

JOB NO.: TCS00371/07

**VERSION NO.: 3** 

DRAINAGE SERVICES DEPARTMENT CONTRACT NO. DC/2006/02

YUEN LONG, KAM TIN, NGAU TAM MEI AND TIN SHUI WAI DRAINAGE IMPROVEMENTS, STAGE 1, PHASE 2B – CHEUNG CHUN SAN TSUEN AND KAM TSIN WAI

KT15 - MONTHLY EM&A REPORT FOR JUNE 2009 (No. 24)

PREPARED FOR

CHIT CHEUNG CONSTRUCTION COMPANY LIMITED

#### **Quality Index**

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Ver. No.	Date	Remarks	
1	8 July 2009	First Submission	
2	13 July 2009	Amended against IEC's comment on 10 July 2009	
3	16 July 2009	Amended against IEC's comment on 14 July 2009	

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#### **EXECUTIVE SUMMARY**

- ES01. Chit Cheung Construction Company Limited (CCC) has been awarded the Drainage Services Department (DSD) Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B Cheung Chun San Tsuen and Kam Tsin Wai (the Project) on 3 April 2007. According to the contract specification requirements, an Environmental Monitoring & Audit (EM&A) program has to be implemented by an Environmental Team (ET) throughout the contract period.
- ES02. Under the Project Profile for Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai, Drainage Improvement Stage 1 Phase 2B Kam Tin Secondary Drainage Channels KT14 & KT15 (Ref.: 382047/E/PP/Issue 5), KT14 & KT15 was defined as Designated Projects and governed by an Environmental Permit (EP-231/2005/A).
- ES03. Action-United Environmental Services and Consulting (AUES) has been commissioned by CCC to be the ET to implement the EM&A program in accordance with the requirements stated in the Environmental Permit and EM&A Manual for Secondary Channels KT14 & KT15 (August 2005). This Contract (DC/2006/02) only covers KT15; and KT14 will be carried out under another contract.
- ES04. This Monthly EM&A Report for June 2009 (No. 24) presents the EM&A results for the period from 26 May to 25 June 2009 (the Reporting Period).

#### BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES05. The monitored results of air quality, construction noise, water quality and ecology demonstrated were in full compliance with the environmental quality criteria

#### **COMPLAINTS LOG**

ES06. No environmental complaint was received in this Reporting Period.

#### NOTIFICATIONS OF ANY SUMMONS AND SUCCESSFUL PROSECUTIONS

ES07. There was no environmental summons or successful prosecution recorded in this Reporting Period.

#### **REPORTING CHANGES**

ES08. There are no changes to be reported in this Reporting Period.

#### **FUTURE KEY ISSUES**

ES09. Construction activities to be undertaken in **July 2009** included backfilling of completed structure, road construction, tree protection and tree transplanting works, carrying out joined survey and utilities companies liaison. Potential environmental impacts for this project generally include air quality, noise, ecology, surface runoff and construction waste. The contractor shall properly implement the required environmental mitigation measures as per the Implementation Schedule in the EM&A manual to ensure no significant adverse environmental impact arises from the construction works. The contractor was reminded to maintain good house-keeping throughout the construction phase.

#### EM&A ACTIVITIES IN THE REPORTING PERIOD

ES10. A summary of the monitoring activities in this Reporting Period is listed below: -

•	1-hour TSP Monitoring	15	Events
•	24-hour TSP Monitoring	5	<b>Events</b>
•	Noise Monitoring	5	<b>Events</b>
•	Stream Water Quality	18	<b>Events</b>



Ecology Site Inspection Audit Event Times

## AIR QUALITY

ES11. No 1-hour and 24-hour TSP monitoring results that triggered the Action or Limit Level was recorded in this Reporting Period.

#### **CONSTRUCTION NOISE**

ES12. No construction noise complaint (an Action Level exceedance) was received and no construction noise monitoring result that exceeded the Limit Level was recorded in this Reporting Period.

#### **STREAM WATER QUALITY**

ES13. No stream water quality monitoring result trigger the Action or Limit Level was recorded in this reporting period.

## **ECOLOGY (FAUNA)**

ES14. No intrusions of construction activities into the wetland areas nor adverse impact on the wetlands was found during site audit on 22 June 2009. No exceedances were recorded in this Reporting Period.

#### SUMMARY OF MONITORING EXCEEDANCES

ES15. A summary of monitoring exceedances during the Reporting Period for air quality, construction noise, stream water quality and ecology monitoring are presented below:-

Monitorin g	Parameters	Work-Related Exceedance %	Investigation & Corrective Actions
Air	1-hour TSP	0	Not Required for 0% Project Related
Quality	24-hour TSP	0	Not Required for 0% Project Related
Noise	Leq (30min) Daytime	0	Not Required for 0% Project Related
	Dissolve Oxygen	0	Not Required for 0% Project Related
	Turbidity (NTU)	0	Not Required for 0% Project Related
Stream	рH	0	Not Required for 0% Project Related
Water	Suspended Solids	0	Not Required for 0% Project Related
	Ammonia Nitrogen	0	Not Required for 0% Project Related
	Zinc	0	Not Required for 0% Project Related
Ecology	Decrease in the total number of species or individuals of wetland dependent bird from baseline	0	Not Required for 0% Project Related Exceedance
	Decrease in the total number of species or individuals of wetland faunal from baseline	0	Not Required for 0% Project Related Exceedance

Note: According to the Project Profile: Secondary Channels KT14 & KT15 Attachment 4 EM&A Manual Section 7.5.1 (b), fauna monitoring is only required to be undertaken in wet seasons (April to July) on a monthly basis.

## SITE INSPECTION BY EXTERNAL PARTIES

ES16. No site visit or inspection was carried out by the Environmental Protection Department in this Reporting Period.

DSD Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai KT15 – Monthly EM&A Report for June 2009 (No. 24)



## **TABLE OF CONTENTS**

1.0	INTRODUCTION	1
2.0	PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS	2
3.0	SUMMARY OF IMPACT MONITORING REQUIREMENTS	3
4.0	IMPACT MONITORING METHDOLOGY	5
5.0	IMPACT MONITORING RESULTS	11
6.0	WASTE MANAGEMENT	16
7.0	SITE INSPECTION	17
8.0	ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE	18
9.0	IMPLEMENTATION STATUS OF MITIGATION MEASURES	19
10.0	IMPACT FORECAST	20
11.0	CONCLUSION	21



## **LIST OF TABLES**

<b>ΓABLE 2-1</b>	STATUS OF ENVIRONMENTAL LICENSE AND PERMITS
ΓABLE 3-1	SUMMARY OF EM&A REQUIREMENTS
<b>ГАВ</b> LЕ <b>3-2</b>	ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING
TABLE 3-3	ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE MONITORING
ΓABLE 3-4	ACTION AND LIMIT LEVELS FOR STREAM WATER QUALITY MONITORING
TABLE 3-5	ACTION AND LIMIT LEVELS FOR CONSTRUCTION ECOLOGY MONITORING
ΓABLE 4-1	LOCATIONS OF AIR QUALITY, CONSTRUCTION NOISE AND STREAM WATER QUALITY MONITORING STATION/LOCATIONS
Г <b>АВ</b> LЕ <b>4-2</b>	MONITORING EQUIPMENT USED IN EM&A PROGRAM
<b>ГАВ</b> LЕ <b>4-3</b>	ANALYTICAL METHOD APPLIED TO WATER QUALITY SAMPLES
Г <b>АВ</b> LЕ <b>5-1</b>	SUMMARY OF 1-HOUR TSP MONITORING RESULTS AT A10
<b>ГАВ</b> LЕ <b>5-2</b>	SUMMARY OF 24-HOUR TSP MONITORING RESULTS AT A10
ΓABLE 5-3	SUMMARY OF NOISE MONITORING RESULTS AT N10A
ΓABLE 5-4	SUMMARY OF STREAM WATER QUALITY RESULTS AT W9A & W9B
TABLE 5-5	SUMMARY OF KT15 ECOLOGY IMPACT MONITORING SURVEYS BIRD SURVEY
Г <b>АВ</b> LЕ <b>5-6</b>	SUMMARY OF FAUNA IMPACT MONITORING SURVEYS
ΓABLE 6-1	SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
<b>ΓABLE 6-2</b>	SUMMARY OF QUANTITIES OF C&D WASTES
ΓABLE 6-3	SUMMARY OF EXCAVATED SOIL FOR MARINE DISPOSAL
Г <b>АВ</b> LЕ <b>7-1</b>	SUMMARY OF FINDINGS OF SITE INSPECTION AND ENVIRONMENTAL AUDIT
ΓABLE 8-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
<b>ΓABLE 8-2</b>	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
ΓABLE 8-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
Г <b>АВ</b> LЕ 11-1	SUMMARY OF THE EXCEEDANCES FOR IMPACT MONITORING

## **LIST OF APPENDICES**

APPENDIX A	PROJECT SITE LAYOUT
APPENDIX B	THREE-MONTH CONSTRUCTION PROGRAM
APPENDIX C	ENVIRONMENTAL ORGANISATION STRUCTURE
APPENDIX D	LOCATIONS OF DESIGNATED MONITORING STATION/LOCATIONS/AREA
APPENDIX E	EVENT/ACTION PLAN FOR AIR QUALITY, CONSTRUCTION NOISE, STREAM WATER QUALITY AND ECOLOGY
APPENDIX F	EQUIPMENT CALIBRATION CERTIFICATES
APPENDIX G	IMPACT MONITORING SCHEDULE
APPENDIX H	GRAPHICAL PLOTS OF AIR QUALITY, CONSTRUCTION NOISE AND STREAM WATER QUALITY MONITORING RESULTS
APPENDIX I	METEOROLOGICAL DATA IN THE REPORTING PERIOD
APPENDIX J	ENVIRONMENTAL TEAM SITE INSPECTION CHECKLISTS
APPENDIX K	TREES PHOTOGRAPHIC RECORDS
APPENDIX L	RESPONSE TO COMMENTS



#### 1.0 INTRODUCTION

- 1.01 Chit Cheung Construction Company Limited (CCC) has been awarded the Drainage Services Department (DSD) Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B Cheung Chun San Tsuen and Kam Tsin Wai (the Project) on 3 April 2007. According to the contract specification requirements the Project should implement an Environmental Monitoring & Audit (EM&A) program by an Environmental Team (ET) throughout the construction period in accordance with the requirements as stated in the project particular specification, Environmental Permit (EP-231/2005/A) and EM&A Manual for KT15. Location plan of the project site is presented in Appendix A and the construction program is presented in Appendix B.
- 1.02 The works to be executed at the proposed Channel KT15 mainly comprise the following:
  - Construction of about 0.8 km secondary drainage channels;
  - Construction of DSD maintenances access;
  - Provisioning and re-provisioning of pedestrian crossings;
  - Associated ancillary works; and
  - Construction of temporary vehicular access in Portion 5A1 of the site for vehicular access from Kam Sheung Road to Lot Nos. 398RP, 395 in DD106 which are adjacent to the site.
- 1.03 Action-United Environmental Services and Consulting (AUES) has been commissioned by CCC to be the ET for implementation of the EM&A program in accordance with the requirements as set out in the contract particular specification, Environmental Permit (EP-231/2005/A), EM&A Manual for KT15 and the Environment Impact Assessment Ordinance (EIAO).
- 1.04 This report presents the results of the project EM&A program for **June 2009** during the period from **26 May to 25 June 2009**.

#### REPORT STRUCTURE

- 1.05 The EM&A report is structured into the following sections:
  - **Section 1** INTRODUCTION
  - Section 2 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS
  - Section 3 SUMMARY OF MONITORING REQUIREMENTS
  - Section 4 IMPACT MONITORING METHODOLOGY
  - **Section 5** IMPACT MONITORING RESULTS
  - **Section 6** WASTE MANAGEMENT
  - **Section 7 SITE INSPECTION**
  - Section 8 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE
  - Section 9 IMPLEMENTATION STATUS OF MITIGATION MEASURES
  - **Section 10** IMPACT FORECAST
  - **Section 11 CONCLUSIONS**



## 2.0 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

#### PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

2.01 The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in **Appendix C**.

## **CONSTRUCTION PROGRESS**

- 2.02 The major construction activities undertaken in this Reporting Period are listed below:-
  - Backfilling behind completed structure;
  - Stream diversion;
  - Road construction:
  - Dumping activities;
  - Sheet pile driving;
  - Tree protection and tree transplanting works;
  - Utilities companies liaison; and
  - Carrying out joined survey

#### SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.03 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Period is presented in **Table 2-1**.

**Table 2-1** Status of Environmental Licenses and Permits

Items	Item Description	License/Permit Status
1	Environmental Permit (EP-231/2005/A)	-
2	Air Pollution Control (Construction Dust)	Notified EPD on 09 July 2007
3	Chemical Waste Producer Registration WPN:5296-519-C3430-01 (Portion 8, Ma Fung Ling Road, Tong Yan San Tsuen, Yuen Long)	
4	Chemical Waste Producer Registration WPN:5113-533-C3434-09 (Kam Tsin Wai, Kam Tin, Yuen Long)	Registration on 20 April 2007
5	Chemical Waste Producer Registration WPN:5213-424-C3431-01 (Portion 7, Birthing Area, Hoi Wan Road, Tuen Mun)	Registration on 20 April 2007
6	Water Pollution Control Ordinance (Discharge License) License No.: 1U450/1	updated on 20 June 2009
7	Billing Account for Disposal of Construction Waste (Account Number: 7005311)	Valid on 07 May 2007



## 3.0 SUMMARY OF IMPACT MONITORING REQUIREMENTS

- 3.01 Environmental monitoring and audit requirements are set out in the EM&A Manual. Air quality, construction noise, stream water quality and ecology have been identified to be the key environmental issues during the construction phase of the project.
- 3.02 A summary of the EM&A requirements for air quality, construction noise, stream water quality and ecology monitoring are shown in **Table 3-1**. The designated station of the air quality, construction noise, stream water quality locations and ecology monitoring area are shown in **Appendix D**.

**Table 3-1** Summary of EM&A Requirements

Environmental Aspect	Monitoring Parameters		Monitoring Stations
Air Quality	1-hour and 24-hour TSP		A10
Construction Noise	Leq <sub>(30min)</sub> during normal working hours		N10a*
	Supplementary dat	a of L <sub>10</sub> and L <sub>90</sub> for reference	
Stream Water Quality	In Situ Measurement	<ul> <li>Dissolved Oxygen Concentration (mg/L);</li> </ul>	W9A & W9B
		<ul> <li>Dissolved Oxygen Saturation (% Sat);</li> </ul>	
		• Turbidity (NTU);	
		• pH;	
		• Salinity (%); Water Depth (m) and	
		• Temperature (°C);	
	Laboratory Analysis	• Suspended Solids (mg/L);	
		<ul> <li>Ammonia Nitrogen (mg/L); and</li> </ul>	
		<ul> <li>Zinc (μg/L).</li> </ul>	
Ecology	Monthly monitoring the wetland areas to activities into the word Monthly monitoring that there is no consequence of attributable to the protographic record Monthly surveys of wet season (Apamphibians, drago the year for birds.		

Note: \* The noise ambient condition within the victim area without significant change. Due to the accessibility, noise monitoring will undertake at N10a. Once the access is available, the impact noise monitoring will undertake at N10.

- 3.03 Air monitoring is carried out once every six days for 24-hour TSP and 3 times every six days for 1-hour TSP at one designated monitoring station A10.
- 3.04 Noise monitoring is conducted once per week at one designated monitoring location (N10a). Measurements of  $Leq_{(30min)}$  shall be taken between 0700 and 1900 with supplementary  $L_{10}$  and  $L_{90}$  data will be collected for reference.
- 3.05 Stream water quality monitoring is conducted were undertaken at two locations (W9A and W9B) twice per week. Dissolved Oxygen (DO), pH and Turbidity (NTU) were measured in-situ, water depth, temperature and salinity will be collected for relevant data. Suspended Solids (SS), Ammonia Nitrogen and Zinc were determined in a HOKLAS accredited laboratory respectively.



- 3.06 Ecological monitoring is conducted in the seasonal wetland area as shown in Project profile of KT15 Figure ATT 4-7.2). Bird survey should be conducted in monthly through the year and other faunal groups (reptiles, amphibians, dragonflies and butterflies) are conducted monthly in wet season (April to July inclusive) only. Photographic record should be made at six month intervals.
- 3.07 A summary of the Action/Limit (A/L) Levels for air quality, construction noise, stream water quality and ecology monitoring are shown in **Tables 3-2, 3-3, 3-4** & **3-5.**

Table 3-2 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action Level (μg/m³)		Limit Level (μg/m³)	
Wontoring Station	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
A10	> 307	> 165	> 500	> 260

Table 3-3 Action and Limit Levels for Construction Noise Monitoring

Time Period			Action Level in dB(A)	Limit Level in dB(A)	
0700-1900	hrs	on	normal	When one or more documented	> 75* dB(A)
weekdays				complaints are received	> 73 · uB(A)

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

Table 3-4 Action and Limit Levels for Stream Water Quality Monitoring

Dissolved Oxygen (mg/L)	W9A (Upstream) <sup>#</sup>	W9B (Downstream)
Action Level	NA	< 0.3
Limit Level	NA	< 0.2
Turbidity (NTU)		
Action Level	NA	> 73.5*
Limit Level	NA	> 78.2**
рН		
Action Level	NA	> 7.0*
Limit Level	NA	> 7.1**
Suspended Solids (mg/L)		
Action Level	NA	> 148*
Limit Level	NA	> 159**
Ammonia Nitrogen (mg/L)		
Action Level	NA	> 30.91*
Limit Level	NA	> 32.20**
Zinc (µg/L)		
Action Level	NA	> 242*
Limit Level	NA	> 252**

Note: # Act as Control Station for Impact Stream Water Quality Monitoring.

\* Alternative Action Level is 120% of upstream control station of same day.

\*\* Alternative Limit Level is 130% of upstream control station of same day.

Table 3-5 Action and Limit Levels for Ecology Monitoring

Parameters	Action Level	Limit Level
Fauna: decrease in the total number of wetland dependant	20 - 40% of	> 40% of
species or individuals of the surveyed faunal groups from	individuals and	individuals
baseline	species	and species

3.08 The Event/Action Plan of air quality, construction noise, stream water quality and ecology monitoring has been implemented for this project. Details of the Event/Action Plan were presented in the **Appendix E**.



#### 4.0 IMPACT MONITORING METHDOLOGY

#### MONITORING LOCATIONS

4.01 The 1-hour and 24-hour TSP monitoring was carried out at one designated station A10. Impact construction noise monitoring was undertaken at the designated location N10a. Stream water quality monitoring was undertaken at two designated locations (W9A & W9B). The ecology monitoring was conducted within the wetland area in according to the EM&A Manual of KT15. The descriptions of monitoring stations are presented in Tables 4-1. The geographically location are shown in Appendix D.

Table 4-1 Location of Air Quality, Construction Noise & Stream Water Quality Monitoring Station/Locations

Air Quality Station	
A10	Village House in Tin Sam San Tsuen
Construction Noise Loc	eation
N10*	Village House in Tin Sam San Tsuen
N10a	Village House in Tin Sam San Tsuen
Water Quality Location	ns
W9A <sup>#</sup>	Tin Sam San Tsuen
W9B	Tin Sam San Tsuen

Note: \* The noise ambient condition within the victim area without significant change. Due to the accessibility, noise monitoring will undertake at N10a. Once the access is available, the impact noise monitoring will undertake at N10

4.02 The meteorological data during the Reporting Period was extracted from the Lau Fau Shan Station of the Hong Kong Observatory (HKO).

#### MONITORING FREQUENCY AND PERIOD

#### 1-HOUR TSP MONITORING

4.03 The 1-hour TSP monitoring was conducted in designated station A10 in according to the EM&A Manual three times every 6 days. Total of 15 monitoring events were carried out in this Reporting Period.

## **24-HOUR TSP MONITORING**

4.04 The 24-hour TSP monitoring was conducted at station A10 once every six days. Total of 5 monitoring events were carried out in this Reporting Period.

#### **NOISE MONITORING**

4.05 Impact noise monitoring was undertaken at location N10a once per week. Total of 5 monitoring events were carried out in this Reporting Period.

#### STREAM WATER QUALITY MONITORING

4.06 The stream water quality monitoring was undertaken at two locations W9A & W9B twice per week. Total of **18** monitoring events were carried out in this Reporting Period.

<sup>#</sup> Act as control station in impact monitoring



#### **ECOLOGY MONITORING**

4.07 Bird survey should be conducted in monthly throughout the year and other faunal groups (reptiles, amphibians, dragonflies and butterflies) are conducted monthly in wet season (April to July inclusive) in the seasonal wetland area. Photographic record should be made at six monthly intervals.

## MONITORING EQUIPMENT

4.08 Monitoring equipment used by the ET in EM&A program is presented in **Table 4-2**.

**Parameters** Equipment **Monitoring Equipment** Sibata LD-3 Laser Dust Meter or 1-hour TSP Portable dust meter TSI DuskTrak Model 8520 24-hour Grasby Anderson GMWS 2310 HVS / Tisch High High Volume Sampler TSP Volume Sampler 515N TISCH Model TE-5028A Calibration Kit Leq30min **Integrating Sound Level Meter** Cesva SC-20c Sound Level Meter Calibrator Cesva CB-5 Acoustical Calibrator Portable Wind Speed Indicator Testo Anemometer Water Depth Water Depth Detector Eagle Sonar Temperature Thermometer & DO Meter YSI 550A or YSI 55/12FT DO Thermometer & DO Meter YSI 550A or YSI 55/12FT Hanna HI 98128 or 98107 or Extech Instruments, ExStik<sup>TM</sup> Model pH110 pH Meter На Hach 2100P **Turbidity** Turbidimeter ATAGO refractometer Salinity Salinometer Water Sampler Teflon bailer / bucket High density polythene bottles (provided by Sample Container laboratory)

'Willow' 33-litter plastic cool box

**Table 4-2** Monitoring Equipment Used in EM&A Program

#### 24-HOUR TSP MONITORING

Storage Container

- 4.09 The 24-hour TSP monitoring was carried out by a High Volume Sampler (HVS) in compliance with the USEPA Standards Title 40, Code of Federal Regulations Chapter 1 (Part 50) specifications. The HVS employed complied with the PS specifications including.
  - Power supply of 220v/50 hz for 24-hour continuous operation;
  - 0.6-1.7 m<sup>3</sup>/min (20-60 SCFM) adjustable flow rate;
  - A 7-day mechanical timer for 24-hour operation;
  - An elapsed time indicator with ±2 minutes accuracy for 24-hour operation;
  - Minimum exposed area of 63 in<sup>2</sup>;
  - Flow control accuracy of  $\pm 2.5\%$  deviation over 24-hour operation;
  - An anodized aluminum shelter to protect the filter and sampler;
  - A motor speed-voltage control to control mass flow rate with accuracy of  $\pm 2.5\%$  deviation over 24-hour sampling period;
  - Provision of a flow recorder for continuous monitoring;
  - Provision of a peaked roof inlet;
  - Incorporation with a manometer; and
  - An 8"x10" stainless steel filter holder to hold, seal and easy to change the filter paper.



