



PROJECT No.: TCS/00408/08

**DSD CONTRACT NO. DC/2007/17
DRAINAGE IMPROVEMENT WORKS IN CHEUNG PO,
MA ON KONG, YUEN KONG SAN TSUEN AND TIN SAM
TSUEN OF YUEN LONG DISTRICT AND SEWERAGE AT
TSENG TAU CHUNG TSUEN, TUEN MUN**

**4TH QUARTERLY EM&A SUMMARY REPORT –
KT14A
JULY –SEPTEMBER 2009**

PREPARED FOR
CHINA ROAD & BRIDGE CORPORATION

Quality Index

Date	Reference No.	Prepared By	Certified By
12 October 2009	TCS00408/08/600/R1255v2	 Nicola Hon Environmental Consultant	 Andrew Lau Environmental Team Leader

Version	Date	Prepared by	Certified by	Description
1	7 October 2009	Nicola Hon	Andrew Lau	First submission
2	12 October 2009	Nicola Hon	Andrew Lau	Amended against IEC's comments on 7 Oct 2009

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Ove Arup & Partners
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Our ref 25211/L149/CN/cl

Date 15 October 2009

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Attention: Mr. Clive Cheng

ARUP

Dear Mr. Cheng,


Contract No. DC/2007/17 Drainage Improvement Works in Cheung Po, Ma On Kong, Yuen King San and Tin Sam Tsuen of Yuen Long District and Sewerage at Tseng Tau Chung Tsuen, Tuen Mun 4th Quarterly EM&A Summary Report - KT14A (July to September 2009) Version 2

We refer to the captioned report (ref.: TCS00408/08/600/R1255v2) and advise that we have no further comment on the captioned submission.

We hereby endorse the captioned report for your onward submission.

If you require any further information, please do not hesitate to contact the undersigned.

Yours sincerely,



Coleman Ng
Independent Environmental Consultant

cc: China Road and Bridge Corporation (Mr. Raymond Mau) (Fax: 2478 9612)
AUES (Mr. TW Tam / Mr. Andrew Lau) (Fax: 2959 6079)

EXECUTIVE SUMMARY

- ES.01. This is the fourth (4th) Quarterly EM&A Report for Channels KT14A (Designated Project works) summarizing the key environmental monitoring results during the period from 26 June 2009 to 28 August 2009 on air quality, construction noise, water quality and waste management.

Progress of the EM&A Programme

- ES.02. The impact EM&A program was undertaken in accordance with the relevant EM&A manuals. A summary of the monitoring activities in this quarter is listed below:

Environmental Issues	Channels KT14A
• 1-hour TSP Monitoring	33 events monitoring
• 24-hour TSP Monitoring	11 events monitoring
• Noise Monitoring	11 monitoring events
• Water Quality Monitoring	28 monitoring days
• Site Inspection Audit	9 occasions

Breaches of Environmental Quality Criteria

- ES.03. In this quarter, no Action or Limit Levels of environmental criteria exceedance are recorded in air quality and construction noise monitoring.

- ES.04. A total of 30 exceedances of water quality A/L Levels of which are 15 exceedances of Action Level and 15 exceedances of Limit Level, were recorded. The overall compliance rate of water quality monitoring in the fourth quarter is 91.1%. Investigation showed that all exceedances were not works related. A summary of all environmental exceedances is presented as follows:

Parameter	Channels KT14A	
	No. of Exceedance	Compliance of percent (%)
Suspended Solids	11	80.4
Turbidity	2	96.4
Dissolved Oxygen	12	78.6
pH	0	100.0
Ammonia	4	92.9
Zinc	1	98.2
Overall	30	91.1

Environmental Complaint, Notifications of Summons and Prosecutions

- ES.05. No complaint, notification of summons and successful prosecution was received during this Quarter Reporting Period. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

Reporting Changes

- ES.06. In this quarterly EM&A summary report, the reporting date is from 26 June 2009 to 28 August 2009 only due to completion of the major construction works on 20 August 2009. The status of substantial completion was certified by the Engineer's Representative on 21 August 2009. Upon receipt of the Contractor's notification, the EM&A programme for the captioned site ceased on 29 August 2009 with immediate effect. Therefore, this is also the last quarterly report for Channel KT14A.

