

**PROJECT NO.: TCS00409/08** 

DSD CONTRACT NO. DC/2007/08
DRAINAGE IMPROVEMENTS WORKS IN TAI PO TIN,
PING CHE, MAN UK PIN AND LIN MA HANG

40<sup>TH</sup> MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT FOR THE DESIGNATED WORKS UNDER THE PROJECT – JUNE 2012 CHANNELS MUP03A&B, MUP04A&B, MUP05 AND LMH01

PREPARED FOR

CHIU HING CONSTRUCTION & TRANSPORTATION COMPANY LIMITED

# **Quality Index**

Date	Reference No.	Prepared By	Certified by
16 July 2012	TCS00409/08/600/R1157v2	Rayer	Thum
		Ray Cheung	T.W. Tam
		<b>Environmental Consultant</b>	Environmental Team Leader

Version	Date	Remarks
1	12 July 2012	First Submission
2	16 July 2012	Amended from IEC's comment on 16 July 2012

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# ENVIRON

Ref.: DSDFANLGEM01 0 1127L.12

16 July 2012

By Fax (26598323) and By Post

Engineer's Representative Office Black & Veatch Hong Kong Ltd 503 Tai Po Tin, Ta Kwu Ling Fanling, New Territories

Attention: Mr. Gilbert Ying

Dear Mr. Ying,

Re: Contract No. DC/2007/08 (EP No. EP-277/2007/A) Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk and Lin Ma Hang 40th Monthly EM&A Report for Channels MUP03A&B, MUP04A&B, MUP05 and LMH01 for June 2012 (Rev. 2)

Reference is made to the submission of 40th Monthly EM&A Report (ref. no.: R1157v2) for the Designated Project Channels MUP03A&B, MUP04A&B, MUP05 and LMH01 provided by the Environmental Team by email on 16 July 2012.

We would like to inform that we have no comment on the captioned report.

Please also note that the Monthly EM&A Report had been verified in accordance with the Condition 3.4 of the Environmental Permit No. EP-277/2007/A.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

David Yeung

Independent Environmental Checker

**AUES** Attn: Mr. T. W. Tam Fax: 2959-6079 C.C.

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#### **EXECUTIVE SUMMARY**

- ES.01 This is the 40<sup>th</sup> monthly EM&A Report for Channels MUP03A&B, MUP04A&B, MUP05 and LMH01 covering a period from 26 May 2012 to 25 June 2012 (the Reporting Period). These works are classified as Designated Projects under the Environmental Impact Assessment Ordinance (Cap. 499) and Environmental Permit No.EP277/2007/A.
- ES.02 As construction works were undertaken only at Channels MUP03A&B, MUP04A&B, MUP05 during the Reporting Period, environmental monitoring for air quality, construction noise, water quality and ecology was therefore performed at those channels only.
- ES.03 In air quality and noise monitoring, there were no Action/ Limit Level exceedance recorded in this reporting period.
- ES.04 In stream water quality monitoring, there were also no exceedance recorded in the reporting period. Therefore, no associated corrective actions were required.

Ctation	DO		Turbidity		pH Value		SS		Total Exceedance	
Station	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
MUP-W4 (a)	0	0	0	0	0	0	0	0	0	0
MUP-W5 (b)	0	0	0	0	0	0	0	0	0	0
MUP-W6 (b)	0	0	0	0	0	0	0	0	0	0
Exceedances	0	0	0	0	0	0	0	0	0	0

Remarks:

(a) impact station; (be) Temporary or mobile station

- ES.05 Four ecological general audits were performed in this reporting month at the nominated construction channel (MUP05). No non-compliance was observed during the auditing period and all of the mitigation measures were found effectively implemented.
- ES.06 No written or verbal complaint, notification of summons or successful prosecution was received (written or verbal) for each media during the Reporting Period. No adverse environmental impacts were observed during the weekly site inspection and environmental audit which indicated that the implemented mitigation measures for air quality, construction noise, water quality and ecology were effective. Minor deficiencies found during the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.
- ES.07 As wet season has come, the coming excavation works of the channels, ingression of surface runoff into the river within MUP Channels continues to be the key issue in future months. The contractor is reminded that mitigation measures for water quality and ecology should therefore be fully implemented.
- ES.08 In addition, attention should be paid to noise impact during the construction work progress, and with other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the Environmental Study Report (ESR) and summarized in Mitigation Measure Implementation Schedule should continually be applied.



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#### 1. INTRODUCTION

The Chiu Hing Construction & Transportation Company Limited (CHCT) was appointed by the Drainage Services Department (DSD) to perform a contract – Contract No. DC/2007/08 *Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang* (the Project). Total construction time is approximately 32 months.

The Project involves construction of various river channels: some classified as Designated Project (DP) and some Non-designated Project (Non-DP) under the Environmental Impact Assessment Ordinance (Cap. 499), as summarized in *Table 1-1*.

Table 1-1 Summary of the Channels under the Project

Channel ID	Location	Designated / Non-Designated
TKL02	Tai Po Tin	Non-Designated
TKL07	Ping Che / Ta Kwu Ling	Non-Designated
MUP01		Non-Designated
MUP02		Non-Designated
MUP03A and MUP03B	Man Uk Pin	Designated (EP277/2007/A)
MUP04A and MUP04B		Designated (EP277/2007/A)
MUP05		Designated (EP277/2007/A)
LMH01	Lin Ma Hang	Designated (EP277/2007/A)

This is the 40<sup>th</sup> monthly report covering data from 26 May 2012 to 25 June 2012 to present the monitoring results of air quality, construction noise, water quality and ecology for the Designated Project of Channels MUP03A&B, MUP04A&B, MUP05 and LMH01 under the Environmental Monitoring & Audit Manual [382486/73//lssue2]. A set of location plans showing all DP works covered in this report are illustrated in *Appendix A*. Details of EM&A requirements for the Designated Project are summarized below:

- (a) Channel MUP03A&B NA
- (b) Channel MUP04A&B the scope of environmental monitoring includes construction noise, air quality and water quality
- (c) Channel MUP05 the scope of environmental monitoring includes construction noise, air quality, water quality and ecology
- (d) Channel LMH01 the scope of environmental monitoring includes construction noise, air quality, water quality and ecology

It has been agreed among the Engineer's Representative (ER), the Independent Environmental Checker (IEC), the Contractor (CHCT), the Environmental Team (ET) and the Environmental Protection Department (EPD) that 25<sup>th</sup> of each month is the cut-off day of each reporting month. Data collected after the 26<sup>th</sup> of every month will be reported in the next issue.

# 1.1 REPORT STRUCTURE

This report has been written in accordance with the requirements set out in the *Environmental Monitoring and Audit Manual* (the EM&A Manual) with the following structure:

Section 1	Introduction
Section 2	Basic Project Information
Section 3	Environmental status
Section 4	Summary of Impact EM&A Requirements
Section 5	Impact Monitoring Results
Section 6	Report on Non-Compliance (NC), Complaint, Notification of Summons (NOS) and Successful prosecution
Section 7	Conclusions and Recommendations



#### 2. BASIC PROJECT INFORMATION

#### 2.1 PROJECT ORGANIZATION

The organization chart and lines of communication with respect to the on-site environmental management and the management structure are shown in *Appendix B*.

#### 2.2 MASTER CONSTRUCTION PROGRAM FOR THE PROJECT

The master construction program of the Project is shown in *Appendix C*. Environmental mitigation measures implemented are shown in *Appendix C*.

#### 2.3 Works Undertaken During the Reporting Month

During this reporting month, the construction work undertaken at the designated work areas is listed as follows:

#### Channel

MUP03A&B, MUP04A&B; and MUP05

#### Carried out defect works during maintenance period as follow:

- Install outstanding fencing, railing and signates
- landscape softworks and establishment works
- Rectify defective concrete on grasscrete/paving

LMH01 Not yet commenced

Future construction works is provided in Appendix C.



#### 3. ENVIRONMENTAL STATUS

# 3.1 WORK UNDERTAKEN DURING THE MONTH WITH ILLUSTRATIONS

In this reporting month, the construction work was undertaken at Channels MUP03A&B, MUP04A&B and MUP05. All proposed construction channels are located at Man Uk Pin. The environmental mitigation Implement is shown in *Table 3-1*.

Table 3-1 Environmental Mitigation Measures Undertake in the Reporting Month

Location	Construction Activities	Environmental Mitigation Measures to be deployed
MUP03A&B, MUP04A&B and MUP05	Carried out defect works during maintenance period as follow:  1. install outstanding fencing, railing and signates;  2. landscape softworks and establishment works;  3. Rectify defective concrete on grasscrete/paving	<ul> <li>Water spraying will be provided before and during handling of excavated material.</li> <li>Retained tree will be properly protected before works commenced</li> </ul>

# 3.2 IMPLEMENTATION OF ENVIRONMENTAL PROTECTION AND POLLUTION CONTROL

The implementation of environmental protection and pollution control/mitigation measures as recommended in the EM&A Manual or ES is shown in *Appendix C*.

A summary status of the permits, licences, and/or notifications on environmental protection for this Project in this reporting month is presented in *Table 3-2*.

Table 3-2 Status of Environmental Licenses and Permits

Item	Item Description	Permit Status
1	Environmental Permit No.EP277/2007/A	Issued on 1 Dec 2009
2	Air Pollution Control (Construction Dust)	Notification to EPD on 27/12/2007
3	Chemical Waste Producer Registration	
	• 5213-652-C3251-04	Valid date: 23 July 2008
	• 5213-652-C3251-05	Valid date: 15 August 2008
4	Water Pollution Control (Discharge license)	
	• W5/1G34/1	Expiry date: 31 August 2013
	• W5/1G35/1	Expiry date: 31 August 2013
	• W5/1I324/1	Expiry date: 31 August 2013
	• W5/1I325/1	Expiry date: 31 August 2013
5	Account for Disposal of Construction Waste No. 7006522	Valid date: 9 January 2008
6	Construction Noise Permit	Nil



#### 4. SUMMARY OF IMPACT MONITORING REQUIREMENTS

Environmental monitoring and audit for air quality, noise, water quality and ecology have been recommended in the EM&A Manual. They are summarized below.

#### 4.1 Monitoring Parameters

The monitoring parameters are summarized in Table 4-1.

Table 4-1 Summary of Monitoring Parameters

Environmental Issue	Parameters			
Air Quality	· ·	<ul><li>1-hour Total Suspended Particulate (1-hour TSP); and</li><li>24-hour Total Suspended Particulate (24-hour TSP)</li></ul>		
Construction Noise	<ul> <li>A-weighted equivalent continuous sound pressure level (30min) (Leq(30min)) during the normal working hours; and</li> <li>A-weighted equivalent continuous sound pressure level (5min) (Leq(5min)) for construction work during the Restricted Hours</li> </ul>			
Water Quality	In-situ     Measurement     Laboratory     Analysis	temperature, dissolved oxygen (DO), dissolved oxygen saturation (DOS), pH value, water depth, temperature & turbidity suspended solids (SS)		
Ecology	MUP05 and LMH01	<ul> <li>The stream conditions monitoring (in-situ measurements of DO, pH and turbidity; laboratory testing of SS);</li> <li>General site audit to reporting the mitigation measures are properly implemented during the construction phase</li> </ul>		

# 4.2 MONITORING LOCATIONS

# 4.2.1 Monitoring Locations Proposed in the EM&A manuals

Monitoring locations have been identified in the EM&A Manual. They are shown in *Appendix D* and summarized in *Table 4-2*.

Table 4-2 Monitoring Locations Proposed in the EM&A Manuals

Issue	Channel	Sensitive Receiver	Monitoring Location ID	Detailed Address
	MUP04A	MUP04A-2	MUP-A3	Village house near Loi Tung
Air	MUP05	MUP05-2 (same	MUP-A1 (same as	Village north of Loi Tung (same as Village house at
All		as MUP01/02-1)	MUP01/02-A1)	Man Uk Pin)
	MUP05	MUP05-4	MUP-A2a#	Village north of Loi Tung
	MUP04A	MUP04A-2	MUP-N4	Village house near Loi Tung
		MUP05-2 (same	MUP-N1 (same as	Village north of Loi Tung (same as Village house at
	MUP05	as MUP01/02-1)	MUP01/02-N1)	Man Uk Pin)
	MOFUS	MUP05-4	MUP-N2	Village north of Loi Tung
Noise		MUP05-6	MUP-N3	Village north of Loi Tung
NOISE		LMH01-1		Village of Lin Ma Hang(* Remark: Mobile station
	LMH01	LMH01-2		subject to the location of the construction works to
		LMH01-3	LMH-N1*	be measured at Sensitive Receiver LMH01-1 or LMH01-2 or LMH01-3 or LMH01-4 or LMH01-5)
		LMH01-4		
		LMH01-5		ENTITO 1 2 OF ENTITO 1 3 OF ENTITO 1 4 OF ENTITO 1 3 )
	MUP04A	Control Station	MUP-W3	Upstream of MUP04A works
		Control Station	MUP-W1 (same as MUP01/02-W1)	Upstream of MUP01 works
	MUP05	Control Station	MUP-W2 (same as MUP01/02-W2)	Upstream of MUP02 works
Water		Impact Station	MUP-W4	Downstream of MUP05 works immediately at the discharge point to River Indus
		Temporary / Mobile Station	MUP-W5	Within MUP05, downstream of the discharge point of MUP01/02 and upstream of the discharge point of MUP04A
		Temporary / Mobile Station	MUP-W6	Within MUP05, downstream of the discharge point of MUP01/02 and MUP04A



Issue	Channel	Sensitive Receiver	Monitoring Location ID	Detailed Address
		Control Station	LMH-W1	Upstream of LMH01 works
		Control Station	LMH-W2	Upstream of LMH01 works
		Impact Station	LMH-W3	Downstream of all LMH01 works immediately at the discharge point to Shenzhen River
Water	LMH01	Temporary / Mobile Station	LMH-W4	Upstream and downstream of particular group of LMH01 works
		Temporary / Mobile Station	LMH-W5	Upstream and downstream of particular group of LMH01 works
		Temporary / Mobile Station	LMH-W6	Upstream and downstream of particular group of LMH01 works
	MUP05	Water Quality of Str	ream	Upstream and downstream of Construction site
Ecology	and LMH01	General Site audit (with emphasis or ecological mitigation measures)		Along stream channel, within 100m upstream and downstream of construction site
	LMH01	Surveys of fish spe	cies	Along stream channel, within 100m upstream and downstream of construction site

Access to the original air quality monitoring location MUP-A2 has been denied. The nearby air quality sensitive receiver MUP05-4 is recommended to be the replacement of the denied MUP-A2 and named MUP-A2a for ease of reference.

#### 4.3 MONITORING FREQUENCY

The impact monitoring should be conducted during the construction activities pass through the contract period to ensure the ambient environmental conditions compliance with the environmental performance criteria i.e. Action and Limit Levels for the Project. The impact monitoring frequency specified in the EM&A Manual is summarized below.

#### Air Quality

Parameters: 24-hour TSP and 1-hour TSP.

Frequency: Once every 6 days for 24-hour TSP & three times every 6 days for 1-hour TSP.

<u>Duration</u>: During the course of construction works

#### **Construction Noise**

<u>Parameters:</u> Leq(30 min) in six consecutive Leq(5 min) measurements.. <u>Frequency:</u> Once a week during 0700-1900 on normal weekdays:

<u>Duration</u>: During the course of construction works

#### Water Quality

<u>Parameters</u>: Duplicate in-situ measurements of water depth, temperature, DO, pH & turbidity;

and laboratory testing of SS. Relevant data will also be measured time of

sampling, DO Saturation, weather conditions and special phenomena.

<u>Depths</u>: All measurements will be carried out at three water depths, namely, 1 m below

water surface, mid-water depth, and 1 m above river bed. If the water depth is less than 6 m, the mid-depth measurement will be omitted. If the depth is less

than 3 m, only the mid-depth measurement will be taken.

Frequency: 3 days a week with an interval of at least 36 hours between two consecutive

sampling days

<u>Duration</u>: During the construction period of the channel works

#### **Ecology**

According to the EM&A Manual [382486/73/Issue2], ecology monitoring is only performed at the Channels MUP05 and LMH01 during the construction phase, the monitoring requirements are listed as following:

#### Parameters:

- (a) General site audit with emphasis on ecology mitigation measure;
- (ii) Water quality of stream (DO, pH, turbidity and SS); and
- (iii) Survey of fish species, which is only requested at Channel LMH01

#### Frequency:

- (b) Once a week for general site audit throughout the construction period;
- (ii) Three times per week for stream monitoring; and
- (iii) Once per week for survey of fish species.



#### Duration:

Throughout the whole construction period

# 4.4 MONITORING EQUIPMENT

The monitoring equipment for air quality, construction noise, stream water quality and ecology are summarized below.

#### 4.4.1 Air Quality

A list of air quality monitoring equipments is shown in *Table 4-3*.

Table 4-3 Air Quality Monitoring Equipment

Equipment	Model
24-hour TSP	
High Volume Air Sampler (herein after 'HVS')	Grasby Anderson GMWS 2310 HVS
Calibration Kit	TISCH Model TE-5025A
1-hour TSP	
Portable Dust Meter	TSI DustTrak Model 8520

#### 4.4.2 Construction Noise

A list of construction noise monitoring equipments is shown in Table 4-4.

Table 4-4 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer

#### 4.4.3 Water Quality

Monitoring Equipment for water quality are shown in Table 4-5.

Table 4-5 Water Quality Monitoring Equipment

Equipment	Model / Description
In-situ Measurement	
Water Depth Detector	Eagle Sonar or steel ruler
Water Sampler	Teflon bailer / bucket
Thermometer & DO meter	YSI Multimeter
pH meter	Extech pH EC 500
Turbidimeter	Hach 2100p
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box
Laboratory Analysis	
Suspended Solids	HOKLAS accredited Laboratory

# 4.4.4 Equipment Calibration

The calibrations certificate of all monitoring equipment are used during the impact monitoring program are attached in *Appendix E* and the calibration requirement are described in below:

#### Air Quality

The calibration of the HVS is performed at a two month intervals in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model No.TE-5025A). The calibration data are properly documented and the associated records are maintained by the ET for future reference.

The 1-hour TSP meter is calibrated at a year intervals in accordance with the in-house method. Zero response of the equipment is checked before and after each monitoring event.



#### Noise

The sound level meters are calibrated using an acoustic calibrator prior to and after spot checking measurements. The meters are regularly calibrated by HOKLAS accredited laboratory. Prior to and following each noise measurement, the accuracy of the sound level meter is checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements are considered valid only if the calibration levels before and after the noise measurement agree to within 1.0 dB

#### Water Quality

In-situ monitoring instruments are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at 3 monthly intervals.

# 4.4.5 Ecology

The following equipment will be used for monitoring:-

- General: field note books and survey forms, digital camera; and
- Binoculars (7-10x and 8 x 30 magnification);

# 4.4.6 Others EM&A Requirement

Landscape & Visual and Cultural Heritage impact monitoring are also required for the Designated Project and stipulated in EM&A manual [382486/73//Issue2] **Section 7** and **Section 8** accordingly

# Landscape & Visual

Landscape and visual mitigation measures should be implemented during construction phase according to the EM&A Manual. The construction phase landscape and visual EM&A shall be carried out as part of the site audit program. Site inspection will be undertaken at least once every two weeks throughout the construction period.

#### Cultural Heritage

Cultural heritage of the Terrance Wall (AAHB-855) at Lin Ma Hang (LMH01) is required to be carried out during the construction phase in accordance with the EM&A Manual [382486/73//lssue2].

#### 4.5 MONITORING PROCEDURE

The monitoring methodology and procedure during the impact monitoring are presented as below:

# 4.5.1 Air Quality

#### 1-hour TSP

Operation of the 1-hour TSP meter is follow manufacturer's Operation and Service Manual. The 1-hour TSP monitor, a TSI Dust Track Aerosol Monitor Model 8520, or Sibata LD-3 Laser Dust Meter is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90° light scattering. The 1-hour TSP monitor consists of the following:

- A pump to draw sample aerosol through the optic chamber where TSP is measured;
- A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
- A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

The 1-hour TSP meter using was within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument was checked before and after each monitoring event.

#### 24 -hour TSP

The equipment used for 24-hour TSP measurement is the HVS brand named Thermo Andersen, Model GS2310 TSP high volume air sampling system, which complied with EPA Code of Federal Regulation, Appendix B to Part 50. The HVS consists of the following:

- An anodized aluminum shelter:
- A 8"x10" stainless steel filter holder;



- A blower motor assembly;
- A continuous flow/pressure recorder;
- A motor speed-voltage control/elapsed time indicator;
- A 6-day mechanical timer, and
- A power supply of 220v/50 Hz

The HVS is calibrated prior the impact monitoring to following the manufacturer's instruction using the NIST-certified standard calibrator brand named Tisch Calibration Kit Model TE-5028A. Regular HVS operation and maintenance as well as filter paper installation and collection was performed by the ET's competent technicians, whereas laboratory analyses were conducted in a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (hereinafter 'ALS'). The analyzed 24-hour TSP filters were kept in ALS for six months prior to disposal.

#### Meteorological Information

All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper is recorded in detail.

Meteorological information is sourced from the Hong Kong Observatory (Ta Kwu Ling Station). The data included wind direction, wind speed, humidity, rainfall, air pressure and temperature etc that in general is required for evaluating the air quality for air quality monitoring.

#### 4.5.2 Construction Noise

Sound level meters listed above comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications, as recommended in Technical Memorandum BE issued under the Noise Control Ordinance (NCO).

All noise measurements are performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq(30min) measurements are used as the monitoring parameter for the time period throughout the construction phase.

The sound level meter is set higher than 1.2m above the existing ground. The microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield is fitted for all measurements. The measurement point at impact locations is normally set close to the exterior of the building.

Immediately prior to and following each noise measurement the accuracy of the sound level meter is checked using an acoustic calibrator generating a known sound pressure level at a known frequency (94dBA). Measurements are accepted as valid due to the calibration levels from before and after the noise measurement agree to within 1.0dB.

#### 4.5.3 Water Quality

Water quality monitoring is conducted at the middle of the water columns (Mid-Depth) due to water columns at all sampling locations are less than 3.0 meters during monitoring.

#### Water Depth

Water depths are determined prior to measurement and sampling. A steel ruler with a suitable weight was dropped to the bottom of the water column to measure the water depth which is actually well below 1 meter.

#### Dissolved Oxygen (DO)

A portable Extech Instrument,  $ExStik^R$  DO600 DO Meter is used for in-situ DO measurement. The DO meter is capable of measuring DO in the range of 0 – 20 mg/L and 0 – 200 % saturation and checked against water saturated ambient air on each monitoring day prior to monitoring.

Although the DO Meter automatically compensates ambient water temperature to a standard temperature of 20°C for ease of comparison of the data under the changing reality, the temperature readings of the DO Meter is recorded.



#### pН

A portable Extech Instrument,  $ExStik^{TM}$  Models pH EC 500 or a Hanna HI98107 pH Meter is used for in-situ pH measurement. The pH meter is capable of measuring pH in the range of 0 – 14 and readable to 0.1. Standard buffer solutions of pH 7 and pH 10 are used for calibration of the instrument before and after measurement.

#### **Turbidity**

A portable Hach 2100p turbidity Meter is used for in-situ turbidity measurement. The turbidity meter is capable of measuring turbidity in the range of 0 – 1000 NTU.

# Suspended Solids (SS)

SS is determined by ALS using HOKLAS accredited analytical methods namely ALS Method EA-025. The limit of report is 2mg/L

#### Water Sampler

Water samples are collected by the ET using a plastic sampler to avoid metal contamination. Due to water depth for both sampling locations are lesser than 0.5m, a cleaned plastic beaker is used for sample collection. The sampler is rinsed before collection with the sample to be taken. 1,000mL water sample is collected from depth for laboratory analyses.

#### Sample Container

Water samples are contained in screw-cap PE (Poly-Ethylene) bottles as provided by ALS. The PE bottles are pretreated by laboratory in accordance with the corresponding analytical requirements of HOKLAS. Where appropriate, the sampling bottles are rinsed with the water to be contained. Water sample is transferred from the sampler to the sample bottles to 95% bottle capacity to allow possible volume expansion during delivery and storage.

#### Sample Storage and delivery

A 'Willow' 33-liter plastic cool box packed with ice is used to preserve the collected water samples prior to arrival at the laboratory. The temperature of the cool box is maintained as close to 4°C as possible without being frozen. Samples are delivered to the laboratory end of sampling day or following day within the maximum storage time requirement.

#### Chemical Analysis

ALS Technichem (HK) Pty Ltd (HOKLAS No. 66) is appointed by ET to provide analytical services for this project. The analysis of suspended solids is carried out to follow the APHA Standard Methods for the Examination of Water and Wastewater 19ed 2540D. The sample preparation and analysis under the QA/QC control is follow the HOKLAS QA/QC requirements and undertaken by the laboratory.

# 4.5.4 Ecology

Weekly site audit covering the whole assessment area is conducted during the construction work at Channels MUP05 and LMH01, focusing on the status/condition of the study area and its immediate vicinity, especially those sensitive habitats that have been identified in the ESR and/or habitats of conservation importance as stated in the EIAO TM.

Any changes found during the site audit have been marked and reported in the Monthly EM&A Report, and for those changes will be predicted to possibly or probably have had an impact on flora and fauna distribution or numbers should be highlighted in the Monthly EM&A report.

Ecology of water quality monitoring at the stream as requested to undertake in upstream and downstream of construction site Channels MUP05 and LMH01. The location of monitoring stations and requirements are same as the Water Quality Monitoring at the Channels MUP05 and LMH01. The procedure of water monitoring is same as the Water Quality monitoring.

#### 4.6 ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

Baseline EM&A monitoring was carried out from17 September to 13 October 2008, and ecological baseline monitoring for the habitat updating was performed on 16 September 2008 in accordance with the EM&A Manuals requirements. A summary of Action/Limit (A/L) Levels for air quality, construction noise, stream water quality, ecology and Landscape & Visual are shown in *Tables 4-6*, *4-7*, *4-8*, *4-9* and *4-10* respectively.



Table 4-6 Action and Limit Levels for Air Quality

Monitoring Station	Action Lev	/el (μg /m³)	Limit Level (µg/m³)		
Worldoning Station	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP	
MUP-A1	>307	>156	> 500	> 260	
MUP-A2a	>300	>149	> 500	> 260	
MUP-A3	>299	>150	> 500	> 260	

Table 4-7 Action and Limit Levels for Construction Noise

Time Period	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hours on normal weekdays	When one documented complaint is received	> 75* dB(A)

Note: \* Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.

Table 4-8 Action and Limit Levels for Water Quality

Monitorin	ng Location	DO (mg/L)			Turbidity (NTU)		H nit)		S <sub>3</sub> /L)
ID	Station Type	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
MUP-W1	Control	NA	NA	NA	NA	NA	NA	NA	NA
MUP-W2	Control	NA	NA	NA	NA	NA	NA	NA	NA
MUP-W3	Control	NA	NA	NA	NA	NA	NA	NA	NA
MUP-W4	Impact	5.27	5.18	18.03	24.81	6.5 – 8.5	6.0 – 9.0	15.8	17.6
MUP-W5	Mobile	4.42	4.37	7.88	8.54	6.5 – 8.5	6.0 – 9.0	6.0	6.0
MUP-W6	Mobile	4.54	4.51	11.81	14.84	6.5 – 8.5	6.0 – 9.0	3.9	4.8
LMH-W1	Control	NA	NA	NA	NA	NA	NA	NA	NA
LMH-W2	Control	NA	NA	NA	NA	NA	NA	NA	NA
LMH-W3	Impact	3.96	3.62	11.31	12.10	6.5 – 8.5	6.0 – 9.0	8.8	10.6
LMH-W4	Mobile	4.34	3.98	5.33	5.95	6.5 – 8.5	6.0 – 9.0	3.0	3.0
LMH-W5	Mobile	2.14	2.07	31.46	35.33	6.5 – 8.5	6.0 – 9.0	25.0	29.8
LMH-W6	Mobile	2.67	2.65	12.32	13.02	6.5 – 8.5	6.0 – 9.0	4.8	6.6

Note: - For DO, non-compliance of water quality limits occurs when monitoring result is lower than the limits.

Table 4-9 Action and Limit Levels for Ecology in Construction Phase at Channels MUP05 and LMH01

Parameter	Action Level	Limit Level
<ul> <li>Any construction works do not cause adverse ecological impacts outside the work site of Channels</li> <li>Where natural banks are to be retained are protected from adverse effects of engineering works, including impacts to riparian vegetation along these banks</li> <li>The existing natural stream channel is protected from adverse effect of engineering works, including potential indirect impacts through increased sedimentation</li> <li>Rock/fines used to form the bottom of the widened channel have the appropriate physical characteristics to permit reestablishment of semi-natural stream conditions</li> <li>The recommended mitigation measures are properly implemented by the Contractor</li> </ul>	Non- conformity on one occasion	Repeated Non- conformity

<sup>-</sup> For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

<sup>-</sup> For pH, non-compliance of water quality limits occurs when monitoring result is exceeded the range of limits.



Table 4-10 Action Level for Landscape and Visual Impact in Construction Phase

Parameter	Action Level	Limit Level
Any trespass by the contractor outside the limit of the works,	Non-conformity	Repeated non-
including any damage to existing trees, woodland and vegetation	on one occasion	conformity

#### 4.7 EVENT AND ACTION PLANS

An Event Action Plan for air quality, construction noise, water quality and ecology has been implemented for this designated project. Details of the Event Action Plan are presented in **Appendix F**.

#### 4.8 Environmental Mitigation Measures

The project ESR has recommended environmental mitigation measures to minimize potential environmental impacts arising from the construction of the project. A full list of the mitigation measures is detailed in *Appendix C*.

#### 4.9 DATA MANAGEMENT AND DATA OA/OC CONTROL

The impact monitoring data is handled by the ET's systematic data recording and management, which complies with an in-house certified (ISO 9001:2000) Quality Management System. Standard Field Data Sheets (FDS) are used in the EM&A program.

The monitoring data recorded in the equipment e.g. 1-hour TSP meters and noise meters are downloaded directly at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data.

For monitoring activities which require laboratory analysis, the responsible laboratory, ALS, follows the QA/QC requirements as set out under their HOKLAS scheme for all laboratory testing.



## 5. IMPACT MONITORING RESULTS

In this reporting month, construction works and environmental monitoring had started at Channels MUP03A&B, MUP04A&B and MUP05 located in Man Uk Pin. No impact monitoring has yet been undertaken at Channel LMH01 due to no construction activities during the month. In the future when the EM&A programme will cover all four channels once works in Channel LMH01 start.

The scheduled impact monitoring in this month is shown in *Appendix G* and the monitoring results are detailed in the following sub-sections. The meteorological data during the Reporting Period are summarized in *Appendix J*.

#### 5.1 AIR QUALITY

According to the EM&A Manual, air monitoring is only required to conduct at Channels MUP04A and MUP05 during the construction phase. In this reporting period, the results of impact air quality monitoring for 24-hour and 1-hour TSP are summarized in *Tables 5-1* and *5-2*. The detailed 24-hour TSP monitoring data are shown in *Appendix H* and the graphic plots are shown in *Appendix I*.

