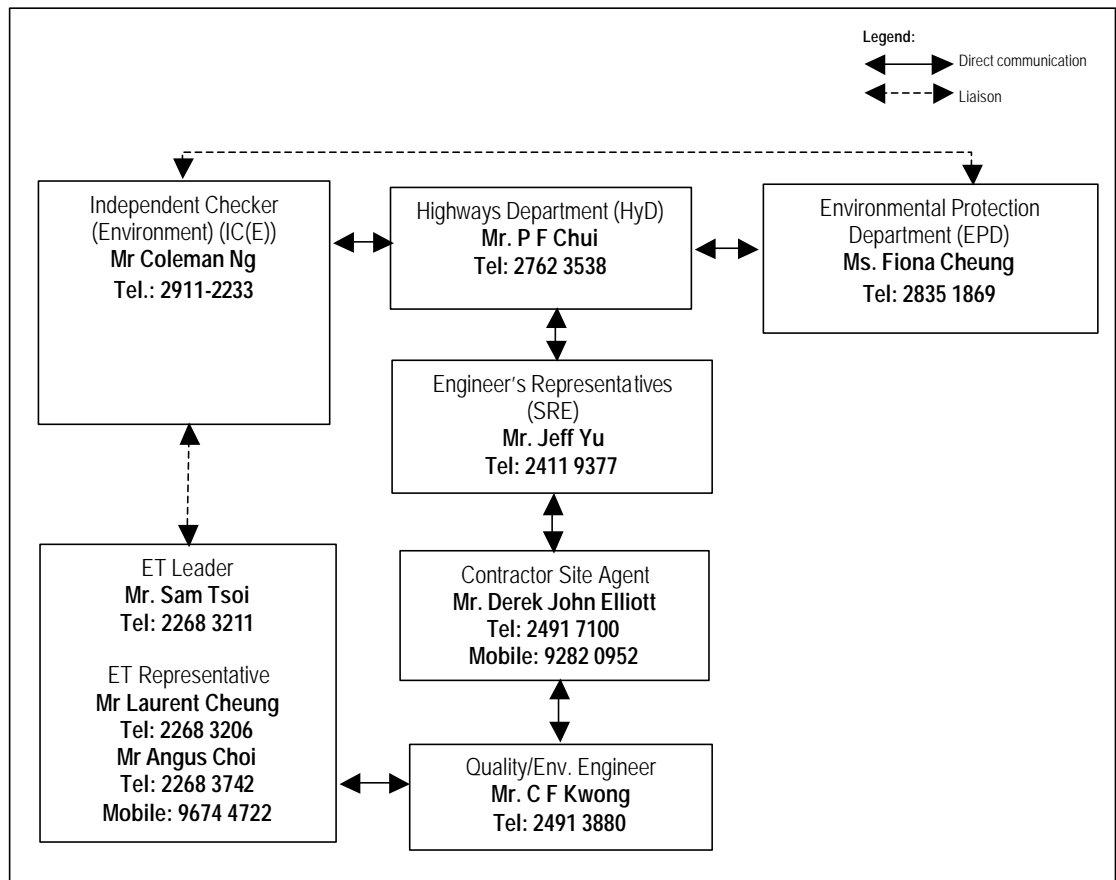
The purpose of the annual EM&A summary report is to summarise and provide the information on monitoring methodology, monitoring results, environmental permit status, site audit findings, recommendations and conclusions for the period from February 2003 to January 2004.

2. ENVIRONMENTAL STATUS

2.1 Project Organisation

The project organisation chart for environmental management is shown in Figure 2-1.

Figure 2-1 Project organisation on environmental management



2.2 Construction Programme

The construction work was commenced in February 2002. The updated construction programme is given in Appendix A.

2.3 Construction Activities of the Year

The major construction activities carried out by the Contractor (CT) for the period from February 2003 to January 2004 included excavation, rock breaking, rock drilling, chemical blasting and hydroseeding for slope formation, bored piling, construction of outfalls and base-slab; and installation of retaining walls and filling of sub-base.

The major sea works (Designated Projects) included placing of rock armour, marine dredging, and reclamation. All major sea works at level below +2.5mPD had been completed in July 2003.

3. SUMMARY OF EM&A REQUIREMENTS

Air quality, construction noise, marine water quality and landscape issues are significant environmental impacts identified for the construction period of the project. In accordance with the Project specific EM&A Manual^[1], air quality, noise, water quality, landscape impact monitoring, and audit shall be performed by an ET at all specified monitoring locations during the construction and operational stages.

3.1 Air Quality Monitoring

3.1.1 Monitoring Parameters

Air monitoring was measured in terms of the TSP levels for both 24-hour and 1-hour periods.

3.1.2 Monitoring Frequency

24-hour TSP and 1-hour TSP levels were monitored during the course of construction according to the EM&A Manual. The monitoring parameters and frequencies are specified in Table 3-1.

Table 3-1 TSP monitoring parameters and frequency

Parameters	Monitoring Frequency	Time Period	No. of measurement for each monitoring
24-hour TSP	Once every six days	0000 - 2400	1
1-hour TSP	Three times per every six days	0700 - 1900	1

3.1.3 Monitoring Locations

A total of eleven locations were specified for the air quality monitoring and they are given in Table 3-2 and presented in Figures 3-1a to 3-1d.

Table 3-2 Air quality monitoring locations

Air Monitoring Station No.	Location	Location description
WA1	Bayside Villas	G/F, Bayside Villas (Temporary Suspended)
WA2	Grand Bay Villas	G/F, Grand Bay Villas (Temporary Suspended)
WA3	Hong Kong Garden	G/F, Hong Kong Garden (Regent Heights)
WA4	Hong Kong Garden	G/F, Hong Kong Garden (Between Blk 1 & 2)
WA5	Hong Kong Garden	G/F, Hong Kong Garden (Block 4)
WA6	Tsing Lung Tau Tin Hau Temple	G/F, Tsing Lung Tau Tin Hau Temple
WA7	Sea Crest Villa	Podium, Sea Crest Villa (Phase 4 Block 12)
WA8	Sea Crest Villa	Podium, Sea Crest Villa (Phase 3 Block 8)
WA9	Sea Crest Villa	Car Park (L3), Sea Crest Villa (Phase 2 Block 6)
WA10	Sea Crest Villa	Podium, Sea Crest Villa (Phase 1 Block 1)
WA11	Lido Garden	G/F, Carpark, Lido Garden Tower 1

Note: Bayside Villas (WA1) and Grand Bay Villas (WA2) are no longer the air sensitive receivers as all residents of Bayside Villas and Grand Bay Villas had been evacuated since September 2002. Therefore, the air quality monitoring at Bayside Villas and Grand Bay Villas were temporary suspended since October 2002 after approval from IC(E) and EPD.

3.2 Construction Noise Monitoring

3.2.1 Monitoring Parameters

Construction noise monitoring was measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). L_{10} and L_{90} will also be recorded as supplementary reference information for data auditing.

3.2.2 Monitoring Frequency

Construction noise measurements were required to be taken on a weekly basis according to the EM&A Manual. The monitoring time periods, monitoring parameters and frequency are specified in Table 3-3.

Table 3-3 Construction noise monitoring parameters and frequency

Time Period (when construction activity is found)	Parameters	Monitoring Frequency	No. of Measurements for Each Monitoring
Between 0700-1900 hours on normal weekdays	$L_{eq(30\text{ min})}$	Once per week	1
Between 1900-2300 hours on normal weekdays	$L_{eq(5\text{ min})}^*$		3 (consecutive)
Between 2300-0700 hours of next day			
Between 0700-1900 hours on holidays			

Remarks: * The $L_{eq(5\text{ min})}$ will only be measured if construction activities are conducted in holidays and between the period of 1900 and 0700 hours during normal weekdays.

3.2.3 Monitoring Locations

A total of sixteen noise monitoring locations were specified. They are given in Table 3-4 and presented in Figures 3-1a to 3-1d. The measurements shall be taken at a position 1m from the exterior of building façade and at a position of 1.2m above ground.

Table 3-4 Construction noise monitoring locations

Noise Monitoring Station No.	Location	Monitoring Point
WN1	Ka Loon Tsuen	House No.3, Ka Loon Tsuen
WN2	Ka Loon Tsuen	House No.15, Ka Loon Tsuen
WN3	Bayside Villas	Upper G/F, Bayside Villas (Temporary Suspended)
WN4	Bayside Villas	Lower G/F, Bayside Villas (Temporary Suspended)
WN5	Grand Bay Villas	G/F, Grand Bay Villas (Temporary Suspended)
WN6	Hong Kong Garden	G/F, Hong Kong Garden (Regent Heights)
WN7	Hong Kong Garden	G/F, Hong Kong Garden (Between Blk 1 & 2)
WN8	Hong Kong Garden	G/F, Hong Kong Garden (Block 4)
WN9	Tsing Lung Tau Village	House 1, Tsing Lung Tau Village
WN10	Tsing Lung Tau Village	House 60-64, Tsing Lung Tau Village
WN11	Villa Alfavista	G/F, Villa Alfavista
WN12	Sea Crest Villa	Podium, Sea Crest Villa (Phase 4 Block 12)
WN13	Sea Crest Villa	Podium, Sea Crest Villa (Phase 3 Block 8)
WN14	Sea Crest Villa	Car Park (L3), Sea Crest Villa (Phase 2 Block 6)
WN15	Sea Crest Villa	Podium, Sea Crest Villa (Phase 1 Block 1)
WN16	Lido Garden	G/F, Carpark, Lido Garden Tower 1

Note: Bayside Villas (WN3 and WN4) and Grand Bay Villas (WN5) are no longer the noise sensitive receivers as all residents of Bayside Villas and Grand Bay Villas had been evacuated since September 2002. Therefore, the noise monitoring at Bayside Villas and Grand Bay Villas were temporary suspended since October 2002 after approval from IC(E) and EPD.

3.3 Water Quality (Designated Project)

3.3.1 Monitoring Parameters

Water quality monitoring includes Turbidity (Tby) in the unit of NTU, Dissolved Oxygen (DO) in the unit of mg/L and Suspended Solids (SS) in the unit of mg/L. In addition to the water quality parameters, other relevant data, such as monitoring location/position, time, water depth, water temperature, salinity, DO saturation, weather conditions, sea conditions, tidal stage will be recorded including any special phenomena, work underway at the construction site, etc.

3.3.2 Monitoring Frequency

Water quality monitoring during the impact stage will be conducted thrice per week, during mid-flood and mid-ebb tides and at sixteen designated sampling locations. The interval between two sets of monitoring will not be less than 36 hours except where exceedances above the Action Level or Limit Level were detected (see also section 3.4). In these cases, the monitoring frequency will be increased.

3.3.3 Monitoring Locations

A total of sixteen locations, 9 for impact and 7 for control had been selected for marine water quality monitoring and the locations are given in Table 3-5A and presented in Figure 3-1b to 3-1e. Marine water quality monitoring from 4 February 2003 to 10 February 2003 had been conducted at these marine water quality monitoring locations.

As agreed by the IC(E) and EPD, a new marine water quality monitoring programme was commenced on 12 February 2003. A total of twelve locations, 8 for impact and 4 for control were selected for the new marine water quality monitoring programme and the locations are given in Table 3-5B and presented in Figure 3-1b to 3-1e.

Table 3-5a Water quality monitoring locations (Original)

Water Monitoring Station No.		Location	
		Eastings	Northings
Tsing Lung Tau	WW1 (Impact Station)	822260	824491
	WR1 (Control Station)	822278	824459
Tsing Lung Tau	WW2 (Impact Station)	822352	824538
	WR2 (Control Station)	822363	824505
Tsing Lung Tau	WW3 (Impact Station)	822506	824609
	WR3 (Control Station)	822518	824578
Tsing Lung Tau	WW4 (Impact Station)	822820	824640
	WR4 (Control Station)	822800	824603
Angler's Beach: Sham Tseung	WW5 (Impact Station)	823697	824937
	WR5 (Control Station)	823700	824905
Angler's Beach: Sham Tseung	WW6 (Impact Station)	823775	824991
	WW7 (Impact Station)	823797	825042
	WR6/WR7 (Control Station)	823797	824964
Angler's Beach	WW8 (Impact station)	823994	825141
	WR8 (Control Station)	824006	825107
Ma Wan Fish Culture Zone	FCZ1 (Impact Station)	823500	823870

Table 3-5b Water quality monitoring locations (New)

Water Monitoring Station No.		Location	
		Eastings	Northings
Tsing Lung Tau	WW1 (Impact Station)	822306	824405
	WW2 (Impact Station)	822377	824462
	WW3 (Impact Station)	822529	824500
	WW4 (Impact Station)	822775	824560
	WR-E-1234 (Control Station for Mid-Ebb Tide)	822204	824312
	WR-F-1234 (Control Station for Mid-Flood Tide)	822850	824519
Angler's Beach: Sham Tseung West	WW5 (Impact Station)	823700	824905
	WW6/7 (Impact Station)	823797	824964
	WW8 (Impact Station)	823900	825023
	WR-E-5678 (Control Station for Mid-Ebb Tide)	823590	824830
	WR-F-5678 (Control Station for Mid-Flood Tide)	823994	825034
Ma Wan Fish Culture Zone	FCZ1 (Impact Station)	823500	823870

Figure 3-1a Monitoring locations



Figure 3-1b Monitoring locations

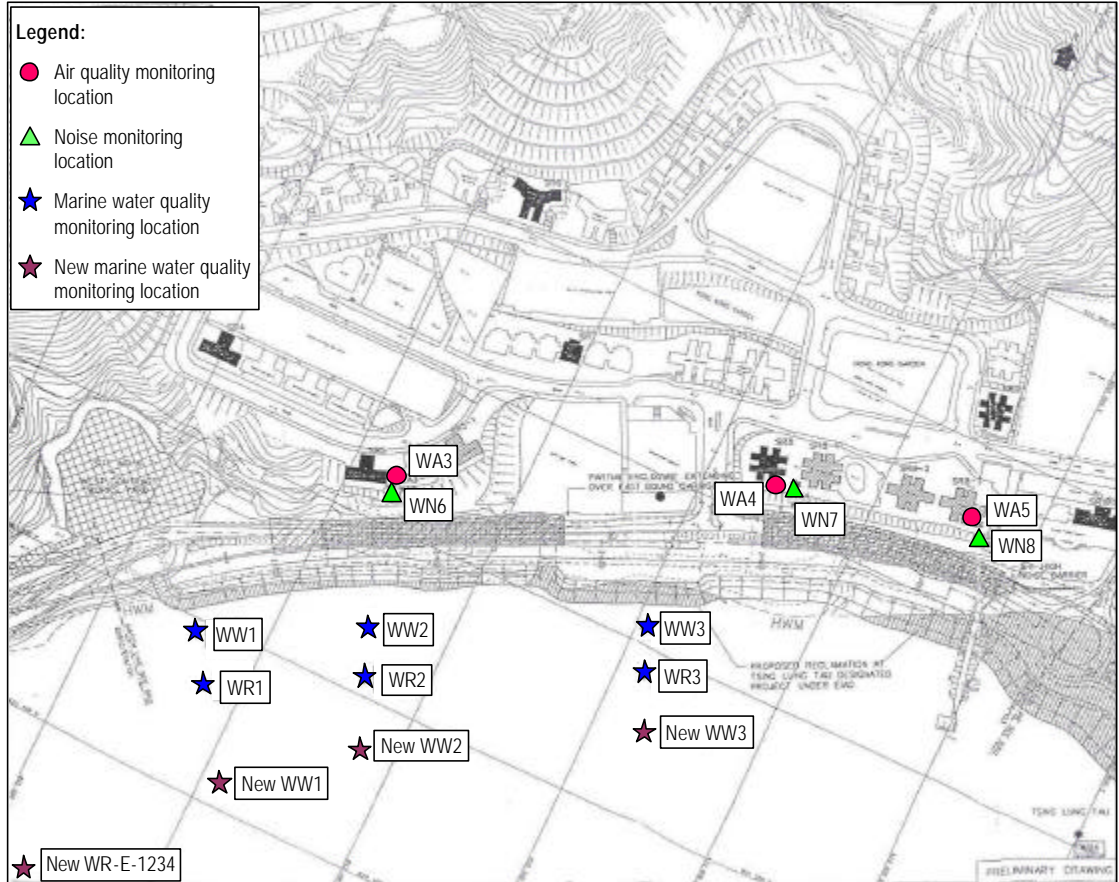


Figure 3-1c Monitoring locations

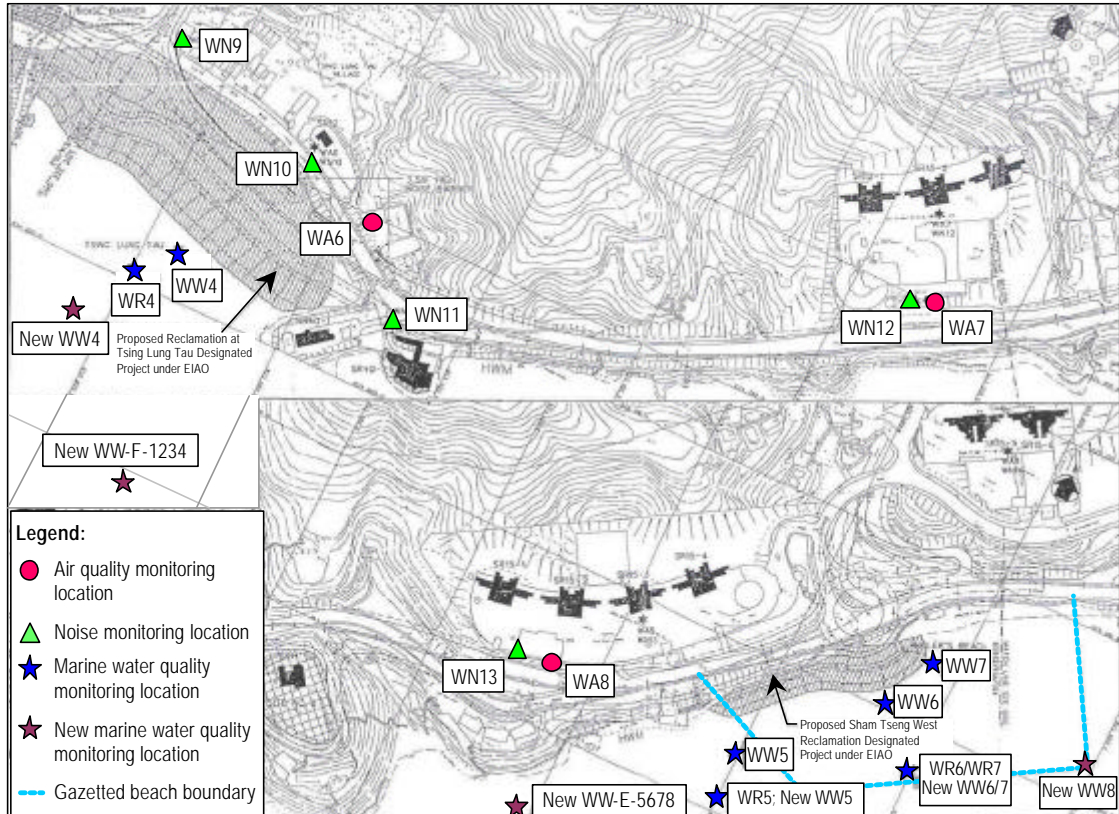


Figure 3-1d Monitoring locations

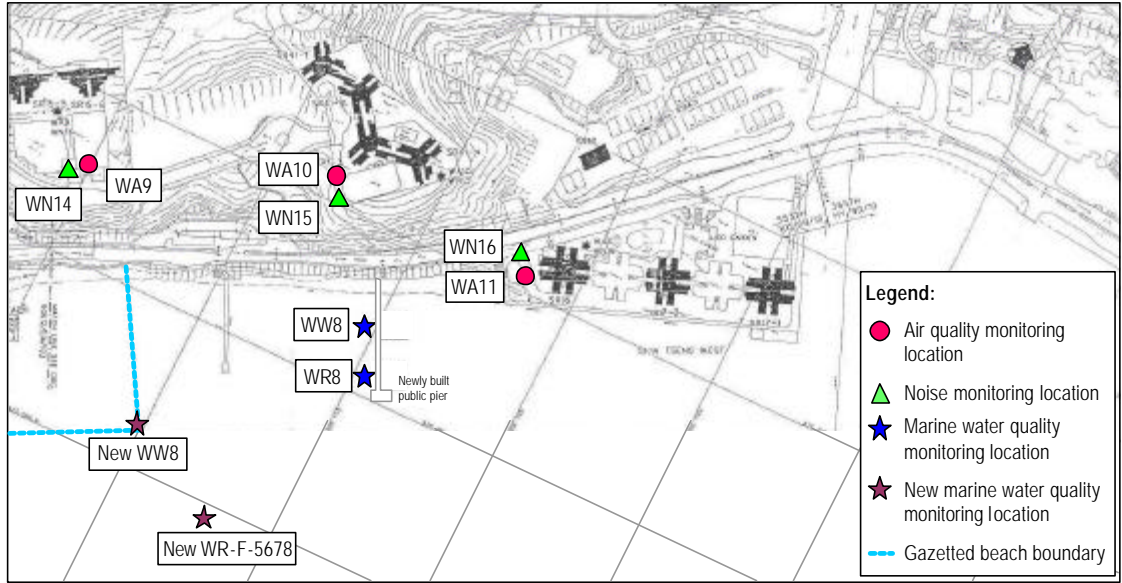
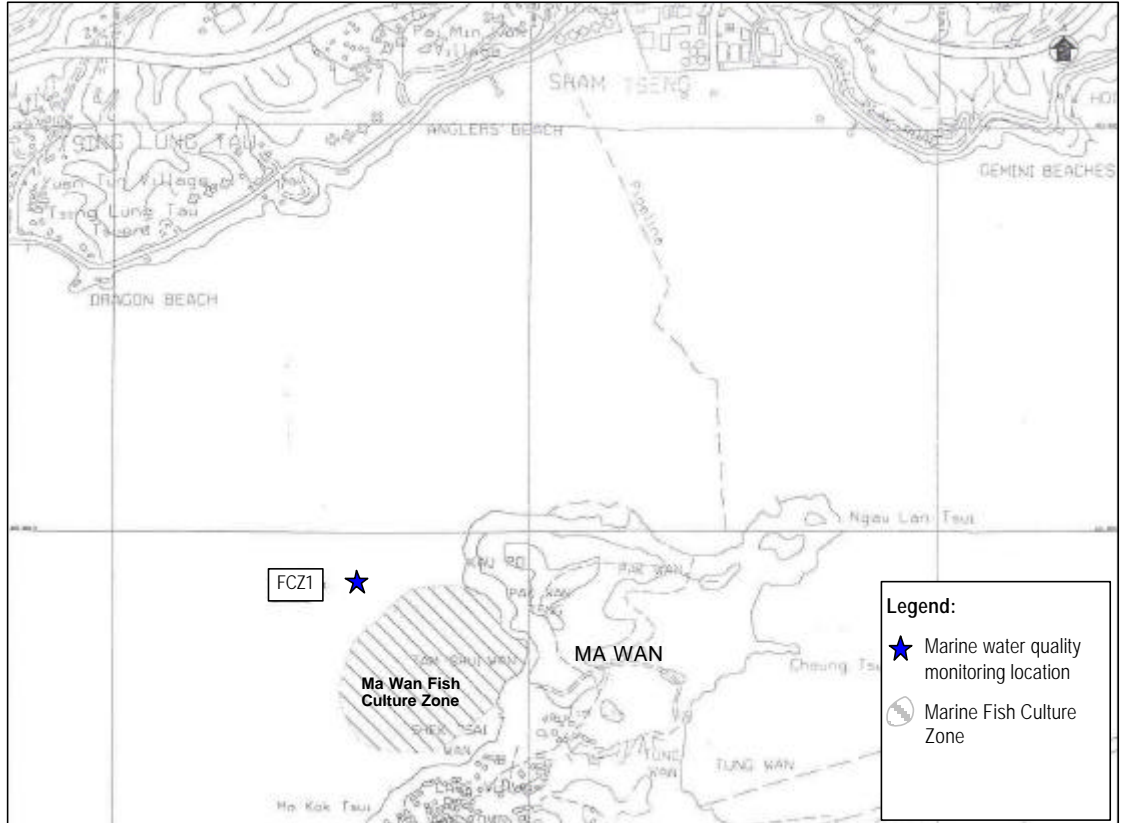


Figure 3-1e Monitoring locations



3.4 Landscape and Visual Monitoring and Audit

3.4.1 Audit Parameters

All landscape and visual mitigation measures undertaken by both the CT and the Landscape Contractor during the construction phase and during the first year of the operational phase were audited by a Registered Landscape Architect, to ensure compliance with the intended aims of the mitigation measures.

