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REVISION No.: 3

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

KT15 - MONTHLY EM&A REPORT FOR OCTOBER 2008 (No. 16)

PREPARED FOR

CHIT CHEUNG CONSTRUCTION COMPANY LIMITED

Quality Index

DateReference No.Prepared ByCertified By14 November 2008TCS00371/07/600/R1004r3-Ken Wong



Environmental Team Leader

Rev. No.	Date	Remarks
1	28 Oct 2008	First Submission
2	06 Nov 2008	Response to IEC's comments received on 05 Nov 2008 (18:10)
3	14 Nov 2008	Response to IEC's comments received on 11 Nov 2008 (14:42)

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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 (hereinafter "the Project") on 03 April 2007. According to the contract specification requirements an Environmental Monitoring & Audit program to be implemented by an Independent 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 Project and governed by Environmental Permit (EP-231/2005/A).
- ES03. Action-United Environmental Services and Consulting (AUES) has been commissioned by CCC to be an Independent Environmental Team (ET) to implement the EM&A program in compliance with the requirements as stated in the Environmental Permit (EP-231/2005/A) and Environmental Monitoring &Audit Manual (EM&A Manual) for Secondary Channel KT14 & KT15 (August 2005). For this Contract (DC/2006/02) only covered KT15 and KT14 will carried out under other contract.
- ES04. This Monthly EM&A Report for October 2008 (No. 16) is present the environmental impact monitoring and audit (EM&A) results of the project EM&A program for the reporting month October 2008 during the period from 26 September 2008 to 25 October 2008.

BREACH OF ACTION AND LIMIT (AL) LEVELS

ES05. Dated and parameters exceedance recorded in this reporting period are summaries in following table.

Monitoring	Parameters	Action Level	Limit Level
Air Quality	1-Hour TSP	-	-
	24-Hour TSP	-	-
Noise	Leq (30min) Daytime	-	-
	Dissolve Oxygen (DO)	-	-
	Turbidity (NTU)	-	-
Stream	pН	-	-
Water	Suspended Solids (SS)	-	02 and 15 Oct 08
	Ammonia Nitrogen	-	-
	Zinc	-	-
Ecology	Number of species of wetland birds	-	21 Oct 08
	Total number of wetland birds	-	-

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

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 was 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 **November 2008** included Construction and Excavation works, Stream Diversion, Tree protection and tree transplanting works, Carrying out joined survey, Utilities companies liaison, Dumping activities and Gabion installation. 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	Events
•	Noise Monitoring	5	Events
•	Stream Water Quality	18	Events
•	Ecology (Fauna)	1	Event
•	Site Inspection Audit	4	Times

AIR QUALITY

ES11. No 1-Hour and 24-Hour TSP monitoring results trigger the Action or Limit Level was recorded in this reporting period.

CONSTRUCTION NOISE

ES12. No construction noise compliant (Action Level) was received and no construction noise monitoring exceeded the Limit Level was recorded in this reporting period.

STREAM WATER QUALITY

ES13. SS exceedance (Limit Level) at W9B was recorded on 02 and 15 October 2008. From the monitoring team on-site observations and the Contractor provide information, only steel fixing, formworks erection and gabion installation were undertaken. No excavation or major discharge on-site was observed on-site. Desilting facilities and proper mitigation measures were implemented on-site. Silty water from Kam Tin Nullah upstream was observed during the sampling. Therefore exceedances of SS were not project related.

ECOLOGY (FAUNA)

ES14. Non-compliance with the ecological criteria was found during the monitoring month on 21 October 2008. No intrusions of construction activities into the wetland areas nor adverse impact was observed. Based on the findings in the pervious monthly monitoring, the non-compliance in wetland dependent bird or fauna was not caused by the project.





SUMMARY OF MONITORING EXCEEDANCES

ES15. A summary of monitoring exceedances during the reporting period for air quality, construction noise, stream water quality and ecology (fauna) monitoring are presented below:-

Monitoring	Parameters	Work-Related Exceedance %	Investigation & Corrective Actions
Air	1-Hour TSP	0	Not Required for 0% Project Related Exceedance
Quality	24-Hour TSP	0	Not Required for 0% Project Related Exceedance
Noise	Leq (30min) Daytime	0	Not Required for 0% Project Related Exceedance
	Dissolve Oxygen (DO)	0	Not Required for 0% Project Related Exceedance
	Turbidity (NTU)	0	Not Required for 0% Project Related Exceedance
Stream	pН	0	Not Required for 0% Project Related Exceedance
Water	Suspended Solids (SS)	0	Not Required for 0% Project Related Exceedance
	Ammonia Nitrogen	0	Not Required for 0% Project Related Exceedance
	Zinc	0	Not Required for 0% Project Related Exceedance
Ecology	Decrease in number of species of wetland birds of conservation importance from baseline.		Not Required for 0% Project Related Exceedance
	Decrease in the total number of wetland birds of conservation importance 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 only undertaken in wet seasons (April to July) in monthly basis.

SITE INSPECTION BY EXTERNAL PARTIES

ES16. No site inspection was undertaken by external parties in this reporting period.



TABLE OF CONTENTS

1.0	INTK	ODUCTION	1
2.0	PROJ	IECT ORGANIZATION AND CONSTRUCTION PROGRESS	2
3.0	SUM	MARY OF IMPACT MONITORING REQUIREMENTS	3
4.0	IMPA	CT MONITORING METHDOLOGY	5
5.0	IMPA	CT MONITORING RESULTS	12
6.0		ΓΕ MANAGEMENT	16
7.0		INSPECTION	17
8.0	ENVI	RONMENTAL COMPLAINT AND NON-COMPLIANCE	18
9.0	IMPI	EMENTATION STATUS OF MITIGATION MEASURES	19
10.0	IMPA	ACT FORECAST	20
11.0	CON	CLUSION	21
LIST	OF TA	BLES	
TABL	E 2-1	STATUS OF ENVIRONMENTAL LICENSE AND PERMITS	
TABL	Е 3-1	SUMMARY OF EM&A REQUIREMENTS	
TABL	E 3-2	ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING	
TABL	E 3-3	ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE MONITORING	;
TABL	Е 3-4	ACTION AND LIMIT LEVELS FOR STREAM WATER QUALITY MONITOR	ING
TABL	E 3-5	ACTION AND LIMIT LEVELS FOR CONSTRUCTION ECOLOGY MONITOR	RING
TABL	E 4-1	LOCATIONS OF AIR QUALITY, CONSTRUCTION NOISE AND STREAM V QUALITY MONITORING STATION/LOCATIONS	WATER
TABL	E 4-2	MONITORING EQUIPMENT USED IN EM&A PROGRAM	
TABL	E 4-3	ANALYTICAL METHOD APPLIED TO WATER QUALITY SAMPLES	
TABL	E 5-1	SUMMARY OF 1-HOUR TSP MONITORING RESULTS AT A10	
TABL	E 5-2	SUMMARY OF 24-HOUR TSP MONITORING RESULTS AT A10	
TABL	E 5-3	SUMMARY OF NOISE MONITORING RESULTS AT N10A	
TABL	E 5-4	SUMMARY OF STREAM WATER QUALITY RESULTS AT W9A & W9B	
TABL	E 5-5	SUMMARY OF KT15 ECOLOGY IMPACT MONITORING SURVEYS BIRD SU	JRVEY
TABL	E 6-1	SUMMARY OF QUANTITIES OF INERT C&D MATERIALS	
TABL	E 6-2	SUMMARY OF QUANTITIES OF C&D WASTES	
TABL	E 6-3	SUMMARY OF EXCAVATED SOIL FOR MARINE DISPOSAL	
TABL	E 8-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS	
TABL	E 8-2	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS	
TABL	E 8-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION	
TARLI	E 11-1	SUMMARY OF THE EXCEEDANCES FOR IMPACT MONITORING	

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 October 2008 (No. 16)



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	RESPONSE TO COMMENT



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 (hereinafter "the Project") on 03 April 2007. According to the contract specification requirements the Project should implemented an Environmental Monitoring & Audit (EM&A) program by an Independent Environmental Team (ET) throughout the construction period in compliance 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 propose drainage 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 Independent Environmental Team (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 the reporting month October 2008 during the period from 26 September 2008 to 25 October 2008.

REPORT STRUCTURE

1.05 The EM&A report is structured into the following sections:

Section 1	INTRODUCTION
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 list below:-
 - Construction and excavation works;
 - Dumping activities;
 - Sheet pile driving;
 - Tree protection and tree transplanting works;
 - Utilities companies liaison;
 - Carrying out joined survey;
 - · Gabion Installation; and
 - Marine dumping of Type 1 material.

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		Notified EPD on 09 July 2007
	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	Obtained on 20 July 2007
7	Billing Account for Disposal of Construction Waste (Account Number : 7005311)	Valid on 07 May 2007
8	Type 1 (Open Sea Disposal) Marine Dumping Permit (EP/MD/09-027)	13 Oct 2008 – 12 Apr 2009



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	I	Monitoring Stations	
Air Quality	1-Hour and 24-Hour TS	SP	A10
Construction Noise	Leq _(30min) during norma	l working hours	N10a*
	Supplementary data of	L ₁₀ and L ₉₀ for reference	
Stream Water Quality	In Situ Measurement	 Dissolved Oxygen Concentration (mg/L); 	W9A & W9B
		 Dissolved Oxygen Saturation (% Sat); 	
		 Turbidity (NTU); 	
		• pH;	
		 Salinity (%); Water Depth (m) and 	
	• Temperature (°C);		
	Laboratory Analysis	sis • Suspended Solids (mg/L);	
	Ammonia Nitrogen (mg/L); and		
	• Zinc (µg/L).		
Ecology	Monthly monitoring of construction activities adjacent to the wetland areas to identify any intrusions of construction activities into the wetland areas:		
	Monthly monitoring of	wetland areas themselves to check that there is	
	no adverse impact on	the wetlands as a consequence of changes to the	
	water table that are attr		
	Photographic records a		
Monthly surveys of fauna in the wetland areas during the wet s		Č	
(April to July inclusive) for reptiles, amphibians, dragonflies, a			
butterflies, and throughout 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)	
Withhit ing 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 weekdays	When one or more documented complaints are received	>75* dB(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) [#]	W9B (Downstream)
Action Level	NA	< 0.3
Limit Level	NA	< 0.2
Turbidity (NTU)		
Action Level	NA	> 73.5*
Limit Level	NA	> 78.2**
pН		
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:

Table 3-5 Action and Limit Levels for Ecology Monitoring

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

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

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.



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	Construction Noise Location				
N10*	Village House in Tin Sam San Tsuen				
N10a	Village House in Tin Sam San Tsuen				
Water Quality Location	Water Quality Locations				
W9A [#]	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.

[#] 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		
1-Hour TSP	Portable dust meter	Sibata LD-3 Laser Dust Meter		
24-Hour TSP	High Volume Sampler	Grasby Anderson GMWS 2310 HVS / Tisch High Volume Sampler 515N		
	Calibration Kit	TISCH Model TE-5028A		
Leq30min	Integrating Sound Level Meter (Type1)	B&K Type 2238		
	Calibrator	B&K Type 4231		
	Portable Wind Speed Indicator	Testo Anemometer		
Water Depth	Water Depth Detector	Eagle Sonar		
Temperature	Thermometer & DO Meter	YSI 550A or YSI 85/10FT		
DO	Thermometer & DO Meter	YSI 550A or YSI 85/10FT		
pН	pH Meter	Hanna HI 98128 or 98107		
Turbidity	Turbidimeter	Hach 2100P		
Salinity	Salinometer	ATAGO refractometer		
-	Water Sampler	Teflon bailer / bucket		
-	Sample Container	High density polythene bottles (provided by laboratory)		
-	Storage Container	'Willow' 33-litter plastic cool box		

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

24-HOUR TSP MONITORING

- 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 m³/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 in²;
 - 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 Sibata LD-3 Laser Dust Meter. 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 10 m/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 85/10FT 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.

<u>рН</u>

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.

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 October 2008 (No. 16)

- 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

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 st Result (μg/m ³)	2 nd Result (μg/m ³)	3 rd Result (μg/m ³)	Action Level (µg/m³)	Limit Level (µg/m³)
29-Sep-08	09:23	172	173	175	> 307	> 500
6-Oct-08	09:23	84	86	83	> 307	> 500
13-Oct-08	09:22	192	190	187	> 307	> 500
18-Oct-08	09:19	108	110	113	> 307	> 500
24-Oct-08	09:21	189	193	196	> 307	> 500

Note: 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

Monitoring Date	Monitoring Results (μg/m³)	Action Level (μg/m³)	Limit Level (µg/m³)
30-Sep-08	35	> 165	> 260
8-Oct-08	48	> 165	> 260
14-Oct-08	71	> 165	> 260
20-Oct-08	41	> 165	> 260
25-Oct-08	63	> 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 rd Leq5	4th Leq5	5th Leq5	6 th Leq5	Leq30
29-Sep-08	10:03	45.8	47.0	46.6	47.0	44.1	48.7	46.7
6-Oct-08	09:40	47.0	46.5	46.1	47.2	47.3	46.3	46.8
13-Oct-08	09:37	45.5	43.9	46.3	45.2	44.9	43.2	45.0
18-Oct-08	09:45	44.8	47.0	46.8	45.9	45.8	44.0	45.8
24-Oct-08	09:36	46.9	48.6	44.5	48.2	46.5	45.7	47.0
Limit L	evel							> 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 Two SS exceed the Limit Level at W9B on 02 and 15 October 2008 was recorded. From the monitoring team on-site observations and the Contractor provide information, only steel fixing, formworks erection and gabion installation were undertaken. No excavation or major discharge on-site was observed on-site (02 and 15 October 2008). Desilting facilities and proper mitigation measures were implemented on-site. Silty water from Kam Tin Nullah upstream was observed during the sampling (02 and 15 October 2008). Therefore exceedances of SS were not project related and impact monitoring schedules are shown in **Appendix G**.
- 5.08 No further stream water quality monitoring results exceeded the Action or Limit Level was recorded in this reporting period. The stream water quality monitoring results are summarized in **Table 5-4** and graphical plots are presented in **Appendix H**.

Monitoring DO in mg/L **Turbidity (NTU)** SS in mg/L Ηα Zinc (µg/L) Ammonia (mg/L) $W9A^{\#}$ W9A# **W9A**# $W9A^{\#}$ W9A# W9A# Date W9B W9B W9B W9B W9B W9B 3.9 12 55 26-Sep-08 4.4 27.1 15.0 6.8 6.9 17 17.60 1.31 24 30-Sep-08 3.8 4.3 25.1 14.0 6.7 6.8 15 22 55.90 3.68 71 32 3.5 4.1 21.5 72.8 6.8 6.8 39 164 103.00 4.53 159 121 2-Oct-08 6-Oct-08 4.2 4.5 10.9 13.1 6.7 19 17 27.40 1.12 <10 6.8 <10 9-Oct-08 3.7 4.0 32.5 13.0 6.8 6.8 63 22 20.20 2.97 143 37 6.9 6.9 15 88 23 13-Oct-08 3.6 4.0 16.8 8.5 29 66.10 2.38 99.6 15-Oct-08 3.5 4.1 86.2 6.7 6.8 110 203 109.00 4.37 334 111 20-Oct-08 3.6 4.0 12.9 71.8 6.9 6.9 28 80 33.10 4.57 84 42 22-Oct-08 3.3 3.8 68.8 19.0 6.8 6.8 39 15 21.90 2.02 100 20 **Action Level** < 0.3* > 73.5* > 7.0* > 148* > 30.91* > 242* < 0.2** > 78.2** > 7.1** > 159** > 32.20** > 252** **Limit Level**

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

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.

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 October 2008 (No. 16)

ECOLOGY

- 5.09 36 individuals of birds from 12 species were recorded during the survey for the present monthly monitoring on 21 October 2008. Among the birds recorded, one individual from one 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, the species number of wetland dependent bird recorded fell within the Limit Level for the monitoring requirements for ecology (i.e. decrease in the number of species or individuals > 40% from the baseline).
- 5.10 No intrusions of construction activities into the wetland areas nor adverse impact on the wetlands was found. Based on the findings in the pervious monthly monitoring, the non-compliance in wetland dependent bird species and individual number was not caused by the project.
- 5.11 From the EM&A Manual Section 7.5.1(b), fauna survey is required during wet season (i.e. April to July) and thus no fauna undertaken in this reporting period. Photographic records are scheduled in six-month intervals and last photographic records were conducted at June 2008. The next photographic records will schedule at December 2008.



5.12 The ecology impact monitoring results are presented in **Table 5-5**.

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

Scientific Name	Common Name	Common Name Abundance reported in the project profile	
Birds		1	
Bubulcus ibis	Cattle Egret	0.4	
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	
Motacilla alba	White Wagtail	Recorded only	3
Pycnonotus jocosus	Red-whiskered Bulbul	Recorded only	7
Pycnonotus sinesis	Chinese Bulbul	Recorded only	3
Lanius schach	Long-tailed Shrike	Recorded only	
Copsychus saularis	Oriental Magpie Robin	Recorded only	2
Orthotomus sutorius	Common Tailorbird	Recorded only	
Lonchura striata	White-rumped Munia	Recorded only	
Passer montanus	Eurasian Tree Sparrow	Recorded only	5
Sturnus nigricollis	Black-collared Starling	Recorded only	2
Acridotheres cristatellus	Crested Myna	Recorded only	4
Prinia flaviventris	Yellow-bellied Prinia	\	
Eudynamis scolopacea	Common Koel	\	
Halcyon smyrnensis	White-throated Kingfisher	1	
Garrulax perspicillatus	Masked Laughingthrush	\	
Zosterops japonica	Japanese White Eye	1	3
Lonchura punctulata	Scaly-breasted Munia	Ì	
Egretta garzetta	Little Egret	\	
Anthus hodgsoni	Olive-backed Pipit	Ì	1
Phylloscopus subaffinis	Dusky Warbler	\	
Phylloscopus inornatus	Yellow-Browed Warbler	1	
Parus major	Great Tit	\	1
Prinia inornata	Plain Prinia	1	
Sturnus sericeus	Red-billied Starling	·	
Centropus bengalensis	Lesser Coucal	\	
Centropus sinensis	Greater Coucal	Ì	
Species Number		15 spp. recorded, (only 2 species of wetland birds with abundance)	12 spp. (1 sp. from the wetland birds with abundance in the baseline)
Individual Number		1.2 (from the 2 species of wetland birds with abundance)	36 (1 from the wetland birds with abundance in the baseline)

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



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 ³)	0	Public Filling
Reused in this Contract (Inert) (m ³)	0	N/A
Reused in other Projects (Inert) (m ³)	0	N/A
Disposal as Public Fill (Inert) (m ³)	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 ³)	14	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	Quantity	Disposal Location
Type 1 Materials (m ³)	23	East Sha Chau (Pitch 4a & 4b)
Type 2 Materials (m ³)	0	East Sha Chau (Pitch 4c)



7.0 SITE INSPECTION

- 7.01 According to the EM&A Manual Section 9.1.2, the environmental site inspection should been formulation by ET Leader. ET had carried out the environmental site inspection on 02, 10, 15 and 23 October 2008 with the Representatives of the Engineer and the Contractor to evaluate the site environmental performance in this reporting period. The monthly IEC site audit conducted on 15 October 2008 by IEC's representative with the Engineer's, the Contractor's and ET's representative. No non-compliance and two observations were noted.
- 7.02 The details of observation during the site inspections and monthly audit as follows:-
 - Haul roads within the site were observed dusty and dry, posing potential construction dust impacts on the surrounding environment; and
 - Rain water stagnated in an idle water treatment tank, rendering mosquito breeding in the area.
- 7.03 The ET site inspection checklists are shown in **Appendix J**. In general, the construction area of KT15 was kept clean and tidy.
- 7.04 No site inspection was undertaken by external parties 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	Environmental Complaint Statistics				
Reporting 1 errou	Frequency Cumulative Complaint N				
July – December 2007	0	0	NA		
January – September 2008	0	0	NA		
October 2008	0	0	NA		

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics							
reporting reriou	Frequency	Cumulative	Nature					
July – December 2007	0	0	NA					
January – September 2008	0	0	NA					
October 2008	0	0	NA					

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics							
reporting reriou	Frequency	Cumulative	Nature					
July – December 2007	0	0	NA					
January – September 2008	0	0	NA					
October 2008	0	0	NA					



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 due to dry/windy season (November to March) 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**.