4.10 The filter papers used in 24-hour TSP monitoring were of size 8"x10" and provided by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 66). The filters papers after measurements were returned to the laboratory for the required treatment and analysis.

## 1-HOUR TSP MONITORING

4.11 Measurement of 1-hour TSP monitoring was taken by TSI DuskTrak Model 8520. That is a portable and battery-operated laser photometer capable of performing real time 1-hour TSP measurements. A comparison test with HVS was carried out prior to baseline monitoring in compliance with the EM&A requirements and a conversion factor for direct reading of the dust meter has been established.

#### WIND DATA MONITORING

4.12 The meteorological data during the Reporting Period was extracted from the Lau Fau Shan Station of the Hong Kong Observatory (HKO).

#### **NOISE MONITORING**

- 4.13 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level  $(L_{eq})$  measured in decibels (dB). Supplementary statistical results such as  $L_{10}$  and  $L_{90}$  were also obtained for reference.
- 4.14 Hand-held sound level meters and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications were used for taking the impact noise measurements.
- 4.15 Windshield was fitted in all measurements. All noise measurements were made with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).
- 4.16 No noise measurement was carried out in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10m/s.

#### STREAM WATER QUALITY MONITORING

#### Water Depth

- 4.17 Water quality monitoring will be conducted at the middle of the water columns (Mid-Depth) if the depths of the water columns at the sampling locations are less than 3 meters during monitoring. Or else, monitoring will be performed at two depths, at 1 meter from surface and bottom respectively when the water depth is less than 6m.
- 4.18 Water depths will be determined prior to measurement and sampling at W9A and W9B, using a portable battery operated depth detector, brand named 'Eagle Sonar', if the depths exceed 3 meter. For the depths well below 1 meter, an appropriate steel ruler or rope with appropriate weight will be used for the depth estimation.



#### Water Temperature

4.19 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 will be recorded in the field data sheets.

#### Dissolved Oxygen (DO)

- 4.20 A portable YSI 550A DO Meter will be 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.
- 4.21 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 will be recorded in the field data sheets.

#### pH

4.22 A portable Hanna pH Meter will be 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 at least pH7 and pH10 shall be used for calibration of the instrument before and after use.

#### *Turbidity (NTU)*

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

#### Salinity

4.24 A portable salinometer capable of measuring salinity in percentage (g/L) will be used for in-situ measure the salinity of stream water at each monitoring location.

#### Water Sampler

4.25 Water samples will be collected by the ET using a water sampler and 'PE' (Poly-Ethylene) sampling bottles provided by the laboratory. The water sampler will be rinsed before collection with the sample to be taken. Kahlsico Water Sampler will be used for sampling. One liter or 1000mL water sample will be collected from each depth for SS determination. The samples collected are stored in a cool box maintained at 4°C and delivered to ALS upon completion of the sampling by end of each sampling day. Sampling in the stream with shallow water condition, plastic bucket will be used for sample collection.

## Sample Container

4.26 Water samples will be contained in screw-cap PE (Poly-Ethylene) bottles, which will be provided and pretreated immediately prior to sampling according to HOKLAS quality requirements by ALS. The sampling bottles will be rinsed with the water to be contained. Water sample is then transferred from the sampler to the sample bottles to 95% bottle capacity to allow possible volume changes during delivery and storage.

## Sample Storage

4.27 A 'Willow' 33-litter plastic cool box packed with ice will be used to preserve the collected water samples prior to arrival at the laboratory for SS determination. The water temperature of the cool box will be maintained at a temperature as close to 4°C as possible without being



frozen. Samples collected will be delivered to the laboratory upon collection.

4.28 DO, water temperature, turbidity (NTU), pH, salinity and water depth were measured in-situ whereas SS, Ammonia Nitrogen and Zinc were determined in a HOKLAS accredited laboratory (ALS).

#### **ECOLOGY MONITORING**

#### Study Area

4.29 The study area for the ecological monitoring programme for KT15 covers the seasonal wetland area as shown in Project Profile of KT15 Figures ATT 4-7.2.

#### Survey Method

- 4.30 Monthly monitoring was conducted by means of walk through survey, along the boundary and within the wetland areas in KT15. Any adverse impacts to the habitat, intrusions of construction activities into the wetland areas, and adverse changes in the wetlands were checked and reported if any.
- 4.31 Photographic records on the fixed photo record points selected during the baseline survey are made every six months. The photos from the construction phase ecological monitoring will be compared with those taken during the baseline which is used as the baseline conditions.
- 4.32 Bird monitoring was conducted in the study areas monthly for KT15. Survey areas in KT15 was the seasonal wetland area covered same as the Project Profile of KT15 Figures ATT 4-7.2.
- 4.33 Fauna monitoring is conducted only during the wet season (April to July inclusive for KT15) in the same survey areas for bird monitoring. For KT15, the survey frequency is monthly, and the surveys cover reptiles, amphibians, dragonflies and butterflies.

#### **Equipment**

4.34 Standard portable field survey equipment was used for ecological monitoring, including 1) Binoculars of 10 x 40 magnifications; 2) Digital camera; 3) Notebook; and/or 4) Butterfly net (when it is necessary to confirm identities of butterflies and dragonflies).

## **EQUIPMENT CALIBRATION**

- 4.35 Initial calibration of the HVS was performed upon installation and thereafter at bi-monthly intervals in accordance with the manufacturer's instruction using the NIST-certified standard calibrator. The calibration data are properly documented and the records are maintained by ET for future reference.
- 4.36 The 1-hour TSP meter was calibrated by the supplier prior to purchase. Zero response of the equipment is checked before and after each monitoring event. A comparison test was carried out with a HVS. A conversion factor (K) of 4.0 was generated in accordance with the equipment manufacturer's instruction. The meter counts in minutes multiplied by the conversion factor will generate the equivalent dust concentration by HVS.
- 4.37 The sound level meters are calibrated using an acoustical calibrator prior to and after measurements. The meters are regularly calibrated in accordance with the manufacturer's



instructions. Prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustical 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.

- 4.38 All in-situ stream water quality monitoring instruments are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at 3 monthly intervals throughout all monitoring stages.
- 4.39 The calibration certificates of the monitoring equipment used during the impact monitoring program are attached in **Appendix F**.

#### ANALYTICAL LABORATORY

4.40 Our ET has commissioned a local HOKLAS-accredited laboratory, ALS Technichem (HK) Pty Ltd (HOKLAS No. 66) to provide analytical services for this project. ALS carried out sample and analysis control in accordance with the HOKLAS QA/QC requirements. The specified testing services provided by ALS as shown in **Table 4-3**.

Table 4-3 Analytical Method applied to Water Quality Samples

Determinant	Standard Method	Detection Limit
Suspended Solids	ALS Method EA025	2 mg/L
Ammonia Nitrogen	ALS Method EK055A	0.01 mg/L
Zinc	ALS Method EG020	10 μg/L

4.41 The analysis of suspended solids, ammonia nitrogen and zinc concentrations were follow the APHA Standard Methods for the Examination of Water and Wastewater 19ed 2540D. ALS Environmental has comprehensive quality assurance and quality control programs and has attained HOKLAS accreditation for a range of environmental testing. For QA/QC procedures, one duplicate sample for every batch of samples was analyses as required by the HOKLAS. The QA/QC results are presented in **Appendix H**.

#### DATA MANAGEMENT AND DATA QA/QC CONTROL

- 4.42 The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring program.
- 4.43 The monitoring data recorded in the equipment e.g. 1-hour TSP meters and noise meters are downloaded directly from the equipment 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.
- 4.44 For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.



#### 5.0 IMPACT MONITORING RESULTS

5.01 The impact monitoring was carried out by the ET in compliance with the project specific EM&A Manual. The impact monitoring schedules are shown in **Appendix G** and the monitoring results are present in the following sub-sections.

## AIR QUALITY

Note:

5.02 The 1-hour and 24-hour TSP impact monitoring data are summarized in **Tables 5-1** and **5-2**. Graphical plots of the past four month monitoring results are shown in **Appendix H**.

Table 5-1 Summary of 1-hour TSP Monitoring Results at A10

Monitoring Date	Start Time	1 <sup>st</sup> Result (μg/m <sup>3</sup> )	2 <sup>nd</sup> Result (μg/m <sup>3</sup> )	3 <sup>rd</sup> Result (μg/m <sup>3</sup> )	Action Level (µg/m³)	Limit Level (µg/m³)
30-May-09	09:19	81	79	83	> 307	> 500
5-Jun-09	09:21	81	88	92	> 307	> 500
11-Jun-09	09:18	57	60	53	> 307	> 500
17-Jun-09	09:25	63	67	70	> 307	> 500
23-Jun-09	09:22	76	83	80	> 307	> 500

Bold and italic is exceed the Action Level.

Bold and underline is exceed the Limit Level

Table 5-2 Summary of 24-hour TSP Monitoring Results at A10

<b>Monitoring Date</b>	Monitoring Results (μg/m³)	Action Level (µg/m³)	Limit Level (µg/m³)
29-May-09	36	> 165	> 260
4-Jun-09	41	> 165	> 260
10-Jun-09	36	> 165	> 260
16-Jun-09	18	> 165	> 260
22-Jun-09	26	> 165	> 260

Note: Bold and italic is exceed the Action Level.
Bold and underline is exceed the Limit Level

- 5.03 No 1-hour and 24-hour TSP monitoring results trigger the Action or Limit Level was recorded in this Reporting Period.
- 5.04 The meteorological data during the monitoring period are summarized in **Appendix I**.

#### **CONSTRUCTION NOISE**

5.05 The impact construction noise monitoring results are summarized in **Table 5-3**. Graphical plots of the past four month monitoring results are shown in **Appendix H**.

Table 5-3 Summary of Noise Monitoring Results at N10a

Date	Start Time	1st Leq5	2nd Leq5	3 <sup>rd</sup> Leq5	4th Leq5	5th Leq5	6 <sup>th</sup> Leq5	Leq30
30-May-09	09:37	46.2	47.0	46.3	46.6	47.3	47.1	46.8
5-Jun-09	09:36	48.8	51.4	49.3	47.8	49.2	51.0	49.8
11-Jun-09	09:38	47.6	48.0	47.9	48.2	49.3	48.5	48.3
17-Jun-09	09:38	49.4	49.3	48.5	47.8	48.0	48.7	48.7
23-Jun-09	09:46	49.1	49.1 50.4 49.6 49.8 48.5 49.6					
Limit Le	Limit Level -						> 75 dB(A)	

5.06 No construction noise complaint (Action Level) was received and all noise level below the Limit Level in this Reporting Period.



## STREAM WATER QUALITY

- 5.07 No stream water quality monitoring result trigger the Action or Limit Level was recorded in this reporting period. The impact monitoring schedules are shown in Appendix G.
- 5.08 The stream water quality monitoring results are summarized in **Table 5-4** and graphical plots are presented in **Appendix H**.

Table 5-4 Summary of Stream Water Quality Results at W9A & W9B

Monitoring	DO in	n mg/L	Turbid	ity (NTU)	pH	I	SS in r	ng/L		a nitrogen g/L)	Zinc	(μg/L)
Date	W9A#	W9B	W9A#	W9B	W9A#	W9B	W9A#	W9B	W9A#	W9B	W9A#	W9B
27-May-09	4.7	5.6	30.5	10.1	6.7	6.7	9.0	7	14.2	5.33	32.0	19
1-Jun-09	3.6	4.5	83.8	42.3	6.7	6.8	83.0	15	23.8	2.13	396.0	62
3-Jun-09	4.2	4.8	57.7	39.4	6.8	6.8	28.0	21	6.7	2.84	81.0	44
8-Jun-09	3.9	4.8	42.2	57.0	6.8	6.9	6.0	12	7.9	2.71	12.0	12
10-Jun-09	4.1	4.6	32.2	26.0	6.8	6.9	18.0	12	31.9	13.30	65.0	33
15-Jun-09	3.9	4.2	40.3	20.0	7.0	6.9	62.0	10	4.5	2.91	289.0	11
17-Jun-09	3.6	4.4	38.2	23.3	6.9	6.8	13.0	10	30.1	15.30	27.0	25
22-Jun-09	3.3	4.5	38.8	18.2	7.1	6.9	13.0	12.0	65.7	20.6	31.0	17.0
24-Jun-09	2.9	3.6	30.7	15.1	7.2	6.8	30.0	13.0	66.3	21.5	86.0	26.0
Action Level	-	< 0.3*	-	> 73.5*	-	> 7.0*	-	> 148*	-	> 30.91*	-	> 242*
Limit Level	ı	< 0.2**	-	> 78.2**	-	> 7.1**	-	> 159**	-	> 32.20**	-	> 252**

Notes: # Act as Control Station for the Impact Water Quality Monitoring.

Bold and italic is exceed the Action Level.

Bold and underline is exceed the Limit Level

- \* Alternative Action Level is 120% of upstream control station of same day.
- \*\* Alternative Limit Level is 130% of upstream control station of same day.



#### **ECOLOGY**

- 5.09 Forty nine (49) individuals of birds from eighteen (18) species were recorded during the survey for the present monthly monitoring on 22 June 2009. Among the birds recorded, two (2) individual from two (2) wetland bird species with abundance from the baseline (i.e. Cattle Egret and Chinese Pond Heron) was recorded. Compared with the average abundance of 1.2 individuals from 2 species of wetland dependent birds recorded during the baseline study for the KT15 Project Profile, both the individual number and the species number of wetland dependent bird recorded comply with the Action/Limit Level for the monitoring requirements for ecology.
- 5.10 Thirty-six (36) individuals of fauna from seventeen (17) species were recorded during the survey for the present monthly monitoring on 22 June 2009. Compared with the total average abundance of 44.99 individuals from 21 species of fauna recorded during the baseline study for the KT15 Project Profile, both the species number and the individual number of fauna recorded comply with the Action/Limit Level for the monitoring requirements for ecology.
- 5.11 No intrusions of construction activities into the wetland areas nor adverse impact on the wetlands was found during site audit on 22 June 2009.
- 5.12 Photographic records are scheduled in six-month intervals, and thus are required in the present monthly monitoring (Jun 09). The results are presented in Appendix K. One of the trees recorded during the baseline photographic records and within the Project boundary (i.e. Tree A) was removed due to the needs of the construction works. Other recorded trees are still intact.
- 5.13 Ecology Impact Monitoring Results are presented in the **Table 5-5** and **Table 5-6**.

Table 5-5 Summary of Ecology Impact Monitoring Surveys Bird Survey

Scientific Name	Common Name	Abundance reported in the project profile	Abundance recorded in the present survey (22 June 09)
Birds			
Bubulcus ibis	Cattle Egret	0.4	1
Ardeola bacchus	Chinese Pond Heron	0.8	1
Amaurornis phoenicurus	White-breasted Waterhen	Recorded only	
Streptopelia chinensis	Spotted Dove	Recorded only	4
Hirundo rustica	Barn Swallow	Recorded only	5
Motacilla alba	White Wagtail	Recorded only	3
Pycnonotus jocosus	Red-whiskered Bulbul	Recorded only	3
Pycnonotus sinesis	Chinese Bulbul	Recorded only	4
Lanius schach	Long-tailed Shrike	Recorded only	
Copsychus saularis	Oriental Magpie Robin	Recorded only	1
Orthotomus sutorius	Common Tailorbird	Recorded only	2
Lonchura striata	White-rumped Munia	Recorded only	
Passer montanus	Eurasian Tree Sparrow	Recorded only	8
Sturnus nigricollis	Black-collared Starling	Recorded only	3
Acridotheres cristatellus	Crested Myna	Recorded only	3
Prinia flaviventris	Yellow-bellied Prinia	\	1
Eudynamis scolopacea	Common Koel	\	1
Garrulax perspicillatus	Masked Laughingthrush	\	2
Zosterops japonica	Japanese White Eye	1	5
Parus major	Great Tit	1	1
Prinia inornata	Plain Prinia	\	1
Species Number		15 spp. recorded, (only 2 species of wetland birds with abundance)	18 spp. (2 sp. from the wetland birds with abundance in the baseline)



Scientific Name	Common Name	Abundance reported in the project profile	Abundance recorded in the present survey (22 June 09)
Individual Number		1.2 (from the 2 species of wetland birds with abundance)	49 (2 from the wetland birds with abundance in the baseline)

Note: \* Wetland dependent species recorded with abundance during the baseline study with the names bolded

**Table 5-6** Summary of Fauna Impact Monitoring Surveys

Scientific Name	Common Name	Abundance reported in the Project Profile	Abundance recorded in the present survey (22 June 09)
Mammals			
\	\	\	\
Herpetofauna			
Bufo melanostictus	Asian Common Toad	2	1
Rana guentheri	Gunther's Frog	2.33	
Polyedates megacephalus	Brown Tree Frog	1.33	
Calotes versicolor	Changeable Lizard	0.33	2
Odonata			
Ischnura senegalensis	Common Bluetail	4.5	2
Ceriagrion auranticum	Orange-tailed Sprite	6	
Orthetrum pruinosum	Common Red Skimmer	1.5	2
Trithemis aurora	Crimson Dropwing	0.5	
Tramea virginia	Saddlebag Glider	1	
Pantala flavescens	Wandering Glider	8.5	3
Orthetrum sabina	Green Skimmer	\	1
Butterfly			
Graphium sarpedon	Common Bluebottle	0.5	
Papilio polytes	Common Mormon	1.5	3
Ariadne ariadne	Angled Castor	2	2
Euploea midamus	Blue-spotted Crow	2.5	1
Ideopsis similis	Ceylon Blue Glassy Tiger	1.5	
Mycalesis mineus	Dark-branded Bush Brown	1.5	
Catapsillia pomona	Lemon Emirgrant	0.5	1
Eurema hecabe	Common Grass Yellow	1	1
Zizeeria maha	Pale Grass Blue	2.5	4
Astictopterus jama	Forest Hopper	0.5	
Erionota torus	Banana Skipper	3	
Hypolimnas bolina	Great Egg-fly	\	1
Pieris canidia	Indian Cabbage White		6
Papilio memnon	Great Mormon	\	2
Elymnias hypermnestra	Common Palmfly	\	2
Papilio helenus	Red Helen	\	2
Total species number		21 species with abundance	17 spp.
Total individual number		44.99	36



#### 6.0 WASTE MANAGEMENT

6.01 The waste management was implemented by on-site Environmental Officer or Environmental Supervisor from time to time.

## RECORDS OF WASTE QUANTITIES

- 6.02 All types of waste arising from the construction work are classified into the following:
  - Construction & Demolition (C&D) Material;
  - Chemical Waste;
  - General Refuse; and
  - Excavated Soil.
- 6.03 The quantities of waste for disposal in this Reporting Period are summarized in **Tables 6-1** and **6-2.** Whenever possible, materials were reused on-site as far as practicable.

Table 6-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
Broken Concrete (Inert) (m <sup>3</sup> )	0	Public Filling
Reused in this Contract (Inert) (m <sup>3</sup> )	0	N/A
Reused in other Projects (Inert) (m <sup>3</sup> )	0	N/A
Disposal as Public Fill (Inert) (m <sup>3</sup> )	0	Tuen Mun Area 38

Table 6-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	0	NA
Recycled Paper / Cardboard Packing (kg)	0	NA
Recycled Plastic (kg)	0	NENT Landfill
Chemical Wastes (kg)	0	License Collector
General Refuses (m <sup>3</sup> )	0	NENT Landfill

6.04 The quantities of excavation soil for marine disposal in this Reporting Period are summarized in **Table 6-3**.

 Table 6-3
 Summary of Excavated Soil for Marine Disposal

Type of Waste	Location	Date	Total	Disposal Location
Type 1 Materials (m <sup>3</sup> )	-	-	-	East Sha Chau (Pitch 4a & 4b)
Type 2 Materials (m <sup>3</sup> )	-	-	-	East Sha Chau (Pitch 4c)



#### 7.0 SITE INSPECTION

- 7.01 According to the EM&A Manual Section 9.1.2, the environmental weekly site inspection should been formulation by ET Leader. ET had carried out the environmental weekly site inspection on 27 May 2009, 3, 10 and 17 June 2009 with the Representatives of the Engineer and the Contractor to evaluate the site environmental performance in this Reporting Period. The IEC monthly site audit was conducted on 17 June 2009 by IEC's representative with the Engineer's, the Contractor's and ET's representative. No non-compliance and four observations were noted.
- 7.02 Findings of the site inspection and environmental audit are summarized below –

Table 7-1 Summary of Findings of Site Inspection and Environmental Audit

Date	Findings / Deficiencies	Follow-Up Status
27 May 09	No adverse environmental impact was observed during the site inspection.	N/A
3 June 09	The stockpiles observed at CH. 380 shall be covered with impervious sheet especially during wet season	During the site inspection on 10 June 2009, the stockpiles observed at CH. 380 have been removed by the Contractor.
10 June 09	Stagnant water accumulation was observed at Ch. 1300, the Contractor shall drain the water away or apply larvicidal oil to prevent mosquitoes breeding.	During the site inspection on 17 June 2009, Stagnant water accumulated at Ch. 1300 has been drained.
17 June 09	• Stockpiles of C&D wastes were observed at head of KT15 (Ch. 11) and Ch. 50, the Contractor shall improve the tidiness of the site.	Will be reported next reporting month
17 June 09	Stagnant water accumulation was observed inside drainage channel at Ch. 100. The Contractor was reminded to clear it immediately.	Will be reported next reporting month

- 7.03 The ET weekly site inspection and IEC monthly site audit checklists are shown in **Appendix**J. In general, the construction area of KT15 was kept clean and tidy.
- 7.04 No site visit or inspection carried out by Environmental Protection Department in this Reporting Period.



## 8.0 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

#### ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.01 No environmental complaint, summons and prosecution was received in this Reporting Period. Statistical summaries environmental complaint, summon and prosecution are presented in **Tables 8-1**, **8-2** and **8-3**.