3.4.2 Audit Frequency

The landscape and visual monitoring and audit was undertaken at least once every two weeks throughout the construction period and once every two months during the operational phase.

3.4.3 Audit Location

The landscape and visual monitoring and audit was conducted throughout the entire site area.

3.5 Performance Limits and Event-Action Plans

The monitoring results were checked against appropriate standards and requirements. A two-tier system performance limits had been established in the Project specific EM&A Manual. The “Action Level” and the “Limit Level” (A/L) are established according to the EPD requirements. ET, ER, IC(E), and CT will take corresponding actions in accordance with the Event-Action Plans if the monitoring results exceed the performance limits.

3.5.1 Air Quality

The action and limit levels for air quality have been established during the baseline monitoring and are provided in Table 3-6.

Table 3-6 Action and Limit Level for air quality

Air Monitoring Station No.	1-hour TSP Level in $\mu\text{g}/\text{m}^3$		24-hour TSP Level in $\mu\text{g}/\text{m}^3$	
	Action Level	Limit Level	Action Level	Limit Level
WA1	350	500	187	260
WA2	362		192	
WA3	353		190	
WA4	362		187	
WA5	346		185	
WA6	362		204	
WA7	351		187	
WA8	347		188	
WA9	345		182	
WA10	352		183	
WA11	357		195	

Table 3-7 details the actions required to be carried out by different parties in case of an exceedance of performance limits being detected.

Table 3-7 Event/Action plan for air quality

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Action Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> Identify the source. Inform the IC(E) and the ER. Repeat measurement to confirm finding. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> Check monitoring data submitted by the ET Leader. Check Contractor's working method. 	<ol style="list-style-type: none"> Notify Contractor. 	<ol style="list-style-type: none"> Rectify any unacceptable practice. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Identify the source. Inform the IC(E) and the ER. Repeat measurements to confirm findings. Increase monitoring frequency to daily. Discuss with the IC(E) and the Contractor on remedial actions required. If exceedance continues, arrange meeting with the IC(E) and the ER. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> Check monitoring data submitted by the ET Leader. Check the Contractor's working method. Discuss with the ET Leader and the Contractor on possible remedial measures. Advise the ER on the effectiveness of the proposed remedial measures. Supervisor implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing. Notify the Contractor. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> Submit proposals for remedial actions to IC(E) within 3 working days of notification. Implement the agreed proposals. Amend proposal if appropriate.
Limit Level				
1. Exceedance for one sample	<ol style="list-style-type: none"> Identify the source. Inform the ER and the EPD. Repeat measurement to confirm finding. Increase monitoring frequency to daily. Assess effectiveness of Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results. 	<ol style="list-style-type: none"> Check monitoring data submitted by the ET Leader. Check the Contractor's working method. Discuss with the ET Leader and the Contractor on possible remedial measures. Advise the ER on the effectiveness of the proposed remedial measures. Supervisor implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing. Notify the Contractor. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance. Submit proposals for remedial actions to IC(E) within 3 working days of notification. Implement the agreed proposals. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> Notify the IC(E), the ER, the EPD and the Contractor. Identify the source. Repeat measurements to confirm findings. Increase monitoring frequency to daily. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. Arrange meeting the IC(E) and the ER to discuss the remedial actions to be taken. Assess effectiveness of the Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions. Review the Contractor's remedial actions whenever necessary and advise the ER accordingly. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing. Notify the Contractor. In consultation with the IC(E), agree with the remedial measures to be implemented. Ensure remedial measures are properly implemented. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> Take immediate action to avoid further exceedance. Submit proposals for remedial actions to IC(E) within 3 working days of notification. Implement the agreed proposals. Resubmit proposals if problem still not under control. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

3.5.2 Construction Noise Impact

The action and limit levels for the construction noise have been established in accordance with the Baseline Monitoring Report^[2] and are tabulated in Table 3-8.

Table 3-8 Action and Limit Levels for construction noise

Time Period	Action	Limit
0700 - 1900 hours on any day not being a Sunday or public holiday	When one documented complaint is received	75dB(A) ⁽¹⁾
19:00 - 23:00 hours on all days and 07:00 - 23:00 on general holidays (including Sundays)		55 ⁽²⁾ / 70 ⁽³⁾
23:00 - 07:00 hours on all days		40 ⁽²⁾ / 55 ⁽³⁾

- Remarks:**
- (1) For educational establishments the limit level shall be 70dB(A) and reduced to 65dB(A) during examination periods.
 - (2) Refers to the types of Plant regulated under the Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM).
 - (3) Refers to the types of Plant regulated under the Technical Memorandum on Noise Other than Percussive Piling (GW-TM).
 - (4) Owing to the high background noise level recorded at WN5, WN9, and WN10, the noise impact monitoring results at these 3 locations will be corrected by its background using the following background correction equation: $L_{eq(30min)} = 10 \log (10^{m/10} - 10^{b/10})$ as $m = \text{Measured } L_{eq(30min)}$, $b = \text{Average Baseline } L_{eq(30min)}$. Only up to the maximum of 3dB(A) is allowed to be deducted after the background correction.

Table 3-9 details the actions required to be carried out by different parties in the case of an exceedance of performance limits being detected.

Table 3-9 Event/Action plan for construction noise

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify the IC(E) and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IC(E) and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures. 	<ol style="list-style-type: none"> 1. Review with analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 3. Supervise the implement of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IC(E). 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Notify the IC(E), the ER, the EPD and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IC(E), the ER, and the EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results. 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 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. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

3.5.3 Water Quality

The action and limit levels for the water quality have been established in accordance with the EM&A Manual and approved by EPD on 15 October 2002. EPD and IC(E) had agreed on 10 April 2003 to apply the “Direct Comparison” method for evaluation of the marine water quality exceedance. The A/L levels had been revised in April 2003 and are presented in Table 3-10.

Table 3-10 Action and Limit Levels of water quality

Parameters		Monitoring Location			
		WW1 to WW8		FCZ1	
		Action Level	Limit Level	Action Level	Limit Level
Mid-Ebb					
DO (mg/L)	Surface & Middle	4.9	4.8	4.7	4.6
	Bottom	4.8	4.8	4.0	4.0
SS (mg/L) (Depth-averaged)		17.0	23.4	For EPD: 12.9 For AFCD: 12.9 and 120% of upstream control station's SS at the same tide of the same day	For EPD: 14.0 For AFCD: 14.0 and 130% of upstream control station's SS at the same tide of the same day
Tby (NTU) (Depth-averaged)		12.0	13.6	For EPD: 9.1 For AFCD: 9.1 and 120% of upstream control station's Tby at the same tide of the same day	For EPD: 10.3 For AFCD: 10.3 and 130% of upstream control station's Tby at the same tide of the same day.
Mid-Flood					
DO (mg/L)	Surface & Middle	4.3	4.2	4.5	4.4
	Bottom	4.3	4.1	4.1	4.1
SS (mg/L) (Depth-averaged)		25.3	28.7	For EPD: 23.3 For AFCD: 23.3 and 120% of upstream control station's SS at the same tide of the same day	For EPD: 25.9 For AFCD: 25.9 and 130% of upstream control station's SS at the same tide of the same day
Tby (NTU) (Depth-averaged)		25.2	31.5	For EPD: 18.7 For AFCD: 18.7 and 120% of upstream control station's Tby at the same tide of the same day	For EPD: 22.3 For AFCD: 22.3 and 130% of upstream control station's Tby at the same tide of the same day.

Notes: “Depth-averaged” is calculated by taking the arithmetic means of reading of all three depths.
 For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

In order to better differentiate between exceedance caused by the contract works and elevated readings arising from causes unrelated to contract works, all parties had agreed to introduce a term “Reaching of Trigger Value” to represent the scenario

where the A/L levels were exceeded by the “Direct Comparison” evaluation method. Upon the detection of “Reaching of Trigger Value”, an initial analysis would be carried out to determine whether it was caused by contract works. Exceedance and non-compliance should only be recorded in case where the “Reaching of Trigger Value” was caused by the contract works.

Table 3-11 details the actions required to be carried out by different parties in the case of water quality exceedance of performance limits being detected. The revised Event/Action Plan for water quality has been endorsed by IC(E) in May 2003, and will be finalised subject to agreement with EPD.

Table 3-11 Event/Action plan for water quality

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Trigger Value				
1. Trigger Value being surpassed for one sampling day	1. Repeat in-situ measurement to confirm findings. 2. Conduct investigation to identify the source(s) of impact. 3. Check monitoring data, all plant, equipment, mitigation measures and the Contractor's working methods. 4. Inform the IC(E), ER, EPD, HyD, Contractor and AFCD (if required) the investigation results. 5. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"	1. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"	1. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"	1. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "Action Level" and "Limit Level"
Action Level				
1. Action level being exceeded by one sampling day and is caused by the construction works	1. Discuss the current mitigation measures with the IC(E) and the Contractor. 2. Pay attention on the monitoring results collected on the subsequent scheduled monitoring date to see if an exceedance, caused by the same or related construction works, is recurring.	1. Discuss with the ET Leader and the Contractor on the current mitigation measures. 2. Assess the effectiveness of the current mitigation measures and advised the ER accordingly.	1. Discuss with the IC(E) on the current mitigation measures.	1. Inform the ER and confirm notification of the exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader and the IC(E) on the current mitigation measures.
2. Action level being exceeded by more than one consecutive days and is cause by the construction works	1. Discuss mitigation measures with the IC(E) and the Contractor. 2. Ensure the proposed mitigation measures are implemented. 3. Further evaluation of the monitoring results on the next scheduled monitoring day and report to all concerned parties, if the affected monitoring stations are still being affected (or are no longer affected) by the construction works. 4. Prepare to increase the monitoring frequency to daily, if the Limit Level is exceeded as below.	1. Discuss with the ET Leader and the Contractor on the proposed mitigation measures. 2. Review proposals on mitigation measures submitted by the Contractor and advised the ER accordingly. 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E), the ET Leader and the Contractor on the proposed mitigation measures. 2. Make agreement on the proposed mitigation measures to be implemented. 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the consecutive exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader and the IC(E) and propose mitigation measures to the IC(E) and the ER within 3 working day. 6. Implement the agreed mitigation measures.
Limit Level				
1. Limit level being exceeded by one sampling day and is cause by the construction works	1. Discuss mitigation measures with the IC(E), the ER and the Contractor. 2. Ensure the proposed mitigation measures are implemented. 3. Prepare to increase the monitoring frequency to daily if further exceedances of the Limit Level are detected on the next sampling day.	1. Discuss with the ET Leader and the Contractor on the proposed mitigation measures. 2. Review proposals on mitigation measures submitted by the Contractor and advised the ER accordingly. 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E), the ET Leader and the Contractor on the proposed mitigation measures. 2. Request the Contractor to Critically review the working methods. 3. Make agreement on the proposed mitigation measures to be implemented. 4. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader, the IC(E) and the ER, and propose mitigation measures to the IC(E) and the ER within 3 working days. 6. Implement the agreed mitigation measures.

Event	Action			
	ET Leader	IC(E)	ER	Contractor
2. Limit level being exceeded by more than one consecutive days and is cause by the construction works	1. Discuss further mitigation measures with the IC(E), the ER and the Contractor. 2. Ensure the proposed further mitigation measures are implemented. 3. Increase the monitoring frequency to daily until no exceedance of the Limit Level.	1. Discuss with the ET Leader and the Contractor on the proposed further mitigation measures. 2. Review proposals on further mitigation measures submitted by the Contractor and advised the ER accordingly. 3. Assess the effectiveness of the implemented further mitigation measures.	1. Discuss with IC(E), the ET Leader and the Contractor on the proposed further mitigation measures. 2. Request the Contractor to Critically review the working methods. 3. Make agreement on the further mitigation measures to be implemented. 4. Assess the effectiveness of the implemented further 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 consecutive exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader, the IC(E) and the ER, and propose further mitigation measures to the IC(E) and the ER within 3 working days. 6. Implement the agreed further mitigation measures. 7. As directed by the ER, slow down or stop all or part of the construction activities.

3.5.4 Landscape and Visual

The Final Tree Survey Report^[3] approved in April 2001 was adopted as the framework of the baseline landscape condition of this road section. In addition, a supplementary tree survey has been carried out in December 2001. The Supplementary Tree Survey Report (Revision A)^[4] completed in March 2002 is also adopted to provide supplementary information of the baseline landscape condition of this road section.

If any non-conformity on landscape and visual issue is observed, the actions in accordance with Event/Action Plan shown in Table 3-12 shall be carried out.

Table 3-12 Event/Action plan for landscape and visual impact

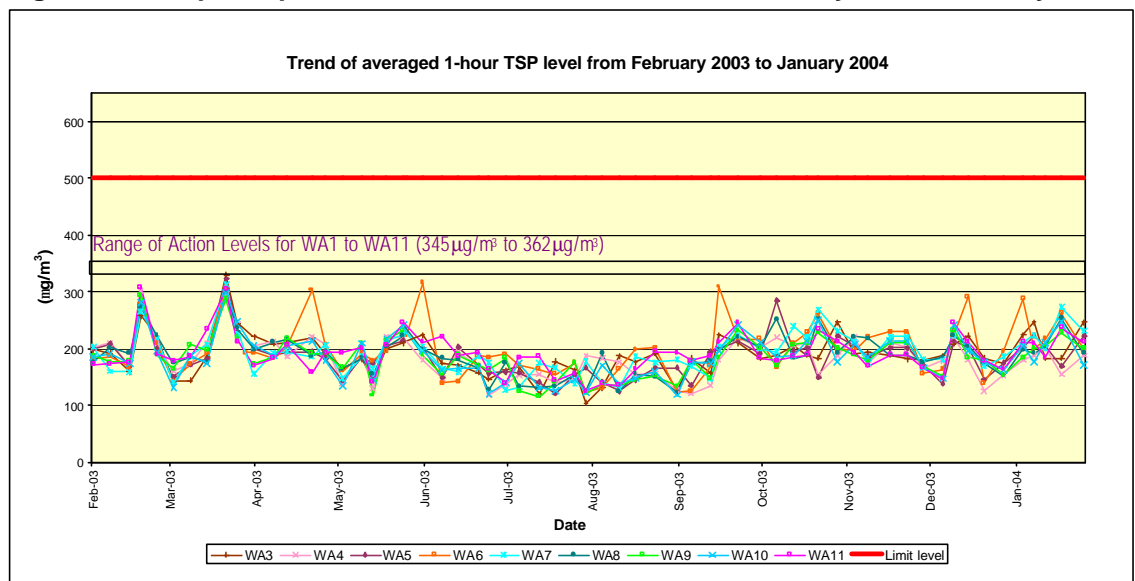
Event	Action			
	ET Leader	IC(E)	ER	Contractor
Non-conformity on one occasion	1. Identify Source(s). 2. Inform the IC(E) and the ER. 3. Discuss mitigation actions with the IC(E), the ER and the Contractor. 4. Monitor remedial actions until rectification has been completed.	1. Check report. 2. Check the Contractor's working method. 3. Discuss with the ET Leader and the Contractor on possible remedial measures. 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working method. 2. Rectify damage and undertaken any necessary replacement.
Repeated Non-conformity	1. Identify Source(s). 2. Inform the IC(E) and the ER. 3. Increase monitoring frequency 4. Discuss mitigation actions with the IC(E), the ER and the Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If exceedance stops, cease additional monitoring	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ET Leader and the Contractor on possible remedial measures. 4. Advise the ER on effectiveness of proposed remedial measures. 5. Supervise implementation of remedial measures.	1. Notify the Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working method. 2. Rectify damage and undertaken any necessary replacement.

4. AIR QUALITY

4.1 1-hour TSP Monitoring Results

The trend of averaged 1-hour TSP levels at each monitoring location in the period from February 2003 to January 2004 are plotted and presented in Figure 4-1.

Figure 4-1 Graphical presentation of 1-hour TSP level from February 2003 to January 2004



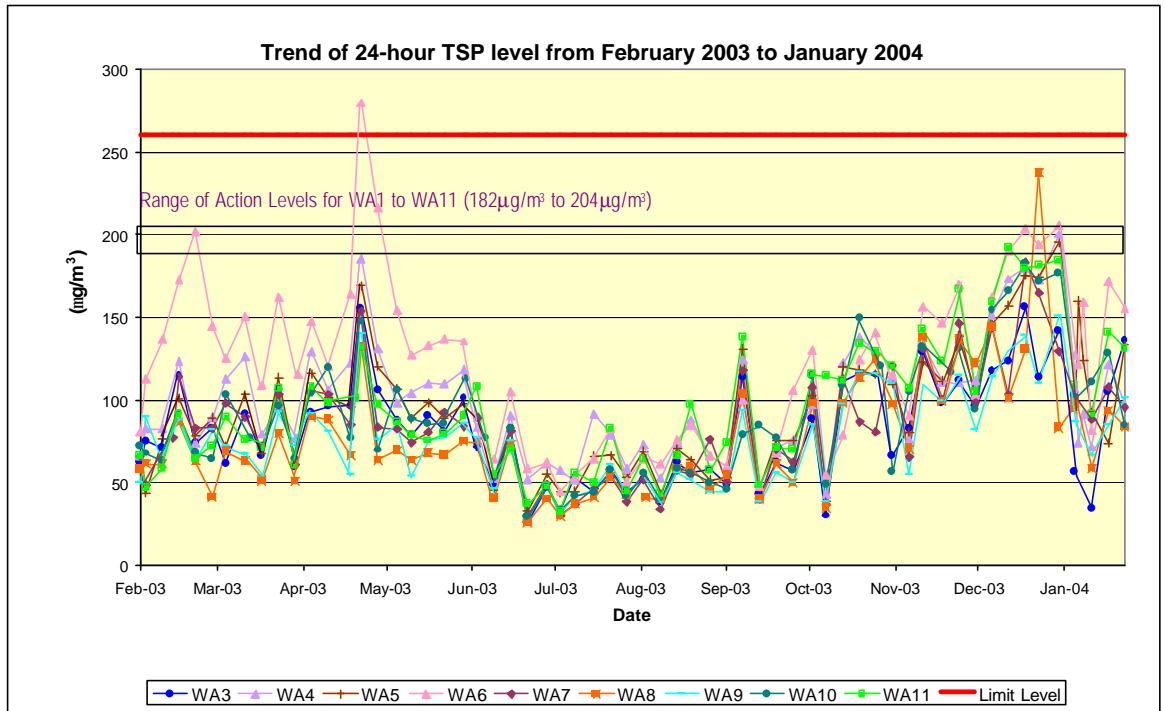
The highest 1-hour TSP level was 357.8µg/m³ recorded at Tsing Lung Tau Tin Hau Temple (WA6) on 24 April 2003 while the lowest 1-hour TSP level was 97.6µg/m³ recorded at Carpark of Sea Crest Villa Phase 2 Block 6 (WA9) on 16 May 2003.

There was no exceedance on the Action and Limit (A/L) Levels during the monitoring period.

4.2 24-hour TSP Monitoring Results

The trend of 24-hour TSP levels at each monitoring location in the period from February 2003 to January 2004 are plotted and presented in Figure 4-2.

Figure 4-2 Graphical presentation of 24-hour TSP level from February 2003 to January 2004



The highest 24-hour TSP level was 279.7 $\mu\text{g}/\text{m}^3$ recorded at G/F of Tsing Lung Tau Tin Hau Temple (WA6) on 26 April 2003 while the lowest 24-hour TSP level was 25.7 $\mu\text{g}/\text{m}^3$ recorded at Podium of Sea Crest Villa Phase 3 Block 8 (WA8) on 25 June 2003.

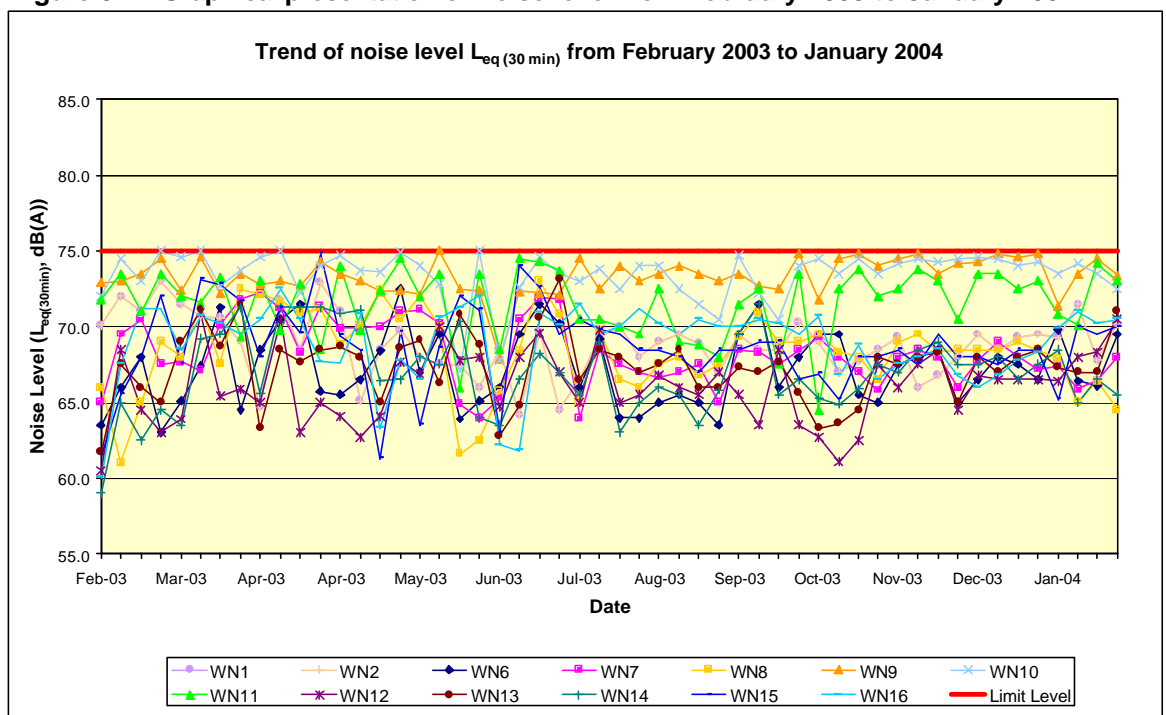
Exceedance on Action Level was recorded at WA6 on 2 May 2003, WA8 on 27 December 2003, and WA4, WA5 and WA6 on 3 January 2004. Exceedance on Limit Level was found at WA6 on 26 April 2003.