Future key issues

- ES.07. This is the last quarterly EM&A summary report for Channel KT14A of the Project following substantial completion on 20 August 2009. However, CREC should still keep in mind the construction noise, air quality, water quality and other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the EIA and summarized in Mitigation Measure Implementation Schedule should also be fully implemented during the maintenance period of Channel KT14A.

END OF TEXT

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1 INTRODUCTION

1.1 BASIC PROJECT BACKGROUND

CRBC has been awarded the DSD Contract No. DC/2007/17 (hereinafter “the Project”). The works to be executed under the Project are located in Kam Tin, Pat Heung and Tuen Mun, New Territories. The location plan of the Project is shown in *Appendix A*.

The Project involves construction of five drainage channels, namely Channels KT12, KT13 (under Environmental Permit No.EP263/2007), KT14A (under Environmental Permit No. EP231/2005A), KT14B and KT14C in Kam Tin and Pat Heung and the sewerage works at Tseng Tau Chung Tsuen in Tuen Mun. As the environmental monitoring requirements for the two Environmental Permits and those not under a permit are different, the EM&A report under the Project is split to the following three stand-alone parts:

1. EM&A Report – Channel KT13 (under EP No.EP263/2007);
2. EM&A Report – Channel KT14A (under EP No. EP231/2005A); and
3. EM&A Report – Channels KT12, KT14B and KT14C (Non-Designated Project works with no Environmental Permit)

This report presents the EM&A results of the Designated Projects works for Channels KT14A. It is the fourth Quarterly EM&A Summary Report covering a three month period from 26 June 2009 to 28 August 2009 (the Reporting Period). This period is less than 3 months as substantial completion was attained on 20 August 2009 and notified on 28 August 2009.

1.2 REPORT STRUCTURE

This Report is structured as follows:

- | | |
|------------------|--|
| <i>Section 1</i> | Introduction |
| <i>Section 2</i> | Summary of Impact Environmental Monitoring and Audit Requirements |
| <i>Section 3</i> | Monitoring Results and Breaches of Environmental Quality Criteria |
| <i>Section 4</i> | Non-compliance, Complaints, Notifications of Summons and Successful Prosecutions |
| <i>Section 5</i> | Conclusion |

1.3 PROJECT ORGANISATION AND CONSTRUCTION PROGRESS

1.3.1 Environmental Management Organization

The environmental management team comprises: DSD (Project Proponent), CRBC (main Contractor), EPD and AFCD (supervisory departments in Government), BVHKL (ER); ARUP (IEC) and AUES (ET). Detailed management organization including organisation structure and key personnel contacts is presented in *Appendix B*.

1.3.2 Works Undertaken during the Quarter Reporting Period

Construction activities implemented during the Reporting Period are presented in *Appendix C*. In addition to the preparation works and site clearance, including underground utility investigation, tree survey, tree pruning and tree transplant, major construction activities are summarized as follows:

26 June 2009 – 25 July 2009

- Construction of manhole, catchpit and drainpipe along the sides of channel;
- Dismantling of noise barrier;
- Installation of sign plate;
- Installation of type 2 railing, and;
- Landscaping works

26 July – 28 August 2009 (impact monitoring ceased on 29 August 2009)

- Compensatory planting and landscaping works.

1.4 ENVIRONMENTAL LICENSING STATUS

The environmental licensing status in the quarter reporting period is summarized in *Table 1*.

Table 1 Status of Environmental Licenses and Permits

Item	License / Permit Description	Status
1	Air Pollution Control (Construction Dust)	Notified EPD on 14-Feb-08
2	Water Pollution Control (Discharge License) License No. 1U461/1	Valid
3	Chemical Waste Producer Registration WPN: 5611-531-C3124-28	Registration on 2-May-08
4	Construction Waste Disposal Billing Account Number 7006524	Valid on 9 Jan 2008

2 SUMMARY OF IMPACT ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

2.1 MONITORING PARAMETERS

The ET has compiled the EM&A requirements set out in the associated EM&A Manuals in the *Environmental Monitoring Methodology*, which has been agreed by the ER and IEC. The monitoring parameters are summarized below.