**Table 8-1** Statistical Summary of Environmental Complaints

Reporting Period	Enviro	nmental Complaint S	Statistics
Reporting 1 eriou	Frequency	Cumulative	<b>Complaint Nature</b>
July – December 2007	0	0	NA
January – December 2008	0	0	NA
January –May 2009	0	0	NA
June 2009	0	0	NA

**Table 8-2** Statistical Summary of Environmental Summons

Reporting Period	Enviro	nmental Summons S	tatistics
Keporting reriou	Frequency	Cumulative	Nature
July – December 2007	0	0	NA
January – December 2008	0	0	NA
January –May 2009	0	0	NA
June 2009	0	0	NA

**Table 8-3** Statistical Summary of Environmental Prosecution

Reporting Period	Enviror	mental Prosecution S	Statistics
Reporting 1 eriou	Frequency	Cumulative	Nature
July – December 2007	0	0	NA
January – December 2008	0	0	NA
January –May 2009	0	0	NA
June 2009	0	0	NA

KT15 – Monthly EM&A Report for June 2009 (No. 24)



#### 9.0 IMPLEMENTATION STATUS OF MITIGATION MEASURES

- 9.01 CCC has been implementing the required environmental mitigation measures according to the EM&A Manual of KT15 Mitigation Measures Implementation Schedule.
- 9.02 A summary of environmental mitigation measures generally implemented by CCC in this Reporting Period is presented as follows;

## **Water Quality**

- Wastewater were appropriately treated by treatment facilities;
- Drainage channels were provided to convey run-off into the treatment facilities;
- Drainage systems were regularly and adequately maintained.

## Air Quality

- Vehicles were cleaned of mud and debris before leaving the site;
- Site vehicles were limited to within 8 km/hr:
- Public roads around the site entrance/exit had been kept clean and free from dust;
- Dust suppression measures were properly provided to reduce dust emission from stockpile.

#### Noise

- Works and equipment were located to minimize noise nuisance from the nearest sensitive receiver:
- Idle equipments were either turned off or throttled down;
- Some of the Powered Mechanical Equipments were covered or shielded by appropriate acoustic materials if practicable.

#### Waste and Chemical Management

- Wastes were properly segregated into inert and non-inert in appropriate containers/areas;
- Excavated materials were reused where practicable.
- A chemical waste storage area had been provided on site;

#### General

• The site was generally kept tidy and clean.



#### 10.0 IMPACT FORECAST

#### KEY ISSUES FOR THE COMING MONTH

- 10.01 Key issues to be considered in the coming month include:
  - Implementation of dust suppression measures at all times;
  - Potential wastewater quality impact due to surface runoff;
  - Potential fugitive dust quality impact from the dry/loose/exposure soil surface/dusty material;
  - Disposal of empty engine oil containers within site area;
  - Ensure dust suppression measures are implemented properly;
  - Sediment catch-pits and silt removal facilities should be regularly maintained;
  - Management of chemical wastes;
  - Discharge of site effluent to the nearby wetland, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
  - Follow-up of improvement on general waste management issues; and
  - Implementation of construction noise preventative control measures.
- 10.02 The tentative 3-month rolling program is presented in **Appendix B**.

KT15 – Monthly EM&A Report for June 2009 (No. 24)



#### 11.0 CONCLUSION

11.01 The EM&A program in **June 2009** was undertaken in compliance with the EM&A Manual for KT15. A summary of environmental compliance of air, noise, stream water quality and ecology in this Reporting Period are presented in **Table 11-1**.

Table 11-1 Summary of the Exceedances for Impact Monitoring

Monitoring	Parameters	Work-Related Exceedance %	Investigation & Corrective Actions
Air	1-hour TSP	0	Not Required for 0% Project Related
Quality	24-hour TSP	0	Not Required for 0% Project Related
Noise	Leq (30min)	0	Not Required for 0% Project Related
	Dissolve Oxygen	0	Not Required for 0% Project Related
	Turbidity (NTU)	0	Not Required for 0% Project Related
Stream	pН	0	Not Required for 0% Project Related
Water	Suspended Solids	0	Not Required for 0% Project Related
	Ammonia Nitrogen	0	Not Required for 0% Project Related
	Zinc	0	Not Required for 0% Project Related
Ecology	Decrease in the total number of species or individuals of wetland dependent bird from baseline	0	Not Required for 0% Exceedance
	Decrease in the total number of species or individuals of wetland faunal from baseline	0	Not Required for 0% Exceedance

Note: According to the EM&A Manual S7.5.1(b), fauna monitoring only undertaken during wet seasons (April to July)

- 11.02 No 1-hour and 24-hour TSP monitoring results trigger the Action or Limit Level was recorded in this Reporting Period.
- 11.03 No construction noise complaint (Action Level) was received and no monitoring noise level above the Limit Level was recorded in this Reporting Period.
- 11.04 No water quality monitoring results exceedances were recorded in this Reporting Period.
- 11.05 Compliance with the ecological criteria was found during the monitoring month on 22 June 2009. No intrusions of construction activities into the wetland areas nor adverse impact was observed.
- 11.06 No environmental complaint, summons or prosecution was received in this Reporting Period.
- 11.07 The ET environmental weekly site inspection and IEC monthly site audit were conducted on 27 May 2009, 3, 10 and 17 June 2009. Although no non-compliance was found, however four observations were recorded. Contractor has been reminded to improve the observed deficiency at the site audit immediately. Details of the observations as follows:-
  - The stockpiles observed at CH. 380 shall be covered with impervious sheet especially during wet season
  - Stagnant water accumulation was observed at Ch. 1300, the Contractor shall drain the water away or apply larvicidal oil to prevent mosquitoes breeding.

# DSD Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai KT15 – Monthly EM&A Report for June 2009 (No. 24)

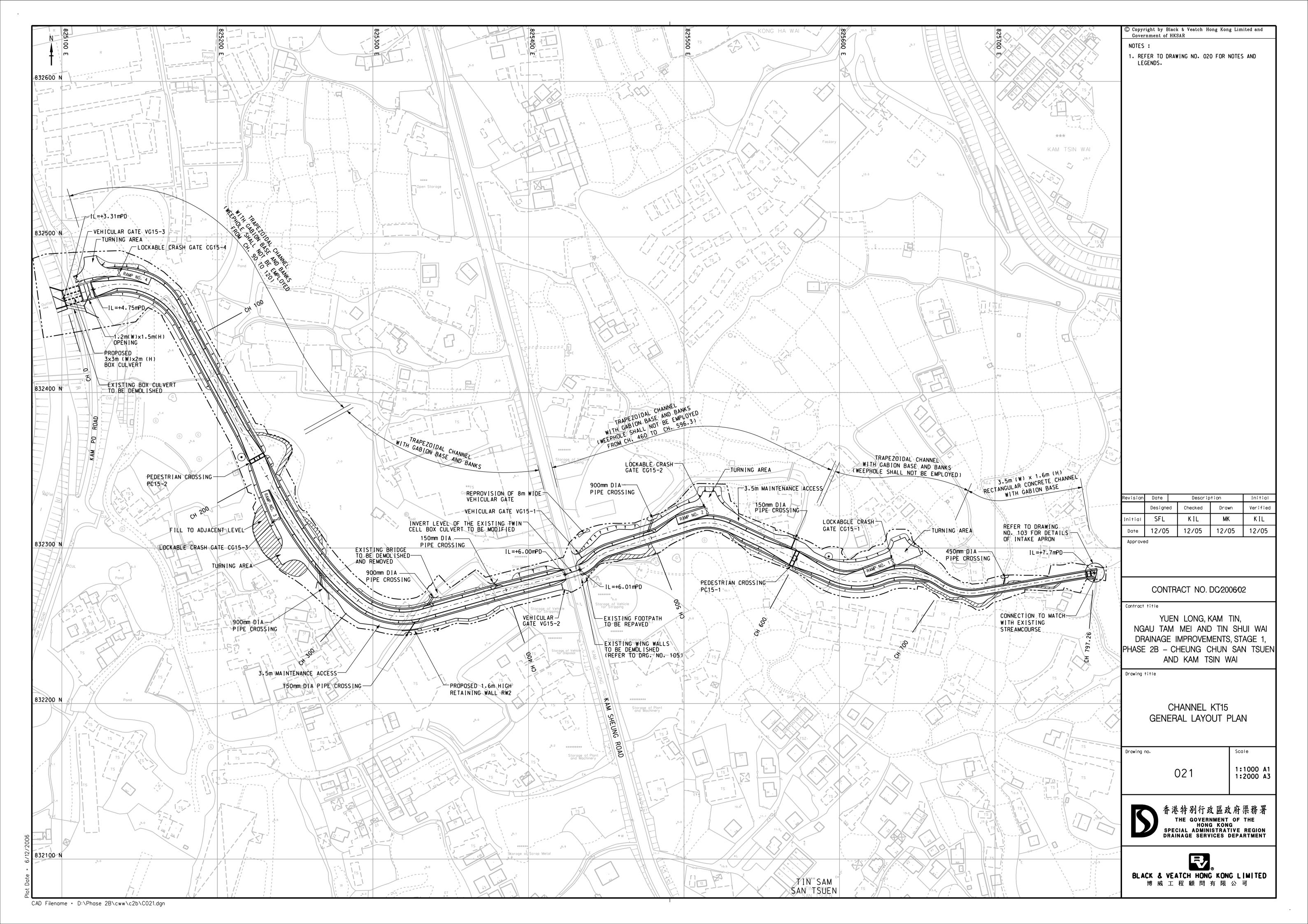


- Stockpiles of C&D wastes were observed at head of KT15 (Ch. 11) and Ch. 50, the Contractor shall improve the tidiness of the site.
- Stagnant water accumulation was observed inside drainage channel at Ch. 100. The Contractor was reminded to clear it immediately.
- 11.08 No site visit or inspection carried out by Environmental Protection Department in this Reporting Period.
- 11.09 The ET will continue to implement the EM&A program and audit the implementation of the environmental mitigation measures.



# APPENDIX A

PROJECT SITE LAYOUT





# APPENDIX B

**THREE-MONTH CONSTRUCTION PROGRAM** 

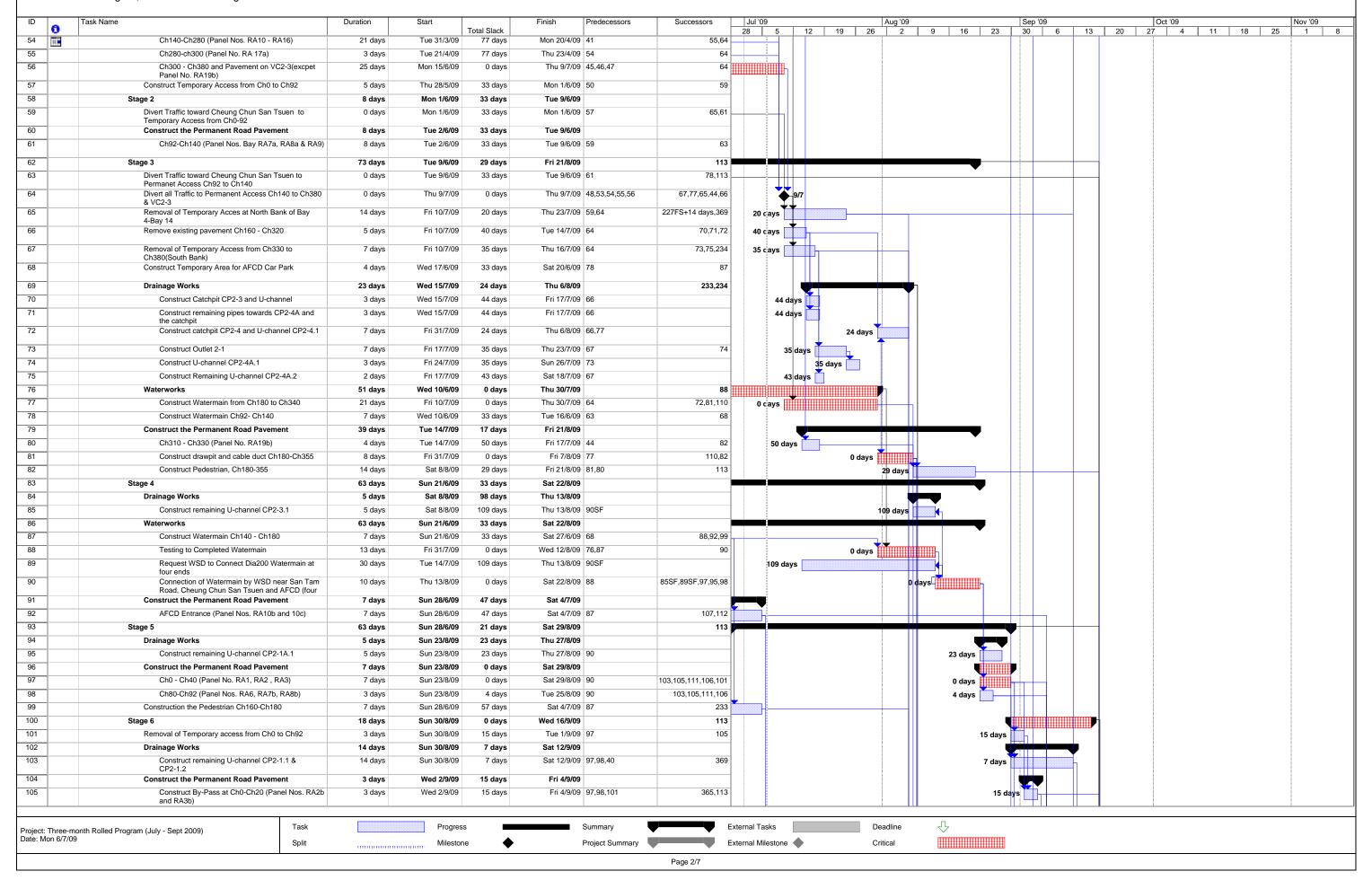
Contract No.: DC / 2006 / 02
Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,
Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai

ð	Task Name	Duration	Start	Total Slack	Finish Predecessors	Successors	Jul '09		Aug '09   16   23	Sep '09
	Letter of Acceptance	1 day	Wed 21/3/07	937 days	Wed 21/3/07		20	0   12   19   20		00   0   10   20   21   4   11   10   20   1
	Date for commencement of Works	1 day	Fri 30/3/07	928 days	Fri 30/3/07					
<b>III</b>	Execution of Article of Agreement	1 day	Tue 3/4/07	0 days	Tue 3/4/07					
		,		-						
	Master Program of Works	965 days	Fri 30/3/07	0 days	Wed 18/11/09					
	Master Frogram of Works	-		-				H		
	Completion Dates	905 days	Fri 30/3/07	0 days	Sat 19/9/09					
	Completion Dates Section I - portions 1, 2 and 3	905 days	Fri 30/3/07	0 days	Sat 19/9/09				<u> </u>	7
	Section II - portions 4, 5 and 5C	905 days	Fri 30/3/07	0 days	Sat 19/9/09					
	Section III - portions 5A1, 5A2 and 5B	746 days	Thu 28/6/07	0 days	Sun 12/7/09   20FS-1 day			<u> </u>		
<b>III</b>	Section IV - temp vehicular access at portion 5A1	90 days	Thu 28/6/07	641 days	Tue 25/9/07   20FS-1 day	22		IIIIIII 7		
	Section V - preservation and protection of existing trees	905 days	Fri 30/3/07	0 days	Sat 19/9/09	22				
	Section V - preservation and protection of existing frees	903 days	11130/3/07	0 days	Sat 19/9/09					
	D	200 days	Fri 30/3/07	0 days	Mon 15/10/07			П		
mer.	Possession of Site Portion 1 - channel KT2	200 days		0 days				<u> </u>		
<b>III</b>	Portion 1 - channel K12  Portion 2 - channel KT2	1 day	Fri 30/3/07	0 days	Fri 30/3/07					
	Portion 2 - channel K12  Portion 3 - channel KT2	61 days	Fri 30/3/07 Fri 30/3/07	780 days	Tue 29/5/07 Thu 28/6/07					
	Portion 3 - channel K12  Portion 4 - channel KT15	91 days	Fri 30/3/07	750 days	Fri 30/3/07					
	Portion 4 - channel K115  Portion 5 - channel KT15	1 day	Fri 30/3/07	0 days						
	Portion 5- channel K115  Portion 5A1 - channel KT15	91 days		750 days	Thu 28/6/07	FS-1 day,11FS-1 day				
	Portion 5A1 - channel K115  Portion 5A2 - channel KT15	91 days	Fri 30/3/07 Fri 30/3/07	0 days	Thu 28/6/07	ro-i day, i iro-i day				
	Portion 5A2 - channel KT15  Portion 5B - channel KT15	91 days	Wed 26/9/07	750 days 641 days	Thu 28/6/07 Mon 15/10/07   11					
<b>=</b>	Portion 5C - channel KT15  Portion 5C - channel KT15	20 days	Fri 30/3/07		Thu 28/6/07					
	Portion 5C - channel K115  Portion 6 - Temp Storage Area at Chi Ho Road	91 days 1 day	Fri 30/3/07	0 days 0 days	Fri 30/3/07					
	Portion 7 - Berthing Area	- 1	Fri 30/3/07		Fri 30/3/07					
	Portion 7 - Bertiling Area  Portion 8 - Site Accommodation	1 day		0 days						
	Portion 8 - Site Accommodation	1 day	Fri 30/3/07	0 days	Fri 30/3/07					
			- 1 1	00 -1	0 1 10 10 10 1					
	Section I of Works	905 days	Fri 30/3/07	60 days	Sat 19/9/09					<u> </u>
	Drainage Works, Waterworks and Roadworks in vincinity of Cheung Chun San Tsuen access	905 days	Fri 30/3/07	60 days	Sat 19/9/09					▼
1	Backfill above Box Culvert Bay 4-6 up to formation	88 days	Mon 2/2/09	33 days	Thu 30/4/09	50				
1	Openning of Bay 1 to Kam Tin River	0 days	Mon 23/3/09	22 days	Mon 23/3/09	36				
111	Divert Traffic to Bay 32b	0 days	Mon 2/2/09	136 days	Mon 2/2/09	34				
	Stage 1	837 days	Fri 30/3/07	68 days	Mon 13/7/09					
	Construct the Channel Bay 28-29	68 days	Mon 2/2/09	136 days	Fri 10/4/09 32	43				
1	Divert Tarffic to Temporary Access at North bank from	0 days	Tue 14/4/09	0 days	Tue 14/4/09	36				
	Bay 14 to Bay 32  Removal of existing crossing(yellow bridge)	5 days	Tue 14/4/09	0 days	Sat 18/4/09 31,35	37				
				-		45 40 40 51 155 155				
	Fill the existing stream bed to road formation near Crossing VC2-3 (Bay 33-Bay 36)	39 days	Sun 19/4/09	0 days	Wed 27/5/09 36	45,46,48,51,165,166				
	Drainage Works	837 days	Fri 30/3/07	68 days	Mon 13/7/09					
1	Construct Dia370 Drainage Pipe CP2-1A to CP2-1	5 days	Mon 2/2/09	206 days	Fri 6/2/09	40				
	and the catchpits  Construct Half long U-channel CP2-1A.1	5 days	Sat 7/2/09	206 days	Wed 11/2/09   39	103				
	Construct Dia375 Drainage Pipe CP2-1B to CP2-3	·	Fri 30/3/07	806 days	Sun 1/4/07	42,54				
	Construct U-channel CP2-1B.1 & CP2-1B.2	14 days	Mon 2/4/07	888 days	Sun 15/4/07 41	113				
	Construct Dia375 Drainage Pipe from Bay 27	4 days	Sat 11/4/09	136 days	Tue 14/4/09 34	44				
	Construct gullies G2-1 & G2-2 and dia150 pipes towards CP2-4	4 days	Fri 10/7/09	50 days	Mon 13/7/09 43,64	80	50 (	cays		
	Construct Part of Dia150 Drainage Pipe towards	4 days	Thu 28/5/09	0 days	Sun 31/5/09 37	51,56		T		
	Outlet 2-1  Construct Part of Dia600 Drainage Pipe towards	4 days	Thu 28/5/09	0 days	Sun 31/5/09   37	51,56				
	Catchpit CP2-4A	4 uays		o days						
	Construct Gullies G2-3 & G2-4 and Dia150mm Pipes towards CP2-4A	4 days	Thu 11/6/09	0 days	Sun 14/6/09 51	56				
	Construct part of U-channel CP2-4A.2(near	2 days	Thu 28/5/09	41 days	Fri 29/5/09 37	64				
	permanent access's end)									
	Waterworks  Construct Watermain from Ch0 to Ch02	41 days	Fri 1/5/09	19 days	Wed 10/6/09	E-7				
	Construct Watermain from Ch0 to Ch92  Construct Watermain from Ch340 to Ch380	27 days	Fri 1/5/09	33 days	Wed 27/5/09   30 Wed 10/6/09   45,46,37	57				
		10 days	Mon 1/6/09	0 days		47				
1	Construct the Permanent Road Pavement	101 days	Tue 31/3/09	0 days	Thu 9/7/09			<b>                                     </b>		
_	Ch40-Ch80 (Panel Nos. RA4 & RA5)	5 days	Mon 13/4/09	83 days	Fri 17/4/09	64				
<b></b>										
<b>=</b>										
Three-m	onth Rolled Program (July - Sept 2009)  Task		Progress	_	Summary	E	xternal Ta	asks De	eadline 🗸	
	ionth Rolled Program (July - Sept 2009)		Progress Milestone		Summary Project Summary	<u> </u>		<u> </u>	eadline 🗸	