5. NOISE

5.1 Noise Monitoring Results

The trend of noise levels at each monitoring location in the period from February 2003 to January 2004 are plotted and presented in Figure 5-1.

Figure 5-1 Graphical presentation of noise level from February 2003 to January 2004



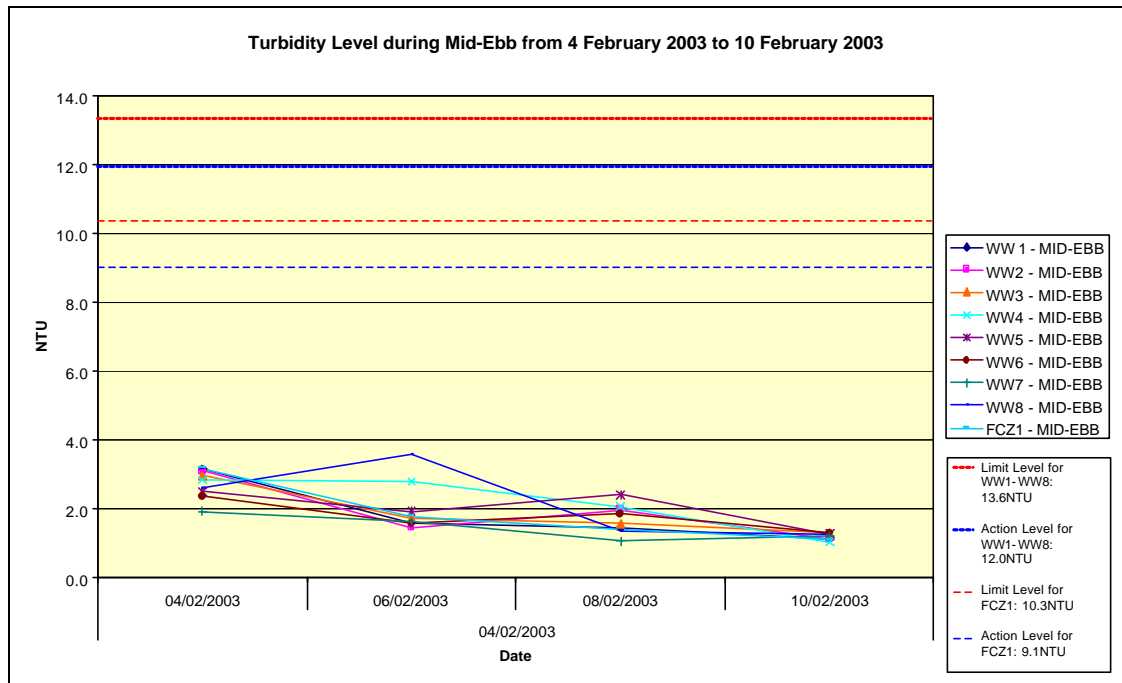
The highest noise level was 75.0dB(A) recorded at House 1, Tsing Lung Tau Village (WN9) on 3 June 2003, at House 60-64, Tsing Lung Tau Village (WN10) on 10 April 2003 and 16 June 2003 while the lowest noise level was 59.0dB(A) recorded at Carpark (L3) of Sea Crest Villa Phase 2 Block 6 (WN14) on 4 February 2003. There was no exceedance on the A/L Levels during the monitoring period.

6. WATER QUALITY (DESIGNATED PROJECT)

6.1 Marine Water Quality Monitoring Results

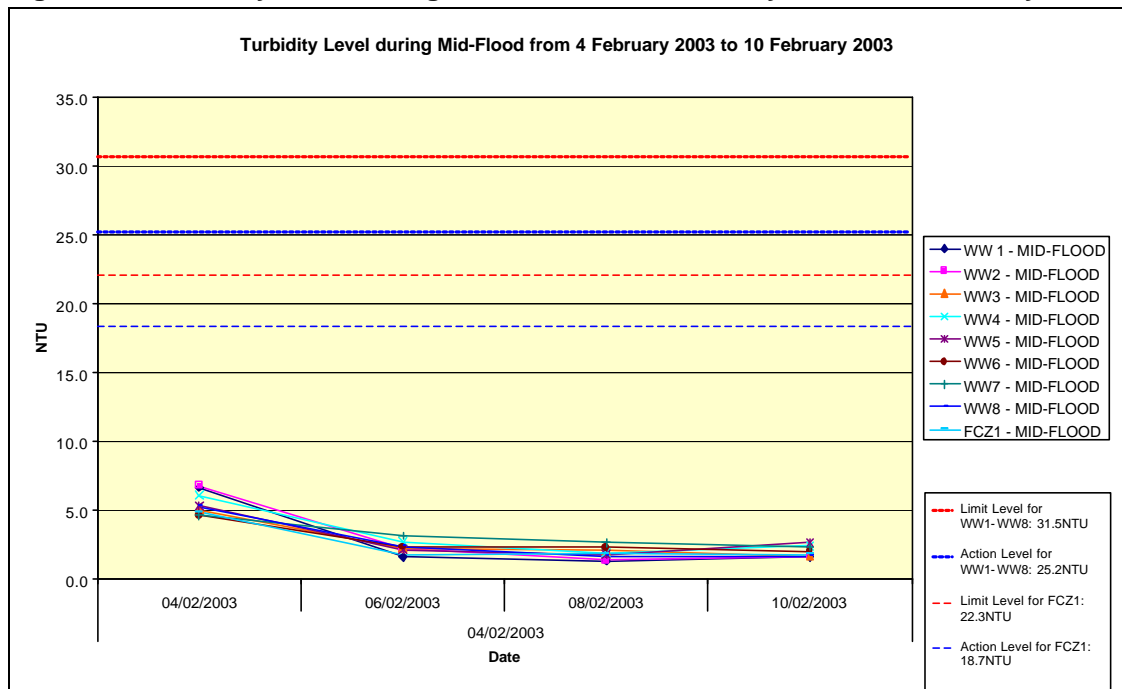
The monitoring results from 4 February 2003 to 10 February 2003 (Old Monitoring Programme) are plotted and presented in Figure 6-1 to Figure 6-8. The monitoring results from 12 February 2003 to 8 October 2003 (New Monitoring Programme) are plotted and presented in Figure 6-9 to Figure 6-16.

Figure 6-1 Turbidity levels during mid-ebb from 4 February 2003 to 10 February 2003



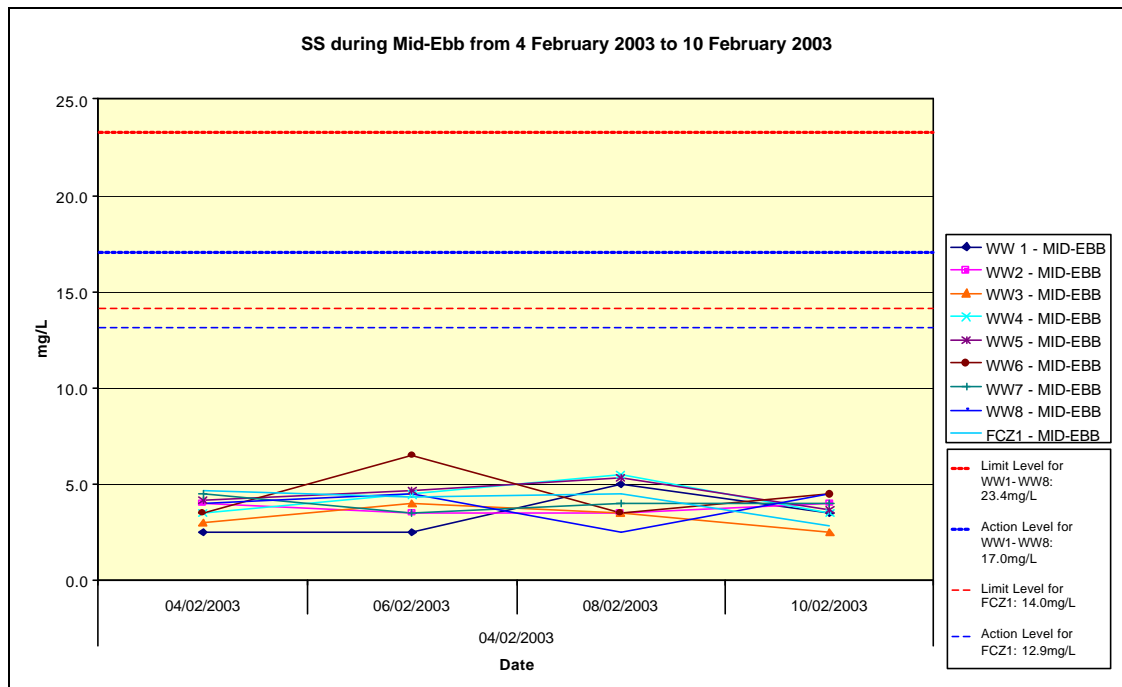
Note: 120% and 130% of upstream control station's Tby at the same tide of the same day are also adopted as the Action Level and Limit Level for the evaluation of the exceedance of Tby.

Figure 6-2 Turbidity levels during mid-flood from 4 February 2003 to 10 February 2003



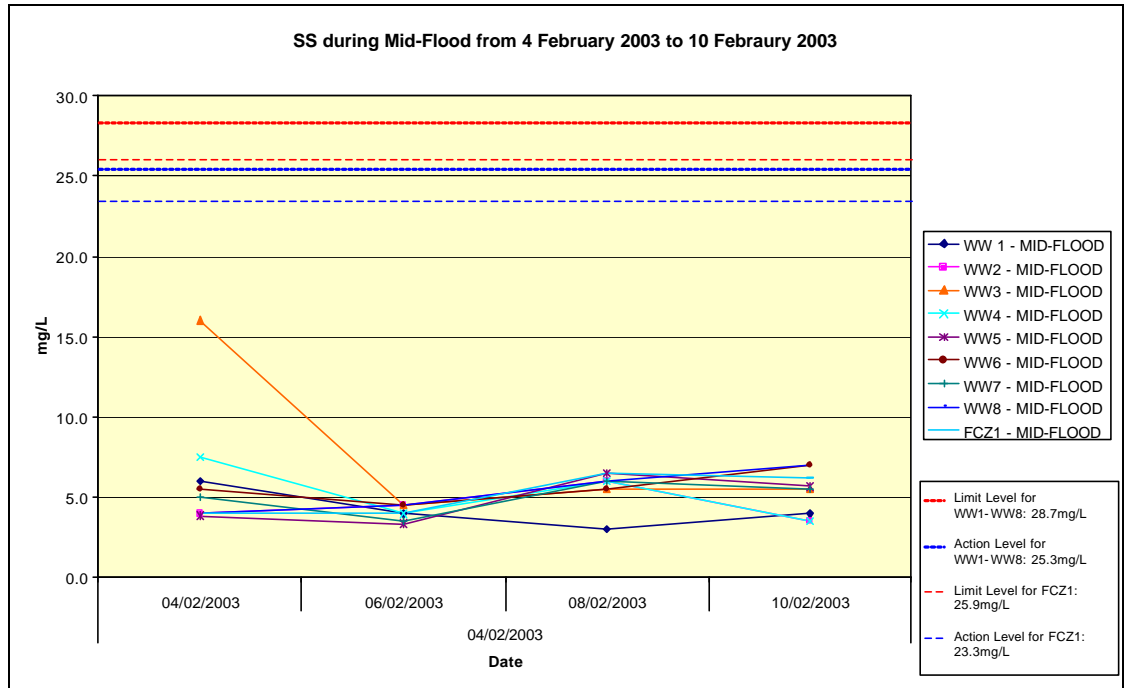
Note: 120% and 130% of upstream control station's Tby at the same tide of the same day are also adopted as the Action Level and Limit Level for the evaluation of the exceedance of Tby.

Figure 6-3 SS during mid-ebb from 4 February 2003 to 10 February 2003



Note: 120% and 130% of upstream control station's SS at the same tide of the same day are also adopted as the Action Level and Limit Level for the evaluation of the exceedance of SS.

Figure 6-4 SS during mid-flood from 4 February 2003 to 10 February 2003



Note: 120% and 130% of upstream control station's SS at the same tide of the same day are also adopted as the Action Level and Limit Level for the evaluation of the exceedance of SS.

Figure 6-5 DO at surface and middle level during mid-ebb from 4 February 2003 to 10 February 2003

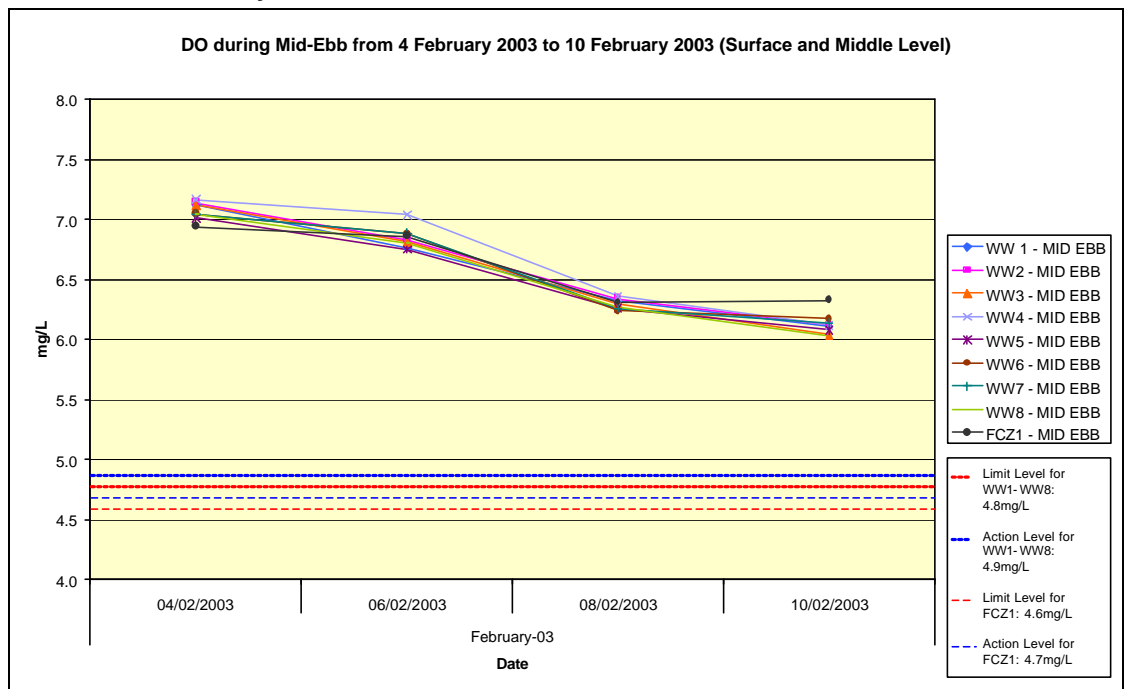


Figure 6-6 DO at surface and middle level during mid flood from 4 February 2003 to 10 February 2003

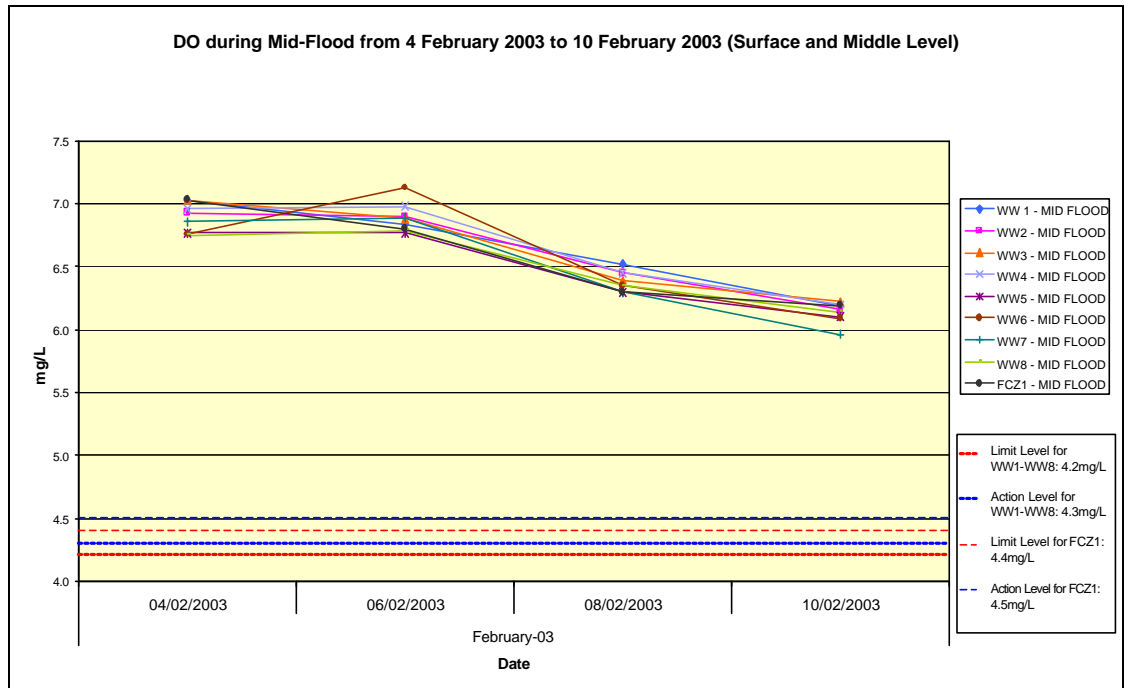


Figure 6-7 DO at bottom level during mid-ebb from 4 February 2003 to 10 February 2003



Figure 6-8 DO at bottom level during mid-flood from 4 February 2003 to 10 February 2003

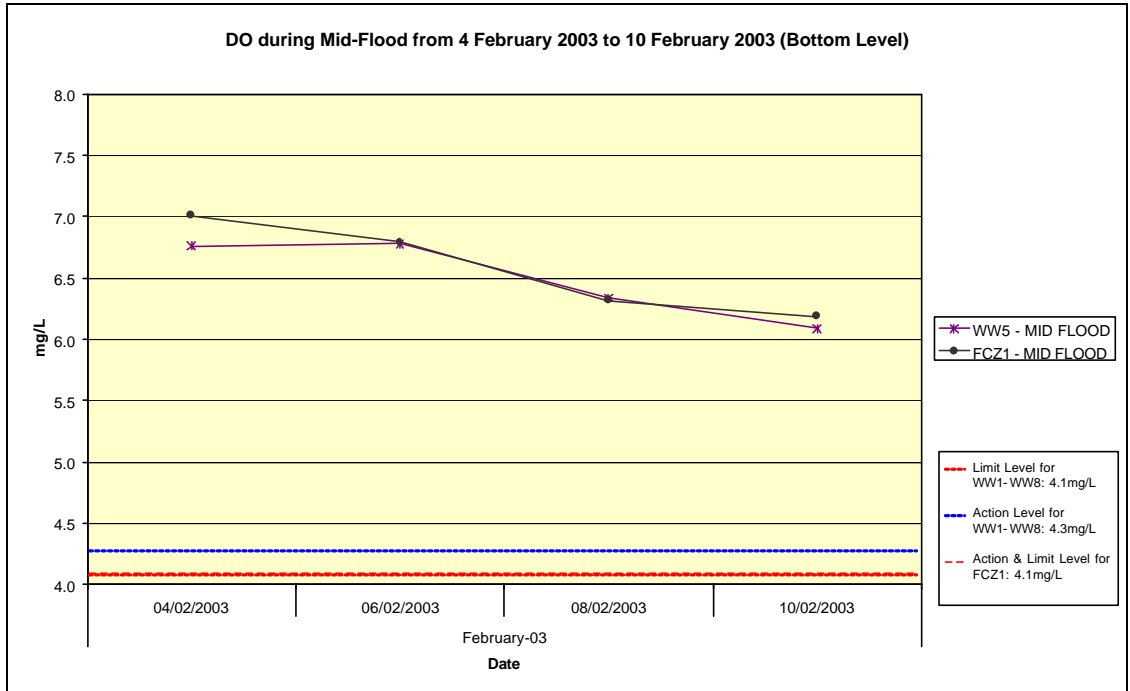


Figure 6-9 Turbidity level during mid-ebb from 12 February 2003 to 8 October 2003

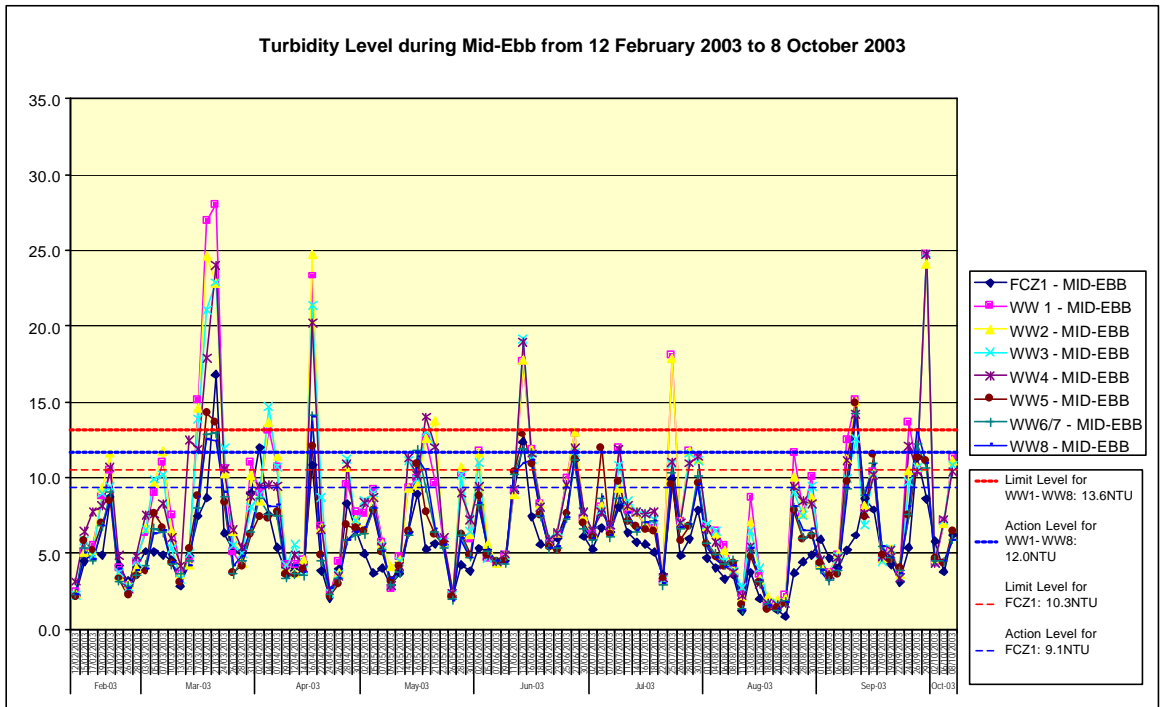


Figure 6-10 Turbidity levels during mid-flood from 12 February 2003 to 8 October 2003