Table 5-1 Summary of 1-hour TSP Monitoring Results (µg/m³)

	MUP-A1 (MUP05)				MUP-A2a (MUP05)				MUP-A3 (MUP04A)			
Date	Start	Mea	asurem	ent	Start	M	easurem	ent	Start	Me	easurem	ent
	Time	1st	2 <sup>nd</sup>	3 <sup>rd</sup>	Time	1st	2 <sup>nd</sup>	3 <sup>rd</sup>	Time	<b>1</b> st	2 <sup>nd</sup>	3 <sup>rd</sup>
26-May-12	13:30	102	116	109	13:41	93	99	98	14:00	101	104	118
1-Jun-12	11:30	34	35	32	11:35	35	33	36	11:40	43	47	45
7-Jun-12	10:25	50	48	49	10:30	45	47	43	10:35	47	49	46
13-Jun-12	13:35	33	29	31	14:07	28	26	28	14:40	39	41	37
19-Jun-12	10:45	46	43	45	10:50	34	38	37	13:30	49	46	48
25-Jun-12	10:30	28	27	30	10:35	26	24	22	13:30	31	33	29
Average	49			44			52.9					
(range)		(27 - 1)	116)			(22	<del>- 99)</del>			(29 –	118)	

Table 5-2 Summary of 24-hour TSP Monitoring Results (µg/m³)

Date	MUP-A1 (MUP05)	MUP-A2a (MUP05)	MUP-A3 (MUP04A)
26-May-12	52	power failure#	power failure#
1-Jun-12	115	power failure#	power failure#
7-Jun-12	59	power failure#	power failure#
13-Jun-12	66	power failure#	power failure#
19-Jun-12	23	power failure#	power failure#
25-Jun-12	52	power failure#	power failure#
Average	61		
(range)	(23 - 115)		

<sup>#</sup> Power failure and no make up of lost samples.

As shown in *Tables 5-1* and *5-2*, there was no exceedance recorded in 1-hour TSP and 24-hour TSP during this reporting period. As a reminder, the Contractor is advised to increase the frequency of water spraying especially in the sunny and dry days. There were total 12 power failures incident recorded at Location MUP-A2a and MUP-A3. It is noted by the Contractor they have tried to fix the problem from power supplier. However, they could not get contact to the residents who supply power all the time. In recent month, monitoring location MUP-A1 has been resumed. And MUP-A2a is coming to be continued shortly. We have constantly liaised with the Contractor to rectify the power supply problem and Contractor will deploy another stable power source. On the other hands, it is shown that there is no works near those locations in recent months. It is believed that the site area would not cause exceeding for monitoring results or significant impact for air quality. However, the Contractor is needed to resume the power supply as soon as possible.



#### 5.2 Construction Noise

According to the EM&A Manual, noise monitoring is only required to perform at Channels MUP04A and MUP05 during the construction phase. All noise monitoring results are summarized in *Tables 5-3* to *5-6* and graphic plot are shown in *Appendix I*.

Table 5-3 Results of Construction Noise Monitoring at Channels MUP-N1 / MUP01/02-N1 (MUP05)

Date	Start Time	1st Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Le <b>q</b> 5	6 <sup>th</sup> Leq5	Leq30 dB(A)
26-May-12	13:38	68.4	67.1	67.5	68.2	68.0	68.7	68
1-Jun-12	11:30	68.2	59.6	68.5	62.7	62.0	68.0	66
7-Jun-12	10:26	54.9	55.0	53.9	60.7	58.9	64.6	60
13-Jun-12	13:35	66.6	65.3	64.0	62.8	61.1	62.2	64
19-Jun-12	10:45	71.9	75.6	74.0	72.0	76.6	73.3	74
25-Jun-12	10:30	72.1	74.0	74.6	71.1	72.5	72.0	73
Limit Level (	Limit Level (Leq30) 75 dB(A)							

Table 5-4 Results of Construction Noise Monitoring at Channels MUP-N2 (MUP05)

Date	Start Time	1st Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30 dB(A)
26-May-12	13:50	66.5	65.8	66.9	67.2	64.8	65.6	66.2
1-Jun-12	13:00	52.5	47.0	48.9	52.5	47.6	51.1	50.5
7-Jun-12	11:00	54.8	48.9	48.2	50.0	49.2	50.8	51.0
13-Jun-12	14:07	50.2	48.9	48.3	49.3	50.1	48.2	49.2
19-Jun-12	11:18	68.4	65.5	65.2	65.5	64.7	66.1	66.1
25-Jun-12	11:02	68.6	65.0	66.5	71.5	68.7	68.4	68.6
Limit Level (	Leq30) 75 dB(A)							

Table 5-5 Results of Construction Noise Monitoring at Channels MUP-N3 (MUP05)

Date	Start Time	1st Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30 dB(A)
26-May-12	14:30	67.4	67.0	65.8	65.2	64.1	66.2	66.1
1-Jun-12	14:05	70.4	67.0	67.5	69.6	66.8	62.2	67.9
7-Jun-12	13:00	62.5	68.7	60.8	63.6	65.6	71.9	67.2
13-Jun-12	15:15	63.4	62.6	60.7	63.5	65.4	70.5	65.7
19-Jun-12	13:35	66.8	66.3	65.8	66.4	69.3	67.1	67.1
25-Jun-12	13:00	71.1	66.7	68.9	68.4	70.4	66.9	69.0
Limit Level (	Leq30)		-	-	75 dB(A)	-	-	

Table 5-6 Results of Construction Noise Monitoring at Channels MUP-N4 (MUP04A)

Date	Start Time	1st Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30 dB(A)
26-May-12	14:40	68.0	68.9	67.2	67.8	68.4	68.5	68.2
1-Jun-12	13:32	62.6	62.2	62.4	63.3	61.8	61.8	62.4
7-Jun-12	11:32	62.0	58.3	58.8	62.1	60.9	58.0	60.3
13-Jun-12	14:40	61.3	58.7	58.1	62.3	60.9	58.9	60.3
19-Jun-12	13:00	72.9	69.3	70.4	71.1	71.3	71.1	71.2
25-Jun-12	11:30	69.5	69.2	69.7	67.9	68.0	68.8	68.9
Limit Level (	Leq30)				75 dB(A)			

As shown in *Tables 5-3* to *5-6*, the construction noise levels fluctuated well below the Limit Level. No documented complaints against the construction noise were registered during the Reporting Period. No NOE or corrective actions were therefore required for the parameter



#### 5.3 WATER QUALITY

In this reporting month, a total of 13 sampling days were performed for stream water quality monitoring according to the EM&A Manual requirements. Detailed in-situ measurements and laboratory results are shown in **Appendix H** and graphic plots given in **Appendix I**.

In stream water quality monitoring, there were also no exceedance recorded in the reporting period. Therefore, no associated corrective actions were required. A summary of exceedances in this reporting month is provided in *Table 5-7* below:

Table 5-7 Summary of Stream Water Quality Exceedances

Ctation	D	0	Turb	idity	pH V	/alue	S	S	Total Exc	ceedance
Station	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
MUP-W4 (a)	0	0	0	0	0	0	0	0	0	0
MUP-W5 (b)	0	0	0	0	0	0	0	0	0	0
MUP-W6 (b)	0	0	0	0	0	0	0	0	0	0
Exceedances	0	0	0	0	0	0	0	0	0	0

For pH measurements, the results shown that the range of pH unit was within 6.69 - 8.10 and within the lower or upper bounds of Action Limit Level.



#### 5.4 ECOLOGY

According to the EM&A Manual [382486/73//Issue2], ecology monitoring is required for Channels MUP05 and LMH01 during the construction phase. In this reporting period, the construction works of Channels LMH01 and MUP05 are at late stage.

In this reporting month, four site visits were carried out on 31<sup>st</sup> May, 7<sup>th</sup>, 16<sup>th</sup> and 21<sup>st</sup> June 2012. During all site visits, it was noted that sediment-loaded water running in the stream. The sediments were likely partially from natural runoff of stream riparian and catchment where the sediments were bought by rain fall. Some construction material including soil and rocks piled in the stream or riverbed also contribute to soil erosion and led to sediment-loading water in the drainage system. The contractor has been reminded to carry out all the required sediment control measures to make sure no sediment-loaded water being discharged to the watercourse.

The detailed findings are listed in the table below and the checklists are attached in Appendix L.

Table 5-8 Summary of Defects and Deficiencies Identified and Follow-up Actions and Remedies Taken

Date of Audit	Defects and Deficiencies Identified	Recommendation	Follow-up Actions and Remedies Taken
31 <sup>st</sup> May 2012	Piles of soil and rocks on streambed with potential soil erosion problem during storm;	Soil erosion control;  Remove soil piles in the streambed	To be taken
	Sediment-loaded water in the stream noted;		
7 <sup>th</sup> June 2012	Piles of soil and rocks on streambed with potential soil	Soil erosion control;	To be taken
	erosion problem during storm;  Sediment-loaded water in the stream noted;	Remove soil piles in the streambed	
16 <sup>th</sup> June 2012	Piles of soil and rocks on streambed with potential soil	Soil erosion control;	To be taken
	erosion problem during storm;  Sediment-loaded water in the stream noted;	Remove soil piles in the streambed	
21 <sup>st</sup> June 2012	Piles of soil and rocks on streambed with potential soil	Soil erosion control;	To be taken
	erosion problem during storm;  Sediment-loaded water in the stream noted;	Remove soil piles in the streambed	

#### 5.5 OTHER FACTORS INFLUENCING THE MONITORING RESULTS

There were no other noticeable external factors generally affecting the monitoring results in this reporting month.

#### 5.6 QA/QC RESULTS AND DETECTION LIMITS

Not applicable.



# 6. REPORT ON NON-COMPLIANCE, COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

#### 6.1 RECORD OF NON-COMPLIANCE OF ACTION AND LIMIT LEVELS

No Action or Limit Level exceedance was identified for air quality, construction noise as well as stream water quality monitoring. For details please refer to section 5.3. No associated corrective actions were therefore required.

#### 6.2 ENVIRONMENTAL COMPLAINTS

No written or verbal complaints were received (written or verbal) for each medium during the Reporting Period.

- 6.3 RECORD OF NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION
  No notification of summons or successful prosecutions was recorded during the Reporting Period.
- 6.4 REVIEW OF REASONS FOR AND IMPLICATION OF NON-COMPLIANCE, COMPLAINT AND NOTICE OF SUMMONS No non-compliance, complaint or Notice of Summons was received in this reporting month.
- 6.5 DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN
  It follows from **Sections 6.1** and **6.4** that no follow-up actions were necessary.

#### 6.6 OTHERS

#### 6.6.1 Solid and Liquid Waste Management Status

The quantity of waste for disposal or reuse is summarized in **Tables 6-1** and **6-2**. The monthly summary of waste flow table is shown in **Appendix M**.

Table 6-1 Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (in '000m <sup>3</sup> )	-	Tuen Mun 38 Fill Bank
CAD Materials (men) (in doding)	0	Reused in other Projects
C&D Materials (Non-Inert) (in '000m <sup>3</sup> )	0	NENT
Chemical Waste (in '000kg)	0	NA
General Refuse (in '000m³)	0	NA

Table 6-2 Summary of Quantities of Waste for Reuse/Recycling

Type of Waste	Quantity	Disposal Location
Metals for Recycling (in '000kg)	0	NA
Paper for Recycling (in '000kg)	0	NA
Plastics for Recycling (in '000kg)	0	NA

There was no known site effluent discharged but it was assumed that an estimated volume of 50m<sup>3</sup> of waste water was discharged in this reporting month.



## 6.6.2 Site Inspection and Environmental Audit

A total of 4 weekly environmental site inspection and audit were conducted jointly by the ER, EO and ET during the Reporting Period on 31 May, 7, 14 and 21 June 2012. No adverse environmental impacts were observed which indicated that the mitigation measures implemented were effective. Minor deficiencies found in the site inspections and audit was promptly rectified within the specified deadlines. Findings of the site inspection and environmental audit are summarized below. Performa of the weekly ET site inspection and audit activities are presented in *Appendix K*.

Table 6-3 Summary of Findings of Site Inspection and Environmental Audit

Date	Findings / Deficiencies	Follow-Up Status
31 May 2012	No adverse environmental impacts were observed during the site inspection. However, full implementation of the required environmental mitigation measures is reminded particularly watering of the dusty surfaces during dusty construction including vehicle movement under dry and windy conditions.	
7 June 2012	<ul> <li>Muddy haul road surfaces were observed within the site particularly at the entrance/exit. Full implementation of the required environmental mitigation measures, in particular wheel washing of the vehicles prior to exit, is reminded.</li> </ul>	The haul road have been found wet by watering on the following site inspection.
14 June 2012	Construction activities but no adverse environmental impacts were observed during the site inspection. Full implementation of the required environmental mitigation measures, in particular wheel washing of the vehicles prior to exit and watering during dusty construction activities under dry and windy conditions, is reminded.	
21 June 2012	No adverse environmental impacts were observed during the site inspection. Full implementation of the required environmental mitigation measures, in particular wheel washing of the vehicles prior to exit, is reminded.	
	•	

# 6.6.3 Works to be undertaken in the Forth-Coming Month

Works to be undertaken next month are shown in the construction program enclosed in *Appendix C*. In addition, the activities undertaken in the Reporting Period including construction, preparation and site clearance activities will also continue in the future. They are summarized below:

The forthcoming activities in the next two months: Carried out defect works during maintenance period as follow:

- (a) Install outstanding fencing, railing and signates;
- (b) Landscape softworks and establishment works;
- (c) Rectify defective concrete on grasscrete/paving;

#### 6.6.4 Future Key Issues and Mitigation Measures for the Forth-Coming Month

As wet season has come, the coming excavation works of the channels, ingression of surface runoff into the river within MUP Channels continues to be the key issue in future months. The contractor is reminded that mitigation measures for water quality and ecology should therefore be fully implemented.

In addition, attention should be paid to noise impact during the construction work progress, and with other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the Environmental Study Report (ESR) and summarized in Mitigation Measure Implementation Schedule should continually be applied.



#### 7 CONCLUSIONS AND RECOMMENDATIONS

This is the **40**<sup>th</sup> monthly EM&A Report for Channels MUP03A&B, MUP04A&B, MUP05 and LMH01 - Designated Project, covering a period from **26 May 2012** to **25 June 2012**.

In air quality and noise monitoring, there were no Action/ Limit Level exceedance recorded in this reporting period. No associated corrective actions were therefore required.

For water quality, there was also no exceedance recorded in the reporting period. Therefore, no associated corrective actions were required.

No written or verbal complaints, notifications of summons or successful prosecutions were received during the Reporting Period. No adverse environmental impacts were observed during the weekly site inspection and environmental audit, which indicated that the implemented mitigation measures for air quality, construction noise and water quality were effective. A few minor deficiencies found in the weekly site inspection and they were rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

As wet season has come, the coming excavation works of the channels, ingression of surface runoff into the river within MUP Channels continues to be the key issue in future months. The contractor is reminded that mitigation measures for water quality and ecology should therefore be fully implemented.

In addition, attention should be paid to noise impact during the construction work progress, and with other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the Environmental Study Report (ESR) and summarized in Mitigation Measure Implementation Schedule should continually be applied.

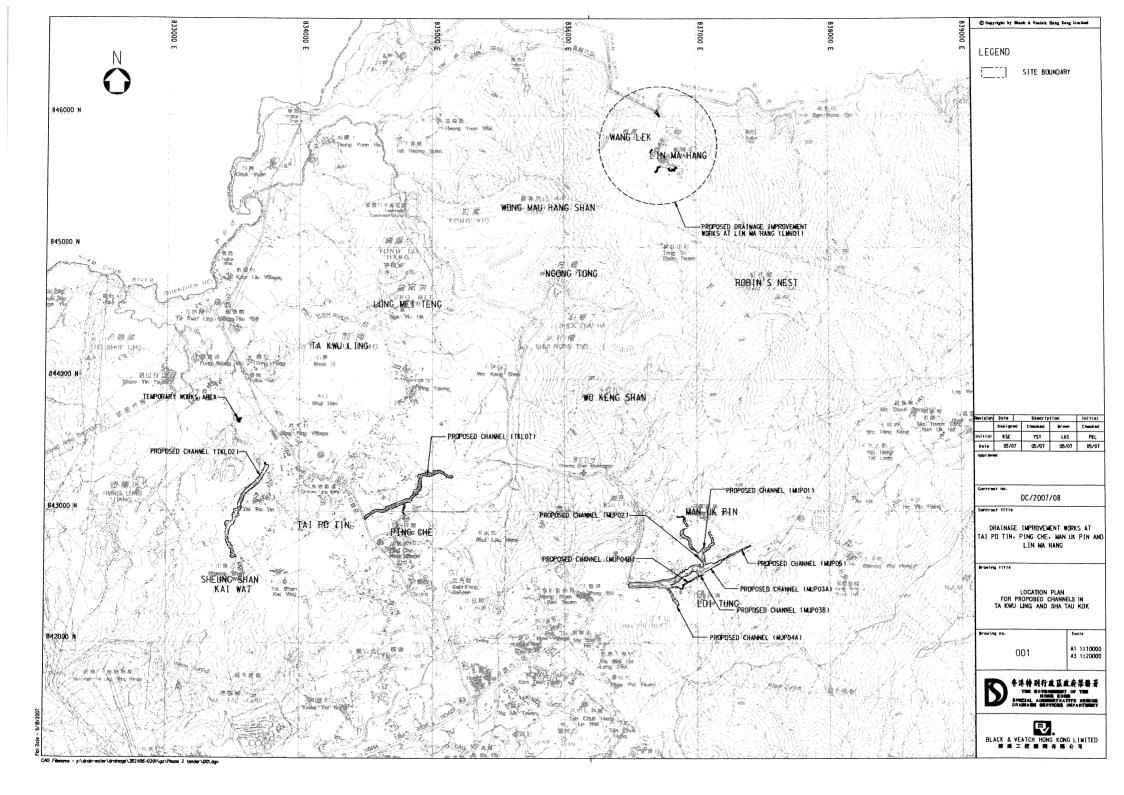
Impact monitoring should be immediately undertaken upon the construction works commencement at Channel LMH01 and will be reported in the coming month.

- End of Text -



# Appendix A

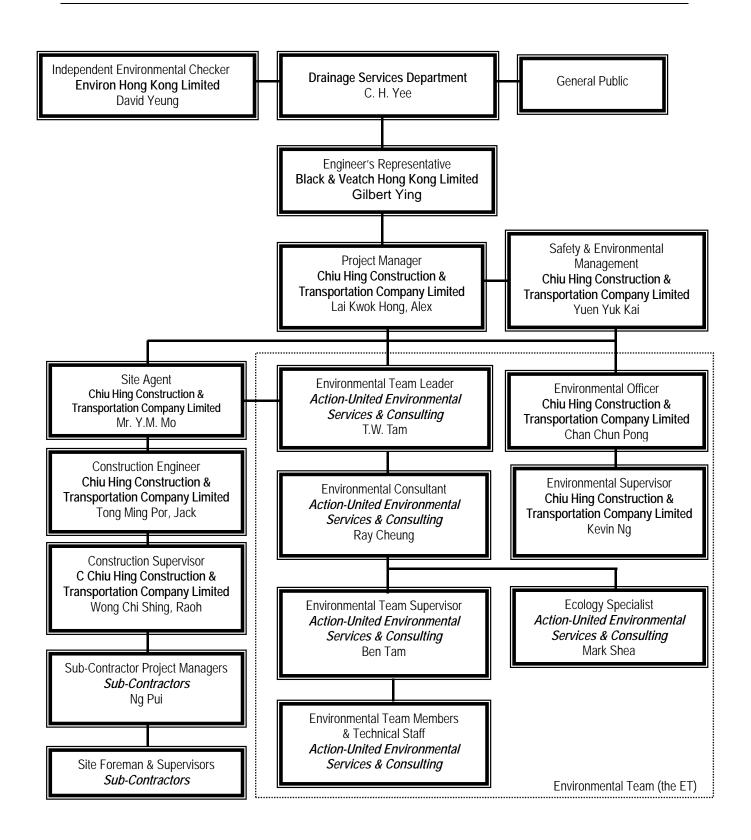
**Site Location Plan** 





# Appendix B

# **Environmental Management Organization and Contacts of Key Personnel**



**Environmental Management Organization** 



# **Contact Details of Key Personnel**

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. C. H. Yee	2594-7347	2827-8700
B&V	Engineer's Representative	Mr. Gilbert Ying	2659-8787	2659-8323
Environ	Independent Environmental Checker	Mr. David Yeung	3743-0788	3548-6988
CHCT	Project Manager	Mr. Lai Kwok Hong, Alex	2659-8221	2659-8232
СНСТ	Safety & Environmental Manager	Mr. Yuen Yuk Kai	2659-8221	2659-8232
СНСТ	Site Agent	Mr. Y.M. Mo	2659-8221	2659-8232
CHCT	Construction Engineer	Mr. Tong Ming Por, Jacky	2659-8221	2659-8232
CHCT	Construction Supervisor	Mr. Roah Wong	2659-8221	2659-8232
CHCT	Structural Engineer	Mr. Kwok Chin Ming	2659-8221	2659-8232
CHCT	Site Forman	Mr. Chung Ping Kai	2659-8221	2659-8232
CHCT	Environmental Officer	Mr. K.M. Lai	2659-8221	2659-8232
CHCT	Environmental Supervisor	Mr. Kevin Ng	2659-8221	2659-8232
Kin Tat	Sub-contractor Project Manager	Mr. Ng Pui	2659-8221	2659-8232
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ray Cheung	2959-6059	2959-6079
AUES	Environmental Team Supervisor	Mr. Ben Tam	2959-6059	2959-6079
AUES	Ecologist	Mr. Mark Shea	2959-6059	2959-6079

# Legends:

DSD (Employer) – Drainage Services Department

*B&V* (Engineer) – Black & Veatch Hong Kong Limited

CHCT (Main Contractor) - Chiu Hing Construction & Transportation Company Limited

Environ (IEC) – Environ Hong Kong Limited

AUES (ET) – Action-United Environmental Services & Consulting



# **Appendix C**

Master Construction Program
Future Construction Works &
Environmental Mitigation Implementation Schedule

DSD Contract DC/2007/08 – Drainage Improvement Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang 40th Monthly EM&A Report for the Designated Project Works – June 2012



**Master Construction Program** 

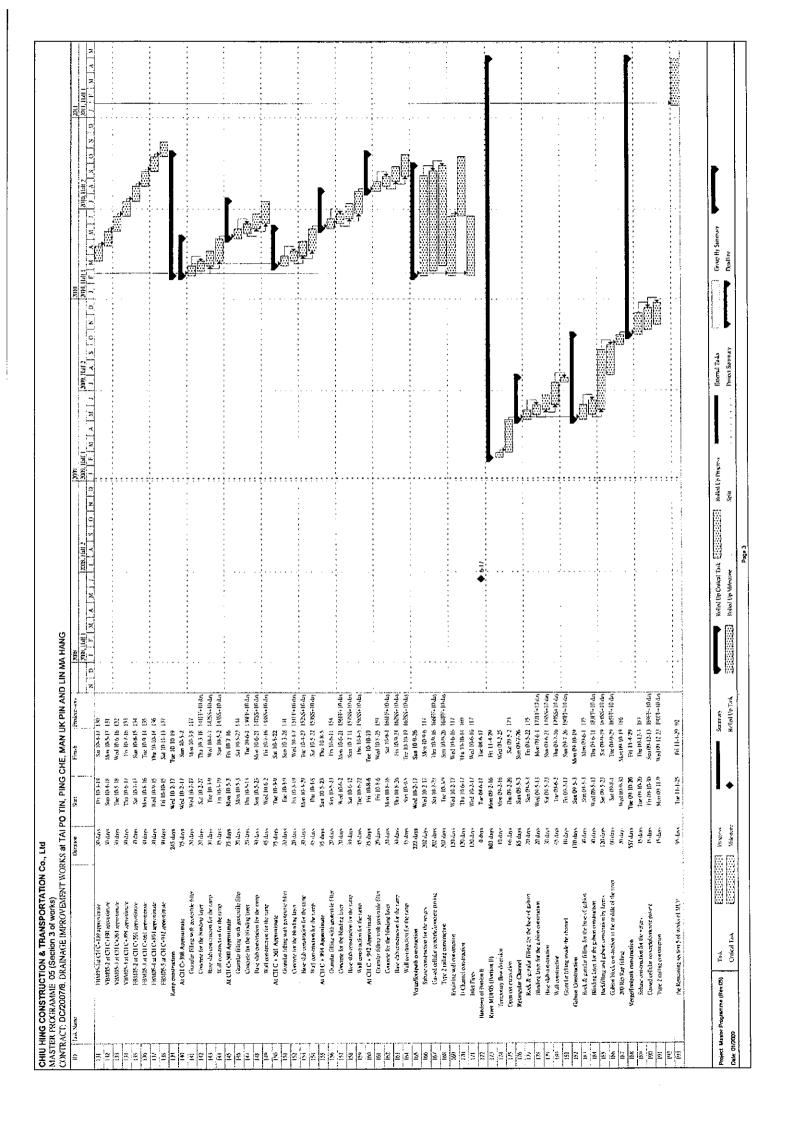
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Handover of Portion B
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Group My Summary Desilie. 2010 2010 3010 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Project Number Eucral Ticks 2008, Half 2 7 | A | S | O | N | D | J | F | M | A | M | J | L | A Rolled Un Propress Š Page 2 N D J F M A M I Relied Up Milestone MASTER PROGRAMME 05 (Section 3 of works) CONTRACT: DC/2007/B. DRAINAGE INFROVEMENT WORKS at TAI PO TIN, PING CHE, MAN UK PIN AND LIN MA HANG The 10-5-74 12585-10 day San De-1 H - 124FF-10 day The 10.2-2 (ITPE) - 5-days Thu 10-4-1 : 123(17-10-04) San forup 1901-101-by Fit ICLES: 10155-5 days Westernisco / HP+5 days Mention 11.2 / 728+5 days Intitution 7855-5 days Welltelley AFF-Stars More 02-14 75/F-5-days Ster 10.5-17 8 (SS-40 days Thu 10.5 27 NSSS+111 days PAULIN SASS-10 LE Thu 10.9.2 Office to Lay The Helick defendance Wed 10 3 33 10217-54to Rollef Up Tack The feet of 11888 The feet of 11888 Tec 10.2-16 117HF The 10.2 16 11NH Summer The Utility 115S Fil 10-2:26 117 Mon 10-4:27 172 Mes 10.5-18 161 Ter 10-15,1 91 May 10, 58, 6555 Sec 10-6 26 8755 Well (E) - 13 - 71 The (0.552-8) Wednakes 113 The 10 8 5 127 Sun 10-5-10 105 S.c. 10 6-19 10R The 10-1-18 117 78.05()-29.36 The POATS 103 NU PARTIE Mee 13 | 24 91 Ven 10:8-23 87 Fi 15 7 16 66 WellP9.23 53 December 3 Au Men 10-1-18 Per Thu O4-12-34 74 St 19447 83 Tec 10.8 (0.88) Pa (0.10) #9 The ID-11-25 90 \$4.101.125.98 Welts-1-22 9 Pn 10-7-9 The 10-2-2 Min 11-1-24 San 10-9-12 Fri 10-7-9 54 10-11-13 Tue 10-2-2 The 10 2 16 ET-11-01 15 The 10-8-5 Wed 10.2-17 Soi 18-2-29 The 10-2-9 Ter 10-129 Fn 10-3-19 Thu 10-458 San 10-5-23 Med 10-8-33 SA 10-7-17 SA 10-7-17 Pri IDS 6 Tue 09-12-15 The 04-12-15 Ma 18 July Se 18 July 54 10 341. 51 10 341. San 10 6-31 San 194-3-14 Tra (0.4.2) Tra (0.4.2) Thum4 23 15:100:423 Fi(0.44.2) Fi(0.6.2) Wed 10.7-2 Man (19.3-2) Pri 04-9-4 The 8049-29 Sea 03-10-4 FA CR 12:25 Tha leb Ed F 174.35 Di 10.3.19 Mra 10.1.20 Par Keas #al 10:2:17 Thy 04.9 24 Men 03-11-30 Sar 00-12-5 Sar 00-12-5 No 1944 Wed 19-12-90 Tire 10-5-11 na 106-13 11 किस्ता क Men (0.3 25 Ti (PL12 & De 10-5-11 Mrn 10-5-31 H-5 (1) (5) Ved 10-2-17 Vol 10-2-17 Well Re 2-17 E BOT TH (PLIO) Set (10.13.5) Wal 10-2-17 distriction of the second 25.00.00 经旧租赁 Tue 10-7:27 Se 10-13 St 09-3-34 ESSECTION Postes. Oy day. 7 days 20 days M0 days 270 days Mahy Mahy Galys to days 30 days 57 days 37 days 45 days (Aldays (f) days 38.45.5 38.45.0 707 thys Cdry Oppos 54.15 States. othe. (mpm) Miles Ę 24 5.0% S Trib Midays 42 chy Balay Stars Salas States Malor (d.b) S9 days er. fildays 41.14 Stars NO Pos CHIU HING CONSTRUCTION & TRANSPORTATION Co., Ltd Main River Construction (CH C-0.00 to C+974 approxima Constant 1X16Shim dia page at CHD+185 Approximate Bur culvert construction at CTI C+190 approximate VENENT-1 related a France of CFI D-48 Approximate VBN#H-2 whealer bridge at CEU2-11 Agrawinate Gabien block constaction in the middle of the river Chlery Block constitution in the possible of the river Gabben Block consocient in the modific of the noor Rock & canalar filling for the base of gathern Pentralge/Vehicular Bralge Communical Rackfilling and gathern tensimities by Layers Bushing layer for the galden constitution Grantlar filling with presently filler EBMO3-1 textbridge at CH E+60 Approximate VBM)S-1al CLC+Mapposimule Great cellular conditionmente primis Gassol cellular condefendative portre Chasel cellilar connectelamente cumas Rock & gandles filling for the tuse of galden Rock & gamble filling for the best of gabons Rick & greater filling for the base of gathon Backfelling and galvier overtiment by lawers Bedilling and private communicating the trans-Rickfilling and gahren constraint by layers Blinda'z layer for the sobion construction Hinding Lype for the galtern constitution Blinding Lyer for the cabbon conductive Wall & Top Slab constitution Saisse construction for the water Subter construction for the verses Subsect retestration for the verges Gravel cellular controls poving Concepte for blus ling lavor temporary flow diverses Manhole Mill to MILL conduction Tyre? railing comments Cupal or Filling for the rise. Critical Disk Type 2 raiting exterior to a temperary flow diversion Type 2 reting community Open est escarabian Verge/Yerspath construction Construct 1350mm dia. pripes Othern Na. 1990 construction Vergerianish emainment 60 from the pape construction Temporary Flow Daversies Temperary Hew Diversion Imperny Phy Dyensky Over call excavation King assertated Works 7.5 River MUT038 (Pertion D) River MUNOSA (Portion D) River MULWER (Parties D) River MUNTS (Portion D) Open cut excessive 200 Rep Rup filling Over our endication Ортой ексимин NY Rio Kup Idling Att Nip Kap filling B.C. at CIT ESSY Project Meder Programme (Rev.05) Date: 01/2009 S 12 2 1 2 2 2 2 2 8 7 7 8 6 7 9 8 6 3 3 2222222



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Open execution and construction for CH 64.01.
Open execution and construction for CH 74.01.
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Reckfilling and gabion construction
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Section 4 & 5 of works - Lin Man Hang (Portion F)
Commonscented Date
landover of Portion F
Prelim Works
Reseline Manitoring Section 5 of works for Lin Ma Hang Construct Access Read Remove and Transplant the trees Underground Utility Survey River LM1901 CONTRACT: DC/2007/08 (The Woks) Temporary flow diversion Critical Task Site clearance Initial site survey T.3. Mobilisation Tire survey Project: Maréer Programme (Rev 05) Dale: 01/2000 Trik Many 