11.0 CONCLUSION

11.01 The EM&A program in **October 2008** 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 Exceedance			
Quality	24-Hour TSP	0	Not Required for 0% Project Related Exceedance			
Noise	Leq (30min) Daytime	0	Not Required for 0% Project Related Exceedance			
	Dissolve Oxygen (DO)	0	Not Required for 0% Project Related Exceedance			
	Turbidity (NTU)	0	Not Required for 0% Project Related Exceedance			
Stream	pН	0	Not Required for 0% Project Related Exceedance			
Water	Suspended Solids (SS)	0	Not Required for 0% Project Related Exceedance			
	Ammonia Nitrogen	0	Not Required for 0% Project Related Exceedance			
	Zinc	0	Not Required for 0% Project Related Exceedance			
Ecology	Decrease in number of species of wetland birds of conservation importance from baseline.	0	Not Required for 0% Project Related Exceedance			
	Decrease in the total number of wetland birds of conservation importance from baseline.	0	Not Required for 0% Project Related 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 Two SS exceed the Limit Level at W9B on 02 and 15 October 2008 was recorded. From the monitoring team on-site observations and the Contractor provide information, only steel fixing, formworks erection and gabion installation were undertaken. No excavation or major discharge on-site was observed on-site (02 and 15 October 2008). Desilting facilities and proper mitigation measures were implemented on-site. Silty water from Kam Tin Nullah upstream was observed during the sampling (02 and 15 October 2008). Therefore exceedances of SS were not project related.
- 11.05 Non-compliance with the ecological criteria was found during the monitoring on 21 October 2008. No intrusions of construction activities into the wetland areas nor adverse impact was observed. Based on the findings in the pervious monthly monitoring, the non-compliance in wetland dependent bird or fauna was not caused by the project.
- 11.06 No environmental complaint, summons or prosecution was received 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 October 2008 (No. 16)

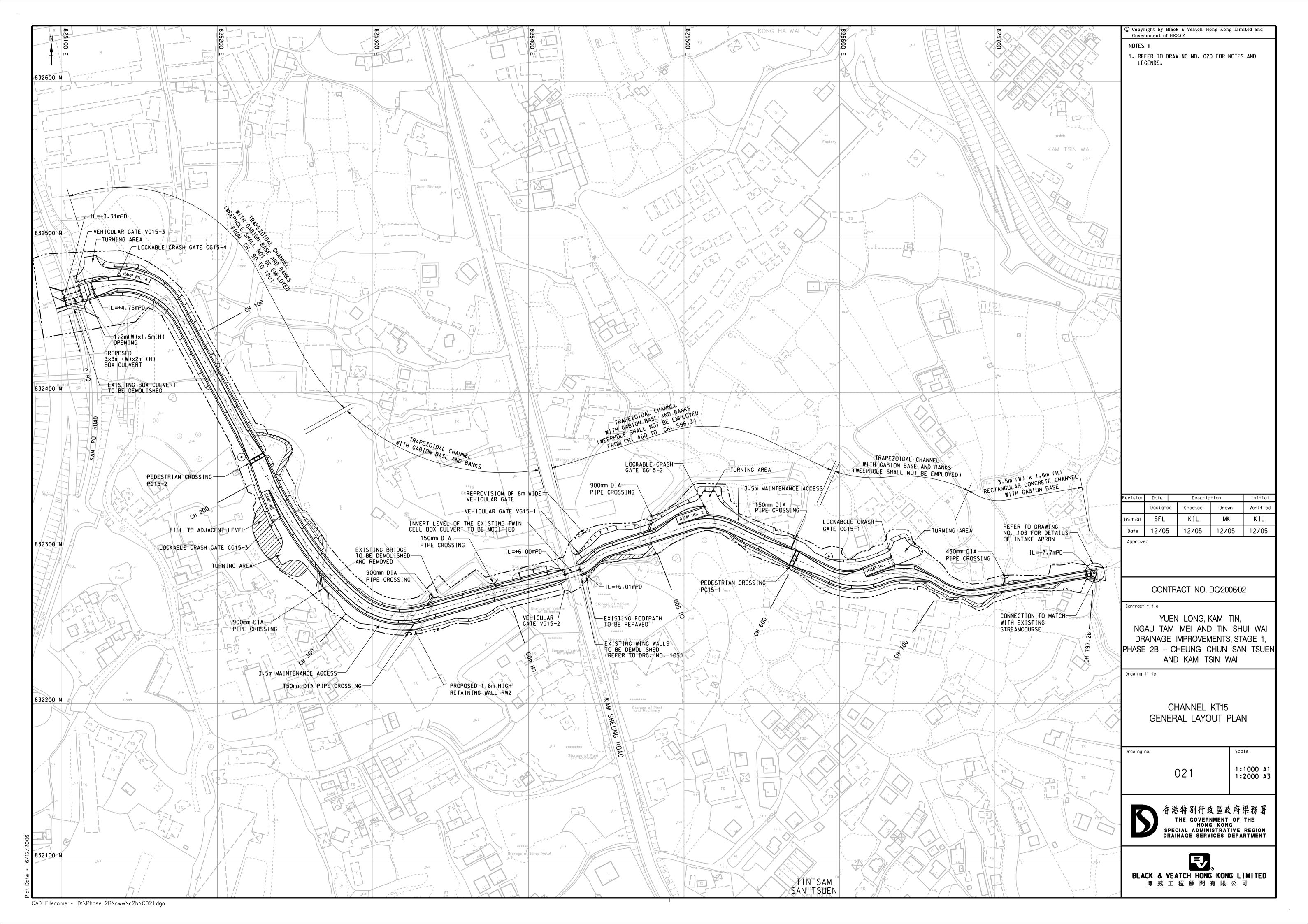
RECOMMENDATIONS

- 11.07 Based on the ET regular and monthly IEC site audit inspection records on 02, 10, 15 and 23 October 2008, no non-compliance and two observations were recorded. Details of the observations as follows:-
 - Haul roads within the site were observed dusty and dry, posing potential construction dust impacts on the surrounding environment; and
 - Rain water stagnated in an idle water treatment tank, rendering mosquito breeding in the area.
- 11.08 No site inspection was undertaken by external parties 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

PROGRAMME OF WORKS - RP16
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

- 1		Duration	Start	Finish	Predecessors	Oct		Nov		Dec	I	Jan
1	Letter of Acceptance	1 day	Wed 21/3/07	Wed 21/3/07		Oct		INUV		Dec		Jan
2	Date for commencement of Works	1 day	Fri 30/3/07	Fri 30/3/07								
_												
	Execution of Article of Agreement	1 day	Tue 3/4/07	Tue 3/4/07								
4	Mastar Danisara at the Wester	000 -1	M 1 04 /0/07	M 7/0/00								
6	Master Programme of the Works	902 days	Wed 21/3/07	Mon 7/9/09								
7	Completion Dates	893 days	Fri 30/3/07	Mon 7/9/09								
8	Section I - portions 1, 2 and 3	893 days	Fri 30/3/07	Mon 7/9/09							<u> </u>	
9	Section II - portions 4, 5 and 5C	893 days	Fri 30/3/07	Mon 7/9/09	2SS							
10	Section III - portions 5A1, 5A2 and 5B	740 days	Thu 28/6/07		20FS-1 day							
11	Section IV - temp vehicular access at portion 5A1	90 days	Thu 28/6/07		20FS-1 day							
12 13	Section V - preservation and protection of existing trees	893 days	Fri 30/3/07	Mon 7/9/09	288							
14	Possession of Site	200 days	Fri 30/3/07	Mon 15/10/07								
15	Portion 1 - channel KT2	1 day	Fri 30/3/07	Fri 30/3/07								
16	Portion 2 - channel KT2	61 days	Fri 30/3/07	Tue 29/5/07	2SS							
17	Portion 3 - channel KT2	91 days	Fri 30/3/07	Thu 28/6/07								
18	Portion 4 - channel KT15	1 day	Fri 30/3/07	Fri 30/3/07								
19 20	Portion 5 - channel KT15	91 days	Fri 30/3/07	Thu 28/6/07								
	Portion 5A1 - channel KT15	91 days	Fri 30/3/07	Thu 28/6/07								
21	Portion 5A2 - channel KT15	91 days	Fri 30/3/07	Thu 28/6/07								
22 23	Portion 5B - channel KT15 Portion 5C - channel KT15	20 days 91 days	Wed 26/9/07 Fri 30/3/07	Mon 15/10/07 Thu 28/6/07								
24	Portion 6 - Temp Storage Area at Chi Ho Road	1 days	Fri 30/3/07	Fri 30/3/07								
25	Portion 7 - Berthing Area	1 day	Fri 30/3/07	Fri 30/3/07								
26	Portion 8 - Site Accommodation	1 day	Fri 30/3/07	Fri 30/3/07								
27												
28	A. Preliminary Works	902 days	Wed 21/3/07	Mon 7/9/09								
9	1. Setting out of Works	893 days	Fri 30/3/07	Mon 7/9/09	2SS							
	2. Environmental Monitoring and Audit	893 days	Fri 30/3/07	Mon 7/9/09								
1	2.1 Establishment of Environmental Team	14 days	Fri 30/3/07	Thu 12/4/07								
3	2.2 approval by the Engineer 2.3 Environmental baseline monitoring	7 days	Fri 13/4/07 Fri 20/4/07	Thu 19/4/07 Thu 5/7/07								
3 4	a. Technical proposal & methodology	77 days 7 days	Fri 20/4/07	Thu 26/4/07								
5	b. Approval by the Engineer	7 days	Fri 27/4/07	Thu 3/5/07								
36	c. Baseline monitoring	63 days	Fri 4/5/07	Thu 5/7/07								
37	2.4 Environmental impact monitoring and audit	777 days	Tue 24/7/07	Mon 7/9/09								
38	Environmental Management and Environmental Management Plan	73 days	Fri 30/3/07	Sun 10/6/07								
39	3.1 Submission of draft EMP	21 days	Fri 30/3/07	Thu 19/4/07								
40	3.2 Comment from the Engineer	7 days	Fri 20/4/07	Thu 26/4/07								
11	3.3 Submission of EMP	45 days	Fri 27/4/07	Sun 10/6/07								
42 43	Engineer's Accommodation 4.1 Renovation	51 days 30 days	Fri 30/3/07	Sat 19/5/07 Sat 28/4/07								
44	4.1 Renovation 4.2 Equipment	50 days	Fri 30/3/07	Sat 26/4/07 Sat 19/5/07								
45	a. Contract telephone	21 days	Fri 30/3/07	Thu 19/4/07								
46	b. Survey equipment	45 days	Fri 30/3/07	Sun 13/5/07								
47	c. Contract computer facilities	51 days	Fri 30/3/07	Sat 19/5/07								
48 49	submission	14 days	Fri 30/3/07	Thu 12/4/07 Thu 19/4/07								
49 50	approval installation	7 days 21 days	Fri 13/4/07 Sun 22/4/07		49,43FS-7 days							
51	testing & commissioning	7 days	Sun 13/5/07	Sat 12/5/07 Sat 19/5/07	· ·							
52	4.3 utilities servicing	33 days	Fri 30/3/07	Tue 1/5/07								
53	a. Water	1 day	Fri 30/3/07	Fri 30/3/07								
54	b. Electricity	1 day	Fri 30/3/07	Fri 30/3/07								
5	c. Telephone	33 days	Fri 30/3/07	Tue 1/5/07								
56 57	temporary service	32 days 19 days	Fri 30/3/07 Fri 13/4/07	Mon 30/4/07 Tue 1/5/07								
8	new service application	19 days 5 days	Fri 13/4/07		56SS+14 days							
9	installation	14 days	Wed 18/4/07	Tue 1/5/07								
60	d. Facsimile	33 days	Fri 30/3/07	Tue 1/5/07								
61	temporary service	32 days	Fri 30/3/07	Mon 30/4/07	26SS							
62	new service	19 days	Fri 13/4/07	Tue 1/5/07								
63	application	5 days	Fri 13/4/07		61SS+14 days							
64 65	installation	14 days	Wed 18/4/07 Fri 30/3/07	Tue 1/5/07								
66	e. Internet broadband temporary service (56K)	33 days 32 days	Fri 30/3/07	Tue 1/5/07 Mon 30/4/07								
	Componery service (cont)	02 days	. 11 00/0/01			<u> </u>						
	PROGRAMME OF WORKS		Progre	ss	Sumn	nary Rolled Up C	Critical Task	Rolled Up Progress	External Ta	asks	Group By Sum	nmary
UIECI.												

PROGRAMME OF WORKS - RP16
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 1.	Took Name		044	Ei-i-b	Dradoonan					10000	Т	
	Task Name	Duration	Start		Predecessors	Oct		Nov	Dec	2009	Jan	
67	new service	19 days	Fri 13/4/07	Tue 1/5/07								
68	application	5 days	Fri 13/4/07		66SS+14 days							
69 70	installation 5. Contractor's Accommodation	14 days	Wed 18/4/07	Tue 1/5/07	об	-						
70	5. Contractor's Accommodation 5.1 Provision	45 days 45 days	Fri 30/3/07	Sun 13/5/07 Sun 13/5/07		-						
72	a. Premises	45 days	Fri 30/3/07	Sun 13/5/07	26SS							
73	b. Toilet facilities	21 days	Mon 23/4/07	Sun 13/5/07		-						
74	c. Telephone service	30 days	Sat 14/4/07	Sun 13/5/07		1						
75	d. Fascimile service	30 days	Sat 14/4/07	Sun 13/5/07	72FF	1						
76	e. Internet broadband service	30 days	Sat 14/4/07	Sun 13/5/07								
77	f. Water	1 day	Fri 30/3/07	Fri 30/3/07								
78	g. electricity	1 day	Fri 30/3/07	Fri 30/3/07	26SS							
79 80	6. Transport (land) for the Engineer 6.1 submission	124 days	Fri 30/3/07	Tue 31/7/07 Thu 5/4/07	200							
81	6.2 comment & approval	7 days	Fri 6/4/07	Thu 19/4/07								
82	6.3 delivery	103 days	Fri 20/4/07	Tue 31/7/07								
83	6.4 temp service	124 days	Fri 30/3/07	Tue 31/7/07								
84	7. Transport (land) for Public Works Regional Labora	tory 124 days	Fri 30/3/07	Tue 31/7/07		-						
85	7.1 submission	7 days	Fri 30/3/07	Thu 5/4/07	2SS							
86	7.2 comment, approval & instruction	14 days	Fri 6/4/07	Thu 19/4/07	85							
87	7.3 delivery	103 days	Fri 20/4/07	Tue 31/7/07	86							
88	8. Signboard	150 days	Fri 30/3/07	Sun 26/8/07								
89 90	8.1 Major	150 days	Fri 30/3/07	Sun 26/8/07	200	-						
90	submission comment & approval	90 days 90 days	Fri 30/3/07 Sun 29/4/07	Wed 27/6/07 Fri 27/7/07	90SS+30 days	-						
92	erection	90 days	Tue 29/5/07		91SS+30 days	-						
93	8.2 Minor	150 days	Fri 30/3/07	Sun 26/8/07		-						
94	submission	90 days	Fri 30/3/07	Wed 27/6/07	2SS	1						
95	comment & approval	90 days	Sun 29/4/07	Fri 27/7/07	94SS+30 days	1						
96	erection	90 days	Tue 29/5/07		95SS+30 days							
97	9. Telephone hotline	15 days	Sun 29/4/07	Sun 13/5/07								
98	9.1 Engineer's instruction	1 day	Sun 29/4/07	Mon 30/4/07								
99	9.2 installation	14 days	Mon 30/4/07	Sun 13/5/07	/4FF							
100	10. Contractual general submissions 10.1 programmes	902 days 28 days	Wed 21/3/07 Wed 21/3/07	Mon 7/9/09 Tue 17/4/07								
101	a. GCC Clause 16 programme	14 days	Wed 21/3/07	Tue 3/4/07	1SS	-						
103	b. Works programme & financial programme	14 days	Wed 4/4/07	Tue 17/4/07		-						
104	c. 3-month rolling programme	14 days	Wed 4/4/07	Tue 17/4/07		-						
105	10.2 contractor's superintendence	14 days	Fri 30/3/07	Thu 12/4/07		-						
106	a. Agent	7 days	Fri 30/3/07	Thu 5/4/07	2SS							
107	b. Surveyor	14 days	Fri 30/3/07	Thu 12/4/07								
108	c. Sub-agent	14 days	Fri 30/3/07	Thu 12/4/07								
109	d. Geotechnical Engineer	7 days	Fri 30/3/07	Thu 5/4/07								
110	e. Geotechnical Supervisor f. Foreman - concrete	14 days 14 days	Fri 30/3/07 Fri 30/3/07	Thu 12/4/07 Thu 12/4/07		-						
111	g. Foreman - drainage	14 days	Fri 30/3/07	Thu 12/4/07		-						
113	h. Staff Organization Plan	14 days	Fri 30/3/07	Thu 12/4/07		-						
114	10.3 Safety Organization	14 days	Fri 30/3/07	Thu 12/4/07		-						
115	a. Safety Officer	14 days	Fri 30/3/07	Thu 12/4/07	2SS	1						
116	b. Safety Supervisor	14 days	Fri 30/3/07	Thu 12/4/07		1						
117	c. Safety Representative	14 days	Fri 30/3/07	Thu 12/4/07	2SS							
118	10.4 TTMS design	7 days	Fri 30/3/07	Thu 5/4/07								
119	a. Independent Traffic Consultant	7 days	Fri 30/3/07	Thu 5/4/07								
120 121	b. Traffic Engineer 10.5 Assistant to Engineer	7 days	Fri 30/3/07	Thu 5/4/07 Tue 1/5/07	200	-						
121	a. Chainmen (4)	33 days 33 days	Fri 30/3/07	Tue 1/5/07	2SS	-						
123	b. Watchmen (2)	33 days	Fri 30/3/07	Tue 1/5/07		-						
124	c. Field assistant (1)	33 days	Fri 30/3/07	Tue 1/5/07		-						
125	d. Technical assistant (1)	33 days	Fri 30/3/07	Tue 1/5/07		-						
126	e. Clerical assistant (1)	33 days	Fri 30/3/07	Tue 1/5/07	2SS	1						
127	f. Office assistant (1)	33 days	Fri 30/3/07	Tue 1/5/07	2SS							
128	10.6 Underground service detection equipment	35 days	Fri 30/3/07	Thu 3/5/07								
129	a. Submission	7 days	Fri 30/3/07	Thu 5/4/07								
130	b. Comment & approval	14 days	Fri 6/4/07	Thu 19/4/07								
131 132	c. Provision 10.7 Independent Checking of Temporary Works	14 days	Fri 20/4/07 Fri 30/3/07	Thu 3/5/07 Thu 26/4/07	130							
132	a. Submission of independent checking enginee	28 days er 14 days	Fri 30/3/07	Thu 26/4/07	2SS	-						
134	b. Comment & approval	14 days	Fri 13/4/07	Thu 26/4/07		-						
135	10.8 Trip ticket system for C & D material	59 days	Fri 30/3/07	Sun 27/5/07		-						
			Dros	26	Summary	Rolled Up Ci	tical Tack	Rolled Up Progress	External Tasks	Group Bu Summer-		
Project: Page: 2	PROGRAMME OF WORKS of 16	F1.	Progres		•					Group By Summary	<u> </u>	
. age. 2	Critical T	ask	Milesto	ne	Rolled Up	Rolled Up M	estone 🔷 S	Split	Project Summary	Deadline	<u>↑</u>	
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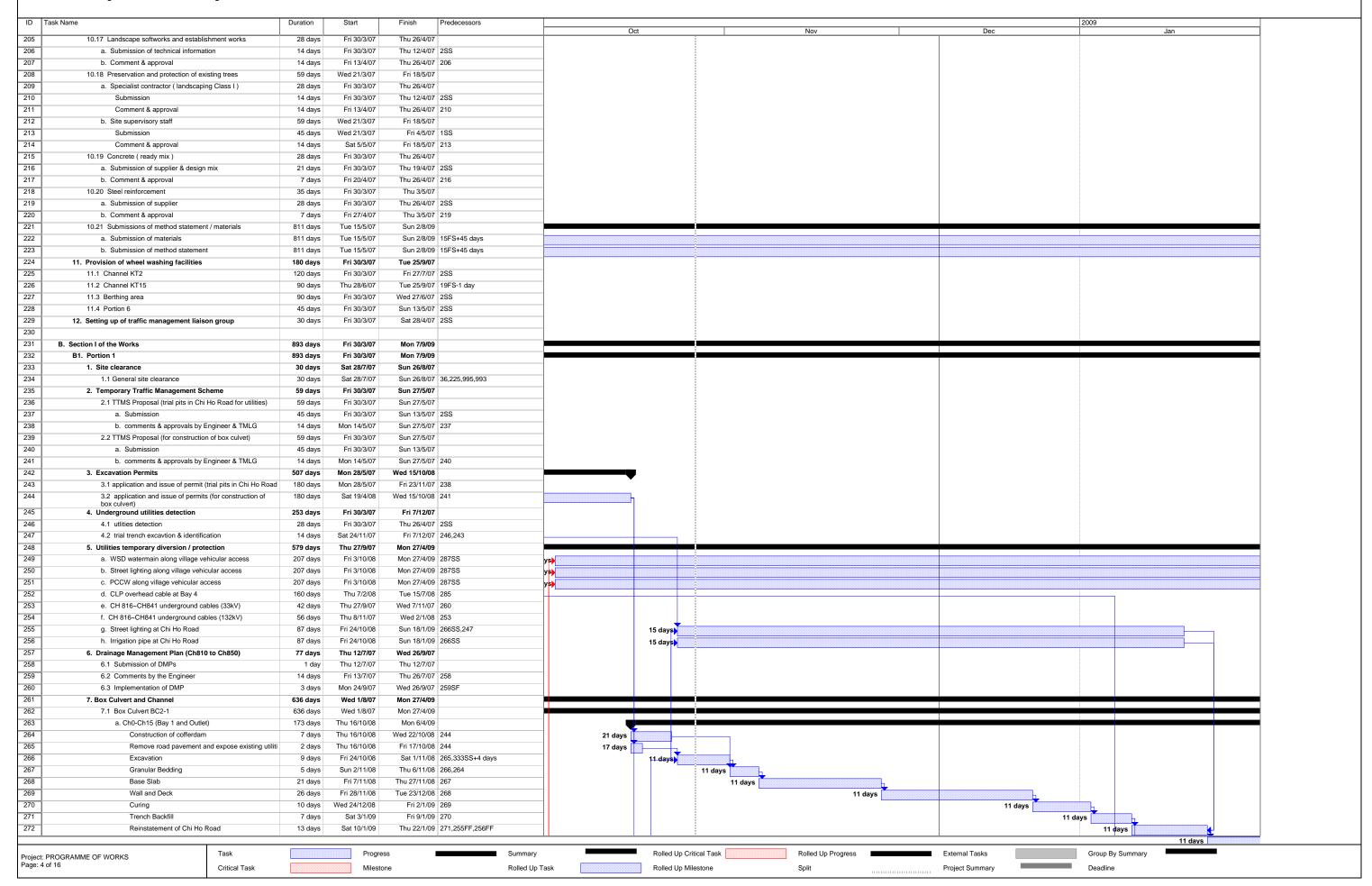
PROGRAMME OF WORKS - RP16
Contract No. : DC / 2006 / 02
Contract Title : Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,
Stage 1, Phase 2B - Cheung Chun San Tsuen and Kam Tsin Wai