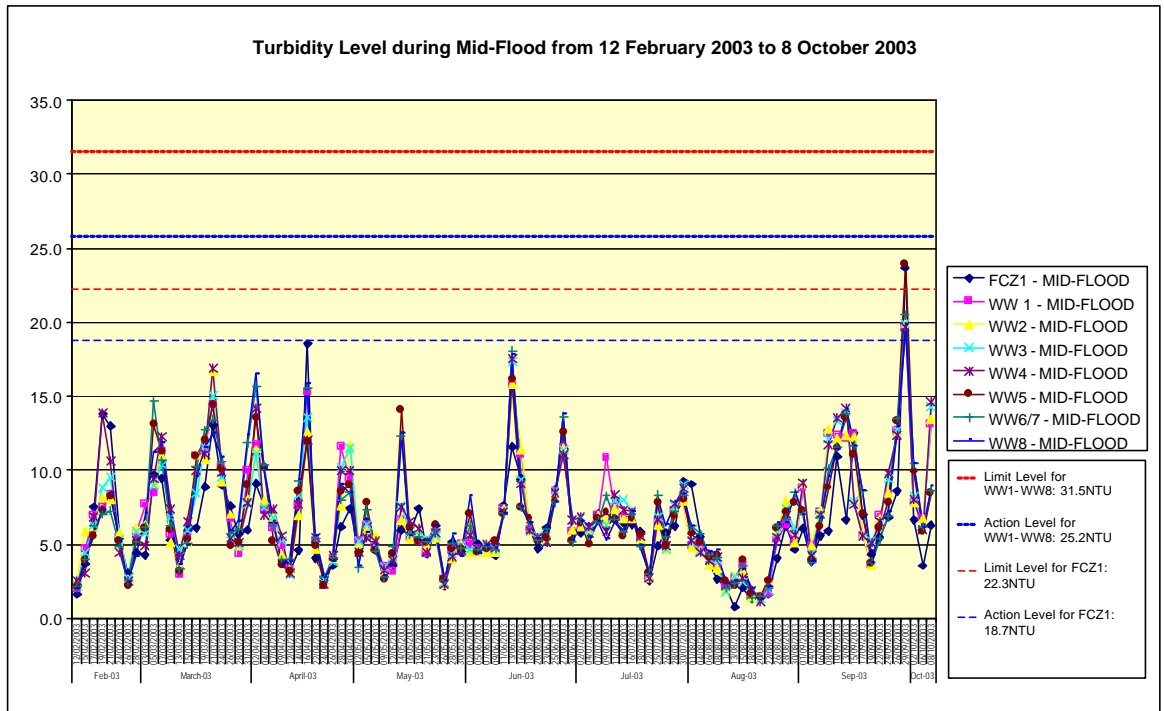


Figure 6-11 SS during mid-ebb from 12 February 2003 to 8 October 2003

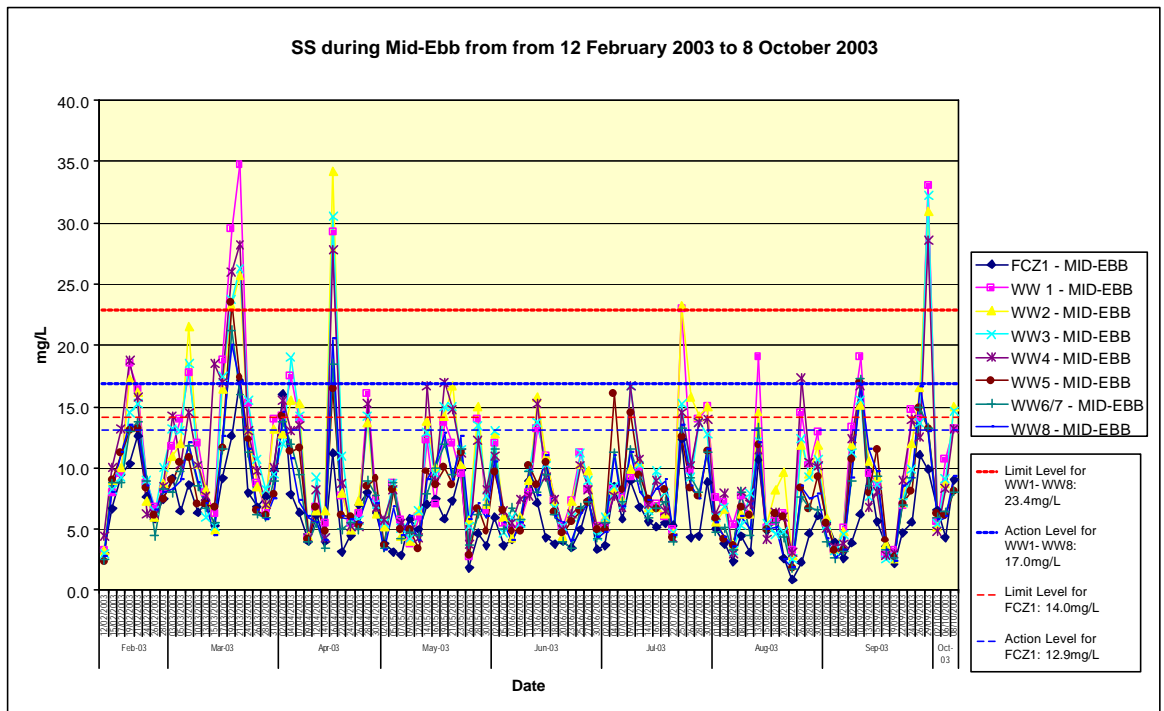


Figure 6-12 SS during mid-flood from 12 February 2003 to 8 October 2003

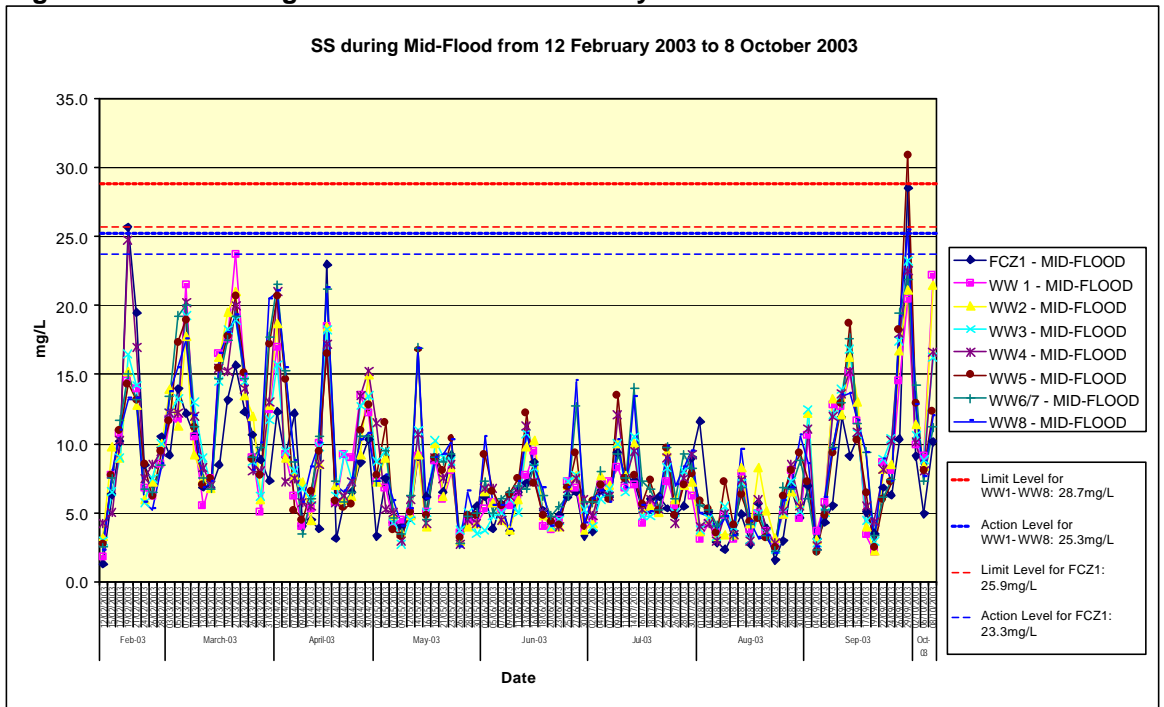


Figure 6-13 DO at surface & middle level during mid-ebb from 12 February 2003 to 8 October 2003

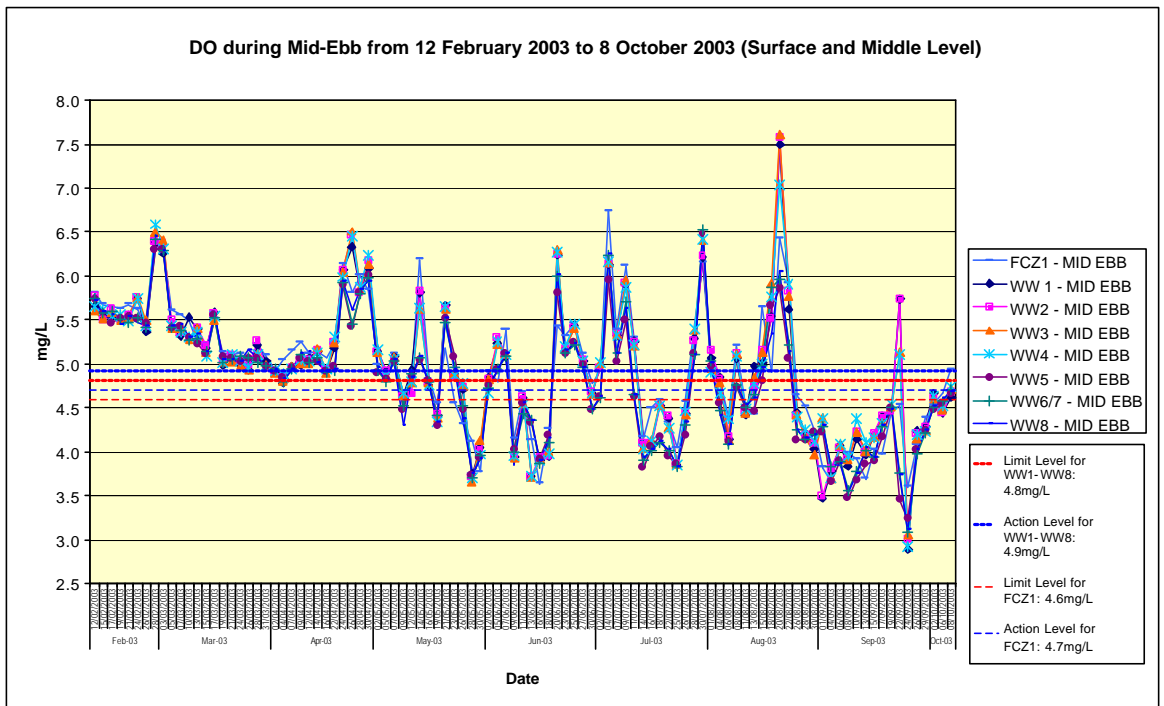


Figure 6-14 DO at surface & middle level during mid-flood from 12 February 2003 to 8 October 2003

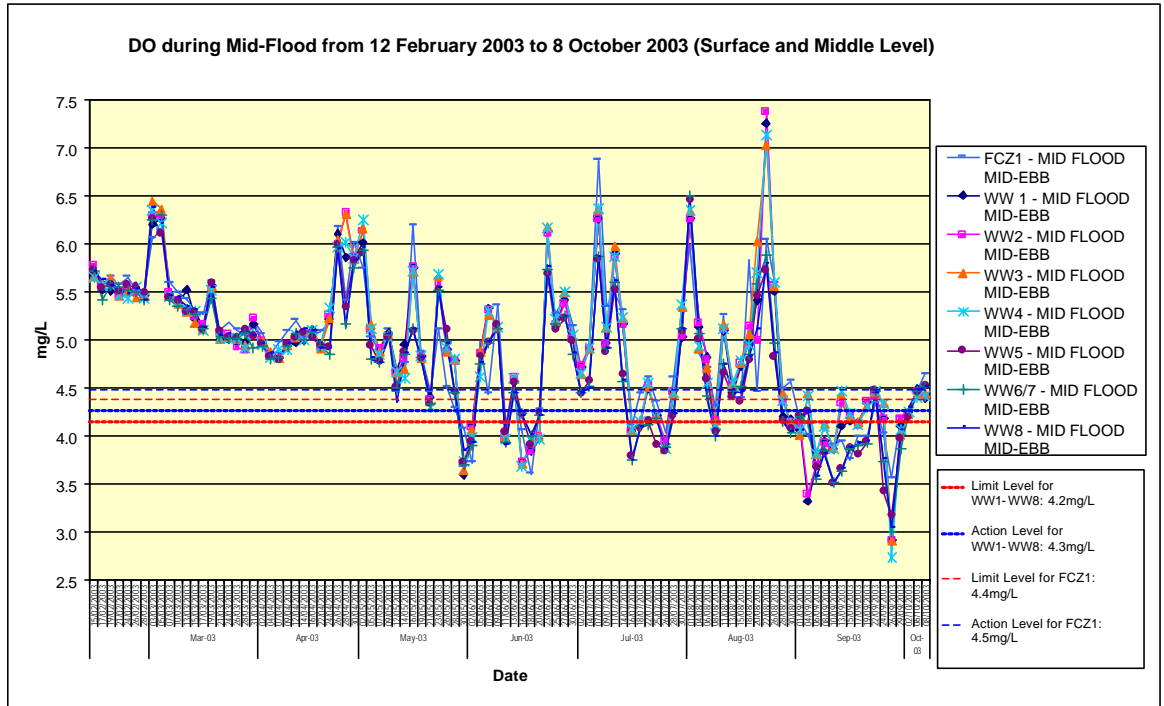


Figure 6-15 DO at bottom level during mid-ebb from 12 February 2003 to 8 October 2003

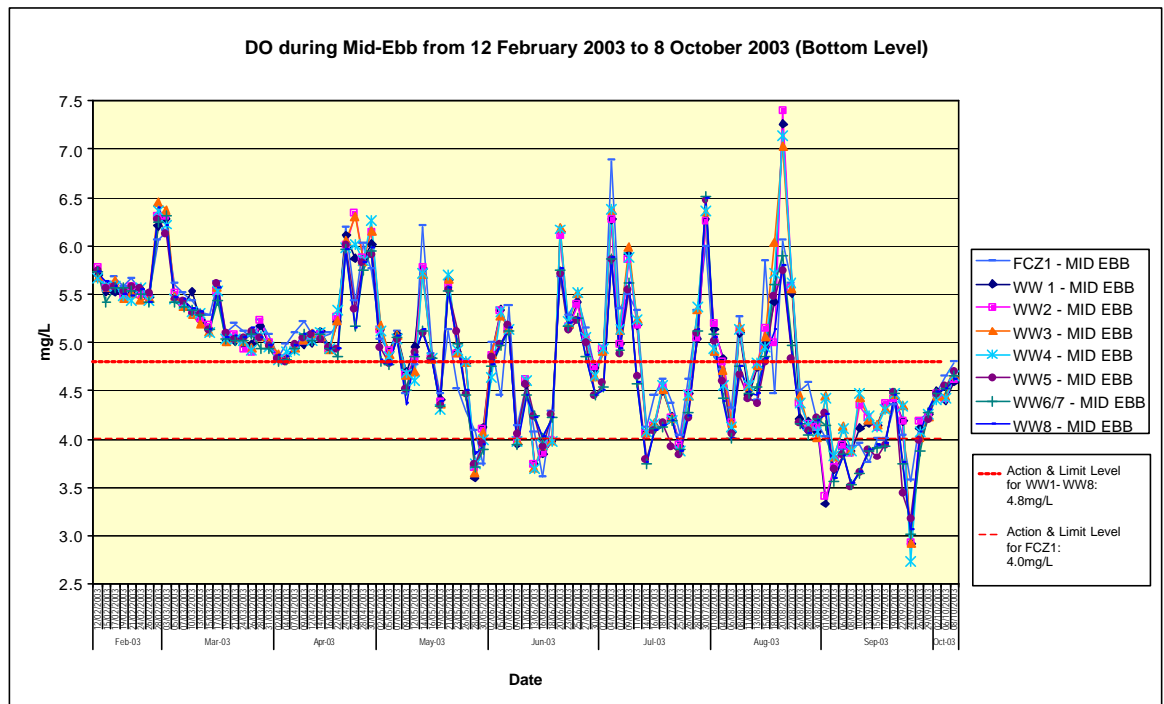
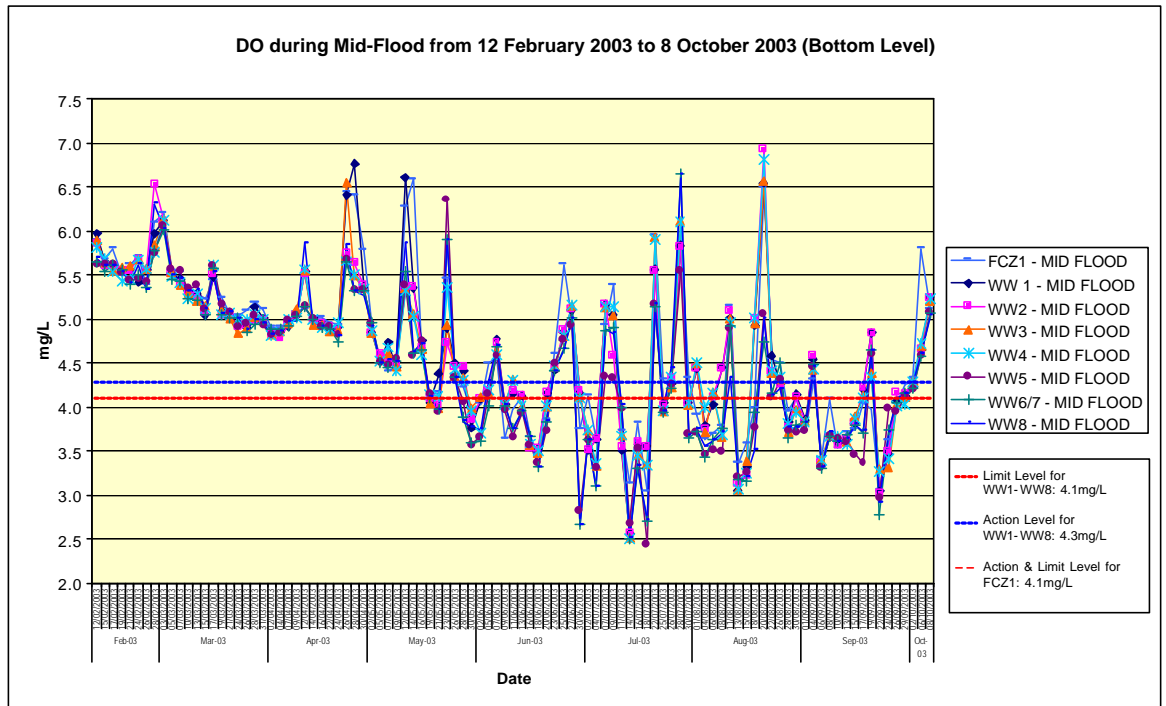


Figure 6-16 DO at bottom level during mid-flood from 12 February 2003 to 8 October 2003



There were occasional “Reaching of Trigger Value” of Dissolved Oxygen (DO), Turbidity (Tby) and Suspended Solids (SS) of marine water quality monitoring in the reporting period. These exceedances were caused by the natural variation of marine water quality rather than the marine works of West Contract, as relatively low DO, high Tby and SS results were recorded at all other control and impact stations.

There were exceedances on Action Level of Tby and SS recorded at WW4 during mid ebb tide on 15 March 2003. It was suspected to be caused by the construction works since escaping of silty water from several openings of the silt curtain at the east of Tsing Lung Tau Pier (i.e. eastern section of Seawall B) was observed during the monitoring. The Contractor had therefore repaired the silt curtain and removed the barge from the concerned area. In addition, the Contractor agreed to inspect and repair the silt curtain regularly.

7. LANDSCAPE AND VISUAL MONITORING AND AUDIT

A total of 26 times of landscape and visual monitoring and audits had been carried out on biweekly basis from February 2003 to January 2004 by a Registered Landscape Architect. No non-conformity regarding the landscape and visual issues was recorded.

8. IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The CT had implemented various environmental mitigation measures as stipulated in the EIA Report^[5], EM&A Manual and the environmental requirements as stipulated in the Contract Specification. The implementation status in the period from February 2003 to January 2004 is summarized in Appendix B.

9. ANNUAL SUMMARY, ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE RECORDS

9.1 Summary of Waste Disposal

A total of 309 loads of Construction & Demolition (C&D) waste had been disposed of at WENT Landfill in the period from February 2003 to January 2004. A total of 33,212 loads of C&D fill materials (Public Fill) had been disposed of at Public Filling Area in Tuen Mun by dump trucks in the period from February 2003 to January 2004. Table 9-1 summarises the number of loads that had been disposed of at Public Filling Area and Landfill in the period from February 2003 to January 2004.

Table 9-1 Waste disposal quantity in the period from February 2003 to January 2004

Month	Number of Loads to Landfill	Number of Loads to Public Filling Area
February 2002	28	2,835
March 2002	9	4,547
April 2002	20	5,049
May 2002	20	4,535
June 2002	8	2,063
July 2002	98	7,264
August 2002	63	2,266
September 2002	8	1,042
October 2002	3	1,054
November 2002	27	989
December 2002	23	502
January 2003	2	1,066
Total	309	33,212

A total of 29 drums (5,072L) of spent lube oil and 3 drums (600L) of Sludge contaminated with spent lube oil had been collected by licensed collector from February 2003 to January 2004.

9.2 Non-compliance Record

9.2.1 24-hour TSP Monitoring Results

- **24-hour TSP at WA6 on 24 April 2003**

24-hour TSP monitoring results measured at WA6 on 24 April 2003 was $279.7\mu\text{g}/\text{m}^3$, which exceeded the Limit Level. Neither abnormal construction activity was carried out close to WA6 nor visible dust source was observed from the nearby construction sites during the course of 24-hour TSP monitoring. The exceedance was caused by high background dust level as well as the large scale of incense and candle burning at the open space of Tin Hau Temple due to the celebration of Tin Hau Festival. The exceedance was not justified as non-compliance. Nevertheless, the Contractor had been advised to properly implement the dust suppression measures.

- **24-hour TSP at WA6 on 2 May 2003**

24-hour TSP monitoring results measured at WA6 on 2 May 2003 was $216.0\mu\text{g}/\text{m}^3$, which exceeded the Action Level. Neither abnormal construction activity was carried out close to WA6 nor visible dust source was observed from the nearby construction sites during the course of 24-hour TSP monitoring. The exceedance was caused by high background dust level as well as the large scale of incense and candle burning at the open space of Tin Hau Temple due to the celebration of Tin Hau Festival. The exceedance was not justified as non-compliance. Nevertheless, the Contractor had been advised to properly implement the dust suppression measures.