Table 2-1 Summary of Monitoring Parameters

Env. Aspect	Monitoring Parameters	
Air Quality	(a) 1-hour Total Suspended Particulate (hereinafter '1-hour TSP'); and (b) 24-hour Total Suspended Particulate (hereinafter '24-hour TSP').	
Construction Noise	(a) A-weighted equivalent continuous sound pressure level (30min) (hereinafter 'Leq(30min)') during the normal working hours; and (b) A-weighted equivalent continuous sound pressure level (5min) (hereinafter 'Leq(5min)') for construction work during the restricted hours.	
Water Quality	(a) In Situ Measurement	temperature, Dissolved Oxygen (hereinafter 'DO'), pH & Turbidity
	(b) Laboratory Analysis	Suspended Solids (hereinafter 'SS'), Ammonia Nitrogen (hereinafter 'NH ₃ -N') and Zinc (hereinafter 'Zn')

2.2 MONITORING LOCATIONS

Monitoring locations are summarized in *Table 2-2* and shown in *Appendix A*.

Table 2-2 Summary of Monitoring Locations

Env. Aspect	Monitoring Location ID	Identified Address / Co-ordinates
Air	A8(a)	Entrance of Strong Sing Garden
Noise	N8	Ground floor of Strong Sing Garden H502
Water	W8A	E825274 / N831712
	W8B	E825143 / N831786

2.3 MONITORING FREQUENCY

The impact monitoring frequency and duration for air quality, construction noise, water quality, ecology and other parameters are summarized below.

2.3.1 Air Quality

Frequency: Once every 6 days for 24-hour TSP and three times every 6 days for 1-hour TSP, when the highest construction dust impacts are anticipated.

Duration: Throughout the construction period

2.3.2 Construction Noise

Frequency: Measurement of Leq 30min: Once a week during 0700-1900 on normal weekdays for Leq30min

If the construction work is undertake at Restricted Hours, the frequency of noise monitoring will be conducted in accordance with the requirements under the related Construction Noise Permit issued by EPD as follows:

- 3 consecutive Leq5min at Restricted Hours from 1700 – 2300;
- 3 consecutive Leq5min for Restricted Hours from 2300 – 0700 next day;
- 3 consecutive Leq5min for Sunday or public holiday from 0700 – 1900;

Duration: Throughout the construction period

2.3.3 Water Quality

Frequency: Three times a week with at least 36 hour intervals between any two consecutive monitoring events

Depths: As the water columns in the stream water within KT14A is generally less than 3 m, measurement is performed at the mid-depths of the monitoring locations. In case the water columns are deeper than 6 m, measurement shall be carried out at three water depths, namely, 1 m below water surface, mid-depth, and 1 m above river bed. If the water depths are between 3 to 6m, the mid-depth measurement is omitted.

Duration: Throughout the construction period.

2.4 ENVIRONMENTAL QUALITY CRITERIA

The Environmental Quality Criteria i.e. Action and Limit Levels (herein after 'A/L Levels') are summarized as follows:

Table 2-4-1 Summary of Air Quality Monitoring Results at KT14A-A8(a)

Monitoring Location ID	Action Level ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
KT14A - A8(a)	310	144	500	260

Table 2-4-2 Action and Limit Levels of Construction Noise Monitoring

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

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

Table 2-4-3 Water Quality Action and Limit Levels

Parameter	Monitoring Location	Type of Station	Action Level	Limit Level
DO (mg/L)	W8A	Control	NA	NA
	W8B	Impact	6.378	4.00
Turbidity (NTU)	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day
pH	W8A	Control	NA	NA
	W8B	Impact	9.2 (95%-ile of baseline results)	9.3 (99%-ile of baseline results)
SS (mg/L)	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day
Ammonia ($\mu\text{g}/\text{L}$)	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day
Zinc ($\mu\text{g}/\text{L}$)	W8A	Control	NA	NA
	W8B	Impact	120% of the results of upstream control station's of the same day	130% of the results of upstream control station's of the same day