Contract No. : DC / 2006 / 02

Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,

Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai



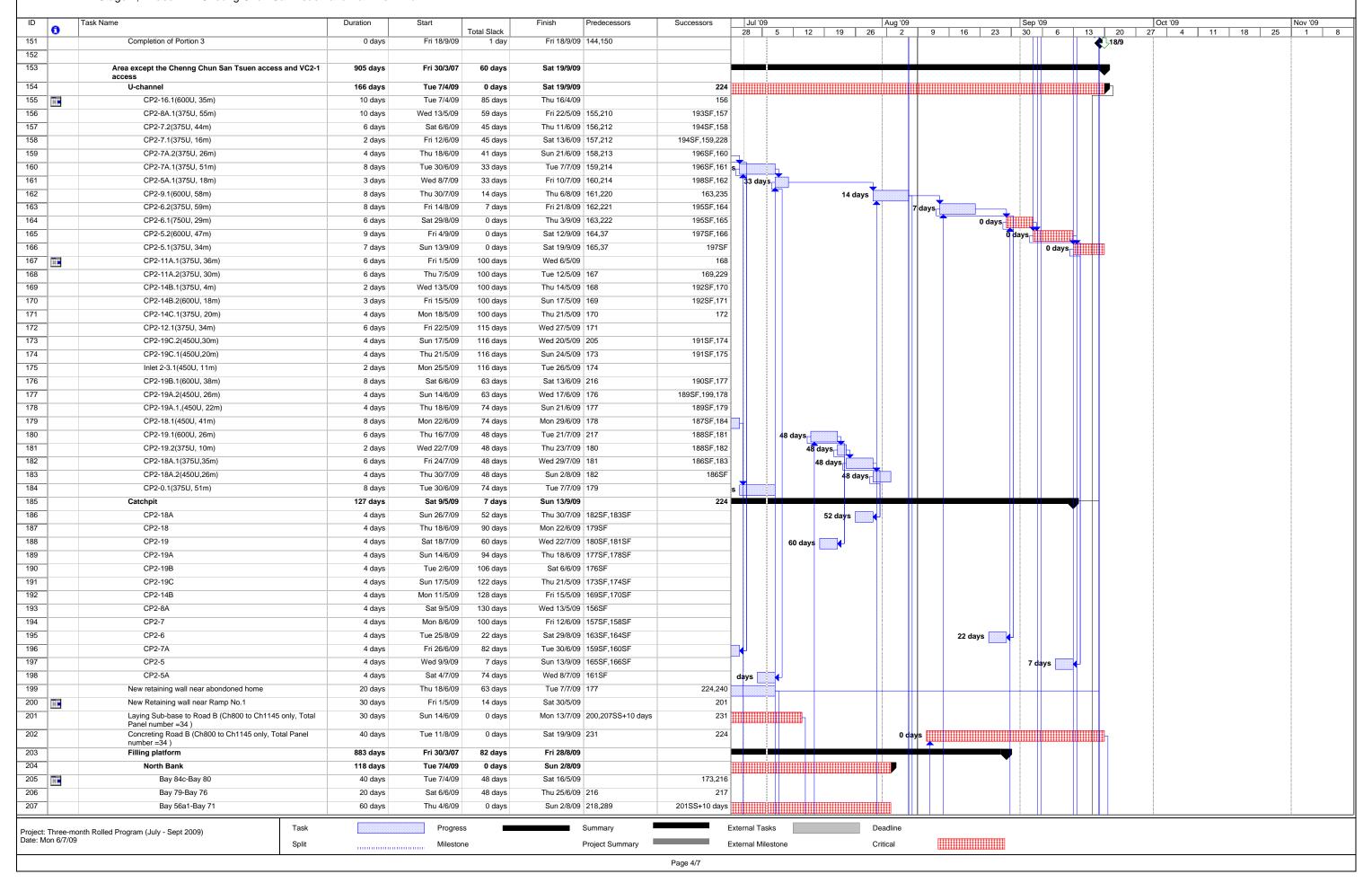
Contract No.: DC / 2006 / 02
Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,
Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai

ID _	Task Name	Duration	Start		Finish	Predecessors	Successors	Jul	'09		Aug '09			Sep '0	9		Oct '09			Nov '09
0				Total Slack				28		12 19			16 23	30		3 20		11	18 25	1 8
106	Construct the drawpit and cable duct Ch40-Ch140  Construct Pedestrian, Ch0-Ch140	8 days 10 days	Sun 30/8/09 Mon 7/9/09	0 days 3 days	Sun 6/9/09 Wed 16/9/09		111,107						0 days		<b>-</b>					:
108	LCEL erect light poles and laying cable	43 days	Sat 8/8/09	0 days	Sat 19/9/09	32,100	113							3 days						
109	Request LCEL to erect poles and lay cable	30 days	Fri 21/8/09	0 days	Sat 19/9/09	110						0	days							
110	Ch160 - Ch380	13 days	Sat 8/8/09	0 days	Thu 20/8/09	77,81	109				0 days	<u> </u>								•
111	Ch0-Ch140	13 days	Mon 7/9/09	0 days	Sat 19/9/09	97,98,106								0 days						
112	Construction of Slope adjacent to AFCD's Pond	30 days	Sun 5/7/09	47 days	Mon 3/8/09		113,365	47 days								Ţ				
113	Completion of Portion 1 and Portion 2	0 days	Sat 19/9/09	0 days	Sat 19/9/09	62,63,93,100,108,42,										19/9				
114																T				
115 116	Construction of Road and Channel in Vicinity of Crossing	229 days	Mon 2/2/09	50 days	Fri 18/9/09															•
	VC2-1			-												<b>Y</b>				
117	Completion of Channel Bay 71 to Bay 73	1 day	Mon 2/2/09	50 days	Mon 2/2/09		119,120													
118	Stage 1  Backfill up to Road Formation	123 days 40 days	Tue 3/2/09	50 days	Fri 5/6/09 Sat 14/3/09		121SS+7													
	·						days,122,130													
120	Demolishing part of existing road pavement at South Bank	3 days	Tue 3/2/09	87 days	Thu 5/2/09	117	122,130													
121	Construct Drainage Pipe and catchpit at west side of road	15 days	Tue 10/2/09	68 days	Tue 24/2/09	119SS+7 days	133,122													
122	Construct Watermain	12 days	Mon 4/5/09	0 days	Fri 15/5/09	119,120,121	123,136,133,126													
123	Testing to Watermain	11 days	Sat 16/5/09	7 days	Tue 26/5/09	122	125													
124	Request WSD to connect watermain	30 days	Mon 27/4/09	188 days	Wed 27/5/09	125SF		1												
125	Connect new watermain to existing watermain by WSD	10 days	Wed 27/5/09	7 days	Fri 5/6/09	123	124SF,142													
				•																
126	Construct new cable duct and pit for public lighting	10 days	Sat 16/5/09	0 days	Mon 25/5/09	122,130	128,133													
127	Request LCEL to relocate pole and laying new cable	30 days	Sun 26/4/09	189 days	Tue 26/5/09	128SF														
128	relocate light pole VA5367 and laying new cable by LCEL	10 days	Tue 26/5/09	65 days	Thu 4/6/09	126	127SF,135													
129	Request PCCW to construct new cable and pit	30 days	Sun 8/3/09	238 days	Tue 7/4/09	130SF														•
130	Construct PCCW cable and pit(by PCCW)	10 days	Tue 7/4/09	27 days	Thu 16/4/09	119.120	129SF,131,126													
131	Laying New Cable and Removal of PCCW's temporary	30 days	Fri 17/4/09	27 days	Sat 16/5/09		142													
	overhead cable and poles					130	172													•
132	Stage 2  Construct the permanent road pavement Panel No.	28 days 15 days	Sat 16/5/09 Tue 26/5/09	10 days	Fri 12/6/09	121,122,126	134													
	RB29, RB28, RB27, RB26a RB26b			•																
134	Curing of Permanent road	3 days	Wed 10/6/09	0 days	Fri 12/6/09	133	138													1
135	Demolishing part of existing road pavement at North Bank	6 days	Fri 5/6/09	65 days	Wed 10/6/09	128	140													
136	Construct two new temporary accesses	5 days	Sat 16/5/09	23 days	Wed 20/5/09	122	138													
137	Stage 3	98 days	Fri 12/6/09	0 days	Fri 18/9/09															
138	Divert Traffic to cosntructed permanent road pavement	0 days	Fri 12/6/09	0 days	Fri 12/6/09	134,136	139,142													
139	and new temporary access  Removal of remaining part of pavement near "Pet	3 days	Sat 13/6/09	60 days	Mon 15/6/09		140													
	World"																			
140	Construct the remaining drainage pipe and catchpit near "Pet World"	7 days	Tue 16/6/09	60 days	Mon 22/6/09	,	141													
141	Constrcut the remaining part of permanent road pavement near "Pet World" ( Panel Nos. RB30,	20 days	Tue 23/6/09	60 days	Sun 12/7/09	140	148													
142	RB31a&b, RB32a&b, RB33a-d, RB34a&b, RB35a&b)) Removel of temporary access at Channel Bay74	5 days	Sat 13/6/09	0 days	Wed 17/6/00	125,138,131	143													
143	Construct the Channel Bay 74 and Bay 75	63 days	Thu 18/6/09	0 days	Wed 19/8/09		144,145													
144	Construct on gabion inside Bay 74 and 75	30 days	Thu 20/8/09	1 day	Fri 18/9/09	143	151					1	day			<b>-</b> h				
145	Backfilling to Final Ground Level	14 days	Thu 20/8/09	0 days	Wed 2/9/09	143	146					0 d	lays							
146	Construct the U-channel and handrailing near bay 74	10 days	Thu 3/9/09	0 days	Sat 12/9/09	145	239						0	days						
147	and 75 Stage 4	9 days	Sun 12/7/09	60 days	Tue 21/7/09				•											
148	Divert traffic to all completed new road pavement	0 days	Sun 12/7/09	60 days	Sun 12/7/09	141	149	-		12/7										
149	Removal of the new temporay access	5 days	Mon 13/7/09	60 days	Fri 17/7/09	148	150		30 days											
150	Construct 375 U-channel under new temporary access	4 days	Sat 18/7/09	60 days	Tue 21/7/09		151		-	nve -										
150	Construct 575 O-chainlet under new temporary access	4 days	3at 10/1/09	ou days	1 ue 2 1/1/09	179	101		60 da	ıys						111				<u>.                                    </u>
	onth Palled Braggom (July Sont 2000) Task		Progres	is ===		Summary		External 7	Tasks		Deadline									
Project: Three-m Date: Mon 6/7/09	onth Rolled Flogram (July - Sept 2009)		Milestor			Project Summary			Milestone		Critical	ļ <del>i ji ji</del>								
	Эрііі		iville2(0)	10		. Toject cummary —		LAIGHIDH I	*IIIGGIUI IG		Omitai									
							Page 3/7													

Contract No. : DC / 2006 / 02

Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,

Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai



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Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai

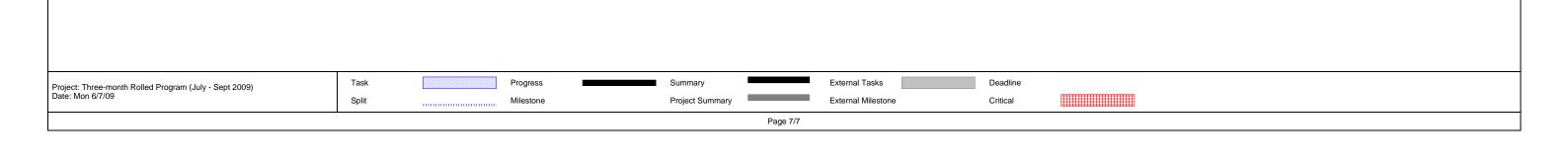
ID _	Task Name	Duration	Start		Finish	Predecessors Successors	Jul '	09 Aug	'00		Sep '09			Oct '09		I	Nov '09
0				Total Slack			28			16 23			20		11 18		1 8
208	Bay 54-Bay 52	12 days	Tue 7/4/09	0 days	Sat 18/4/09												
209	Bay 51-Bay 49	12 days	Sun 19/4/09	0 days	Thu 30/4/09												
210	Bay 48-Bay 46	12 days	Fri 1/5/09	0 days	Tue 12/5/09												
211	Bay 45-Bay 43	12 days	Wed 13/5/09	0 days	Sun 24/5/09												
212	Bay 42-Bay 40	12 days	Mon 25/5/09	0 days	Fri 5/6/09		-										
213	Bay 39-Bay 37	12 days	Sat 6/6/09	0 days	Wed 17/6/09		<u></u>										
214	Bay 36-Bay 33	12 days	Thu 18/6/09	0 days	Mon 29/6/09												
215	South Bank	883 days	Fri 30/3/07	82 days	Fri 28/8/09												
216	Bay 80 Pay 76	20 days	Sun 17/5/09 Fri 26/6/09	48 days	Fri 5/6/09 Wed 15/7/09												
	Bay 80-Bay 76 Bay 56a1-Bay 71		Sun 5/4/09	48 days	Mon 25/5/09												
218	Bay 48-Bay 46	51 days	Tue 30/6/09	9 days 0 days	Tue 14/7/09		<u> </u>										
220	Bay 45-Bay 43	15 days	Wed 15/7/09	0 days	Wed 29/7/09		,	0 days									
221	Bay 42-Bay 40	15 days	Thu 30/7/09	0 days	Thu 13/8/09		-	0 days 0 days									
222	Bay 39-Bay 37	15 days	Fri 14/8/09	0 days	Fri 28/8/09		-	• • • • • • • • • • • • • • • • • • •	0 days								
223	Bay 36-Bay 33	15 days	Fri 30/3/07	950 days	Fri 13/4/07				Juays								
224	Completion of Portion 3	0 days	Sat 19/9/09	0 days		154,185,199,228,229	-						19/9				
225		,-	3, 3, 3, 3				1						10.0				
226	Planting Trees	130 days	Wed 13/5/09	0 days	Sat 19/9/09												
227	Bay 2-Bay 9, North Bank, 48 trees	24 days	Fri 7/8/09	20 days		65FS+14 days 230SF,113,369		20 day	ys.		***************************************	***************************************	±9"				
228	Bay 41-Bay 42, North Bank, 7 trees	3 days	Sun 14/6/09	95 days	Tue 16/6/09	•			4								
229	Bay 54& Bay 55d, North Bank, 13 trees	7 days	Wed 13/5/09	123 days	Tue 19/5/09												
230	Bay 56c1, North Bank, 8 trees	4 days	Mon 3/8/09	44 days	Fri 7/8/09		1	44 days	$ \!$								
231	Bay 64-Bay 72b, North Bank, 56 trees	28 days	Tue 14/7/09	0 days	Mon 10/8/09	201 224,367,202	1	0 days									
232																	
233	Bay 7-Bay 27, South Bank, 40 trees	20 days	Fri 7/8/09	24 days	Wed 26/8/09	99,69 113	1	24 day	ys	_							
234	Bay 30-Bay 33, South Bank, 17 trees	9 days	Fri 7/8/09	35 days	Sat 15/8/09	67,69 113		35 day	ys								
235	Bay 40-Bay 53, South Bank, 38 trees	19 days	Fri 7/8/09	25 days	Tue 25/8/09	162 224		25 day	ys	_							
236	Bay 56a2, South Bank, 42 trees	21 days	Mon 15/6/09	50 days	Sun 5/7/09	224,237											
237	Bay 57-Bay 66a, South Bank, 52 trees	26 days	Mon 6/7/09	50 days	Fri 31/7/09	236 224	50 days	S									
238	Bay 68c-Bay 72a, South Bank, 26 trees	13 days	Tue 26/5/09	104 days	Sun 7/6/09	218 224											
239	Bay 74-Bay 78, South Bank, 13 trees	7 days	Sun 13/9/09	0 days	Sat 19/9/09	146 224					C	) days	₽				
240	Bay 79-Bay 83c, South Bank, 22 trees	11 days	Wed 8/7/09	63 days	Sat 18/7/09	199 224	63 da	ays									
241																	
242																	
243	Section II of the Works	905 days	Fri 30/3/07	60 days	Sat 19/9/09												
244	Kam Sheung Road Upstream	905 days	Fri 30/3/07	60 days	Sat 19/9/09												
245	Construction of Gabion at Bay 56 -Bay 62	26 days	Sat 28/3/09	111 days	Wed 22/4/09	247											
246	Pump Stream from Bay 49 to Bay 46	0 days	Thu 23/4/09	8 days	Thu 23/4/09												
247	Construction of Gabion at Bay 49	5 days	Thu 23/4/09	111 days	Mon 27/4/09		]										
248	Inspecion of New channel Bay 49- Bay 63 by DSD	14 days	Tue 28/4/09	111 days	Mon 11/5/09												
249	Divert Stream to New Channel	0 days	Mon 11/5/09	111 days	Mon 11/5/09												
250	Drainage Works	833 days	Fri 30/3/07	50 days	Thu 9/7/09			<b>—</b>									
251	CP Inlet 15-4	8 days	Fri 30/3/07	717 days	Fri 6/4/07												
252	MH15 F MH15 E	25 days	Tue 24/3/09	0 days	Fri 17/4/09												
253	МН15 E СР15-8A	13 days	Sat 18/4/09 Fri 1/5/09	0 days	Thu 30/4/09 Tue 12/5/09												
254	Outlet 15-3	12 days		0 days													
255 256	Outlet 15-3 CP15-5	12 days	Wed 13/5/09 Mon 25/5/09	0 days	Sun 24/5/09 Mon 1/6/09		-										
256	Inlet 15-3	8 days	Tue 2/6/09	0 days	Thu 11/6/09		-										
258	MH15 C	10 days	Fri 12/6/09	0 days	Sun 21/6/09												
259	CP15-7	9 days	Mon 22/6/09	50 days	Tue 30/6/09												
260	CP15-6	9 days	Wed 1/7/09	50 days	Thu 9/7/09		33 33333 LLL										
261	U-channel	80 days	Wed 1/7/09	110 days	Fri 31/7/09		, ,										
262	CP15-8A.2	15 days	Wed 13/5/09	175 days	Wed 27/5/09			Y									
263	CP15-8A.1	8 days	Wed 13/5/09	182 days	Wed 20/5/09												
264	CP15-5.2	5 days	Tue 2/6/09	165 days	Sat 6/6/09												
265	CP15-5.1	3 days	Tue 2/6/09	167 days	Thu 4/6/09		1										
	<u> </u>	,-		9-	2, 30												
Project: Three-m	onth Rolled Program (July - Sept 2009)		Progres	s ===		Summary	External T	Tasks Deadline	е								
Date: Mon 6/7/09	Split	111111111111111111111111111111111111111	Milestor	ne		Project Summary	External N	Milestone Critical									
						Page 5/7											

Contract No.: DC / 2006 / 02
Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,
Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai

	Task Name	Duration	Start	Finish Predecessors Successors Jul '09 Aug '09 Sep '09 Oct '09 No
0	CP15-7.2	4 days	Thu 2/7/09 121 days	Sun 5/7/09   259,276   267   4ys   19   26   2   9   16   23   30   6   13   20   27   4   11   18   25   19   19   19   19   19   19   19   1
	CP15-7.1	15 days	Mon 6/7/09 121 days	Mon 20/7/09   266   121 days
	CP15-7.1	15 days	Sun 12/7/09 110 days	
-	CP15-6.1	5 days	Mon 27/7/09 110 days	
	Backfilling			Fri 31/7/09   260,268
		835 days	•	
	North Bank	795 days	Fri 30/3/07 20 days	Mon 1/6/09
	Bay 49-Bay 56	14 days	Fri 30/3/07 736 days	Thu 12/4/07 253,262,273
	Bay 44-48	18 days	Thu 23/4/09 20 days	Sun 10/5/09   246,272   263,264,265,274,278
	Bay 37-Bay 43	22 days	Mon 11/5/09 20 days	Mon 1/6/09   246,273   278
	South Bank	20 days	Mon 22/6/09 70 days	Sat 11/7/09
	Bay 55- Bay 58	10 days	Mon 22/6/09 70 days	Wed 1/7/09   249,258   266,277
	Bay 47a - Bay 54	10 days	Thu 2/7/09 70 days	Sat 11/7/09 276 268,343 ays
	Road Construction(Panel Nos. RD2 - RD15C)	90 days	Mon 22/6/09 0 days	Sat 19/9/09   258,273,274 343 343 343 343 343 343 343 343 343 3
-	Diversion of CLP's cable on Kam Sheung Road	0 days	Wed 15/7/09 5 days	Wed 15/7/09 280 15/7
	Road Construction on Kam Sheung Road	62 days	Wed 15/7/09 5 days	Mon 14/9/09   279   343   5 days
	Planting of Trees	61 days	Mon 1/6/09 50 days	Fri 31/7/09
	Bay 38 - Bay 43, North Bank, 28 trees	14 days	Mon 29/6/09 32 days	Sun 12/7/09 258FS+7 days 283
	Bay 47b - Bay 55, North Bank, 26 trees	13 days	Mon 13/7/09 32 days	Sat 25/7/09 282 343,368 32 days
	Bay 55 - Bay 58, North Bank, 20 trees	10 days	Wed 22/7/09 50 days	Fri 31/7/09 286 343 50 days
	Bay 37 - Bay 42b, South Bank, 19 trees	10 days	Mon 1/6/09 101 days	Wed 10/6/09 343
	Bay 50 - Bay 55, South Bank, 10 trees	5 days	Fri 17/7/09 50 days	Tue 21/7/09 260FS+7 days 284 50 days
_		•	,	
	Kam Sheung Road Dowstream	905 days	Fri 30/3/07 60 days	Sat 19/9/09
<b>—</b>	Completion of Kam Po Road	15 days	Wed 20/5/09 0 days	Wed 3/6/09   293   312FF,290,207
	Removal of Temporary Access	10 days	Thu 4/6/09 4 days	Sat 13/6/09 289 320,312
	Construction of Bay 6	15 days	Sun 12/7/09 23 days	Sun 26/7/09   332,326,321   333   <b>23</b> days
	Construction of Gabion at Bay 6, 7 & 8	25 days	Mon 3/8/09 23 days	
<b>III</b>	Completion of Bay 1	0 days	Tue 31/3/09 50 days	Thu 2//8/09   333   343   23 days   Tue 31/3/09   289,301
##	North Bank	897 days		Fri 11/9/09
		•	•	Sat 11/7/09
	Drainage Works	103 days	Tue 31/3/09 4 days	
	CP15-2	7 days	Fri 12/6/09 0 days	Thu 18/6/09   350   297,309   305   207,309   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   300   305   303   305   30
_	CP15-2A	7 days	Fri 19/6/09 0 days	Thu 25/6/09 296 305,303,309
<b>=</b>	MH15 B	8 days	Fri 15/5/09 0 days	Fri 22/5/09 351
	CP15-1	7 days	Thu 2/7/09 7 days	Wed 8/7/09 312 307 ays
	CP15-01 & CP15-0	10 days	Thu 2/7/09 4 days	Sat 11/7/09 312 307,338 ays
	MH15-H	16 days	Tue 31/3/09 59 days	Wed 15/4/09 293 312,313 T
	U-channel and forming slope	68 days	Mon 6/7/09 0 days	Fri 11/9/09
	CP15-2.1	4 days	Mon 6/7/09 0 days	Thu 9/7/09   297,309   304   0 days
	CP15-2.2	14 days	Fri 10/7/09 0 days	Thu 23/7/09 303 310,305 0 cays
	CP15-2A.1	3 days	Thu 13/8/09 7 days	Sat 15/8/09 297,304,310 306 7 days
	CP15-2A.2	20 days	Sun 23/8/09 0 days	Fri 11/9/09   305,311   339
	CP15-1.1	20 days	Sun 12/7/09 4 days	Fri 31/7/09 299,300 313 days
	Backfilling	70 days	Sun 14/6/09 0 days	Sat 22/8/09
	Bay 7-Bay 11	10 days	Fri 26/6/09 0 days	Sun 5/7/09   296,297   303,338   303
	Bay 12 - Bay18	20 days	Fri 24/7/09 0 days	Wed 12/8/09 304 305,311 0 days
	Bay 19- Bay 27	10 days	Thu 13/8/09 0 days	Sat 22/8/09 310 306 0 days
	Bay 1- Bay 6	18 days	Sun 14/6/09 4 days	Wed 1/7/09 289FF,290,301 299,300,343
	Road Construction (Panel RE1 to RE4)	32 days	Sat 1/8/09 4 days	Tue 1/9/09 301,307 338,343 4 days
	Construction of Gabion (Bay 6-Bay 8)	22 days	Fri 30/3/07 943 days	Fri 20/4/07
	South Bank	877 days	Fri 30/3/07 88 days	Sat 22/8/09
	Drainage Works	877 days	Fri 30/3/07 88 days	Sat 22/8/09
	Inlet 15-1	7 days	Thu 26/3/09 231 days	Wed 1/4/09   346
	CP15-3B	7 days	Sun 16/8/09 13 days	Sat 22/8/09   336   342   13 days
	CP15-3	7 days	Fri 30/3/07 837 days	Thu 5/4/07 326
	Inlet 15-B	14 days	Sun 14/6/09 23 days	Sat 27/6/09 290 332,321
	Outlet 15-A	7 days	Sun 28/6/09 30 days	Sat 2/7/09   250   332,321
	U-channel and Forming Slope			
	CP15-3B.1	92 days	Fri 10/4/09 102 days	Fri 10/7/09
	CF 13-3D.1	35 days	Fri 10/4/09 188 days	Thu 14/5/09   328
	Task		Progress	Summary External Tasks Deadline
ct: Three-m	ionth Rolled Program (July - Sept 2009)			Project Summary External Milestone Critical
Mon 6/7/0	9 Split		Milestone	