- **24-hour TSP at WA8 on 27 December 2003**

24-hour TSP monitoring results measured at WA8 on 27 December 2003 was $237.3\mu\text{g}/\text{m}^3$, which exceeded the Action Level. The site staff's had checked the works schedule and found that there was no heavy construction activity carried out close to WA8. However, there was a haze overcasted at the ambient air causing a poor atmospheric condition. As reflected in the relatively high API levels at the end of December 2003, the atmospheric dispersion effect was fairly poor due to the seasonal characteristic. It was therefore considered that the exceedance at WA8 was caused by haze in the atmosphere and poor dispersion effect. The Contractor was advised to enhance the dust suppression measures, including proper wheel washing of vehicle at site exit; and watering the haul road, unpaved area and other dusty activities, such as rock breaking, rock drilling, loading/unloading of rock boulders and earth moving. Additional monitoring was conducted on 7th January 2004 but no further exceedance was found.

- **24-hour TSP at WA4, WA5 and WA6 on 3 January 2004**

24-hour TSP monitoring results measured at WA4, WA5 and WA6 on 3 January 2004 were $200.3\mu\text{g}/\text{m}^3$, $195.2\mu\text{g}/\text{m}^3$ and $205.4\mu\text{g}/\text{m}^3$, respectively, which exceeded the Action Level. As confirmed by the Contractor, all these monitoring locations were within Seawall-B stretch of the project. The excavation works at Seawall-B areas were mainly completed and the construction of reinforced concrete structures was in progress. The current work types and number of plants mobilised in the area was not believed to be the cause of such exceedances since the mobilisation rate was significantly lower than usual during the past months. However, there was a haze overcast at the ambient air causing a poor atmospheric condition in early January 2004. Similar to the condition in late December 2003, and the atmospheric dispersion effect was fairly poor due to seasonal characteristics. It was therefore considered that the exceedances at WA4, WA5 and WA6 could be due to the hazy condition in the atmosphere and poor dispersion effect. The Contractor was advised to enhance the dust suppression measures. Additional monitoring was conducted on 10th and 12th January 2004 but no further exceedance was recorded with enhanced dust suppression measures.

9.2.2 Complaints on Construction Noise

There were seven documented complaints regarding construction noise which had triggered the Action Level of construction noise.

- **Construction Noise Complaints received on 6 March 2003**

Three complaints (Log no. 70) were forwarded by EPD regarding dust emission, construction noise during restricted hours and daytime construction noise at Seawall B, opposite to Hong Kong Garden. Regarding the complaints on construction noise during restricted hours, the Contractor confirmed that there was no violation. Nevertheless, the Contractor had informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. It was agreed to keep vigilant in monitoring and surveillance of the site and to remind the subcontractors continually of the statutory requirements.

Regarding the complaint on daytime construction noise, it was confirmed that the construction noise levels were well below 75dB(A). Nevertheless, the Contractor agreed to continuously monitor and review their operations in order to minimize the noise impact. The Contractor was also reminded to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal if adjustment and reorganization of working arrangement was necessary.

- **Construction Noise Complaint on 21 May 2003**

Complaint log no. 84 was received on 21 May 2003 regarding construction noise from the slope works outside Sea Crest Villa Phase I. The Contractor was requested to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal after approval. The Contractor had reported that low-noise emission construction equipment was used at the time of inspection and proposed to speed up the works in order to limit the duration of daytime construction noise impact. Additional noise monitoring had been taken by the Contractor on 22 May 2003 at WN15 with a noise level of 66.6dB(A), which was below the limit level of 75dB(A). After reviewing the findings and investigation details, the Contractor confirmed that no further remedial actions was required.

- **Construction Noise Complaint on 2 June 2003**

Complaint log no. 88 was received on 2 June 2003 regarding day-time construction noise and dust emission from the construction works at Seawall B, opposite to Hong Kong Garden, which was suspected to be caused by rock breaking activity. Upon investigation, no rock breaking activity had been observed in subsequent site audits and no noise exceedance has been recorded. Nevertheless, the Contractor was advised to provide portable noise barrier if there was rock breaking activity in future and conduct additional noise monitoring at the noise monitoring station WN8 if additional mitigation measures was implemented. The Contractor agreed to expedite the works in order to reduce the duration of day-time perceived impact. The Contractor also proposed to perform additional ad-hoc inspections at the concerned area in order to confirm continual implementation of measures. Additional noise monitoring would be conducted where appropriate.

- **Construction Noise Complaint on 27 June 2003**

Complaint log no. 97 was received on 27 June 2003 regarding the noise nuisance arising from the construction activities outside Sea Crest Villa Phase III. Noise generated from the ongoing construction works in these areas was monitored. ET had reminded the Contractor on the noise mitigation. Since rock breaking works with jackhammer at Pai Min Kok was completed on 26 June 2003 and the complainant made no further complaints after the Contractor's explanation regarding works progress, the Contractor considered that no further remedial action would be taken. No additional noise monitoring would be required.

- **Construction Noise Complaint on 6 December 2003**

Complaint log no. 116 was received on 6 December 2003 regarding construction noise during early hours of 8:00am. Inspection was made at the concern area but no abnormal construction activity was found. The Contractor had explained to the Complainant that no statutory permit was required for construction work other than

percussive piling at 8:00am and the nature of works conducted at the area was well within permitted limits. ET had reminded the Contractor to implement noise mitigation proposal in accordance with EM&A Manual. As the Contractor had responded to the complainant and no further complaint was recorded, the Contractor proposed that no further remedial/ preventative measures were necessary.

9.2.3 Marine Water Quality Monitoring Results

DESIGNATED PROJECT - There were occasional exceedances on A/L Levels of DO, Tby and SS of marine water quality monitoring in the period from 12 September 2003 to 8 October 2003. These exceedances were caused by the natural variation of marine water quality rather than the marine works of West Contract, as relatively low DO, high Tby and SS results were recorded at all other control and impact stations.

There were exceedances on Action Level of Tby and SS recorded at WW4 during mid ebb tide on 15 March 2003. It was suspected to be caused by the construction works since escaping of silty water from several openings of the silt curtain at the east of Tsing Lung Tau Pier (i.e. eastern section of Seawall B) was observed during the monitoring. The Contractor had therefore repaired the silt curtain and removed the barge from the concerned area. In addition, the Contractor agreed to inspect and repair the silt curtain regularly.

9.3 Complaint Record

A total of 21 environmental complaints were received from February 2003 to January 2004. Four of them were concerned about traffic noise from construction site; three regarded daytime construction noise; three for construction noise during restricted hours. Two of the complaints were about construction dust emission; one was regarding both construction noise and dust emission from the construction works at Seawall B. Regarding the complaints for water quality impact, four were concerned about stagnant water arising from construction activities, one about water leakage and one about the muddy water on the beach opposite to Sea Crest Villa Phase III. Other complaints were one regarding the felling of all old trees along section of Castle Peak Road near Ma Wan Pier and one regarding accumulation of general refuse on pedestrian walkway. All had been solved after investigation.

9.4 Notification of Summons and Successful Prosecutions

The Contractor had convicted an offence on 29 May 2003 regarding the discharge of effluent on 6 January 2003 with BOD and E. coli exceeding the maximum standards as stated in the Discharge Licence.

9.5 Comparison of EM&A Data with EIA Predication

Apart from occasional exceedance of air quality and one exceedance of marine water quality monitoring, the environmental monitoring data (i.e. air quality and construction noise) collected in the period from February 2003 to January 2004 were generally in line with the prediction of the EIA Report as the monitoring results were within the acceptable levels as stipulated in the EIA Report. No marine water assessment/modelling was undertaken during the EIA stage and therefore, comparison with the marine water quality monitoring results was not feasible.

9.6 Review of Environmental Monitoring Methodology and EM&A Programme

The environmental monitoring methodologies and procedures were regularly reviewed by the ET. No modification to the existing monitoring methodology was recommended except the relocation of the marine water quality monitoring station.

EPD and IC(E) had agreed to apply the “Direct Comparison” method for evaluation of the marine water quality exceedance during the reporting period. All parties had agreed to introduce a term “Reaching of Trigger Value” to represent the scenario where the A/L levels were exceeded by the “Direct Comparison” evaluation method. As a whole, EM&A programme had been conducted as planned in the reporting period.

The EM&A programme and the implementation of the mitigation measures were successful in the period from February 2003 to January 2004.

9.7 Environmental Acceptability of the Project

Even though occasional exceedances of air quality and marine water quality were detected, the environmental monitoring results had indicated that the operation of the site activities by the CT in the period from February 2003 to January 2004 in general comply with the relevant environmental requirements.

10. REFERENCES

- [1] Mouchel Halcrow Joint Venture. 2001. Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan West Contract No. HY/99/18, Environmental Monitoring & Audit Manual.

- [2] Ove Arup & Partners Hong Kong Limited. July 2001. Contract No. HY/99/18 Castle Peak Road Improvement between Shem Tseng and Ka Lung Tsuen, Tsuen Wan, Environmental Baseline Monitoring Report (Second Issue).

- [3] Mouchel Halcrow Joint Venture. 2001. D&C Consultancy Agreement No. CE 1/96 Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan, Tree Survey Report & Tree Felling Application Revision D.

- [4] Mouchel Halcrow Joint Venture. Contract No. HY/99/18 March 2002. D&C Consultancy Agreement No. CE 1/96 Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan, Supplementary Tree Survey Report & Tree Felling Application Revision A.

- [5] Maunsell Consultants Asis Ltd. 1996. Feasibility Study for Castle Peak Road Improvement between Ka Loon Tsuen and Yau Kom Tau, Final Report Volume 3 Environmental Impact Assessment.

APPENDIX A

**Construction
Programme**

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																
							JAN				FEB				MAR				APR				
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26
CPR Improvement bet Sham Tseng & Ka Loon Tsuen																							
Important Dates																							
Key Dates																							
00-SECV	KDE - All Works bet CH2210-2300	0		06APR04*	0	-34																	
Portions Handover Dates																							
00-VD6	Handover Portion No. 6 to Employer	0		28FEB04*	0	0																	
00-VD7	Handover Portion No. 7 to Employer	0		28FEB04*	0	0																	
1. Preliminaries																							
Planning & Programming																							
01-0108	Maintain Programming & Submit Progress Reports	1,236	24NOV01A	26MAY05	60	0																	
Waste Management																							
01-1166	Implement & Monitor WMP	1,171	21DEC01A	23MAR05	63	0																	
Maintenance of Traffic Flow																							
01-1153	Maintain Traffic Flow	1,171	24NOV01A	23MAR05	63	0																	
Environmental Monitoring & Audit																							
01-11702	Implement & Maintain Impact Monitor & Audit	1,601	08MAR02A	26MAY06	46	0																	
Interfacing and Coordination																							
01-1173	Coordination/Integration with Interfacing Works	1,171	01DEC01A	23MAR05	63	0																	
01-1174	Provide Reasonable Access to Other Contractors	1,171	01DEC01A	23MAR05	63	0																	
16. Site Safety																							
Safety Management System																							
16-1612	Implement & Maintain Safety Management System	1,151	14DEC01A	23MAR05	62	0																	
CPR from Chainage 0+900 to Chainage 1+870																							
1. Preliminaries																							
Proposed Utility Works																							
01-1203	Proposed Gasmain on E/B C, way CH1070-1350	40	13AUG03A	25FEB04	85	-194																	
01-1204	Additional Gasmain on E/B C, way CH950-1070	20	15DEC03A	25FEB04	50	-194																	
3. Roadworks																							
Earthworks																							
03-3016	Excavate to Future Road Level at BPRW03; 31-37	20	12JAN04A	30JAN04	50	-37																	
03-3011	Earthworks Along W/B C/W CH1464 to 1554	14	07APR04	26APR04	0	18																	
Drainage Works																							
03-3136	Drill/excavate for drainage at E/B CH1100-1205	26	23SEP03A	15JAN04A	100																		
03-3137	Construct drainage at E/B CH1100-1215	18	11NOV03A	28JAN04	56	-198																	

Start Date	23NOV01		Early Bar
Finish Date	07FEB07		Progress Bar
Data Date	16JAN04		Critical Activity
Run Date	29JAN04 08:05		

3M26

Sheet 1 of 12

Maeda Corporation
HY/99/18 - Castle Peak
3- Month Rolling Programme

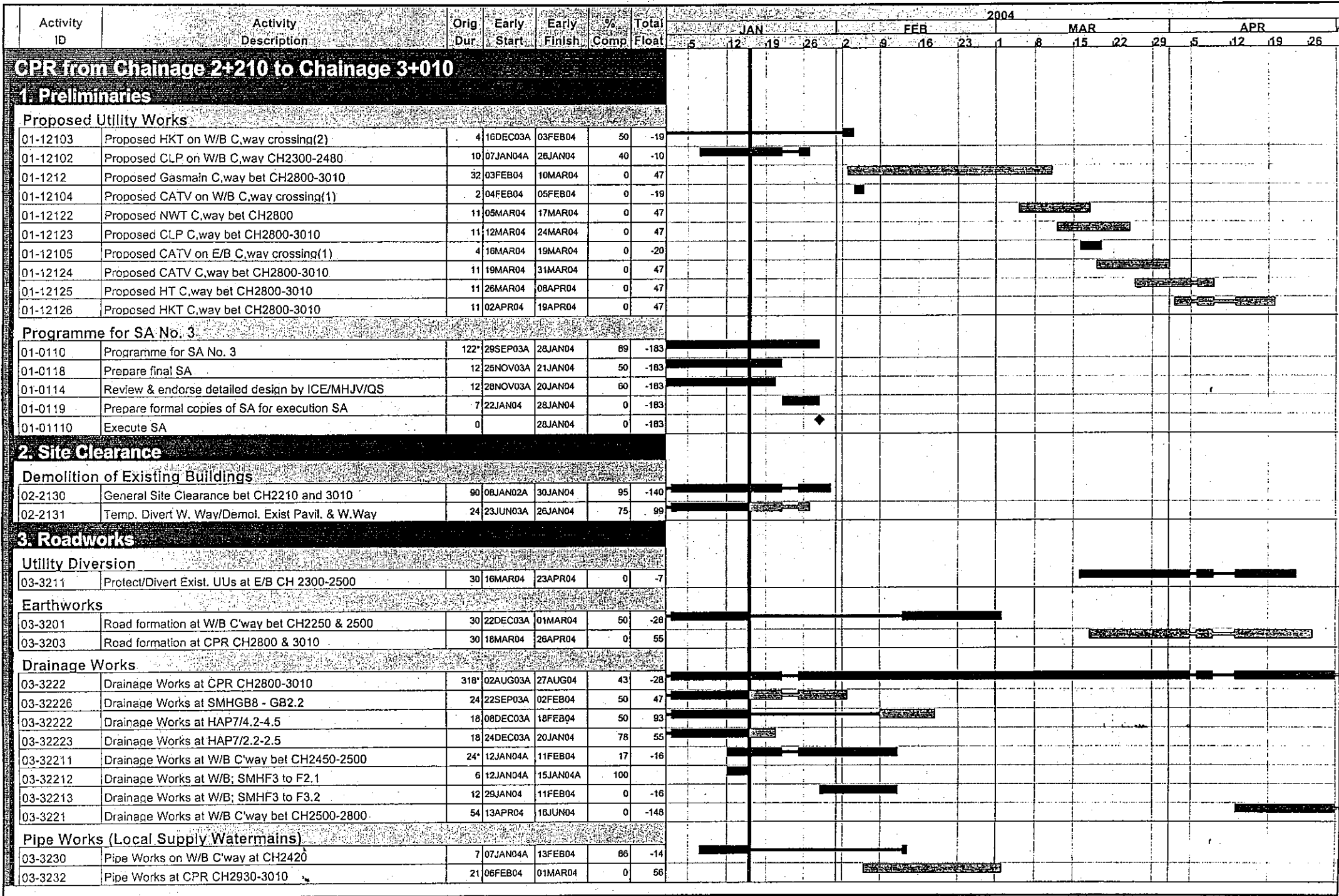


January 2004				
Date	Revision	Checked	Approved	
14APR03	revision c			
10.FEB03	revision d			
10.JAN03	revision e			
30.FEB03	revision 01			
17SEP03	revision 02			

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																	
							JAN				FEB				MAR				APR					
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26	
Drainage Works																								
03-3134	Drainage at Access Road R8	30	21FEB04	26MAR04	0	-135																		
03-3129	Drainage along E/B C'way bet CH0980-1100	30	18MAR04	26APR04	0	-212																		
Pipe Works (Local Supply Watermains)																								
03-3150	Pipe Works on E/B C'way bet CH1185-1215	10	29JAN04	09FEB04	0	-198																		
03-3154	Pipe Works at Access Road R8	20	27MAR04	23APR04	0	-135																		
Road Works																								
03-3024	Temp Rdworks at E/B C'way (CH1070-1350)	30	09MAR04	16APR04	0	-222																		
03-3025	Divert Traffic to E/B C'way CH1070 -1350	0		16APR04	0	-222																		
5. Footbridges																								
Footbridge FB12																								
05-5300	Form Working Platform for S.I. South (FB12)	30	04APR02A	10JAN04A	100																			
05-5310	GI Work at South Support for FB12; 14 piles	28	25APR02A	17JAN04	96	-59																		
05-53112	Piling Work at North Support for FB12; 17 piles	72	13SEP03A	05JAN04A	100																			
05-53101	Piling Platform for FB12 South	30	01DEC03A	13JAN04A	100																			
05-531122	Pile tests at North Support for FB12; 17 piles	8	14JAN04A	26JAN04	25	-66																		
05-53102	Piling Work at South Support for FB12; 14 piles	56	15JAN04A	25MAR04	2	-59																		
05-5330	North Pile caps for FB12; 8 Nos.	40	27JAN04	12MAR04	0	-66																		
05-5320	South Pile caps for FB12; 6 Nos.	40	26MAR04	17MAY04	0	-59																		
6. Retaining Walls																								
Bored Pile Wall BPRW03																								
06-62232	Construct Facing Wall for BPRW03; 1 to 30	45	24NOV03A	09FEB04	60	-48																		
06-622248	Const. 16 no.s 610 dia. mini piles	32	12DEC03A	10JAN04A	100																			
06-62233	Construct Caping Beam for BPRW03; 1 to 30	30	19DEC03A	16FEB04	60	-48																		
06-62255	Construct Facing Wall for BPRW03; 31 to 37	20	31JAN04	23FEB04	0	-37																		
06-62235	Fill & Trim Slope/Construct U-Channel; 1 to 30	30	03FEB04	08MAR04	0	-48																		
06-62256	Construct Caping Beam for BPRW03; 31 to 37	12	24FEB04	08MAR04	0	-37																		
06-62260	U-channel on F/P at BPRW03	15	09MAR04	25MAR04	0	16																		
Bored Pile Wall BPRW60																								
06-62640	Fill & Trim Slope/Construct U-Channel on Slope	30	02MAY03A	21JAN04	83	-102																		
06-62660	U-channel on F/P at BPRW60	15	03FEB04	19FEB04	0	-88																		
Reinforced Earth Wall 01																								
RE0114	Excavate/Temp. Slope Protection; 2nd stage	30	22OCT03A	02FEB04	60	18																		
RE0116	Mass concrete/Install panel & mesh/Backfill	36	03FEB04	15MAR04	0	18																		
RE0118	Finishing Work	30	02MAR04	06APR04	0	18																		
Reinforced Earth Wall 60																								
RE6014	Backfill/Finishing Work	24	10NOV03A	02FEB04	50	-119																		
L-Shaped Walls																								
06-65402	Backfill & drainage behind RW60	10	03JAN04A	10JAN04A	100																			
06-6103	Retaining Wall RW01 (CH1350-1464); 11 bays	90	03MAR04	23JUN04	0	-50																		

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004															
							JAN				FEB				MAR				APR			
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19
7. Noise Structures																						
Procurement of Noise Barrier																						
07-7060	Fabrication of Steel Members for Noise Barrier	100	16JAN04	24APR04	17	-50	[Bar chart showing activity duration from Jan 16 to Apr 24]															
07-7070	Fabrication of Panels for Noise Barrier	100	16JAN04	24APR04	17	-50	[Bar chart showing activity duration from Jan 16 to Apr 24]															
07-7040	Prepare, Submit Shop Drawings for NM03	21	29JAN04	18FEB04	0	-44	[Bar chart showing activity duration from Jan 29 to Feb 18]															
07-7080	Delivery of Steel Members for Noise Barrier	90	15FEB04	14MAY04	0	-50	[Bar chart showing activity duration from Feb 15 to May 14]															
07-7050	ER Review/Approve Shop Drawings for NM03	30	19FEB04	19MAR04	0	-44	[Bar chart showing activity duration from Feb 19 to Mar 19]															
07-7090	Delivery of Panels for Noise Barrier	90	25FEB04	24MAY04	0	-50	[Bar chart showing activity duration from Feb 25 to May 24]															
Noise Mitigation No. 01																						
07-71112	Foundation of NM01 (North); CH1205-1280	50	04DEC03A	06FEB04	68	-184	[Bar chart showing activity duration from Dec 4 to Feb 6]															
07-71114	Excavation/formation for bays 22-25 of NM01	12	04DEC03A	10JAN04A	100		[Bar chart showing activity duration from Dec 4 to Jan 10]															
07-71116	Construct base slab for bays 22-25 of NM01	24	24DEC03A	30JAN04	58	-184	[Bar chart showing activity duration from Dec 24 to Jan 30]															
07-7118	Construct wall for bays 22-25 of NM01	24	05JAN04A	06FEB04	33	-184	[Bar chart showing activity duration from Jan 5 to Feb 6]															
07-7113	Foundation of NM01 (North); CH1350-1405	50	13MAR04	15MAY04	0	-86	[Bar chart showing activity duration from Mar 13 to May 15]															
07-71132	Excavation/formation for bays 37-42 of NM01	18	13MAR04	02APR04	0	-66	[Bar chart showing activity duration from Mar 13 to Apr 2]															
07-71134	Construct base for bays 37-42 of NM01	24	27MAR04	28APR04	0	-66	[Bar chart showing activity duration from Mar 27 to Apr 28]															
8. Culverts and Outfalls																						
Culvert-Outfall AA																						
08-81502	Exc. Culvert-Outfall AA (within Exist CPR)	6	26FEB04	03MAR04	0	-194	[Bar chart showing activity duration from Feb 26 to Mar 3]															
08-815022	const. Culvert-Outfall AA (within Exist CPR)	18	01MAR04	20MAR04	0	-185	[Bar chart showing activity duration from Mar 1 to Mar 20]															
Culvert-Outfall AB																						
08-8102	Exc. Culvert-Outfall AB (the remaining portion)	6	26FEB04	03MAR04	0	-188	[Bar chart showing activity duration from Feb 26 to Mar 3]															
08-81022	Const. Culvert-Outfall AB (the remain. portion)	18	04MAR04	24MAR04	0	-188	[Bar chart showing activity duration from Mar 4 to Mar 24]															
Culvert-Outfall B																						
08-82012	Const. SMHB2 & Downpipes at bottom batter	18	19NOV03A	26JAN04	67	-178	[Bar chart showing activity duration from Nov 19 to Jan 26]															
Culvert-Outfall D																						
08-8500	Construct Outfall D (North)	139	14AUG03A	02FEB04	91	-135	[Bar chart showing activity duration from Aug 14 to Feb 2]															
08-85011	Exc. Culvert-Outfall D (North)	50	09SEP03A	26JAN04	88	-135	[Bar chart showing activity duration from Sep 9 to Jan 26]															
08-85015	Construct SMHD1/cascade/ staircase/1500 pipe	18	03JAN04A	02FEB04	50	-135	[Bar chart showing activity duration from Jan 3 to Feb 2]															
10. Geotechnical & Slope Works																						
New Slope Nos. 4, 5 & 3																						
10-10205	Excavation & Filling Works for Slopes 4, 5 & 3	24	08JAN04A	08MAR04	17	-135	[Bar chart showing activity duration from Jan 8 to Mar 8]															
10-102052	Drainage/Stabise Slopes 4, 5 & 3	18	24FEB04	15MAR04	0	-135	[Bar chart showing activity duration from Feb 24 to Mar 15]															
Existing Slope Works																						
10-10211	Remedial Works to Slope No. D/R16	598	05DEC02A	13DEC04	55	-65	[Bar chart showing activity duration from Dec 5 to Dec 13]															
10-10210	Remedial Works to Slope No. C161 & C5	103	17DEC03A	26APR04	22	-212	[Bar chart showing activity duration from Dec 17 to Apr 26]															
10-102102	Erect scaffolding/rock mapping	18	30DEC03A	16JAN04	94	-192	[Bar chart showing activity duration from Dec 30 to Jan 16]															
10-102107	Temp. work design/consent from the ER for RW101	30	02JAN04A	11FEB04	33	-212	[Bar chart showing activity duration from Jan 2 to Feb 11]															
10-102104	Install rock dowels/surface protection	30	12JAN04A	19FEB04	10	-179	[Bar chart showing activity duration from Jan 12 to Feb 19]															
10-102106	Excavate & formation to retaining wall RW101	30	12FEB04	17MAR04	0	-212	[Bar chart showing activity duration from Feb 12 to Mar 17]															
10-102105	Remove scaffolding, temp. catch fence	20	20FEB04	13MAR04	0	-179	[Bar chart showing activity duration from Feb 20 to Mar 13]															
10-102108	Construct retaining wall RW101/backfill	30	18MAR04	26APR04	0	-212	[Bar chart showing activity duration from Mar 18 to Apr 26]															