2.5 ENVIRONMENTAL MITIGATION MEASURES

CRBC has committed to implement environmental protection and pollution control and mitigation measures as recommended in the PP, EP and the EM&A Manual. Continuous up-dating of the Mitigation Measures Implementation Schedules attached in the EM&A Manual is required under the PS. The updated Environmental Mitigation Measures Schedule is enclosed in **Appendix D**. The implemented mitigation measures include:

- (a) Watering of exposed dry and dusty surface, including stock piles of dusty materials;
- (b) Covering of the loose soil to minimize water quality impacts;
- (c) Hard pavement of haul road leading to public roads;
- (d) Wheel washing facility at to avoid construction dust impacts on the public roads; and
- (e) Construction of noise barriers.
- (f) During construction works nearly the seasonal wetland, mitigation measures of Ecology will be followed in accordance with EM&A Manual Annex A ECO.1 and ECO.3;

3 MONITORING RESULTS AND BREACHES OF ENVIRONMENTAL QUALITY CRITERIA

The environmental monitoring results will be compared against the Action and Limit Levels established based on the baseline monitoring results and statutory criteria. In case the measured data exceed the environmental quality criteria, remedial actions will be triggered according to the Event and Action Plan. In the reporting quarter, the graphical plots of the trends of monitored parameter over the past four months are presented in *Appendix E*.

3.1 AIR QUALITY

In this quarter reporting period, there were total of 33 sampling events for 1-hour TSP and 11 sampling events for 24-hour TSP at the designated location KT14A-A8(a). The summary of Air Quality of 1-hour and 24-hour TSP in this quarterly report are presented in *Table 3-1-1 and 3-1-2*.

Table 3-1-1 Summaries of Air Quality of 1-hour and 24-hour TSP in the Quarter Reporting period

Channel	Station	1-hour TSP			24-hour TSP		
		Max	Min	Mean	Max	Min	Mean
KT14A	A8(a)	98	37	60	62	10	26
Recorded in the date		10 Aug 09	26 Jun 09	33 events	8 Aug 09	27 Jun 09 and 4 Jul 09	11 events

Table 3-1-2 Summaries of Breaches of Air Quality A/L Levels

Location	Exceedance	1-hour TSP	24-hour TSP	Total
A8(a)	Action Level	0	0	0
	Limit Level	0	0	0

As shown in *Table 3-1-1 and 3-1-2* and *Appendix E*, the 1-hour TSP and 24-hour TSP of the Reporting Period fluctuated below the Action Levels of 310 and 144 respectively. Neither NOE of air quality nor corrective action was therefore required.

3.2 CONSTRUCTION NOISE

Monitoring results are presented in graphic plots in *Appendix E*. Breaches of construction noise A/L Levels during the Reporting Period are summarized in *Table 3-2*.

Table 3-2 Summaries of Breaches of Construction Noise A/L Levels

Channel	Station	Leq _{30min} (dB(A))		Action Level in dB(A)	Limit Level in dB(A)
		Max	Min		
KT14	N8	62.5	46.9	When one documented complaint is received	75*
Record Date		11 Jul 09	6 Jul 09		

As shown in *Tables 3-2* and *Appendix E*, all the construction noise results fluctuated below the Limit Level. Neither NOE of construction noise nor corrective action was therefore required.

3.3 WATER QUALITY

Monitoring results are presented in graphic plots in *Appendix E*. Breaches of water quality A/L Levels during the Reporting Period are summarized in *Table 3-3-1 and 3-3-2*, taken into account that W8A is set as the up-stream control station for W8B.