Contract No. : DC / 2006 / 02
Contract Title : Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,
Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai

ID _	Task Name	Duration	Start		Finish Predecessors	Successors	Jul '09		Aug '09			Sep '0			Oct '09		Nov '
24	CP15-3.2(1st section)	14 days	Sat 13/6/09	Total Slack 131 days	Fri 26/6/09   326	325	28 5 12	2   19	26 2	9 16	23	30	6 13	3 20	27 4	11   18	25 1
	1 1	-	Sat 13/6/09 Sat 27/6/09	· .	Fri 10/7/09   324	325											
5 6	CP15-3.2(Remaing section CP15-3.1	14 days		131 days	Fri 12/6/09   319,331,335	291,341,324											
		14 days	Sat 30/5/09	52 days		291,341,324											
7	Backfilling	135 days	Sat 21/3/09	0 days	Sun 2/8/09	200 200 205											
8	Bay 16b - Bay 23	20 days	Sat 21/3/09	0 days	Thu 9/4/09	323,329,335											
.9	Bay 24 - Bay 31	20 days	Fri 10/4/09	0 days	Wed 29/4/09 328	335											
0	Bay 32 - Bay 35	10 days	Sat 21/3/09	30 days	Mon 30/3/09	352,335											
1 1	Bay 7 - Bay 16a	25 days	Sat 21/3/09	97 days	Tue 14/4/09	326											
2	Bay 3 - Bay 5	14 days	Sun 28/6/09	23 days	Sat 11/7/09 320	291,340			_								
33	Bay 6	7 days	Mon 27/7/09	23 days	Sun 2/8/09 291	292		23 days									
4																	
35	Laid Su-base Material from Bay 20 to Bay 35	30 days	Thu 30/4/09	0 days	Fri 29/5/09 328,329,330	355,326											
6	Constructing Road Pavement Bay 20- Bay 26	30 days	Fri 17/7/09	13 days	Sat 15/8/09 356	318	13 days	<b>3</b>	i								
37	Planting Trees	70 days	Sun 12/7/09	0 days	Sat 19/9/09												
8	Bay 2 - Bay 9, North Bank, 29 trees	14 days	Wed 2/9/09	4 days	Tue 15/9/09 313,309,300	343			T		4 da	ys					
9	Bay 13 - Bay 18, North Bank, 16 trees and 25 bamboo	8 days	Sat 12/9/09	0 days	Sat 19/9/09 306	343							days	<b></b>			
10	Bay 2 - Bay 6, South Bank, 35 trees	18 days	Sun 12/7/09	52 days	Wed 29/7/09   332	343	5⊇ days						- 11111111				
1	Bay 10 - Bay 11, South Bank, 8 trees and 18 bamboo	4 days	Fri 17/7/09	61 days	Mon 20/7/09 326,356	343	61 days										
2	Bay 18 - Bay 26, South Bank, 29 trees	15 days	Sun 23/8/09	13 days	Sun 6/9/09 318	343	o i days			13 da	vs						
43	Completion of Portion 5	0 days	Sat 19/9/09	0 days	Sat 19/9/09 277,278,313,312,280	368FF+30 days				15 da	,-			19/9			
4	Completion of Folion 5	0 days	Oat 13/3/03	o days	Gat 13/3/03 217,210,313,312,200	30011 130 day3								- 19/9			
		116 days	Mon 22/2/00	£1 days	Thu 16/7/09												
15	Section III of the Works - Portions 5A1, 5A2	116 days	Mon 23/3/09	61 days	Thu 16/7/09			₹									
	DOOM ALICOLAN LAW OLD D		NA 00/0/00	05.1	W 105/0/00	047.047											
6	Laying cable duct by PCCW's & HGC's Work at Kam Sheung Roa	•	Mon 23/3/09	85 days	Wed 25/3/09	317,347											
7	Diversion of HGC's cables(by HGC) at Kam Sheung Road	0 days	Sat 30/5/09	20 days	Sat 30/5/09 346	348											
8	Concrete Surround to PCCW's cable ducts (By PCCW) at Kam St	-	Fri 19/6/09	0 days	Thu 25/6/09 347,355	356											
.9	Drainage Works	73 days	Tue 31/3/09	53 days	Thu 11/6/09												
50	Outlet 15-2	10 days	Tue 2/6/09	0 days	Thu 11/6/09 351	296											
1	Inlet 15-2	10 days	Sat 23/5/09	0 days	Mon 1/6/09 298	354,350											
52	CP15-4A.1	10 days	Tue 31/3/09	223 days	Thu 9/4/09 330												
53																	
54	Backfilling at Bay 28-Bay 35	18 days	Tue 2/6/09	0 days	Fri 19/6/09 351	358											
5	Constructing Road Pavement Bay 27- Bay 34	20 days	Sat 30/5/09	0 days	Thu 18/6/09 335	359,361,348		1									
6	Constructing Road Pavement Bay 35	21 days	Fri 26/6/09	0 days	Thu 16/7/09 348	336,361,341		<b>H</b>									
7	Planting Trees	27 days	Sat 20/6/09	0 days	Thu 16/7/09												
8	Bay 23 - Bay 35, North Bank, 36 trees	18 days	Sat 20/6/09	0 days	Tue 7/7/09 354	359											
59	Bay 27 - Bay 35 , South Bank, 17 trees	9 days	Wed 8/7/09	0 days	Thu 16/7/09   355,358	361	0 days										
60				*			- 1111111111111111111111111111111111111	***									
61	Completion of Portion 5A1, 5A2 & 5B	0 days	Thu 16/7/09	0 days	Thu 16/7/09 356,355,359			16/7									
62								V									
3	Section V of the Works - Preservation and protection to existing trees	905 days	Fri 30/3/07	72 days	Sat 19/9/09												
64	223221 To the traine Transaction and protocolor to oxiding these	220 days	50,5,51	uayo	54. 15,5,55												
55	Construction of Hard Paved Area above box cuvlert at South Bank	30 days	Sat 5/9/09	15 days	Sun 4/10/09 105,112	366					15	5 days			<u> </u>		
66	Erection of Fencing near Hard Paved Area	30 days	Mon 5/10/09	15 days	Tue 3/11/09   365										15 days		
7	Erection of Fencing along Channel KT2	100 days	Tue 11/8/09	0 days	Wed 18/11/09   231				0 da	vs Harris							***************************************
8	Erection of Fencing along Channel KT15	84 days	Tue 28/7/09	30 days	Mon 19/10/09 283,343FF+30 days			30 days	<del>*</del>	, - <u>HIIIIIIIII</u>		шин	***************************************				***************************************
69	Construction of Hard Paved Area above box cuvlert at North Bank	30 days	Sun 13/9/09	49 days	Mon 12/10/09 103,65,227			JU uays					19 days		-		
		JU UAVS	Juli 13/3/09	45 UdVS									es CIAVS				



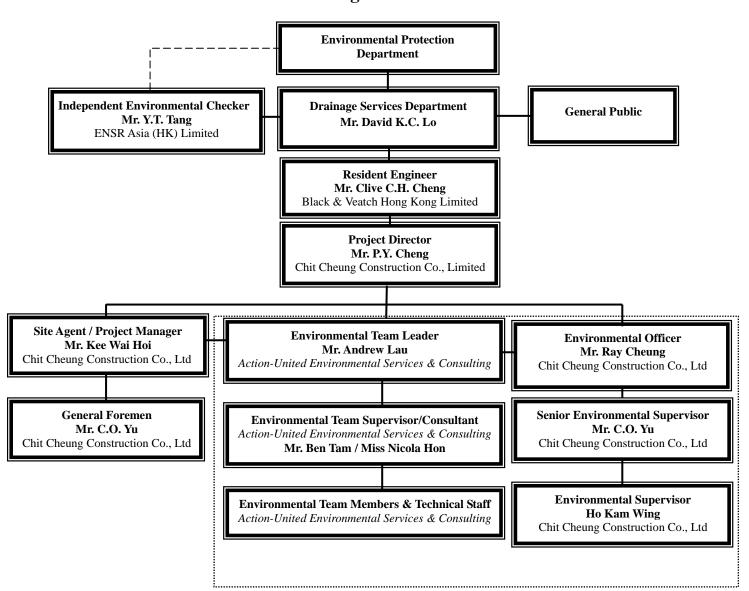


# **APPENDIX C**

**ENVIRONMENTAL ORGANIZATION STRUCTURE** 



### **Environmental Organization Structure**



Contractor's Environmental Team (CET)



### **Contact Details of Key Personnel**

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. David K.C. LO	2594-7254	2827-8526
B&V	Engineer	Mr. Kelvin N.F. LAU	2601-1000	2601-3988
B&V	Engineer's Representative	Mr. Clive C.H. CHENG	2478-9161	2478-9396
ENSR	Independent Environmental Checker	Mr. Y.T. Tang	3105-8537	2891-0305
CCC	Project Director	Mr. P.Y. CHENG	9023-4821	2403-1162
CCC	Project Manager	Mr. K.W. Hoi	6603-9711	2479-1365
CCC	Site Agent	Mr. K.W. Hoi	6603-9711	2479-1365
CCC	Site Engineer	Mr. Jimmy CHAN	9234-8632	2479-1365
CCC	Environmental Officer	Mr. Ray Cheung	6103-7404	2479-1365
CCC	Senior Environmental Supervisor	Mr. C. O. Yu	9026-9501	2479-1365
CCC	Environmental Supervisor	Mr. K W Ho	9016-0592	2479-1365
CCC	Safety Officer	Mr. C.C Yu	6086-4658	2479-1365
AUES	Environmental Team Leader	Mr. Andrew Lau	2959-6059	2959-6079
AUES	Ecologist	Mr. Vincent Lai	9406-9784	2959-6079

Legend:

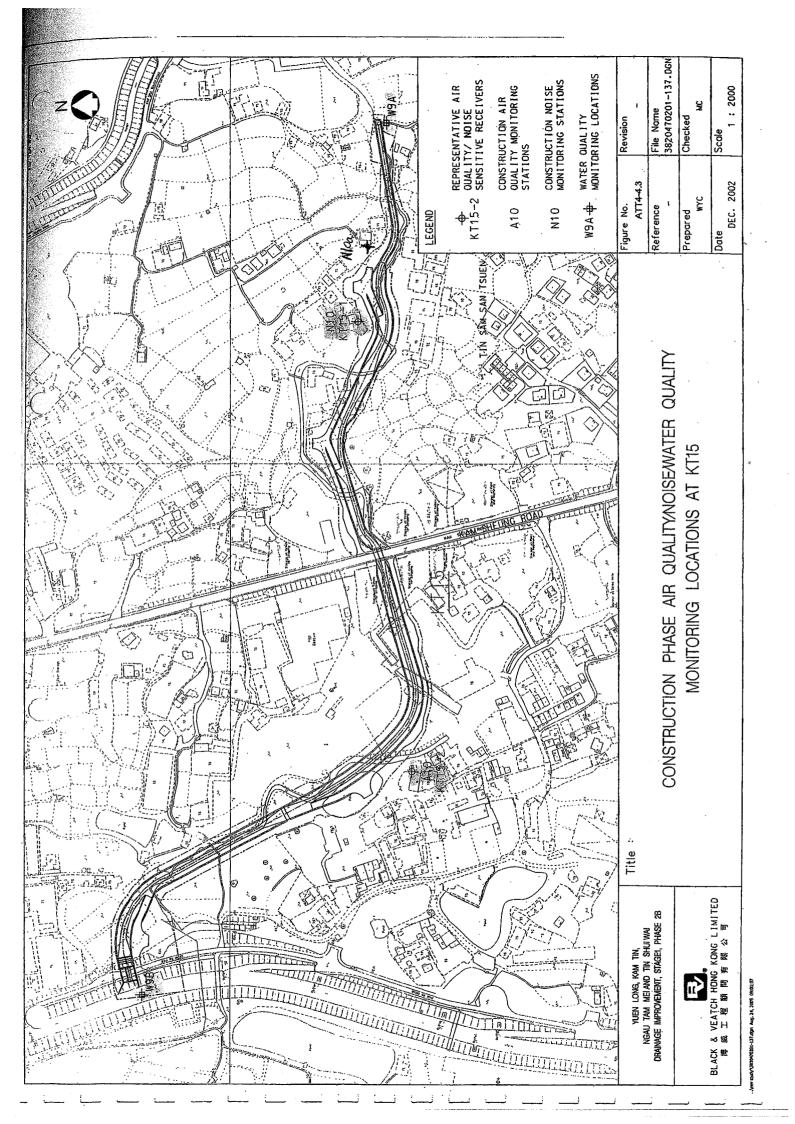
DSD (Employer) B&V (Engineer) Drainage Services Department Black & Veatch Hong Kong Limited Chit Cheung Construction Company Limited. ENSR Asia (HK) Ltd. CCC (Contractor) ENSR (IEC) AUES (ET)

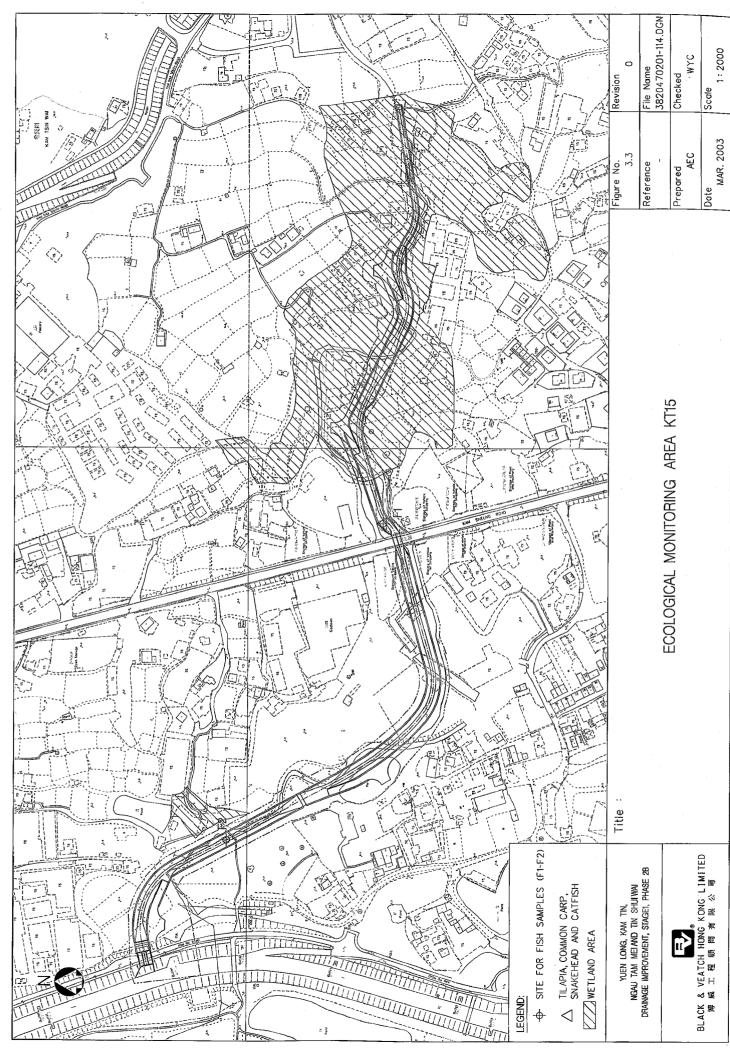
Action-United Environmental Services & Consulting



## APPENDIX D

# LOCATIONS OF DESIGNATED MONITORING STATION/LOCATIONS/AREA





-\env study3820470201-114.dgn Aug. 24, 2005 09:03:48



## APPENDIX E

EVENT/ACTION PLAN FOR AIR QUALITY, CONSTRUCTION NOISE, STREAM WATER QUALITY AND ECOLOGY



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

EVENT	ACTION					
EVENI	ET	IEC	Engineer	Contractor		
ACTION LEVEL						
Exeedance for one sample	Identify source     Inform IEC and Engineer     Repeat measurement to confirm finding     Increase monitoring frequency to daily	Check monitoring data submitted by ET     Check Contractor's working method	Notify Contractor	Rectify any unacceptable practice     Amend working methods if appropriate		
Execdance for two or more consecutive samples	Identify source     Inform IEC and Engineer     Repeat measurements to confirm findings     Increase monitoring frequency to daily     Discuss with IEC and Contractor on remedial actions required     If exceedance continues, arrange meeting with IEC and Engineer     7. If exceedance stops, cease additional monitoring	Check monitoring data submitted by ET     Check Contractor's working method     Discuss with ET and Contractor on possible remedial measures     Advice Engineer on the effectiveness of the proposed remedial measures     Supervise implementation of remedial measures	Confirm receipt of notification of failure in writing     Notify Contractor     Ensure remedial measures properly implemented	Submit proposals for remedial actions to IEC within 3 working days of notification     Implement the agreed proposals     Amend proposal if appropriate		
LIMIT LEVEL						
Exeedance for one sample	Identify source     Inform Engineer and EPD     Repeat measurement to confirm finding     Increase monitoring frequency to daily     Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and Engineer informed of the results	Check monitoring data submitted by ET     Check Contractor's working method     Discuss with ET and Contractor on possible remedial measures     Advice Engineer on the effectiveness of the proposed remedial measures     Supervise implementation of remedial measures	Confirm receipt of notification of failure in writing     Notify Contractor     Ensure remedial measures properly implemented	Take immediate action to avoid further exceedance     Submit proposals for remedial actions to IEC within 3 working days of notification     Implement the agreed proposals     Amend proposal if appropriate		
Exceedance for two or more consecutive samples	Notify IEC, Engineer and EPD     Identify source     Repeat measurement to confirm findings     Increase monitoring frequency to daily     Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.     Arrange meeting with IEC and Engineer to discuss the remedial actions to be taken     Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and Engineer informed of the results     If exceedance stops, cease additional monitoring	Discuss amongst Engineer, ET and Contractor on potential remedial actions     Review Contractor's remedial actions whether necessary to assure their effectiveness and advice the Engineer accordingly     Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented 4. Discuss amongst Environmental Team Leader and the Contractor potential remedial actions 5. Ensure remedial measures properly implemented 6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IEC within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the Engineer until the exceedance is abated		



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

EVENT		ACTION		
EVENT	ET Leader	IEC	Engineer	Contractor
ACTION LEVEL	Notify Contractor and Engineer     Carry out investigation     Report the results of investigation to the IEC and Contractor     Discuss with the Contractor and formulate remedial measures     Increase monitoring frequency to check mitigation effectiveness	Review the analysed results submitted by ET     Review the proposed remedial measures by the Contractor and advice the Engineer accordingly     Supervise implementation of remedial measures	Confirm receipt of notification of failure in writing     Notify Contractor     Require Contractor to propose remedial measures for the analysed noise problem     Ensure remedial measures properly implemented	Submit noise mitigation proposals for remedial actions to IEC     Implement the agreed proposals
LIMIT LEVEL	Notify IEC, Engineer, EPD and Contractor     Identify source     Repeat measurement to confirm findings     Increase monitoring frequency     Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented     Inform IEC, Engineer and EPD the causes & actions taken for the exceedances     Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and Engineer informed of the results     If exceedance stops, cease additional monitoring	Discuss amongst Engineer, ET and Contractor on potential remedial actions     Review Contractor's remedial actions whether necessary to assure their effectiveness and advice the Engineer accordingly     Supervise implementation of remedial measures	Confirm receipt of notification of failure in writing     Notify Contractor     Require Contractor to propose remedial measures for the analysed noise problem     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 further exceedance     Submit proposals for remedial actions to IEC 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 Engineer until the exceedance is abated



### **Event and Action Plan for Stream Water Quality**

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



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

Event	ET Leader	IEC	Engineer	Contractor
Fauna The total number of species or individuals of the surveyed wetland dependent faunal groups is reduced by 20-40% from baseline	Notify IEC and Contractor;     Check the position and state of the current works to identify the causes;     Discuss mitigation measures with IEC and Contractor	Discuss with ET and Contractor on the mitigation measures     Review proposals on mitigation measures submitted by Contractor and advice Engineer accordingly     Assess the effectiveness of the implemented mitigation measures	Discuss with IEC on the proposed mitigation measures;     Reach agreement on the mitigation measures to be implemented	Inform Engineer and confirm notification of the non-compliance in writing Take immediate action to avoid further exceedances; Check all plant and equipment and working methods, especially noise emanating ones Discuss with ET and IEC and propose mitigation measures to IEC and Engineer Implement the agreed mitigation measures



## APPENDIX F

# **EQUIPMENT CALIBRATION CERTIFICATES**



# Equipment Calibration List for Construction of Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai Project

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1	Air	Tisch High Volume Sampler 515N (Serial No. 9833620)	7 May 09 7 Jul 09	
2*		TSI DuskTrak Model 8520 (21060)	30 Aug 08	30 Aug 09
3*		TSI DuskTrak Model 8520 (23080)	30 Aug 08	30 Aug 09
4	Noise	Cesva CB-5 Acoustical Calibrator (Serial No. 030934) 28 Apr 09 28 Apr 1		28 Apr 10
5		Cesva SC-20c Sound Level Meter (Serial No. T212509)	28 Apr 09	28 Apr 10
6*	Water	YSI 550A (Serial No. 05F2063AZ)	21 Apr 09	21 July 09
7*		Hanna pH Meter HI98107 (Serial No. S411364)	6 May 09	6 Aug 09
8*		Turbidimeter HACH 2100p (Serial No. 08070C31408)	4 May 09	4 Aug 09
9		Hand refractometer ATAGO (Serial No. 289468)	21 Apr 09	21 Jul 09

Note: \*Calibration certificates will only be provided if monitoring equipment is re-calibrated or new.