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004															
							JAN				FEB				MAR				APR			
							5	12	19	26	2	9	16	23	1	8	15	22	5	12	19	26
13. Reprovisioning of LCSD & FEHD Facilities																						
FEHD Facilities																						
13-1330	Construct RCP B	169*	09JUL03A	02FEB04	93	304																
13-1340	Reprovision of Sitting Out Area at Ka Loon Tsuen	141*	13SEP03A	04MAR04	72	97																
13-13406	Const. footing/floor slab of Sitting Out Area	40	13SEP03A	29JAN04	78	97																
13-1320	Construct RCP A	39*	12JAN04A	28FEB04	10	101																
13-13202	Construct drainage system of RCPA	12	12JAN04A	29JAN04	25	101																
13-13307	Finishing works for RCPB	12	16JAN04	02FEB04	0	304																
13-13204	Formation/construct foundation of RCPA	6	30JAN04	05FEB04	0	101																
13-13407	Const./install Roof & Furnit of Sitting Out Area	30	30JAN04	04MAR04	0	97																
13-13206	Construct sub-structure & roofing of RCPA	12	06FEB04	19FEB04	0	101																
13-13207	Finishing works for RCPA	8	20FEB04	28FEB04	0	101																
Stairways																						
13-1310	Construct Stairway ST01 and Add. Ramp ST01A	30	22DEC03A	15JAN04A	100																	
13-1313	Construct Stairway ST03	30	16MAR04	23APR04	0	-111																
Variation Order																						
Additional Works at Slope 1																						
10-1045	Const. drainage/stabilize slope at bott. batter	139*	21AUG03A	09FEB04	87	-188																
10-1051	Const. planter wall/drainage V.O. 104	18	05DEC03A	26JAN04	87	-188																
10-1052	Const. additional but. wall at bottom batter	12	27JAN04	09FEB04	0	-188																
Mass & Buttress Wall in front of House No. 6																						
VO214	Add. retaining wall at House no. 6; VO 214	158*	18SEP03A	29MAR04	62	-222																
VO2143	Soldier piling	12	02DEC03A	30JAN04	17	-222																
VO2144	Excavation/lagging to soldier piles	16	31JAN04	18FEB04	0	-222																
VO2145	Rock mapping/confirm rock dowels	4	19FEB04	23FEB04	0	-222																
VO2146	Install rock dowels	4	24FEB04	27FEB04	0	-222																
VO2147	Construct buttress wall	12	26FEB04	12MAR04	0	-222																
VO2148	Construct mass concrete wall	8	13MAR04	22MAR04	0	-222																
VO2149	Back filling & drainage behind retaining wall	6	23MAR04	29MAR04	0	-222																
Remedial Works for failed slope behind BPRW60																						
06-62652	Rem. Works for Failed Slope at BPRW60; VO. 197	77*	21OCT03A	21JAN04	94	-102																
06-62269	Reinstate work/finishing work	8	29DEC03A	21JAN04	38	-102																
Mass Concrete Wall at toe of Slope 3																						
VO2252	Add. mass conc. wall at toe of slope 3; VO. 253	30	27JAN04	01MAR04	0	-135																
Grade 200 Rockfill Slope to replace RW74																						
VO206	Construct Slope replacing RW74; VO 206	81*	12DEC03A	22MAR04	33	-206																
VO2064	Remove exist shortcrete/benching/fill grade 700	24	22DEC03A	02FEB04	50	-206																
VO2066	Const. berm/drain/stairs/cap. layer; top batter	12	03FEB04	16FEB04	0	-206																
VO2068	Const. berm/drain/stairs/cap. layer; 2nd batter	18	17FEB04	08MAR04	0	-206																
VO2069	Const. drain/stairs/cap. layer; bott batter	12	09MAR04	22MAR04	0	-206																



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																	
							JAN				FEB				MAR				APR					
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26	
Pipe Works (Local Supply Watermains)																								
03-3233	Water Works at Portion W10	7	12FEB04	19FEB04	0	14																		
Road Works																								
03-3142	Lav sub-base, kerbs & edgings; W/B CH2250-2500	18	17FEB04	08MAR04	0	-28																		
03-31422	Construct rd pave & f/p; W/B CH2250-2500	18	24FEB04	15MAR04	0	-28																		
03-3147	Divert Traffic to W/B Perma C'way CH2210 to 2500	0		15MAR04	0	-28																		
03-31448	Reinstate E/B CH2210-2300 prior to Complete KDE	6	30MAR04	06APR04	0	-28																		
5. Footbridges																								
Footbridge FB01																								
05-51103	Piling Works for caps 10 to 12; FB01; 8 Nos.	150	17JUN03A	10JAN04A	100																			
05-51104	Pile testing for FB01 (South)	12	16JAN04	02FEB04	0	-119																		
05-51202	South Columns & Column head for 6-7; 3 Nos.	30	26JAN04	28FEB04	0	-52																		
05-51201	South Pile caps for 8 to 12; FB01; 5 Nos.	24	16MAR04	16APR04	0	-119																		
Footbridge FB02																								
05-52402	North Columns & column head for FB02; 9 Nos.	40	22SEP03A	21JAN04	88	-64																		
05-52704	Construct Stairway for FB02 (North)	30	22DEC03A	26JAN04	80	-55																		
05-5270	Construct Ramp for FB02 (North)	60	31DEC03A	11FEB04	67	-69																		
05-5230	South Pile caps for FB02; 8 Nos.	35	05JAN04A	11FEB04	43	-109																		
05-52302	South Columns & column head for FB02; 9 Nos.	40	12FEB04	29MAR04	0	-109																		
05-5250	Erect Deck of Main Span for FB02	30	30MAR04	08MAY04	0	-109																		
05-5260	Construct Ramp for FB02 (South)	60	30MAR04	14JUN04	0	-109																		
05-52604	Construct Stairway for FB02 (South)	30	30MAR04	08MAY04	0	-79																		
05-52706	Erect Steelwork & Roofing for FB02 (North)	30	30MAR04	08MAY04	0	-109																		
7. Noise Structures																								
Noise Mitigation No. 02																								
07-7231	Const. footing for NM02 (South); CH2450-2480	24	04DEC03A	26JAN04	75	-8																		
Noise Mitigation No. 03																								
07-7311	Foundation of NM03 (South)	60*	29JAN04	08APR04	0	-61																		
07-73112	Excavation/formation of NM03 (South)	18	29JAN04	18FEB04	0	-61																		
07-73114	Construct base of NM03 (South)	34	12FEB04	22MAR04	0	-61																		
07-73116	Construct wall stem of NM03 (South)	34	28FEB04	08APR04	0	-61																		
Noise Mitigation No. 04																								
07-7407	Erect Frame/Panels for NM04 (Within portion W10)	50	25FEB04	27APR04	0	-40																		
8. Culverts and Outfalls																								
Culvert-Outfall F																								
08-8710	Formation Culvert-Outfall F (South of Exist CPR)	193*	02JUN03A	26JAN04	97	114																		
08-87102	Excavate and Const. Outlet (stitch concrete)	43	02JUN03A	26JAN04	86	114																		
Culvert-Outfall G																								
08-8810	Culvert-Outfall G (South of Exist CPR)	204*	11JUN03A	16FEB04	88	-104																		
08-88105	Excavate/formation/blinding for bay 3	12	03DEC03A	26JAN04	50	-104																		
08-88106	Const. twin box-culvert for bay 3	18	27JAN04	16FEB04	0	-104																		

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004															
							JAN				FEB				MAR				APR			
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19
9. Seawalls and Marine Works																						
Sea Wall B (710 m Length)																						
09-9114	Granular Fill (CH2210-2450)	50	22APR03A	06FEB04	80	-8																
09-9134	Granular Fill (CH2800-3010)	50	10MAY03A	01MAR04	60	87																
09-91122	Place Armour to +4 mPD (CH2210-2500)	25	03DEC03A	04FEB04	50	-8																
L-Shaped Walls																						
09-91113	Retaining Wall RW-B (CH2250-2500)	282*	10FEB03A	21JAN04	98	-52																
09-9133	Retaining Wall RW-B (CH2800-3010)	212*	11JUN03A	25FEB04	85	56																
09-9143	Reprovision of Pavillion at Sea Wall B	258*	23JUN03A	06MAY04	66	-51																
09-9123	Retaining Wall RW-B (CH2500-2800)	323*	14JUL03A	13AUG04	48	-148																
09-91136	Const. plinth; RW-B for bay 01-27	46	04SEP03A	21JAN04	89	-52																
09-91437	Const. pavilion & staircase	24	08SEP03A	06MAY04	17	-51																
09-91234	Const. RW-B; base for bays 25-27; at FB01	18	30OCT03A	18JAN04	94	-47																
09-91334	Const. RW-B; base for bays 59-68; at FB02	40	17DEC03A	02FEB04	70	-109																
09-913341	Const. RW-B; wall for bays 59-68; at FB02	40	03JAN04A	13FEB04	50	-109																
09-91336	Const. plinth; RW-B for bays 57-76	46	08JAN04A	25FEB04	-35	56																
09-912312	Const. wall of RW-B; bays 33-56	60	29JAN04	08APR04	0	-148																
09-912344	Const. RW-B; base for bays 28-32; at FB01	18	03FEB04	23FEB04	0	-119																
09-912346	Const. RW-B; wall for bays 28-32; at FB01	18	24FEB04	15MAR04	0	-119																
10. Geotechnical & Slope Works																						
Existing Slope Works																						
09-9212	Remedial Works to Slope No. 6SW-C186 & C1/C78	90*	16MAR04	07JUL04	0	6																
09-92121	Remedial Works to Slope No. 6SW-D/C186	36*	16MAR04	30APR04	0	12																
09-921212	Form access and site clearance	6	16MAR04	22MAR04	0	12																
09-92122	Remedial Works to Slope No. 6SW-D/C1 & D/C78	90*	16MAR04	07JUL04	0	6																
09-921221	Form access and site clearance	8	16MAR04	24MAR04	0	6																
09-921214	Construct 300 U-channel on the slope	6	23MAR04	29MAR04	0	12																
09-921222	Trim slope/Construct 300 U-channel on the slope	12	25MAR04	08APR04	0	6																
09-921216	Excavate/trim slope to future road level	12	30MAR04	16APR04	0	12																
09-921223	Excavate/trim slope to future road level	26	13APR04	13MAY04	0	6																
12. Entrusted Watermains																						
Entrusted Water Mains																						
12-1216	DN1000FW/Associated Wks at CPR CH2800-3010	52	10SEP03A	26JAN04	89	-28																
12-1231	DN1000FW/Associated Wks at E/B CH2270-2300	20	04DEC03A	31JAN04	45	-28																
12-1219	DN1000FW/Associated Wks at E/B CH2480-2550	30	06JAN04A	23FEB04	0	-28																
12-1232	DN150 cross rd & fire hydrant at CH L600	12	16MAR04	29MAR04	0	-28																
CPR from Chainage 3+010 to Chainage 3+730																						
1. Preliminaries																						
Temporary Watermain Diversions																						
001-1170	Watermain Diversion between CH3010-3100	21	03FEB04	26FEB04	0	-72																

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																			
							JAN				FEB				MAR				APR							
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26			
Proposed Utility Works																										
01-1245	Proposed Gasmain on E/B C. way CH3540-3670	20	06MAR04	29MAR04	0	53																				
01-1240	Proposed CLP on W/B bet CH3010-3100	5	03APR04	13APR04	0	-125																				
01-12402	Proposed CATV on W/B CH3010, rd crossing	2	03APR04	08APR04	0	-125																				
01-12403	Proposed HKT on W/B CH3220, rd crossing	2	07APR04	08APR04	0	-125																				
2. Site Clearance																										
Demolition of Existing Buildings																										
02-2162	Demolish Exist RCP at Potlon No. W32	6	02APR04	13APR04	0	-126																				
3. Roadworks																										
Earthworks																										
03-3241	Earthworks at W/B C'way CH3010-3300	97*	11DEC03A	13APR04	29	-126																				
03-3243	Earthworks at E/B C'way CH3400-3540	30	11MAR04	19APR04	0	-21																				
Drainage Works																										
03-3324	Drainage Works on E/B C'way bet CH3540-3670	257*	10APR03A	23FEB04	88	53																				
03-3320	Drainage Works on W/B C'way bet CH3010-3300	58	03FEB04	14APR04	0	-109																				
03-33248	Exc. & const. drainage for H2.4-pH2.4	18	03FEB04	23FEB04	0	53																				
Pipe Works (Local Supply Watermains)																										
03-3331	Pipe Works on E/B C'way bet CH3540-3670	22	10FEB04	05MAR04	0	53																				
Road Works																										
03-3340	Dragon Garden Accommodation	625*	12APR02A	24MAY04	84	-146																				
03-334006	Const. Plinth & Wall Face incl. Slope Work	60	10JAN03A	28FEB04	42	-12																				
03-33132	Temp UUs & Roadworks at E/B CH3300-3460	30	03FEB04	08MAR04	0	-65																				
03-33133	Divert Traffic on E/B Temp. C'way CH3300-3460	0		08MAR04	0	-65																				
03-334008	Remove Temporary Hoarding & Reinstatement	35	13APR04	24MAY04	0	123																				
03-3314	Lay sub-base, kerbs & edgings; W/B CH3010-3300	29	14APR04	18MAY04	0	-126																				
R.E. Wall REV05																										
Reinforced Earth Wall W05W																										
REV010	Excavation/Temp. soil nail/Cleaning the base	70	20FEB04	17MAY04	0	-65																				
5. Footbridges																										
Footbridge FB11																										
05-5530	North Pile caps for FB11; 6 Nos.	35	06OCT03A	02FEB04	66	-65																				
05-5520	South Pile caps for FB11; 8 Nos.	35	10OCT03A	28JAN04	77	-22																				
05-55202	South Columns & column head for FB11; 9 Nos.	40	09DEC03A	08MAR04	13	-22																				
05-5550	Construct Ramp for FB11 (South)	60	09MAR04	22MAY04	0	-22																				
6. Retaining Walls																										
Reinforced Earth Wall 13																										
RE1312	Mass concrete/Install panel & mesh/Backfill	80	21JAN03A	03MAR04	93	-126																				
RE1314	Finishing Work	112*	24NOV03A	13APR04	72	-126																				
RE1315	Construct L-shaped wall	30	24NOV03A	20MAR04	50	-126																				
RE1317	Compacted selected fill	18	11DEC03A	13APR04	0	-126																				
RE1316	Construct Plinth	18	20DEC03A	01APR04	44	-126																				

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																	
							JAN				FEB				MAR				APR					
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26	
L-Shaped Walls																								
06-6590	Construct Partition Wall at D. Garden	45*	28SEP02A	08APR04	85	-21																		
06-6591	Construct Retaining Wall RW16 (Outside)	30*	08MAR03A	22MAR04	83	-21																		
06-6560	Construct Retaining Wall RW13	250*	22APR03A	23FEB04	88	-91																		
06-65912	Construct Wall Stem of RW16; Bay 3 to 5	40	05JUL03A	11FEB04	50	-15																		
06-65904	Construct Partition Wall; Bay 12	30	04AUG03A	08APR04	80	-21																		
06-65906	Construct Partition Wall; Bays 8 & 10	25	24OCT03A	26JAN04	76	-21																		
06-6566	Construct Wall Stem of RW13; 6 bays	24	17NOV03A	15JAN04A	100																			
06-65915	Construct Retaining Wall RW16; Bay 6	25	22DEC03A	02FEB04	52	-1																		
06-6567	Backfill behind RW13	18	24DEC03A	02FEB04	33	-109																		
06-65913	Temp. Works for RW16; Bays 1-2	18	27JAN04	16FEB04	0	-21																		
06-6568	Construct plinth of RW13; 6 bays	18	03FEB04	23FEB04	0	-91																		
06-65914	Construct Retaining Wall RW16; Bays 1-2	30	17FEB04	22MAR04	0	-21																		
06-65908	Extract sheet piles & temp. rd to D. Garden	12	26FEB04	10MAR04	0	-21																		
06-65909	Construct Partition Wall; Bays 11	18	11MAR04	31MAR04	0	-21																		
8. Culverts and Outfalls																								
Culvert - Outfall HB																								
08-81010	Culvert-Outfall HB (South of Exist CPR)	26*	27JAN04	25FEB04	0	-126																		
08-810102	Excavation for DN 1200 DI Pipe & SMHHB3	8	27JAN04*	04FEB04	0	-126																		
08-810103	Const. SMHHB3 & Catchpit	12	05FEB04	18FEB04	0	-126																		
08-810104	Install DN 1200 DI Pipe & Backfill	6	19FEB04	25FEB04	0	-126																		
Culvert-Outfall H																								
08-81110	Culvert-Outfall H (North of Exist CPR)	184*	13AUG03A	24MAR04	70	-21																		
08-81113	Construct manhole SMHH1& install 1.65m pipe	24	26FEB04	24MAR04	0	-21																		
10. Geotechnical & Slope Works																								
New Slope No. 9																								
10-10545	Drainage Work for Slope No.9	35	27JAN03A	26JAN04	83	65																		
New Slope No. 11																								
10-10757	Reprovion of B. Fence: V.O. No. 133	45	06MAR04	03MAY04	0	106																		
Existing Slope Works																								
10-1092	Remedial Works to Slope No. FR41	149*	26JUL03A	26JAN04	96	150																		
10-10927	Additional mass conc. wall at RW104	18	30DEC03A	07JAN04A	100																			
10-10928	Fill behind RW104 & Finishing Work	16	07JAN04A	26JAN04	63	150																		
11. Entrusted Sewerage Works																								
Entrusted Sewers/Drains																								
11-1141	Sewer Works at E/B bet CH3540-3670	169*	09JUL03A	02FEB04	93	53																		
11-11412	Const. sewer for TS127 to TS127A	24	09JUL03A	10JAN04A	100																			
11-11413	Const. sewer for TS127A to TS128	24	24NOV03A	15JAN04A	100																			
11-11414	Const sewer for TS128 to TS130	30	13DEC03A	02FEB04	60	53																		

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																		
							JAN				FEB				MAR				APR						
							5	12	19	26	2	9	16	23	1	8	15	22	5	12	19	26			
13. Reprovisioning of LCSD & FEHD Facilities																									
Stairways																									
13-1331	Construct Stairway ST06	60*	27JAN04	06APR04	0	-94																			
13-13312	Formation & Construct foundation	10	27JAN04	06FEB04	0	-94																			
13-1332	Construct Stairway ST07	60	27JAN04	06APR04	0	150																			
13-13314	Construct staircae upto +8.6 mPD	23	07FEB04	04MAR04	0	-94																			
13-13316	Construct Stairway from +8.6 to +10.4 mPD	15	05MAR04	22MAR04	0	-94																			
13-13318	Finishing & railing	12	23MAR04	06APR04	0	-94																			
Variation Order																									
Additional Works at Outfall IA under VO No. 195																									
08-81230	Additional Works under V.O. No. 195	126*	16JAN04	21JUN04	0	207																			
08-81231	Form Access & Remove Vegetation; VO 195	12	16JAN04*	02FEB04	0	207																			
08-81232	Exc. incl. Sheet pile/Break Conc. Pipe; L. Part	18	03FEB04	23FEB04	0	207																			
08-81233	Const. Cascade/M. Stairway/Backfill; L. Part	18	24FEB04	15MAR04	0	207																			
08-81234	Exc. incl. Sheet pile; U. Part of Cascade	12	16MAR04	29MAR04	0	207																			
08-81235	Const. Cascade/M. Stairway/Backfill; U. Part	12	30MAR04	16APR04	0	207																			
CPR from Chainage 3+730 to Chainage 4+470																									
2. Site Clearance																									
Demolition of Existing Buildings																									
02-2160	Site Clearance bet CH3730-4470	75	16MAR02A	26JAN04	92	-122																			
3. Roadworks																									
Utility Diversion																									
03-34105	Temp. relocate/protect exist. L.A. Pipes	12	13DEC03A	20JAN04	67	-89																			
03-34506	Lay UUs/Temp. Roadwork at E/B CH 3900-3980	40	09MAR04	28APR04	0	-122																			
Drainage Works																									
03-3424	Drainage Works at E/B C'way CH3900-4330	89*	28NOV03A	17MAR04	44	-108																			
03-34241	Drainage Works; manholes IC1.9-IC1.7	30	28NOV03A	09JAN04A	100																				
03-34243	Drainage Works; manholes IC1.5-IC3.1	40	02JAN04A	23FEB04	25	-108																			
03-34242	Drainage Works; manholes IC1.7-IC1.5	30	16JAN04	23FEB04	0	-108																			
03-3426	Drainage Works at E/B C'way CH4330-4470	58*	27JAN04	02APR04	0	2																			
03-34262	Sheet piling/excavate trench for storm drainage	50	27JAN04	24MAR04	0	2																			
03-34245	Drainage Works; m/h IC1.9-IC1.12 & IC12.2-12.3	30	03FEB04	08MAR04	0	-122																			
03-34264	Const. manholes and install drainage	50	05FEB04	02APR04	0	2																			
03-34244	Drainage Works; manholes J1.6-J1.5	20	24FEB04	17MAR04	0	-108																			
03-34552	Drainage along Access Road R10	16	30MAR04	21APR04	0	92																			
Road Works																									
03-34523	Stage 2 TTA (Temp. works at central divider)	35*	10DEC03A	26JAN04	83	2																			
03-345234	Break central divider & const. temp road	8	16DEC03A	03JAN04A	100																				
03-345235	Consent/install traffic signals by EMSD	12	02JAN04A	26JAN04	25	2																			
03-345236	Divert traffic for Stage 3 TTA	0		26JAN04	0	2																			
03-34533	Stage 3 TTA (works at E/B fast lane)	70*	27JAN04	21APR04	0	2																			