Gover by Summery Padin 300 lbit 2 J A J S | D | N | D Poput Summan Esterral Tasks N T N XXX 151(2 20%, 151(1) Relief Up Prepress Fis Noted the Option Text. [2020] [2020] Page Relial Up Milester 2008 2008, fair 1 1 | 8 | 31 | A MASTER PROCRAMME 05 (Section 3 of works)
CONTRACT: DC/2007/8, DRAINAGE IMPROVEMENT WORKS at TAI PO TIN, PING CHE, MAN UK PIN AND LIN MA HANG 12-21 Thirds 11 12 (985-10-less) Supplied 13.2 (685-10-lass) Se 02446 18FF-10 large Tue 00 & 16 19FF-10 large That 03-6-25 48 Sim 09-7-5 PVED+ 19 days Walth IS STRUM Man D1.6-29 5155+10 days Man Olive H. 2005-10145-v The 09-9-3 \$285+16 day Rolled Up Tack Walther B. 585- Ways Serbinary Nort Dist. 25, 1755 Sa(0×11-2) 21 The 10×125 23 The 10×16 24 Sun (20-10-4 Wed (20-4-2): 15 Tue (40-5-12): 57 Man (94-9-11 11 Sun (9)-10-4 45 Tur (9.12.22 6) Fn 10-2-16 田克爾里 Wellowsky D Tag (0.11-17-54 Ph 10 i.1 35 Sim foliation So Mer 19-11-2-52 Man Robbill F609-11-13-21 Wed 19.4.22 15 The UP (-11 to 54097-11-31 Mon 1028-10 32 គាលា ចេន Red PHILES SH the Dife. 18 Sur (0:5:21 39 Tec 01.7.21 KI 11 (条件) 国家 The OLY IS IS 50.00-10-3-33 Slow FLS-17 G Ter 09 5-12, 29 PROPERTY 8 The Co.4.2 9 Sm (14-5-12-1) 2 06-4-30 Drug S.1 (8-9.6. 5 San 09-11-22 Tue 10-1-6 K (-0) nox Most (Pt.1-19 Sun (?)-10-4 Wed RE-4-30 Man (9)-6-1 Wed 00'2 11 Su (S. 17 Fue 10-4-6 Sar 09-2-21 Sen 10-1-11 Mon (9-11-2) )'n 11-4-29 Well 03-35 Jun 03-0-15 Men 195-1527 Thu (195.5.7 \$4.01.2 The 190-X-25 The (2) 8-25 Med DE 11-23 Med 09-3-2 wed 16-2-17 10 S Sur 09-2-22 141-39-2-23 Ph. 69-1-14 Mon (99-4-13 Mar (99-4-13 For 1935-12 Sur 1937-12 he 026.2 5.1(3).6.6 Fri 04 9-4 Sun (9-14)-4 Wed 08-4-30 Mexi 09.2.2 Sun 08-8-17 Mon 03:2:2 The OHALLS h JAL-30 flor 09.4.13 Sat 19-5-17 Fri 07-12-21 Med (B-12-4) Antiber13 Thu 09.4.25 Welf#5.13 Thu 03 8-6 Von (9-1-15 Vet (02-23) 31-11-00 Page 10000 발표하시 SC-780 PS 00 TEXT PAR The part 1 NA COUNTY Fr PLAS SHOWER Men 09. 5.9 Tie (\*9-15 Seri (Pr. 11.22) Tac 00.9-15 Mon 09-4-13 Thu 09.4.23 Ter 09.8-11 11:13 Mrs (0-4-13 Men (Parta) Not 01 6-32 Sec. (0) 22 The 09-15-6 No. IR-L-W et they Silectors 304 days 201 days (7) days Salas į Fresh Hebry S, thy (Sidns S. Belive Matery States Relay 44.0 A) ş 30 days 30,135 SQ days CHIU HING CONSTRUCTION & TRANSPORTATION Co., Ltd Galtion North constrainen in the makille of the most FRMO2-1 feedwilge at CTI 9-455 Approximate PUSG2-2 feedwilge at CTI 9-489 Approximate Ussest cellular concrete/concrete paying Cassed cellular concert/Gasynde paning Kock & paralar filling for the best of gabina Rock & gander (ding by the bay of galeso Rick & genelatifiling for the hise of galven Rechilling and gabien constructed by layers Blinding Lyer for the galvion construction Backtiffing and galvion constitution by Javers Reckfilling and palvin constructor by layer Blisher lays for the policy construction Blinding lawer for the gaboor construction ATI ASTS UC in CIRA-liti Approximate Subtrac constitution for the vertex Rock & gauster filling for the base of gaborn University of helper concerns for records proving Subsic receiptation for the empo-RW type D at CHE-525 Approximate Hindric layer for the gaborn concernation. Declibing and palone constrained by Layers Subsection in the the wages Francis & cred cheering support Type 2 railing construction fyre 2 railing construction Hashaver of Pretion A Section 3 - Man UK Pine (Pration D. & E) Commercement Date Removal and Transplanting of trees Collegensial Utility Survey Verge/fredpolit construction Verpalfespath construction Temperary Flow Diversives Critical Toda Tenparary Flow Disersect Type I railing construction Remark of the sheet piles. Verseffinitials constitution Subflive existing river bank Conpense the dimense River MUI'Ol (Parting D) Tempatan Hear Datesion Sheet phe incultative. CONTRACT, DC/2007/08 (The Woks) Over the expension O'D Kap Kap Filling River MURUDA (Positive D) 600 IC constructive 蒼 Open aut pressation Main River of MUST/2 Thre-survey Constitut Arress Roed River MUIVO (Portion D) Filling of Rip Kap Markeles constructing Reseling Mariteting Mobblestion Site elemente האוביובות נית ביתו Handowy of Petice D **JOUC construction** Application of XP Initial site survey MUI'02 Bypass Project: Maxier Programme (Rev.05) Hedin Works 2 2 3 S. 2. 2. 9 z 8. 8. 28282 3

DSD Contract DC/2007/08 – Drainage Improvement Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang 40th Monthly EM&A Report for the Designated Project Works – June 2012



**Future Construction Program** 

CHIU HING CONSTRUCTION & TRANSPORTATION Co., Ltd MASTER PROGRAMME 12 CONTRACT; DC/2007/8. DRAINAGE IMPROVEMENT WORKS at T					
ID	Duration   Start   Finish   2012   Half 1,2012	Half 2, 2012  J A S O N	2013   Half 1, 2013   D	Half 2, 2013  J A S O N	2014     Half 1,2014
3 Prelim Works 4 Mobilization and setting up 5 Submissions 6 Baseline Monitoring for Environmental Protection 7 Monitoring point set up	260 days         Fri 21/12/07         Fri 5/9/08           80 days         Fri 21/12/07         Sun 9/3/08           150 days         Fri 21/12/07         Sun 18/5/08           90 days         Mon 10/3/08         Sat 7/6/08           25 days         Sun 8/6/08         Wed 2/7/08				
8 Structural Condition survey 9 Apply XP for the Works carrying out at Hyds Road 10 Section 5 - Works Area (Portion A) 11 Setting out for Works Area	120 days Mon 10/3/08 Mon 7/7/08 180 days Mon 10/3/08 Fri 5/9/08 152 days Fri 21/12/07 Tue 20/5/08 7 days Fri 21/12/07 Thu 27/12/07				
12 Initial Survey and Photos for Works Area 13 Underground Utility Dectection 14 Fencing/Hoarding construction 15 Construct Run in/out access 16 Construct Site drainage system	14 days Fri 28/12/07 Thu 10/1/08 7 days Fri 11/1/08 Thu 17/1/08 20 days Fri 18/1/08 Wed 6/2/08 14 days Thu 7/2/08 Wed 20/2/08 14 days Thu 7/2/08 Wed 20/2/08				
17 Erection of Site Office at Works Area 18 Install electricity and telephone line for site offices 19 Project Signboard construction 20 Section 1 - Tai Po Tin (Portion B)	45 days Thu 7/2/08 Sat 22/3/08 14 days Sun 23/3/08 Sat 5/4/08 10 days Sun 11/5/08 Tue 20/5/08 1266 days Wed 30/4/08 Mon 17/10/11				
21 Handover of Portion B - River TKL02  22 Main River Construction  23 Temporary Flow Diversion  24 Gabion Wall Construction at CH 0+0 to CH 90+0 Right Bank	0 days         Wed 30/4/08         Wed 30/4/08           921 days         Mon 22/9/08         Thu 31/3/11           60 days         Mon 22/9/08         Thu 20/11/08           70 days         Mon 22/9/08         Sun 30/11/08				
25 Gabion Wall Construction at CH 0+0 to CH 90+0 Left Bank 26 Gabion Wall Construction at CH 90+0 to CH 180+0 Right Bank 27 Gabion Wall Construction at CH 90+0 to CH 180+0 Left Bank 28 Gabion Wall Construction at CH 180+0 to CH 270+0 Right Bank 29 Gabion Wall Construction at CH 180+0 to CH 270+0 Left Bank	70 days Mon 20/4/09 Sun 28/6/09 70 days Mon 29/6/09 Sun 6/9/09				
30 Gabion Wall Construction at CH 270+0 to CH 360+0 Right Bank 31 Gabion Wall Construction at CH 270+0 to CH 360+0 Left Bank 32 Gabion Wall Construction at CH 360+0 to CH 450+0 Right Bank 33 Gabion Wall Construction at CH 360+0 to CH 450+0 Left Bank	80 days Mon 25/1/10 Wed 14/4/10 45 days Thu 15/4/10 Sat 29/5/10 80 days Sun 30/5/10 Tue 17/8/10				
34 Gabion Wall Construction at CH 450+0 to CH 540+0 Right Bank 35 Gabion Wall Construction at CH 450+0 to CH 540+0 Left Bank 36 Gabion Wall Construction at CH 540+0 to CH 630+0 Right Bank 37 Gabion Wall Construction at CH 540+0 to CH 630+0 Left Bank 38 Gabion Wall Construction at CH 630+0 to CH 720+0 Right Bank	80 days Sat 2/10/10 Mon 20/12/10 80 days Fri 13/3/09 Sun 31/5/09 80 days Mon 1/6/09 Wed 19/8/09				
<ul> <li>Gabion Wall Construction at CH 630+0 to CH 720+0 Left Bank</li> <li>Gabion Wall Construction at CH 720+0 to CH 810+0 Right Bank</li> <li>Gabion Wall Construction at CH 720+0 to CH 810+0 Left Bank</li> <li>Rip Rap filling and gabion block installation in middle of River Ch.</li> </ul>	45 days Sun 8/11/09 Tue 22/12/09 80 days Wed 23/12/09 Fri 12/3/10 80 days Sat 13/3/10 Mon 31/5/10 han 266 days Fri 9/7/10 Thu 31/3/11				
43 Grassed cellular concrete paving  44 River Associated Works  45 Footbridge construction  46 FBT02-3 at CH 406 approximate  47 VBT02-1 at CH510 approximate	263 days Mon 12/7/10 Thu 31/3/11  921 days Fri 10/4/09 Mon 17/10/11  180 days Thu 15/4/10 Mon 11/10/10  60 days Thu 15/4/10 Sun 13/6/10  60 days Mon 14/6/10 Thu 12/8/10				
48	60 days				
52 At CH 485+0 to CH 555+0 Approximate 53 At CH 630+0 to CH 690+0 Approximate 54 Verge/footpath construction 55 Subase construction for the verges 56 Gassed cellular concrete/concrete paving	60 days Wed 28/4/10 Sat 26/6/10 60 days Wed 12/5/10 Sat 10/7/10 173 days Wed 16/3/11 Sun 4/9/11 160 days Wed 16/3/11 Mon 22/8/11 160 days Wed 16/3/11 Mon 22/8/11				
57 Type 2 railing construction 58 <b>Retaining wall construction</b> 59 At CHO Approximate 60 At CH501 Approximate	150 days Fri 8/4/11 Sun 4/9/11  495 days Fri 10/4/09 Tue 17/8/10  60 days Fri 10/4/09 Mon 8/6/09  90 days Fri 30/4/10 Wed 28/7/10  90 days Thu 20/5/10 Tue 17/8/10				
61 At CH800 Approximate  62 <b>U Channel construction</b> 63 600 UC at CH0 Approximate  64 450 UC at CH501 Approximate  65 300 UC at CH800 Approximate	200 days         Fri 1/4/11         Mon 17/10/11				
66 67 68 Section 2 - Ping Che (Portion C & E) 69 Commencement Date 70 Hand over of Portion C & E - River TKL07	1240 days Wed 30/4/08 Wed 21/9/11 1240 days Wed 30/4/08 Wed 21/9/11 0 days Wed 30/4/08 Wed 30/4/08				
71 Main River Construction (CH80 to CH150 approximate) 72 Temporary Flow Diversion 73 Open cut excavation 74 Rock & ganular filling for the base of gabion	965 days         Fri 1/8/08         Wed 23/3/11           14 days         Fri 1/8/08         Thu 14/8/08           25 days         Fri 15/8/08         Mon 8/9/08           25 days         Mon 25/8/08         Thu 18/9/08				
75 Blinding layer for the gabion construction 76 Backfilling and gabion construction by layers 77 Ganular Hilling for the river 78 Grassed cellular concrete paving 79 Main River Construction (CH270 to CH670 approximate)	25 days Thu 4/9/08 Sun 28/9/08 45 days Sun 14/9/08 Tue 28/10/08 30 days Thu 9/10/08 Fri 7/11/08 30 days Tue 22/2/11 Wed 23/3/11  659 days Wed 19/8/09 Wed 8/6/11				
80 Temporary Flow Diversion 81 Open cut excavation 82 Rock & ganular filling for the base of gabion 83 Blinding layer for the gabion construction 84 Backfilling and gabion construction by layers	25 days Wed 19/8/09 Sat 12/9/09 80 days Sun 13/9/09 Tue 1/12/09 80 days Wed 23/9/09 Fri 11/12/09 20 days Sat 12/12/09 Thu 31/12/09 180 days Tue 22/12/09 Sat 19/6/10				
85 Gabion block construction in the middle of the river 86 200 Rip Rap filling 87 Granular fill for the Maintenance access 88 Construction of Maintenance access	50 days Tue 11/5/10 Tue 29/6/10 60 days Thu 30/12/10 Sun 27/2/11 60 days Wed 15/12/10 Sat 12/2/11 166 days Sat 25/12/10 Wed 8/6/11				
90 Grassed cellular concrete paving 91 River Associated Works 92 Box culvert construction at (CH685 to CH735 approximate) 93 Temporary flow diversion	10 days Thu 28/8/08 Sat 6/9/08				
94 Open cut excavation 95 Granular filling with geotextile filter 96 Concrete for blindling layer 97 Base slab construction 98 Wall & Top Slab construction	90 days Sun 7/9/08 Fri 5/12/08 30 days Sun 16/11/08 Mon 15/12/08 10 days Tue 16/12/08 Thu 25/12/08 90 days Fri 26/12/08 Wed 25/3/09 90 days Mon 5/1/09 Sat 4/4/09				
99 Backfilling 100 Box culvert construction at (CH735 to CH838 approximate) 101 Temporary flow diversion 102 Open cut excavation	45 days Sun 1/3/09 Tue 14/4/09  245 days Sat 1/5/10 Fri 31/12/10  10 days Sat 1/5/10 Mon 10/5/10  120 days Tue 11/5/10 Tue 7/9/10				
103 Granular filling with geotextile filter  104 Concrete for blindling layer  105 Base slab construction  106 Wall & Top Slab construction  107 Backfilling	30 days Mon 19/7/10 Tue 17/8/10 21 days Wed 18/8/10 Tue 7/9/10 90 days Wed 8/9/10 Mon 6/12/10 122 days Wed 1/9/10 Fri 31/12/10 65 days Thu 28/10/10 Fri 31/12/10				
108         Footbridge construction           109         FBT07-3 at CH317 approximate           110         FBT07-4 at CH445 approximate           111         FBT07-5 at CH600 approximate           112         FBT07-6 at CH687 approximate	556 days         Mon 5/1/09         Wed 14/7/10           30 days         Mon 5/1/09         Tue 3/2/09           30 days         Wed 4/2/09         Thu 5/3/09           30 days         Fri 6/3/09         Sat 4/4/09           30 days         Sun 5/4/09         Mon 4/5/09				
113       FBT07-2 at CH250 approximate         114       FBT07-1 at CH35 approximate         115       Ramp construction         116       At CH435 Approximate         117       At CH517 Approximate	30 days Tue 5/5/09 Wed 3/6/09 90 days Fri 16/4/10 Wed 14/7/10  277 days Sat 3/10/09 Tue 6/7/10 60 days Thu 15/10/09 Sun 13/12/09 60 days Sat 3/10/09 Tue 1/12/09				
118 At CH600 Approximate  119 At CH35 Approximate  120 Verge/footpath construction  121 Subase construction for the verges  122 Gassed cellular concrete/concrete paving	60 days Wed 18/11/09 Sat 16/1/10 90 days Thu 8/4/10 Tue 6/7/10 165 days Tue 1/3/11 Fri 12/8/11 145 days Tue 1/3/11 Sat 23/7/11 135 days Mon 21/3/11 Tue 2/8/11				
123         Type 2 railing construction           124         Retaining wall construction           125         At CH35 to CH 105 Approximate           126         Type D L-shaped RW construction           127         Backfilling the RW	138 days Mon 28/3/11 Fri 12/8/11 290 days Thu 21/5/09 Sat 6/3/10 290 days Thu 21/5/09 Sat 6/3/10 200 days Thu 21/5/09 Sun 6/12/09 90 days Mon 7/12/09 Sat 6/3/10				
128     U Channel construction       129     375&525 UC at CH352 Approximate       130     Trench excavation       131     Concrete for the U channel	205 days         Tue 1/3/11         Wed 21/9/11           190 days         Wed 16/3/11         Wed 21/9/11           180 days         Wed 16/3/11         Sun 11/9/11           180 days         Sat 26/3/11         Wed 21/9/11				
132         525UC at CH552 Approximate           133         Trench excavation           134         Concrete for the U channel           135         525&600 UC at CH690 Approximate           136         Trench excavation	155 days         Tue 1/3/11         Tue 2/8/11           145 days         Tue 1/3/11         Sat 23/7/11           145 days         Fri 11/3/11         Tue 2/8/11           185 days         Tue 1/3/11         Thu 1/9/11           175 days         Tue 1/3/11         Mon 22/8/11				
137 Concrete for the U channel 138 Inlet Pipes 139 Inlet pipe at CH100 Approximate 140 Inlet pipe at CH400 Approximate 141 Inlet pipe at CH408 Approximate	175 days Fri 11/3/11 Thu 1/9/11 175 days Sun 20/6/10 Sat 11/12/10 25 days Sun 20/6/10 Wed 14/7/10 25 days Thu 15/7/10 Sun 8/8/10 25 days Mon 9/8/10 Thu 2/9/10				
142 Inlet pipe at CH450 Approximate 143 Inlet pipe at CH570 Approximate 144 Inlet pipe at CH630 Approximate 145 Inlet pipe at CH750 Approximate 146	25 days Fri 3/9/10 Mon 27/9/10 25 days Tue 28/9/10 Fri 22/10/10 25 days Sat 23/10/10 Tue 16/11/10 25 days Wed 17/11/10 Sat 11/12/10				
147         148       Section 3 - Man Uk Ping (Portion D & E)         149       Commencement Date         150       Handover of Portion D         151       Prelim Works	1456 days Fri 21/12/07 Thu 15/12/11 0 days Wed 30/4/08 Wed 30/4/08 0 days Wed 30/4/08 Wed 30/4/08 300 days Wed 30/4/08 Mon 23/2/09				
152Baseline Monitoring153Mobilisation154Site clearance155Initial site survey	90 days Wed 30/4/08 Mon 28/7/08 30 days Tue 29/7/08 Wed 27/8/08 Firi 26/9/08 30 days Sat 27/9/08 Sun 26/10/08				
156 Tree survey 157 Construct Access Road 158 Remove and Transplant the trees 159 Underground Utility Survey 160 River MUP01 (Portion D)	20 days				
161 Temporary Flow Diversion 162 Open cut excavation 163 Rock & ganular filling for the base of gabion 164 Blinding layer for the gabion construction	20 days Tue 24/2/09 Sun 15/3/09 120 days Mon 16/3/09 Mon 13/7/09 120 days Thu 26/3/09 Thu 23/7/09 100 days Sat 25/4/09 Sun 2/8/09				
165 Backfilling and gabion constrution by layers  166 Verge/footpath construction  167 Subase construction for the verges  168 Gassed cellular concrete/concrete paving  169 Type 2 railing construction	180 days       Tue 5/5/09       Sat 31/10/09         400 days       Sun 1/11/09       Sun 5/12/10         100 days       Sun 1/11/09       Mon 8/2/10         150 days       Tue 9/2/10       Thu 8/7/10         150 days       Fri 9/7/10       Sun 5/12/10				
170         300UC construction           171         River MUP02 (Portion D)           172         Stabilise existing river bank           173         Temporary flow diversion           174         Sheet pile irrstallation	120 days				
175       Excavate & erect shoring support         176       Rock & ganular filling for the base of gabion         177       Blinding layer for the gabion construction         178       Backfilling and gabion construction by layers	60 days Mon 21/12/09 Thu 18/2/10 90 days Fri 19/2/10 Wed 19/5/10 30 days Thu 20/5/10 Fri 18/6/10 120 days Sat 19/6/10 Sat 16/10/10				
179 Removal of the sheet piles  180 MUP02 Bypass  181 Temporary Flow Diversion  182 Open cut excavation  183 Rock & ganular filling for the base of gabion	10 days Sun 17/10/10 Tue 26/10/10  381 days Mon 4/1/10 Wed 19/1/11  10 days Mon 4/1/10 Wed 13/1/10  90 days Thu 14/1/10 Tue 13/4/10  60 days Wed 14/4/10 Sat 12/6/10				
184 Blinding layer for the gabion construction 185 Backfilling and gabion constrution by layers 186 Filling of Rip Rap 187 Verge/footpath construction	21 days Sun 13/6/10 Sat 3/7/10 100 days Sun 4/7/10 Mon 11/10/10 75 days Tue 12/10/10 Sat 25/12/10 200 days Sun 4/7/10 Wed 19/1/11				
188 Subase construction for the verges  189 Gassed cellular concrete/concrete paving  190 Type 2 railing construction  191 Main River of MUPO2  192 Temporary Flow Diversion	45 days Sun 4/7/10 Tue 17/8/10 90 days Wed 18/8/10 Mon 15/11/10 65 days Tue 16/11/10 Wed 19/1/11 379 days Sun 1/11/09 Sun 14/11/10 14 days Sun 1/11/09 Sat 14/11/09				
193 Open cut excavation 194 Rock & ganular filling for the base of gabion 195 Blinding layer for the gabion construction 196 Backfilling and gabion construction by layers 197 Gabion block construction in the middle of the river	60 days Sun 15/11/09 Wed 13/1/10 60 days Wed 25/11/09 Sat 23/1/10 60 days Sat 5/12/09 Tue 2/2/10 90 days Tue 15/12/09 Sun 14/3/10 90 days Fri 25/12/09 Wed 24/3/10				
198 200 Rip Rap filling 199 FBM02-1 footbridge at CH 8+455 Approximate 200 RW type D at CH8+525 Approximate 201 Verge/footpath construction	30 days Thu 25/3/10 Fri 23/4/10 45 days Sat 24/4/10 Mon 7/6/10 30 days Tue 8/6/10 Wed 7/7/10 200 days Mon 15/3/10 Thu 30/9/10				
202 Subase construction for the verges 203 Gassed cellular concrete/concrete paving 204 Type 2 railing construction 205 300 &375 UC at CH8+400 Approximate 206 River MUP03A (Portion D)	100 days Mon 15/3/10 Tue 22/6/10 100 days Thu 25/3/10 Fri 2/7/10 90 days Sat 3/7/10 Thu 30/9/10 45 days Fri 1/10/10 Sun 14/11/10				
207 600UC construction 208 Manholes construction 209 600mm dia. pipe construction 210 900mm dia. pipe construction 211 River MUP03B (Portion D)	461 days         Thu 25/3/10         Tue 28/6/11           120 days         Thu 25/3/10         Thu 22/7/10           90 days         Fri 23/7/10         Wed 20/10/10           90 days         Fri 31/12/10         Wed 30/3/11           90 days         Thu 31/3/11         Tue 28/6/11           581 days         Thu 25/3/10         Wed 26/10/11				
212 Temporary Flow Diversion 213 Open cut excavation 214 Rock & ganular filling for the base of gabion 215 Blinding layer for the gabion construction	S81 days         Thu 25/3/10         Wed 26/10/11           20 days         Thu 25/3/10         Tue 13/4/10           30 days         Wed 14/4/10         Thu 13/5/10           30 days         Mon 19/4/10         Tue 18/5/10           30 days         Sat 24/4/10         Sun 23/5/10           57 days         Thu 29/4/10         Thu 24/6/10				
216 Backfilling and gabion constrution by layers 217 Gabion block construction in the middle of the river 218 200 Rip Rap filling 219 FBM03-1 footbridge at CH E+60 Approximate 220 135m high box culvert crossing construction	121 days Wed 31/3/10 Thu 29/7/10 45 days Sun 20/6/10 Tue 3/8/10 70 days Fri 25/6/10 Thu 29/10 120 days Wed 29/6/11 Wed 26/10/11				
221 Verge/footpath construction 222 Subase construction for the verges 223 Gassed cellular concrete/concrete paving 224 Type 2 railing construction 225 River MUPO4A (Portion D)	209 days         Fri 25/6/10         Wed 19/1/11           49 days         Fri 25/6/10         Thu 12/8/10           90 days         Fri 13/8/10         Wed 10/11/10           70 days         Thu 11/11/10         Wed 19/1/11				
226 Temporary Flow Diversion  Project: Master Programme (Rev.12) Task Split	433 days       Thu 25/3/10       Tue 31/5/11         15 days       Thu 25/3/10       Thu 8/4/10     Project Summary  Project Summary  External Milestone ◆  Summary  Project Summary  External Tasks  External Milestone ◆  Output  Description:  The 433 days  The 431/5/11  The 31/5/11  The 31/5/11	Deadline $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$			
Remark: The critical path as highlighted in red colour			Page 1		

C/2007/8. DRAINAGE IMPROVEMENT WORKS at T	Duration Start Finish 2012				[ex. 100	2002					2013					[77.152.2010				2014		
Open cut excavation	60 days Fri 9/4/10 Mon 7/6/10	J F	М	A M	J J	2012 J A	A S	0	N	D	Half 1, 2013 J	F	М	A 1	M J	Half 2, 2013 J	A	S O	N	Half 1, 2014 D J	F M	A
Rock & ganular filling for the base of gabion	60 days Tue 8/6/10 Fri 6/8/10 30 days Fri 18/6/10 Sat 17/7/10																					
nding layer for the gabion construction ckfilling and gabion constrution by layers	126 days Sun 18/7/10 Sat 20/11/10																					
n block constuction in the middle of the river ip Rap filling	90 days Wed 22/9/10 Mon 20/12/10 30 days Tue 21/12/10 Wed 19/1/11				1											1 1 1						
4-2 vehicular bridge at CHD+11 Approximate 4-1 vehicular bridge at CH D+48 Approximate	90 days Sun 18/7/10 Fri 15/10/10 90 days Sat 16/10/10 Thu 13/1/11																					
act 4X1650mm dia. pipes at CH D+185 Approximate	242 days Sat 2/10/10 Tue 31/5/11															1 1 1						
potpath construction ase construction for the verges	127 days         Wed 15/9/10         Wed 19/1/11           90 days         Wed 15/9/10         Mon 13/12/10																					
ed cellular concrete/concrete paving 2 railing construction	71 days Wed 10/11/10 Wed 19/1/11 108 days Mon 4/10/10 Wed 19/1/11																					
4B (Portion D)	169 days Wed 4/8/10 Wed 19/1/11 10 days Wed 4/8/10 Fri 13/8/10																					
ry Flow Diversion excavation	10 days Wed 4/8/10 Fri 13/8/10 30 days Sat 14/8/10 Sun 12/9/10				1																	
anular filling for the base of gabion layer for the gabion construction	30 days Thu 19/8/10 Fri 17/9/10 30 days Tue 24/8/10 Wed 22/9/10															1 1 1						
ng and gabion constrution by layers	77 days Sun 29/8/10 Sat 13/11/10															1						
olock constuction in the middle of the river Rap filling	20 days Sat 30/10/10 Thu 18/11/10 15 days Fri 19/11/10 Fri 3/12/10																					
t 1350mm dia. pipes otpath construction	47 days Sat 4/12/10 Wed 19/1/11 67 days Sun 14/11/10 Wed 19/1/11																					
ase construction for the verges	20 days Sun 14/11/10 Fri 3/12/10																					
sed cellular concrete/concrete paving e 2 railing construction	27 days Sat 4/12/10 Thu 30/12/10 20 days Fri 31/12/10 Wed 19/1/11															 						
5 (Portion D) sociated Works	1456 days Fri 21/12/07 Thu 15/12/11 1456 days Fri 21/12/07 Thu 15/12/11																					
bridge/Vehicular Bridge Construction	283 days Mon 12/4/10 Wed 19/1/11															1 1 1						
VBM05-4 at CH C+398 approximate FBM05-2 at CH C+561 approximate	60 days Mon 12/4/10 Thu 10/6/10 60 days Fri 11/6/10 Mon 9/8/10															1						
FBM05-3 at CH C+661 approximate FBM05-4 at CH C+894 approximate	58 days Tue 10/8/10 Wed 6/10/10 55 days Thu 7/10/10 Tue 30/11/10																					
FBM05-5 at CH C+942 approximate	50 days Wed 1/12/10 Wed 19/1/11																					
np construction At CH C+398 Approximate	350 days Fri 31/12/10 Thu 15/12/11 105 days Fri 31/12/10 Thu 14/4/11															 						
Granular filling with geotextile filter Concrete for the blinding layer	45 days Fri 31/12/10 Sun 13/2/11 20 days Fri 4/2/11 Wed 23/2/11															 						
Base slab construcion for the ramp	60 days Mon 14/2/11 Thu 14/4/11															1 1 1						
Wall construction for the ramp  At CH C+500 Approximate	45 days Thu 24/2/11 Sat 9/4/11 105 days Sun 10/4/11 Sat 23/7/11																					
Granular filling with geotextile filter  Concrete for the blinding layer	45 days Sun 10/4/11 Tue 24/5/11 20 days Sun 15/5/11 Fri 3/6/11																					
Base slab construcion for the ramp	60 days Wed 25/5/11 Sat 23/7/11																					
Wall construction for the ramp  At CH C + 561 Approximate	45 days Sat 4/6/11 Mon 18/7/11  105 days Mon 14/2/11 Sun 29/5/11				1											 						
Granular filling with geotextile filter  Concrete for the blinding layer	45 days Mon 14/2/11 Wed 30/3/11 20 days Mon 21/3/11 Sat 9/4/11															1 1 1						
Base slab construcion for the ramp	60 days Thu 31/3/11 Sun 29/5/11																					
Wall construction for the ramp  At CH C + 894 Approximate	45 days Sun 10/4/11 Tue 24/5/11 105 days Wed 25/5/11 Tue 6/9/11															1						
Granular filling with geotextile filter Concrete for the blinding layer	45 days Wed 25/5/11 Fri 8/7/11 20 days Wed 29/6/11 Mon 18/7/11																					
Base slab construction for the ramp Wall construction for the ramp	60 days Sat 9/7/11 Tue 6/9/11 45 days Tue 19/7/11 Thu 1/9/11																					
At CH C + 942 Approximate	105 days Fri 2/9/11 Thu 15/12/11																					
Granular filling with geotextile filter Concrete for the blinding layer	45 days Fri 2/9/11 Sun 16/10/11 20 days Fri 7/10/11 Wed 26/10/11															 						
Base slab construction for the ramp  Wall construction for the ramp	60 days Mon 17/10/11 Thu 15/12/11 45 days Thu 27/10/11 Sat 10/12/11															 						
ge/footpath construction	80 days Fri 21/12/07 Sun 9/3/08																					
Subase construction for the verges Gassed cellular concrete/concrete paving	50 days Fri 21/12/07 Fri 8/2/08 70 days Fri 21/12/07 Thu 28/2/08															1 1 1						
Type 2 railing construction aining wall construction	70 days Mon 31/12/07 Sun 9/3/08 45 days Fri 21/12/07 Sun 3/2/08															1						
hannel construction	45 days Mon 4/2/08 Wed 19/3/08 70 days Fri 21/12/07 Thu 28/2/08																					
Pipes ion E	445 days Sun 1/11/09 Wed 19/1/11																					
5 (Portion E) ry flow diversion	445 days         Sun 1/11/09         Wed 19/1/11           10 days         Sun 1/11/09         Tue 10/11/09																					
excavation ar Channel	70 days Wed 11/11/09 Tue 19/1/10 115 days Wed 20/1/10 Fri 14/5/10																					
x & ganular filling for the base of gabion	60 days Wed 20/1/10 Sat 20/3/10																					
ding layer for the gabion construction slab construction	30 days Mon 1/3/10 Tue 30/3/10 60 days Thu 11/3/10 Sun 9/5/10															 						
construction ular filling inside the channel	45 days Sun 21/3/10 Tue 4/5/10 10 days Wed 5/5/10 Fri 14/5/10															 						
Construction	170 days Sat 15/5/10 Sun 31/10/10																					
& ganular filling for the base of gabion ing layer for the gabion construction	30 days Sat 15/5/10 Sun 13/6/10 30 days Tue 25/5/10 Wed 23/6/10																					
filling and gabion constrution by layers on block construction in the middle of the river	120 days Fri 4/6/10 Fri 1/10/10 60 days Fri 13/8/10 Mon 11/10/10																					
Rip Rap filling	20 days Tue 12/10/10 Sun 31/10/10															 						
otpath construction se construction for the verges	85 days Wed 27/10/10 Wed 19/1/11 45 days Mon 1/11/10 Wed 15/12/10																					
ed cellular concrete/concrete paving e 2 railing construction	60 days Wed 27/10/10 Sat 25/12/10 55 days Fri 26/11/10 Wed 19/1/11															1						
o a mining contribution	SS Gays 111 20/11/10 WCI 19/1/11																					
	1095 days Fri 21/12/07 Sun 19/12/10																					
nd Establishment Works System at Lin Ma Hang	1095 days Fri 21/12/07 Sun 19/12/10 90 days Wed 15/10/08 Mon 12/1/09																					
of paving	150 days Tue 13/1/09 Thu 11/6/09																					
ks ks	120 days Fri 12/6/09 Fri 9/10/09 60 days Sat 10/10/09 Tue 8/12/09																					
Portion G ng at Portion G	0 days         Wed 15/10/08         Wed 15/10/08           120 days         Sun 24/1/10         Sun 23/5/10																					
struction at Portion G	180 days Mon 24/5/10 Fri 19/11/10																			; ; !		