Batch:

HK0907263

Date of Issue:

21/04/2009

Client:

ACTION UNITED ENVIRO SERVICES

Client Reference:

### Calibration of Thermometer

Item:

YSI Multimeter

Model No.:

YSI 550A

Serial No.:

05F2063AZ

Equipment No.:

- -

Calibration Method:

In-house Method

Date of Calibration:

21 April, 2009

Testing Results:

Reference Temperature (°C)	Recorded Temperature (°C)		
23.5 °C	23.3 °C		
31.5 °C	31.4 °C		
Allowing Deviation	±2.0°C		

Ms Wong Wai Man, Alice Laboratory Manager - Hong Kong



Batch:

HK0907263

Date of Issue:

21/04/2009

Client:

ACTION UNITED ENVIRO SERVICES

Client Reference:

### Calibration of DO System

Item:

YSI Multimeter

Model No.:

YSI 550A

Serial No.:

05F2063AZ

Equipment No.:

- -

Calibration Method:

This meter was calibrated in accordance with standard method APHA (18th Ed.) 4500-0C & G

Date of Calibration:

21 April, 2009

Testing Results:

Expected Reading	Recording Reading		
2.87 mg/L 4.66 mg/L 8.30 mg/L	3.06 mg/L 4.85 mg/L 8.16 mg/L		
Allowing Deviation	±0.2 mg/L		

Ms Wong Wai Man, Alice Laboratory Manager - Hong Kong



Batch:

HK0908673

Date of Issue:

12/05/2009

Client:

ACTION UNITED ENVIRO SERVICES

Client Reference:

### Calibration of pH System

Item:

HANNA pH Meter

Model No.:

HI98107

Serial No.:

S411364

Equipment No.:

- -

Calibration Method:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 4500-H<sup>+</sup>B

Date of Calibration:

06 May, 2009

Testing Results:

Expected Reading	Recording Reading	
4.0	4.1	
7.0	7.1	
10.0	9.9	
Allowing Deviation	± 0.2	

Ms Wong Wai Man, Alice Laboratory Manager - Hong Kong

Batch:

HK0907985

Date of Issue:

04/05/2009

Client:

**ACTION UNITED ENVIRO SERVICES** 

Client Reference:

DC\_2007\_08 - DRAINAGE IMPROVEMENT WORKS AT TAI PO TIN, PING CHE, MAN UK PIN AND LIN MA HANG

### Calibration of Turbidity System

Item:

Portable Turbidimeter

Model No.:

**HACH 2100P** 

Serial No.:

08070C031408

Equipment No.:

3054010

Calibration Method:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 2130B

Date of Calibration:

04 May, 2009

### Testing Results:

Expected Reading	Recording Reading	
0.00 NTU	0.19 NTU	
4.00 NTU	3.85 NTU	
16.0 NTU	16.7 NTU	
80.0 NTU	83.2 NTU	
160 NTU	166 NTU	
Allowing Deviation	±10%	

Ms Wong Wai Man, Alice

Laboratory Manager - Hong Kong

# **AUES**

# **Equipment Calibration Record**

**Equipment Calibrated:** 

Type: Dust Trak Model 8520

Manufacturer: TSI
Serial No. 23080
Equipment Ref: EQ063

**Standard Equipment:** 

Standard Equipment: Higher Volume Sampler

Location & Location ID: Village house No. 96 of Tai Po Mei (A2)

Equipment Ref: A-2

Last Calibration Date: 29-Aug-08

**Equipment Calibration Results:** 

Calibration Date: 30-Aug-08

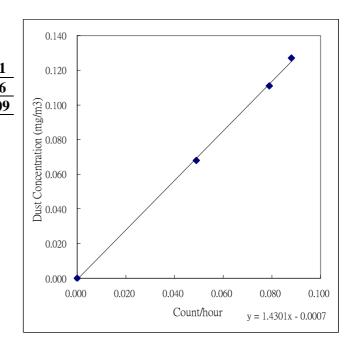
Hour	Time	Temp °C	RH %	Dust Concentr	ration in mg/m <sup>3</sup>
Hour	Time	Temp C	K11 /0	(Standard Equipment)	(Calibrated Equipment)
1	12:15 ~ 13:15	32.7	74	0.049	0.068
1	13:20 ~ 14:20	33.5	74	0.088	0.127
1	14:28 ~ 15:28	35.8	74	0.079	0.111

Sensitivity Adjustment Zero Calibration (Before Calibration 0 (mg/m³)

Sensitivity Adjustment Zero Calibration (After Calibration) 0 (mg/m³)

Linear Regression of Y or X

Slope: 0.0801
Correlation Coefficient 0.9996
Validity of Calibration Record 30-Aug-09



Operator: Ben Tam Signature: Date: 2008/8/30

QC Reviewer F.N.Wong Signature: Date: 2008/8/30

# **AUES**

# **Equipment Calibration Record**

**Equipment Calibrated:** 

Type: Dust Trak Model 8520

Manufacturer: TSI
Serial No. 21060

Equipment Ref: EQ021

**Standard Equipment:** 

Standard Equipment: Higher Volume Sampler

Location & Location ID: Village house No. 96 of Tai Po Mei (A2)

Equipment Ref: A-2

Last Calibration Date: 29-Aug-08

**Equipment Calibration Results:** 

Calibration Date: 30-Aug-08

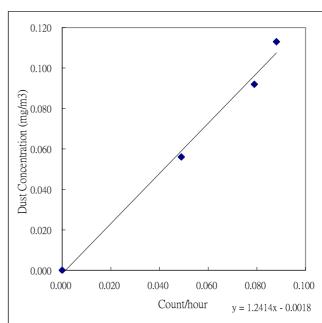
Hour	Time	Temp °C	RH %	Dust Concentr	ration in mg/m <sup>3</sup>
Hour	Time	Temp C	K11 /0	(Standard Equipment)	(Calibrated Equipment)
1	12:15 ~ 13:15	32.7	74	0.049	0.056
1	13:20 ~ 14:20	33.5	74	0.088	0.113
1	14:28 ~ 15:28	35.8	74	0.079	0.092

Sensitivity Adjustment Zero Calibration (Before Calibratio 0 (mg/m³)
Sensitivity Adjustment Zero Calibration (After Calibration) 0 (mg/m³)

Linear Regression of Y or X

Slope:
Correlation Coefficient
Validity of Calibration Record

0.0748 0.9958 30-Aug-09



Operator: Ben Tam

Signature :

Date: 2008/8/30

QC Reviewer F.N.Wong

Signature:

Date: 2008/8/30



# APPENDIX G

# IMPACT MONITORING SCHEDULES



### **Impact Monitoring Schedules in this Reporting Period**

Date		Air Q	uality	NOISE	WATER QUALITY	ECOLOGY SURVEYS
		1-Hr TSP	24-Hr TSP	LEQ 30MIN	QOALITI	JUNETO
26-May-09	Tue					
27-May-09	Wed					
28-May-09	Thu					
29-May-09	Fri					
30-May-09	Sat					
31-May-09	Sun					
1-June-09	Mon					
2-June-09	Tue					
3-June-09	Wed					
4-June-09	Thu					
5-June-09	Fri					
6-June-09	Sat					
7-June-09	Sun					
8-June-09	Mon					
9-June-09	Tue					
10-June-09	Wed					
11-June-09	Thu					
12-June-09	Fri					
13-June-09	Sat					
14-June-09	Sun					
15-June-09	Mon					
16-June-09	Tue					
17-June-09	Wed					
18-June-09	Thu					
19-June-09	Fri					
20-June-09	Sat					
21-June-09	Sun					
22-June-09	Mon					
23-June-09	Tue				<u></u>	
24-June-09	Wed					
25-June-09	Thu					

Monitoring Day
Sunday or Public Holiday



## **Impact Monitoring Schedules in the Next Reporting Period**

Date		Air Q	uality	NOISE LEQ 30MIN	WATER QUALITY	ECOLOGY SURVEYS
		1-Hr TSP	24-Hr TSP		20712111	001112110
26-June-09	Fri					
27-June-09	Sat					
28-June-09	Sun					
29-June-09	Mon					
30-June-09	Tue					
1-July-09	Wed					
2-July-09	Thu					
3-July-09	Fri					
4-July-09	Sat					
5-July-09	Sun					
6-July-09	Mon					
7-July-09	Tue					
8-July-09	Wed					
9-July-09	Thu					
10-July-09	Fri					
11-July-09	Sat					
12-July-09	Sun					
13-July-09	Mon					
14-July-09						
15-July-09	Wed					
16-July-09	Thu					
17-July-09						
18-July-09	Sat					
19-July-09	Sun					
20-July-09						
21-July-09	Tue					
22-July-09	Wed					
23-July-09	Thu					
24-July-09	Fri					
25-July-09	Sat					

✓	Monitoring Day
	Sunday or Public Holiday

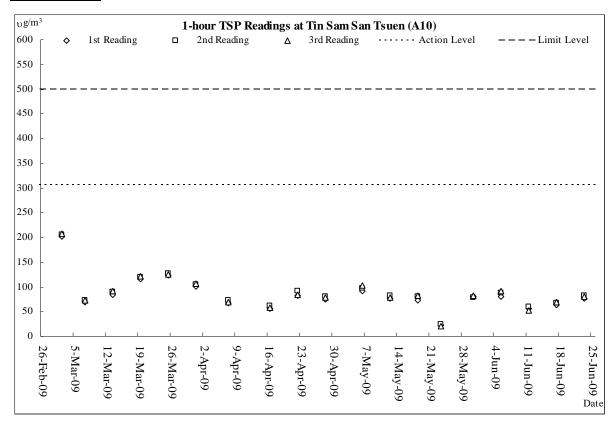


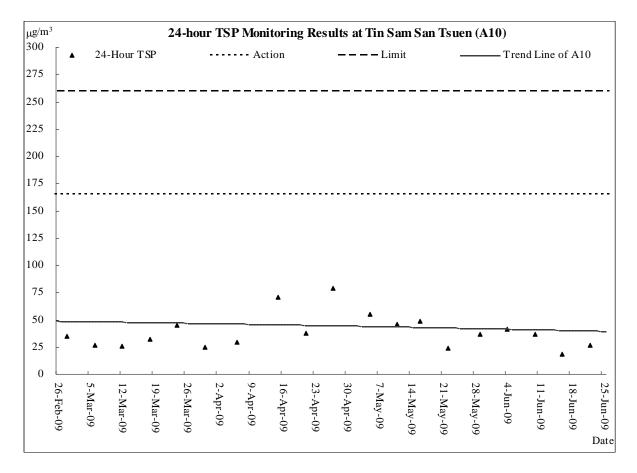
### APPENDIX H

GRAPHICAL PLOTS OF AIR QUALITY, CONSTRUCTION NOISE AND STREAM WATER QUALITY MONITORING RESULTS



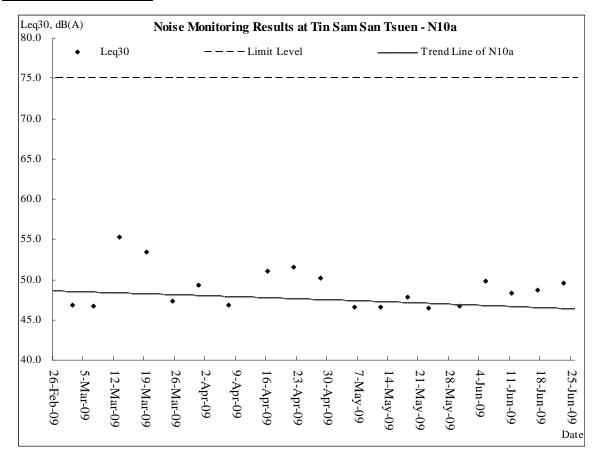
#### AIR QUALITY





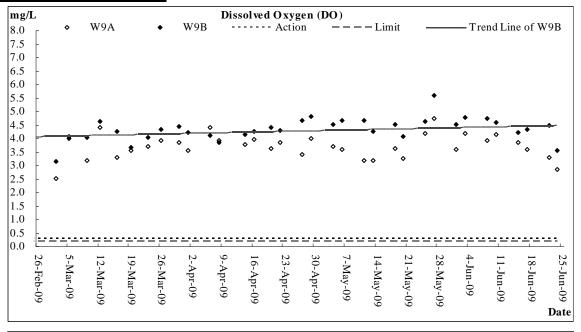


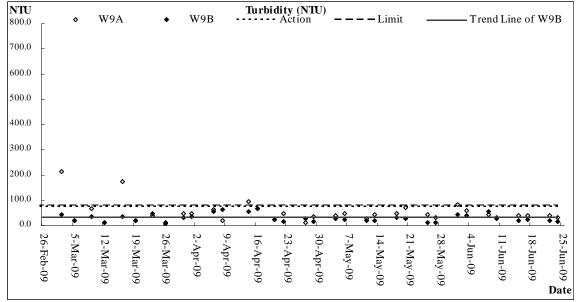
### **CONSTRUCTION NOISE**

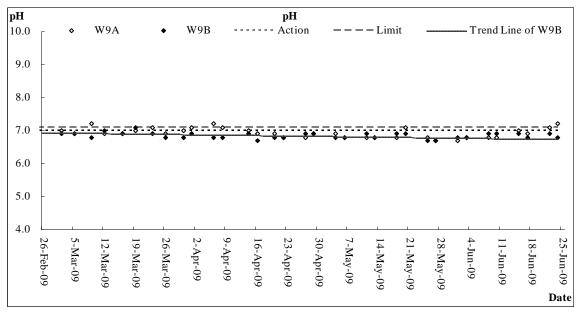




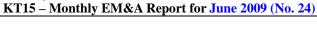
#### **STREAM WATER QUALITY**

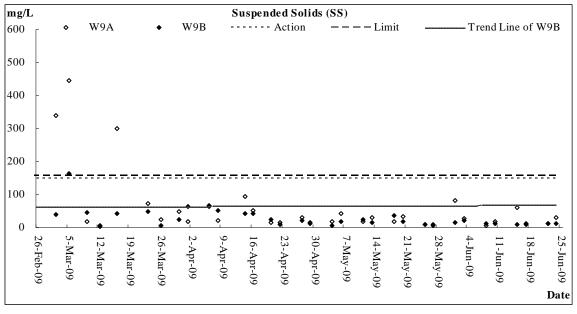


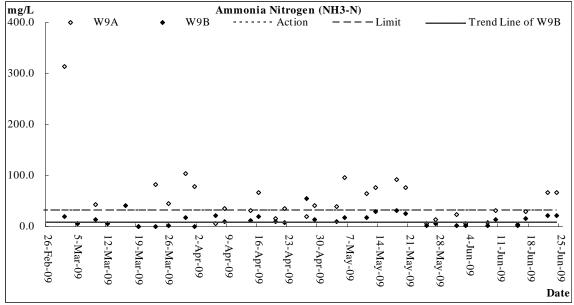


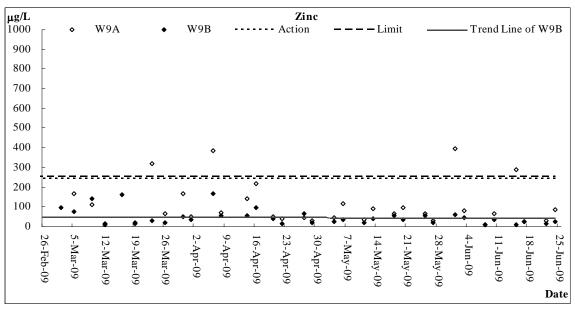














Date	2	27-May-09															
Location	Time	Depth (m)	Tem	np (oC)	DO	(mg/L)	DC	OS (%)	Turbidi	ty (NTU)	5	Salinity		pН	SS	NH3-N	Zinc
W9A	09:25	0.19	23.4	23.4	4.77	4.74	49.7	49.4	30.8	30.5	0	0.0	6.70	6.70	9.0	14.2	32.0
WAA	09.23	0.18	23.4	23.4	4.71	4.74	49.0	49.4	30.2	30.3	0	0.0	6.70	0.70	9.0	14.2	32.0
WOD	00.25	0.22	23.8	22.0	5.61	<i>5.5</i> 0	58.6	50.2	10.4	10.1	0	0.0	6.70	6.70	7.0	5.2	10.0
W9B	09:35	0.22	23.8	23.8	5.54	5.58	57.9	58.3	9.7	10.1	0	0.0	6.70	6.70	7.0	5.3	19.0

Date		1-Jun-09															
Location	Time	Depth (m)	Tem	p (oC)	DO	(mg/L)	DO	OS (%)	Turbidi	ity (NTU)	5	Salinity		pН	SS	NH3-N	Zinc
W9A	10:00	0.10	24.6	24.6	3.61	2.50	39.2	38.8	84.5	83.8	0	0.0	6.70	6.70	83.0	23.8	396.0
W9A	10:00	0.10	24.6	24.6	3.54	3.58	38.4	36.6	83.1	03.0	0	0.0	6.70	0.70	65.0	23.8	390.0
WOD	10.10	0.15	25.1	25.1	4.55	4.51	48.8	40.4	42.9	42.2	0	0.0	6.80	6.00	15.0	2.1	(2.0
W9B	10:10	0.15	25.1	25.1	4.47	4.51	47.9	48.4	41.7	42.3	0	0.0	6.80	6.80	15.0	2.1	62.0

Date		3-Jun-09															
Location	Time	Depth (m)	Tem	p (oC)	DO	(mg/L)	DO	S (%)	Turbidi	ity (NTU)		Salinity		pН	SS	NH3-N	Zinc
W9A	09:40	0.12	24.3	24.3	4.21	4.17	45.6	44.8	57.3	57.7	0	0.0	6.80	6.80	28.0	6.7	81.0
W9A	09:40	0.12	24.3	24.3	4.13	4.17	44.0	44.8	58.1	31.1	0	0.0	6.80	0.80	28.0	0.7	81.0
W9B	00.50	0.17	25.6	25.6	4.82	4.70	51.3	51.0	40.3	20.4	0	0.0	6.80	6.90	21.0	2.0	44.0
W9B	09:50	0.17	25.6	25.6	4.74	4.78	50.6	51.0	38.4	39.4	0	0.0	6.80	6.80	21.0	2.8	44.0

Date		8-Jun-09															
Location	Time	Depth (m)	Tem	p (oC)	DO	(mg/L)	DC	OS (%)	Turbidi	ity (NTU)	S	Salinity		pН	SS	NH3-N	Zinc
W9A	09:10	0.15	24.8	24.9	3.95	3.91	42.6	42.0	42.6	42.2	0	0.0	6.80	6.80	6.0	7.9	12.0
W9A	09:10	0.15	24.8	24.8	3.87	3.91	41.3	42.0	41.8	42.2	0	0.0	6.80	0.80	6.0	7.9	12.0
Mob	00.20	0.10	25.9	25.0	4.77	4.775	50.4	<b>70.1</b>	57.7	57.0	0	0.0	6.90	6.00	12.0	2.7	12.0
W9B	09:20	0.18	25.9	25.9	4.72	4.75	49.7	50.1	56.2	57.0	0	0.0	6.90	6.90	12.0	2.7	12.0



Date	1	10-Jun-09															
Location	Time	Depth (m)	Tem	np (oC)	DO	(mg/L)	DC	OS (%)	Turbidi	ty (NTU)	5	Salinity		рН	SS	NH3-N	Zinc
W9A	09:30	0.18	23.2	23.2	4.17	4.14	43.7	43.3	32.8	32.2	0	0.0	6.80	6.80	18.0	31.9	65.0
WAA	09.30	0.16	23.2	23.2	4.1	4.14	42.8	43.3	31.5	32.2	0	0.0	6.80	0.80	16.0	31.9	03.0
WOD	00.40	0.22	24.9	24.0	4.62	4.50	49.6	40.6	26.2	26.0	0	0.0	6.90	6.00	12.0	12.2	22.0
W9B	09:40	0.22	24.9	24.9	4.53	4.58	483	49.6	25.7	26.0	0	0.0	6.90	6.90	12.0	13.3	33.0

Date	-	15-Jun-09															
Location	Time	Depth (m)	Tem	ıp (oC)	DO	(mg/L)	DO	OS (%)	Turbidi	ity (NTU)	5	Salinity		pН	SS	NH3-N	Zinc
W/O A	00.10	0.12	26.2	26.2	3.88	2.95	41.7	41.4	42.1	40.2	0	0.0	7.00	7.00	(2.0	4.5	200.0
W9A	09:10	0.13	26.2	26.2	3.82	3.85	41.0	41.4	38.4	40.3	0	0.0	7.00	7.00	62.0	4.5	289.0
WOD	00.20	0.24	26.8	26.0	4.26	4.22	45.4	45.0	19.2	20.0	0	0.0	6.90	6.00	10.0	2.0	11.0
W9B	09:20	0.24	26.8	26.8	4.18	4.22	44.6	45.0	20.7	20.0	0	0.0	6.90	6.90	10.0	2.9	11.0