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																	
							JAN				FEB				MAR				APR					
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26	
Road Works																								
03-345332	Road formation/Paving asphalt at E/B fast lane	12	03APR04	21APR04	0	2																		
5. Footbridges																								
L-Shaped Walls																								
03-3400	Excavate & Temp. Slope Protection; Walkway-FB03	296*	01APR03A	31MAR04	79	-107																		
03-34002	Excavate & Temp. Slope Protection; bays 15-19	40	13OCT03A	08MAR04	70	-144																		
05-54502	Const. wall of walkway; FB03(South); bays 4-12	48	30OCT03A	02FEB04	75	-80																		
03-340022	T. design/mini pile/excavate; bays 20-21-VO 246	40	01NOV03A	23FEB04	25	-144																		
05-54507	Const. base of walkway; FB03(South); bays 1-3	20	12JAN04A	11FEB04	0	-125																		
05-54509	Const. wall of walkway; FB03(South); bays 1-3	30	18FEB04	23MAR04	0	-111																		
03-34003	Excavate & Temp. Slope Protection; bays 13-14	20	09MAR04	31MAR04	0	-107																		
05-54503	Const. base of walkway; FB03(South); bays 15-21	32	09MAR04	19APR04	0	-144																		
Footbridge FB03																								
05-5450	Construct Walkway for FB03 (South)	230*	20SEP03A	02JUL04	42	-144																		
05-54302	North Columns & Col head for FB03; 6 Nos.	50	21NOV03A	02FEB04	76	-122																		
05-5420	South Pile caps for FB03; 1 Nos.	30	16JAN04	23FEB04	0	-146																		
05-5460	Construct Ramp for FB03 (North)	60	03FEB04	16APR04	0	98																		
05-54202	South Columns & Column head for FB03	30	24FEB04	29MAR04	0	-146																		
05-54506	Construct Stairway for FB03 (South)	30	30MAR04	08MAY04	0	-146																		
6. Retaining Walls																								
Reinforced Earth Wall 21																								
RE2114	Finishing Work	56*	16DEC03A	25FEB04	43	-90																		
RE2115	Construct end walls & coping	30	16DEC03A	10JAN04A	100																			
RE2116	Backfill slope on top of RE wall	30	12JAN04A	11FEB04	33	-145																		
RE2117	Trim slope & construct berm & channel	16	05FEB04	25FEB04	0	-90																		
Reinforced Earth Wall 70																								
RE7012	Finishing Work	68*	02DEC03A	25FEB04	53	-90																		
RE7014	Backfill slope on top of RE wall	30	12DEC03A	11FEB04	33	-145																		
RE7015	Trim slope & construct berm & channel	30	12JAN04A	25FEB04	10	-90																		
8. Culverts and Outfalls																								
Culvert-Outfall IB																								
08-81520	Culvert-Outfall IB (South Portion)	54*	24FEB04	30APR04	0	-90																		
08-815202	Excavation and formation	12	24FEB04	08MAR04	0	-90																		
08-815203	Const. wing wall and cascade	18	09MAR04	29MAR04	0	-90																		
08-815204	Const. ret. wall/manhole & concrete pipes	24	30MAR04	30APR04	0	-90																		
Culvert-Outfall I																								
08-81320	Culvert-Outfall I (South & Exist CPR)	81*	13DEC03A	23MAR04	32	-125																		
08-813202	Excavation and formation; South	12	13DEC03A	10JAN04A	100																			
08-813203	Const. outfall wing wall	19	27JAN04	17FEB04	0	-125																		
08-813204	Const. 2mx2m twin box culvert; South	30	18FEB04	23MAR04	0	-125																		

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	% Comp	Total Float	2004																	
							JAN				FEB				MAR				APR					
							5	12	19	26	2	9	16	23	1	8	15	22	29	5	12	19	26	
9. Seawalls and Marine Works																								
Seawall C (460 m Length)																								
09-9242	Granular Fill at FB03 Stairway/W. way (bays 1-6)	30	03APR04	13MAY04	0	-146																		
10. Geotechnical & Slope Works																								
L-Shaped Walls																								
10-109208	Add ret. walls to 6SE-C/C431& C/C111; VO 219	30	22DEC03A	02FEB04	60	-112																		
Existing Slope Works																								
10-109203	Rem. Works to Slope 6SE-C/C431& C/C111; VO 168	187*	02JUL03A	16FEB04	87	98																		
10-109206	Slope works to 6SE-C/C431& C/C111; VO 168	30	21JUL03A	16FEB04	60	98																		
11. Entrusted Sewerage Works																								
Entrusted Sewers/Drains																								
11-1124	Sewer Works at E/B C'way bet CH3980-4330	87*	12FEB04	29MAY04	0	-145																		
11-11242	Sewer Works at TS115-TS110	47	12FEB04	07APR04	0	-145																		
11-1121	Additional Sewer Works at R10; VO No. 209	30	24FEB04	29MAR04	0	92																		
11-11246	Sewer Works at TS115-TS118	30	09MAR04	16APR04	0	-122																		
11-11244	Sewer Works at TS110-TS105	40	08APR04	29MAY04	0	-145																		
13. Re provisioning of LCSD & FEHD Facilities																								
FEHD Facilities																								
13-1350	Reprovision Pavilion & Pai Lau	205*	22DEC03A	02SEP04	9	-112																		
13-1351	Substructure of Pai Lau	18	22DEC03A	17JAN04	89	-112																		
13-1353	Substructure of Pavilion	18	03FEB04	23FEB04	0	82																		
14. Landscape Works																								
Tree Felling and Transplanting																								
14-21606	Transplant Trees;South of exist. CPRCH4200-4300	65	09MAY02A	04FEB04	70	120																		

APPENDIX B

**Implementation Status
on Environmental
Protection
Requirements**

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Air Quality				
Annex F	2.8	Twice daily watering	All unpaved haul roads, bulldozed material, exposed site areas	Implemented
Annex F	2.8	Collection of dust through a fabric filter	Concrete batching plants	Not Applicable
Annex C2		<p>General Requirement</p> <p>The Contractor shall undertake measures to prevent dust nuisance as a result of his activities. Any air pollution control system installed shall be operated whenever the plant is in operation.</p> <p>The Contractor shall not install any furnace, boiler or other similar plant or equipment using any fuel that may produce air pollutants without the prior written consent of the Director of Environmental Protection (DEP) pursuant to the Air Pollution Control Ordinance.</p> <p>The Contractor shall not burn debris or other materials on the works areas.</p> <p>The Contractor shall implement dust suppression measures which shall include, but not be limited, to the following:</p> <ul style="list-style-type: none"> • Stockpiles of sand and aggregate greater than 20m³ for use in concrete manufacture shall be enclosed on three sides, with walls extending above the pile and 2m beyond the front of the pile. • Effective water sprays shall be used during the delivery and handling of all raw sand and aggregate, and other similar materials, when dust is likely to be created and to dampen stored materials during dry and windy weather • Areas where there is a regular movement of vehicles shall have all-weather surface to a standard agreed with the Engineer and be kept clear of loose surface material. • If used, conveyor belts shall be fitted with wind boards, and conveyor transfer points and hopper discharge areas shall be enclosed to minimize dust emission. Conveyors carrying materials which have the potential to create dust shall be totally enclosed and fitted with belt cleaners, • Cement and other such fine grained material delivered in bulk shall be stored in closed silos fitted with a high level alarm indicator. The high level alarm indicators shall be interlocked with the filling line so that in the event of the hopper approaching an overfull conditions, an audible alarm will operate and the pneumatic line to the filling tanker will close. 	All areas	<p>Implemented</p> <p>Complied</p> <p>Complied</p> <p>Not applicable</p> <p>Implemented</p> <p>Implemented</p> <p>Not applicable</p> <p>Not applicable</p>

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C2		<ul style="list-style-type: none"> • Air vents on cement silos shall be fitted with suitable fabric filters provided with either shaking or pulse-air cleaning mechanisms. The fabric filter area shall be determined using an air-cloth ration (filtering velocity) of 0.01-0.03m/s. • Weigh hopper shall be vented to a suitable filter. • The filter bags in the cement silo dust collector must be thoroughly shaken after cement is blown into the silo to ensure adequate dust collection for subsequent loading. • The provision of adequate dust suppression plant including water bowsers with spray bars or means of applying surface chemical treatment, the details of which shall be submitted to and approved by the Engineer. • Areas of reclamation shall be completed, including final compaction, as quickly as possible consistent with good practice to limit the creation of wind blown dust. • Unless otherwise approved by the Engineer, the Contractor shall restrict all motorized vehicles on the work areas to a maximum speed appropriate to the quality of the haul roads and confine haulage and delivery vehicles to designed roadways inside the work areas. • If applicable, the Contractor shall arrange blasting techniques so as to minimise dust generation. <p>In addition to these standard dust control measures, the proposed control measures contained in the Air Pollution Control (Construction Dust) Regulation should be noted.</p>	All areas	<p>Not applicable</p> <p>Not applicable</p> <p>Not applicable</p> <p>Implemented</p> <p>Seawall reclamation works completed</p> <p>Implemented</p> <p>Chemical blasting was implemented</p> <p>Complied</p>
		<p>At any concrete batching plant or crushing plant being operated on the work areas the following additional conditions shall be complied with:</p> <ul style="list-style-type: none"> • Where dusty materials are being discharged to vehicles from a conveying system at a fixed transfer point, a three-sided roofed enclosure with a flexible curtain across the entry shall be provided. Exhaust fans shall be provided for this enclosure and vented through a suitable fabric filter system. <p>Any vehicle with open load carrying area for moving potentially dust producing material shall properly fitting side and tail boards. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin in good condition. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.</p>	All areas	<p>Not applicable</p> <p>Implemented</p>
		<ul style="list-style-type: none"> • The Contractor shall frequently clean and water and concrete batching plant and ancillary areas in minimize any dust emissions. 	All areas	Not applicable

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C2 (v)		<ul style="list-style-type: none"> • Dry mix batching shall be carried out in a totally enclosed area with exhaust to suitable fabric filters. <p>Concrete batching plant or crushing plants may be required to obtain specified processes licences from EPD.</p>		<p>Not applicable</p> <p>Not applicable</p>
Annex C3		The Contractor will not be allowed to operate Mineral Works (Crushing Plant) on the works areas	All areas	Complied
Annex C4		<p>Monitoring of Dust (TSP) Levels</p> <p>The Contractor shall carry out the Works in such a manner as to minimize dust emissions during execution of the Works.</p> <p>The Engineer may require equipment intended to be used on the Works to be made available for inspection and approval to ensure that it is suitable for the project.</p> <p>The Contractor shall devise and arrange methods of working to minimize dust emissions, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.</p> <p>Before the commencement of the Works, the Contractor shall submit to the Engineer the proposed methods of working.</p> <p>After commencement of the Works if the equipment or work methods are believed by the Engineer to be causing serious air pollution impacts, remedial proposals shall be drawn up by the Contractor and once approved by the engineer, implemented. In developing these remedial measures, the Contractor shall inspect and review all dust sources that may be contributing to the pollution impacts. Where such remedial measures include the use of additional or alternative equipment such equipment shall not be used on the Works until approved by the Engineer. Where remedial measures include maintenance or modification of previously approved equipment such equipment shall not be used on the Works until such maintenance or modification is completed and the adequacy of the maintenance or modification is demonstrated to the satisfaction of the Engineer.</p> <p>If the Engineer finds that approved remedial measures are not being implemented and that serious impacts persist, he may direct the Contractor to cease related parts of the Works until the measures are implemented. No claims by the Contractor shall be entertained in connection with such a direction.</p> <p>The dust levels will be measured by the "High Volume method for total suspended particulates" as described by the United States Environmental Protection Agency in 40 CFR Part 50.</p>	At the monitoring locations specified in the EM&A Manual	<p>Implemented</p> <p>Complied</p> <p>Implemented</p> <p>Implemented</p> <p>Complied</p> <p>Complied</p> <p>Implemented</p>

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C4		<p>The Engineer will carry out baseline monitoring prior to the commencement of major construction works to determine and agree with the Contractor ambient dust (TSP) levels at each specified monitoring station. The baseline monitoring will be carried out for a period of at least two weeks, with measurements to be taken every day at each monitoring station.</p> <p>Impact monitoring during the course of the Works will normally undertaken by any one or more of the monitoring stations. The contractor will be responsible for the data; however, because of conflict of interest, the monitoring and processing work should be done by others, such as a consultant, rather than by the contractor itself. Data should be submitted to the Engineer for approval.</p> <p>Should the impact monitoring record dust level which are indicative of a deteriorating situation so that closer monitoring is reasonably indicated, then the Engineer may instruct the Contractor to undertake daily impact monitoring at any one or more of the monitoring stations until the results indicate an improving and acceptable level of air quality.</p>	At the monitoring locations specified in the EM&A Manual	<p>Complied. The baseline monitoring had been conducted by Contractor's ET</p> <p>Implemented</p> <p>Complied</p>
Annex C5		<p>Action on Construction Dust (TSP) Levels</p> <p>A systematic and objective Action Plan, which is linked to Action and Limit levels as stipulated in the EM&A Manual, should be strictly followed</p> <p>Where the Engineer determines that the recorded dust (TSP) level is significantly greater than the levels established in the baseline survey, the Engineer will direct the Contractor to take effective remedial measures including, but not limited to, reviewing dust source and modifying working procedures.</p> <p>The Contractor shall inform the Engineer of all steps taken. Written reports and proposals for action shall be passed to the Engineer by the Contractor whenever the Engineer determines that air quality monitoring shows that the recorded dust (TSP) level is significantly greater than the levels established in the baseline survey of breaching the Air Quality Objective, or accepted guidelines.</p> <p>If the Engineer finds that approved remedial measures are not being implemented and that serious impacts persist, he may direct the Contractor to cease related parts of the Works until the measures are implemented. No claims by the Contractor shall be entertained in connection with such a direction.</p>	All areas	<p>Implemented</p> <p>Complied</p> <p>Complied</p> <p>Complied</p>

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Construction Noise				
7.3.2	3.7	Noisy equipment and activities should be sited by the Contractor as far away from sensitive receivers as is practical. Replace noisy plant with quieter alternatives. Idle equipment should be turned off or throttled down. Quieter power units of stationary and earth moving plant with partial or full enclosures or vibratory isolation. Properly maintain powered mechanical equipment. Use temporary noise barriers or earth embankments where practicable. Details of the type, length, height and material shall be submitted to DEP for agreement no later than 1 month before construction. Surface density of portable barriers should not be less than 7kg/m ² .	All areas	Implemented Implemented Complied Implemented Complied Implemented
7.3.2	3.7	Hand held breakers to comply with EEC Technical Directive 84/537.	All areas of road removal	Complied
7.3.2	3.7	Portable compressors to comply with EEC Technical Directive 84/533.	Works yards, all areas where pile cap, column, superstructure, surfacing and retaining wall works are underway	Implemented
7.3.6	3.7	Schedule noisy activities to reduce duration and severity of noise exposure.		Implemented
7.4.2	3.7	Shield prefabrication and concrete for SR4	Western workyard	Not applicable
Annex C13		General Requirement The Contractor shall consider noise as an environmental constraint in his planning and execution of the Works. The Contractor shall take all necessary measures to ensure that the operation of mechanical equipment and construction process on or off the works areas will not cause any unnecessary and excessive noise, which may disturb any occupant of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise. The Contractor shall submit to the Engineer for his consent details of the Contractor's equipment including methods of use and construction operations together with proposed measures for limiting noise therefore which shall include, inter alia, the use of silencers, mufflers, acoustic linings or shields, or acoustic sheds (this will apply in particular to the tunnel portals) or screens and shall be based upon the best reasonable practice. Information on the types and models of silenced equipment and acoustic treatment for unsilenced equipment shall be	All areas	Implemented Implemented

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
		included. The contractor shall use such measures and shall maintain plant and silencing equipment in good condition so as to minimize the noise emission during construction works.		
Annex C13		<p>Hand-held breakers used by the Contractor shall comply with the standards specified in EET Technical Directive 84/537, and portable compressors shall comply with the standards specified in EEC Technical Directive 84/533.</p> <p>The Engineers may require equipment intended to be used on the works to be made available for inspection and approval to ensure that it is suitable for the project.</p> <p>The Contractor shall devise and arrange methods of working to minimize noise impacts, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.</p> <p>Before the commencement of the Works the Contractor shall submit to the Engineer the proposed methods of working.</p> <p>After commencement of the Works of the equipment or work methods are believed by the Engineer to be causing serious noise pollution impacts, the equipment or work methods shall be inspected and remedial proposals drawn upon by the Contractor and once approved by the Engineer, implemented. In developing these remedial measures, the Contractor shall review all construction noise sources that may be contributing to the pollution impacts, and propose changes to scheduling of activities, installation of plant soundproofing, provision of alternative plant, erection of sound barriers around part of the works areas or the location of construction noise sources, or any other measures that may be effective in reducing noise. Where such remedial measures include the use of additional or alternative equipment, such equipment shall not be used on the Works until approved by the Engineer. Where remedial measures include maintenance or modification of previously approved equipment such equipment shall not be used on the Works until such maintenance or modification is completed and the adequacy of the maintenance or modification is demonstrated to the satisfaction of the Engineer.</p> <p>If the Engineer finds that approved remedial measures are not being implemented and that serious impacts persist, he may direct the Contractor to cease related parts of the Works until the measures are implemented. No claims by the Contractor shall be entertained in connection with such a direction.</p>	All areas	<p>Implemented</p> <p>Complied</p> <p>Implemented</p> <p>Complied</p> <p>Implemented</p> <p>The case had not been happened.</p>
Annex C14		<p>Permitted Noise Levels</p> <p>In the event that the Contractor intends to carry out works of a type and during periods ("the Restricted Periods") to which Section 6 of the Noise Control Ordinance applies, the Contractor shall apply for and obtain a Construction Noise Permit and thereafter shall comply with the conditions which may be imposed in relation thereto.</p>	All areas	Complied. No "Restricted Periods" work is required.

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C14		<p>Work will be permitted during “the Restricted Periods” subject to:</p> <ul style="list-style-type: none"> • The Contractor complying with its obligations under Annex C13 above. • The Contractor making an application for an obtaining a Construction Noise Permit in due time and in due form; and • The Contractor not causing the canceling or adverse variation of such Construction Noise Permit as may be issued by reason of the generation of noise in excess of the limits set out in Technical memorandum on Noise from Construction Work for the identified NSRs 	All areas	Complied. No “Restricted Periods” work is required.
Annex C15		<p>Noise Monitoring and Compliance Audit Reporting</p> <p>Monitoring equipment and methodology shall comply with the Technical Memorandum on Noise from Construction Work other than Percussive Piling, issued under Section 9 of the Noise Control Ordinance. Monitoring will be carried out throughout the construction period by the Contractor under the supervision of the Engineer. The data will be provided to the Engineer on a regular basis, or as requested.</p> <p>A monthly summary of monitoring data will be prepared by the Engineer. This will include an interpretation of the significance of the monitoring results. The monthly summary shall also identify any additional mitigation measures taken by the Contractor as a result. A copy of the summary report shall be made available for inspection by the Director of Environmental Protection at his request and by the Contractor.</p> <p>The Contractor shall provide within one week of the commencement of the Contract at least one portable sound level meter complying with International electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1) (Bruel & Kjaer Type 2221 or similar approved) complete with tripods. These meters will be used by the Contractor or Engineer for noise monitoring, and should be regularly calibrated to ensure accuracy and consistency.</p> <p>The Engineer will, prior to commencement of major construction works, carry out baseline monitoring to determine baseline noise levels. The baseline monitoring will be carried out for a period at least one week, with measurements to be taken every day at locations and to a schedule determined by the Engineer. From these measurements baseline noise levels (L_{eq} (5 min)) will be calculated. The target level for maximum construction noise levels will be 5dB(A) above the measured background.</p>	All areas	<p>Complied. The construction noise monitoring is carried out by Contractor’s ET.</p> <p>Complied. Monthly EM&A report is prepared by the Contractor’s ET.</p> <p>The sound level meters will be provided by the Contractor once requested by Engineer.</p> <p>Complied. Baseline monitoring had been conducted by Contractor’s ET.</p>

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Operational Noise				
8.3.11		5m barrier fro Lung Tang Court (SR10) Indirect mitigation measures for Lung Tang Court (SR10) (Approximately 18 dwellings eligible - subject to confirmation by the detailed Noise Insulation Work Study) 3.5 barrier for Tsing Lung Tau Village and Yuen Tun (SR12)	Ch2750 to Ch2800 (Lung Yue Road) Floors 3-10 Ch2825 to Ch3000 (access gap at 2950)	Will be implemented before the commencement of the road Will be implemented by HyD
8.3.13		Indirect mitigation measures at Sea Crest Villas Phase IV (SRs 13-1, 13-2, 13-3) (Approximately 238 dwellings eligible - subject to confirmation by the detailed Noise Insulation Work Study)	All levels	Will be implemented by HyD
Table 8.1		Indirect mitigation measures for Dragonville (SR14) (Approximately 1 dwelling eligible - subject to confirmation by the detailed Noise Insulation Work Study)	All levels	Will be implemented by HyD
8.3.15		Indirect mitigation measures at Sea Crest Villas Phase III (SRs 15-1 to 15-4) (Approximately 258 dwellings eligible - subject to confirmation by the detailed Noise Insulation Work Study)	All levels	Will be implemented by HyD
8.3.17		Indirect mitigation measures at Sea Crest Villas Phase II (SRs 15-5 to 15-6) (Approximately 80 dwellings eligible - subject to confirmation by the detailed Noise Insulation Work Study)	Above 10 th storey	Will be implemented by HyD
8.3.24		Indirect mitigation measures at Sea Crest Villas Phase I (SRs 41-1 to 41-5) (Approximately 487 dwellings eligible - subject to confirmation by the detailed Noise Insulation Work Study)	Above 5 th storey	Will be implemented by HyD

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Construction Waste				
13.3.1	5	Segregate different categories of waste	All areas	Implemented
13.3.2	5	Use as much excavated spoil on site as possible	All areas	Implemented
13.3.3	5	Register chemical maintenance waste	All areas	Complied
13.3.4	5	Bund chemical material storage areas to 120% capacity	Work yards	Complied
		Do not connect chemical material storage areas to the foul or stormwater drainage system		Complied
13.3.5	5	Store and label dangerous goods	All areas	Implemented
		Pack dangerous goods suitably to prevent leakage during transportation		Implemented
13.3.6	5	Prevent disposal of hazardous materials to air, soil, water bodies	All areas	Implemented
13.3.7	5	Provide refuse containers at all work areas	All areas	Implemented
13.3.8	5	Discharge human waste into septic tanks	All areas	Implemented