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Project: Master Programme (Rev.12) Task Split Project Summary Project Summary External Milestone Deadline The critical path as highlighted in red colour

DSD Contract DC/2007/08 – Drainage Improvement Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang 40th Monthly EM&A Report for the Designated Project Works – June 2012



**Environmental Mitigation Implementation Schedule** 

## APPENDIX A IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

Table A1 Implementation Schedule of Air Quality Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*	tion	Relevant
110	<u> </u>		Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Legislation & Guidelines
AIF Q	uanty - Co	nstruction Phase			-		-l		<u> </u>
		Construction Dust				*	T		T
3.6.1	2.9.2	In order to comply with Air Pollution Control Ordinance (APCO), the Contractor should undertake at all times measures to prevent dust nuisance as a results of his activities. The Contractors are required to follow all the requirements for dust control stipulated in the Air Pollution Control (Construction Dust) Regulation. Dust suppression measures should be installed as part of good construction practice, and they should be incorporated in the Contract Specification and implemented to minimize dust nuisance to within acceptable levels arising from the works. The followings are examples of the dust suppression measures.  (i) The area in which excavation takes place shall be sprayed with water immediately prior to, during and immediately after the excavation to minimise dust generation.  (ii) The Contractor shall frequently clean and water the site to minimize fugitive dust emissions.	To prevent dust nuisance on ASRs during construction	All works site / during construction	Construction Contractor		<b>1</b>		Air Pollution Control Ordinanc Air Pollution Control (Construction Dust) Regulation

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EIA	EM&A		Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	olementa Stages*	tion	Relevant
Ref	Ref		Recommended Wittgatton Weasawes	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
		(iii)	Effective water sprays shall be used during the delivery and handling of aggregate, and other similar materials, when dust is likely to be created and to dampen all stored materials during dry and windy weather.							
		(iv)	Watering of exposed surfaces shall be conducted at least 2 times per day especially during dry and windy weather.							
		(v)	Areas within the site where there is a regular movement of vehicles must be regularly watered as often as necessary for effective suppression of dust or as often as directed by the Engineer.							
		(vi)	Where dusty material are being discharged to vehicle 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 to a suitable fabric filter system.							·
		(vii)	The Contractor shall restrict all motorised vehicles within the site, excluding those on public roads, to a maximum speed of 15 km per hour and confine haulage and delivery vehicles to designated roadways inside the site.		·					
s		(viii	) Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning							

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location /	Implementation		plement: Stages		Relevant Legislation &
ļ			Concerns to addressed	Timing	Agent	D	.C	0	Guidelines
		facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facility. Such wheel washing facilities shall be usable prior to any earthworks excavating activity on the site. The Contractor shall also provide a hard-surfaced road between any washing facility and the public road.							
		(ix) All vehicle exhausts should be directly vertically upwards or directed away from the ground.							
		(x) Any materials dropped on paved roads will need to be cleaned up immediately to prevent dust nuisance.							
		Odow							
3.6.2	2.9.3	In the event that excavated materials are found to be odourous, the following measures should be implemented by the Contractor.	To prevent odour nuisance on ASRs during construction	All works site / during construction	Construction Contractor		4		Air Pollution Control Ordinance Environmental Impact Assessment Ordinance
		(i) Place odorous excavated material as far away (say, at least 20m) from air sensitive receivers as possible.		, .					Orumanec
		(ii) Temporary stockpiles of odorous excavated material should be properly covered with tarpaulin and should be removed off-site as soon as practically possible within 24 hours to						,	

DSD Contract DC/2007/08 – Drainage Improvement Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang The Designated Works under the Project

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EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Imp	plementa Stages*		Relevant Legislation &
Ref	Ref	Accommodical Caracteristics	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Guidelines
		avoid any odour nuisance arising.							
Air Qı	uality - Op	erational Phase				···	Т	I .	T
		N/A							

Table A2 Implementation Schedule of Noise Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plement: Stages*		Relevant Legislation &
	Construction	The state of the s	Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Guidelines
110136 **	Constructio						•		
4.6.2 – 4.6.5	Table 3.4	effective ways of alleviating construction noise impact. The Contractor should use quiet plant with sound power level lower than that stipulated in the TM-GW as the Level 1 mitigation for construction noise. The quiet plant used in the construction noise calculation is shown in Appendix B. The Contractor can propose other suitable alternative equipment with similar or lower sound power level.	noise during construction	All works site / during construction	Construction Contractor		.1	÷	Environmental Impact Assessmen Ordinance ETWB TCW No. 19/2005
		The use of mini or lower power rating equipment (e.g. mini excavator) should also be considered where practical. This technique would be feasible and practical at some locations given the limited space available for using large size construction equipment and the small scale works involved (e.g. localised bank improvement at LMH01, U-channel and drainage pipes at MUP03 & 04B).  The contractor should take note of ETWB TCW No. 19/2005 on the use of QPME.							

EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*	tion	Relevant Legislation &
Ref	Ref		Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Guidelines
		Level 2 Mitigation - Use of Temporary Noise Barriers							i
4.6.7 - 4.6.8	Table 3.4	Since most of the NSRs within the Project area are typically low-rise village houses of not more than 3 storeys tall, it would be effective to have noise screening structures or temporary noise barriers purposely-built along the site boundary to provide additional protection to NSRs close to the construction site boundary. This could be in the form of purposely-built site hoarding constructed from appropriate materials with a minimum superficial density of 7 kg/m². Noise barrier should be provided for noisy construction activities that would be undertaken close (about 25m or less) to NSRs. With the exception of NSRs MUP04A-2 and MUP05-6, the noise barrier should have a vertical height of at least 2.5 m or (depending on the height of the NSRs to be protected) a height ensuring that the operating equipment can be shielded from the view of the NSRs. For NSR MUP04A-2, the temporary noise barrier should have a minimum height of 3.5m with a small cantilevered upper portion. For MUP05-6, the temporary noise barrier should have a minimum height of 3m with a small cantilevered upper portion. The temporary noise barrier should have no gaps or opening at joints. The Contractor should regularly inspect and maintain the noise		All works site located at 25m or less from NSRs as shown in Figures 4.4 – 4.6 / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location /	Implementation	Im	plement: Stages*		Relevant
			Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
		barrier to ensure its effectiveness.							
		For the construction works which have the potential to exceed the noise standards on nearby NSR and whose line of sight cannot be effectively blocked by the temporary noise barrier, movable (mobile) barriers should be provided. Movable barriers of at least 2.5 m height with a small cantilevered upper portion and skid footing can be located within a few meters of stationary plant (e.g. generator, compressor) and within about 5 m or more of a mobile equipment (e.g. excavator, mobile crane), such that the line of sight to the NSR is blocked by the barriers.							
		Good Site Practices						. <del></del> .	
4.6.11	Table 3.4	In general, potential construction noise impact can be minimised or avoided by imposing a combination of the following good site practices as mitigation measures:	To protect NSRs from noise during construction	All works site / during construction	Construction Contractor	. ;	4		Environmental Impact Assessment Ordinance
		(a) Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction period.	•	·			٠	1	
		(b) Construction plant should be sited away from NSRs.							

EIA	EM&A		Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	olementa Stages*		Relevant
Ref	Ref		Recommended Partigation Pacasures	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
I		(c)	Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.							
		(d)	Equipment known to emit sound strongly in one direction should be orientated such that the noise is directed away from nearby NSRs.							
		(e)	Material stockpiles and other structures (such as site offices) should be effectively utilised to shield on-site construction activities.							
		(f)	Stationary equipment should be located within the channel when weather conditions permit (e.g. dry season).							
		(g)	The Contractor shall devise, arrange methods of working and carrying out the works in such manner as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these measures are implemented properly.							
		(h)	In the event that new schools are built near the works area, the Contractor should minimize construction noise exposure to the schools (especially during examination periods). The Contractor should liaise with the school and the Examination Authority to							

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
	Itel		Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
		ascertain the exact dates and times of all examination periods during the course of the contract and to avoid noisy activities during these periods.							
4.6.13 - 4.6.14	Table 3.4	To adopt good public relation with the local communities and maintain effective communication channel with the public such as setting up a 24-hour hotline system for enquiry and complaint.	To promote good public relation and maintain effective communication during construction	All works site / during construction	Project Office (Engineer) & Construction Contractor		1		Environmental Impact Assessment Ordinance
4.6.17 & 4.6.18	Table 3.4	Further mitigation by restricting concurrent usage of several equipment at the same time.	To further mitigate construction noise at NSRs MUP04A-2 & MUP04B-2	For works within 20m of NSRs MUP04A-2 & MUP04B-2 / during construction	Construction Contractor		4		Environmental Impact Assessment Ordinance
4.6.19	Table 3.4	The use of purpose built temporary noise barriers would not be practicable for works at LMH01 as the works are small scale, short duration and within village environs with very limited working space. It may also hamper access causing inconvenience to the villagers. The process of installing and dismantling the noise barriers itself would create additional noise nuisance. The use of light-weight mobile barrier is considered more preferable.	To protect NSRs at LMH01 from noise during construction	All works site located at 25m or less from NSRs as shown in Figure 4.6 / during construction	Construction Contractor	,	٠.		Environmental Impact Assessment Ordinance

EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
Ref	Ref	Accommodate Annighton Production	Measures and Main Concerns to addressed	Timing	Agent	D	C	О	Legislation & Guidelines
4.6.20 - 4.6.21	Table 3.4	Employ quiet working method (e.g. mini-concrete crusher, saw & lift) during demolition works of crossings, restrict concurrent usage of several equipment at the same time such as parking dump truck, concrete lorry mixer outside main village area. The use of dump truck or concrete lorry mixer will be limited to only about 1 trip every few	To further mitigate construction noise at NSRs for LMH01	Construction works at LMH01 / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance
4.8.4	Table 3.4	It is recommended that works programme should be scheduled such that only one crossing is constructed at any one time. Bank improvement work can be conducted concurrently.	To mitigate cumulative noise impact at LMH01	Crossing construction at LMH01 / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance
4.9.1	3.8.1	The Contractor should design, construct, operate and maintain the mitigation measures throughout the construction stage and as required by the Engineer. Before commencement of the works, the Contractor should submit to the Engineer for approval (as part of their method statement) details of the mitigation measures to be employed under the works. The Contractor's proposed mitigation measures should also be certified by the ET Leader and verified by the IEC to ensure the intended noise reduction effectiveness can be achieved.		All works site / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation		plementa Stages*		Relevant
			Measures and Main Concerns to addressed	Timing	Agent	D	C	О	Legislation & Guidelines
loise - O	perational	Phase							
		N/A							

\* D=Design, C=Construction, O=Operation
N/A Not applicable

D = Design, C = Construction, O = Operation

Table A3 Implementation Schedule of Water Quality Mitigation Measures

EIA	EM&A		Objectives of the Recommended	Location /	Implementation	Imp	lementa Stages*		Relevant Legislation &
Ref	Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	Č	0	Guidelines
Water	Quality - (	Construction Phase							
5.6.2	4.9:2	General  The contractor shall observe and comply with the Water Pollution Control Ordinance (WPCO) and its subsidiary regulations. The contractor shall carry out the works in such a manner as to minimise adverse impacts on the water quality during execution of the works. In particular the contractor shall arrange his method of working to minimise the effects on the water quality within and outside the site and on the transport routes.	water quality impact during construction	All works site / during construction	Construction Contractor		4		Water Pollution Control Ordinance
5.6.3	4.9.3	The contractor shall follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures below and as specified in ProPECC PN 1/94 - Construction Site Drainage. In particular, the contractor shall submit and implement an Erosion Control Plan (as part of the Environmental Management Plan) which shall incorporate details of the mitigation measures recommended below to reduce water quality impacts arising from construction works. The design of the mitigation measures and the Plan shall be submitted by the contractor to the Engineer for approval.	water quality impact during construction	All works site / during construction	Construction Contractor		1		ProPECC PN 1/94 ETWB TCW No. 19/2005

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
			Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Legislation & Guidelines
		Site Surface Runoff					<del> </del>	<u> </u>	
5.6.4	4.9.4	Proper construction site drainage management measures shall be implemented to control site runoff and drainage, and thereby prevent high sediment loadings from reaching downstream sections of the river and adjacent agricultural land.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor		√		ProPECC PN 1/94
5.6.5	4.9.5	Turbid water from construction sites must be treated to minimise the solids content before being discharged. Advice on the handling and disposal of site discharge is given in the ProPECC Note PN 1/94 - Construction Site Drainage.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor		1		ProPECC PN 1/94
5.6.6	4.9.6	In general, surface run-off from construction sites should be discharged into waterbodies via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided to intercept storm run-off from outside the site so that it will not wash across the site (or into the proposed channel works area). Catchpits and perimeter channels should be constructed in advance of earthworks.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor	,	1		ProPECC PN 1/94

EIA	EM&A		Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
Ref	Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	Ć	0	Legislation & Guidelines
5.6.7	4.9.7	Silt removal facilities, channels should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure proper functioning of these facilities at all times.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor		1		ProPECC PN 1/94
5.6.8	4.9.8	Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into the nearby waterbodies. Open stockpiles susceptible to erosion should be covered with tarpaulin or similar fabric and provided with containment such as bunds, sand bag barriers or equivalent measures, especially during the wet season (April — September) or when heavy rainstorm is predicted. Runoff to watercourses should be reduced by minimising flat exposed areas of permeable soil, and by forming pits or diversion channels into which runoff can flow to suitable treatment facilities before discharge.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor		1		ProPECC PN 1/94
ì		De-watering / Excavation of Streams and Removal of Sediment							
5.6.9	4.9.9	The use of containment structures such as earth bund or sand bag barriers wrapped with geotextile fabric or similar material or diversion channels is recommended to facilitate a dry or at least confined excavation within watercourses.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor		1		Water Pollution Control Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation				Relevant Legislation &
			Measures and Main Concerns to addressed	Timing	Agent	D	С	О	Guidelines
5.6.10	4.9.10	Excavation works at the existing stream section of MUP05 should be programmed to be carried out during periods of low flow (dry season from 1st October to 31st March) to minimise impacts on downstream water quality and sensitive receivers. For the ecologically sensitive stream of LMH01, the restriction period should be further extended for an additional month (i.e. excavation works allowed from 1st November to 31st March) to protect the aquatic fauna from silty runoff due to possible heavy rain during the transitional period of the wet / dry seasons.	To minimize adverse water quality impact from excavation works during wet season	MUP05 & LMH01 / during construction	Construction Contractor		1		Water Pollution Control Ordinance
5.6.11	4.9.11	In addition, the excavation works should be carried out in sections to reduce the area of exposed surfaces as described below. For MUP05, the first 300m upstream section will have no restriction. For the remaining sections of MUP05 (within existing stream course), the length would be restricted to 300m at any one time. For MUP04A, a 100m restriction should be imposed for the entire stream works area to cater for potential cumulative impact on MUP05.	Restrict length of excavation work to minimise impacts on downstream water quality and sensitive receivers	MUP05 & MUP04A / during construction	Construction Contractor		. 1		Water Pollution Control Ordinance
5.6.12	4.9.12	As for LMH01, given its relatively small scale works but sensitive nature of the stream, it is recommended that only either one portion of bank	To minimize adverse water quality impact on LMH01 during	LMH01 / during construction	Construction Contractor		√		Water Pollution Control Ordinance

EIA	EM&A		Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
Ref	Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
		improvement works or one vehicular crossing reconstruction should be carried out at any one time.	construction						
5.6.14	4.9.14	After dewatering of the streams, the sediments should be allowed to dry before excavation (yet still maintain a moist state to avoid dust nuisance). This will facilitate excavation of the sediments and also minimise the risk of drained water flowing back into watercourses as the sediment is handled. Where time or weather constraints require handling of wet sediment, care should be taken in the removal of sediment and the storage area should be bunded to prevent silty runoff entering watercourses. Given its small quantity, all excavated sediment should be reused on-site as backfilling material.	To minimize adverse water quality impact during construction (in particular when excavating and handling sediments)	All works site where sediment removal is required / during construction	Construction Contractor		1		Water Pollution Control Ordinance
5.6.15	4.9.15	Excavated sediment will likely be temporarily stored on-site for reuse as backfilling material. This should be stored in a bunded area and covered during wet season or when rainstorm is forecasted to avoid inadvertent release of silts and suspended solids to nearby water bodies.	water quality impact during construction (in particular when	All works site where sediment removal is required / during construction	Construction Contractor		1		Water Pollution Control Ordinance
5.6.16	4.9.16	Regular monitoring of suspended solids and turbidity should be conducted during excavation works. Any exceedance of water quality in the	water quality impact	All works site / during construction	Construction Contractor		√		Water Pollution Control Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plements Stages*		Relevant
	Kei	<i>*</i>	Measures and Main Concerns to addressed	Timing	Agent	D	Č	0	Legislation & Guidelines
	-	nearby water bodies caused by inadvertent release of site runoff should be rectified in accordance with EM&A programme for this Project.							
		Concreting Work				<del>_</del> ·			
5.6.17	4.9.17	Runoff should be carefully channelled to prevent concrete-contaminated water from entering watercourses. Adjustment of pH can be achieved by adding a suitable neutralising reagent to wastewater prior to discharge. Re-use of the supernatant from the sediment pits for washing out of concrete lorries should be practised.	To minimize adverse water quality impact during construction (in particular concreting works)	All works site / during construction	Construction Contractor		1		Water Pollution Control Ordinance
5.6.18	4.9.18	Any exceedance of acceptable range of pH levels in the nearby water bodies caused by inadvertent release of site runoff containing concrete should be monitored and rectified under the EM&A programme for this Project.	To minimize adverse water quality impact during construction (in particular concreting works)	All works site / during construction	Construction Contractor		. 1		Water Pollution Control Ordinance
5.6.19	4.9.19	To protect the sensitive stream of Lin Ma Hang, no concrete should be used during bank improvement works at LMH01.	To minimize adverse water quality impact on LMH01 during construction	LMH01 bank improvement works / during construction	Construction Contractor		. √		Environmental Impact Assessment Ordinance
		Site Workshop or Depot					-		•
5.6.20	4.9.20	Any contractor generating waste oil or other	To minimize adverse	All works site /	Construction		1		Water Pollution

EIA	EM&A		Objectives of the Recommended	Location /	Implementation	Im	olementa Stages*	tion	Relevant
Ref	Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
ì		chemicals as a result of his activities should register as a chemical waste producer and provide a safe storage area for chemicals on site. The storage site should be located away from existing water courses.	water quality impact during construction	during construction	Contractor		·		Control Ordinance
5.6.21	4.9.21	All compounds in works areas should be located on areas of hard standing with provision of drainage channels and settlement ponds where necessary to allow interception and controlled release of settled/treated water; and provision of bunding for all potentially hazardous materials on site including fuels. Hard standing compounds should drain via an oil interceptor. To prevent spillage of fuels or other chemicals to water courses, all fuel tanks and storage areas should be sited on sealed areas, within a bund of a capacity equal to 110% of the storage capacity of the largest tank. Disposal of the waste oil should be done by a licensed collector. Oil interceptors should be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass should be provided to avoid overload of the interceptor's capacity. Good housekeeping practices should be implemented to minimise careless spillage and to keep the storage and the work space in a tidy and clean condition. Appropriate training including safety codes and relevant manuals should be given to the personnel who regularly handle the chemicals on site.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor				Water Pollution Control Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
Rei	Kei		Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Legislation & Guidelines
				•					-
5.6.22	4.9.22	The contractor should prepare an emergency contingency plan (spill action plan) for the Project to contain and remove all accidental spillage of chemicals and hazardous materials on-site including fuels at short notice and to prevent or minimize the quantities of contaminants entering the stream water and affecting the habitats. The contractor should submit the emergency contingency plan to the ET for review & comment and the engineer for approval.	To prevent or minimize the quantities of contaminants entering the stream water and affecting the habitats in case of accidental spillage of chemicals and hazardous materials	All works site / during construction	Construction Contractor		√		Water Pollution Control Ordinance
5.6.24	4.9.24	Presence of Additional Population (Workers)  Sewage arising from the additional population of workers on site should be collected in a suitable storage facility, such as portable chemical toilets. An adequate number of portable toilets should be provided for the construction workforce. The portable toilets should be maintained in a state that will not deter the workers from using them. The collected wastewater from sewage facilities and also from eating areas or washing facilities must be disposed of properly, in accordance with the WPCO requirements. Wastewater collected should be discharged into foul sewers and collected by licensed collectors.	To minimize adverse water quality impact during construction	All works site / during construction	Construction Contractor		1		ProPECC PN 1/94  Water Pollution Control Ordinance

Table A4 Implementation Schedule of Waste Management Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location /	Implementation	Im	plement: Stages*		Relevant Legislation &
	<u> </u>		Concerns to addressed	Timing	Agent	D	С	0	Guidelines
Waste -	- Construc	tion Phase						<u>.</u>	
		General					T		
6.5.2 - 6.5.3	5.1.2 - 5.1.3	Upon appointment, the main contractor of each construction contract should prepare and implement an Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 — Environmental Management on Construction Sites which should describe the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The contractor shall implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated (preferably monthly) by the contractor. The EMP should take into account the recommended mitigation measures in the EIA Report. The contractor also should refer to the Construction and Demolition Material Management Plan (C&DMMP) in Appendix D1 (of the EIA) to facilitate him in the preparation of the EMP of the Contract.	Waste reduction, reuse, recycling and proper disposal of waste	All works site / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005

EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Imp	olementa Stages*		Relevant Legislation &
Ref	Ref	Accommonded Management Accounts	Measures and Main Concerns to addressed	Timing	Agent	D	Č	0	Guidelines
6.5.4	5.1.4	Training of construction staff should be undertaken by the contractor about the concept of site cleanliness and appropriate waste management procedures. The contractor should develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. Requirements for staff training should be included in the EMP.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005
6.5.5	5.1.5	Good planning and site management practice should be employed to eliminate over ordering or mixing of construction materials to reduce wastage. Proper storage and site practices will minimise the damage or contamination of construction materials.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005
6.5.6	5.1.6	Where waste generation is unavoidable, the potential for recycling or reuse should be rigorously explored. If wastes cannot be recycled, disposal routes described in the EMP should be followed. A recoding system for the amount of waste generated, recycled and disposed (including the disposal sites) should be implemented. In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be included.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		٨		Waste Disposal Ordinance ETWB TCW No. 19/2005 31/2004
6.5.7	5.1.7	Regular cleaning and maintenance of the waste storage area should be provided.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
	1		Measures and Main Concerns to addressed	Timing	Agenț	D	C	О	Legislation & Guidelines
			,						ETWB TCW No. 19/2005
		On-site Sorting, Reuse and Recycling							
6.5.8	5.1.8	All waste materials should be segregated into categories covering:	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance
		excavated materials suitable for reuse on-site;							ETWB TCW No.
		excavated materials suitable for public filling facilities;							19/2005
		remaining C&D waste for landfill;							
		chemical waste; and							
		general refuse for landfill.							
6.5.9	5.1.9	Proper segregation and disposal of construction waste should be implemented. Separate containers	Waste reduction, reuse, recycling and proper	All work sites / during	Construction Contractor		1		Waste Disposal Ordinance
		should be provided for inert and non-inert wastes.	disposal of waste	construction		j			ETWB TCW No. 19/2005
· · · · · · · · · · · · · · · · · · ·				1			<u>-</u> _		
6.5.10	5.1.10	Sorting is important to recover materials for reuse and recycling. Specific area should be allocated for on-site sorting of C&D materials and to provide a	Waste reduction, reuse, recycling and proper	All work sites / during construction	Construction Contractor		. 1		Waste Disposal Ordinance
		temporary storage area for those sorted materials	disposal of waste	construction				ĺ	ETWB TCW No. 19/2005, 31/2004

EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Imp	olementa Stages*	tion	Relevant Legislation &
Ref	Ref	Accommodate Alligation Management	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Guidelines
		such as metals, concrete, timber, plastics, glass, excavated spoils, bricks / tiles and waste papers. If area is limited, all C&D materials should at least be sorted on-site into inert and non-inert component. Non-inert materials (C&D waste) such as bamboo, timber, vegetation, packaging waste and other organic materials should be reused and recycled wherever possible and disposed of to designated landfill only as a last resort. Inert materials (public fill) such as concrete, stone, clay, brick, soil, asphalt and the like should be separated and reuse in this or other projects (subject to approval by the relevant parties in accordance with the ETWB TCW No. 31/2004) before disposed of at a public filling facility operated by Civil Engineering and Development Department (CEDD). Steel and other metals should be recovered from demolition waste stream and recycled.							
6.5.11	5.1.11	The reuse of inert materials such as soil, rock and broken concrete should be maximised. Waste should be separated into fine, soft and hard materials. With the use of a crusher coarse material can be crushed to make it suitable for use as fill material where fill is required in the works. This minimises the use of imported material and maximises use of the C&D material produced.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		7		Waste Disposal Ordinance ETWB TCW No. 19/2005
6.5.12	5.1.12	Prior to export of material from the site, the	Waste reduction, reuse,	All work sites /	Construction		4		Waste Disposal

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plementa Stages*		Relevant
Rei	Kei		Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Legislation & Guidelines
		potential for it to be reused should be assessed. With the exception of excavated clay most C&D material can easily be reused. Waste separation methods should be followed to ensure that C&D waste is separated at source. Suitable soft materials should be used for landscaping and grading of embankments. Fine material should be separated out and used as topsoil.	recycling and proper disposal of waste	during construction	Contractor				Ordinance  ETWB TCW No. 19/2005
6.5.13	5.1.13	The feasibility of using recycled aggregates in lieu of virgin materials should be rigorously considered during the detailed design and construction stages as stipulated in WBTC No. 12/2002 and ETWB TCW No. 24/2004. In general, recycled aggregates are suitable for use as fill materials in earthworks, road sub-base formation, and drainage works. Recycled aggregates can also be used in concrete (up to Grade 35) for mass concrete walls and other minor structures such as planter boxes, toe wall planters and pavement, etc.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005, 24/2004 WBTC No. 12/2002
6.5.14	5.1.14	Recycled inert C&D material should be used in the works as sub-bases for access roads and footpaths of the proposed channels. Recycled aggregates should be considered for use in concrete as outlined in the above mentioned technical circulars. Some recycled rock material can be reused in the gabions, as rock fill or as stream bed material. This is dependent on size of rock fragments but can be	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor	-	1		Waste Disposal Ordinance ETWB TCW No. 19/2005

EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Imp	lementa Stages*	tion	Relevant Legislation &
Ref	Ref		Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Guidelines 1
		achieved by appropriate use of a crusher.							
		Site Clearance / Demolition Materials							
		Excavated Materials							
6.5.15	5.1.15	All C&D materials should be sorted on-site into inert and non-inert components by the contractor.	Waste reduction, reuse, recycling and proper	All work sites / during	Construction Contractor		1		Waste Disposal Ordinance
		inert and non-inert components by the contractor. Non inert materials (C&D waste) such as wood, glass and plastic should be reuse and recycle before disposal to a designated landfill as a last resort (currently assume to be the nearby NENT Landfill). Inert materials (public fill) such as soil, rubble, sand, rock, brick and concrete should be separated and where appropriate broken down to size suitable for subsequent filling. Suitable C&D material should be use as pipe bedding or for backfilling of retaining walls, box culvert and formation of channel embankments. Excavated rocks from existing streams should be reuse for rip-rap lining and gabion lining. Inert materials should be reused on-site or in other projects approved by relevant	disposal of waste	construction	Communication				ETWB TCW No. 19/2005, 31/2004
A CONTRACTOR OF THE CONTRACTOR		parties in accordance with the ETWB TCW No. 31/2004 before disposed of at public filling facilities. Steel and other metals should be recovered from C&D materials and recycled.							
6.5.16	5.1.16	Excavated sediment from existing stream should be reuse on-site as backfilling material.	Reuse of excavated sediment to minimize offsite disposal	MUP04A / during construction	Construction Contractor		1		Waste Disposal Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Im	plements Stages*		Relevant
		2	Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Legislation & Guidelines
·									
6.5.17	5.1.17	Good quality reusable topsoil should be stockpiled for later landscaping works. Stockpiles should be less than 2 m in height, formed to a safe angle of repose and hydroseeded or covered with tarpaulin to prevent erosion during the rainy season and to minimise dust generation.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor	,	1		Waste Disposal Ordinance ETWB TCW No: 19/2005
6.5.18	5.1.18	Control measures for temporary stockpiles on-site should be taken in order to minimize the noise, generation of dust, pollution of water and visual impact. These measures include:	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005
		<ul> <li>surface of stockpiled soil should be regularly wetted with water especially during dry season;</li> </ul>					-		137,2003
		<ul> <li>disturbance of stockpiled soil should be minimized;</li> </ul>		·					
		<ul> <li>stockpiled soil should be properly covered with tarpaulin especially when heavy rain storms are predicted;</li> </ul>							
		<ul> <li>stockpiling areas should be enclosed where space is available;</li> </ul>		· · · · · · · · · · · · · · · · · · ·				`	
		<ul> <li>stockpiling location should be away from the water bodies; and</li> </ul>							
		an independent surface water drainage system				į			