				_				
Task Name	Durat	ion Start	Finish Predecessors	Oct	Nov	Dec	2009 Jan	\dashv
a. Submission of site management plan	45	days Fri 30/3/07	Sun 13/5/07 2SS	Oct -	INOV	, Dec	Jan	\dashv
b. Comment & approval		days Mon 14/5/07	Sun 27/5/07 136					
10.9. Condition survey and structral monitorin	893	days Fri 30/3/07	Mon 7/9/09					
a. Submission of Independent Structural	Engineer 14	days Fri 30/3/07	Thu 12/4/07 2SS					
b. Comment & approval	7	days Fri 13/4/07	Thu 19/4/07 139					
c. Proposal for condition survey & structu	ral monitoring 209	days Fri 20/4/07	Wed 14/11/07					
Portion 1, 4, 6, 7, 8	30	days Fri 20/4/07	Sat 19/5/07 140					
Portion 2	30	days Wed 30/5/07	Thu 28/6/07 16					
Portion 3, 5		days Fri 29/6/07	Sat 28/7/07 17,19,20,21					
Portion 5A1, 5A2 and 5B		days Tue 16/10/07	Wed 14/11/07 22					
d. Comment & approval		days Sun 20/5/07	Wed 28/11/07					
Portion 1, 4, 6, 7, 8		days Sun 20/5/07	Sat 2/6/07 142					
Portion 2		days Fri 29/6/07	Thu 12/7/07 143					
Portion 3, 5		days Sun 29/7/07	Sat 11/8/07 144					
Portion 5A1, 5A2 and 5B		days Thu 15/11/07	Wed 28/11/07 145					
e. Condition survey & structural monitorin		days Sun 3/6/07	Mon 7/9/09					
Portion 1, 4, 6, 7, 8		days Sun 3/6/07	Mon 7/9/09 147					
Portion 2 Portion 3, 5		days Fri 13/7/07	Mon 7/9/09 148					
Portion 3, 5 Portion 5A1, 5A2 and 5B		days Sun 12/8/07 days Thu 29/11/07	Mon 7/9/09 149 Mon 6/7/09 150					
5 Portion 5A1, 5A2 and 5B 10.10 Handling & disposal of Type 1 & 2 control		days Inu 29/11/07 days Sat 14/7/07	Tue 25/9/07					
<u> </u>								
a. Proposed type of dump truck		days Sun 15/7/07	Mon 27/8/07					
Submission		days Sun 15/7/07	Mon 13/8/07 804SS-44 days					
Comment & approval		days Tue 14/8/07	Mon 27/8/07 158					
b. Proposal of berthing area arrangemen		days Mon 30/7/07	Tue 11/9/07					
Submission		days Mon 30/7/07	Tue 28/8/07					
Comment & approval c. Proposal of disposal arrangement		days Wed 29/8/07	Tue 11/9/07 161					
		days Sat 14/7/07	Tue 25/9/07					
Submission Comment & approval		days Sat 14/7/07 days Wed 12/9/07	Tue 11/9/07 Tue 25/9/07 164					
Comment & approval 10.11 Type 3 contaminated material		-	Sun 13/1/08					
7 a. Decontaminated material		days Fri 30/3/07 days Fri 30/3/07	Fri 10/8/07	_				
a. Decontamination specialist Submission		days Fri 30/3/07	Fri 27/7/07 2SS	_				
Comment & approval		days Sat 28/7/07	Fri 10/8/07 168					
b. Statement & treatment programme		days Sat 25/7/07	Fri 21/9/07					
(1) Submission		days Sat 11/8/07	Fri 7/9/07 169					
2 (2) Comment & approval		days Sat 8/9/07	Fri 21/9/07					
B by the Engineer		days Sat 8/9/07	Fri 21/9/07 171					
by the EPD		days Sat 8/9/07	Fri 21/9/07 171					
c. Setting up of Treatment Plant		days Thu 15/11/07	Sun 13/1/08 174					
3 10.12 Safety Plan	35	days Wed 21/3/07	Tue 24/4/07					
a. Submission of draft Safety Plan	14	days Wed 21/3/07	Tue 3/4/07 1SS					
b. Comment by the Engineer	7	days Wed 4/4/07	Tue 10/4/07 177					
c. Submission of Safety Plan	14	days Wed 11/4/07	Tue 24/4/07 178					
10.13 Sub-contractor Management Plan		days Wed 21/3/07	Mon 7/9/09					
a. Submission of SMP	30	days Wed 21/3/07	Thu 19/4/07 1SS					
b. For information & Comments		days Fri 20/4/07	Thu 3/5/07 181					
c. Update SMP		days Fri 4/5/07	Mon 7/9/09 182					
10.14 proof of plant ownership		days Fri 30/3/07	Mon 7/9/09					
a. Submission of draft written undertaking		days Fri 30/3/07	Thu 12/4/07 2SS					
b. Comment by the Engineer / Employer		days Fri 13/4/07	Thu 26/4/07 185					
c. Engineer's request		days Fri 27/4/07	Mon 7/9/09 186					
10.15 Contractor's Management Team a. Submission of staff member details		days Fri 30/3/07	Mon 7/9/09					
		days Fri 30/3/07 days Fri 13/4/07	Thu 12/4/07 2SS					
b. Update management / site supervisior 10.16 Water supply pipeworks material		days Fri 13/4/07 days Wed 21/3/07	Mon 7/9/09 189 Tue 30/12/08		<u> </u>			
a. Supplier		days Wed 21/3/07 days Wed 21/3/07	Tue 17/4/07				-	
3 Submission		days Wed 21/3/07	Tue 3/4/07 1SS	_				
comment & approval		days Wed 21/3/07	Tue 17/4/07 193	_				
b. Manufacturer		days Wed 21/3/07	Tue 17/4/07					
Submission		days Wed 21/3/07	Tue 3/4/07 1SS					
7 comment & approval		days Wed 4/4/07	Tue 17/4/07 196					
c. Independent Inspection Agent (IIA)		days Wed 21/3/07	Tue 17/4/07					
Submission		days Wed 21/3/07	Tue 3/4/07 1SS					
comment & approval		days Wed 4/4/07	Tue 17/4/07 199					
d. Representative of the IIA		days Wed 21/3/07	Tue 17/4/07					
Submission		days Wed 21/3/07	Tue 3/4/07 1SS					
comment & approval	14	days Wed 4/4/07	Tue 17/4/07 202					
				1	-	1	:	
ect: PROGRAMME OF WORKS	sk	Progr	ess Summary	Rolled Up Crit	tical Task Rolled Up Progress	External Tasks	Group By Summary	
0 (40	itical Task	Milest	one Rolled Up	o Task Rolled Up Mile	estone Split	Project Summary	Deadline	
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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

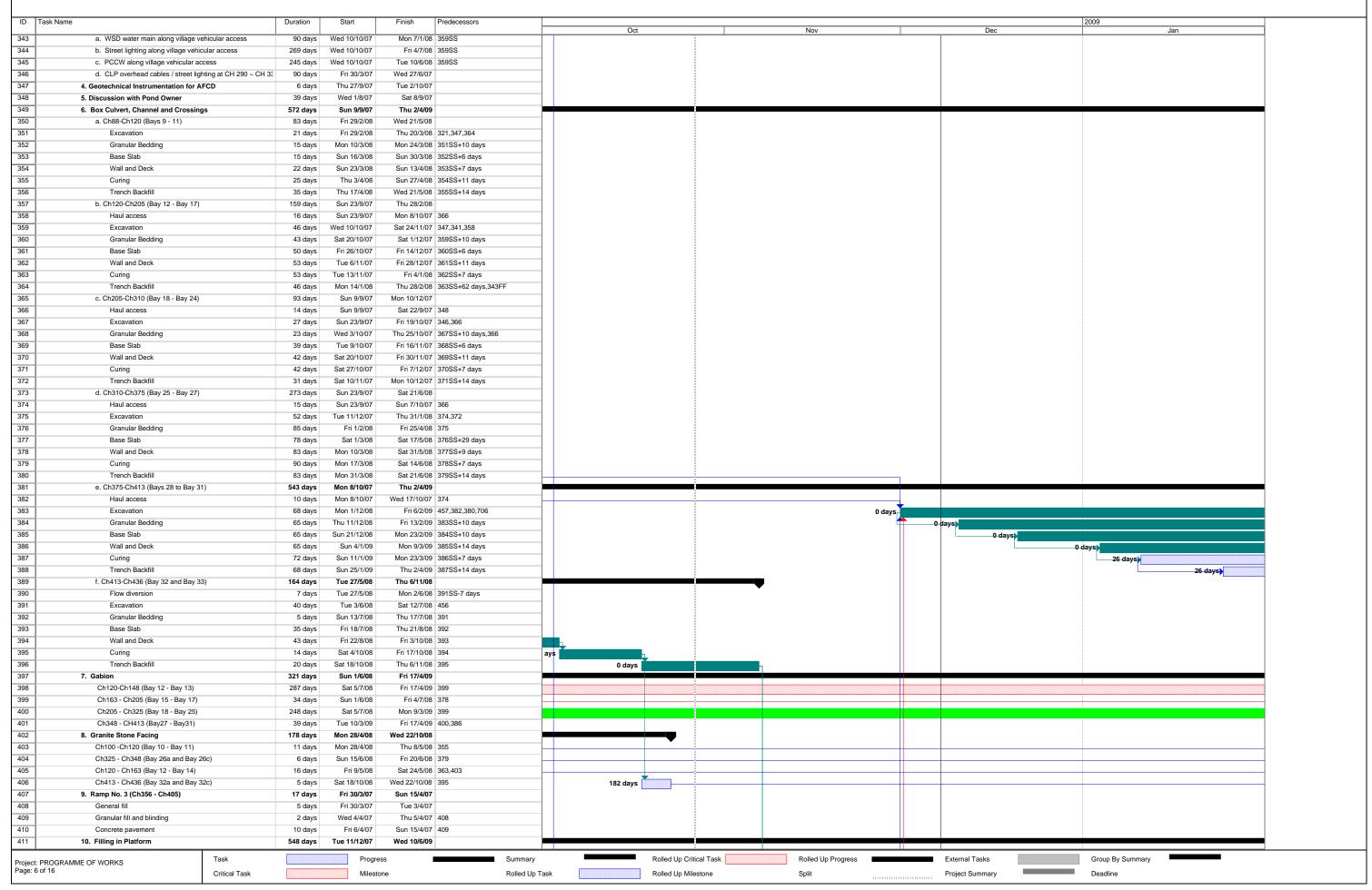


Contract No. : DC / 2006 / 02

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 Finish 274 87 davs Fri 26/10/07 h Temporary Bund in AFCD Pond Wed 1/8/07 275 31 days Wed 1/8/07 Fri 31/8/07 276 2. Comments by the Engineer and AFCD Sat 1/9/07 Sun 30/9/07 275 30 days 277 3.Modified chain link fence Mon 1/10/07 Thu 11/10/07 276 11 days 278 Fri 12/10/07 Fri 26/10/07 277 4. Construction of temporary bund 15 days 279 c. Ch15-Ch32 (Bays 2 & 3) 103 days Sat 27/10/07 Wed 6/2/08 280 Sat 27/10/07 Tue 20/11/07 278 Excavation 25 days 281 Granular Bedding 7 days Wed 21/11/07 Tue 27/11/07 280 282 Base Slab Wed 28/11/07 Sat 15/12/07 281 18 days 283 Wall and Deck 32 days Sun 16/12/07 Wed 16/1/08 282 284 Curina 14 days Thu 17/1/08 Wed 30/1/08 283 285 Trench Backfill 7 days Thu 31/1/08 Wed 6/2/08 284 286 d. Ch32-Ch88 (Bays 4 - 7) 207 days Fri 3/10/08 Mon 27/4/09 287 Mon 5/1/09 455,252FF+66 days,334 Excavation 95 days Fri 3/10/08 288 Granular Bedding 80 days Mon 13/10/08 Wed 31/12/08 287SS+10 days 289 Base Slab (Bavs 4, 5, 7) 95 days Sat 25/10/08 Tue 27/1/09 288SS+12 days 290 Wall and Deck (Bays 4, 5, 7) 107 days Tue 17/2/09 289SS+9 days Mon 3/11/08 0 days 291 Tue 3/3/09 290SS+16 days Curina 105 days Wed 19/11/08 102 days 292 Trench Backfill Wed 3/12/08 Sat 14/3/09 291SS+14 days 23 days 293 Tue 10/3/09 291 Modification of temporary support to watermain fo Wed 4/3/09 7 davs 294 10 days Wed 11/3/09 Fri 20/3/09 293 295 Fri 3/4/09 294 Wall and Deck (Bay 6) Sat 21/3/09 14 days 296 Curing (Bay 6) Sat 4/4/09 Fri 17/4/09 295 297 Mon 27/4/09 296,249FF,250FF,251FF Backfill (Bay 6) 10 days Sat 18/4/09 298 7.2 Channel 189 days Thu 3/1/08 Wed 9/7/08 299 a. Ch840-Ch844 (Bay 56b) 91 days Thu 3/1/08 Wed 2/4/08 300 Excavation (including contamination materials) 25 days Thu 3/1/08 Sun 27/1/08 254 301 Granular Bedding Mon 28/1/08 Wed 30/1/08 300 3 davs 302 Base Slah 22 days Thu 31/1/08 Thu 21/2/08 301 303 Wall and Deck 23 days Fri 22/2/08 Sat 15/3/08 302 304 Curing 14 days Sun 16/3/08 Sat 29/3/08 303 305 Trench Backfill Wed 2/4/08 304 4 days Sun 30/3/08 306 b. Demolition of existing crossing 7 days Sun 30/3/08 Sat 5/4/08 304 307 c. Ch800-840 (Bay 56a) Wed 9/7/08 95 days Sun 6/4/08 308 Excavation (including contamination materials) 8 days Sun 6/4/08 Sun 13/4/08 306 309 Granular Bedding 7 days Mon 14/4/08 Sun 20/4/08 308 310 Base Slab Fri 30/5/08 309 40 days Mon 21/4/08 311 Wall and Deck Sat 31/5/08 Mon 30/6/08 310 31 days Sat 5/7/08 311SS+10 days 312 Curina 26 days Tue 10/6/08 313 Trench Backfill 16 days Tue 24/6/08 Wed 9/7/08 312SS+14 days 314 8. Filling in Platform 400 davs Thu 3/4/08 Thu 7/5/09 315 8.1 Box Culvert 118 days Sat 10/1/09 Thu 7/5/09 316 a. Ch0-Ch15 (Bay 1 and Outlet) Mon 12/1/09 271 3 davs Sat 10/1/09 317 b. Ch15-Ch88 (Bay 2 to Bay 8) 10 days Tue 28/4/09 Thu 7/5/09 292,297 318 8.2 Channel Tue 29/7/08 118 days Thu 3/4/08 319 a. Ch840-Ch844 (Bay 56b) 5 days Thu 3/4/08 Mon 7/4/08 305 320 b. Ch800-840 (Bay 56a) Thu 10/7/08 Tue 29/7/08 313 20 days 321 9. Geotechnical Instrumentation for CLP Pylon 4 days Mon 24/9/07 Thu 27/9/07 322 10. Trial pits for watermain under existing village access Tue 17/6/08 Fri 20/6/08 455 4 days 323 11. Temporary support to existing watermain 21 days Sat 21/6/08 Fri 11/7/08 322 324 12. Drainage works (except Bays 56a and 56b) 45 days Fri 8/5/09 Sun 21/6/09 325 a surface drain 45 days Fri 8/5/09 Sun 21/6/09 317 326 Wed 5/8/09 197,204,327 13. Water supply pipeworks 60 days Sun 7/6/09 327 14. Roads and paying (except Bays 56a and 56b) 30 days Fri 8/5/09 Sat 6/6/09 317 328 15. Diversion of traffic to permanent access from Bay 4 to B Sun 7/6/09 Sun 7/6/09 327 1 day 329 Fri 21/8/09 326 16. Street furnitures / traffic sign / road marking (except Bay 16 days Thu 6/8/09 330 17. Landscape softworks / hardworks (except Bays 56a and Sat 8/8/09 316,317,327 63 days Sun 7/6/09 331 18. Road Diversion in Chi Ho Road Thu 16/10/08 Mon 20/10/08 5 days 332 a. Construction of temporary footpath above Box Culvert Thu 16/10/08 Sun 19/10/08 244 333 b. Implementation of footpath diversion Mon 20/10/08 Mon 20/10/08 332 1 day 19. Removal of Tree No. 501 334 1 day Thu 2/10/08 Thu 2/10/08 335 20. Permanent footpath 33 days Thu 6/8/09 Mon 7/9/09 326 336 R2 Portion 2 893 days Fri 30/3/07 Mon 7/9/09 337 1. Site clearance 90 days Tue 14/8/07 Sun 11/11/07 338 Sun 11/11/07 36,999,225,1001 1.1 General clearance 90 days Tue 14/8/07 339 2. Underground utilities detection 42 days Tue 3/7/07 Mon 13/8/07 2.1 utilities detection Tue 3/7/07 Mon 30/7/07 340 28 days 341 2.2 trial trench excavtion & identification 14 days Tue 31/7/07 Mon 13/8/07 340 Progress Rolled Up Critical Task Group By Summary Project: PROGRAMME OF WORKS Critical Task Milestone Rolled Up Task Rolled Up Milestone Split Project Summary Deadline