Date	1	17-Jun-09															
Location	Time	Depth (m)	Tem	np (oC)	DO	(mg/L)	DO	S (%)	Turbidi	ty (NTU)	8	Salinity		pН	SS	NH3-N	Zinc
W9A	09:30	0.14	27.1	27.1	3.64	3.61	38.9	38.6	38.5	38.2	0	0.0	6.90	6.90	13.0	30.1	27.0
WAA	09.30	0.14	27.1	27.1	3.57	3.01	38.2	36.0	37.9	36.2	0	0.0	6.90	0.90	13.0	30.1	27.0
WOD	00.40	0.22	27.5	27.5	4.39	4.25	46.2	45.0	24.0	22.2	0	0.0	6.80	6.00	10.0	15.2	25.0
W9B	09:40	0.22	27.5	27.5	4.31	4.35	45.3	45.8	22.6	23.3	0	0.0	6.80	6.80	10.0	15.3	25.0

Date	2	22-Jun-09															
Location	Time	Depth (m)	Tem	p (oC)	DO	(mg/L)	DO	S (%)	Turbidi	ity (NTU)	S	Salinity		pН	SS	NH3-N	Zinc
W9A	09:25	0.12	26.6	26.6	3.32	3.28	36.3	35.9	39.4	38.8	0	0.0	7.10	7.10	13.0	65.7	31.0
WAA	09.23	0.13	26.6	20.0	3.24	3.20	35.5	33.9	38.1	30.0	0	0.0	7.10	7.10	13.0	03.7	31.0
WOD	00.25	0.25	27.0	27.0	4.51	4.40	48.6	49.0	18.9	10.2	0	0.0	6.90	6.00	12.0	20.6	17.0
W9B	09:35	0.25	27.0	27.0	4.44	4.48	47.3	48.0	17.5	18.2	0	0.0	6.90	6.90	12.0	20.6	17.0



Date	2	24-Jun-09															
Location	Time	Depth (m)	Tem	p (oC)	DO	(mg/L)	DO	OS (%)	Turbidi	ity (NTU)	5	Salinity		pН	SS	NH3-N	Zinc
W9A	09:45	0.12	26.6	26.6	2.89	2.86	31.4	31.0	31.8	30.7	0	0.0	7.20	7.20	30.0	66.3	86.0
W9A	09.43	0.12	26.6	20.0	2.82	2.80	30.6	31.0	29.6	30.7	0	0.0	7.20	7.20	30.0	00.5	80.0
WOD	00.55	0.26	27.2	27.2	3.58	2.56	38.9	20 5	15.8	15 1	0	0.0	6.80	6.90	12.0	21.5	26.0
W9B	09:55	0.26	27.2	27.2	3.53	3.56	38.1	38.5	14.3	15.1	15.1 0.	0.0	6.80	6.80	13.0	21.5	26.0

KT15 – Monthly EM&A Report for June 2009 (No. 24)



APPENDIX I

# METEOROLOGICAL DATA IN THE REPORTING PERIOD



KT15 – Monthly EM&A Report for June 2009 (No. 24)

# Meteorological Data Extracted from HKO in the Reporting Period

			Lau Fau Shan Weather Station							
Date	Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction				
26-May-09 Tue	cloudy/a few showers/moderate	20.2	26.2	12.7	86	E				
27-May-09 Wed	cloudy/showers/sunny	39.2	28	12	78.5	E/NE				
28-May-09 Thu	Holiday									
29-May-09 Fri	cloudy/rain/moderate/fresh	5.5	21.8	14.5	78	E/NE				
30-May-09 Sat	cloudy/sunny	0	24.8	10	73.5	E				
31-May-09 Sun	fine/light winds	0	26.6	13.7	65	S/SE				
1-Jun-09 Mon	fine/light winds	0	27.3	8	67	S/SE				
2-Jun-09 Tue	sunny periods/isolated	Trace	27	14.5	67.7	S/SE				
3-Jun-09 Wed	cloudy/showers/squally	10.4	28.5	20	79.5	S/SE				
4-Jun-09 Thu	cloudy/sunny	36.8	27.5	27.5	79.2	W/NW				
5-Jun-09 Fri	hot/fine/dry/light winds	0	28.1	15	66.5	W/NW				
6-Jun-09 Sat	fine/day/hot/light winds	0	28.5	10.5	68	S/SE				
7-Jun-09 Sun	cloudy/a few	Trace	28.1	16.5	63.5	S/SE				
8-Jun-09 Mon	sunny intervals/a few	11.2	27.8	16.5	67.5	S/SE				
9-Jun-09 Tue	cloudy/rain/squally	16.5	27.1	16	76.7	S/SE				
10-Jun-09 Wed	cloudy/showers/squally	Trace	28.4	11.5	81.7	S/SE				
11-Jun-09 Thu	overcast/rain/squally	49.2	25.8	11.5	86	S/SE				
12-Jun-09 Fri	cloudy/rain/squally	7.9	26.5	26.5	82	E/SE				
13-Jun-09 Sat	cloudy/squally	Trace	28.6	16	87	E/SE				
14-Jun-09 Sun	cloudy/scattered	24	28.3	13.7	78.2	SE				
15-Jun-09 Mon	cloudy/rain/squally	17.3	28.4	10.7	79.5	Ē				
16-Jun-09 Tue	cloudy/scattered	6.1	27	13.5	85.5	E/NE				
17-Jun-09 Wed	sunny periods/isolated	Trace	28.8	9.7	81	E/NE				
18-Jun-09 Thu	fine/hot/haze/light winds	0	28.6	10.2	79	S/SE				
19-Jun-09 Fri	isolated	5.7	28.9	12.5	75.5	S/SE				
20-Jun-09 Sat	sunny periods/islated	0	30	10.5	77	E/NE				
21-Jun-09 Sun	cloudy/moderate/fresh/sunny	0	29.3	13.7	77.5	W/SW				
22-Jun-09 Mon	cloudy/scattered	15.7	30.1	23.7	78	S/SW				
23-Jun-09 Tue	hot/a few showers/squally	12.5	28.9	17.5	82.5	S/SW				
24-Jun-09 Wed	, I 3	8.5	29.5	15.5	82.5	W/SW				
25-Jun-09 Thu	a few showers/squally	6.6	29.5	13.5	76.7	S/SE				



KT15 – Monthly EM&A Report for June 2009 (No. 24)

# APPENDIX J

# **ENVIRONMENTAL TEAM SITE INSPECTION CHECKLISTS**

## **Environmental Site Inspection Checklist for KT15**



Projec	et:	Contract No.: DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai			y oresentati	ve:	Mr. Cheung				
Inspe	ction		IEC/	IEC's re	epresenta	tive:					
Date:		27 May 2009	ETL	/ ET's r	epresenta	itive:	Nicola Hon				
Time:	me: 10:00				s represe	ntative:	M. K. Ng				
			Che	cklist N	0.		KT15-27	0509			
PART A: GENERAL INFORMATION Environmenta					EP-231/20	05/A					
Weath		✓ Sunny Fine Cloudy		Rainy							
Humid	oerature: 27.1										
Wind:	iity.	Strong Breeze V Light		Calm							
PART	B:	SITE AUDIT									
				Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks		
Section	on 1: W	ater Quality									
1.01	Is an e	offluent discharge license obtained for the Project?		Ш	$\checkmark$		Ш	Ш			
1.02	Is the	effluent discharged in accordance with the discharge licence?	)		$\checkmark$						
1.03	Is the	discharge of turbid water avoided?			$\checkmark$						
1.04		nere proper desilting facilities in the drainage systems to a SS levels in effluent?	)		$\checkmark$						
1.05	Are there channels, sandbags or bunds to direct surface run-off sedimentation tanks?				$\checkmark$						
1.06		ere any perimeter channels provided at site boundaries to ept storm runoff from crossing the site?	)		$\checkmark$						
1.07	Is drai	nage system well maintained?			$\checkmark$						
1.08		cavation proceeds, are temporary access roads protected by ed stone or gravel?	′		$\checkmark$						
1.09	Are te	mporary exposed slopes properly covered?			$\checkmark$						
1.10	Are ea	arthworks final surfaces well compacted or protected?			$\checkmark$						
1.11	Are ma	anholes adequately covered or temporarily sealed?			$\checkmark$						
1.12	Are the	ere any procedures and equipment for rainstorm protection?			$\checkmark$						
1.13	Are wh	neel washing facilities well maintained?			$\checkmark$						
1.14	ls rund	off from wheel washing facilities avoided?			$\checkmark$						
1.15	Are the	ere toilets provided on site?			$\checkmark$						
1.16	Are to	ilets properly maintained?			$\checkmark$						
1.17	Are the vehicle and plant servicing areas paved and located with roofed areas?			$\checkmark$							
1.18	Is the	oil leakage or spillage avoided?			$\checkmark$						
1.19		ere any measures to prevent leaked oil from entering the ge system?	)		$\checkmark$						
1.20	washir	nere any measures to collect spilt cement and concreteings during concreting works?			$\checkmark$						
1.21	Are the	ere any oil interceptors/grease traps in the drainage systems nicle and plant servicing areas, canteen kitchen, etc?	6					$\checkmark$			

# **Environmental Site Inspection Checklist for KT15**



		Not Obs.	Yes	No	Follow	N/A	Photo/ Remarks
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 KT15 stream course.		$\checkmark$				
1.28	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.29	Prevent any stagnant water accumulated within the excavation trench or site working area.		$\checkmark$				
Section	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 be removed from 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?	$\checkmark$					

# **Environmental Site Inspection Checklist for KT15**



		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).		$\checkmark$				
Sectio	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 wastes 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.		$\checkmark$				



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		V				
Section	on 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	on 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections of KT15?		$\checkmark$				
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands at KT15?		$\checkmark$				
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at KT15 are prohibited?		$\checkmark$				
Section	on 7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		$\checkmark$				



#### Remarks

#### Follow-Up of Last Site Inspection (20 May 2009)

- 1. The stagnant water accumulated in Ch. 500 has been removed.
- 2. The gravel stockpile on the site (Ch. 520) has been removed.

#### Finding of Site Inspection on 27 May 2009:

No adverse environmental impact was observed during the site inspection.

Projec		Contract No.: DC Yuen Long, Kam Wai Drainage Im Cheung Chun Sa	Tin, No	gau Tam Mei nents, Stage	1, Phase 2B –	F	nspected b	resentati		K. P. Cheung				
Inspec Date:	tion	3 June 2009					EC/IEC's re ETL/ ET's re	•		Nicola Hon				
Time:		10:00						or's representative: Ray Cheung						
						C	Checklist N	0.		KT15-03	0609			
PART	A:	GENERAL INF	ORMA <sup>-</sup>	TION	Environmenta	al P	ermit No. N	IA						
Weath	er:	✓ Sunny		Fine	Cloudy		Rainy							
Tempe	erature:	28.5		°C										
Humidi	ity:	High	<b>√</b>	Moderate	Low	_	<b>–</b>							
Wind:		Strong		Breeze	_ ✓ Light		Calm							
PART	B:	SITE AUDIT												
							Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks		
Sectio	on 1: Wa	ater Quality												
1.01	Is an e	effluent discharge lic	ense ol	btained for the	e Project?			$\checkmark$						
1.02	Is the	effluent discharged i	n accor	rdance with th	e discharge licenc	e?		$\checkmark$						
1.03	Is the	discharge of turbid v	vater av	voided?				$\checkmark$						
1.04		nere proper desiltin e SS levels in effluer		ities in the d	rainage systems	to		$\checkmark$						
1.05		ere channels, sandle entation tanks?	ags or	bunds to dire	ect surface run-off	to		$\overline{\checkmark}$						
1.06		ere any perimeter ept storm runoff from			t site boundaries	to		$\checkmark$						
1.07	Is drai	nage system well m	aintaine	ed?				$\checkmark$						
1.08		cavation proceeds, and stone or gravel?	are tem	porary acces	s roads protected	by		$\checkmark$						
1.09	Are ter	mporary exposed slo	opes pr	operly covere	d?			$\checkmark$						
1.10	Are ea	erthworks final surfac	ces wel	I compacted of	or protected?						$\checkmark$			
1.11	Are ma	anholes adequately	covere	d or temporar	ily sealed?			$\checkmark$						
1.12	Are the	ere any procedures	and eq	uipment for ra	instorm protection	?		$\checkmark$						
1.13	Are wh	neel washing facilitie	es well r	maintained?				$\overline{\checkmark}$						
1.14	Is runc	off from wheel washi	ng facil	lities avoided?	?			$\overline{\checkmark}$						
1.15	Are the	ere toilets provided	on site?	?				$\overline{\checkmark}$						
1.16	Are toi	ilets properly mainta	ined?					$\checkmark$						
1.17		e vehicle and plant areas?	servicir	ng areas pave	ed and located with	nin					$\checkmark$			
1.18	Is the	oil leakage or spillaç	je avoid	ded?				$\overline{\checkmark}$						
1.19		ere any measures ge system?	to prev	vent leaked o	oil from entering the	he		$\checkmark$						
1.20		nere any measures ngs during concretin			ement and concre	ete					$\checkmark$			
1.21	Are the for veh	ere any oil intercept nicle and plant servi	ors/greating are	ase traps in tl eas, canteen k	ne drainage syster kitchen, etc?	ns					$\checkmark$			
1.22	Are the	e oil interceptors/gre	ase tra	ps maintaine	d properly?						$\checkmark$			



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
1.23	Is used bentonite recycled where appropriate?					$\checkmark$	
1.24	Concreting wastes water should be neutralized below the pH Action Levels before discharge.					$\checkmark$	
1.25	Any mitigation is implemented during de-watering of the stream within the proposed channel to avoid pollutants entering Kam Tin River?					$\checkmark$	
1.26	Sediments at the dewatering of the streams should be dry before excavation.					$\checkmark$	
1.27	Dam or barrier should be provided at the interaction of old and new channels to prevent concrete washing from the construction works flow into the exist channel.					$\checkmark$	
1.28	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.29	Prevent any stagnant water accumulated within the excavation trench or site working area.		$\checkmark$				
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		V				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?		$\overline{\checkmark}$				
2.03	Are the excavated materials sprayed with water during handling?	Ш	$\overline{\checkmark}$				
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?		V				
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 20km/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 odourous materials shall be transported away from site immediately if possible?					$\checkmark$	
2.17	If on-site stockpiling cannot be avoided, it should covered properly at all time and shortest duration storage on-site as possible?				$\checkmark$		Remark 1
2.18	All vehicle exhaust are directed vertically upwards or directed away from the ground?					$\checkmark$	
2.19	Any materials dropped on sealed roads are clean up immediately to prevent dust emission?					$\checkmark$	
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers (Level 3 mitigation measures)?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down (Level 3 mitigation measures)?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition (Level 3 mitigation measures)?		$\checkmark$				



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers (Level 3 mitigation measures)?					$\checkmark$	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					$\checkmark$	
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).					$\checkmark$	
3.15	Noisy equipment and activities should be placed as far from close-proximity sensitive receivers (Level 3 mitigation measures)?		$\checkmark$				
3.16	Prolonged operation of noisy equipment close to dwelling is avoided (Level 3 mitigation measures)?		$\checkmark$				
3.17	Noisy plant or processes is replaced by quieter alternatives as possible (Level 3 mitigation measures)?					$\checkmark$	
3.18	Noisy activities had been scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise (Level 3 mitigation measures)?					$\checkmark$	
3.19	Equipments emit sound strongly in one direction should oriented away to the nearby NSRs as possible (Level 3 mitigation measures)?					$\checkmark$	
3.20	Stationary equipment should be located within the channels as far as practicable (Level 3 mitigation measures)?					$\checkmark$	
Sectio	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?		V				
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 wastes 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?		$\checkmark$				

		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
4.14	Are designated areas identified for storage and sorting of construction wastes?		<b>V</b>				
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 managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		$\checkmark$				
Section	on 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	on 6: Ecology						
6.01	CH300-1100 the channelisation should be conducted with gabion banks and gabion bottom lining, to allow for the reestablishment of riparian and stream ecosystems?		$\checkmark$				
6.02	Vehicle access is restricted to the section west and east of the channel, and only footpath access is permitted at chainage 500-800 (KT2).		$\checkmark$				
6.03	Works in the marsh and other disturbances to this area is avoided?		$\checkmark$				
6.04	Prevent site effluent/runoff discharge to the marsh at KT2?		$\checkmark$				
6.05	Stockpiling or disposal of materials, and any dredging or construction activities at the marsh at KT2 are prohibited?		$\checkmark$				
6.06	Mimimise the need to remove vegetation including trees. If tree felling is necessary, tree felling permit should be apply before any felling activities.		$\checkmark$				
Section	on7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?					$\checkmark$	



#### Remarks

#### Follow-Up of Last Site Inspection (27 May 2009):

No adverse environmental impact was observed during the last site inspection.

### Finding of Site Inspection on 3 June 2009:

Remark 1: The stockpiles observed at CH. 380 shall be covered with impervious sheet especially during wet season.



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

( Kp CHEUNG ) ( ) Nicola Hon ) (7. Y, Cheung )

Project Inspect Date:	- -	Contract No.: DC/ Yuen Long, Kam Wai Drainage Imp Cheung Chun San 10 June 2009	Tin, N roven	gau Tam Mei nents, Stage	1, Phase 2B –	F	nspected b RE/RE's rep EC/IEC's re ETL/ ET's re	presentati epresenta	tive:	K. P. Cheung - Andrew Lau				
Time:	-	10:00				(	Contractor's	s represe	ntative:	Ray Cheung				
							Checklist N	0.		KT15-10	0609			
PART A	<b>A</b> :	GENERAL INFO	ORMA	TION	Environment	al P		IA						
Weathe		✓ Sunny		Fine	Cloudy	L	Rainy							
Temper Humidit		28.2 High	<b>✓</b>	] °C ] Moderate	Low									
Wind:	у.	Strong		Breeze	✓ Light	Г	Calm							
PART E	3:	SITE AUDIT		ı										
							Not			Follow		Photo/		
							Obs.	Yes	No	up	N/A	Remarks		
		ater Quality												
1.01	Is an e	ffluent discharge lice	ense o	btained for the	e Project?			$\overline{\mathbf{V}}$						
1.02	Is the e	effluent discharged ir	acco	rdance with th	e discharge licenc	e?		$\checkmark$						
1.03	Is the c	discharge of turbid w	ater a	voided?				$\checkmark$						
		ere proper desilting SS levels in effluen		ities in the d	rainage systems	to		$\checkmark$						
		ere channels, sandb entation tanks?	ags or	bunds to dire	ect surface run-off	to		$\overline{\checkmark}$						
		ere any perimeter o pt storm runoff from			t site boundaries	to		$\checkmark$						
1.07	Is drair	nage system well ma	intain	ed?				$\checkmark$						
		avation proceeds, a d stone or gravel?	re tem	porary acces	s roads protected	by		$\checkmark$						
1.09	Are ten	mporary exposed slo	pes pı	roperly covere	d?			$\checkmark$						
1.10	Are ea	rthworks final surfac	es wel	Il compacted o	or protected?						$\checkmark$			
1.11	Are ma	anholes adequately o	covere	d or temporar	ily sealed?			$\checkmark$						
1.12	Are the	ere any procedures a	and eq	uipment for ra	instorm protection	?		$\checkmark$						
1.13	Are wh	eel washing facilities	s well	maintained?				$\checkmark$						
1.14	Is runo	ff from wheel washir	ng faci	lities avoided?	?			$\checkmark$						
1.15	Are the	ere toilets provided o	n site	?				$\checkmark$						
1.16	Are toil	lets properly maintai	ned?					$\checkmark$						
		e vehicle and plant s areas?	ervicir	ng areas pave	ed and located with	nin					$\checkmark$			
1.18	Is the c	oil leakage or spillag	e avoi	ded?				$\checkmark$						
		ere any measures t ge system?	o pre	vent leaked o	oil from entering t	he		$\checkmark$						
		ere any measures igs during concreting			ement and concre	ete					$\checkmark$			
		ere any oil intercepto icle and plant servic				ns					$\checkmark$			
1.22	Are the	e oil interceptors/grea	ase tra	aps maintaine	d properly?						$\checkmark$			



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
1.23	Is used bentonite recycled where appropriate?					$\checkmark$	
1.24	Concreting wastes water should be neutralized below the pH Action Levels before discharge.					$\checkmark$	
1.25	Any mitigation is implemented during de-watering of the stream within the proposed channel to avoid pollutants entering Kam Tin River?					$\checkmark$	
1.26	Sediments at the dewatering of the streams should be dry before excavation.					$\checkmark$	
1.27	Dam or barrier should be provided at the interaction of old and new channels to prevent concrete washing from the construction works flow into the exist channel.					$\checkmark$	
1.28	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.29	Prevent any stagnant water accumulated within the excavation trench or site working area.				$\checkmark$		Remark 1
Section	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?		$\overline{\checkmark}$				
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 20km/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 odourous materials shall be transported away from site immediately if possible?					$\checkmark$	
2.17	If on-site stockpiling cannot be avoided, it should covered properly at all time and shortest duration storage on-site as possible?		$\checkmark$				
2.18	All vehicle exhaust are directed vertically upwards or directed away from the ground?					$\checkmark$	
2.19	Any materials dropped on sealed roads are clean up immediately to prevent dust emission?					$\checkmark$	
Section	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers (Level 3 mitigation measures)?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down (Level 3 mitigation measures)?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition (Level 3 mitigation measures)?		$\checkmark$				



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers (Level 3 mitigation measures)?					$\checkmark$	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					$\checkmark$	
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).					$\checkmark$	
3.15	Noisy equipment and activities should be placed as far from close-proximity sensitive receivers (Level 3 mitigation measures)?		$\checkmark$				
3.16	Prolonged operation of noisy equipment close to dwelling is avoided (Level 3 mitigation measures)?		$\checkmark$				
3.17	Noisy plant or processes is replaced by quieter alternatives as possible (Level 3 mitigation measures)?					$\checkmark$	
3.18	Noisy activities had been scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise (Level 3 mitigation measures)?					$\checkmark$	
3.19	Equipments emit sound strongly in one direction should oriented away to the nearby NSRs as possible (Level 3 mitigation measures)?					$\checkmark$	
3.20	Stationary equipment should be located within the channels as far as practicable (Level 3 mitigation measures)?					$\checkmark$	
Sectio	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?		V				
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 wastes 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?  4.15 Are construction wastes sorted (inert and non-inert) on site?  4.16 Are construction wastes reused?  4.17 Are construction wastes disposed of properly?  Are site hoardings and signboards made of durable materials	ert and non-inert) on site?  of properly?  rds made of durable materials  for the disposal of construction aspection?  owed if contaminated material  sposal of construction waste or		<ul><li>✓</li><li>✓</li></ul>				
4.16 Are construction wastes reused?  4.17 Are construction wastes disposed of properly?	of properly?  rds made of durable materials  for the disposal of construction aspection?  owed if contaminated material  sposal of construction waste or						
4.17 Are construction wastes disposed of properly?	rds made of durable materials  for the disposal of construction aspection?  owed if contaminated material  sposal of construction waste or		<ul><li>✓</li></ul>				
	rds made of durable materials  for the disposal of construction aspection?  owed if contaminated material  sposal of construction waste or		<u></u>				
Are site hoardings and signboards made of durable materials	for the disposal of construction aspection? owed if contaminated material sposal of construction waste or		_				
instead of timber?	nspection?  owed if contaminated material  sposal of construction waste or		$\checkmark$			ш	
4.19 Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	sposal of construction waste or			ш			
4.20 Are appropriate procedures followed if contaminated material						$\checkmark$	
4.21 Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	nspection?		$\checkmark$				
4.22 Site cleanliness and appropriate waste management training had provided for the site workers.	waste management training had		$\checkmark$				
4.23 Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.			$\checkmark$				
Section 5: Landscape & Visual							
5.01 Are retained and transplanted trees in health condition?	s in health condition?		$\checkmark$				
5.02 Are retained and transplanted trees properly protected?	s properly protected?		$\checkmark$				
5.03 Are surgery works carried out for the damaged trees?	he damaged trees?					$\checkmark$	
Is damage to trees outside site boundary due to construction activities avoided?	boundary due to construction		$\checkmark$				
5.05 Is the night-time lighting controlled to minimize glare to sensitive receivers?	d to minimize glare to sensitive		$\checkmark$				
Section 6: Ecology							
CH300-1100 the channelisation should be conducted with gabion 6.01 banks and gabion bottom lining, to allow for the reestablishment of riparian and stream ecosystems?			$\checkmark$				
Vehicle access is restricted to the section west and east of the 6.02 channel, and only footpath access is permitted at chainage 500-800			$\checkmark$				
(KT2).  6.03 Works in the marsh and other disturbances to this area is avoided?	urhances to this area is avoided?		V				
			_				
6.04 Prevent site effluent/runoff discharge to the marsh at KT2?			V		Ш		
6.05 Stockpiling or disposal of materials, and any dredging or construction activities at the marsh at KT2 are prohibited?	at KT2 are prohibited?	Ш	$\checkmark$				
Mimimise the need to remove vegetation including trees. If tree  6.06 felling is necessary, tree felling permit should be apply before any felling activities.			$\checkmark$				
Section7: Others							
7.01 Are relevant Environmental Permits posted at all vehicle site entrances/exits?	mits posted at all vehicle site					$\checkmark$	



#### Remarks

#### Follow-Up of Last Site Inspection (3 June 2009):

The stockpiles observed at CH. 380 have been removed by the Contractor.