EIA	EM&A	Recommended Mitigation Measures	Objectives of the Recommended	Location /	Implementation	Imp	lementa Stages*	tion	Relevant Legislation &
Ref	Ref	Necommence Mingarion Measures	Measures and Main Concerns to addressed	Timing	Agent	D	Ċ	0	Guidelines
i		equipped with silt traps should be installed at the stockpiling area.							
6.5.19	5.1.19	The identification of final disposal sites for C&D materials generated by the construction works will be considered during the detailed design stage of the Project when the volume and types of C&D materials can be more accurately estimated. The Public Fill Committee of CEDD should be consulted on designated outlets (e.g. public filling area) for public fill, whilst EPD should be consulted on landfills for C&D waste. Disposal of C&D waste to landfill must not have more than 50% (by weight) inert material. The C&D waste delivered for landfill disposal should contain no free water and the liquid content should not exceed 70% by weight.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		7		Waste Disposal Ordinance ETWB TCW No. 19/2005
6.5.20	5.1.20	In order to avoid dust or odour impacts, any vehicle leaving a works area carrying C&D waste or public fill should have their load covered before leaving the construction site.	recycling and proper	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005 WBTC No. 19/2001
6.5.21	.5.1.21	C&D materials should be disposed of at designated public filling facilities or landfills. Disposal of	Waste reduction, reuse, recycling and proper	1	Construction Contractor		1		Waste Disposal Ordinance

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location / Timing	Implementation	Im	plement Stages		Relevant
		these materials for use at other construction	Concerns to addressed		Agent	D	C	0	Legislation & Guidelines
		projects is subject to the approval of the EPD, Engineer and/or relevant authorities, such as LandsD, PlanD, etc. Furthermore, unauthorized disposal of C&D materials in particular on private agricultural land is prohibited and may be subject to relevant enforcement and regulating actions. The contractor shall refer and strictly follow the tripticket system for the disposal of C&D material as stipulated in the ETWB TCW No. 31/2004.		construction					ETWB TCW No. 19/2005, 31/2004
		Chemical Waste					i		
5.5.22	5.1.22	chemical waste producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation. These wastes are subject to stringent disposal routes. EPD requires information on the particulars of the waste	Waste reduction, reuse, recycling and proper disposal of chemical waste	All work sites / during construction	Construction Contractor		√		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging
		generation processes including the types of waste produced, their location, quantities and generation rates. A nominated contact person must be registered with EPD. An updated list of licensed chemical waste collector can be obtained from EPD.			1				Labelling and Storage of Chemical Waste
5.23	5.1.23	Storage, handling, transport and disposal of chemical W							
			••	All work sites / luring	Construction Contractor		1		Waste Disposal (Chemical Waste)

			Objectives of the Recommended	Location /	Implementation	Imp	plementa Stages*	tion	Relevant Legislation &
EIA Ref	EM&A Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	C	0	Guidelines
		Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD, and should be collected by a licensed chemical waste collector.	disposal of chemical waste	construction					Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Waste
6.5.24	5.1.24	Suitable containers should be used for specific types of chemical wastes, containers should be properly labelled (English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations), resistance to corrosion, stored safely and closely secure. Stored volume should not be kept more than 450 liters unless the specification has been approved by the EPD. Storage area should be enclosed by three sides by a wall, partition of fence that is at least 2 m height or height of tallest container with adequate ventilation and space.	Waste reduction, reuse, recycling and proper disposal of chemical waste	All work sites / during construction	Construction Contractor		7		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Waste
6.5.25	5.1.25	Hard standing, impermeable surfaces draining via oil interceptors should be provided in works area compounds. Interceptors should be regularly emptied to prevent release of oils and grease into the surface water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Oil and fuel bunkers should be bunded and/or enclosed on three sides to prevent discharge due to accidental spillages or breaches of tanks. Bunding	recycling and proper disposal of chemical waste		Construction Contractor		1		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Waste

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location /	Implementation	Im	plementa Stages*	tion	Relevant
		should be of sufficient capacity to accommodate	Concerns to addressed	Timing	Agent	D	C	0	Legislation & Guidelines
6.5.26		of the total volume of the largest container or 20% of the total volume of waste, whichever is largest. Waste collected from any grease traps should be collected and disposed of by a licensed contractor.							
0.3.20	5.1.26	Lubricants, waste oils and other chemical wastes are likely to be generated during the maintenance of vehicles and mechanical equipment. Used lubricants should be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place. If possible, such waste should be sent to oil recycling companies, and the empty oil drums collected by appropriate companies for reuse or refill.	1, 10,000,	All work sites / during construction	Construction Contractor		1		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Waste
5.5.27		be collected by licensed collectors. The licensed collector should regularly take at a six and a		All work sites / during construction	Construction Contractor		1		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Waste
5.28	5.1.28	No lubricants, oils, solvents or paint products vishould be allowed to discharge into water courses,		All work sites /	Construction		1		Waste Disposal

		A destination Management	Objectives of the Recommended	Location /	Implementation	Imp	olementa Stages*	tion	Relevant Legislation &
EIA Ref	EM&A Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Guidelines
Ť		either by direct discharge, or as contaminants carried in surface water runoff from the construction site.	disposal of chemical waste	construction					(General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Waste
6.5.29	5.1.29	Concrete Waste  Dry concrete waste (considered as public fill) should be sorted out from the other wastes and recycled for reuse or sorted out for disposal at designated public filling facilities.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005, 33/2002
6.5.30	5.1.30	Wooden Materials  All wooden materials used on-site should be kept separate from other wastes to avoid damage and to facilitate reuse. Timber which cannot be reused should be sorted out from other waste and stored separately from all inert waste before being disposed of to landfill.	recycling and proper disposal of waste	1	Construction Contractor				Waste Disposal Ordinance ETWB TCW No. 19/2005, 33/2002
6.5.31	5.1:31	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of	recycling and proper disposal of waste	1	Construction Contractor		1		Waste Disposal Ordinance ETWB TCW No. 19/2005, 33/2002

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location / Timing	Implementation	Im	plementa Stages*	ition	Relevant
		timber used on construction sites. Metallic alternatives to timber are readily available and	Concerns to addressed	l Anning	Agent	D	C	0	Legislation & Guidelines
		should be used rather than new timber. Recast concrete units should be adopted wherever feasible to minimize the use of timber formwork.							
6.5.32	5.1.32	Only waste material need be taken to a landfill. It should be separated from recyclable wood and steel materials. As for all waste types these materials should be reused on-site or other approved sites before disposal is considered as an option.	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance
		Disposal to landfill should only be considered as a final option. Contractors are responsible for storage of re-useable materials on-site.							ETWB TCW No. 19/2005, 33/2002
i.5.33		from other construction and chemical wastes and disposed of at designated landfill. A temporary	Waste reduction, reuse, recycling and proper disposal of waste	All work sites / during construction	Construction Contractor		1		Waste Disposal Ordinance
		refuse collection point should be set up by the contractor to facilitate the collection of refuse by licensed contractors. The removal of waste from the site should be arranged on a daily or at least on every second day by the contractor to minimise any potential odour impacts, minimise the presence of cests, vermin and other scavengers and prevent unsightly accumulation of waste.		***					ETWB TCW No. 19/2005

Table A5 Implementation Schedule of Ecological Impact Measures

			Objectives of the	Location /	Implementation	Imp	plementa Stages*	tion	Relevant Legislation &
EĮA Ref	EM&A Ref	Recommended Mitigation Measures	Recommended Measures and Main Concerns to addressed	Timing	Agent	D	Ĉ	O	Guidelines
Ecology	- Construct	ion Phase					1	Γ	
7.9.3	6.5.2	Civen the ecological importance of Lin Ma Hang stream, it is proposed that construction works at LMH01 should be restricted to the dry season period from 1 <sup>st</sup> November – 31 <sup>st</sup> March. The small scale of works should allow all construction to be completed within dry season to ensure that the risk of erosion and sedimentation due to heavy rain on the works areas, as well as disturbance impacts to surrounding areas, will be minimised.	impacts during construction at LMH01	All works sites at LMH01 / during construction	Construction Contractor		4		Environmental Impact Assessment Ordinance
7.9.4	6.5.3	In addition, the breaking of existing shotcrete banks at LMH01 should be restricted to hand-held equipment. Concrete should not be used for construction of the gabion banks.	impacts during	All works sites at LMH01 / during construction	Construction Contractor		7		Environmental Impact Assessment Ordinance
7.9.5	6.5.4	Potential disturbance impacts to surrounding habitats and pollution risks (water quality impacts) to the stream should be minimised by adoption of appropriate site managemen procedures, as detailed in ETWB TCW No 5/2005; including among others the location of access to the site and storage of materials, and treatment of construction site waste to prevent	impacts during construction at LMH01 t f f	All works sites at LMH01 / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance

EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main	Location /	Implementation	Im	plementa Stages*	ition	Relevant
	pollution of the stream. These site management		1 ming	Agent	D	C	0	Legislation & Guidelines
	measures are listed in the subsequent section.							
	MUP05 (natural stream section) Streamhed							
	One of the main benefits of the proposed stream widening measures is that the existing natural stream bed is left undisturbed. Accordingly, works should be carried out in such a way that as much as possible of the natural stream bed should be left undisturbed and that where disturbance is essential this should be minimised in terms of area, magnitude and duration to minimise potential impacts to stream fauna and to ensure refuges for these species during the period of the works. Avoidance of the stream bed can be achieved by conducting the earthworks to widen the stream from the landward side, by not lowering the widened channel to the same level as, or below, the existing channel, and by leaving the existing stream untouched except during the final stage, when the newly formed widened	impacts during construction at	All works sites at MUP05 / during construction	Construction Contractor		✓		Environmental Impact Assessment Ordinance
6.5.9 ]	In addition, the widened stream bottom should be floored with natural materials (natural rock and increase of varying sizes) to approximate as closely as possible to the rocky components of a natural materials.	impacts during construction at	MUP05 / during	Construction Contractor		٧ .	[ ]	Environmental Impact Assessment Ordinance
	6.5.9	pollution of the stream. These site management measures are listed in the subsequent section.  MUPOS (natural stream section)  Streambed  6.5.8 One of the main benefits of the proposed stream widening measures is that the existing natural stream bed is left undisturbed. Accordingly, works should be carried out in such a way that as much as possible of the natural stream bed should be left undisturbed and that where disturbance is essential this should be minimised in terms of area, magnitude and duration to minimise potential impacts to stream fauna and to ensure refuges for these species during the period of the works. Avoidance of the stream bed can be achieved by conducting the earthworks to widen the stream from the landward side, by not lowering the widened channel to the same level as, or below, the existing channel, and by leaving the existing stream untouched except during the final stage, when the newly formed widened stream bed is joined to the existing stream.  6.5.9 In addition, the widened stream bottom should be floored with natural materials (natural rock and fines of varying sizes) to approximate as closely as	pollution of the stream. These site management measures are listed in the subsequent section.  MUP05 (natural stream section)  Streambed  6.5.8 One of the main benefits of the proposed stream widening measures is that the existing natural stream bed is left undisturbed. Accordingly, works should be carried out in such a way that as much as possible of the natural stream bed should be left undisturbed and that where disturbance is essential this should be minimised in terms of area, magnitude and duration to minimise potential impacts to stream fauna and to ensure refuges for these species during the period of the works. Avoidance of the stream bed can be achieved by conducting the earthworks to widen the stream from the landward side, by not lowering the widened channel to the same level as, or below, the existing channel, and by leaving the existing stream untouched except during the final stage, when the newly formed widened stream bed is joined to the existing stream.  6.5.9 In addition, the widened stream bottom should be floored with natural materials (natural rock and fines of varying sizes) to approximate as closely as possible to the rocky components of a natural MUP05	Ref   Recommended   Measures and Main   Concerns to addressed   Timing	Ref pollution of the stream. These site management measures are listed in the subsequent section.    MUPOS (natural stream section)	Ref pollution of the stream. These site management measures are listed in the subsequent section.    MUP05 (natural stream section)	Ref pollution of the stream. These site management measures are listed in the subsequent section.    MUP05 (natural stream section)	Ref

			Objectives of the Recommended	Location /	Implementation	Imp	plementation Stages*		Relevant Legislation &
EIA Ref	EM&A Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Guidelines
		deposited naturally.							
7.9.11	6.5.10	In order to minimise potential impacts to stream fauna during excavation of the widened "two-stage" channel, this work should be limited to the dry season as far as possible, between 1st October and 31st March. As rainfall is low at this time, erosion is less likely and deposition of sediment downstream of the works should be minimised. This also avoids the time when stream fauna are at the most vulnerable stage in their life cycle (eggs and young larvae). Any essential works outside the dry season should be temporarily isolated from the stream to prevent the risk of pollution or sedimentation affecting the ecological integrity of the stream.		All works sites at MUP05 / during construction	Construction Contractor		7		Environmental Impact Assessment Ordinance
7.9.12	6.5.11	As required to minmize potential water quality impacts (Section 5.6), excavation works at the stream section of MUP05 should be restricted to 300m length at any one time. No restriction is considered necessary for the first 300m upstream concrete drains section. Excavation works a MUP04A should be restricted to 100m to cater fo potential cumulative impact on MUP05.	construction at MUP05	All works sites at MUP05 / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance
7.9.13	6.5.12	Appropriate site management procedures during the construction phase should be adopted, a	Minimize ecological impacts during	All works sites at MUP05 / during	Construction Contractor		1		Environmental Impact Assessment

,	recommended in ETWB TCW No. 5/2005, to	Measures and Main				_Stages*		Relevant
	To the state of th	Concerns to addressed construction at		Agent	D	C	0	Legislation & Guidelines
	pollution risks (water quality impacts) to the stream. This should include the location of access to the site and storage of materials, and treatment of construction site waste to prevent pollution of the stream. These site management pressures are	MUP05	construction					Ordinance
19 &	The loss of bankside trees and		·					!
i	transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and	bankside trees and associated riparian	MUP05 / during construction	Construction Contractor				Environmental Impact Assessmen Ordinance
-	Celtis tetranda (sinensis)							
•	Ficus hispida							
	4							
					:	.		•
-								
-	·			j				
	19 & e 6.6	the stream. These site management measures are listed in the subsequent section.  The loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  Celtis tetranda (sinensis)  Ficus microcarpa  Litsea glutinosa  Sapium discolor  Schleffera arboricolar (octophylla)	of Construction site waste to prevent pollution of the stream. These site management measures are listed in the subsequent section.  The loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  Celtis tetranda (sinensis)  Ficus microcarpa  Litsea glutinosa  Sapium discolor  Schleffera arboricolar (octophylla)	The loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  - Celtis tetranda (sinensis) - Ficus microcarpa - Litsea glutinosa - Sapium discolor - Schleffera arboricolar (octophylla)	19 & the loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  **Celtis tetranda (sinensis)**  **Ficus microcarpa**  **Litsea glutinosa**  **Sapium discolor**  **Schleffera arboricolar (octophylla)**	the stream. These site management measures are listed in the subsequent section.  Mitigate the loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  Celtis tetranda (sinensis)  Ficus microcarpa  Litsea glutinosa  Sapium discolor  Schleffera arboricolar (octophylla)	the stream. These site management measures are listed in the subsequent section.  Mitigate the loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  ■ Celtis tetranda (sinensis)  ■ Ficus microcarpa  ■ Litsea glutinosa  ■ Sapium discolor  ■ Schleffera arboricolar (octophylla)	19 & The loss of bankside trees, and associated riparian habitats, should be mitigated through transplanting existing trees to suitable locations wherever possible, and through supplemental planting of native trees and bamboos in locations where the project area includes sufficient space adjacent to the stream but outside the channel itself (in addition to retaining in-situ as much trees as possible). The appropriate species of trees and bamboos include.  ■ Celtis tetranda (sinensis)  ■ Ficus microcarpa  ■ Litsea glutinosa  ■ Sapium discolor  ■ Schleffera arboricolar (octophylla)

			Objectives of the Recommended	Location /	Implementation	Imp	lementa Stages*	tion	Relevant Legislation &
EIA Ref	EM&A Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	С	0	Guidelines
		Bambusa eutuldoides							
7.9.21	6.5.20	The proposed landscape compensatory planting of about 740 trees (approximately 1,100 m²) along the MUP channels will serve dual purpose of landscape impact mitigation as well as mitigating the loss of riparian trees.	Dual purpose of landscape impact mitigation and mitigate the loss of riparian trees at the MUP channels	MUP channels / during construction	Construction Contractor		√		Environmental Impact Assessment Ordinance
				All works site /	DSD (or its	1	1	<del>                                     </del>	Environmental
7.9.22	6.5.21	The Landscape Plan to be submitted prior to commencement of planting or landscaping works	To ensure the recommended plant	during detailed	appointed				Impact Assessment Ordinance
Table 7.29		should take into account the recommended plant should take into account the recommended plant	species are taken into account in the	design and construction	Detailed Design Engineer)				
(8.11.27	(7.5.11)	species.	Landscape Plan						
)					Construction Contractor to				
1					implement the				
					approved planting plan				
7.9.23	6.5.22	The recommended site management measures are generally good site practices and proper wate quality control / waste management measures to be implemented by the contractor for all work near stream courses. These measures include:	to minimize ecological	All works sites at LMH01 and MUP05 / during construction	Construction Contractor		7		Environmental Impact Assessmen Ordinance
		<ul> <li>Construction activities should be restricted t works area that should be clearly demarcated</li> </ul>	0						

1) 1) \$\overline{V}\$

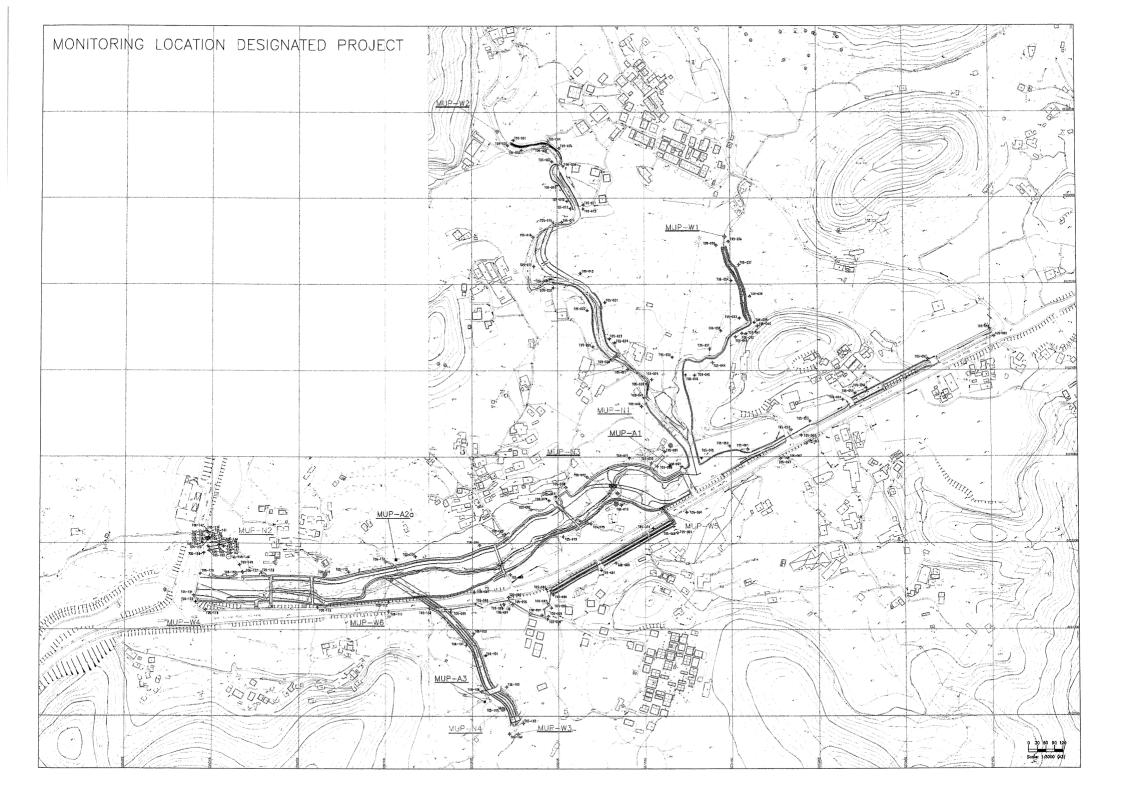
EIA Ref ·	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures and Main Concerns to addressed	Location / Timing	Implementation Agent	Im	plementa Stages*		Relevant Legislation &
		Excavation works should be carried out during the dry season where stream flow is low. Where adequate space is available, works should be carefully phased such that only one side of the channel is constructed. Temporary diversion should be provided to ensure continuous water flow to the downstream section.						0	Guidelines
		The proposed works site inside or in the proximity of natural streams should be temporarily isolated, such as using bunds or sandbag barriers (wrapped with geotextile fabric) or other similar techniques, to prevent adverse impacts on the stream water quality.							
	e,	For the stream section where the existing natural stream bed and bank will be left untouched, no disturbance to the stream bed and bank should be allowed from construction works, equipment or workers. If temporary access track on streambed is unavoidable, this should be kept to the minimum width and length. Temporary stream crossings should be supported on stilts above the stream bed.							
		Adequate temporary drainage measures including sediment and oil/grease traps should be provided to prevent contaminated site run-off entering the water bodies.							
	-	Stockpiling of construction materials, spoils and waste should be properly covered and located away from water bodies to prevent silty runoff and other pollutants from entering							

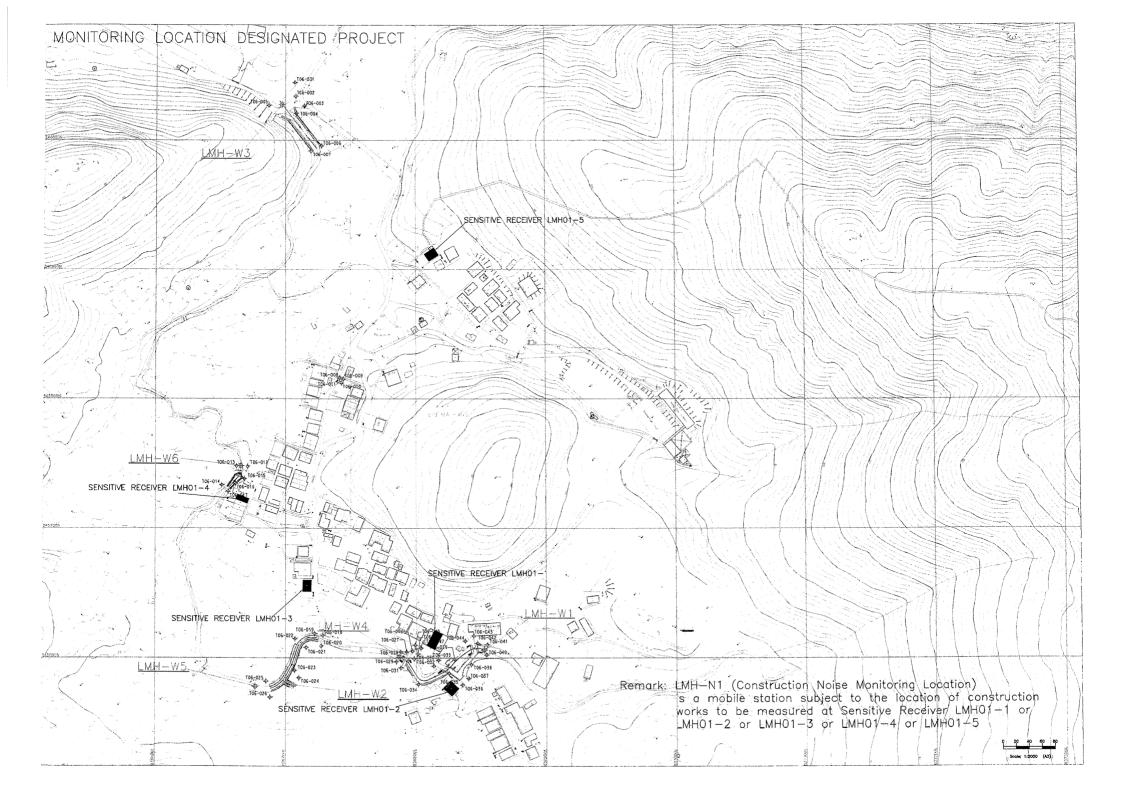
			Objectives of the Recommended	Location /	Implementation		olementat Stages*	іоп	Relevant Legislation &
EIA Ref	EM&A Ref	Recommended Mitigation Measures	Measures and Main Concerns to addressed	Timing	Agent	D	C	О	Guidelines
		the water bodies during rain storms.							
		<ul> <li>Construction effluent, site run-off and sewage should be properly collected, treated and disposed.</li> </ul>			:				·
		Supervisory staff of the contractor should be assigned to station on site to closely supervise and monitor the construction works. All workers should be regularly briefed to avoid disturbing the flora and fauna near the works area.							1
7.9.24	6.5.23	The contractor should provide details of the mitigation measures to be implemented during construction stage as part of their working method statement to the Engineer for approval. This should be reviewed by the Environmental Team Leader.	construction at LMH01 and MUP05	All works sites at LMH01 and MUP05 / during construction	Construction Contractor		1		Environmental Impact Assessment Ordinance
Ecology	- Operatio	n Phase				1	<u>'.</u>	1	
7.9.6	6.5.5	LMH01  Very little or no management / maintenance of the completed sections of LMH01 are expected Removal of obstruction should be undertaken only when flooding or safety issues have been identified.	operation of LMH01	LMH01 / during operation stage	DSD (or DSD's maintenance contractor)	-		1	Environmental Impact Assessment Ordinance
		HUDDIA A							



# **Appendix D**

**Environmental Monitoring Locations** 







# **Appendix E**

**Certificates of Calibration** 



#### **Equipment Calibration List**

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1		TSP Sampler Calibration Spreadsheet for MUP-A1	13 May 12	13 Jul 12
2#		TSP Sampler Calibration Spreadsheet for MUP-A2	16 Jul 11	16 Sep 11
3#	Air	TSP Sampler Calibration Spreadsheet for MUP-A3	30 Jun 11	30 Aug 11
4		DustTrak Model 8520 EQ064	13 Sep 2011	13 Sep 2012
5		AM510 11008017	10 Oct 2011	10 Oct 2012
6		Bruel & Kjaer Integrating Sound Level Meter EQ010 (Serial No. 2285721)	20 Apr 12	20 Apr 13
7	Noise	Bruel & Kjaer Integrating Sound Level Meter EQ082 (Serial No. 2713428)	20 Apr 12	20 Apr 13
8		NL-31 Rion Sound Level Meter EQ068 (Serial No. 00410247)	20 Apr 12	20 Apr 13
9	Water	YSI Sonde 6820 / 650 MDS (Serial No. 02J0912/02K0788 AA) (DO, pH, Turbidity)	27 Apr 12	27 Jul 12

<sup>\*</sup>Note: Calibration certificates will only be provided when monitoring equipment is re-calibrated or new. # Calibration could not conduct due to power failure.