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



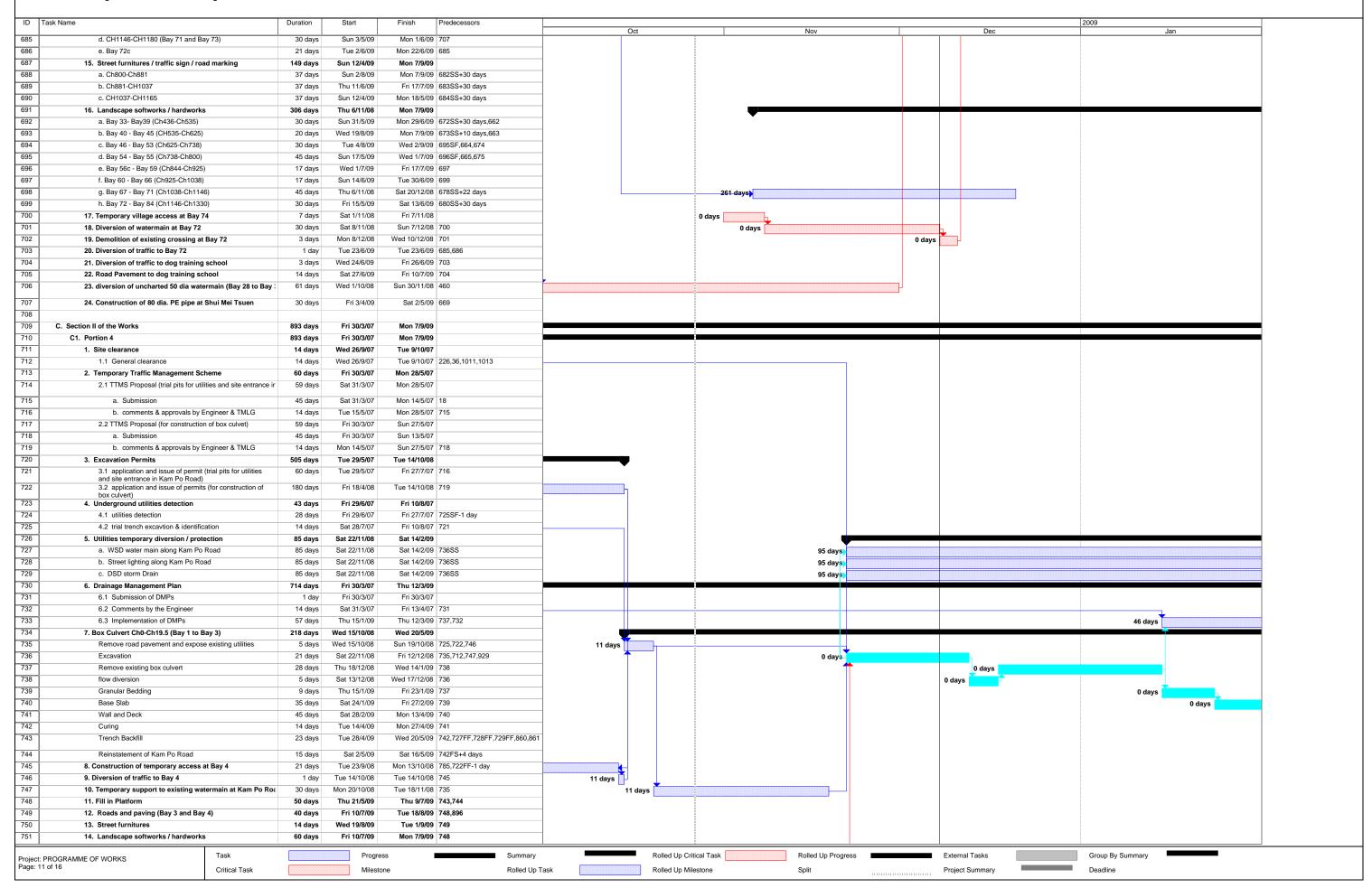
ID Task		Duration	Start	Finish	Predecessors					2009
10						Oct		Nov	Dec	Jan
12	10.1 Box Culvert BC2-1	10 days	Thu 22/5/08	Sat 31/5/08	356					
14	a. Ch88-Ch120 (South of Bay 9 - Bay 11)	10 days	Thu 22/5/08	Sat 31/5/08	356					
15	10.2 Channel and Crossing a. Ch120-Ch205 (Bay 12 - Bay 17)	548 days	Tue 11/12/07 Fri 29/2/08	Wed 10/6/09 Wed 28/5/08	264					
16	b. Ch205-Ch310 (Bay 18 - Bay 24)	90 days	Tue 11/12/07	Sun 6/4/08						
17	c. Ch310-Ch361 (Bay 16 - Bay 24)	118 days	Sun 22/6/08	Tue 22/7/08						
118		31 days		Wed 10/6/09						
119	d. Ch361-Ch413 (Bay 28 - Bay 31)	48 days	Fri 24/4/09		388,462					
20	11. Drainage works	451 days	Mon 7/4/08	Wed 1/7/09						
	11.1 storm drain with manhole and headwall	451 days	Mon 7/4/08	Wed 1/7/09						
21	a. Ch88-Ch 120 (Bay 9 - Bay 11)	20 days	Sun 1/6/08	Fri 20/6/08						
22	b. Ch120-Ch205 (Bay 12 - Bay 17)	20 days	Thu 29/5/08	Tue 17/6/08	*					
23	c. Ch205-Ch310 (Bay 18 - Bay 24)	20 days	Mon 7/4/08	Sat 26/4/08						
24	d. Ch310-Ch361 (Bay 25 - Bay 27)	20 days	Wed 23/7/08	Mon 11/8/08						
	e. Ch361-Ch436 (Bay 28 - Bay 32)	21 days	Thu 11/6/09	Wed 1/7/09	418					
26 27	11.2. surface drain	397 days	Tue 27/5/08	Sat 27/6/09	440,405					
	a. Ch88-Ch 120 (Bay 9 - Bay 11)	10 days	Mon 25/5/09	Wed 3/6/09						
28 29	b. Ch120-Ch190 (Bay 12 - Bay 16)	10 days	Thu 18/6/09	Sat 27/6/09						
	c. Ch190-Ch348 (Bay 17 - Bay 26)	15 days	Tue 27/5/08	Tue 10/6/08						
30	d. Ch348-Ch390 (Bay 27 - Bay 29)	10 days	Thu 11/6/09	Sat 20/6/09						
31	e. Ch390-Ch436 (Bay 30 - Bay 32)	10 days	Thu 11/6/09	Sat 20/6/09						
32	12.1. Water supply pipeworks (Bay 9 to Bay 26)	60 days	Thu 18/6/09		435,436,437,204					
33	12.2. Water supply pipeworks (Bay 27 to Bay 32)	14 days	Thu 2/7/09	Wed 15/7/09	424,425,204					
34	13. Roads and paving	496 days	Mon 7/4/08	Sat 15/8/09	100 440 404 6 : -					
35	a. Ch88-Ch 148 (Bay 9 - Bay 13)	17 days	Fri 8/5/09		422,413,421,317					
36	b. Ch148-Ch190 (Bay 14 - Bay 16)	10 days	Mon 8/6/09	Wed 17/6/09	***					
37	c. Ch190-Ch348 (Bay 17 - Bay 26)	50 days	Mon 7/4/08	Mon 26/5/08			<u> </u>			
38	d. Ch348-Ch390 (Bay 27 - Bay 29)	10 days	Thu 2/7/09	Sat 11/7/09	·					
9	e. Ch390-Ch436 (Bay 30 to Bay 32)	45 days	Thu 2/7/09	Sat 15/8/09	425					
40	14. Road furnitures	461 days	Tue 27/5/08	Sun 30/8/09						
41	a. Ch88-Ch 120 (Bay 9 - Bay 11)	17 days	Mon 25/5/09	Wed 10/6/09						
42 43	b. Ch120-Ch205 (Bay 12 - Bay 17)	33 days	Thu 18/6/09	Mon 20/7/09						
	c. Ch205-Ch348 (Bay 18 - Bay 26)	50 days	Tue 27/5/08	Tue 15/7/08						
14	d. Ch348-Ch390 (Bay 27 - Bay 29)	33 days	Sun 12/7/09	Thu 13/8/09						
5	e. Ch390-Ch436 (Bay 30 - Bay 32)	15 days	Sun 16/8/09	Sun 30/8/09	439					
6	15. Landscape softworks / hardworks	106 days	Mon 25/5/09	Mon 7/9/09						
7	a. Ch88-Ch 120 (Bay 9 - Bay 11)	30 days	Mon 25/5/09	Tue 23/6/09						
8	b. Ch120-Ch205 (Bay 12 - Bay 17)	70 days	Thu 18/6/09	Wed 26/8/09						
9	c. Ch205-Ch310 (Bay 18 - Bay 24)	62 days	Thu 18/6/09	Tue 18/8/09						
50	d. Ch310-Ch436 (Bay 25 - Bay 32) south	38 days	Thu 11/6/09		430SS,431SS					
51	e. Ch310-Ch436 (Bay 25 - Bay 32) north	8 days	Mon 31/8/09	Mon 7/9/09						
52	16. Final trimming of north platform from Bay 26 to Bay 32	15 days	Sun 16/8/09	Sun 30/8/09						
53	17. Construct temporary access (Bay 5 to Bay 14)	25 days	Thu 22/5/08	Sun 15/6/08	356,364					
54	18. Removal of existing public light controller near Bay 14	1 day	Sun 15/6/08	Sun 15/6/08						
5	19. Traffic diversion at north of Bay 5 to Bay 14	1 day	Mon 16/6/08	Mon 16/6/08	·	J				
6	20. Temporary Village Access on Bay 28 - Bay 30	2 days	Sun 1/6/08	Mon 2/6/08				<u> </u>		
57	21. Temporary Village Access on Bay 32	3 days	Fri 7/11/08	Sun 9/11/08			26 days		_	
58	22. Diversion of traffice to permanent access between Bay 1	1 day	Fri 3/4/09	Fri 3/4/09	388,437					
59	23. Temporary pipe crossing at south of Bay 30	4 days	Thu 28/8/08	Sun 31/8/08	460SS-4 days					
30	24. Diversion of traffic from Cheung Chun San Chuen to the	1 day	Mon 1/9/08	Mon 1/9/08						
			Ont 40/4/00	M== 00/1/05	404 070 000 000 400 400 101 107					
1	25. Diversion of existing stream to constructed channel	3 days	Sat 18/4/09		401,273,398,399,400,403,404,405					
2	26. Demolition of existing vehicular bridge	3 days	Tue 21/4/09	Thu 23/4/09	461					
3										
64	B3. Portion 3	789 days	Thu 12/7/07	Mon 7/9/09				1		
55	1. Site clearance	90 days	Sat 15/9/07	Thu 13/12/07						
3	1.1 General clearance	90 days	Sat 15/9/07	Thu 13/12/07	17,225,1005,1007					
67	2. Underground utilities detection	42 days	Tue 31/7/07	Mon 10/9/07						
8	2.1 utilities detection	28 days	Tue 31/7/07	Mon 27/8/07	340					
9	2.2 trial trench excavtion & identification	14 days	Tue 28/8/07	Mon 10/9/07	468					
0	3. Utilities temporary diversion / protection	153 days	Mon 5/1/09	Sat 6/6/09						—
1	a. WSD water main along village access at CH 1150	153 days	Mon 5/1/09	Sat 6/6/09	609SS,614FF+60 days					93 days
72	b. Street lighting along village access at CH 1150	93 days	Mon 5/1/09	Tue 7/4/09	609SS,614FF					153 days
73	c. PCCW along village access at CH 1150	153 days	Mon 5/1/09		609SS,614FF+60 days		<u> </u>			93 days
74	4. Drainage Management Plan	789 days	Thu 12/7/07	Mon 7/9/09	•					
75	4.1 Submission of DMPs	1 day	Thu 12/7/07	Thu 12/7/07						
76	4.2 Comments by the Engineer	14 days	Fri 13/7/07	Thu 26/7/07	475					
77	4.3 Implementation of DMP	659 days	Mon 19/11/07	Mon 7/9/09						
	·	- 9 -					8			

	Fask Name	Duration	Start	Finish	Predecessors	Oct.	Nov	Doo
478	5. Channel and Crossings	733 days	Sat 1/9/07	Wed 2/9/09		Oct	Nov	Dec Jan
479	a. Bay 34-35	50 days	Fri 7/11/08	Fri 26/12/08				
480	Excavation	10 days	Fri 7/11/08	Sun 16/11/08			0 days	▼
481	Granular Bedding	4 days	Mon 17/11/08	Thu 20/11/08			0 days	
482	Base Slab	8 days	Fri 21/11/08	Fri 28/11/08		-	0 days	
483	Wall and Deck	14 days	Sat 29/11/08	Fri 12/12/08		-	0 days	
484	Curing	7 days	Sat 13/12/08	Fri 19/12/08		-		0 days
485	Trench Backfill	7 days	Sat 20/12/08	Fri 26/12/08		-		0 days
486	b. Bay 36-37	50 days	Sat 20/12/08	Sat 14/2/09		-		Vuays
487	Excavation	10 days	Sat 27/12/08	Mon 5/1/09				A days
488	Granular Bedding	4 days	Tue 6/1/09	Fri 9/1/09				0 days 0 days 0 days
489	Base Slab	-	Sat 10/1/09	Sat 17/1/09				U days
490		8 days						U days
	Wall and Deck	14 days	Sun 18/1/09	Sat 31/1/09				
491	Curing	7 days	Sun 1/2/09	Sat 7/2/09				0 days
492	Trench Backfill	7 days	Sun 8/2/09	Sat 14/2/09				
493	c. Bay 38-39	50 days	Sun 15/2/09	Sun 5/4/09				
494	Excavation	10 days	Sun 15/2/09	Tue 24/2/09				
495	Granular Bedding	4 days	Wed 25/2/09	Sat 28/2/09				
496	Base Slab	8 days	Sun 1/3/09	Sun 8/3/09				
497	Wall and Deck	14 days	Mon 9/3/09	Sun 22/3/09	496			
498	Curing	7 days	Mon 23/3/09	Sun 29/3/09	497			
499	Trench Backfill	7 days	Mon 30/3/09	Sun 5/4/09	498			
500	d. Bay 40-41	50 days	Mon 6/4/09	Mon 25/5/09		7		
501	Excavation	10 days	Mon 6/4/09	Wed 15/4/09	499	1		
502	Granular Bedding	4 days	Thu 16/4/09	Sun 19/4/09	501	1		
503	Base Slab	8 days	Mon 20/4/09	Mon 27/4/09	502	1		
504	Wall and Deck	14 days	Tue 28/4/09	Mon 11/5/09	503			
505	Curing	7 days	Tue 12/5/09	Mon 18/5/09		-		
506	Trench Backfill	7 days	Tue 19/5/09	Mon 25/5/09		-		
507	e. Bay 42-43	50 days	Tue 26/5/09	Tue 14/7/09		-		
508	Excavation	10 days	Tue 26/5/09	Thu 4/6/09		-		
509	Granular Bedding	4 days	Fri 5/6/09	Mon 8/6/09		-		
510	Base Slab	8 days	Tue 9/6/09	Tue 16/6/09		-		
511	Wall and Deck	14 days	Wed 17/6/09	Tue 10/6/09		_		
512	Curing			Tue 7/7/09		_		
512	-	7 days	Wed 1/7/09	Tue 14/7/09		-		
	Trench Backfill	7 days	Wed 8/7/09			-		
514	f. Bay 44-45	50 days	Fri 3/4/09	Fri 22/5/09		4		
515	Excavation	10 days	Fri 3/4/09	Sun 12/4/09		_		
516	Granular Bedding	4 days	Mon 13/4/09	Thu 16/4/09				
517	Base Slab	8 days	Fri 17/4/09	Fri 24/4/09				
518	Wall and Deck	14 days	Sat 25/4/09	Fri 8/5/09				
519	Curing	7 days	Sat 9/5/09	Fri 15/5/09				
520	Trench Backfill	7 days	Sat 16/5/09	Fri 22/5/09				
521	g. Bay 46-47	50 days	Thu 12/2/09	Thu 2/4/09				
522	Excavation	10 days	Thu 12/2/09	Sat 21/2/09	534			
523	Granular Bedding	4 days	Sun 22/2/09	Wed 25/2/09	522			
524	Base Slab	8 days	Thu 26/2/09	Thu 5/3/09	523	7		
525	Wall and Deck	14 days	Fri 6/3/09	Thu 19/3/09	524	1		
526	Curing	7 days	Fri 20/3/09	Thu 26/3/09	525	1		
527	Trench Backfill	7 days	Fri 27/3/09	Thu 2/4/09		_		
528	h. Bay 48-49	50 days	Wed 24/12/08	Wed 11/2/09		-		
529	Excavation	10 days	Wed 24/12/08	Fri 2/1/09		-		0 days
530	Granular Bedding	4 days	Sat 3/1/09	Tue 6/1/09		-		0 days
531	Base Slab	8 days	Wed 7/1/09	Wed 14/1/09		-		0 days
532	Wall and Deck	14 days	Thu 15/1/09	Wed 14/1/09 Wed 28/1/09		-		0 days
533	Curing	7 days	Thu 19/1/09	Wed 28/1/09		-		<u> </u>
534	Trench Backfill		Thu 5/2/09	Wed 4/2/09 Wed 11/2/09		-		0 days
535		7 days				-		
	i. Bay 50-51	50 days	Tue 4/11/08	Tue 23/12/08		4		
536	Excavation	10 days	Tue 4/11/08	Thu 13/11/08		_	0 days	
537	Granular Bedding	4 days	Fri 14/11/08	Mon 17/11/08			0 days	
538	Base Slab	8 days	Tue 18/11/08	Tue 25/11/08			0 days	
539	Wall and Deck	14 days	Wed 26/11/08	Tue 9/12/08			0 days	
540	Curing	7 days	Wed 10/12/08	Tue 16/12/08				0 days
541	Trench Backfill	7 days	Wed 17/12/08	Tue 23/12/08	540			0 days
542	j. Bay 52-53	50 days	Mon 15/9/08	Mon 3/11/08				
543	Excavation	10 days	Mon 15/9/08	Wed 24/9/08	557			
544	Granular Bedding	4 days	Thu 25/9/08	Sun 28/9/08	543			
545	Base Slab	8 days	Mon 29/9/08	Mon 6/10/08		T		
0-10							±	
546	Wall and Deck	14 days	Tue 7/10/08	Mon 20/10/08	545	0 days		

ID .	Task Name	Duration	Start	Finish	Predecessors	
547	Curing	7 days	Tue 21/10/08	Mon 27/10/08	546	0 days
548	Trench Backfill	7 days	Tue 28/10/08	Mon 3/11/08		0 day
549	k. Bay 54 - Bay 55	380 days	Sat 1/9/07	Sun 14/9/08		
550	Haul access	6 days	Sat 1/9/07	Thu 6/9/07	55000 40 4	
551	Flow diversion	10 days	Sun 3/2/08		552SS-10 days	
552	Excavation (including contamination material)	120 days	Wed 13/2/08	Wed 11/6/08	days,469,1005,550,227	
553	Granular Bedding	116 days	Sat 23/2/08		552SS+10 days	
554	Base Slab	131 days	Fri 29/2/08		553SS+6 days	
555 556	Wall and Deck Curing	144 days 151 days	Tue 11/3/08 Tue 18/3/08		554SS+11 days	
557	Curing Trench Backfill	167 days	Tue 18/3/08		555SS+7 days 556SS+14 days	
558	I. Bay 56c - Bay 59 south	206 days	Fri 7/9/07	Sun 30/3/08	•	
559	Haul access	10 days	Fri 7/9/07	Sun 16/9/07		
560	Flow diversion	10 days	Mon 5/11/07		561SS-10 days	
561	Excavation (including contamination material)	66 days	Thu 15/11/07	Sat 19/1/08	559	
562	Granular Bedding	64 days	Sun 25/11/07		561SS+10 days	
563	Base Slab (except Bay 59)	79 days	Sat 1/12/07		562SS+6 days	
564	Wall and Deck (except Bay 59)	82 days	Wed 12/12/07		563SS+11 days	
565	Curing (except Bay 59)	89 days	Wed 19/12/07		564SS+7 days	
566 567	Trench Backfill (except Bay 59)	89 days	Wed 2/1/08 Mon 22/12/08		565SS+14 days	
568	m. Bay 59 north Base Slab	41 days 10 days	Mon 22/12/08 Mon 22/12/08	Sat 31/1/09 Wed 31/12/08		0 days
569	Wall and Deck	7 days	Thu 1/1/09	Wed 31/12/00		0 days
570	Curing	14 days	Thu 8/1/09			0 days
571	Trench Backfill	10 days	Thu 22/1/09	Sat 31/1/09		0 days
572	n. Bay 60 - Bay 67	218 days	Mon 17/9/07	Mon 21/4/08		
573	Haul access	10 days	Mon 17/9/07	Wed 26/9/07		
574	Flow diversion	10 days	Wed 10/10/07		575SS-10 days	
575	Excavation and Handling of Type 3 Contaminated Mate	116 days	Sat 20/10/07	Tue 12/2/08		
576 577	Granular Bedding	116 days	Tue 30/10/07		575SS+10 days	
578	Base Slab Wall and Deck	127 days 130 days	Mon 5/11/07 Fri 16/11/07		576SS+6 days 577SS+11 days	
579	Curing	137 days	Fri 23/11/07		578SS+7 days	
580	Trench Backfill	137 days	Fri 7/12/07		579SS+14 days	
581	o. Bay 68 - Bay 70	374 days	Thu 27/9/07	Sat 4/10/08		
582	Haul access	5 days	Thu 27/9/07	Mon 1/10/07	573	
583	Flow diversion	10 days	Fri 4/1/08		584SS-10 days	
584	Excavation and Handling of Type 3 Contaminated Material	201 days	Mon 14/1/08	Fri 1/8/08	175	
585	Granular Bedding	197 days	Thu 24/1/08	Thu 7/8/08	584SS+10 days	
586	Base Slab	201 days	Wed 30/1/08		585SS+6 days	
587	Wall and Deck	204 days	Sun 10/2/08		586SS+11 days	
588	Curing	211 days	Sun 17/2/08		587SS+7 days	
589	Trench Backfill	217 days	Sun 2/3/08		588SS+14 days	
590 591	p. Bay 71 to Bay 73 Excavation	98 days 30 days	Thu 11/12/08 Thu 11/12/08	Wed 18/3/09 Fri 9/1/09		O days
592	Granular Bedding	30 days	Wed 17/12/08		591SS+6 days	O days O days
593	Base Slab	45 days	Sat 27/12/08		592SS+10 days	0 days
594	Wall and Deck	45 days	Sat 10/1/09		593SS+14 days	- O-days)
595	Curing	45 days	Sat 24/1/09	Mon 9/3/09	594SS+14 days	
596	Trench Backfill	34 days	Fri 13/2/09	Wed 18/3/09	595SS+20 days	
597	q. Bay 74 and Bay 75	71 days	Wed 24/6/09			
598	Excavation	14 days	Wed 24/6/09	Tue 7/7/09		
599	Granular Bedding	5 days	Wed 8/7/09	Sun 12/7/09		
600 601	Base Slab Wall and Deck	14 days	Mon 13/7/09 Mon 27/7/09	Sun 26/7/09 Sun 9/8/09		
602	Curing	14 days	Mon 10/8/09	Sun 9/8/09 Sun 23/8/09		
603	Trench Backfill	10 days	Mon 24/8/09	Wed 2/9/09		
604	r.Bay 76 - Bay 84	450 days	Mon 14/1/08	Tue 7/4/09		
605	Haul access	5 days	Fri 17/10/08		609SS-15 days	321 days)
606	Flow diversion	10 days	Wed 22/10/08	Fri 31/10/08	609SS-10 days	311 days)
607	Handling of Type 3 Contaminated Material	78 days	Mon 14/1/08	Mon 31/3/08		
608	Demolition of existing footbridge (Bay 83)	7 days	Mon 17/11/08	Sun 23/11/08		24 days
609	Excavation Cropules Redding	120 days	Sat 1/11/08	Sat 28/2/09		0 days
610 611	Granular Bedding Base Slab	116 days	Tue 11/11/08 Mon 17/11/08		609SS+10 days 610SS+6 days	O days
612	Wall and Deck	116 days 112 days	Fri 28/11/08		611SS+11 days	0 days
613	Curing	112 days	Fri 5/12/08		612SS+7 days	0 days
614	Trench Backfill	110 days	Fri 19/12/08		613SS+14 days	52 days)
		-				
Project: Page: 9	PROGRAMME OF WORKS		Progr		Summary	
ı aye. 9	Critical Task		Milest	tone	Rolled Up 1	Up Task Rolled Up Milestone Split Project Summary Deadline
	-					