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Construction Water Quality				
12.3.1	4.8	Bund all active work areas to 110% capacity. Obtain discharge consent. Direct drainage as far away as possible from sensitive areas. Provide proper sewage treatment and disposal facilities in the form of chemical toilets for site workers. Direct surface run-off through sediment removal facilities.	All areas Site Offices All areas All areas All areas	Implemented Implemented Implemented Implemented Implemented
12.3.2	4.8	Undertake works close to beaches outside the designated bathing season.	All areas	Implemented
Annex C6		<p>General requirements</p> <p>The Contractor shall carry out the Works in such a manner as to minimize adverse impacts on the water quality during the execution of the Works. In particular he shall arrange his method of working to minimize the effects on the water quality within the works areas, adjacent to the works areas, on the transport routes to and from the works areas and at the loading, and dumping areas.</p> <p>If marine plant is used on the Works, it shall be inspected by the Engineer to ensure that the plant is suitable for the project and can be operated to achieve the water quality requirement (WQRs) detailed in Clause 8 of the appendix of the Feasibility Study EIA. The Contractor shall provide experienced personnel with suitable training to ensure that these methods are implemented.</p> <p>The Contractor shall devise and arrange methods of working to minimize water pollution and to meet the WQRs and shall provide experienced personnel with suitable training to ensure that these methods are implemented.</p> <p>Before the commencement of the Works, he Contractor shall submit to the Engineer the proposed methods of working.</p> <p>After commencement of the Works, if the plant or work methods are believed by the Engineer to be causing serious water pollution impacts, the Contractor shall proposed remedial measures which may include, but not limited to, the pollution avoidance measures outlined in Clause of the Appendix of Feasibility Study EIA. Where such remedial measures include the use of additional or alternative plant such plant shall not be used on the works until approved by the Engineer. Where remedial measures include maintenance or modification of previously approved plant, such plant shall not be used on the Works until such maintenance or modification is completed and the adequacy of the maintenance or modification is demonstrated to the satisfaction of the Engineer.</p>	All areas	Complied Complied Complied Complied Complied

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C6		If the Engineer finds that approved remedial measures are not being implemented and that serious impacts persist, he may direct the Contractor to cease related parts of the Works until the measures are implemented. No claims by the Contractor shall be entertained in connection with such a direction.		The case had not been happened.
Annex C7		<p>Definitions</p> <p>For use in this contract only, the following definition is used:</p> <ul style="list-style-type: none"> • Unsuitable material - material taken from the area of the Works. (including borrow areas), which is unsuitable for use as fill material. The material may include builders debris, spoil and hard material dumped by others. 	All areas	Complied
Annex C8		<p>Water Quality Requirements</p> <p>The Contractor shall minimize adverse impacts resulting from the dumping operations on water quality. To achieve these requirements the Contractor shall design and implement methods of working that:-</p> <ul style="list-style-type: none"> • Minimize loss of material during transport of fill material; • Prevent discharge of fill material except at approved locations; • Prevent the avoidable reduction, due to the Works, of the dissolved oxygen content of the water adjacent to the Works. 	Reclamation areas	Complied
Annex C9		<p>Water Quality Monitoring Requirements</p> <p>The Contractor shall provide the following equipment within one week of the commencement of the Contract:-</p> <ul style="list-style-type: none"> • <u>Dissolved oxygen and temperature measuring equipment</u> <p>The instrument shall be a portable, weatherproof dissolved oxygen measuring instrument complete with cable sensor, comprehensive operation manuals, and be operable from a DC power source. It shall be capable of measuring:-</p> <ul style="list-style-type: none"> * a dissolved oxygen level in the range of 0-20mg/L and 0-200% Saturation; and * a temperature OF 0-45 degree Celsius <p>It shall have a membrane electrode with automatic temperature compensation complete with a cable of not less than 30m in length. Sufficient stocks of spare electrodes and cable shall be maintained for replacement where necessary. (YSI model 58 meter, YSI 5739 probe, TSI 5795A submersible stirrer with reel and cable or similar approved).</p>	During marine water monitoring	The monitoring equipment had been provided by Contractor's ET and agreed with ER and EPD.

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C9		<ul style="list-style-type: none"> • <u>Turbidity Measurement Instrument</u> A portable weatherproof turbidity-measuring instrument complete with cable sensor and comprehensive operation manuals. The equipment shall be operable from a DC power source. It shall have a photoelectric sensor capable of measuring turbidity between 0-100NTU and be complete with a cable at least 30m long. (Partech Turbidimeter Model 70003RP mark 2 or similar approved). • <u>Suspended Solids Sampling Equipment</u> A 12 volt DC powered peristaltic pump equipped with a Tygon tubing of at least 30m length. • <u>Thermometer</u> A laboratory standard certified mercury thermometer with an accuracy of at least 0.5degree Celsius. • <u>Water Depth Detector</u> A portable, battery-operated echo sounder. This unit can either be handheld or affixed to the bottom of the work boat if the same vessel is to be used throughout the monitoring programme. (Seafarer 700 or similar approved). • <u>12V batteries and 200V/12V Battery charger</u> <p>Monitoring instrument shall be checked, calibrated and certified by an approved accredited laboratory use on the Works and subsequently re-calibrated at 3-month intervals throughout all stages of the water quality monitoring. Response of sensors and electrodes should be checked with certified standard solutions before each use.</p>	During marine water monitoring	The monitoring equipment had been provided by Contractor's ET and agreed with ER and EPD.
Annex C10		<p>General Procedures for the Avoidance of Polluting During Transporting, and Dumping</p> <p>The Contractor's equipment shall be designed and maintained to minimize the risk of silt and other contaminants being released into the water column or deposited in other than designated locations.</p> <p>Pollution avoidance measures shall include but are not limited to the following:-</p> <ul style="list-style-type: none"> • Mechanical grabs shall be designed and maintained to avoid spillage and shall seal tightly while being lifted; • Vessels shall be sized so that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that under turbidity is not generated by turbulence from vessel movement or propeller wash; <p>Pipe leakages are to be required promptly and plant is not to be operated with leaking pipes;</p>	Reclamation areas	Implemented Implemented

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C10		<ul style="list-style-type: none"> • The marine works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the work areas or dumping grounds; • Barges shall fitted with tight fitting seals to their bottom openings to prevent leakage of material; • Excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved; <p>The Engineer may monitor vessels transporting material to ensure that no dumping outside the approved location takes place and that loss of material does not take place during transportation. The Contractor shall provide all reasonable assistance to the Engineer for these purposes.</p> <p>The Contractor shall ensure that material is disposed of at approved locations. He will be required to ensure accurate positioning of vessels before discharge and will be required to submit and agree proposals with the Engineer for positional control at disposal sites. Disposal in designated marine dumping grounds shall be in accordance with conditions of a licence issued by the DEP under the Dumping at Sea Act (Overseas Territories) Order 1975. Floatable and certain contaminated material (as defined by DEP) will not be acceptable at marine dumping grounds and will require other method of disposal.</p>	Reclamation areas	<p>Implemented</p> <p>Complied</p> <p>Complied</p>
Annex C11		<p>Removal of Waste Material</p> <p>Notwithstanding the provision of the GCC the Contractor shall not permit any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the works areas onto any adjoining land or allow and waste matter or refuse to be deposited anywhere within the works areas or onto any adjoining land and shall all such matter removed from the works areas.</p> <p>The Contractor shall be responsible for temporary training, diverting or conducting of open streams or drains intercepted by any works and for reinstating these to their original courses on completion of the Works.</p> <p>The Contractor shall submit any proposed stream course and nullah temporary diversions to the Engineer for agreement one month prior to such diversion works being commenced. Diversions shall be constructed to allow the water flow to discharge without overflow, erosion or washout. The area through which the temporary diversion is no longer required.</p> <p>The Contractor shall segregate inert construction waste material suitable for reclamation or land formation and shall dispose of such material at a public dumping areas(s).</p>	All areas	<p>Implemented</p> <p>Implemented</p> <p>Implemented</p> <p>Implemented</p>

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Annex C11		<p>Non-inert construction waste material deemed unsuitable for reclamation or land formation and other waste material shall be disposed of at a public landfill.</p> <p>The Contractor's attention is drawn to the Waste Disposal Ordinance, the Public Health and Municipal Services Ordinance and the Water Pollution Control Ordinance.</p>	All areas	<p>Implemented</p> <p>Complied</p>
Annex C12		<p>Discharge into Sewers and Drains</p> <p>The Contractor shall not discharge directly or indirectly (by runoff) or cause or permit or suffer to be discharged into any public sewer, storm-water drain, channel, stream-course or sea, any effluent or foul or contaminated water or cooling or hot water without the prior consent of the relevant Authority who may require the Contractor to provide, operate and maintain at the Contractor's own expense, within the premises or otherwise, suitable works for the treatment and disposal of such effluent or foul or contaminated or cooling or hot water.</p> <p>If any office, site canteen or toilet facilities is erected, foul water effluent shall, subject to paragraph 12(i) above, be directed to a foul sewer or to a sewage treatment facility.</p> <p>The Contractor's attention is drawn to the Building Ordinance, the Water Pollution Control Ordinance and the Technical Memorandum "Standard for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters".</p>	All areas	<p>Implemented</p> <p>Implemented</p> <p>Complied</p>
12.3.1		<p>Dredging of marine sediment shall be limited to the scour apron.</p> <p>No more than 1 derrick lighter shall be used for marine dredging works. The total maximum dredging rate shall not be more than 200m³ per day.</p> <p>No more than 1 derrick lighter shall be used for marine dredging works. The total maximum dredging rate shall not be more than 200m³ per day.</p> <p>All filling activities shall be carried out behind rockfill and rock armour.</p> <p>Tightly closed grabs shall be used to restrict the loss of fine sediment to suspension.</p> <p>Silt curtain shall be used along the reclamation area during construction to control sediment suspension within the work area.</p> <p>The construction method specified in Section 2.1 of the Project Profile submitted on 16 February 2001 shall be followed during the construction.</p>	Tsing Lung Tau and Sham Tseng West Reclamations	Marine dredging completed

Feasibility Study EIA Ref.:	Feasibility Study EM&A Manual Log ref.:	Environmental Protection Measures	Location	Implementation Status
Landscape and Visual				
14.13.4		Off-site planting works to ameliorate landscape and visual impacts. Semi-ornamental planting to provide a coordinated streetscape and interface with road junctions. Verge planting to enhance the view from the road and soften the overall appearance of the route.	All areas Urban Areas All areas	Implementing Implementing Implementing
Drawing Nos 97294/MF/081 to 97294/MF/095		Woodland Hydroseeding Screen planting Edge Planting	Slopes Shotcrete Areas Exposed rock slopes	Implementing Implementing Implementing

APPENDIX C

**Log record on
environmental
complaints**

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Proposed Actions	Completion Date	Remarks
029	12-Aug-02	Complaint from Mr. Au regarding muddy water washing out from Kowloon Bound Lane from the construction site	Enlarge concrete paving at site entrance; further improvement to the existing temporary drainage system to minimise wash-off of waste water to the adjacent road; and make sure temporary water supply points are properly turned off during lunch break or other times when they are not in use.	16-Aug-02	
036	31-Aug-02	Complaint from Mrs. Chung regarding the generation of fugitive dust from the construction site in front of Tsing Lung Tau Village	Frequent watering of the related works area with the aid of water browser	31-Aug-02	
054	7-Dec-02	Complaint from Mr. Lo regarding the stagnant water ponding in front of the construction site at Sham Tseng	Explained to the complainant that the water ponding was a wheel washing bay	7-Dec-02	
067	3-Mar-03	Complaint from Hong Kong Garden Management Office regarding the noise from vehicular movement over the temporary road cover at Castle Peak Road provided by the Contractor	The Contractor has added extra welding to improve the rigidity of the temporary steel deck. The work was completed during the off-peak hours in the period between 12-Mar-03 to 17-Mar-03.	17-Mar-03	The Contractor has taken noise readings and found that the noise level was within the baseline levels.
068	11-Mar-03	Complaint from Mr. Leung at Hong Kong Garden regarding the noise from evening road traffic, travelling over the steel decking plate on the adjacent temporary road diversion.	The Contractor has added extra welding to improve the rigidity of the temporary steel deck. The work was completed during the off-peak hours in the period between 12-Mar-03 to 17-Mar-03.	17-Mar-03	The Contractor has taken noise readings and found that the noise level was within the baseline levels.
070	6-Mar-03	Complaint from EPD regarding the reclamation works at Seawall B opposite to Hong Kong Garden on Sunday	The Contractor has previously informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. The Contractor agreed to keep vigilant in monitoring and surveillance of the site and continue to remind the subcontractors of the statutory requirements.	10-Mar-03	The Contractor has formally closed all site area for the Chinese New Year. Entrances of all site area were barricaded before the Contractor's staff vacated the sites on 30 January 2003.
070	6-Mar-03	Complaint from EPD regarding dust emission from the reclamation works at Seawall B opposite to Hong Kong Garden.	The Contractor has previously informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. The Contractor agreed to keep vigilant in monitoring and surveillance of the site and continue to remind the subcontractors of the statutory requirements.	10-Mar-03	The Contractor has investigated and confirmed that the marine works towards the eastern end of Seawall B was wet and the concreting works at the west end of the Seawall B were not dusty and no dust was emitted. Ground surface was also covered with crushed rock. The Contractor was also further reminded to spray water before and during unloading and moving of rock boulders and onto the haul road.
070	24-Mar-03	Complaint from EPD regarding daytime construction noise at Seawall B opposite to Hong Kong Garden.	The Contractor agreed to continuously monitor and review the operation in the vicinity opposite to Lung tang Court, in order to minimize the noise impact caused to the public. In addition the Contractor will respond to the complaints received on the 24- hours Contract Complaint Hotline 2496 2555 in the first instant.	31-Mar-03	No exceedance was recorded at the noise monitoring station WN6, WN7 and WN8 from January 2003 to March 2003. It was suspected that the noise was due to traffic noise together with operational noise of plant equipment at Seawall B. The Contractor was also reminded if reorganization of working arrangement is necessary, mitigation proposal should be submitted to IC(E) for review. Additional noise monitoring shall also be conducted at the noise monitoring station WN8 once the mitigation proposal is implemented.

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Proposed Actions	Completion Date	Remarks
076	15-Apr-03	Complaint from Mr. Wong of TL 60 Management Limited regarding the noise nuisance generated from the vehicle movement over the temporary steel decking in front of Hong Kong Garden at Castle Peak Road provided by the Contractor.	The Contractor has replaced the isolated decking plate by 17 April 2003 and agreed to frequently inspect the condition of the steel decking. Further improvement works were completed on 25 April 2003.	25-Apr-03	
078	15-Apr-03	Complaint from Mr. Chau of Hong Kong Garden regarding the noise nuisance generated from vehicle movement over the temporary steel plate in front of the premises.	The Contractor has explained to Mr. Chau that the improvement works were completed on 25 April 2003 and agreed to carry out daily inspection to check the condition of the steel plate.	29-Apr-03	The complainant agreed that the noise nuisance has abated.
080	5-May-03	Complaint from Mr. Tsao / Mr. Chan of Mui Yuen, opposite to Bayside Villas regarding water leakage from the rocky slope behind his house and the damage of water pipes by cleaning works.	The water pipe was repaired on 9 May 2003. The Contractor has explained that the rocky slope was outside the site boundary.	9-May-03	
082	7-May-03	Complaint from Ms. Chan regarding water ponding on existing footpath along Castle Peak Road near the Contractor's site office.	The Contractor has formed holes at existing upstand wall to drain off water trapped in the adjacent footpath and to patch up local depression at the affected footway with plain concrete.	19-May-03	
084	21-May-03	Complaint from Ms. Lam of Sea Crest Villa Phase I regarding construction noise from the slope works outside Sea Crest Villa Phase I.	The Contractor has observed low-noise emission construction equipment were being used at the time of inspection and proposed to speed up the works to limit the duration of daytime construction noise impact. The Contractor has provided additional information in their letter ref. HY/99/18/M45/300/40/10229 dated 25 June 2003. Additional noise monitoring had been taken by the Contractor on 22 May 2003 at WN15 obtaining the result of 66.6dB(A), which was below the limit level of 75dB(A). After reviewing the findings and investigation details, the Contractor confirmed that no further remedial actions was required.	25-Jun-03	The Contractor was requested to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal. Additional noise monitoring is required to be conducted at the noise monitoring station WN15 once the mitigation proposal is implemented. The IC(E) had no comment on the Contractor's findings. Since no mitigation measures were implemented, additional noise monitoring was not conducted.
086	23-May-03	Complaint from Mr. So regarding stagnant water in the drainage and wheel washing bay near the entrance of Sea Crest Villa Phase IV and the damage of road surface near L1 main gate and CLP electricity supply room.	Explained to the complainant that the stagnant water inside the wheel washing bay was for cleaning of vehicle. The leakage found the temporary water pipe was repaired. The water and silt trapped in the U-channel near the main entrance of the estate was removed and the kerb on west side of the run-in to Gate L1 was reinstated.	29-May-03	The Contractor will properly maintain the wheel washing facility, regularly inspect and clean the drainage channel and the gully pots near the main entrance of the estate. The damaged paving slab and cable pit near the power supply room will be restored to original condition after completion of the adjacent substructure works around mid August 2003.
088	3-Jun-03	Complaint from EPD regarding construction dust from Seawall B.	The Contractor proposed to place the concerned area under higher priority and endeavor to water the concerned haul road more frequently during dry days.	6-Jun-03	No rock breaking activity has been observed in site audits since 5 June 2003. The haul road at Seawall B was observed wetted in the site audits. The Contractor was reminded to provide water spraying if there is rock breaking activity in this vicinity.

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Proposed Actions	Completion Date	Remarks
088	3-Jun-03	Complaint from EPD regarding construction noise from Seawall B.	The Contractor reported that there may be occasional crashing noise for the piling works when rock level is reached. The Contractor has been providing mitigation measures, such as barrier and restriction of the rate of concerned works. The Contractor will also endeavor to expedite the works to reduce the duration of perceived daytime impact. The Contractor proposed to perform additional ad hoc inspections on Mondays, Wednesday and Fridays at the concerned area to confirm continual implementation of measures and to conduct additional noise monitoring where appropriate.	6-Jun-03	No rock breaking activity has been observed in site audits since 5 June 2003. Contractor has been reminded to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal if provision of additional mitigation measures is required. The Contractor was also advised to provide portable noise barrier if there is rock breaking activity. Additional noise monitoring is also required to be conducted at the noise monitoring station WN8 once the mitigation proposal is implemented. The IC(E) had no comment on the Contractor's findings. Since no mitigation measures were implemented, additional noise monitoring was not conducted.
091	16-Jun-03	Complaint from Ms. Chan of Sea Crest Villa Phase 1 regarding noise from drilling works carried out at BPRW70 outside Sea Crest Villa Phase 1 before 07:00.	Upon investigation, the Contractor confirmed that there has been no construction work being conducted before 07:00. Nevertheless, the Contractor has scheduled the concerned work to be commenced at 08:00 as on 17 July 2003.	17-Jun-03	
092	16-Jun-03	Complaint from Mrs. Chung of Lido Garden regarding noise from drilling works carried out at BPRW70 opposite to Lido Garden before 07:00.	Upon investigation, the Contractor confirmed that there has been no construction work being conducted before 07:00. Nevertheless, the Contractor has scheduled the concerned work to be commenced at 08:00 as on 17 July 2003.	17-Jun-03	
097	27-Jun-03	Complaint from Mr Fok of Kai Shing Management Services regarding noise nuisance and the ponding of stagnant water arising from the construction activities outside Sea Crest Villa Phase III.	Upon investigation, the condition of water pumps installed separately at east end of the slope close to SCV Phase III and Pai Min Kok Stream Course has been checked. Noise generated from the ongoing construction works in these areas has been monitored. The rock breaking with jackhammer at PMK had been completed on 26 June 2003.	4-Jul-03	After further enquiry into the nature of the complaint, it appears that the complaint refers to the extended duration of construction works in the concerned area (i.e. inconvenience caused due to lengthy works program). The Contractor's Mr Peter Ip has explained the nature of the works to the Management Office. There have been no further complaints from SCV Phase III since the briefing.
103	31-Jul-03	Complaint from Hong Kong Management Office regarding the noise generated by vehicles running over the steel decking plate on the Castle Peak Road close to Hong Kong Garden.	The existing steel decking plate had been repaired during off peak hours and regular inspection on the condition of steel plate and adjacent road surface was agreed to be conducted.	5-Aug-03	There had been no further complaints after the repair.
105	13-Aug-03	Complaint from Mr Chow of Sham Tseng regarding fell of all old trees along section of Castle Peak Road near Ma Wan Pier.	After investigation on the matter, it had been confirmed that the felling and the transplanting of group of trees along the Castle Peak Road near Ma Wan Pier had been carried out in compliance with approved plans and schedules. No follow up is required.	16-Aug-03	
108	11-Sep-03	Complaint from Mr Edith Lee of Sea Crest Villa Phase I complained that it was very dusty at her house and she found that there was no water spraying at the construction site of the slope near Ma Wan Pier.	After investigation on the matter, water browser was arranged for spraying through the haul road. Rock breaking location would be sprayed directly connected from water supply point. To follow up the case, water browser would be arranged every 2 to 3 hours depends on drying up condition. A worker would be arranged for spraying water through out the rock breaking	11-Sep-03	

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Proposed Actions	Completion Date	Remarks
112	10-Oct-03	Complaint from Mr Cheung of FEHD that regarding the general refuse being accumulating on the pedestrian walkway between Sea Crest Villa Phase III and Phase II and the drainage channel at Pai Min Kok Village.	Investigation was conducted immediately on 11 October 2003. It was observed that the pedestrian walkway and Outfall I had been tidied up except at the corner of Sea Crest Villa Phase III where a broken umbrella and some broken traffic light was lying on the ground. Immediate action was taken to remove the broken umbrella and signal lights. The site area would be maintained regularly. It was noted that wooden formwork and construction materials might possibly been mistaken to be rubbish.	13-Oct-03	
114	25-Nov-03	Complaint log no. 114 was received on 25 November 2003 regarding the muddy water found on the beach opposite to Sea Crest Villa Phase III.	An inspection for the concerned site area at the interface between the beach and the construction site revealed that there was no evidence of active construction works adjacent to the beach or the presence of muddy water. There was also no evidence of muddy water discharge from Outfall I. The work programme for the following days leading up to the complaint was inspection and found that the bored piling activity had been completed and removed since 15 November 2003. The contractor would regularly monitor the area for muddy water. If potential discharge sources were identified, the Contractor would take action to rectify the situation.	26-Nov-03	
115	30-Nov-03	Complaint from Miss Chan of Sham Tseng Latrine was received on 30 November 2003 regarding the pond of foul water at the footway in front of Sham Tseng Latrine.	An inspection for the concerned site area was carried out. The water ponding was confirmed to be overflow from the terminal manhole, which was a part of public latrine system. The maintenance of the public latrine and the associated systems were the responsibility of FEHD. The Contractor had contacted FEHD to follow up the issue.	1-Dec-03	
116	6-Dec-03	Complaint from Mr Paul Wong of Hong Kong Garden Management Office was received on 6 December 2003 regarding construction noise during early hours of 8:00am.	Inspection of concern area and no abnormal construction activities was found. The Contractor had explained to the Complainer that no statutory permit was required for construction work other than percussive piling at 8:00am and the nature of works conducted at the area was well within permitted limits. ET was reminded the Contractor to implement noise mitigation proposal in accordance with EM&A Manual.	8-Dec-03	Noise generated from the ongoing construction works in these areas was monitored and no exceedance was found. As the Contractor had responded to the complainant and no further complaint was recorded, the Contractor proposed that no further remedial/ preventative measures were necessary.