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# Appendix F

**Details of the Event Action Plan** 

### **Event/Action Plan for Air Quality**

EVENT		ACTION		
EVEINI	ET Leader	IEC	ER	Contractor
ACTION LEVEL Exceedance for one sample  Exceedance for two or more consecutive samples	Identify source     Inform IEC, ER and Contractor     Repeat measurement to confirm findings     Increase monitoring frequency to daily     Identify source     Inform IEC, ER and Contractor     Repeat measurement to confirm findings     Increase monitoring frequency to daily     Discuss with IEC, Contractor and ER on remedial actions required     If exceedance continue, arrange meeting with IEC, ER and Contractor     If exceedance stops, cease additional monitoring	Check monitoring data submitted by ET Leader     Check Contractor's working method     Check monitoring data submitted by ET Leader     Check Contractor's working method     Discuss with ET Leader and Contractor on possible remedial measures     Advise the ER on the effectiveness of the proposed remedial measures     Supervise implementation of remedial measures	Notify Contractor      Confirm receipt of notification of failure in writing     Notify Contractor     Ensure remedial measure properly implemented	Rectify any unacceptable practice     Amend working methods if appropriate      Submit proposals for remedial actions to IEC and ER within 3 working days notification     Implement the agreed proposals     Amend proposal if apprpriate
LIMIT LEVEL Exceedance for one sample	Identify source     Inform IEC, ER, EPD and Contractor     Repeat measurement to confirm findings     Increase monitoring frequency to daily     Access effectiveness of Contractor's remedial actions and kept IEC, EPD and ER informed of results	Check monitoring data submitted by ET Leader     Check Contractor's working method     Discuss with ET Leader and Contractor on possible remedial measures     Advise the ER on the effectiveness of the proposed remedial measures     Audit implementation of remedial measures	Confirm receipt of notification of failure in writing     Notify Contractor     Ensure remedial measures properly implemented	Take immediate action to avoid for the exceedance     Submit proposals for remedial actions to IEC and ER within 3 working days of notification     Implement the agreed proposals     Amend proposal if appropriate
Exceedance for two or more consecutive samples	<ol> <li>Notify IEC, ER, Contractor and EPD</li> <li>Identify source</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency to daily</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li> <li>Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken</li> <li>Access effectiveness of Contractor's remedial actions and kept IEC, EPD and ER informed of results</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	Discuss amongst ER, ET Leader and Contractor on the potential remedial actions     Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly     Audit the implementation of remedial measures	Confirm receipt of notification of failure in writing     Notify Contractor     In consultation with IEC, agree with the Contractor on the remedial measures to be implemented     Ensure remedial measures properly implemented     If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	Take immediate action to avoid for the exceedance     Submit proposals for remedial actions to IEC and ER within 3 working days of notification     Implement the agreed proposals     Resubmit proposals if problem still not under control     Stop the relevant portion of works as determined by the ER unit the exceedance is abate

### **Event/Action Plan for Water Quality**

EVENT	ET Leader	IEC	ER	Contractor
Action Level being exceeded by one sampling day	<ol> <li>Repeat in-situ measurement to confirm findings</li> <li>Identify source(s) of impact</li> <li>Inform IEC and Contractor</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>Discuss mitigation measures with IEC and Contractor</li> <li>Repeat measurement on next day of exceedance</li> </ol>	Discuss with ET and Contractor on the mitigation measures     Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly     Assess the effectiveness of the implemented mitigation measures	Discuss with IEC on the proposed mitigation measures     Make agreement on the mitigation measures to be implemented     Assess effectiveness of the implemented mitigation measures	Inform the ER and confirm notification of the non-compliance in writing     Rectify unacceptable practice     Check all plant and equipment     Consider changes of working methods     Discuss with ET and IEC and propose mitigation measures to IEC and ER     Implement the agreed mitigation measures
Action Level being exceeded by more than one consecutive sampling day	<ol> <li>Repeat in-situ measurement to confirm findings</li> <li>Identify source(s) of impact</li> <li>Inform IEC and Contractor</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>Discuss mitigation measures with IEC and Contractor</li> <li>Ensure mitigation measures are implemented</li> <li>Prepare to increase the monitoring frequency to daily</li> <li>Repeat measurement on next day of exceedance</li> </ol>	<ol> <li>Discuss with ET and Contractor on the mitigation measures</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>Assess the effectiveness of the implemented mitigation measures</li> </ol>	Discuss with IEC on the proposed mitigation measures     Make agreement on the mitigation measures to be implemented     Assess effectiveness of the implemented mitigation measures	Inform the ER and confirm notification of the non-compliance in writing     Rectify unacceptable practice     Check all plant and equipment     Consider changes of working methods     Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days     Implement the agreed mitigation measures
Limit Level being exceeded by one sampling day	<ol> <li>Repeat in-situ measurement to confirm findings</li> <li>Identify source(s) of impact</li> <li>Inform IEC, Contractor and EPD</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>Discuss mitigation measures with IEC, ER and Contractor</li> <li>Ensure mitigation measures are implemented</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit Level</li> </ol>	<ol> <li>Discuss with ET and Contractor on the mitigation measures</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>Assess the effectiveness of the implemented mitigation measures</li> </ol>	Discuss with IEC on the proposed mitigation measures     Request Contractor to critically review the working methods     Make agreement on the mitigation measures to be implemented     Assess effectiveness of the implemented mitigation measures	<ol> <li>Inform the ER and confirm notification of the non-compliance in writing</li> <li>Rectify unacceptable practice</li> <li>Check all plant and equipment</li> <li>Consider changes of working methods</li> <li>Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days</li> <li>Implement the agreed mitigation measures</li> </ol>
Limit Level being exceeded by more than one consecutive sampling day	<ol> <li>Repeat in-situ measurement to confirm findings</li> <li>Identify source(s) of impact</li> <li>Inform IEC, Contractor and EPD</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>Discuss mitigation measures with IEC, ER and Contractor</li> <li>Ensure mitigation measures are implemented</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days</li> </ol>	<ol> <li>Discuss with ET and Contractor on the mitigation measures</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>Assess the effectiveness of the implemented mitigation measures</li> </ol>	Discuss with IEC on the proposed mitigation measures     Request Contractor to critically review the working methods     Make agreement on the mitigation measures to be implemented     Assess effectiveness of the implemented mitigation measures     Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the work until no exceedance of Limit Level	<ol> <li>Inform the ER and confirm notification of the non-compliance in writing</li> <li>Rectify unacceptable practice</li> <li>Check all plant and equipment</li> <li>Consider changes of working methods</li> <li>Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days</li> <li>Implement the agreed mitigation measures</li> <li>As directed by the ER, to slow down or to stop all or part of the work or construction activities</li> </ol>

### **Event/Action Plan for Ecology**

EVENT		ACTION		
EVEIVI	ET Leader	IEC	ER	Contractor
Non-conformity on one occasion	<ol> <li>Identify source</li> <li>Inform the IEC and ER</li> <li>Discuss remedial actions with IEC, the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ol>	Check monitoring results     Check the Contractor's working method     Discuss with the ET and Contractor on possible remedial measures     Advise the ER on effectiveness of proposed remedial measures     Check the implementation of remedial measures	Notify Contractor     Ensure remedial measures are properly implemented     Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of serous non-conformity until situation is rectified	<ol> <li>Take immediate action to avoid further problem</li> <li>Amend working methods if needed</li> <li>Submit proposals for remedial actions to ET, ER and IEC</li> <li>Rectify damage and implement the agreed remedial actions</li> </ol>
Repeated Non-confirmity	<ol> <li>Identify source</li> <li>Inform the IEC, ER, EPD and AFCD</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with IEC, the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	Check monitoring results     Check the Contractor's working method     Discuss with the ET and Contractor on possible remedial measures     Supervise the implementation of remedial measures     Advise the ER on effectiveness of proposed remedial measures and keep EPD and AFCD informed	Notify Contractor     Ensure remedial measures are properly implemented     Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of serous non-conformity until situation is rectified	<ol> <li>Take immediate action to avoid further problem</li> <li>Amend working methods if needed</li> <li>Submit proposals for remedial actions to ET, ER and IEC</li> <li>Rectify damage and implement the agreed remedial actions</li> </ol>

### **Event/Action Plan for Landscape and Visual Impact**

EVENT		ACTION		
EVEIVI	ET Leader	IEC	ER	Contractor
Non-conformity on one occasion	<ol> <li>Identify source</li> <li>Inform the IEC and the ER</li> <li>Discuss remedial actions with IEC, the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ol>	Check report     Check the Contractor's working method     Discuss with the ET and Contractor on possible remedial measures     Advise the ER on effectiveness of proposed remedial measures	Notify the Contractor     Ensure remedial measures are properly implemented.	Amend working methods if needed     Rectify damage and undertake remedial measures or any necessary replacement
Repeated Non-conformity	Identify source     Inform the IEC, ER, EPD and AFCD     Increase monitoring (site audit) frequency     Discuss remedial actions with IEC, the ER and the Contractor     Monitor remedial actions until rectification has been completed     If exceedance stops, cease additional monitoring (site audit)	Check report     Check the Contractor's working method     Discuss with the ET and Contractor on possible remedial measures     Advise the ER on effectiveness of proposed remedial measures.     Supervise the implementation of remedial measures	Notify Contractor     Ensure remedial measures are properly implemented	Amend working methods if needed     Rectify damage and undertake remedial measures or any necessary replacement

### **Event/Action Plan for Construction Noise**

EV/ENT		Action		
EVENT	ET Leader	IEC	ER	Contractor
Action Level	<ol> <li>Notify IEC, Contractor and ER</li> <li>Carry out investigation and identify source</li> <li>Report the results of investigation to IEC, Contractor and ER</li> <li>Discuss with the Contractor and formulate remedial measures</li> <li>Increase monitoring frequency</li> <li>Check compliance to Action/limit Levels after application of mitigation measures</li> </ol>	Review the analysed results submitted by the ET Leader     Review the proposed remedial measures by the Contractor and advise the ER & ER accordingly     Review the implementation of remedial measures	Confirm receipt of notification of complaint in writing     Notify Contractor     Check monitoring data submitted by the ET     Require Contractor to propose remedial measures for the analysed noise problem     Ensure remedial measures are properly implemented	Submit noise mitigation proposals to ER and IEC within three working days     Liaise with the ER to ensure the effectiveness of the agreed mitigation     Amend proposal if required     Implement noise mitigation proposals
Limit Level	<ol> <li>Notify IEC, Contractor and ER</li> <li>Identify source</li> <li>Repeat measurement to confirm findings</li> <li>Increase monitoring frequency</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li> <li>Inform IEC, ER and EPD the causes &amp; actions taken form the exceedances</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</li> <li>If exceedance stops, cease additional monitoring</li> </ol>	Check monitoring data submitted by ET     Discuss amongst ER, ET Leader and Contractor on the potential remedial actions     Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER & ET accordingly     Audit the implementation of remedial measures	1. Confirm receipt of notification of exceedance 2. Notify Contractor 3. Check monitoring data submitted by the ET 4. Require Contractor to propose remedial measures for the analysed noise problem 5. Discuss with ET, IEC and Contractor on proposed remedial actions to be implemented 6. Ensure remedial measures are properly implemented 7. Assess the effectiveness of the remedial actions and keep the Contractor informed 8. If exceedance continues, consider what protion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	<ol> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial actions to ER within three working days of notification</li> <li>Liaise with the ER to ensure the effectiveness of the agreed mitigation</li> <li>Amend proposal if required</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated</li> </ol>



# Appendix G

**Monitoring Schedule** 



#### Monitoring Schedule for Channels MUP in this Reporting Month

	Date	Air Q	uality	NOISE	WATER	ECOLOG	Y
		1-hour TSP	24-hour TSP	LEQ 30MIN	QUALITY	Water Quality	ECOLOGY SURVEYS
Sat	26-May-12						
Sun	27-May-12						
Mon	28-May-12						
Tue	29-May-12						
Wed	30-May-12						
Thu	31-May-12						
Fri	1-June-12						
Sat	2-June-12						
Sun	3-June-12						
Mon	4-June-12						
Tue	5-June-12						
Wed	6-June-12						
Thu	7-June-12						
Fri	8-June-12						
Sat	9-June-12						
Sun	10-June-12						
Mon	11-June-12						
Tue	12-June-12						
Wed	13-June-12						
Thu	14-June-12						
Fri	15-June-12						
Sat	16-June-12						
Sun	17-June-12						
Mon	18-June-12						
Tue	19-June-12						
Wed	20-June-12						
Thu	21-June-12						
Fri	22-June-12						
Sat	23-June-12						
Sun	24-June-12						
Mon	25-June-12						

Monitoring Day
Sunday or Public Holiday

<u>Parameters</u>: <u>Location ID</u>

Air MUP-A1 (Same as MUP01/02-A1), MUP-A2a, MUP-A3,

Noise MUP05-N1 (Same as MUP01/02-N1), MUP-N2, MUP-N3, MUP-N4,

Water MUP-W1 (Same as MUP01/02-W1), MUP-W2 (Same as MUP01/02-W2),

MUP-W3, MUP-W4, MUP-W5, MUP-W6

Ecology Survey As location in MUP05



#### Monitoring Schedule for Channels MUP in coming month

	Date	Air Q	uality	NOISE	WATER	ECOLOG	Y
		1-hour TSP	24-hour TSP	LEQ 30MIN	QUALITY	Water Quality	ECOLOGY SURVEYS
Tue	26-June-12						
Wed	27-June-12						
Thu	28-June-12						
Fri	29-June-12						
Sat	30-June-12						
Sun	1-July-12						
Mon	2-July-12						
Tue	3-July-12						
Wed	4-July-12						
Thu	5-July-12						
Fri	6-July-12						
Sat	7-July-12						
Sun	8-July-12						
Mon	9-July-12						
Tue	10-July-12						
Wed	11-July-12						
Thu	12-July-12						
Fri	13-July-12						
Sat	14-July-12						
Sun	15-July-12						
Mon	16-July-12						
Tue	17-July-12						
Wed	18-July-12						
Thu	19-July-12						
Fri	20-July-12						
Sat	21-July-12						
Sun	22-July-12						
Mon	23-July-12						
Tue	24-July-12						
Wed	25-July-12						

Monitoring Day
Sunday or Public Holiday

Parameters: Location ID

Air MUP-A1 (Same as MUP01/02-A1), MUP-A2a, MUP-A3,

MUP05-N1 (Same as MUP01/02-N1), MUP-N2, MUP-N3, MUP-N4, Noise Water

MUP-W1 (Same as MUP01/02-W1), MUP-W2 (Same as MUP01/02-W2),

MUP-W3, MUP-W4, MUP-W5, MUP-W6

**Ecology Survey** As location in MUP05



## Appendix H

Detailed Impact Monitoring Data of Air Quality and Water Quality

# DSD CONTRACT NO. DC/2007/08 Drainage Improvements Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang 24- hour TSP Monitoring Data

				ı						STANDARD		BLANK	BLANK	BLANK	BLANK	INITIAL	FINAL	WEIGHT		l	
DATE	SAMPLE	ELAPSED	ELAPSED	ELAPSED	MIN	MAX	AVG	AVG	AVG	FLOW	AIR	SAMPLE	INTIAL	FINAL	DIFF	FILTER	FILTER	DUST	Dust 24-hr TSP		
DATE	NUMBER	TIMF	TIMF	TIME	CHART	CHART	CHART	TEMP	PRESS	RATE	VOLUME	NUMBER	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	COLLECTED	in Air		
	NOWIDER	INITIAI	FINAL	(min)	READING	READING	READING	(oC)	(hPa)	(m3/min)	(std m3)	NOWBER	(g)	(g)	(g)	(g)	(g)	(g)	(ug/m3)	Action Level	Limit Lovol
24-hour TSP	Monitoring Da	ata for MUP-A1		` '	KLADING	KEADING	KLADINO	(00)	(III d)	(1113/111111)	(314 1113)		(9)	(9)	(9)	(9)	(9)	(9)	(ug/iii3)	ACTION LEVE	LIIIII LCVCI
26-May-12	24268	3626.09	3650.62	1471.80	30	32	31	26.9	1006.6	1.2400	1825.05	NA	3.5683	3.5689	0.001	2.7492	2.8457	0.0965	52	156	260
1-Jun-12	24765	3650.62	3675.15	1471.80	37	39	38	27.2	1007.1	1.4195	2089.21	NA	3.5683	3.5689	0.001	2.7606	3.0015	0.2409	115	156	260
7-Jun-12	24798	3675.15	3699.88	1483.80	35	38	36.5	28.5	1004.2	1.3776	2044.11	NA	2.8441	2.8446	0.001	2.7494	2.8705	0.1211	59	156	260
13-Jun-12	24800	3699.88	3724.93	1503.00	36	38	37	26.1	1001.0	1.3927	2093.20	NA	3.5689	3.5689	0.001	2.7464	2.8861	0.1397	66	156	260
19-Jun-12	24801	3724.93	3748.9	1438.20	37	39	38	28.4	1005.9	1.4170	2037.88	NA	2.8443	2.8450	0.001	2.7475	2.7953	0.0478	23	156	260
25-Jun-12	24804	3748.9	3773.82	1495.20	36	38	37	28.9	1003.7	1.3895	2077.65	NA	2.8455	2.8457	0.001	2.7089	2.8181	0.1092	52	156	260
24-hour TSP	Monitoring Da	ata for MUP-A2	la .																		
26-May-12	power failure																		power failure	149	260
1-Jun-12	power failure																		power failure	149	260
7-Jun-12	power failure																		power failure	149	260
13-Jun-12	power failure																		power failure	149	260
19-Jun-12	power failure																		power failure	149	260
25-Jun-12	power failure																		power failure	149	260
24-hour TSP	Monitoring Da	ata for MUP-A3	}																		
26-May-12	power failure																		power failure	150	260
1-Jun-12	power failure	•																	power failure	150	260
7-Jun-12	power failure																		power failure	150	260
13-Jun-12	power failure																		power failure	150	260
19-Jun-12	power failure																		power failure	150	260
25-Jun-12	power failure																		power failure	150	260

# DSD CONTRACT NO. DC/2007/08 Drainage Improvements Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang

#### Water Quality Monitoring Data for MUP05

Date	28-1	Лау-12													
Location	Time	Depth (m)	Temp(oC)		D0 (r	ng/L)	DOS	6(%)	Turbidity(NTU)		pH		s	S	
MUP-W1 (Control)	02:19	0.2	25.2	25.2	4.82	4 9	55.70	57.2	6.15	6.1	6.85	6.9	4.00	4.0	
(MUP01/02-W1)	02.17	0.2	25.2	25.2	4.88	4.7	58.70	37.2	6.12	0.1	6.92	0.7	4.00	4.0	
MUP-W2 (Control)	03:00	0.3	24.8	24.8	6.41	6.4	72.80	71.6	5.42	5.5	6.77	6.8	7.00	7.0	
(MUP01/02-W2)	03.00	0.3	24.8	24.0	6.37	0.4	70.40	71.0	5.62	5.5	6.91	0.0	7.00	7.0	
MUP-W3 (Control)	02:25	0.3	25.3	25.3	6.55	6.6	95.60	90.3	5.94	6.1	6.84	6.9	4.00	4.0	
WOF-WS (CONTO)	02.25	0.3	25.3	25.5	6.63	0.0	84.90	90.3	6.20	0.1	6.93	0.9	4.00	4.0	
MUP-W4 (Impact)	02:40	0.5	22.0	22.0	6.50	6.4	78.10	76.7	7.93	7.8	7.18	7.2	5.00	5.0	
WOP-W4 (Impact)	02.40	0.5	22.0	22.0	6.33	0.4	75.30	70.7	7.70	7.0	7.21	1.2	5.00	5.0	
MUP-W5 (mobile)	02:00	0.3	25.1	25.1	5.32	5.4	60.80	61.5	6.42	6.4	7.34	7.4	3.00	3.0	
WOP-WS (Mobile)	02.00	0.3	25.1	25.1	5.47	3.4	62.10	01.5	6.30	0.4	7.41	7.4	3.00	3.0	
MUP-W6 (mobile)	01:45	0.5	25.9	25.0	6.32	6.4	82.20	81.9	7.27	7.0	7.19	7.2	3.00	3.0	
wor-wo (mobile)	U1:45	0.5	25.9	.9 25.9		0.4	81.60	01.9	6.81	7.0	7.17	1.2	3.00	3.0	

Date	30-1	Лау-12												
Location	Time	Depth (m)	Temp(oC)		D0 (r	ng/L)	DOS	(%)	Turbidity(NTU)		pН		s	s
MUP-W1 (Control)	03:00	0.1	22.0	22.0	6.02	6.1	65.80	66.3	3.67	3.7	6.85	6.9	3.00	3.0
(MUP01/02-W1)	03.00	0.1	22.0	22.0	6.09	0.1	66.70	00.3	3.80	3.7	6.97	0.9	3.00	3.0
MUP-W2 (Control)	02:20	0.3	21.5	21.5	6.37	6.4	82.50	81.4	2.34	2.3	6.84	6.9	3.00	3.0
(MUP01/02-W2)	02.20	0.5	21.5	21.5	6.40	0.4	80.20	01.4	2.31	2.3	6.93	0.7	3.00	3.0
MUP-W3 (Control)	01:55	0.1	22.0	22.0	4.57	4.6	59.10	60.3	3.11	3.3	6.88	6.9	6.00	6.0
WOP-W3 (CONTION)	01.55	0.1	22.0	22.0	4.63	4.0	61.40	00.3	3.42	3.3	7.01	0.9	6.00	6.0
MUP-W4 (Impact)	03:10	0.5	22.6	22.6	6.42	6.4	75.10	74.5	2.64	2.6	6.81	6.9	6.00	6.0
WOP-W4 (Impact)	03.10	0.5	22.6	22.0	6.39	0.4	73.80	74.5	2.58	2.0	6.95	0.9	6.00	6.0
MUP-W5 (mobile)	02:35	0.5	21.1	21.1	7.09	7.1	72.60	73.6	3.38	3.4	6.88	7.0	2.00	2.0
MOP-WS (Mobile)	02.33	0.5	21.1	21.1	7.13	7.1	74.60	73.0	3.41	3.4	7.03	7.0	2.00	2.0
MUP-W6 (mobile)	01:45	0.3	21.4	21.4	9.87	9.7	67.50	68.5	3.38	3.3	6.99	7.0	2.00	2.0
MUP-W6 (Mobile)	01:45	0.3	21.4	21.4	9.58	9.7	69.40	68.5	3.27	3.3	6.96	7.0	2.00	2.0

Date	1-J	un-12												
Location	Time	Depth (m)	Tem	Temp(oC)		ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	s	is
MUP-W1 (Control)	01:50	0.1	31.5	31.5	5.22	5.3	76.60	77.5	4.37	4.3	6.78	6.9	6.00	6.0
(MUP01/02-W1)	01:50	0.1	31.5	31.5	5.43	5.3	78.40	11.5	4.25	4.3	7.08	6.9	6.00	6.0
MUP-W2 (Control)	02:25	0.3	28.0	28.0	4.87	4 9	70.80	71.9	1.79	1.6	7.32	7.3	4.00	4.0
(MUP01/02-W2)	02.25	0.3	28.0	20.0	4.96	4.9	72.90	71.9	1.45	1.0	7.21	7.3	4.00	4.0
MUP-W3 (Control)	02:00	0.1	30.9	30.9	2.82	29	35.10	36.4	3.32	3.2	6.89	7.0	10.00	10.0
WOP-WS (CONTO)	02.00	0.1	30.9	30.9	2.95	2.9	37.60	30.4	3.14	3.2	7.09	7.0	10.00	10.0
MUP-W4 (Impact)	02:10	0.5	30.3	30.3	5.97	6.0	82.30	82.9	2.13	2.1	7.55	7.5	3.00	3.0
MOP-W4 (Impact)	02.10	0.5	30.3	30.3	5.98	6.0	83.40	02.9	2.14	2.1	7.45	7.5	3.00	3.0
MUP-W5 (mobile)	01:30	0.3	28.5	28.5	4.73	4.8	68.20	68.9	3.78	3.7	7.28	7.2	3.00	3.0
wor-ws (mobile)	01:30	0.3	28.5	20.5	4.83	4.8	69.50	06.9	3.66	3.7	7.14	1.2	3.00	3.0
MIID W/ (	01.00	0.0	28.2	20.2	7.36		88.60	74.1	4.31	4.0	6.97	7.0	2.00	2.0
MUP-W6 (mobile)	01:20	0.3	28.2	28.2	7.42	7.4	59.50	74.1	4.23	4.3	7.03	7.0	2.00	2.0

Date	4-J	un-12												
Location	Time	Depth (m)	Temp(oC)		DO (mg/L)		DOS(%)		Turbidity(NTU)		pH		S	S
MUP-W1 (Control)	01:45	0.1	30.1	30.1	4.88	4.9	64.10	65.5	9.51	9.6	7.03	7.1	5.00	5.0
(MUP01/02-W1)	01.45	0.1	30.1	30.1	4.97	4.9	66.80	65.5	9.63	9.0	7.07	7.1	5.00	5.0
MUP-W2 (Control)	02:15	0.2	29.2	29.2	5.45	5.5	63.30	64.1	2.46	2.6	7.23	7.4	4.00	4.0
(MUP01/02-W2)	02.15	0.2	29.2	29.2	5.56	5.5	64.90	04.1	2.64	2.0	7.54	7.4	4.00	4.0
MUP-W3 (Control)	01:55	0.1	28.8	28.8	3.65	3.7	45.40	46.3	4.78	4.9	6.90	7.0	4.00	4.0
WUP-W3 (Control)	01:55	0.1	28.8	28.8	3.79	3.7	47.20	46.3	4.97	4.9	7.02	7.0	4.00	4.0
MUP-W4 (Impact)	02:05	0.5	29.1	29.1	5.28	5.3	65.90	67.0	11.80	11.0	7.54	7.6	4.00	4.0
WOP-W4 (Impact)	02.05	0.5	29.1	29.1	5.39	5.3	68.00	67.0	10.20	11.0	7.61	7.0	4.00	4.0
MUP-W5 (mobile)	01:25	0.3	30.8	30.8	4.83	4.9	66.80	68.3	6.62	6.6	7.36	7.3	5.00	5.0
WOP-W5 (Mobile)	01.25	0.3	30.8	30.0	4.93	4.9	69.70	00.3	6.55	0.0	7.31	7.3	5.00	5.0
MIID W// (mobile)	01:15	0.2	29.5	29.5	4.62	4.7	48.70	49.0	6.62	6.6	7.09	7.2	3.00	3.0
MUP-W6 (mobile)	01:15	0.2	29.5	29.5	4 71	4.7	49 20	49.0	6.48	0.0	7 24	1.2	3.00	3.0

Date	6-J	un-12												
Location	Time	Depth (m)	Tem	p(oC)	D0 (r	ng/L)	DOS	(%)	Turbidit	ty(NTU)	р	Н	s	is
MUP-W1 (Control)	01:52	0.1	29.2	29.2	7.97	7.9	77.80	77.1	6.04	6.1	6.89	7.0	3.00	3.0
(MUP01/02-W1)	01.52	0.1	29.2	29.2	7.83	7.9	76.40	77.1	6.13	0.1	7.04	7.0	3.00	3.0
MUP-W2 (Control)	02:20	0.3	32.0	32.0	4.83	4.8	66.00	66.9	4.83	4 9	7.28	7.3	3.00	3.0
(MUP01/02-W2)	02.20	0.3	32.0	32.0	4.67	4.0	67.80	00.9	4.97	4.9	7.34	7.3	3.00	3.0
MUP-W3 (Control)	02:00	0.1	32.0	32.0	3.86	3.7	62.30	61.2	3.46	4.0	6.69	6.8	4.00	4.0
	02.00	0.1	32.0	32.0	3.45	3.1	60.10	01.2	4.54	4.0	6.85	0.0	4.00	4.0
MUP-W4 (Impact)	02:10	0.5	33.9	33.9	5.53	5.8	64.20	66.1	4.95	4 9	7.81	7.7	4.00	4.0
WOP-W4 (Impact)	02.10	0.5	33.9	33.9	5.98	3.0	67.90	00.1	4.89	4.9	7.66	1.1	4.00	4.0
MUP-W5 (mobile)	01:40	0.2	32.6	32.6	5.13	5.2	71.00	71.7	4.77	4.7	7.31	7.2	3.00	3.0
(Bildom) cvv-ruivi	01:40	0.2	32.6	32.6	5.23	5.2	72.40	/1./	4.61	4./	7.18	1.2	3.00	3.0
MUP-W6 (mobile)	01.00	0.3	31.0	24.0	6.05		84.00	05.4	4.31	4.4	7.24	7.3	2.00	2.0
MUP-W6 (mobile)	01:30	0.3	31.0	31.0	6.21	6.1	86.20	85.1	4.50	4.4	7.37	7.3	2.00	2.0

Date	8-J	un-12												
Location	Time	Depth (m)	Tem	o(oC)	D0 (r	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	S	S
MUP-W1 (Control)	01:40	0.1	29.9	29.9	6.02	6.0	78.30	78.7	5.01	5.1	7.06	7.1	2.00	2.0
(MUP01/02-W1)	01.40	0.1	29.9	29.9	6.05	6.0	79.10	70.7	5.13	5.1	7.19	7.1	2.00	2.0
MUP-W2 (Control)	02:10	0.2	29.0	29.0	4.85	4.9	63.30	64.1	3.12	3.1	7.63	7.7	4.00	4.0
(MUP01/02-W2) 02:10	02:10	0.2	29.0	29.0	4.93	4.9	64.80	64.1	3.03	3.1	7.73	1.1	4.00	4.0
MUP-W3 (Control)	01:45	0.1	28.0	28.0	3.45	3.5	39.70	40.4	5.82	5.8	6.87	7.0	3.00	3.0
	01:45	0.1	28.0	28.0	3.52	3.5	41.00	40.4	5.73	5.8	7.03	7.0	3.00	3.0
MUP-W4 (Impact)	01:55	0.5	28.8	28.8	7.77	7.7	97.60	97.0	8.92	8.9	7.44	7.3	5.00	5.0
WOP-W4 (Impact)	01.55	0.5	28.8	20.0	7.69	1.1	96.40	97.0	8.84	0.9	7.13	7.3	5.00	5.0
AND ME (	01:25	0.3	28.6	20.7	5.73	5.8	68.10	(0.7	4.72	4.7	7.42	7.	4.00	4.0
MUP-W5 (mobile)	01:25	0.3	28.6	28.6	5.79	5.8	69.30	68.7	4.67	4.7	7.32	7.4	4.00	4.0
			27.5		4.57		58.30		4.72		7.03		3.00	
MUP-W6 (mobile)	01:20	0.3	27.5	27.5	4.65	4.6	59.60	59.0	4.65	4.7	7.14	7.1	3.00	3.0

Date	11	Jun-12												
Location	Time	Depth (m)	Tem	o(oC)	n) OD	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	S	s
MUP-W1 (Control)	01:40	0.1	24.5	24.5	5.37	5.3	62.20	61.4	4.01	4.1	6.75	6.9	2.00	2.0
(MUP01/02-W1)	01.40	0.1	24.5	24.5	5.26	5.3	60.50	01.4	4.21	4.1	7.08	0.9	2.00	2.0
MUP-W2 (Control)	2:15	0.3	29.0	29.0	5.04	5.1	65.70	66.8	3.32	3.3	7.01	7.1	3.00	3.0
(MUP01/02-W2)	2,10	0.5	29.0	27.0	5.11	3.1	67.80	00.0	3.29	3.3	7.23	7.1	3.00	3.0
MUD W2 (Control)	01:50	0.2	24.3	24.3	4.55	4.6	50.30	52.2	3.99	4.2	6.73	6.9	2.00	2.0
MUP-W3 (Control)	01.50	0.2	24.3	24.3	4.72	4.0	54.00	32.2	4.31	4.2	7.09	0.9	2.00	2.0
MUP-W4 (Impact)	02:00	0.6	28.1	28.1	5.88	5.9	68.70	69.3	8.34	8.3	7.18	7.2	2.00	2.0
WOP-W4 (Impact)	02.00	0.0	28.1	20.1	5.93	5.9	69.80	09.3	8.22	0.3	7.24	1.2	2.00	2.0
MUP-W5 (mobile)	01:20	0.4	28.4	28.4	4.72	4.8	59.50	60.3	4.59	4.5	7.42	7.4	4.00	4.0
MOP-W5 (Mobile)	01.20	0.4	28.4	20.4	4.85	4.0	61.00	00.3	4.45	4.5	7.31	7.4	4.00	4.0
MUP-W6 (mobile)	01:10	0.3	28.3	28.3	5.59	5.6	46.30	47.4	4.59	4.5	6.97	7.1	2.00	2.0
MUP-W6 (MODILE)	01:10	0.3	28.3	28.3	5.65	5.6	48.50	47.4	4.47	4.5	7.30	7.1	2.00	2.0

# DSD CONTRACT NO. DC/2007/08 Drainage Improvements Works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang

#### Water Quality Monitoring Data for MUP05

Date	13	Jun-12												
Location	Time	Depth (m)	Tem	p(oC)	DO (r	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	s	iS
MUP-W1 (Control)	01:50	0.2	22.2	22.2	6.35	6.4	75.70	75.9	10.60	10.5	6.86	7.0	9.00	9.0
(MUP01/02-W1)	01.50	0.2	22.2	22.2	6.44	0.4	76.00	75.9	10.41	10.5	7.04	7.0	9.00	9.0
MUP-W2 (Control)	02:25	0.3	22.5	22.5	6.50	6.7	75.30	76.8	9.11	9.1	6.24	6.7	8.00	8.0
(MUP01/02-W2)	02:25	0.3	22.5	22.5	6.81	6.7	78.30	76.8	9.05	9.1	7.14	6.7	8.00	8.0
MUP-W3 (Control)	01:25	0.2	21.7	21.7	6.88	7.0	68.80	69.2	5.21	5.2	7.13	7.2	3.00	3.0
	01.25	0.2	21.7	21.7	7.05	7.0	69.60	09.2	5.28	3.2	7.35	1.2	3.00	3.0
MUP-W4 (Impact)	02:17	1	23.5	23.5	7.22	7.3	76.30	77.2	6.05	6.1	7.05	7.1	5.00	5.0
WOF-W4 (Impact)	02.17	'	23.5	23.3	7.34	1.3	78.10	11.2	6.11	0.1	7.11	7.1	5.00	5.0
MUP-W5 (mobile)	01:32	1	22.8	22.8	6.28	6.3	75.40	75.1	6.82	6.9	7.17	7.2	3.00	3.0
MUP-W5 (Mobile)	01:32	'	22.8	22.8	6.24	6.3	74.70	75.1	6.96	6.9	7.20	1.2	3.00	3.0
			22.3		6.39		76.80		9.80		7.20		3.00	
MUP-W6 (mobile)	01:15	0.5	22.3	22.3	6.42	6.4	77.90	77.4	9.60	9.7	7.18	7.2	3.00	3.0

Date	15	Jun-12												
Location	Time	Depth (m)	Temp	o(oC)	D0 (r	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	s	s
MUP-W1 (Control)	09:25	0.1	26.5	26.5	3.38	3.4	46.90	25.6	4.22	4.3	6.97	7.0	8.00	8.0
(MUP01/02-W1)	09.23	0.1	26.5	20.5	3.47	3.4	4.20	25.0	4.38	4.3	7.08	7.0	8.00	8.0
MUP-W2 (Control)	10:15	0.3	26.6	26.6	7.02	7.1	88.60	89.0	3.03	3.2	7.02	7.1	4.00	4.0
(MUP01/02-W2)	10.13	0.5	26.6	20.0	7.10	7.1	89.40	07.0	3.37	3.2	7.23	7.1	4.00	1 4.0
MIID W2 (Control)	08:55	0.2	26.1	26.1	5.01	5.1	58.20	58.8	4.36	4.4	7.60	7.5	8.00	8.0
MUP-W3 (Control)	06.55	0.2	26.1	20.1	5.18	5.1	59.30	30.0	4.42	4.4	7.34	7.5	8.00	0.0
MUP-W4 (Impact)	10:05	0.5	24.3	24.3	10.51	10.2	86.40	84.5	6.22	6.3	7.14	7.2	3.00	3.0
WOP-W4 (Impact)	10.03	0.5	24.3	24.3	9.83	10.2	82.60	04.3	6.36	0.3	7.18	1.2	3.00	3.0
MUP-W5 (mobile)	09:05	0.3	25.6	25.6	4.99	5.0	63.70	63.9	4.59	4.6	7.47	7.3	2.00	2.0
MOP-WS (Mobile)	09.03	0.3	25.6	25.0	4.95	5.0	64.00	03.9	4.51	4.0	7.20	7.3	2.00	2.0
MUP-W6 (mobile)	08:45	0.3	25.7	25.7	4.89	4 9	38.80	39.4	4.57	4.5	7.22	7.2	2.00	2.0
MUP-W6 (Mobile)	08:45	0.3	25.7	25.7	4.96	4.9	39.90	39.4	4.48	4.5	7.25	1.2	2.00	2.0