j	TI. N	D	Ott	Finish Doubles	lana
ID	Task Name	Duration	Start	Finish Predecessors	
316	a. Bay 33- Bay39 (Ch436-Ch535)	155 days	Mon 6/4/09	Mon 7/9/09 499	
617	b. Bay 40 - Bay 45 (CH535-Ch625)	108 days	Sat 23/5/09	Mon 7/9/09 520	
618	c. Bay 46 - Bay 53 (Ch625-Ch738)	308 days	Tue 4/11/08	Mon 7/9/09 548	0 days
619	e. Bay 57 - Bay 59 (Ch881-Ch925)	229 days	Thu 22/1/09	Mon 7/9/09 570	0 days
620	f. Bay 60 - Bay 66 (Ch925-Ch1038)	170 days	Sat 5/7/08	Sun 21/12/08 579,399	
621	g. Bay 67 - Bay 70 (Ch1038-Ch1146)	98 days	Mon 15/9/08	Sun 21/12/08 588	
622	h. Bay 71 - Bay 82 (Ch1165-Ch1301)	158 days	Fri 3/4/09	Mon 7/9/09 613	
623	7. Granite Stone Facing	237 days	Sat 16/8/08	Thu 9/4/09	
624	Bay 54 to Bay 56 (Ch738 - Ch881)	78 days	Sat 16/8/08	Sat 1/11/08 556	
625	Bay 67, Bay 68 and Bay 69a (Ch1038 -Ch1108)	23 days	Mon 15/9/08	Tue 7/10/08 588	
626 627	Granite facing stone Bay 72 (Ch1146 to Ch1165)	14 days	Tue 10/3/09	Mon 23/3/09 595	
	Bay 83 and Bay 84 (Ch1301-Ch1330)	7 days	Fri 3/4/09	Thu 9/4/09 613	
628 629	8. Ramp No. 2 (Ch752 - Ch800, Bay 55)	17 days	Sat 16/8/08	Mon 1/9/08	
630	General fill	5 days	Sat 16/8/08	Wed 20/8/08 556	
631	Granular fill and blinding	2 days	Thu 21/8/08 Sat 23/8/08	Fri 22/8/08 629 Mon 1/9/08 630	
632	Concrete pavement	10 days	Mon 15/9/08	Wed 15/10/08	
633	9. Ramp No. 1 (Ch1052 - Ch1103, Bay 68) base slab	31 days 12 days	Mon 15/9/08	Fri 26/9/08 588,587SS+21 days,565	
634	Wall	10 days	Sat 27/9/08	Mon 6/10/08 633	
635	General fill	5 days	Tue 7/10/08	Sat 11/10/08 634	71 days
636	Granular fill and blinding	2 days	Sun 12/10/08	Mon 13/10/08 635	327 days 327 days
637	Concrete pavement	2 days	Tue 14/10/08	Wed 15/10/08 636	327 days 327
638	10. Pedestrian Temporary Crossing at Bay 83 (Ch1306)	150 days	Tue 11/11/08	Thu 9/4/09	
639	11.1 Construction	5 days	Tue 11/11/08	Sat 15/11/08 609SS+10 days	24 days
640	11.2 Pedestrian diversion	1 day	Sun 16/11/08	Sun 16/11/08 639	24 days
641	11.3 Demolition of Temp crossing	2 days	Wed 8/4/09	Thu 9/4/09 614	
642	11. Retaining Wall RW1 (Ch430-Ch490)	173 days	Thu 1/11/07	Mon 21/4/08	
643	Excavation	26 days	Thu 1/11/07	Mon 26/11/07	
644	Granular bedding	7 days	Tue 27/11/07	Mon 3/12/07 643	
645	Base slab	24 days	Tue 4/12/07	Thu 27/12/07 644	
646	Wall	56 days	Fri 28/12/07	Thu 21/2/08 645	
647	Curing	14 days	Fri 22/2/08	Thu 6/3/08 646	
648	Backfilling (including sub-soil drain and catchpit)	46 days	Fri 7/3/08	Mon 21/4/08 647	
649	12. Filling in Platform	504 days	Tue 22/4/08	Mon 7/9/09	
650	a. Bay 33- Bay39 (Ch436-Ch535)	25 days	Mon 6/4/09	Thu 30/4/09 499	
651	b. Bay 40 - Bay 43 (CH535-Ch625)	25 days	Wed 15/7/09	Sat 8/8/09 513	
652	c. Bay 44 - Bay 53 (Ch625-Ch738)	28 days	Sat 23/5/09	Fri 19/6/09 520	
653	d. Bay 54 - Bay 55 (Ch738-Ch800)	19 days	Mon 15/9/08	Fri 3/10/08 557,631FF	
654 655	e. Bay 56c - Bay 59 (Ch844-Ch925)	21 days	Sun 1/2/09	Sat 21/2/09 566,571	0 days
656	f. Bay 60 - Bay 66 (Ch925-Ch1038)	41 days	Tue 22/4/08	Sun 1/6/08 580	
657	g. Bay 67 - Bay 70 (Ch1038-Ch1146) h. Bay 71 - Bay 73 (Ch1146-CH1180)	10 days	Sun 5/10/08 Thu 19/3/09	Tue 14/10/08 589 Mon 23/3/09 596	days
658	i. Bay 71 - Bay 73 (CH1146-CH1160)	5 days	Thu 19/3/09	Mon 7/9/09 603	
659	j. Bay 76 - Bay 84 (Ch1195-Ch1330)	7 days	Wed 8/4/09	Tue 14/4/09 614	
660	13. Drainage works	484 days	Fri 2/5/08	Fri 28/8/09	
661	13.1 storm drain with manhole	469 days	Fri 2/5/08	Thu 13/8/09	
662	a. Bay 33- Bay39 (Ch436-Ch535)	30 days	Thu 16/4/09	Fri 15/5/09 650SS+10 days	
663	b. Bay 40 - Bay 45 (CH535-Ch625)	20 days	Sat 25/7/09	Thu 13/8/09 651SS+10 days	
664	c. Bay 46 - Bay 53 (Ch625-Ch738)	20 days	Tue 2/6/09	Sun 21/6/09 652SS+10 days	
665	d. Bay 54 - Bay 55 (Ch738-Ch800)	20 days	Thu 25/9/08	Tue 14/10/08 653SS+10 days	
666	e. Bay 56c - Bay 59 (Ch844-Ch925)	30 days	Wed 11/2/09	Thu 12/3/09 654SS+10 days,320FF	
667	f. Bay 60 - Bay 66 (Ch925-Ch1038)	60 days	Fri 2/5/08	Mon 30/6/08 655SS+10 days	
668	g. Bay 67 - Bay 70 (Ch1038-Ch1146)	20 days	Wed 15/10/08	Mon 3/11/08 656SS+10 days	308-days)
669	h. Bay 71 - Bay 73 (Ch1146-CH1180)	10 days	Tue 24/3/09	Thu 2/4/09 657	
670	i. Bay 74 - Bay 84 (Ch1180-Ch1330)	20 days	Sat 18/4/09	Thu 7/5/09 659SS+10 days,641	
671	13.2. surface drain	453 days	Mon 2/6/08	Fri 28/8/09	
672	a. Bay 33- Bay39 (Ch436-Ch535)	45 days	Fri 1/5/09	Sun 14/6/09 650	
673	b. Bay 40 - Bay 45 (CH535-Ch625)	20 days	Sun 9/8/09	Fri 28/8/09 651	
674	c. Bay 46 - Bay 53 (Ch625-Ch738)	45 days	Sat 20/6/09	Mon 3/8/09 652	
675	d. Bay 54 - Bay 55 (Ch738-Ch800)	45 days	Sat 4/10/08	Mon 17/11/08 653	ays
676	e. Bay 56c - Bay 59 (Ch844-Ch925)	45 days	Sun 22/2/09	Tue 7/4/09 654	
677	f. Bay 60 - Bay 66 (Ch925-Ch1038)	45 days	Mon 2/6/08	Wed 16/7/08 655	
678	g. Bay 67 - Bay 71 (Ch1038-Ch1146)	45 days	Wed 15/10/08	Fri 28/11/08 656	261 days
679	h. Bay 72 - Bay 73 (Ch1146-CH1180)	30 days	Tue 2/6/09	Wed 1/7/09 685	
680	h. Bay 74 - Bay 84 (Ch1180-Ch1330)	21 days	Wed 15/4/09	Tue 5/5/09 659	
681	14. Roads and paving	172 days	Fri 13/3/09	Mon 31/8/09	
682	a. Ch800-Ch881(Bay 56a to Bay 56c)	60 days	Fri 3/7/09	Mon 31/8/09 683	
683	b. Ch881-CH1037 (Bay57 to Bay 66)	52 days	Tue 12/5/09	Thu 2/7/09 684,667	
684	c. CH1037-CH1146 (Bay 67 to Bay 70)	60 days	Fri 13/3/09	Mon 11/5/09 666	
	PROGRAMME OF WORKS 0 of 16 Task Critical Task		Progres Milesto		

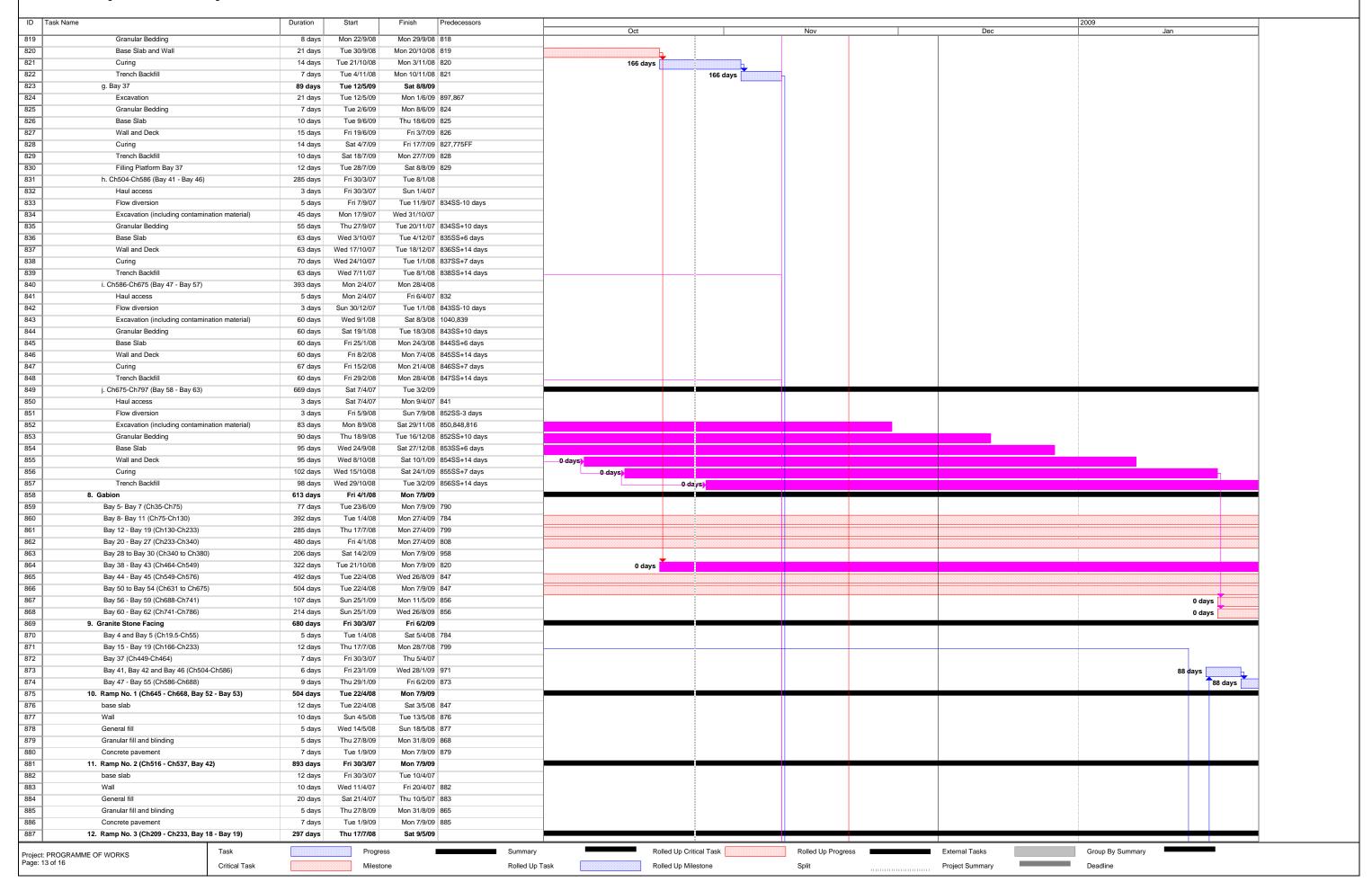
Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,



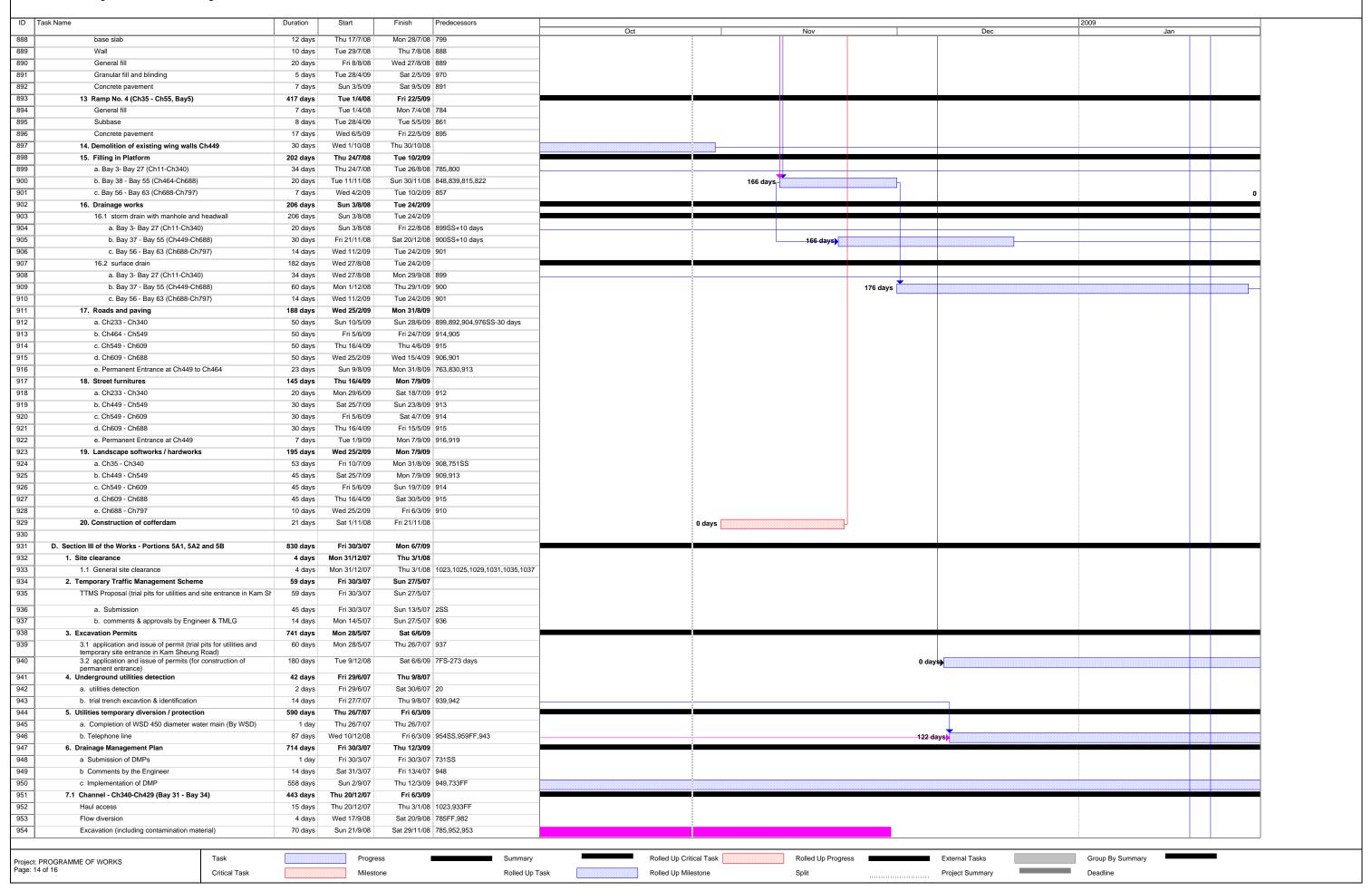
CHIT CHEUNG CONSTRUCTION CO., LTD. DATE: Oct 2008

ID Tasi	k Name	Duration	Start	Finish	Predecessors					2009	
752	15. Modification to invert level of box culvert at Kam Sheun		Fri 19/6/09	Sun 2/8/09		Oct	Nov		Dec	Jan	
	15. modification to invest level of box curvest at Nam Sheun	45 days	111 13/0/03	Juli 2/0/09	020,000						
753 754	C2. Portion 5 and 5C	893 days	Fri 30/3/07	Mon 7/9/09							
755	1. Site clearance	90 days	Thu 20/9/07	Tue 18/12/07		-					
756	1.1 General clearance	90 days	Thu 20/9/07		36,226SS+75 days,1017,1019	1					
757	2. Temporary Traffic Management Scheme	59 days	Fri 30/3/07	Sun 27/5/07							
758	TTMS Proposal (trial pits for utilities and site entrance in Ka	59 days	Fri 30/3/07	Sun 27/5/07							
759	a. Submission	45 days	Fri 30/3/07	Sun 13/5/07	2SS						
760	b. comments & approvals by Engineer & TMLG	14 days	Mon 14/5/07	Sun 27/5/07	759	-					
761	3. Excavation Permits	804 days	Mon 28/5/07	Sat 8/8/09							
762	3.1 application and issue of permit (trial pits for utilities and temporary site entrance in Kam Sheung Road)	60 days	Mon 28/5/07	Thu 26/7/07	760						
763	3.2 application and issue of permits (for construction of	180 days	Tue 10/2/09	Sat 8/8/09	7FS-210 days						
764	permanent entrance) 4. Underground utilities detection	42 days	Fri 29/6/07	Thu 9/8/07							
765	a. utilities detection	28 days	Fri 29/6/07	Thu 26/7/07							
766	b. trial trench excavtion & identification	14 days	Fri 27/7/07	Thu 9/8/07	762,765	-					
767	5. Utilities temporary diversion / protection	223 days	Fri 30/3/07	Wed 7/11/07							
768	a. CLP overhead cables at CH 100 ~ CH 120	90 days	Fri 10/8/07	Wed 7/11/07							
769	b. CLP overhead cables at CH 530 ~ CH 550	90 days	Fri 10/8/07	Wed 7/11/07							
770	c. CLP overhead cables at CH 670 ~ CH 690	90 days	Fri 10/8/07	Wed 7/11/07	766						
771 772	d. Gas main at Kam Sheung Road Drainage Management Plan	84 days	Fri 30/3/07	Thu 21/6/07 Wed 18/2/09							
773	5.1 Submission of DMPs	692 days 1 day	Fri 30/3/07 Fri 30/3/07	Fri 30/3/07							
774	5.2 Comments by the Engineer	14 days	Sat 31/3/07	Fri 13/4/07		-					
775	5.3 Implementation of DMP	551 days		Wed 18/2/09							
776	7. Channel and Crossings	863 days	Fri 30/3/07	Sat 8/8/09							
777	a. Ch11-Ch130 (Bay 4 - Bay 11)	229 days	Thu 23/8/07	Mon 7/4/08		1					
778	Haul access	5 days	Thu 23/8/07	Mon 27/8/07							
779	Flow diversion	10 days	Tue 1/1/08		780SS-10 days						
780	Excavation (including contamination material)	44 days	Fri 11/1/08		768,778,809						
781 782	Granular Bedding Base Slab (except south of Bay 6 and north of Bay 7)	40 days	Mon 21/1/08 Sun 27/1/08		780SS+10 days 781SS+6 days	-					
		-			-						
783	Wall and Deck (except south of Bay 6 and north of Bay	37 days	Sun 10/2/08	Mon 17/3/08	782SS+14 days						
784	Curing	44 days	Sun 17/2/08	Mon 31/3/08	783SS+7 days						
785	Trench Backfill	37 days	Sun 2/3/08		784SS+14 days						
786	b. South of Bay 6 and north of Bay 7	53 days	Thu 21/5/09	Sun 12/7/09							
787	Excavation	4 days	Thu 21/5/09	Sun 24/5/09							
788 789	Granular Bedding Base Slab and Wall	5 days	Mon 25/5/09 Sat 30/5/09	Fri 29/5/09 Mon 8/6/09		-					
789	Curing	10 days 14 days	Tue 9/6/09	Mon 8/6/09 Mon 22/6/09		-					
791	Trench Backfill	20 days	Tue 23/6/09	Sun 12/7/09		-					
792	c. Ch130-Ch233 (Bay 12 - Bay 19)	341 days	Sat 18/8/07	Wed 23/7/08		1					
793	Haul access	5 days	Sat 18/8/07	Wed 22/8/07		1					
794	Flow diversion	10 days	Sat 29/3/08		795SS-10 days	1					
795	Excavation (including contamination material)	33 days	Tue 8/4/08	Sat 10/5/08							
796	Granular Bedding	29 days	Fri 18/4/08		795SS+10 days						
797 798	Base Slab Wall and Deck	50 days	Thu 24/4/08		796SS+6 days	-					
798	Curing	56 days 63 days	Thu 8/5/08 Thu 15/5/08		797SS+14 days 798SS+7 days	-					
800	Trench Backfill	56 days	Thu 15/5/08		799SS+14 days	-					
801	d. Ch233-Ch340 (Bay 20 - Bay 30)	151 days	Mon 13/8/07	Thu 10/1/08		-					
802	Haul access	5 days			804SS-15 days	-					
803	Flow diversion	10 days	Sat 18/8/07	Mon 27/8/07	802	=					
804	Excavation (including contamination material)	60 days	Tue 28/8/07	Fri 26/10/07							
805	Granular Bedding	70 days	Fri 7/9/07		804SS+10 days						
806	Base Slab	78 days	Thu 13/9/07		805SS+6 days						
807 808	Wall and Deck	85 days	Thu 27/9/07		806SS+14 days	-					
808	Curing Trench Backfill	92 days 85 days	Thu 4/10/07 Thu 18/10/07		807SS+7 days 808SS+14 days	-					
810	e. North of Bay 38 and Bay 39	95 days	Thu 5/6/08	Sun 7/9/08		-					
811	Excavation	28 days	Thu 5/6/08		848SS+97 days	-					
812	Granular Bedding	10 days	Thu 3/7/08	Sat 12/7/08		+					
813	Base Slab and Wall	24 days	Sun 13/7/08	Tue 5/8/08	812	1					
814	Curing	14 days	Wed 6/8/08	Tue 19/8/08		1					
815	Trench Backfill	17 days	Wed 20/8/08	Fri 5/9/08							
816	Forming site access at north of Bay 38 and Bay 39	2 days	Sat 6/9/08	Sun 7/9/08							
817	f. South of Bay 38 and Bay 39, and Bay 40	64 days	Mon 8/9/08	Mon 10/11/08							J
	1										
	OGRAMME OF WORKS		Progre	ess I	Summary	Rolled Up Cr	itical Task Rolled Up Prog	ress	External Tasks	Group By Summary	
age: 12 of	16 Critical Task		Milest	one	Rolled Up	Task Rolled Up Mi	lestone Split		Project Summary	Deadline	
	<u> </u>										