#### Finding of Site Inspection on 10 June 2009:

Remark 1: Stagnant water accumulation was observed at Ch. 1300, the Contractor shall drain the water away or apply larvicidal

oil to prevent mosquitoes breeding.



RE's representative

IEC's representative

ET's representative

Contractor's representative

ED CUFTERION ) (

Andrew Lau

Projec	et:	Contract No.: DC/2 Yuen Long, Kam T Wai Drainage Impr Cheung Chun San	in, Ngau Tam Mei rovements, Stage 1	l, Phase 2B –		pected b /RE's rep	y oresentativ	ve:	K. P. Cheung Cyrus Lau				
Inspec	ction				IEC	C/IEC's re	presentat	ive:					
Date:		17 June 2009			ETI	L/ ET's re	epresentat	tive:	Nicola H	on			
Time:		10:00					s represer	ntative:	Ray Cheung				
					Ch	ecklist N	0.		KT15-17	0609			
PART		GENERAL INFO		Environmental	l Per	-	IA						
Weath		✓ Sunny	Fine  C	Cloudy		Rainy							
Humid	erature:	28.5 High	✓ Moderate	Low									
Wind:	ity.	Strong	Breeze	Light		Calm							
PART	р.	SITE AUDIT				J Cairi							
FARI	Ь.	SITE AUDIT											
						Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks		
Section	on 1: Wa	ater Quality			<u> </u>					_			
1.01	Is an e	ffluent discharge lice	nse obtained for the	Project?			$\checkmark$						
1.02	Is the 6	effluent discharged in	accordance with the	e discharge licence	?		$\checkmark$						
1.03	Is the	discharge of turbid wa	ater avoided?				$\checkmark$						
1.04		ere proper desilting SS levels in effluent		rainage systems to	0		$\checkmark$						
1.05		ere channels, sandba entation tanks?	ags or bunds to dire	ct surface run-off to	0		$\checkmark$						
1.06		ere any perimeter chept storm runoff from c		site boundaries to	0		$\checkmark$						
1.07	Is drair	nage system well mai	intained?				$\checkmark$						
1.08		cavation proceeds, and stone or gravel?	e temporary access	roads protected by	У		$\checkmark$						
1.09	Are ter	mporary exposed slop	oes properly covered	d?			$\checkmark$						
1.10	Are ea	rthworks final surface	es well compacted o	r protected?						<b>V</b>			
1.11	Are ma	anholes adequately co	overed or temporari	ly sealed?			$\checkmark$						
1.12	Are the	ere any procedures a	nd equipment for rai	instorm protection?			$\checkmark$						
1.13	Are wh	neel washing facilities	well maintained?				$\checkmark$						
1.14	Is runo	off from wheel washing	g facilities avoided?				$\checkmark$						
1.15	Are the	ere toilets provided or	n site?				$\checkmark$						
1.16	Are toi	lets properly maintain	ned?				$\checkmark$						
1.17		e vehicle and plant se areas?	ervicing areas pave	d and located within	n					$\overline{\checkmark}$			
1.18	Is the	oil leakage or spillage	e avoided?				$\checkmark$						
1.19		ere any measures to ge system?	o prevent leaked o	il from entering the	е		$\checkmark$						
1.20		nere any measures ngs during concreting		ment and concrete	е					$\checkmark$			
1.21		ere any oil interceptor nicle and plant servicir			S					$\overline{\checkmark}$			
1.22	Are the	e oil interceptors/grea	se traps maintained	properly?						$\overline{\checkmark}$			



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
1.23	Is used bentonite recycled where appropriate?					$\checkmark$	
1.24	Concreting wastes water should be neutralized below the pH Action Levels before discharge.					$\checkmark$	
1.25	Any mitigation is implemented during de-watering of the stream within the proposed channel to avoid pollutants entering Kam Tin River?					$\checkmark$	
1.26	Sediments at the dewatering of the streams should be dry before excavation.					$\checkmark$	
1.27	Dam or barrier should be provided at the interaction of old and new channels to prevent concrete washing from the construction works flow into the exist channel.					$\checkmark$	
1.28	License collector should be employed for handling the sewage of mobile toilet.		$\checkmark$				
1.29	Prevent any stagnant water accumulated within the excavation trench or site working area.		$\checkmark$				
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?		$\overline{\mathbf{V}}$				
2.03	Are the excavated materials sprayed with water during handling?		$\overline{\checkmark}$				
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 20km/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 odourous materials shall be transported away from site immediately if possible?					$\overline{\checkmark}$	
2.17	If on-site stockpiling cannot be avoided, it should covered properly at all time and shortest duration storage on-site as possible?		$\checkmark$				
2.18	All vehicle exhaust are directed vertically upwards or directed away from the ground?					$\checkmark$	
2.19	Any materials dropped on sealed roads are clean up immediately to prevent dust emission?					$\checkmark$	
Section	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers (Level 3 mitigation measures)?		$\checkmark$				
3.02	Is silenced equipment adopted?		$\checkmark$				
3.03	Is idle equipment turned off or throttled down (Level 3 mitigation measures)?		$\checkmark$				
3.04	Are all plant and equipment well maintained and in good condition (Level 3 mitigation measures)?		$\checkmark$				



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers (Level 3 mitigation measures)?					$\checkmark$	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					$\checkmark$	
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).					$\checkmark$	
3.15	Noisy equipment and activities should be placed as far from close-proximity sensitive receivers (Level 3 mitigation measures)?		$\checkmark$				
3.16	Prolonged operation of noisy equipment close to dwelling is avoided (Level 3 mitigation measures)?		$\checkmark$				
3.17	Noisy plant or processes is replaced by quieter alternatives as possible (Level 3 mitigation measures)?					$\checkmark$	
3.18	Noisy activities had been scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise (Level 3 mitigation measures)?					$\checkmark$	
3.19	Equipments emit sound strongly in one direction should oriented away to the nearby NSRs as possible (Level 3 mitigation measures)?					$\checkmark$	
3.20	Stationary equipment should be located within the channels as far as practicable (Level 3 mitigation measures)?					$\checkmark$	
Sectio	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?		V				
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 wastes 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?		$\checkmark$				

		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
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?				$\checkmark$		Remark 1
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 managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.		$\checkmark$				
Section	Section 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	on 6: Ecology						
6.01	CH300-1100 the channelisation should be conducted with gabion banks and gabion bottom lining, to allow for the reestablishment of riparian and stream ecosystems?		$\checkmark$				
6.02	Vehicle access is restricted to the section west and east of the channel, and only footpath access is permitted at chainage 500-800 (KT2).		$\checkmark$				
6.03	Works in the marsh and other disturbances to this area is avoided?		$\checkmark$				
6.04	Prevent site effluent/runoff discharge to the marsh at KT2?		$\checkmark$				
6.05	Stockpiling or disposal of materials, and any dredging or construction activities at the marsh at KT2 are prohibited?		$\checkmark$				
6.06	Mimimise the need to remove vegetation including trees. If tree felling is necessary, tree felling permit should be apply before any felling activities.		$\checkmark$				
Section	on7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?					$\checkmark$	



#### Remarks

#### Follow-Up of Last Site Inspection ( 10 May 2009):

Stagnant water accumulated at Ch. 1300 has been drained.

#### Finding of Site Inspection on 17 June 2009:

Remark 1: Stockpiles of C&D wastes were observed at head of KT15 (Ch. 11), the Contractor shall improve the tidiness of the site.



C's represei, tative	ET's representative	e Contractor's representative
your Law :	Audi ( Nicda Hon	( T. Y. Cheung)
	gh.	ga Aula

Proje	Project:  Contract No.: DC/2006/02  Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai  Inspection		and Tin Shui , Phase 2B –	nspected b	•		Joe Chan, K.P. Cheung Cyrus Lan			
Inspe			·····	RE's repres EC's repre						
Date:		17-6-2007		ET's representative: N. Vola Hon						
Time:	***************************************	Contractor's representative:						Ray	Cheung	
PART	A: Gi	ENERAL INFORMATION	Environmental P	ermit No. E	P-231/200	5/A			The second secon	
Weath	ner:	٠	Cloudy	Rainy						
Tempo Humic	erature:	3,0 °C ⊓ Moderate	Low							
Wind:	inty.	Strong Breeze	Light	Calm						
PART	B: SI	TE AUDIT	MARIO (1985)		:: <u></u>		<del> </del>			
				Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks	
Section	on 1: Water Q	uality					······································			
1.01		discharge license obtained for the	•							
1.02	Is the efflue licence?	ent discharged in accordance v	vith the discharge							
1.03	Is the dischar	rge of turbid water avoided?								
1.04		roper desilting facilities in the dr vels in effluent?	ainage systems to							
1.05	Are there cha sedimentation	annels, sandbags or bunds to díreon n tanks?	ot surface run-off to							
1.06	Are there any perimeter channels provided at site boundaries t intercept storm runoff from crossing the site?		site boundaries to							
1.07	Is drainage s	ystem well maintained?	•						Remark &	
1.08	As excavation crushed stone	n proceeds, are temporary access e or gravel?	roads protected by							
1.09	Are temporar	y exposed slopes properly covered	?						**************************************	
1.10	Are earthworl	ks final surfaces well compacted or	protected?							
1.11	11 Are manholes adequately covered or temporarily sealed?		y sealed?							
1.12	Are there any	/ procedures and equipment for rail	nstorm protection?						venurk &	
1.13	Are wheel wa	ashing facilities well maintained?			7					
1.14	Is runoff from	wheel washing facilities avoided?	•							
1.15	Are there toile	ets provided on site?								
1.16	Are toilets pro	operly maintained?								
1.17	Are the vehic roofed areas?	le and plant servicing areas paved?	and located within							
1.18	Is the oil leak	age or spillage avoided?			Z					
1.19	Are there an drainage syst	y measures to prevent leaked oil tem?	from entering the							
1.20		ny measures to collect spilt centing concreting works?	nent and concrete							
1.21		<i>r</i> oil interceptors/grease traps in the d plant servicing areas, canteen kit								
1.22 Are the oil interceptors/grease traps maintained properly?			properly?		Ø					

*		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
1.23	Is used bentonite recycled where appropriate?						•
1.24	Is designated settlement area for runoff / wheel wash water provided and located at the streambed with 1-2m deep, 12m long and around 50m <sup>3</sup> capacities for sedimentation?		Image: section of the				
1.25	Is excavation prohibited in the settlement area?		$\square$				
1.26	Is concreting wastes water neutralized below the pH Action Levels before discharge?						
1.27	Are mobile toilets provided on site and located away from the KT15 stream course?						
1.25	Is License collector employed for handling the sewage of mobile toilet?						
Section	on 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?						
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?						
2.03	Are the excavated materials sprayed with water during handling?						
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?						
2.05	Is the exposed earth properly treated within six months after the last construction activities?						,
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		$\square$				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?						
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?						
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?						
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?						
2.11	Is dark smoke emission from plant/equipment avoided?						
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?						
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?						
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?						
2.15	Is open burning avoided?						
2.16	Are excavated materials from the stream removed form site on the same day and be stored in covered impermeable skips while awaiting removal from site?						
Sectio	on 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?						
3.02	Is silenced equipment adopted?						
3.03	Is idle equipment turned off or throttled down?		$\square$				
3.04	Are all plant and equipment well maintained and in good condition?						
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?						
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	Z					
3.07	Are air compressors fitted with valid noise emission labels during operation?						
3.08	Are flaps and panels of mechanical equipment closed during operation?						
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	AMPRICA VAL				7	

		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?						
3.11	Are valid Construction Noise Permit(s) posted at site entrances?						
3.12	Is quiet plant used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures)?						
3.13	Are temporary / moveable noise barrier or site hoarding provided or erected at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments be shielded by the noise barrier which cannot be visible from NSRs (Level 2 mitigation measure)?		$\square$				
3.14	Are temporary / moveable noise barrier equal to or more than 3m height with 10kg/m² provided for noise mitigation measures (Level 2 mitigation measures)?	Ø					
Section	on 4: Waste/Chemical Management						
4.01	Is the Waste Management Plan submitted to Engineer for approval?						
4.02	Are receptacles available for general refuse collection?						
4.03	Is general refuse sorting or recycling implemented?		Ø				
4.04	Is general refuse disposed of properly and regularly?						·
4.05	Is the Contractor registered as a chemical waste producer?						
4.06	Are the chemical waste containers properly labelled?						
4.07	Are the chemical wastes stored in proper storage areas?						
4.08	Is the chemical waste storage area properly labelled?						
4.09	Is the chemical waste storage area used for storage of chemical waste only?						
4.10	Are incompatible chemical wastes stored in different areas?						
4.11	Are the chemical wastes disposed of by licensed collectors?						
4.12	Are trip tickets for chemical wastes disposal available for inspection?						
4.13	Are chemical/fuel storage areas bunded?						
4.14	Are designated areas identified for storage and sorting of construction wastes?		$\mathbb{Z}$				
4.15	Are construction wastes sorted (inert and non-inert) on site?						
4.16	Are construction wastes reused?						
4.17	Are construction wastes disposed of properly?						Remark 3
4.18	Are site hoardings and signboards made of durable materials instead of timber?						1000-1100
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?						
4.20	Are appropriate procedures followed if contaminated material exists?						
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?						
4.22	Is site cleanliness and appropriate waste management training provided for the site workers?						
4.23	Are contaminated sediments managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002?						
Sectio	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		7				

		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
5.02	Are retained and transplanted trees properly protected?						
5.03	Are surgery works carried out for the damaged trees?						
5.04	Is damage to trees outside site boundary due to construction activities avoided?						
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	Ø					
Section	on 6: Ecology						
6.01	Are gabion banks and base provided for channel linings and banks for typical sections of KT15?						
6.02	Is site effluent/runoff discharge to the seasonal wetlands at KT15 prevented?		Ø				
6.03	Are stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at KT15 prohibited?		Z				
Section	on 7: Others			-			
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?						
	1		·			· · · · · · · · · · · · · · · · · · ·	
17	Il a s a share contract - s						

KFollow-up observations 7:

O wheel washing facilities had been provided at all site exits to remove sitt from vehicles' bodies & wheels. (closed).

@ water spraying by nater trucks on hand roads. had been provided I hand roads had been hard poved with concrete (closed).

( Wew observations):

- (3) Stockpile of CAD waste was found at chanage 50.

  The Contractor was reminded to clear them & maintain house keeping on site properly.
- A stagrant vater accumulation was observed inside drainage channel at chainage 100. The Contractor was reminded to clear it immediately.

Remarks

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

P:\60023871\Audit\Checklists\chklst template KT15.doc

KT15 – Monthly EM&A Report for June 2009 (No. 24)

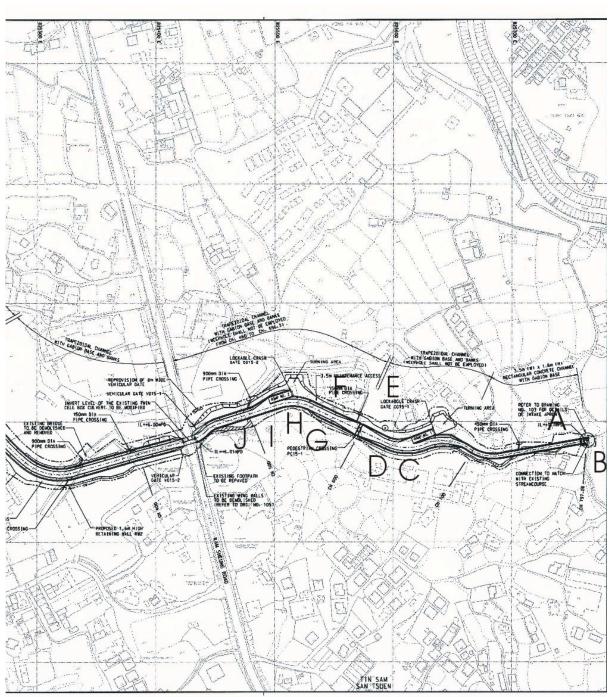


## APPENDIX K

# TREES PHOTOGRAPHIC RECORDS



KT15 – Monthly EM&A Report for June 2009 (No. 24)



Locations of photo records for Kt15

# Photo Records for KT15 (June 2009)



DSD Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai

KT15 – Monthly EM&A Report for June 2009 (No. 24)



## APPENDIX L

## **RESPONSE TO COMMENTS**

DSD Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai KT15 – Monthly EM&A Report for June 2009 (No. 24)



DSD Contract No.: DC/2006/02

Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai KT15 – Monthly EM&A Summary Report for June 2009 (R1356 Version 2) submit on 13 July 2009

Response to IEC's comments [Received from e-mail on 14 July 2009]

Items	Section / Paragraph	Comments	Response to Comments
1.	Table 7-1 / Section 11.07	Please keep consistency between the text of item no.4 in Table 7-1 and item no. 3 in Section 11.07	Done.
2.	Appendix C	Please clarify if different persons were held on the position of Project Manager and Site Agent of CCC for KT2 and KT15.	The Project Manager and Site Agent of CCC for KT2 and KT15 is the same person. Mr. K.W. Hoi
3.	Appendix J	In site inspection ET's checklist on 17-June-09, in the finding item, it should be "Scattered C&D wastes" pr "Stockpiles of C&D wastes."  Please check and revise the items accordingly.	Revised.

DSD Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai KT15 – Monthly EM&A Report for June 2009 (No. 24)



DSD Contract No.: DC/2006/02

Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai

KT15 – Monthly EM&A Summary Report for June 2009 (R1356 Version 1) submit on 8 July 2009

Response to IEC's comments [Received from e-mail on 10 July 2009]

Items	Section / Paragraph	Comments	Response to Comments
1.	ES05.	<ul> <li>No Limit Level exceedances were recorded for number of species of wetland birds on 22 June 2009 and total number of wetland birds on 24 April 2009.</li> <li>Please update the table with records on Action/Limit Level exceedances for wetland fauna.</li> </ul>	The grammar is correct under checking.
2.	ES09./Table 2-1	Please update the table with separation on construction activities for each reporting periods as some of the listed construction activities were not conducted during all reporting periods.	Amended.
3.	ES15./Sectin 10.05	Please rewrite the sentence as "Non-compliances with the ecological criteria were found during the quarter (24 April 2009 and 25 May2009)."  Please add the dates of observations were recorded as for easy reference.	The table is revised.
4.	ES16./Table 10-1	Please update the sections on "decrease in the total number of species or individuals of wetland fauna from baseline.". No "N/A" should be provided as monitoring were conducted for the reporting quarter.  There is a typo in the table. It should be "wetland fauna from baseline".	Amended.
5.	Table 3-5	Please add the Action and Limit Levels for wetland fauna from baseline.	Done.
6.	Table 5-1	<ul> <li>For April 2009, no "Limit Level breaching" should be recorded on individual number of wetland dependent birds.</li> <li>For May 2009, "Limit Level breaching" should be recorded on individual number of wetland dependent birds.</li> <li>For June 2009, no "Limit Level breaching" should be recorded for both wetland dependent birds and fauna on species number and individual numbers.</li> </ul>	Done.
7.	Section 5.07	Please update the text with correct date of photographic records and date of next photographic records.	Done.
8.	Table 6-2	0.007kg of general refuse shall be recorded in April 2009 rather than June 2009.	Done.
9.	Section 7.02 and 10.07	17 observations shall be recorded in the reporting quarter.	There was only 2 water quality monitoring in a week. The schedule is revised.

DSD Contract No. DC/2006/02 Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B – Cheung Chun San Tsuen and Kam Tsin Wai KT15 – Monthly EM&A Report for June 2009 (No. 24)



Items	Section / Paragraph	Comments	Response to Comments
10.	Table 8-1, 8-2, 8-3	Please keep consistency on the period presentation format.	Done.
11.	Appendix B	Please keep consistency between the environmental organization structure and contact details of key personnel.	See attached.