Date	18	Jun-12												
Location	Time	Depth (m)	Tem	p(oC)	D0 (r	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	S	S
MUP-W1 (Control)	01:40	0.1	35.0	35.0	3.55	3.6	48.20	49.0	6.05	6.0	6.88	6.9	8.00	8.0
(MUP01/02-W1)	01.40	0.1	35.0	33.0	3.69	3.0	49.70	49.0	6.01	6.0	7.01	0.9	8.00	0.0
MUP-W2 (Control)	02:25	0.3	34.6	34.6	4.86	4 9	72.90	73.5	3.07	3.0	7.10	7.2	7.00	7.0
(MUP01/02-W2)	02.25	0.3	34.6	34.0	4.93	4.9	74.00	73.3	2.98	3.0	7.34	1.2	7.00	7.0
MUP-W3 (Control)	01:05	0.1	31.3	31.3	4.06	4.1	58.20	59.1	5.48	5.5	6.94	7.0	4.00	4.0
	01.05	0.1	31.3	31.3	4.17	4.1	59.90	39.1	5.60	5.5	7.15	7.0	4.00	4.0
MUP-W4 (Impact)	02:15	0.4	34.8	34.8	8.23	8.3	99.60	99.2	4.06	4.0	7.14	7.2	3.00	3.0
MOF-W4 (Impact)	02.13	0.4	34.8	34.0	8.35	0.3	98.80	77.2	4.01	4.0	7.30	7.2	3.00	3.0
MIID WE (mobile)	1:23	0.4	32.9	32.9	7.02	7.4	73.60	74.3	4.83	4.9	7.37	7.3	3.00	3.0
MUP-W5 (mobile)	1,23	0.4	32.9	32.9	7.70	7.4	75.00	74.3	4.94	4.9	7.25	7.3	3.00	3.0
MUP-W6 (mobile)	01.05		31.8	24.0	13.18	40.0	67.40	(0.1	8.22	8.1	7.10	7.0	3.00	2.0
MUP-W6 (Mobile)	01:05	0.2	31.8	31.8	13.26	13.2	68.80	68.1	8.03	8.1	7.24	7.2	3.00	3.0

Date	20	Jun-12												
Location	Time	Depth (m)	Tem	p(oC)	n) OD	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	S	s
MUP-W1 (Control)	01:40	0.1	29.1	29.1	6.42	6.3	70.20	68.6	8.13	8.3	7.03	7.2	10.00	10.0
(MUP01/02-W1)	01.40	0.1	29.1	29.1	6.21	0.3	66.90	00.0	8.51	0.3	7.33	1.2	10.00	10.0
MUP-W2 (Control)	02:25	0.3	30.5	30.5	4.48	4.7	55.30	57.0	2.90	3.5	7.15	7.2	24.00	24.0
(MUP01/02-W2)	02.25	0.3	30.5	30.5	4.97	4.7	58.60	37.0	4.08	3.5	7.30	1.2	24.00	24.0
MUP-W3 (Control)	01:15	0.1	32.3	17.8	5.77	5.7	82.80	81.4	11.60	13.5	7.03	7.1	9.00	9.0
	01:15	0.1	3.3	17.8	5.64	5.7	80.00	81.4	15.40	13.5	7.15	7.1	9.00	9.0
MUP-W4 (Impact)	02:10	0.6	28.1	28.1	5.42	5.5	69.30	70.9	5.98	6.0	7.14	7.2	5.00	5.0
WOP-W4 (Impact)	02.10	0.0	28.1	20.1	5.60	5.5	72.40	70.9	6.04	0.0	7.34	1.2	5.00	5.0
MIID WE (mobile)	01:22	0.3	31.4	31.4	7.77	7.7	93.40	92.1	5.67	5.7	7.53	7.5	2.00	2.0
MUP-W5 (mobile) 0	01.22	0.3	31.4	31.4	7.63	1.1	90.80	92.1	5.81	5.7	7.48	7.5	2.00	2.0
MUD W. (	01.05	0.0	31.4	22.4	9.88	9.8	96.80	05 (	2.13	2.4	7.06		3.00	2.0
MUP-W6 (mobile)	01:05	0.2	31.4	31.4	9.70	9.8	94.30	95.6	2 07	2.1	7 14	7.1	3.00	3.0

Date	22	Jun-12						-	-	-	-	-		
Location	Time	Depth (m)	Tem	p(oC)	DO (r	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	S	is
MUP-W1 (Control)	01:47	0.1	29.1	29.1	4.79	4.8	53.30	54.1	4.92	4.8	6.72	6.9	2.00	2.0
(MUP01/02-W1)	01.47	0.1	29.1	29.1	4.84	4.0	54.90	34.1	4.66	4.0	7.09	0.9	2.00	2.0
MUP-W2 (Control)	02:15	0.3	29.3	29.3	9.47	9.3	72.50	71.4	3.66	3.6	6.90	7.0	3.00	3.0
(MUP01/02-W2)	02.15	0.3	29.3	29.3	9.04	9.3	70.20	71.4	3.54	3.0	7.03	7.0	3.00	3.0
MUP-W3 (Control)	01:25	0.1	28.6	28.6	3.28	3.3	50.20	51.2	11.40	10.9	6.87	6.9	3.00	3.0
	01.25	0.1	28.6	20.0	3.37	3.3	52.10	31.2	10.40	10.9	6.91	0.9	3.00	3.0
MUP-W4 (Impact)		0.5	29.2	29.2	5.82	5.9	64.70	65.5	5.78	5.7	7.19	7.1	3.00	3.0
WUP-W4 (Impact)	01:58	0.5	29.2	29.2	5.98	5.9	66.30	65.5	5.64	5.7	7.04	7.1	3.00	3.0
MUP-W5 (mobile)	01:30	0.3	28.6	28.6	4.59	4.7	43.80	44.8	6.15	6.1	7.12	7.1	4.00	4.0
wor-ws (mobile)	01:30	0.3	28.6	20.6	4.78	4.7	45.80	44.8	6.08	0.1	7.09	7.1	4.00	4.0
MUP-W6 (mobile)	01.15	0.1	28.0	20.0	4.64	4.0	40.60	40.0	8.85	0.1	6.80		3.00	2.0
MUP-W6 (mobile)	01:15	0.1	28.0	28.0	5.02	4.8	43.80	42.2	7.37	8.1	6.98	6.9	3.00	3.0

Date	25	Jun-12												
Location	Time	Depth (m)	Tem	p(oC)	D0 (r	ng/L)	DOS	(%)	Turbidi	ty(NTU)	р	Н	S	S
MUP-W1 (Control)	01:55	0.1	31.7	31.7	4.44	4.5	69.60	68.9	9.28	9.2	6.74	6.9	5.00	5.0
(MUP01/02-W1)	01.55	0.1	31.7	31.7	4.58	4.5	68.20	00.9	9.15	9.2	6.98	0.9	5.00	3.0
MUP-W2 (Control)	03:15	0.3	30.8	30.8	4.71	4.8	58.50	59.2	4.95	4.9	7.42	7.4	7.00	7.0
(MUP01/02-W2)	03:15	0.3	30.8	30.6	4.82	4.0	59.90	39.2	4.84	4.9	7.31	7.4	7.00	7.0
MUP-W3 (Control)	01:17	0.2	30.9	30.9	4.21	4.3	53.60	54.7	9.83	9.8	7.13	7.1	4.00	4.0
	01.17	0.2	30.9	30.9	4.39	4.3	55.70	34.7	9.76	9.0	7.00	7.1	4.00	4.0
MUP-W4 (Impact)	02:00	0.5	31.7	31.7	9.67	9.7	83.90	84.7	7.84	7.8	7.34	7.4	3.00	3.0
WOP-W4 (Impact)	02.00	0.5	31.7	31.7	9.74	9.1	85.50	04.7	7.74	7.0	7.45	7.4	3.00	3.0
ANID ME (makila)	01:30	0.5	31.6	31.6	9.72	9.7	86.30	86.9	6.82	6.8	8.16	8.1	5.00	5.0
MUP-W5 (mobile)	01:30	0.5	31.6	31.6	9.66	9.7	87.50	00.9	6.76	0.8	8.04	0.1	5.00	5.0
ALID MAY (	01.10	0.0	32.0	22.0	12.30	40.0	102.40	102 5	6.15		7.66	7.	3.00	2.0
MUP-W6 (mobile)	01:10	0.3	32.0	32.0	12.35	12.3	104.60	103.5	6.30	6.2	7.51	7.6	3.00	3.0



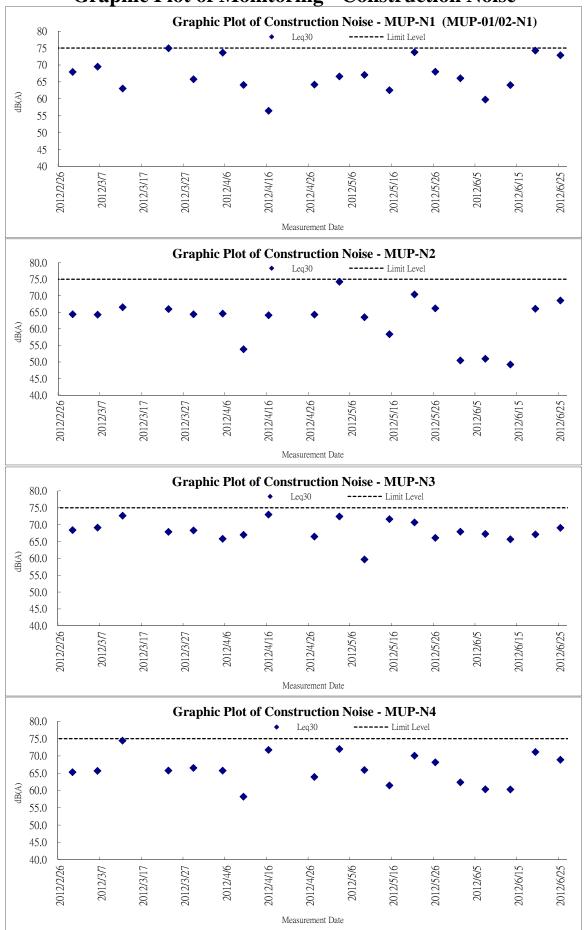
## Appendix I

# **Graphic Plot of Monitoring**

- 1. Construction Noise
- 2. Air Quality
- 3. Water Quality

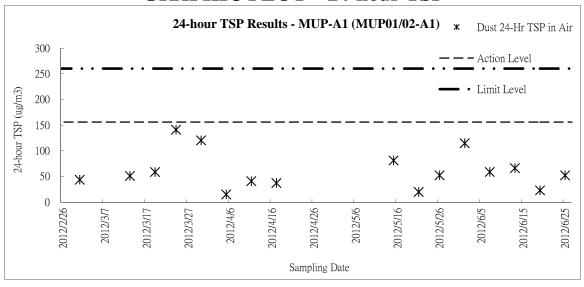


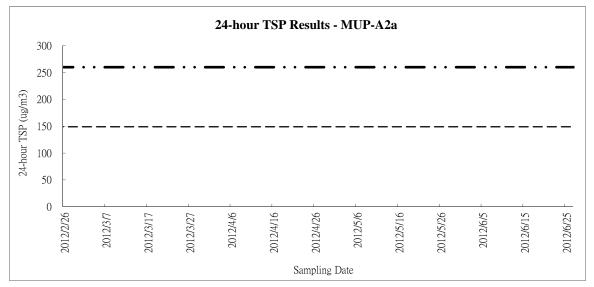
### **Graphic Plot of Monitoring - Construction Noise**

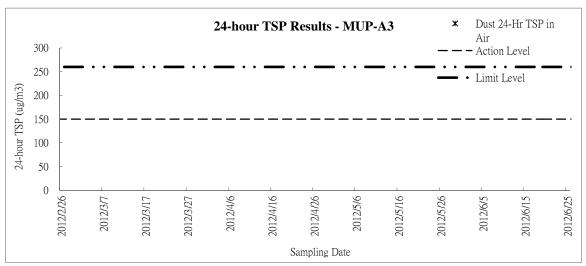




# **Graphic Plot of Monitoring - Air Quality GRAPHIC PLOT – 24-hour TSP**

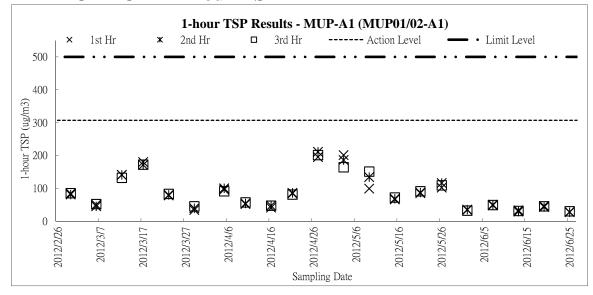


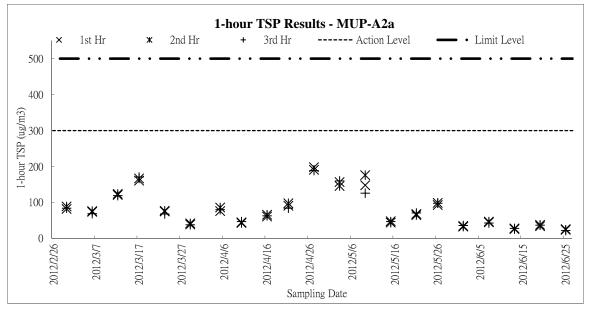


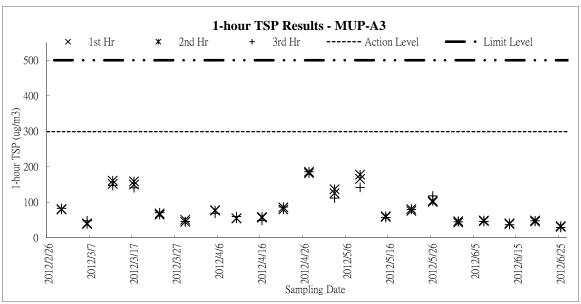




### **GRAPHIC PLOT – 1-hour TSP**

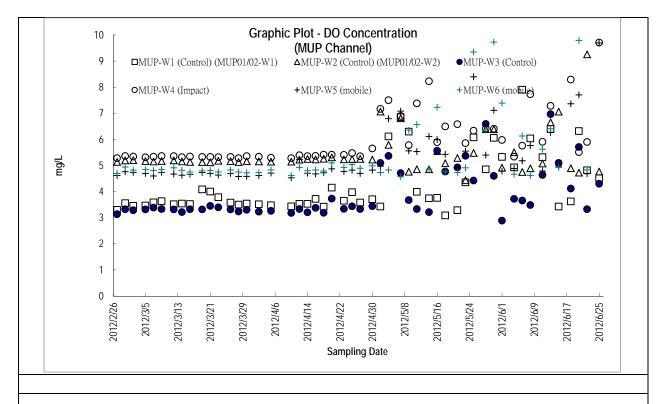


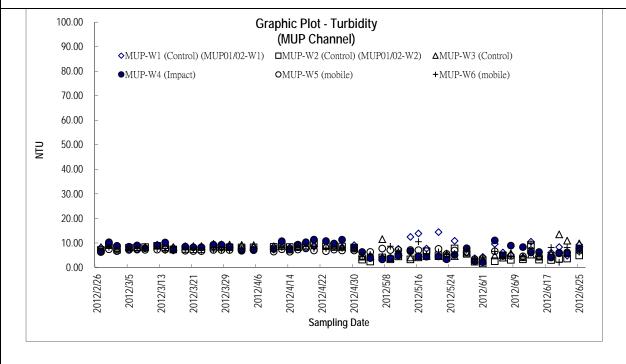




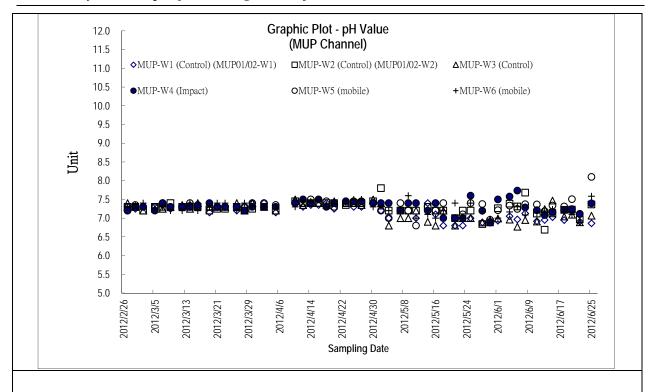


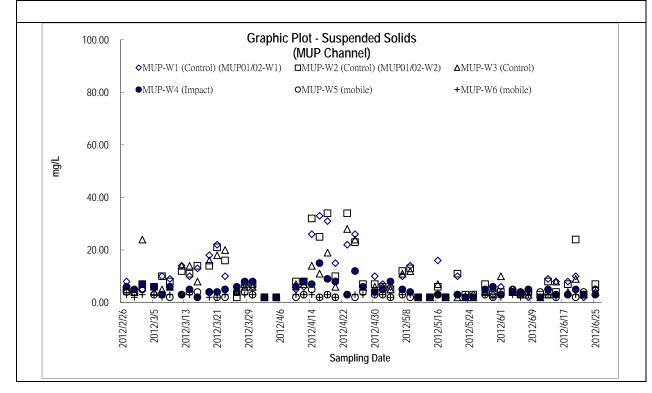
### **Graphic Plot of Monitoring - Water Quality**













# Appendix J

**Meteorological Records** 



### **Meteorological Data in this Reporting Month**

					Ta K	wu Ling	
Date	:	Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-May-12	Sat	Cloudy with showers.	28.4	26.8	8.5	81	Е
27-May-12	Sun	Moderate to fresh easterly winds.	5.8	27.7	10.2	82	Е
28-May-12	Mon	Fresh easterly winds	10.5	25.5	9	91	Е
29-May-12	Tue	Cloudy with one or two rain patches	0.1	26	13	82	Е
30-May-12	Wed	Fresh easterly winds, occasionally strong offshore.	Trace	28.2	9.1	74.7	E/NE
31-May-12	Thu	Mainly cloudy.	Trace	27.3	8.2	82	Е
1-Jun-12	Fri	Fresh southwesterly winds	0	26.6	12	68.5	Е
2-Jun-12	Sat	Mainly fine and hot	8.6	28	12.7	70	Е
3-Jun-12	Sun	Moderate east to southeasterly winds.	Trace	26.1	8.3	83.2	Е
4-Jun-12	Mon	Mainly fine and hot	Trace	27.7	7.6	77	Е
5-Jun-12	Tue	Mainly fine	0	28.3	7.3	78	Е
6-Jun-12	Wed	Fresh southwesterly winds	0	28.3	9	78	E/NE
7-Jun-12	Thu	Mainly fine and hot	Trace	29.3	10	74.5	Е
8-Jun-12	Fri	Fresh southwesterly winds	0	29.8	7.3	79.7	Е
9-Jun-12	Sat	Moderate west to northwesterly winds.	1.5	28.9	9.2	81	S/SW
10-Jun-12	Sun	Fresh southwesterly winds	26.8	29.9	10.2	76.7	S/SW
11-Jun-12	Mon	Mainly cloudy with scattered showers	0.2	29	10	82.5	SW
12-Jun-12	Tue	Mainly cloudy with a few showers.	2.8	28.6	6.5	81.5	N/NW
13-Jun-12	Wed	Mainly fine	22.5	26.6	6.6	87	E/SE
14-Jun-12	Thu	Very hot in the afternoon.	Trace	27.2	6.1	78	Е
15-Jun-12	Fri	Light to moderate southeasterly winds.	Trace	27.9	7.5	79.5	E/NE
16-Jun-12	Sat	Mainly fine and hot	60.3	26.9	8.7	79.7	Е
17-Jun-12	Sun	Moderate east to southeasterly winds.	24.6	26.9	10.8	88	Е
18-Jun-12	Mon	Mainly fine.	17.7	27.6	12.3	85.5	E/NE
19-Jun-12	Tue	Very hot in the afternoon.	1.4	28.6	7	78.7	E/NE
20-Jun-12	Wed	Moderate east to southeasterly winds.	0	29.6	4.5	75.5	W/SW
21-Jun-12	Thu	-	31.2	27.8	5.7	90.7	E/NE
22-Jun-12	Fri	Light to moderate southeasterly winds.	16	27.5	7.5	87	S
23-Jun-12	Sat	HOLIDAY					
24-Jun-12	Sun	Very hot	4.9	28	8	79	S/SW
25-Jun-12	Mon	isolated showers.	0.2	27.8	8.9	81.7	S/SW

<sup>\*</sup> The record was extracted from The Hong Kong Observatory Weather Stations # missing (less than 24 hourly observations a day)



# Appendix K

**Proforma of the Weekly ET Site Inspection Checklist** 

## **Environmental Team – Weekly Site Inspection and Audit Checklist**



Project	DSD Contract No. DC/2007/08	Inspecte	d by	Checklist No.	DC200708-31-May-20	12
	Drainage Improvement Works at Tai Po Tin, Ping	IEC/IEC's	Representative	:		
	Che, Man Uk Pin and Lin Ma Hang		Representative:			
Inspect Date:	tion 31-May-2012		Representative Representative			
Time:	10:00	Contract	or's		g /	
PART		. top. ooo.		Environmenta	al Permit No. EP-277/2007/ <i>F</i>	—— A
Weath		Rainy	Calm		a	•
Tempe	erature: 29 °C					
Humio	dity: High Moderate Low			N/A		
Wind:		Calm				
	nnel	Area Inspe	ected			
TKL0	07					
MUP MUP	01/02 05					
PART E	3: SITE AUDIT					
		Not		Fallani	Dhatai	
	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes No	Follow Up	N/A Photo/ Remarks	
Section	1: Water Quality					
1.01	Is an effluent discharge license obtained for the Project?	$\checkmark$			Ш	
1.02	Is the effluent discharged in accordance with the discharge licence?	$\checkmark$				
	Is the discharge of turbid water avoided?					
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?		$\overline{V}$			
	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?					
	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?		$\checkmark$			
1.07	Is drainage system well maintained?		$\overline{\checkmark}$			
	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?		$\overline{\checkmark}$			
1.09	Are temporary exposed slopes properly covered?		$\checkmark$			
1.10	Are earthworks final surfaces well compacted or protected?		$\overline{\checkmark}$			
1.11	Are manholes adequately covered or temporarily sealed?	$\checkmark$				
1.12	Are there any procedures and equipment for rainstorm protection?		$\checkmark$			
1.13	Are wheel washing facilities well maintained?		$\overline{V}$			
1.14	Is runoff from wheel washing facilities avoided?		$\overline{V}$			
1.15	Are there toilets provided on site?		$\checkmark$			
1.16	Are toilets properly maintained?					
	Are the vehicle and plant servicing areas paved and located within roofed areas?		$\checkmark$			
1.18	Is the oil leakage or spillage avoided?		$\checkmark$			
	Are there any measures to prevent leaked oil from entering the drainage system?		$\checkmark$			
	Are there any measures to collect spilt cement and concrete washings during concreting works?	$\checkmark$				



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	V					
1.22	Are the oil interceptors/grease traps maintained properly?	$\checkmark$					
1.23	Is used bentonite recycled where appropriate?	$\checkmark$					
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.		$\checkmark$				
1.25	No excavation is undertaken in the settlement area.		$\checkmark$				
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	$\checkmark$					
1.27	Mobile toilets should provide on site and located away the stream course.		$\checkmark$				
1.25	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.26	Is ponding /stand water avoided		$\checkmark$				
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		$\checkmark$				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		$\checkmark$				
2.03	Are the excavated materials sprayed with water during handling?		$\checkmark$				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		$\checkmark$				
2.05	Is the exposed earth properly treated within six months after the last construction activities?		$\checkmark$				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		$\checkmark$				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?		$\checkmark$				
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		$\checkmark$				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		$\checkmark$				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		$\checkmark$				
2.11	Is dark smoke emission from plant/equipment avoided?		$\checkmark$				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	$\checkmark$					
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?		$\checkmark$				
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	$\checkmark$					
2.15	Is open burning avoided?		$\checkmark$				
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.		$\checkmark$				
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition?		$\checkmark$				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	$\checkmark$					
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	$\checkmark$					



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?	<b>V</b>					
3.08	Are flaps and panels of mechanical equipment closed during operation?		$\checkmark$				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	$\checkmark$					
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?		$\checkmark$				
3.11	Are valid Construction Noise Permit(s) posted at site entrances?		$\checkmark$				
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	$\checkmark$					
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	$\checkmark$					
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	$\checkmark$					
Section	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		$\checkmark$				
4.02	Are receptacles available for general refuse collection?		$\checkmark$				
4.03	Is general refuse sorting or recycling implemented?		$\checkmark$				
4.04	Is general refuse disposed of properly and regularly?		$\checkmark$				
4.05	Is the Contractor registered as a chemical waste producer?	$\checkmark$					
4.06	Are the chemical waste containers properly labelled?	$\checkmark$					
4.07	Are the chemical containers stored in proper storage areas?		$\checkmark$				
4.08	Is the chemical waste storage area properly labelled?		$\checkmark$				
4.09	Is the chemical waste storage area used for storage of chemical waste only?		$\checkmark$				
4.10	Are incompatible chemical wastes stored in different areas?	$\checkmark$					
4.11	Are the chemical wastes disposed of by licensed collectors?	$\checkmark$					
4.12	Are trip tickets for chemical wastes disposal available for inspection?	$\checkmark$					
4.13	Are chemical/fuel storage areas bunded?		$\checkmark$				
4.14	Are designated areas identified for storage and sorting of construction wastes?		$\checkmark$				
4.15	Are construction wastes sorted (inert and non-inert) on site?		$\checkmark$				
4.16	Are construction wastes reused?		$\checkmark$				
4.17	Are construction wastes disposed of properly?				$\checkmark$		
4.18	Are site hoardings and signboards made of durable materials instead of timber?		$\checkmark$				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		$\checkmark$				
4.20	Are appropriate procedures followed if contaminated material exists?		$\checkmark$				
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?		$\checkmark$				
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		$\checkmark$				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		$\checkmark$				



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Sectio	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		$\checkmark$				
5.02	Are retained and transplanted trees properly protected?		$\checkmark$				
5.03	Are surgery works carried out for the damaged trees?					$\checkmark$	
5.04	Is damage to trees outside site boundary due to construction activities avoided?		$\checkmark$				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?		$\checkmark$				
Sectio	n 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections?	$\checkmark$					
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands?	$\checkmark$					
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands are prohibited?	$\checkmark$					
Sectio	n 7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		$\checkmark$				
7.02	Is any mosquito control measures implemented to prevent mosquito breeding?						

#### Remarks

Follow-Up of Last Site Inspection: Not required for reminders.

#### Findings of Site Inspection on 31 May 2012:

1. No adverse environmental impacts were observed during the site inspection. However, full implementation of the required environmental mitigation measures is reminded particularly watering of the dusty surfaces during dusty construction including vehicle movement under dry and windy conditions.



IEC's representative RE's representative ET's EO's Contractor's representative representative representative

) ( H. N. Cheung) ( F. N. Wong ) ( Lai Kwok ( Hong )



Project:	DSD Contract No. DC/2007/08	Inspect	ed by		Checklist No.		DC200708-7-Jun-2012		
	Drainage Improvement Works at Tai Po Tin, Ping Che,		's Represent						
Inspection	Man Uk Pin and Lin Ma Hang n	RE/ RE's Representative:  ETL/ ET's Representative:  EO/ EO's Representative:  Contractor's			Wong F. I				
Date:	7-June-2012				Lai Kwok Hong Alex				
Time:	10:00	Represe							
PART A	: GENERAL INFORMATION			ı	Environmenta	al Permi	t No. EP-277/2007/A		
Weather		Rainy	Cal	m					
Temperat Humidity					N/A				
Wind:		Calm							
Chann	el	Area Insp	ected						
TKL02 TKL07 MUP01/02 MUP05									
PART B:	SITE AUDIT								
	t Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Ilow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks		
Section 1	: Water Quality	_							
1.01 ls	an effluent discharge license obtained for the Project?	$\checkmark$							
1.02 ls	the effluent discharged in accordance with the discharge licence?	$\checkmark$							
1.03 ls	the discharge of turbid water avoided?		$\checkmark$						
1.04 Are	e there proper desilting facilities in the drainage systems to duce SS levels in effluent?		$\checkmark$						
	e there channels, sandbags or bunds to direct surface run-off to dimentation tanks?		$\checkmark$						
	e there any perimeter channels provided at site boundaries to ercept storm runoff from crossing the site?		$\checkmark$						
1.07 ls	drainage system well maintained?		$\checkmark$						
	excavation proceeds, are temporary access roads protected by ushed stone or gravel?		$\checkmark$						
1.09 Ar	e temporary exposed slopes properly covered?		$\checkmark$						
1.10 Ar	e earthworks final surfaces well compacted or protected?		$\checkmark$						
1.11 Ar	e manholes adequately covered or temporarily sealed?	$\checkmark$							
1.12 Ar	e there any procedures and equipment for rainstorm protection?		$\checkmark$						
1.13 Ar	e wheel washing facilities well maintained?		$\checkmark$						
1.14 ls	runoff from wheel washing facilities avoided?		$\checkmark$				-		
1.15 Ar	e there toilets provided on site?		$\checkmark$						
1.16 Ar	e toilets properly maintained?		$\checkmark$						
	e the vehicle and plant servicing areas paved and located within ofed areas?		$\checkmark$						
1.18 ls	the oil leakage or spillage avoided?		$\checkmark$						
	e there any measures to prevent leaked oil from entering the ainage system?		$\checkmark$						
1.20 Ar	e there any measures to collect spilt cement and concrete ashings during concreting works?	$\checkmark$							



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	$\checkmark$					
1.22	Are the oil interceptors/grease traps maintained properly?	$\checkmark$					
1.23	Is used bentonite recycled where appropriate?	$\checkmark$					
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.		$\checkmark$				
1.25	No excavation is undertaken in the settlement area.		$\checkmark$				
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	$\checkmark$					
1.27	Mobile toilets should provide on site and located away the stream course.		$\checkmark$				
1.25	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.26	Is ponding /stand water avoided		$\checkmark$				
Section	on 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		$\checkmark$				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		$\checkmark$				
2.03	Are the excavated materials sprayed with water during handling?		$\checkmark$				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		$\checkmark$				
2.05	Is the exposed earth properly treated within six months after the last construction activities?		$\checkmark$				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		$\checkmark$				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?		$\checkmark$				
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		$\checkmark$				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		$\checkmark$				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		$\checkmark$				
2.11	Is dark smoke emission from plant/equipment avoided?		$\checkmark$				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	$\checkmark$					
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?		$\checkmark$				
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	$\checkmark$					
2.15	Is open burning avoided?		$\checkmark$				
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.		$\checkmark$				
Section	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition?		$\checkmark$				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	$\checkmark$					
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	$\checkmark$					



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?	<b>V</b>					
3.08	Are flaps and panels of mechanical equipment closed during operation?		$\checkmark$				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	$\checkmark$					
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?		$\checkmark$				
3.11	Are valid Construction Noise Permit(s) posted at site entrances?		$\checkmark$				
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	$\checkmark$					
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	$\checkmark$					
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	$\checkmark$					
Section	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		$\checkmark$				
4.02	Are receptacles available for general refuse collection?		$\checkmark$				
4.03	Is general refuse sorting or recycling implemented?		$\checkmark$				
4.04	Is general refuse disposed of properly and regularly?		$\checkmark$				
4.05	Is the Contractor registered as a chemical waste producer?	$\checkmark$					
4.06	Are the chemical waste containers properly labelled?	$\checkmark$					
4.07	Are the chemical containers stored in proper storage areas?		$\checkmark$				
4.08	Is the chemical waste storage area properly labelled?		$\checkmark$				
4.09	Is the chemical waste storage area used for storage of chemical waste only?		$\checkmark$				
4.10	Are incompatible chemical wastes stored in different areas?	$\checkmark$					
4.11	Are the chemical wastes disposed of by licensed collectors?	$\checkmark$					
4.12	Are trip tickets for chemical wastes disposal available for inspection?	$\checkmark$					
4.13	Are chemical/fuel storage areas bunded?		$\checkmark$				
4.14	Are designated areas identified for storage and sorting of construction wastes?		$\checkmark$				
4.15	Are construction wastes sorted (inert and non-inert) on site?		$\checkmark$				
4.16	Are construction wastes reused?		$\checkmark$				
4.17	Are construction wastes disposed of properly?				$\checkmark$		
4.18	Are site hoardings and signboards made of durable materials instead of timber?		$\checkmark$				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		$\checkmark$				
4.20	Are appropriate procedures followed if contaminated material exists?		$\checkmark$				
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?		$\checkmark$				
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		$\checkmark$				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		$\checkmark$				



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Section	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		$\checkmark$				
5.02	Are retained and transplanted trees properly protected?		$\checkmark$				
5.03	Are surgery works carried out for the damaged trees?					$\checkmark$	
5.04	Is damage to trees outside site boundary due to construction activities avoided?		$\checkmark$				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?		$\checkmark$				
Section	n 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections?	$\checkmark$					
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands?	$\checkmark$					
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands are prohibited?	$\checkmark$					
Section	n 7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		$\checkmark$				
7.02	Is any mosquito control measures implemented to prevent mosquito breeding?						