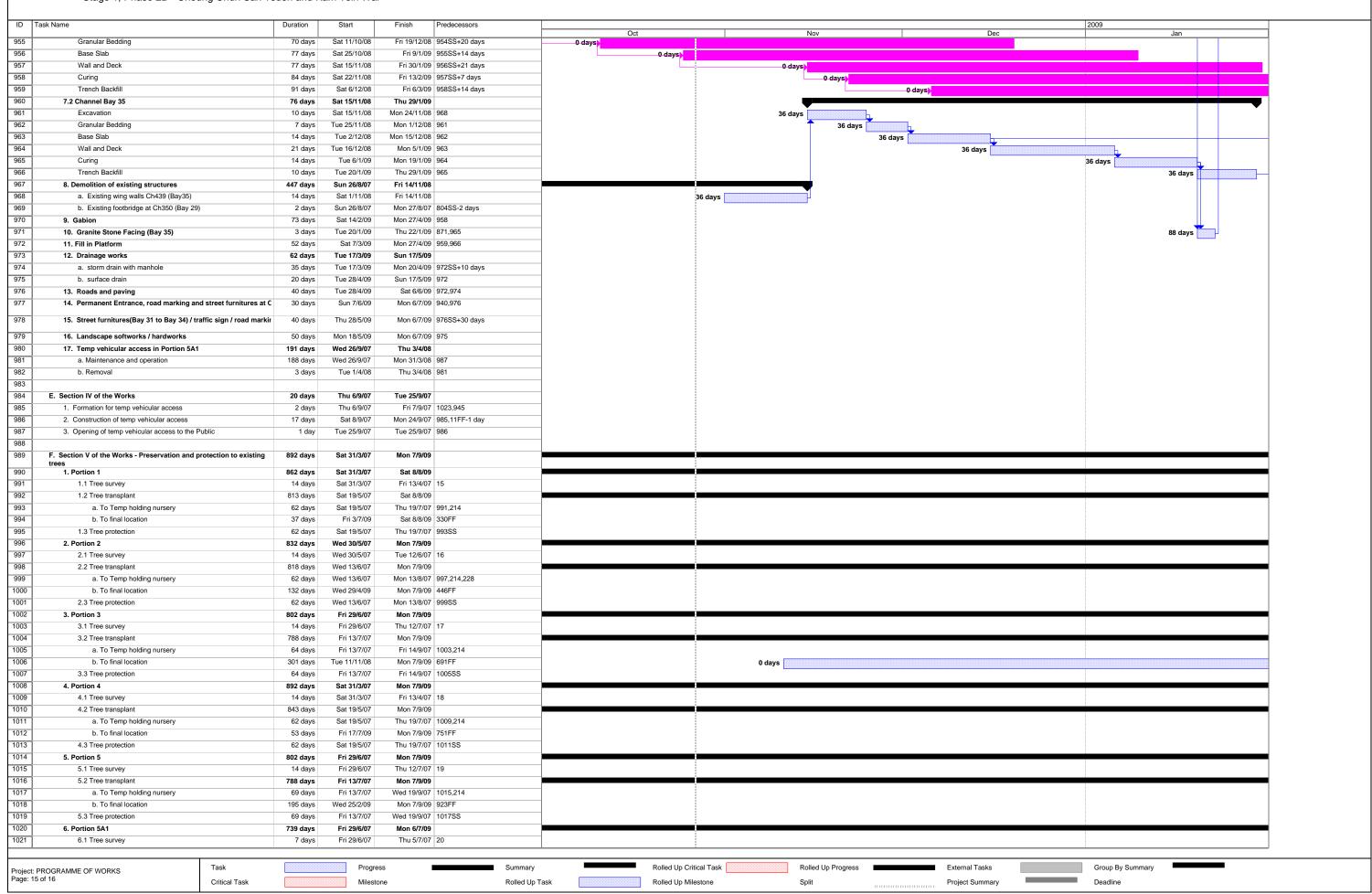
Contract Title: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements,



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



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



ID	Task Name	Duration	Start	Finish	Predecessors				2009
						Oct	Nov	Dec	Jan
1022	6.2 Tree transplant	732 days	Fri 6/7/07	Mon 6/7/09					
1023	a. To Temp holding nursery	62 days	Fri 6/7/07	Wed 5/9/07	1021,214	1			
1024	b. To final location	61 days	Thu 7/5/09	Mon 6/7/09	979FF				
1025	6.3 Tree protection	62 days	Fri 6/7/07	Wed 5/9/07	1023SS				
1026	7. Portion 5A2	739 days	Fri 29/6/07	Mon 6/7/09					
1027	7.1 Tree survey	14 days	Fri 29/6/07	Thu 12/7/07	21				
1028	7.2 Tree transplant	725 days	Fri 13/7/07	Mon 6/7/09					
1029	a. To Temp holding nursery	62 days	Fri 13/7/07	Wed 12/9/07	1027,214				
1030	b. To final location	61 days	Thu 7/5/09	Mon 6/7/09	979FF				
1031	7.3 Tree protection	62 days	Fri 13/7/07	Wed 12/9/07	1029SS				
1032	8. Portion 5B	630 days	Tue 16/10/07	Mon 6/7/09					
1033	8.1 Tree survey	14 days	Tue 16/10/07	Mon 29/10/07	22				
1034	8.2 Tree transplant	616 days	Tue 30/10/07	Mon 6/7/09					
1035	a. To Temp holding nursery	62 days	Tue 30/10/07	Sun 30/12/07	1033,214				
1036	b. To final location	61 days	Thu 7/5/09	Mon 6/7/09	979FF				
1037	8.3 Tree protection	62 days	Tue 30/10/07	Sun 30/12/07	1035SS				
1038						1			
1039	G. Berthing Area	545 days	Wed 12/9/07	Mon 9/3/09					
1040	1. Construction of Loading Facilities	27 days	Wed 12/9/07	Mon 8/10/07	162	1			
1041	2. Removal of Loading Facilities	2 days	Sun 1/3/09	Mon 2/3/09	609	1			
1042	3. Reinstatement of Berthing Area	7 days	Tue 3/3/09	Mon 9/3/09	1041	1			

CHIT CHEUNG CONSTRUCTION CO., LTD. DATE: Oct 2008



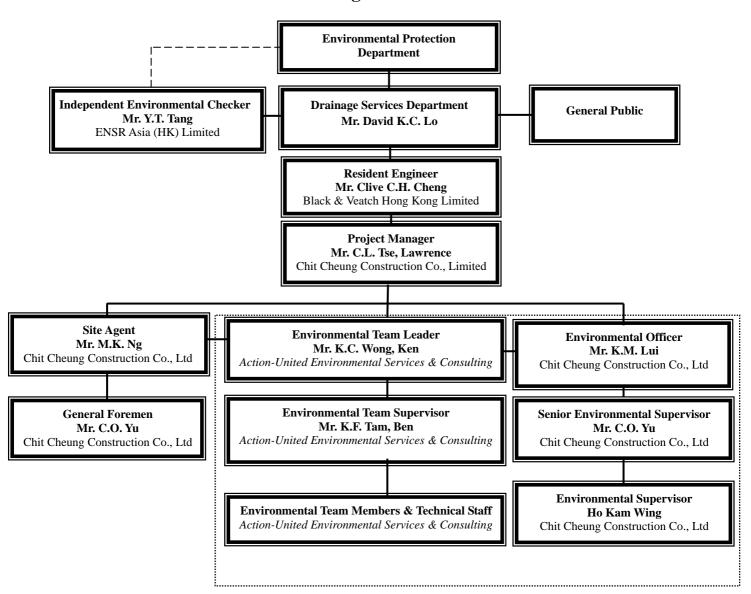


APPENDIX C

ENVIRONMENTAL ORGANIZATION STRUCTURE



Environmental Organization Structure



Contractor's Environmental Team (CET)



KT15 – Monthly EM&A Report for October 2008 (No. 16)

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. Lawrence TSE	9752-0748	2479-1365
CCC	Site Agent	Mr. M.K. NG	6603-9711	2479-1365
CCC	Site Engineer	Mr. Jimmy CHAN	9234-8632	2479-1365
CCC	Environmental Officer	Mr. LUI Kam Man	9257-9111	2479-1365
CCC	Senior Environmental Supervisor	Mr. YU Chor-on	9026-9501	2479-1365
CCC	Environmental Supervisor	Ho Kam Wing	9016-0592	2479-1365
CCC	Safety Officer	Mr. SHEA Yan Keung	6086-4658	2479-1365
AUES	Environmental Team Leader	Ken Wong	2959-6059	2959-6079
AUES	Environmental Team Supervisor	Ben Tam	2959-6059	2959-6079
AUES	Ecologist	Vincent Lai	9406-9784	2959-6079
AUES	Decontamination Specialist	FN Wong	2959-6059	2959-6079

Legend:

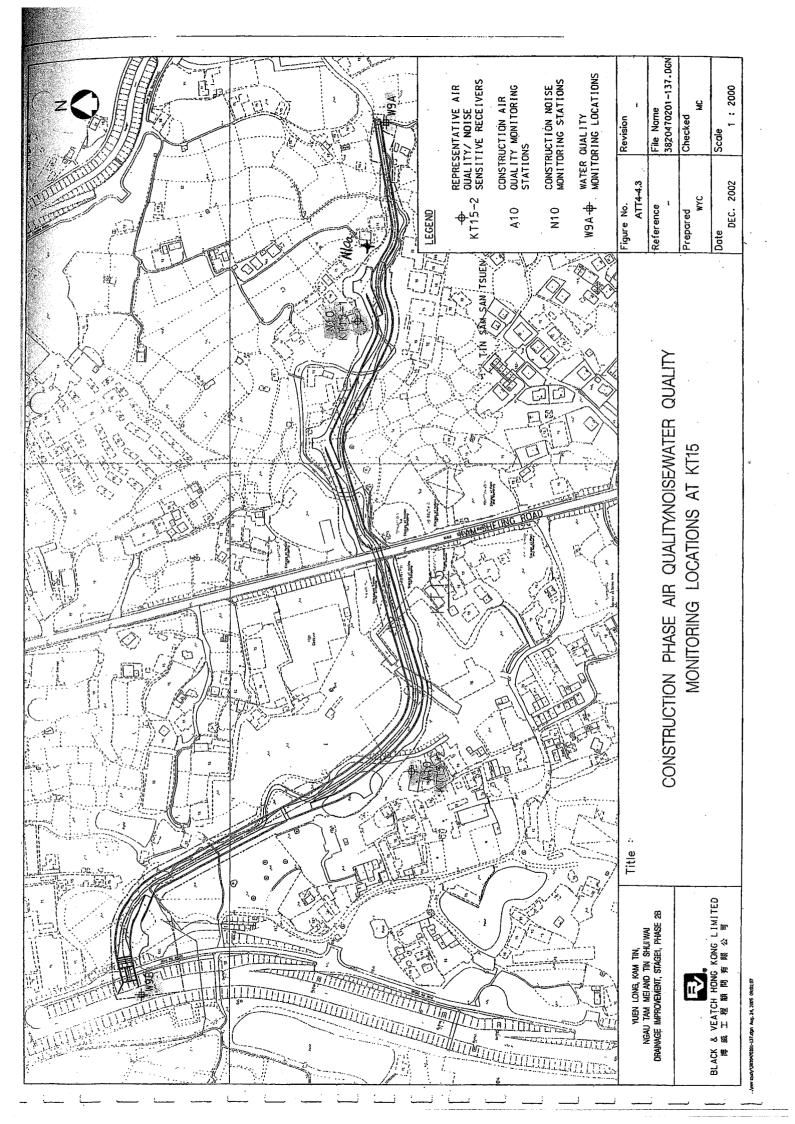
DSD (Employer) B&V (Engineer) Drainage Services Department Black & Veatch Hong Kong Limited Chit Cheung Construction Company Limited. ENSR Asia (HK) Ltd. CCC (Contractor) ENSR (IEC) AUES (ET)

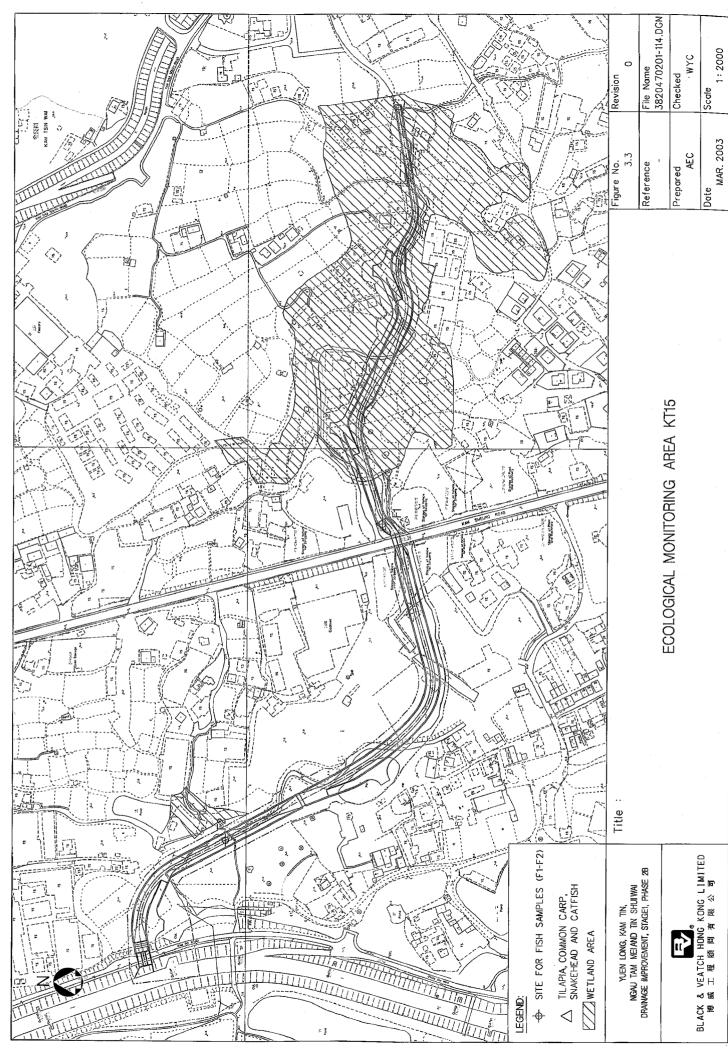
Action-United Environmental Services & Consulting



APPENDIX D

LOCATIONS OF DESIGNATED MONITORING STATION/LOCATIONS/AREA





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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		
Exeedance 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 Fexceedance continues, arrange meeting with IEC and Engineer T. 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 if problem still not under control 5. Stop the relevant portion of works as determined by the Engineer until the exceedance is abated		

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





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	1	Contract
	Repeat in-situ measurement to	Discuss with ET and	Engineer 1. Discuss with IEC on the	Contractor 1. Inform Engineer and
ACTION LEVEL (being exceeded by one sampling day)	confirm findings 2. Identify source(s) of impact 3. Inform IEC and Contractor 4. Check monitoring data, all plant, equipment and Contractor's working methods 5. Discuss mitigation measures IEC and Contractor 6. Repeat measurement on next day of exceedance	Contractor on the mitigation measures 2. Review proposals on mitigation measures submitted by Contractor and advice Engineer accordingly 3. Assess the effectiveness of the implemented mitigation measures	proposed mitigation measures 2. Make agreement on the mitigation measures to be implemented	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 Contractor and propose mitigation measures to IEC and Engineer 6. Implement the agreed mitigation measures
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	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 IEC and propose mitigation measures to IEC and Engineer within 3 working days 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	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, IEC and Engineer and propose mitigation measures to IEC and Engineer within 3 working days Implement the agreed mitigation measures
LIMIT LEVEL (being exceeded by more than one sampling days)	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform Contractor, Engineer, IEC and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with 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 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	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, IEC and Engineer and propose mitigation measures to IEC and Engineer within 3 working days Propose mitigation measures to Engineer within 3 working days Implement the agreed mitigation measures; As directed by Engineer, to slow down or to stop all or part of the construction activities

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





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

KT15 – Monthly EM&A Report for October 2008 (No. 16)



APPENDIX F

EQUIPMENT CALIBRATION CERTIFICATES

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 October 2008 (No. 16)

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	Greasby Anderson GMWS2310 High Volume Sampler	08 Sep 08	08 Nov 08
2		EQ094 - Sibata LD-3 Laser Dust Meter	20 Jun 08	19 Jun 09
3		EQ096 - Sibata LD-3 Laser Dust Meter	20 Jun 08	19 Jun 09
4	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	22 Apr 08	22 Apr 09
5		Bruel & Kjaer 2238 Integrating Sound Level Meter	22 Apr 08	22 Apr 09
6*	Water	YSI Multimeter YSI 550A (Serial No. 05F2063AZ)	17 Oct 08	17 Dec 08
7*		Hanna pH Meter HI98107 (Serial No. S388220)	26 Sep 08	26 Nov 08
8		Turbidimeter HACH 2100p (Serial No. 950900008735)	01 Sep 08	01 Dec 08
9*		Hand refractometer ATAGO (Serial No. 289468)	17 Oct 08	17 Dec 08

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

CERTIFICATE OF ANALYSIS

HK0817539

17/10/2008 ACTION UNITED ENVIRO SERVICES Client Reference: Date of Issue:

Calibration of DO System

YSI Multimeter Item:

YSI 550A Model No.:

05F2063AZ Serial No.:

Equipment No.:

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

17 October, 2008 Date of Calibration:

Testing Results:

Expected Reading	Recording Reading
4.88 mg/L	4.76 mg/L
6.52 mg/L	6.38 mg/L
7.89 mg/L	7.86 mg/L
Allowing Deviation	±0.2 mg/L

Ms Wong Wai Man, Alice Laboratory Manager - Hong Kong

CERTIFICATE OF ANALYSIS

HK0815700

26/09/2008 ACTION UNITED ENVIRO SERVICES

Calibration of pH System

Client Reference:

Date of Issue: Client:

Batch:

HANNA pH Meter Item:

HI98107 Model No.: S388220 0800542 Equipment No.: Serial No.:

This meter was calibrated in accordance with standard method APHA (19th Ed.) 4500-H*B Calibration Method:

26 September, 2008 Date of Calibration:

Testing Results:

Expected Reading	Recording Reading
4.01 7.01 10.0	4.0 7.1 9.9
Allowing Deviation	± 0.2

Laboratory Manager - Hong Kong Ms Wong Wai Man, Alice

CERTIFICATE OF ANALYSIS

Date of Issue: Client: Batch:

HK0817540 17/10/2008 ACTION UNITED ENVIRO SERVICES

Calibration of Salinity System

Client Reference:

HAND REFRACTOMETER Item:

ATAGO Model No.:

289468 Serial No.:

EQ114 Equipment No.: This meter was calibrated in accordance with standard method APHA (19th Ed.) 2520 A and B Calibration Method:

17 October, 2008 Date of Calibration:

Testing Results:

Expected Reading	Recording Reading
10 g/L	10 g/L
20 g/L	19 g/L
30 g/L	28 g/L
40 g/L	38 g/L
Allowing Deviation	±10%

Laboratory Manager - Hong Kong Ms Wong Wai Main, Alice



KT15 - Monthly EM&A Report for October 2008 (No. 16)

APPENDIX G

IMPACT MONITORING SCHEDULES

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 October 2008 (No. 16)

Impact Monitoring Schedules in this Reporting Period

Date		Air Quality		Noise Leq 30min	Stream Water	Ecology Surveys
Bute		1-Hour TSP	24-Hour TSP	Troise Eeq Somm	Quality	Leology Bull veys
26-Sep-08	Fri				✓	
27-Sep-08	Sat					
28-Sep-08	Sun					
29-Sep-08	Mon	✓		✓		
30-Sep-08	Tue		✓		✓	
1-Oct-08	Wed					
2-Oct-08	Thu				✓	
3-Oct-08	Fri					
4-Oct-08	Sat					
5-Oct-08	Sun					
6-Oct-08	Mon	✓		✓	✓	
7-Oct-08	Tue					
8-Oct-08	Wed		✓			
9-Oct-08	Thu				✓	
10-Oct-08	Fri					
11-Oct-08	Sat					
12-Oct-08	Sun					
13-Oct-08	Mon	✓		✓	✓	
14-Oct-08	Tue		✓			
15-Oct-08	Wed				✓	
16-Oct-08	Thu					
17-Oct-08	Fri					
18-Oct-08	Sat	✓		✓		
19-Oct-08	Sun					
20-Oct-08	Mon		✓		✓	
21-Oct-08	Tue					✓
22-Oct-08	Wed				✓	
23-Oct-08	Thu					
24-Oct-08	Fri	✓		✓		
25-Oct-08	Sat		✓			

✓	Monitoring Day
	Sunday or Public Holiday

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 October 2008 (No. 16)

Impact Monitoring Schedules in the Next Reporting Period

Date		Air (Quality	Noise Leq 30min	Stream Water	Ecology Surveys
Date		1-Hour TSP	24-Hour TSP	Troise Leq 30mm	Quality	Leology Bull veys
26-Oct-08	Sun					
27-Oct-08	Mon				✓	
28-Oct-08	Tue					
29-Oct-08	Wed				✓	
30-Oct-08	Thu	✓		✓		
31-Oct-08	Fri		✓			
1-Nov-08	Sat					
2-Nov-08	Sun					
3-Nov-08	Mon				✓	
4-Nov-08	Tue		✓			
5-Nov-08	Wed	✓		✓	✓	
6-Nov-08	Thu					
7-Nov-08	Fri					
8-Nov-08	Sat					✓
9-Nov-08	Sun					
10-Nov-08	Mon		✓		✓	
11-Nov-08	Tue	✓		✓		
12-Nov-08	Wed				✓	
13-Nov-08	Thu					
14-Nov-08	Fri					
15-Nov-08	Sat		✓			
16-Nov-08	Sun					
17-Nov-08	Mon	✓		✓	✓	
18-Nov-08	Tue					
19-Nov-08	Wed				✓	
20-Nov-08	Thu					
21-Nov-08	Fri		✓			
22-Nov-08	Sat	✓		✓		
23-Nov-08	Sun					
24-Nov-08	Mon				✓	
25-Nov-08	Tue					

✓	Monitoring Day
	Sunday or Public Holiday



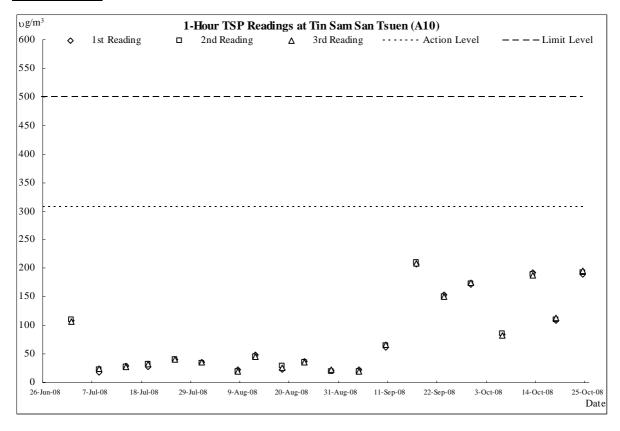
APPENDIX H

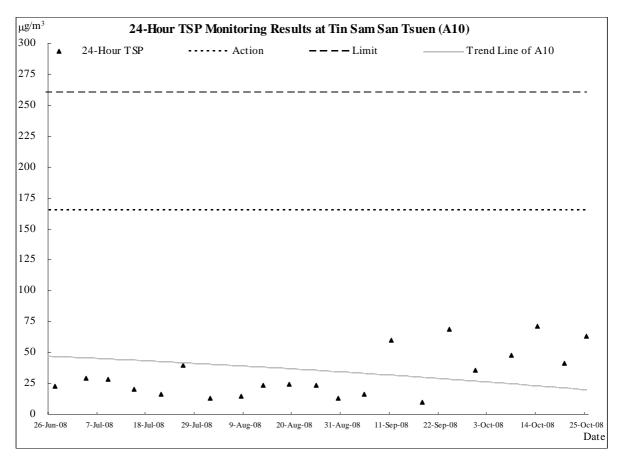
GRAPHICAL PLOTS OF AIR QUALITY, CONSTRUCTION NOISE AND STREAM WATER QUALITY MONITORING RESULTS



KT15 – Monthly EM&A Report for October 2008 (No. 16)

AIR QUALITY

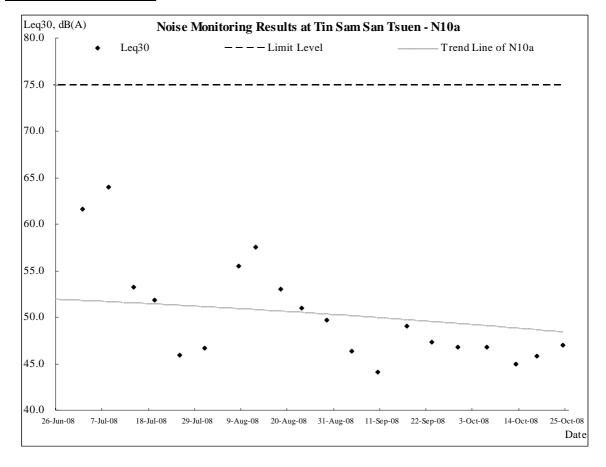






KT15 – Monthly EM&A Report for October 2008 (No. 16)

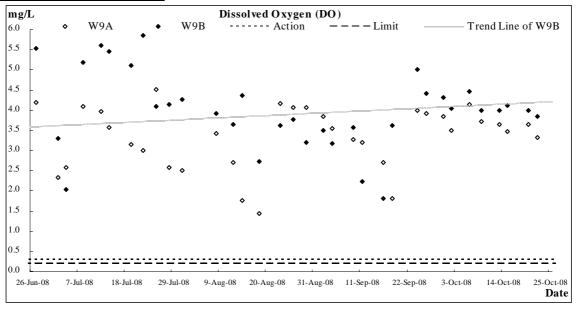
CONSTRUCTION NOISE

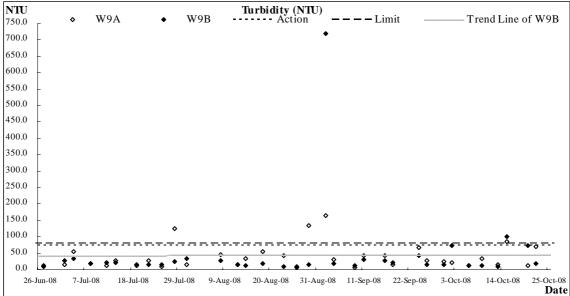


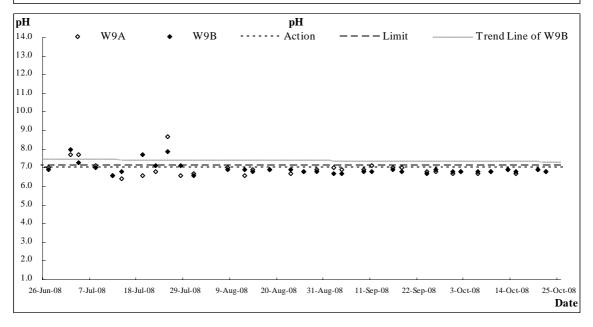




STREAM WATER QUALITY

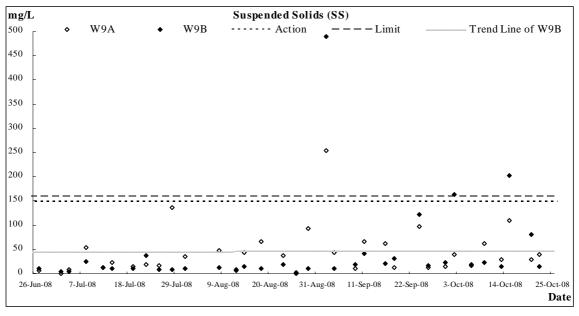


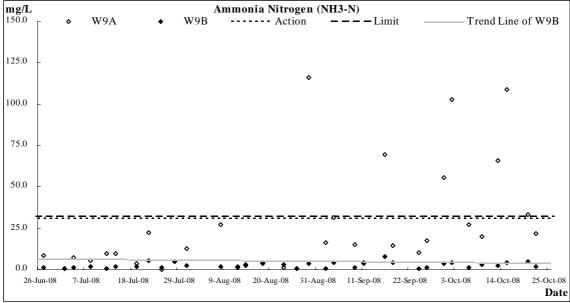


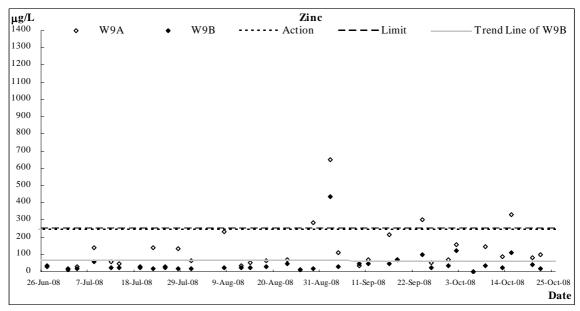




KT15 - Monthly EM&A Report for October 2008 (No. 16)







Note: Monitoring on 06 August 2008 was cancelled due to Tropical Cyclone Signal No. 8

Monitoring on 23 September 2008 was cancelled due to Tropical Cyclone, Heavy Rainfall and Thunderstorm Signal Warning.

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 October 2008 (No. 16)



Date	20	6-Sep-08															
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pН		SS	NH3-N	Zinc
W9A	13:40	0.18	27.3	27.3	3.91	2.02	48.9	49.1	27.7	27.1	0	0.0	6.80	6.80	12.0	17.6	55.0
W9A	13:40	0.18	27.3	21.3	3.94	3.93	49.3	49.1	26.4	27.1	0	0.0	6.80	0.80	12.0	17.6	33.0
W9B	12.50	0.26	27.8	27.9	4.44	4.42	55.7	55.5	14.8	15.0	0	0.0	6.90	<i>c</i> 00	17.0	1.2	24.0
Wab	13:50	0.26	27.8	27.8	4.41	4.43	55.2	55.5	15.2	15.0	0	0.0	6.90	6.90	17.0	1.3	24.0

Date	3(0-Sep-08															
Location	Time	Depth (m)	Ten	np (oC)	DO	DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity	pН		SS	NH3-N	Zinc
W9A	12.20	0.14	27.2	27.2	3.82	3.84	47.6	47.9	24.3	25.1	0	0.0	6.70	6.70	15.0	55.9	71.0
W9A	13:30 0.14	27.2	21.2	3.86	3.64	48.1	47.9	25.9	23.1	0	6.70	0.70	15.0	33.9	/1.0		
WOD	12.45	0.21	27.9	27.0	4.29	4.21	52.9	52.2	13.7	14.0	0	0.0	6.80	C 90	22.0	2.7	22.0
W9B	13:45	0.21	27.9	27.9	4.32	4.31	53.4	53.2	14.2	14.0	0	0.0	6.80	6.80	22.0	3.7	32.0

Date	2	-Oct-08															
Location	Time	Depth (m)	Ten	np (oC)	DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pН		SS	NH3-N	Zinc
W9A	12:35	0.13	27.6	27.6	3.48	3.51	43.7	44.3	21.6	21.5	0	0.0	6.80	6.80	39.0	103.0	159.0
W9A	12:33	0.13	27.6	27.0	3.53	5.51	44.8	44.3	21.4	21.3	0	0.0	6.80	0.80	39.0	103.0	139.0
W9B	12:50	0.28	28.1	28.1	4.06	4.05	49.1	48.9	72.6	72.8	0	0.0	6.80	6.80	164.0	4.5	121.0
W9D	12:30	0.28	28.1	26.1	4.04	4.03	48.7	46.9	72.9	72.8	0	0.0	6.80	0.80	104.0	4.3	121.0

Location	Time	Depth (m)	Temp	o (oC)	DO (ı	DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity	pН		SS	NH3-N	Zinc
W9A	12:45	0.17	27.6	27.6	4.17	1 15	52.0	51.7	10.3	10.9	0	0.0	6.70	6.70	10.0	27.4	<10
W9A	12:43	0.17	27.6	27.0	4.13	4.15	51.3	51.7	11.4	10.9	0	0.0	6.70	0.70	19.0	27.4	<10
W9B	13:00	0.31	28.2	28.2	4.48	4.46	56.9	565	12.8	13.1	0	0.0	6.80	6.80	17.0	1.1	<10
WAD	13:00	0.51	28.2	20.2	4.44	4.40	56.0	56.5	13.3	13.1	0	0.0	6.80	0.80	17.0	1.1	<10

Date	9	-Oct-08															
Location	Time	Depth (m)	Ten	np (oC)	DO	DO (mg/L)		DOS (%)		Turbidity (NTU)		Salinity		pН	SS	NH3-N	Zinc
WOA	09:45	0.14	27.3	27.3	3.71	3.72	46.1	46.3	32.9	32.5	0	0.0	6.80	6.80	63.0	20.2	143.0
W9A 0	09:43	0.14	27.3	21.3	3.73	3.72	46.5	40.3	32.1	32.3	0	0.0	6.80	0.80	63.0	20.2	143.0
WOD	00.55	0.29	27.1	27.1	3.97	2.00	49.8	50.1	12.8	12.0	0	0.0	6.80	C 90	22.0	2.0	27.0
W9B	09:55	5 0.28 27.1 27.1 4.01 3	3.99	50.4	50.1	13.2	13.0	0	0.0	6.80	6.80	22.0	3.0	37.0			



Date	1	3-Oct-08															
Location	Time	Depth (m)	Ten	np (oC)	DO	(mg/L)	DC	OS (%)	Turbidi	ity (NTU)	:	Salinity		pН	SS	NH3-N	Zinc
W9A	12:00	0.16	27.9	27.9	3.63	3.65	45.2	45.5	17.1	16.8	0	0.0	6.90	6.90	29.0	66.1	88.0
W9A	12:00	0.16	27.9	21.9	3.66	3.03	45.7	43.3	16.4	10.8	0	0.0	6.90	0.90	29.0	00.1	88.0
WOD	10.15	0.27	28.2	20.2	3.97	2.00	50.1.	50.9	8.2	0.5	0	0.0	6.90	<i>C</i> 00	15.0	2.4	22.0
W9B	12:15	0.27	28.2	28.2	4.01	3.99	50.8	50.8	8.7	8.5	0	0.0	6.90	6.90	15.0	2.4	23.0

Date	1:	5-Oct-08															
Location	Time	Depth (m)	Ten	np (oC)	DO	(mg/L)	DC	OS (%)	Turbid	ity (NTU)	:	Salinity		pН	SS	NH3-N	Zinc
W9A	11:50	0.13	27.8	27.8	3.44	3.46	43.7	44.0	86.9	86.2	0	0.0	6.70	6.70	110.0	109.0	334.0
W9A	11.50	0.13	27.8	27.0	3.48	3.40	44.2	44.0	85.4	00.2	0	0.0	6.70	0.70	110.0	109.0	334.0
WOD	12.05	0.20	28.2	20.2	4.13	4.12	53.1	52.0	97.2	00.6	0	0.0	6.80	6.80	203.0	4.4	111.0
W9B	12:05	0.30	28.2	28.2	4.1	4.12	52.7	52.9	102.0	99.6	0	0.0	6.80	0.80	203.0	4.4	111.0

Date	20	0-Oct-08															
Location	Time	Depth (m)	Ten	np (oC)	DO	(mg/L)	DC	OS (%)	Turbidi	ty (NTU)	:	Salinity		pН	SS	NH3-N	Zinc
W9A	13:10	0.14	27.4	27.4	3.67	3.65	46.8	46.5	12.6	12.9	0	0.0	6.90	6.90	28.0	33.1	84.0
W9A	13:10	0.14	27.4	27.4	3.62	3.03	46.2	40.3	13.1	12.9	0	0.0	6.90	0.90	28.0	33.1	84.0
W9B	13:25	0.22	27.8	27.8	3.98	4.00	49.8	50.1	72.1	71.8	0	0.0	6.90	6.90	80.0	1.6	42.0
WAR	15:25	0.22	27.8	21.8	4.02	4.00	50.3	30.1	71.4	/1.8	0	0.0	6.90	0.90	80.0	4.6	42.0

Date	22	2-Oct-08															
Location	Time	Depth (m)	Ten	np (oC)	DO	(mg/L)	DC	OS (%)	Turbidi	ity (NTU)	:	Salinity		pН	SS	NH3-N	Zinc
W9A	12:20	0.14	27.9	27.9	3.29	3.31	38.4	38.8	69.4	68.8	0	0.0	6.80	6.80	39.0	21.9	100.0
W9A	12:20	0.14	27.9	21.9	3.33	5.51	39.1	30.0	68.2	08.8	0	0.0	6.80	0.80	39.0	21.9	100.0
WOD	12.25	0.20	28.1	20.1	3.86	2.94	47.1	46.0	18.4	10.0	0	0.0	6.80	C 90	15.0	2.0	20.0
W9B	12:35	0.28	28.1	28.1	3.82	3.84	46.4	46.8	19.6	19.0	0	0.0	6.80	6.80	15.0	2.0	20.0



KT15 – Monthly EM&A Report for October 2008 (No. 16)

APPENDIX I

METEOROLOGICAL DATA IN THE REPORTING PERIOD





Meteorological Data Extracted from HKO in the Reporting Period

				Lau F	au Shan V	Veather Stat	ion
Date		Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-Sep-08	Fri	sunny periods/moderate	0.1	29.4	12.5	77.5	Е
27-Sep-08	Sat	sunny periods/cloudy/a few showers/moderate/fresh	Trace	27.5	12	73.5	E/NE
28-Sep-08	Sun	sunny periods/cloudy/a few showers/moderate/fresh	2.3	27.2	19.5	63	N/NE
29-Sep-08	Mon	fine/dry/moderate/fresh	2	26.9	17	62.5	N/NE
30-Sep-08	Tue	fine/dry/moderate	0	27.3	16	60	E/NE
1-Oct-08	Wed	Holiday					
2-Oct-08	Thu	sunny periods/moderate	3	27.9	9	68	E/NE
3-Oct-08	Fri	cloudy/overcast/rain/moderate/fresh/strong	2.4	27.6	17	70	Е
4-Oct-08	Sat	cloudy/scattered showers/squally thunderstorm/moderate/fresh	14	28.1	17	78	Е
5-Oct-08	Sun	cloudy/moderate/fresh	122.6	25	29.5	88.5	S/SE
6-Oct-08	Mon	cloudy/moderate/fresh	Trace	24	27.5	80.5	N/NW
7-Oct-08	Tue	Holiday					
8-Oct-08	Wed	cloudy/sunny periods/moderate/fresh	0.5	25	12	77	E/NE
9-Oct-08	Thu	sunny periods/cloudy/moderate/fresh	Trace	27.7	14	72	Е
10-Oct-08	Fri	fine/dry/moderate	0	28.3	10	70	E/SE
11-Oct-08	Sat	fine/dry/moderate/fresh	0	28.2	13.5	68.5	E/NE
12-Oct-08	Sun	cloudy/rain/fresh/strong	Trace	26.6	12	73	E/NE
13-Oct-08	Mon	cloudy/rain/fresh/strong	0.3	24.5	11	83	E/NE
14-Oct-08	Tue	cloudy/haze/sunny periods/moderate/fresh	Trace	25.6	13.5	75.5	E/NE
15-Oct-08	Wed	fine/dry/moderate/fresh	Trace	26.9	9	71	Е
16-Oct-08	Thu	fine/hazy/cloudy/moderate	0	27.4	12	71	E/SE
17-Oct-08	Fri	cloudy/rain/moderate/fresh	0.1	26.8	11.7	69.5	E/SE
18-Oct-08	Sat	sunny periods/cloudy/moderate/fresh	0	28.5	10.7	71.5	E/SE
19-Oct-08	Sun	fine/dry/moderate/fresh	1.6	28.6	9.5	66.2	E/SE
20-Oct-08	Mon	fine/dry/moderate/fresh	Trace	28.3	14.5	66.5	E/SE
21-Oct-08	Tue	fine/moderate	0	27.4	13.5	66.5	Е
22-Oct-08	Wed	fine/moderate	0	27	9	74	E/SE
23-Oct-08	Thu	fine/hot/haze/light winds	0	26.7	10.5	76.2	S/SE
24-Oct-08	Fri	cloudy/sunny intervals/moderate/fresh	0	28	11.5	68	E/NE
25-Oct-08	Sat	cloudy/sunny intervals/moderate/fresh	Trace	27.6	15.5	68	Е



KT15 – Monthly EM&A Report for October 2008 (No. 16)

APPENDIX J

ENVIRONMENTAL TEAM SITE INSPECTION CHECKLISTS



Projec	ct:	Contract No.: DC/2006/0 Yuen Long, Kam Tin, Ng Wai Drainage Improvem Cheung Chun San Tsue	jau Tam Mei ents, Stage	1, Phase 2B –	Inspected RE/RE's re	•	tive:	Mr. A.F.1	Ng	
Inspe	ction				IEC/IEC's r	epresenta	ative:			
Date:		2 October 2008			ETL/ ET's	represent	ative:	F.N.Won	g	
Time:		2:30 p.m.			Contractor	•	entative:	M.K.Ng/ľ		
					Checklist I	No.		KT15-02	1008	
PART		GENERAL INFORMAT		Environmental		EP-231/20	005/A			
Weath		Sunny	Fine °C	✓ Cloudy	Rainy					
Humid	erature:		Moderate	Low						
Wind:	•	✓ Strong	Breeze	Light	Calm					
PART	В:	SITE AUDIT								
				Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks	
Section		ater Quality								
1.01		ffluent discharge license ob		•	Ш	\checkmark	Ш	Ш	Ш	
1.02	Is the	effluent discharged in a e?	accordance	with the discharge		\checkmark				
1.03	Is the	discharge of turbid water av			\checkmark					
1.04		ere proper desilting facilit SS levels in effluent?	ies in the d	rainage systems to) [\checkmark				
1.05		ere channels, sandbags or entation tanks?	bunds to dire	ect surface run-off to	· 🗆	\checkmark				
1.06		ere any perimeter channel pt storm runoff from crossin		t site boundaries to		\checkmark				
1.07	Is draii	nage system well maintaine	d?			\checkmark				
1.08		cavation proceeds, are temped stone or gravel?	oorary access	roads protected by	′ 🔲	\checkmark				
1.09	Are ter	mporary exposed slopes pro	operly covere	d?		\checkmark				
1.10	Are ea	rthworks final surfaces well	compacted o	r protected?					$\overline{\checkmark}$	
1.11	Are ma	anholes adequately covered	l or temporari	ly sealed?		\checkmark				
1.12	Are the	ere any procedures and equ	ipment for ra	instorm protection?		\checkmark				
1.13	Are wh	neel washing facilities well m	naintained?			\checkmark				
1.14	ls runc	off from wheel washing facili	ties avoided?			\checkmark				
1.15	Are the	ere toilets provided on site?				\checkmark				
1.16	Are toilets properly maintained?					\checkmark				
1.17	Are the vehicle and plant servicing areas paved and located w roofed areas?			d and located withir					\checkmark	
1.18						\checkmark				
1.19	Are there any measures to prevent leaked oil from entering drainage system?					\checkmark				
1.20		ere any measures to col ngs during concreting works	ment and concrete					$\overline{\checkmark}$		
1.21		ashings during concreting works? re there any oil interceptors/grease traps in the drainage or vehicle and plant servicing areas, canteen kitchen, etc'							\checkmark	



		Not Obs.	Yes	No	Follow	N/A	Photo/ Remarks
1.22	Are the oil interceptors/grease traps maintained properly?					$\overline{\checkmark}$	
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				
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		\checkmark				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?					\checkmark	
2.03	Are the excavated materials sprayed with water during handling?		\checkmark				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?			\checkmark			
2.05	Is the exposed earth properly treated within six months after the last construction activities?		\checkmark				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?			\checkmark			
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?			\checkmark			
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		\checkmark				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		\checkmark				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		\checkmark				
2.11	Is dark smoke emission from plant/equipment avoided?		$\overline{\checkmark}$				
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	



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?					\checkmark	
3.08	Are flaps and panels of mechanical equipment closed during operation?		\checkmark				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).		\checkmark				
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)		\checkmark				
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).		\checkmark				
Sectio	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		$\overline{\checkmark}$				
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.		\checkmark				
Sectio	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		\checkmark				
5.02	Are retained and transplanted trees properly protected?		\checkmark				
5.03	Are surgery works carried out for the damaged trees?					\checkmark	
5.04	Is damage to trees outside site boundary due to construction activities avoided?		\checkmark				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?		\checkmark				
Sectio	n 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections 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				
Sectio	n 7: Others						
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		\checkmark				

Remarks

Last Site Inspection (24 September 2008):

Site conditions messed up by the rain storm signalled No. 8 were observed improved. Case closed.