#### Remarks

Follow-Up of Last Site Inspection: Not required for reminders.

Findings of Site Inspection on 7 Jun 2012:

1. Muddy haul road surfaces were observed within the site particularly at the entrance/exit. Full implementation of the required environmental mitigation measures, in particular wheel washing of the vehicles prior to exit, is reminded.



IEC's representative RE's representative ET's EO's Contractor's representative representative representative

Jan 1

( ) ( H. N. Cheung) ( F. N. Wong ) ( Lai Kwok ( ) Hong )



Humi Wind	Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang  14-June-2012  10:00  T A: GENERAL INFORMATION her:  Sunny Fine Cloudy  erature:  30	Inspected by IEC/IEC's Representative: RE/ RE's Representative: ETL/ ET's Representative: EO/ EO's Representative: Contractor's Representative:  E Rainy Calm Area Inspected		Wong F. N Lai Kwok H	./Ben Ta		
TKL TKL MUF MUF	07 P01/02 P05						
Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes I	No	Follow Up	N/A	Photo/ Remarks
Sectio	n 1: Water Quality						
1.01	Is an effluent discharge license obtained for the Project?	$\checkmark$					
1.02	Is the effluent discharged in accordance with the discharge licence?	$\checkmark$					
1.03	Is the discharge of turbid water avoided?						
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?						
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?		$\overline{\checkmark}$				
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?		$\checkmark$				
1.07	Is drainage system well maintained?		$\overline{\checkmark}$				
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?		$\overline{\checkmark}$				
1.09	Are temporary exposed slopes properly covered?		$\overline{\checkmark}$				
1.10	Are earthworks final surfaces well compacted or protected?		$\checkmark$				
1.11	Are manholes adequately covered or temporarily sealed?	$\checkmark$					
1.12	Are there any procedures and equipment for rainstorm protection?		$\overline{\checkmark}$				
1.13	Are wheel washing facilities well maintained?		$\overline{\checkmark}$				
1.14	Is runoff from wheel washing facilities avoided?		$\overline{\checkmark}$				
1.15	Are there toilets provided on site?		<b>V</b>				
1.16	Are toilets properly maintained?						
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?		<b>V</b>				
1.18	Is the oil leakage or spillage avoided?		$\overline{\checkmark}$				
1.19	Are there any measures to prevent leaked oil from entering the drainage system?						
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	$\checkmark$					



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	V					
1.22	Are the oil interceptors/grease traps maintained properly?	$\checkmark$					
1.23	Is used bentonite recycled where appropriate?	$\checkmark$					
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.		$\checkmark$				
1.25	No excavation is undertaken in the settlement area.		$\checkmark$				
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	$\checkmark$					
1.27	Mobile toilets should provide on site and located away the stream course.		$\checkmark$				
1.25	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.26	Is ponding /stand water avoided		$\checkmark$				
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		$\checkmark$				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		$\checkmark$				
2.03	Are the excavated materials sprayed with water during handling?		$\checkmark$				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		$\checkmark$				
2.05	Is the exposed earth properly treated within six months after the last construction activities?		$\checkmark$				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		$\checkmark$				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?		$\checkmark$				
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		$\checkmark$				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		$\checkmark$				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		$\checkmark$				
2.11	Is dark smoke emission from plant/equipment avoided?		$\checkmark$				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	$\checkmark$					
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?		$\checkmark$				
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	$\checkmark$					
2.15	Is open burning avoided?		$\checkmark$				
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.		$\checkmark$				
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition?		$\checkmark$				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	$\checkmark$					
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	$\checkmark$					



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?	$\checkmark$					
3.08	Are flaps and panels of mechanical equipment closed during operation?		$\checkmark$				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	$\checkmark$					
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?		$\checkmark$				
3.11	Are valid Construction Noise Permit(s) posted at site entrances?		$\checkmark$				
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	$\checkmark$					
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	$\checkmark$					
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	$\checkmark$					
Section	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		$\checkmark$				
4.02	Are receptacles available for general refuse collection?		$\checkmark$				
4.03	Is general refuse sorting or recycling implemented?		$\checkmark$				
4.04	Is general refuse disposed of properly and regularly?		$\checkmark$				
4.05	Is the Contractor registered as a chemical waste producer?	$\checkmark$					
4.06	Are the chemical waste containers properly labelled?	$\checkmark$					
4.07	Are the chemical containers stored in proper storage areas?		$\checkmark$				
4.08	Is the chemical waste storage area properly labelled?		$\checkmark$				
4.09	Is the chemical waste storage area used for storage of chemical waste only?		$\checkmark$				
4.10	Are incompatible chemical wastes stored in different areas?	$\checkmark$					
4.11	Are the chemical wastes disposed of by licensed collectors?	$\checkmark$					
4.12	Are trip tickets for chemical wastes disposal available for inspection?	$\checkmark$					
4.13	Are chemical/fuel storage areas bunded?		$\checkmark$				
4.14	Are designated areas identified for storage and sorting of construction wastes?		$\checkmark$				
4.15	Are construction wastes sorted (inert and non-inert) on site?		$\checkmark$				
4.16	Are construction wastes reused?		$\checkmark$				
4.17	Are construction wastes disposed of properly?				$\checkmark$		
4.18	Are site hoardings and signboards made of durable materials instead of timber?		$\checkmark$				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		$\checkmark$				
4.20	Are appropriate procedures followed if contaminated material exists?		$\checkmark$				
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?		$\checkmark$				
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		$\checkmark$				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		$\checkmark$				



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Sectio	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		$\checkmark$				
5.02	Are retained and transplanted trees properly protected?		$\checkmark$				
5.03	Are surgery works carried out for the damaged trees?					$\checkmark$	
5.04	Is damage to trees outside site boundary due to construction activities avoided?		$\checkmark$				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?		$\checkmark$				
Sectio	n 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections?	$\checkmark$					
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands?	$\checkmark$					
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands are prohibited?	$\checkmark$					
Sectio	n 7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		$\checkmark$				
7.02	Is any mosquito control measures implemented to prevent mosquito breeding?						

#### Remarks

Follow-Up of Last Site Inspection: Not required for reminders.

Findings of Site Inspection on 14 Jun 2012:

 Construction activities but no adverse environmental impacts were observed during the site inspection. Full implementation of the required environmental mitigation measures, in particular wheel washing of the vehicles prior to exit and watering during dusty construction activities under dry and windy conditions, is reminded.



IEC's representative RE's representative ET's representative representative representative representative

( ) ( H. N. Cheung) (F. N. Wong ) ( Lai Kwok ( Hong )



Project:	DSD Contract No. DC/2007/08	Inspecte	d by		Checklist No.	D(	C200708-21-Jun-2012			
	Drainage Improvement Works at Tai Po Tin, Ping	IEC/IEC's	s Representativ	ve:						
Inspection	Che, Man Uk Pin and Lin Ma Hang	RE/ RE's Representative: ETL/ ET's Representative:			Wong E N	m				
Date:	21-June-2012	EO/ EO's Representative: Contractor's Representative:			Wong F. N./Ben Tam  Lai Kwok Hong Alex					
Time:	10:00									
PART A	: GENERAL INFORMATION				Environmenta	al Permi	t No. EP-277/2007/A			
Weather	: Sunny Fine Cloudy	Rainy	Calm							
Temperat	ure: 29 °C									
Humidity		o .			N/A					
Wind: Chann		Calm <b>Area Insp</b> e	ected							
TKL02	-									
TKL07										
MUP05										
PART B:	SITE AUDIT									
	t Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Ilow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes I	No	Follow Up	N/A	Photo/ Remarks			
Section 1	: Water Quality									
1.01 ls	an effluent discharge license obtained for the Project?	$\checkmark$								
1.02 ls t	the effluent discharged in accordance with the discharge licence?	$\checkmark$								
1.03 ls	the discharge of turbid water avoided?		$\checkmark$							
1.04 Are	e there proper desilting facilities in the drainage systems to duce SS levels in effluent?		<b>V</b>							
	e there channels, sandbags or bunds to direct surface run-off to dimentation tanks?		$\overline{\checkmark}$							
	e there any perimeter channels provided at site boundaries to ercept storm runoff from crossing the site?		$\overline{\checkmark}$							
1.07 ls	drainage system well maintained?		$\overline{\checkmark}$							
	excavation proceeds, are temporary access roads protected by ushed stone or gravel?		$\overline{\checkmark}$							
1.09 Are	e temporary exposed slopes properly covered?		$\checkmark$							
1.10 Are	e earthworks final surfaces well compacted or protected?		$\checkmark$							
1.11 Are	e manholes adequately covered or temporarily sealed?	$\checkmark$								
1.12 Are	e there any procedures and equipment for rainstorm protection?		$\overline{\checkmark}$							
1.13 Ar	e wheel washing facilities well maintained?		$\overline{\checkmark}$							
1.14 ls	runoff from wheel washing facilities avoided?		$\checkmark$							
1.15 Ar	e there toilets provided on site?		<b>V</b>							
1.16 Are	e toilets properly maintained?		$\checkmark$							
	e the vehicle and plant servicing areas paved and located within ofed areas?		$\overline{\checkmark}$							
1.18 ls	the oil leakage or spillage avoided?		$\overline{\checkmark}$							
	e there any measures to prevent leaked oil from entering the ainage system?		$\overline{\checkmark}$							
1.20 Are	e there any measures to collect spilt cement and concrete ashings during concreting works?	$\checkmark$								



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	V					
1.22	Are the oil interceptors/grease traps maintained properly?	$\checkmark$					
1.23	Is used bentonite recycled where appropriate?	$\checkmark$					
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m3 capacities for sedimentation.		$\checkmark$				
1.25	No excavation is undertaken in the settlement area.		$\checkmark$				
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	$\checkmark$					
1.27	Mobile toilets should provide on site and located away the stream course.		$\checkmark$				
1.25	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.26	Is ponding /stand water avoided		$\checkmark$				
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		$\checkmark$				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		$\checkmark$				
2.03	Are the excavated materials sprayed with water during handling?		$\checkmark$				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		$\checkmark$				
2.05	Is the exposed earth properly treated within six months after the last construction activities?		$\checkmark$				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		$\checkmark$				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?		$\checkmark$				
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		$\checkmark$				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		$\checkmark$				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		$\checkmark$				
2.11	Is dark smoke emission from plant/equipment avoided?		$\checkmark$				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	$\checkmark$					
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?		$\checkmark$				
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	$\checkmark$					
2.15	Is open burning avoided?		$\checkmark$				
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.		$\checkmark$				
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition?		$\checkmark$				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	$\checkmark$					
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	$\checkmark$					



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?	$\checkmark$					
3.08	Are flaps and panels of mechanical equipment closed during operation?		$\checkmark$				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	$\checkmark$					
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?		$\checkmark$				
3.11	Are valid Construction Noise Permit(s) posted at site entrances?		$\checkmark$				
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	$\checkmark$					
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	$\checkmark$					
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	$\checkmark$					
Section	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		$\checkmark$				
4.02	Are receptacles available for general refuse collection?		$\checkmark$				
4.03	Is general refuse sorting or recycling implemented?		$\checkmark$				
4.04	Is general refuse disposed of properly and regularly?		$\checkmark$				
4.05	Is the Contractor registered as a chemical waste producer?	$\checkmark$					
4.06	Are the chemical waste containers properly labelled?	$\checkmark$					
4.07	Are the chemical containers stored in proper storage areas?		$\checkmark$				
4.08	Is the chemical waste storage area properly labelled?		$\checkmark$				
4.09	Is the chemical waste storage area used for storage of chemical waste only?		$\checkmark$				
4.10	Are incompatible chemical wastes stored in different areas?	$\checkmark$					
4.11	Are the chemical wastes disposed of by licensed collectors?	$\checkmark$					
4.12	Are trip tickets for chemical wastes disposal available for inspection?	$\checkmark$					
4.13	Are chemical/fuel storage areas bunded?		$\checkmark$				
4.14	Are designated areas identified for storage and sorting of construction wastes?		$\checkmark$				
4.15	Are construction wastes sorted (inert and non-inert) on site?		$\checkmark$				
4.16	Are construction wastes reused?		$\checkmark$				
4.17	Are construction wastes disposed of properly?				$\checkmark$		
4.18	Are site hoardings and signboards made of durable materials instead of timber?		$\checkmark$				
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?		$\checkmark$				
4.20	Are appropriate procedures followed if contaminated material exists?		$\checkmark$				
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?		$\checkmark$				
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.		$\checkmark$				
4.23	Contaminated sediments will be managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		$\checkmark$				



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Sectio	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		$\checkmark$				
5.02	Are retained and transplanted trees properly protected?		$\checkmark$				
5.03	Are surgery works carried out for the damaged trees?					$\checkmark$	
5.04	Is damage to trees outside site boundary due to construction activities avoided?		$\checkmark$				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?		$\checkmark$				
Sectio	n 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections?	$\checkmark$					
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands?	$\checkmark$					
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands are prohibited?	$\checkmark$					
Sectio	n 7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		$\checkmark$				
7.02	Is any mosquito control measures implemented to prevent mosquito breeding?						

#### Remarks

Follow-Up of Last Site Inspection: Not required for reminders.

Findings of Site Inspection on 21 Jun 2012:

1. No adverse environmental impacts were observed during the site inspection. Full implementation of the required environmental mitigation measures, in particular wheel washing of the vehicles prior to exit, is reminded.



IEC's representative RE's representative ET's representative representative representative

) ( H. N. Cheung) ( F. N. Wong ) ( Lai Kwok ( Hong )



## **Appendix** L

**Proforma of Ecology Inspection Checklist** 



Project:	Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang				Inspected by IEC/IEC's Repres RE/RE's Represe ETL/ ET's Repres	ntative:	Checklist No.
Date:	31 May 2012			EO/EO's Represe			
Time:	16:00 pm				Contractor's Rep	resentative:	
PART A:		GENE	RAL INFORMA	TION		Envi	ironmental Permit No.
Weather:	Sunny	Fine	✓ Cloudy	Rainy	Calm	✓ EP-	-277/2007A
Temperature	: 29	°C					
Humidity:	High	✓ Moderate	Low			N/A	
Wind:	Strong	✓ Breeze	Light	Calm			
Channel				Area Ins	spected		
MUP01/02/0	05			Al	I		
PART B:			SITE AUDIT				

PART B:		SITE AUDIT								
Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks		
Section	on 6: Ecc	ology						<u> </u>		
1.01	6.5.8	earthworks to widen the stream have been undertaken from the landward side and existing stream untouched except during the final stage		✓						
1.04	6.5.9	widened stream bottom floored with natural materials to approximate as closely as possible to the rocky components of a natural stream bottom		✓						
1.02	6.5.10	Any essential works outside the dry season have been temporarily isolated from the stream					<b>-</b>			
1.03	6.5.11	Excavation works have been restricted to 300m length at any one time		✓			_			
1.04	6.5.13	native riparian trees which would be impacted during construction works have been transplanted to suitable sites within the project area where possible				✓	_			
1.05	6.5.22	Construction activities have been restricted to works area that should be clearly demarcated		✓						
1.06	6.5.22	Temporary diversions have been provided to ensure continuous water flow to the downstream section.		✓						
1.07	6.5.22	The proposed works site inside or in the proximity of natural streams have been temporarily isolated		✓						
1.08	6.5.22	no disturbance to the stream bed and bank have been found from construction works, equipment or workers for the stream section where the existing natural stream bed and bank will be left untouched				✓	_			
1.09	6.5.22	Temporary access track on streambed have been kept to the minimum width and length		✓						
1.09	6.5.22	Temporary stream crossings are supported on stilts above the stream bed.					<b>-</b>			
1.10	6.5.22	Adequate temporary drainage measures including sediment and oil/grease traps have been provided to prevent contaminated site run-off entering the water bodies		<b>√</b>			_	_		
1.11	6.5.22	Stockpiling of construction materials, spoils and waste have been properly covered and located away from water bodies				✓	_			



Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.12	6.5.22	Supervisory staff of the contractor have been assigned to station on site to closely supervise and monitor the construction works		<b>√</b>				
1.13	6.5.22	workers have bee regularly briefed to avoid disturbing the flora and fauna near the works area	✓	<b>√</b>			_	
1.14	6.5.22	Construction effluent, site run-off and sewage have been properly collected, treated and disposed				<b>√</b>	_	
1.15	6.5.22	details of the mitigation measures to be implemented during construction stage have been submitted to the Engineer for approval		✓			_ 	

#### Remarks

MUP05: Soil and rocks are observed piled in riverbed, attention should be paid to potential erosion caused by storm or heavy rain. Without control measure, the potential runoff with sediments will affect down stream/riverbed.

Recommended actions:

- Soil erosion control;
- Remove soil piles in the streambed

IEC's representative	RE's representative	ET's representative	EO's representative	Contractor's representative
		Moosh		
( )	( )	( Mark Shea )	( )	( )



Project:	DSD Contract N Drainage Improve Tai Po Tin, Ping (		nd Lin Ma Hang	l	Inspected by IEC/IEC's Repres RE/RE's Represe		Checklist No.			
Inspection	nspection				ETL/ ET's Representative:					
Date:	<b>7 June 2012</b> 16:30 pm				EO/EO's Represe	ntative:				
Time:					Contractor's Rep	resentative:				
PART A:		GENE	RAL INFORMA	TION		Envi	ronmental Permit No.			
Weather:	Sunny	Fine	✓ Cloudy	Rainy	Calm	□ P-	277/2007A			
Temperature	: 30	°C								
Humidity:	High	Moderate	Low			N/A				
Wind:	Strong	Breeze	Light	Calm						
Channel				Area Ins	spected					
MUP01/02/0	05			All						

#### PART B: SITE AUDIT

PARID:		SITE AUDIT						
Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Section	on 6: Eco							
1.01	6.5.8	earthworks to widen the stream have been undertaken from the landward side and existing stream untouched except during the final stage		✓				
1.04	6.5.9	widened stream bottom floored with natural materials to approximate as closely as possible to the rocky components of a natural stream bottom		✓				
1.02	6.5.10	Any essential works outside the dry season have been temporarily isolated from the stream					<b>-</b>	
1.03	6.5.11	Excavation works have been restricted to 300m length at any one time		✓			_	
1.04	6.5.13	native riparian trees which would be impacted during construction works have been transplanted to suitable sites within the project area where possible				✓	_	
1.05	6.5.22	Construction activities have been restricted to works area that should be clearly demarcated		✓			_	
1.06	6.5.22	Temporary diversions have been provided to ensure continuous water flow to the downstream section.		✓			_	
1.07	6.5.22	The proposed works site inside or in the proximity of natural streams have been temporarily isolated		✓			_	
1.08	6.5.22	no disturbance to the stream bed and bank have been found from construction works, equipment or workers for the stream section where the existing natural stream bed and bank will be left untouched				<b>√</b>	_	
1.09	6.5.22	Temporary access track on streambed have been kept to the minimum width and length		✓			_	
1.09	6.5.22	Temporary stream crossings are supported on stilts above the stream bed.					<b>-</b>	
1.10	6.5.22	Adequate temporary drainage measures including sediment and oil/grease traps have been provided to prevent contaminated site run-off entering the water bodies		✓		✓	_	
1.11	6.5.22	Stockpiling of construction materials, spoils and waste have been properly covered and located away from water bodies				✓		



Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.12	6.5.22	Supervisory staff of the contractor have been assigned to station on site to closely supervise and monitor the construction works	<b>√</b>	✓				
1.13	6.5.22	workers have bee regularly briefed to avoid disturbing the flora and fauna near the works area	<b>√</b>	✓				
1.14	6.5.22	Construction effluent, site run-off and sewage have been properly collected, treated and disposed				✓	_	
1.15	6.5.22	details of the mitigation measures to be implemented during construction stage have been submitted to the Engineer for approval		✓			_ 	

#### Remarks

MUP05: Soil and rocks are observed piled in riverbed, attention should be paid to potential erosion caused by storm or heavy rain.

Recommended actions:

- Soil erosion control;
- Remove soil piles in the streambed

IEC's representative		RE's representative	ET's representa	tive	EO's repre	sentative	Contractor's representative	
			Morsh					
(	)	( )	( Mark Shea	)	(	)	(	)

Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance;

Follow Up: Observations requiring follow-Up actions N/A: Not

Temporary stream crossings are supported on stilts

Adequate temporary drainage measures including sediment and oil/grease traps have been provided to prevent contaminated site run-off entering the

Stockpiling of construction materials, spoils and waste have been properly covered and located

above the stream bed.

away from water bodies

water bodies

EM&A

Applicable

REF:

Note:

1.09

1.10

1.11

6.5.22

6.5.22

6.5.22



Photo/

Remarks

Project:	Drainage Improv	No. DC/2007/08 rement Works at Che, Man Uk Pin ar	nd Lin Ma Hang	Inspected by IEC/IEC's Repre RE/RE's Repres		Checklist No.
Inspection				ETL/ ET's Repre	sentative:	
Date:	16 June 2012	une 2012			entative:	
Time:	16:00 pm			Contractor's Re	presentative:	
PART A:		GENE	RAL INFORMATION		Envi	ironmental Permit No.
Weather:	Sunny	Fine	✓ Cloudy Rai	ny Calm	✓ EP-	-277/2007A
Temperature:	30	°C				
Humidity:	✓ High	Moderate	Low		N/A	
Wind:	Strong	Breeze	✓ Light Calı	m		
Channel			Are	a Inspected		
MUP01/02/0	5			All		
PART B:			SITE AUDIT			

**Follow** 

Up

Yes

Obs.

No

N/A

#### Section 6: Ecology 6.5.8 earthworks to widen the stream have been undertaken from the landward side and existing stream untouched except during the final stage 1.04 6.5.9 widened stream bottom floored with natural materials to approximate as closely as possible to the П П П П rocky components of a natural stream bottom 6.5.10 1.02 Any essential works outside the dry season have been temporarily isolated from the stream 1.03 6.5.11 Excavation works have been restricted to 300m П П П П length at any one time 1.04 6.5.13 native riparian trees which would be impacted during construction works have been transplanted to suitable sites within the project area where possible 1.05 6.5.22 Construction activities have been restricted to works area that should be clearly demarcated 6.5.22 1.06 Temporary diversions have been provided to ensure continuous water flow to the downstream section. 1.07 6.5.22 The proposed works site inside or in the proximity of natural streams have been temporarily isolated 1.08 6.5.22 no disturbance to the stream bed and bank have been found from construction works, equipment or workers for the stream section where the existing natural stream bed and bank will be left untouched 6.5.22 1.09 Temporary access track on streambed have been kept to the minimum width and length

П



Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.12	6.5.22	Supervisory staff of the contractor have been assigned to station on site to closely supervise and monitor the construction works	<b>√</b>	<b>√</b>				
1.13	6.5.22	workers have bee regularly briefed to avoid disturbing the flora and fauna near the works area	✓	✓				
1.14	6.5.22	Construction effluent, site run-off and sewage have been properly collected, treated and disposed				✓	_	
1.15	6.5.22	details of the mitigation measures to be implemented during construction stage have been submitted to the Engineer for approval		✓			-	

#### Remarks

MUP05: Soil and rocks are observed piled in riverbed, attention should be paid to potential erosion caused by storm or heavy rain. Without control measure, the potential runoff with sediments will affect down stream/riverbed.

Recommended actions:

- Soil erosion control;
- Remove soil piles in the streambed

IEC's representative		RE's representative	ET's representative	EO's representative	Contractor's representative
			March		
(	)	( )	( Mark Shea	(	( )



Project:	Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang			J	Inspected by IEC/IEC's Represe RE/RE's Represe ETL/ ET's Represe	ntative:	Checklist No.
Date: 21 June 2012					EO/EO's Represe	ntative:	
Time:	16:00 pm				Contractor's Rep	resentative:	
PART A:		GENE	RAL INFORMA	TION		Env	ironmental Permit No.
Weather:	Sunny	Fine	✓ Cloudy	✓ Rainy	Calm	✓ EP	-277/2007A
Temperature	31	O <sub>C</sub>					
Humidity:	High	✓ Moderate	Low			N/A	
Wind:	Strong	✓ Breeze	Light	Calm			
Channel				Area Ins	spected		
MUP01/02/0	5			Al	1		

#### PART B: SITE AUDIT

Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Section	n 6: Eco	ology						
1.01	6.5.8	earthworks to widen the stream have been undertaken from the landward side and existing stream untouched except during the final stage		✓			_	
1.04	6.5.9	widened stream bottom floored with natural materials to approximate as closely as possible to the rocky components of a natural stream bottom		<b>√</b>				
1.02	6.5.10	Any essential works outside the dry season have been temporarily isolated from the stream					✓	
1.03	6.5.11	Excavation works have been restricted to 300m length at any one time		✓			_	
1.04	6.5.13	native riparian trees which would be impacted during construction works have been transplanted to suitable sites within the project area where possible				✓	_	
1.05	6.5.22	Construction activities have been restricted to works area that should be clearly demarcated		✓			_	
1.06	6.5.22	Temporary diversions have been provided to ensure continuous water flow to the downstream section.		✓			_	
1.07	6.5.22	The proposed works site inside or in the proximity of natural streams have been temporarily isolated		✓			_	
1.08	6.5.22	no disturbance to the stream bed and bank have been found from construction works, equipment or workers for the stream section where the existing natural stream bed and bank will be left untouched				✓	_	
1.09	6.5.22	Temporary access track on streambed have been kept to the minimum width and length		✓			_	
1.09	6.5.22	Temporary stream crossings are supported on stilts above the stream bed.					<u>-</u>	
1.10	6.5.22	Adequate temporary drainage measures including sediment and oil/grease traps have been provided to prevent contaminated site run-off entering the water bodies		<b>√</b>		✓	_	
1.11	6.5.22	Stockpiling of construction materials, spoils and waste have been properly covered and located away from water bodies				✓		



Note:	EM&A REF:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
1.12	6.5.22	Supervisory staff of the contractor have been assigned to station on site to closely supervise and monitor the construction works	<b>√</b>	<b>√</b>				
1.13	6.5.22	workers have bee regularly briefed to avoid disturbing the flora and fauna near the works area	✓	✓				
1.14	6.5.22	Construction effluent, site run-off and sewage have been properly collected, treated and disposed				✓	_	
1.15	6.5.22	details of the mitigation measures to be implemented during construction stage have been submitted to the Engineer for approval		✓			_ 	

#### Remarks

MUP05: Soil and rocks are observed piled in riverbed, attention should be paid to potential erosion caused by storm or heavy rain. Without control measure, the potential runoff with sediments will affect down stream/riverbed.

Recommended actions:

- Soil erosion control;
- Remove soil piles in the streambed

IEC's representative		RE's representative	ET's representative	EO's	representative	Contractor's representative	
			March				
(	)	( )	( Mark Shea )	(	)	(	)



## **Appendix M**

**Monthly Summary Waste Flow Table** 

## Monthly Summary Waste Flow Table for 2012 (26 May to 25 June 2012)

		Actual Quan	tities of Inert C&	D Wastes Generate	ed Monthly		A	ctual Quantities	of C&D Wastes (	Generated Monthly	
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m3)
Jan	2,392	0	0.2	1.062	0	1.13	0	0	0	0	0
Feb	1.97	0	0	1.87	0	0.1	0	0	0	0	0
Mar	2.65	0	0	2.35	0	0.3	0	0	0	0	0
Apr	2.83	0	0	2.68	0	0.15	0	0	0	0	0.011
May	1.37	0	0.1	1.27	0	0	0	0	0	0	0
Jun	0.9	0	0.9	0	0	0	0	0	0	0	0
Sub-total	12.112	0	1.2	9.232	0	1.68	0	0	0	0	0.011
Jul											
Aug											
Sep			5,7.50								
Oct							****				
Nov				(Prost)							
Dec											
Total	12.112	0	1.2	9.232	0	1.68	0	0	0	0	0.011

25/6/2012

	No. of the last of		Forecast of Total	Quantities of C	&D Materials to	be Generated fro	om the Contract*			
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000m <sup>3</sup> )
283.5	35.1	47.5	107	32	24	60	1	1	1,	10

Notes:

- (1) The performance targets are given in PS Clause 25.01F(14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
- \* (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown 1.37 of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m3. (PS Clause 25.01E(4)(b) 0.9 refers). [Delete Note (4) and the table above on the forecast, where inapplicable].

2.27

#### Summary Table for Work Processes or Activities Requiring Timber for Temporary Works

Contract No. :	DC/2007/08 Date:		25 June 2012
Contract Title:	DRAINAGE IMPROVEMENT WORKS AT TAI PO TIN, PING CHE, MAN UK PIN & LIN MA HAN	NG_	

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m <sup>3</sup> )	Actual Quantities used (m <sup>3</sup> )	Remarks
	Construction of footpath and Grasscrete paving at MUP05	Formwork for Supporting formwork	1.4	1.2	
		T. J. F. C.			

**Total Estimated Quantity of Timber Used** 

1.4

Notes:

- (a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.
- (b) The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.01E(5).

DC/2007/08 APP25.5-1



## Appendix N

**Response to Comments** 



# DSD Contract DC/2007/08 – Drainage Improvement Works at Tai Po Tin, Ping Che, Man Uk and Lin Ma Hang

1st Response to IEC Comments – EM&A Report (Designated Project)

Item	Section / Paragraph	Comment	Response
1	Appendix G	To confirm the date of third ecological inspection	Amended

2nd Response to IEC Comments – EM&A Report (Designated Project)

Item	Section / Paragraph	Comment	Response