Finding of Site Inspection on 02 October 2008:

No adverse environmental impacts were observed during the site inspection. However, haul roads within the site were observed dusty and dry, posing potential construction dust impacts on the surrounding environment. Construction dust suppression measures including watering of the dusty and dry surfaces of the site are reminded during dusty works in dry and windy days.

RE's representative	IEC's representative	ET's representative	Contractor's representative	
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(') ((F.N.Wong	()



Projec	Yuen Long, Kam Tin, Ngau Tam Mei and Wai Drainage Improvements, Stage 1, P	Tin Shui hase 2B –	nspected b			M- A F N	la.	
Inspe	Cheung Chun San Tsuen and Kam Tsin	<u> </u>	RE/RE's rep EC/IEC's re			Mr. A.F.N	ng	
Date:			ETL/ ET's r	•		F.N.Won	q	
Time:			Contractor'	•		M.K.Ng/N		
		C	hecklist N	0.		KT15-10	1008	
PART	ΓA: GENERAL INFORMATION	Environmental P	ermit No. I	EP-231/20	05/A			
Weath	her: Sunny 🗸 Fine	Cloudy	Rainy					
Temp	perature: 28 °C							
Humic	dity: High Moderate	Low						
Wind:	Strong ✓ Breeze	Light	Calm					
PART	TB: SITE AUDIT							
			Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
Section	ion 1: Water Quality						-	
1.01	Is an effluent discharge license obtained for the Pro	ject?		$\overline{\checkmark}$				
1.02	Is the effluent discharged in accordance with licence?	the discharge		$\overline{\checkmark}$				
1.03	Is the discharge of turbid water avoided?			\checkmark				
1.04	Are there proper desilting facilities in the drains reduce SS levels in effluent?	age systems to		\checkmark				
1.05	Are there channels, sandbags or bunds to direct s sedimentation tanks?			\checkmark				
1.06	Are there any perimeter channels provided at sit intercept storm runoff from crossing the site?	e boundaries to		\checkmark				
1.07	Is drainage system well maintained?			\checkmark				
1.08	As excavation proceeds, are temporary access roacrushed stone or gravel?	ads protected by		\checkmark				
1.09	Are temporary exposed slopes properly covered?			$\overline{\checkmark}$				
1.10	Are earthworks final surfaces well compacted or pro-	otected?					\checkmark	
1.11	Are manholes adequately covered or temporarily se	ealed?		\checkmark				
1.12	Are there any procedures and equipment for rainsto	orm protection?		\checkmark				
1.13	Are wheel washing facilities well maintained?			\checkmark				
1.14	Is runoff from wheel washing facilities avoided?			\checkmark				
1.15	Are there toilets provided on site?			\checkmark				
1.16	Are toilets properly maintained?			\checkmark				
1.17	Are the vehicle and plant servicing areas paved ar roofed areas?	nd located within					\checkmark	
1.18	Is the oil leakage or spillage avoided?			\checkmark				
1.19	Are there any measures to prevent leaked oil frodrainage system?	om entering the		\checkmark				
1.20	Are there any measures to collect spilt cemen washings during concreting works?	t and concrete					\checkmark	
1.21	Are there any oil interceptors/grease traps in the di						\checkmark	



		Not Obs.	Yes	No	Follow up	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	



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?					\checkmark	
3.08	Are flaps and panels of mechanical equipment closed during operation?		\checkmark				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).		\checkmark				
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)		\checkmark				
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).		V				
Sectio	n 4: Waste/Chemical Management	_		_	_	_	
4.01	Waste Management Plan had been submit to Engineer for approval.	Ш	$\overline{\mathbf{V}}$	Ш		Ш	
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.		\checkmark				
Section	n 5: Landscape & Visual						
5.01	Are retained and transplanted trees in health condition?		\checkmark				
5.02	Are retained and transplanted trees properly protected?		\checkmark				
5.03	Are surgery works carried out for the damaged trees?					\checkmark	
5.04	Is damage to trees outside site boundary due to construction activities avoided?		\checkmark				
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?		\checkmark				
Section	n 6: Ecology						
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections 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 7: Others							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?		\checkmark				
	5						

Remarks

Follow-Up of Last Site Inspection (02 October 2008):

No adverse construction dust impacts were observed within the site. Case closed

Finding of Site Inspection on 10 October 2008:

No adverse environmental impacts were observed at KT15, except rain water stagnated in an idle water treatment tank, rendering mosquito breeding in the area. Mosquito control measures are reminded, preferably drying off the stagnant water.

RE's representative	IEC's representative	ET's representative	Contractor's representative	
#		AN .	B	
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Proje	Yuer	ract No.: DC/2006/02 n Long, Kam Tin, Ngau Tam Me Drainage Improvements, Stage	i and Tin Shui	Inspected by								
		ung Chun San Tsuen and Kam		RE/RE's representative:			Mr. A.F.N	Ng				
Inspe	ction		II	EC/IEC's re	epresentat	tive:	Cyrus La	ıu				
Date:		ctober 2008		TL/ ET's r	•		F.N.Wong					
Time:	14:30) p.m.		Contractor'	-	ntative:		Lui Kam Man				
				Checklist N			KT15-15	1008				
PART		ENERAL INFORMATION	Environmental P		EP-231/200	05/A						
	eather: Sunny V Fine Cloudy Rainy											
	erature: 28		□ Low									
Humic Wind:	_		Light	Colm								
vviria.		Strong ✓ Breeze	Light	Calm								
PART	PART B: SITE AUDIT											
				Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks			
Section	on 1: Water Qu	uality						_				
1.01	Is an effluent	discharge license obtained for th	e Project?		\checkmark							
1.02	Is the efflue licence?	ent discharged in accordance	with the discharge		\checkmark							
1.03	Is the dischar	rge of turbid water avoided?			\checkmark							
1.04		roper desilting facilities in the ovels in effluent?	drainage systems to		\checkmark							
1.05	Are there cha sedimentation	annels, sandbags or bunds to dir n tanks?	ect surface run-off to		$\overline{\checkmark}$							
1.06		y perimeter channels provided a m runoff from crossing the site?	at site boundaries to		\checkmark							
1.07	Is drainage s	ystem well maintained?			\checkmark							
1.08	As excavation crushed stone	n proceeds, are temporary acces e or gravel?	ss roads protected by		\checkmark							
1.09	Are temporar	y exposed slopes properly covere	ed?		$\overline{\checkmark}$							
1.10	Are earthwor	ks final surfaces well compacted	or protected?					\checkmark				
1.11	Are manholes	s adequately covered or tempora	rily sealed?		$\overline{\checkmark}$							
1.12	Are there any	procedures and equipment for ra	ainstorm protection?		$\overline{\checkmark}$							
1.13	Are wheel wa	ashing facilities well maintained?			$\overline{\checkmark}$							
1.14	Is runoff from	wheel washing facilities avoided	?		\checkmark							
1.15	Are there toil	ets provided on site?			\checkmark							
1.16	Are toilets pro	operly maintained?			\checkmark							
1.17	Are the vehice roofed areas?	cle and plant servicing areas pavo?	ed and located within					\checkmark				
1.18	Is the oil leak	age or spillage avoided?			$\overline{\checkmark}$							
1.19	Are there an drainage syst	y measures to prevent leaked tem?	oil from entering the		$\overline{\checkmark}$							
1.20		ny measures to collect spilt co ring concreting works?	ement and concrete					\checkmark				
1.21		y oil interceptors/grease traps in t						\checkmark				



		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				
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		\checkmark				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?					\checkmark	
2.03	Are the excavated materials sprayed with water during handling?		\checkmark				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?					\checkmark	
2.05	Is the exposed earth properly treated within six months after the last construction activities?		\checkmark				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		\checkmark				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?		\checkmark				
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		\checkmark				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		\checkmark				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		\checkmark				
2.11	Is dark smoke emission from plant/equipment avoided?		\checkmark				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?					\checkmark	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?		\checkmark				
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?		\checkmark				
2.15	Is open burning avoided?		\checkmark				
2.16	Excavated materials from the stream must be removed from site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.					\checkmark	
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?		\checkmark				
3.02	Is silenced equipment adopted?		\checkmark				
3.03	Is idle equipment turned off or throttled down?		\checkmark				
3.04	Are all plant and equipment well maintained and in good condition?		\checkmark				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?		\checkmark				
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					\checkmark	



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?					\checkmark	
3.08	Are flaps and panels of mechanical equipment closed during operation?		\checkmark				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).		\checkmark				
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)		\checkmark				
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).		V				
Sectio	n 4: Waste/Chemical Management	_		_	_	_	
4.01	Waste Management Plan had been submit to Engineer for approval.	Ш	$\overline{\mathbf{V}}$	Ш		Ш	
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 (10 October 2008):

Rain water stagnated in an idle water treatment tank was dried off. Case closed.

Finding of Site Inspection on 15 October 2008:

No adverse environmental impacts were observed. It is reminded that the implemented environmental mitigation measures are properly maintained or improved as necessary to minimize environmental impacts generated from the Project.

RE's representative	IEC's representative	ET's representative	Contractor's representative
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Political description of the control			11000



Proje	Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvements, Stage 1, Phase 2B –	Inspected by									
	Cheung Chun San Tsuen and Kam Tsin Wai			oresentat		Mr. A.F.	Ng				
Inspe Date:	23 October 2008			epresenta epresenta		Ben Tam	<u> </u>				
Time:				s represe		M.K.Ng/Man					
			ecklist N	•		KT15-231008					
PART	A: GENERAL INFORMATION Environment	al Peri	mit No. I	EP-231/20	05/A						
Weath	ner: Sunny Fine 🗸 Cloudy		Rainy								
Temp	erature: 28 °C		•								
Humic	dity: High Moderate Low										
Wind:	✓ Strong Breeze Light		Calm								
PART	PART B: SITE AUDIT										
			Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks			
Section	on 1: Water Quality		OD3.			чр		Remarks			
1.01	Is an effluent discharge license obtained for the Project?			\checkmark							
1.02	Is the effluent discharged in accordance with the discharglicence?	ge		\checkmark							
1.03	Is the discharge of turbid water avoided?			\checkmark							
1.04	Are there proper desilting facilities in the drainage systems reduce SS levels in effluent?	to		\checkmark							
1.05	Are there channels, sandbags or bunds to direct surface run-off sedimentation tanks?	to		\checkmark							
1.06	Are there any perimeter channels provided at site boundaries intercept storm runoff from crossing the site?	to		\checkmark							
1.07	Is drainage system well maintained?			\checkmark							
1.08	As excavation proceeds, are temporary access roads protected crushed stone or gravel?	by		\checkmark							
1.09	Are temporary exposed slopes properly covered?			\checkmark							
1.10	Are earthworks final surfaces well compacted or protected?						\checkmark				
1.11	Are manholes adequately covered or temporarily sealed?			\checkmark							
1.12	Are there any procedures and equipment for rainstorm protection	?		\checkmark							
1.13	Are wheel washing facilities well maintained?			\checkmark							
1.14	Is runoff from wheel washing facilities avoided?			\checkmark							
1.15	Are there toilets provided on site?			\checkmark							
1.16	Are toilets properly maintained?			\checkmark							
1.17	Are the vehicle and plant servicing areas paved and located with roofed areas?	nin					\checkmark				
1.18	Is the oil leakage or spillage avoided?			\checkmark							
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	he		\checkmark							
1.20	Are there any measures to collect spilt cement and concrewashings during concreting works?	ete					\checkmark				
1.21	Are there any oil interceptors/grease traps in the drainage system for vehicle and plant servicing areas, canteen kitchen, etc?	ns					\checkmark				



		Not Obs.	Yes	No	Follow up	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			
Sectio	n 2: Air Quality						
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?		\checkmark				
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?					\checkmark	
2.03	Are the excavated materials sprayed with water during handling?		\checkmark				
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?		\checkmark				
2.05	Is the exposed earth properly treated within six months after the last construction activities?		\checkmark				
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?		\checkmark				
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?		\checkmark				
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?		\checkmark				
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?		\checkmark				
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?		\checkmark				
2.11	Is dark smoke emission from plant/equipment avoided?		\checkmark				
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?					\checkmark	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?		\checkmark				
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?		\checkmark				
2.15	Is open burning avoided?		\checkmark				
2.16	Excavated materials from the stream must be removed from site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.					\checkmark	
Sectio	n 3: Noise						
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?		\checkmark				
3.02	Is silenced equipment adopted?		\checkmark				
3.03	Is idle equipment turned off or throttled down?		\checkmark				
3.04	Are all plant and equipment well maintained and in good condition?		\checkmark				
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?		\checkmark				
3.06	Are hand held breakers fitted with valid noise emission labels during operation?					\checkmark	_



		Not Obs.	Yes	No	Follow up	N/A	Photo/ Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?					\checkmark	
3.08	Are flaps and panels of mechanical equipment closed during operation?		\checkmark				
3.09	Are Construction Noise Permit(s) applied for percussive piling works?					\checkmark	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?					\checkmark	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?					\checkmark	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).		\checkmark				
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)		\checkmark				
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).		\checkmark				
Sectio	n 4: Waste/Chemical Management						
4.01	Waste Management Plan had been submit to Engineer for approval.		$\overline{\mathbf{V}}$				
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

Last Site Inspection (15 October 2008):

No adverse environmental impacts were observed during the site inspection.

Finding of Site Inspection on 23 October 2008:

No adverse environmental impacts were observed during the site inspection. However, stagnant water was observed within the site. Mosquito control measures are reminded to prevent mosquito breeding.

RE's representative		IEC's representative	ET's representative	Contractor's representative
			0,70	2
			FNWong (p.p)	
)	()	(Ben Tam)	()



APPENDIX K

RESPONSE TO COMMENT



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 October 2008 (R1004 Revision 1) submit on 28 October 08 (12:17)

Response to IEC's comments [Received from e-mail on 05 November 2008 18:10]

No.	Section / Paragraph	Comments	Ref.	Response to Comments
1	ES05	Investigation reports for the exceedance of Suspended Solid of stream water quality monitoring on 2 & 15 October 2008 and exceedance of number of species of wetland birds of ecological monitoring on 21 October 2008 are still outstanding.	-	Investigation report for SS exceedance on 02 & 15 October 2008 had issued to relevant parties by facsimiles. From the Contractor information, Chit Cheung and BV also received the investigation report for 02 and 15 October 2008. Please double check your incoming records. The Contractor response for ecological monitoring exceedance on 21 October 2008 was received on 06 November 2008 and the investigation report had issued on 06 November 2008. (Our Ref.: TCS00371/07/300/F1032).
2	ES10	Only 4 site inspection audits had been carried out during the reporting period. Please check and revise accordingly.	-	Noted.
3	4.08, Appendix F	Please keep consistent with the equipment models used for pH, DO and temperature monitoring.	-	Noted.
4	5.07, 11.04, Appendix D	Please show us the exact location of the Kam Tin Nullah upstream (with marking of monitoring stations W9A and W9B) mentioned in section 5.07. (Can be provided in a separated figure)	-	Please use the figure in Appendix D to locate the Kam Tin Nullah upstream.
5	5.07, 6.04	Please inform us where the excavated Type 1 contaminated material was come from in the reporting period.	-	Please clarify the comment for S5.07 since the excavated Type 1 contaminated material only present in S6.04 Table 6-3. In according to the Contractor provide information, the Type 1 contaminated material in this reporting period was excavated from Bay 58 on 16 October 2008. Please refer to the attached Contractor information.
6	7.01, 11.07	Environmental site inspection date on 30 October 2008 is out of the reporting period, please edit the text accordingly.	-	Noted.
7	Appendix G	The date of ecological survey in the text is not consistent with the impact monitoring schedule listed in Appendix G. Please check and revise accordingly.	-	Noted.
8	Appendix H	In the suspended solid monitoring results graph, an unrelated data point at W9A was found on around 31-Aug-08. Please check and revise accordingly.	-	In according to the Monthly EM&A Report for September 2008 (R0925 Revision 3) which was certified by ETL and verified by IEC on 16 October 2008 (Your Ref.: 60023871/c/rwhw810603), the suspended solid at W9A around 31-Aug-08 (exactly monitoring date is 02 September 2008) was relative high (laboratory of SS at W9A on 02 September 2008 is 255mg/L). The graphical plot of SS in Appendix H is correct and consistency.



No.	Section / Paragraph	Comments	Ref.	Response to Comments
9	Appendix J	1) In site inspection checklist on 15 October 2008, please update	-	Noted.
		the date of last site inspection date and site inspection date.		
		2) For the site inspection checklist on 23 October 2008,		
		(a) the date of site inspection should be 23 October 2008 instead		Noted.
		of 2 October 2008 as listed.		
		(b) According to the site inspection checklist on 15 October		Noted.
		2008, there should be no item need to be followed up in the site		Noted.
		inspection on 23 October 200. Please check and revise the		
		section of "last site inspection (15 October 2008)".		
		(c) Item 1.26 should be marked as "Follow up/No" as it		Noted.
		corresponds to the observation listed in the checklist.		
10	Appendix K	The report was submitted on 04 November 2008 (13:59) instead	-	As mention in our e-mail on 28 October 2008 (12:17), some outstanding issues
		of the date listed.		will update accordingly. Therefore, the submission date is no need to amend.



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 October 2008 (R1004 Revision 2) submit on 06 November 08 (14:34)

Response to IEC's comments [Received from e-mail on 11 November 2008 14:42]

No.	Section / Paragraph	Comments	Ref.	Response to Comments
1	5.07, 11.04	As we refer the location map in Appendix D, we cannot clearly locate the exact	-	Please refer to the attached figure.
		position of the Kam Tin Nullah (or Kam Tin River as stated in the investigation		
		report) upstream mentioned in text.		
		Please mark on a separate location map showing us the exact location of the Kam		
		Tin Nullah (or KamTin River as stated in the investigation report) upstream (with		
		marking of monitoring stations) mentioned in section 5.07 and 11.04 for our easy		
	7.07.11.04	reference and investigation of potential sources of silty effluent.		N
2	5.07, 11.04	Please clarify when the on-site observations stated in section 5.07 were taken	-	Noted.
		place. It is advised to add the date for the on-site observations, especially after the		
		wordings "No excavation or major discharge on-site was observed" and "Kam		
		Tin Nullah upstream was observed during the sampling", for our easy reference.		
3	7.01, 11.07	Environmental site inspection date on 30 October 2008 is out of the reporting	-	Noted.
		period, please edit the text accordingly.		
4	Appendix G	The date of ecological survey in the text is not consistent with the impact	-	Noted.
		monitoring schedule listed in Appendix G. Please check and revise accordingly.		
5	Appendix J	Item numbering of section 1 of the site inspection checklist on 2, 10, 15 October	-	Noted.
		2008 was incorrect. Please check and revise accordingly.		