Table 3-3-1 Summaries of Water Quality monitoring in the Quarter Reporting period

location	Exceedance	DO	Turbidity	pH	SS	NH ₄ ⁺ N	Zn	Total
W8B (Jul 2009)	Action Level	7	0	0	1	0	0	8
	Limit Level	0	0	0	3	2	0	5
W8B (Aug 2009)	Action Level	5	1	0	1	0	0	7
	Limit Level	0	1	0	6	2	1	10
W8B (Sep 2009)	Action Level	0	0	0	0	0	0	0
	Limit Level	0	0	0	0	0	0	0
Total	Action Level	12	1	0	2	0	0	15
	Limit Level	0	1	0	9	4	1	15

Table 3-3-2 Summaries of Breaches of the Existing Water Quality A/L Levels at W8B

Parameter	Channels KT14A	
	No. of Exceedance	Compliance Rate (%)
Suspended Solids	11	80.4
Turbidity	2	96.4
Dissolved Oxygen	12	78.6
pH	0	100.0
Ammonia	4	92.9
Zinc	1	98.2
Overall	30	91.1

As shown in *Tables 3-3-1* and *Appendix E*, a total of 30 exceedances of water quality A/L Levels, namely 15 exceedances of Action Levels and 15 exceedances of Limit Levels, were recorded during the Reporting Period. Summary of breaches of the existing water quality A/L at W8B is shown in *Table 3-3-2*.

The NOE and the associated investigation report have been issued upon confirmation of the results and construction information. Investigation concluded that all of the exceedances are not related to the works under the Project. No corrective actions were recommended.

3.4 SUMMARIES WEATHER CONDITIONS DURING THE QUARTER REPORTING PERIOD

July 2009

July 2009 was warmer than usual. The mean temperature was 29.1 degrees, 0.4 degrees above the normal figure of 28.7 degrees. The total rainfall of 389.4 millimetres in the month was about 4 percent above the normal figure of 374.4 millimetres. The accumulated rainfall since 1 January was 1206.9 millimetres, about 16 percent below the normal figure of 1429.1 millimetres for the same period.

August 2009

August 2009 was hotter and drier than usual. The mean temperature was 29.4 degrees, 1.0 degrees above the normal of 28.4 degrees. There were 14 very hot days, making it the hottest August since 1963. The mean minimum temperature of 27.7 degrees was the highest for August since record began. The total rainfall of 334.1 millimetres in the month was about 25 percent below the normal figure of 444.6 millimetres. The accumulated rainfall since 1 January was 1541.0 millimetres, about 18 percent below the normal figure of 1873.7 millimetres for the same period.

4 NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

4.1 NON-COMPLIANCE

A total of 30 exceedances of water quality A/L Levels were recorded in this reporting quarter and the associated investigation report have been issued upon confirmation of the results and construction information. Investigation concluded that all of the exceedances are not related to the works under the Project. No other non-compliance or deficiency was identified during regular site inspection and environmental audit. No associated remedial actions were recommended.

4.2 ENVIRONMENTAL COMPLAINTS

Since 27 March 2009, no complaint had been received by DSD, ER, the Contractor or EPD. No associated remedial actions were recommended in this reporting month.

4.3 NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

No notifications of summons and successful prosecutions were recorded during the Reporting Period. No associated remedial actions were recommended.

4.4 OTHERS

4.4.1 Waste Management Status

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 and sediment

Waste generated, re-used, recycled and disposed of during the Reporting Period is shown in *Appendix F: Monthly Summary Waste Flow Table*.

4.4.2 Site Inspection and Environmental Audit

A total of nine (9) occasions of weekly environmental site inspection and audit were conducted jointly by the ER, EO and ET during the Reporting Period. Minor deficiencies found during the site inspection and audit were in general rectified within the specified deadlines. Findings of the site inspection and environmental audit are summarized in *Table 4-3*.

Table 4-3 Summary of Findings of Site Inspection and Environmental Audit

Date	Findings / Deficiencies	Follow-Up Status
30 Jun 09	No adverse environmental impacts were observed during the site inspection	N/A
7 Jul 09		
14 Jul 09	Water accumulated within the drip tray and eye-holes of concrete blocks shall be drained or filled with soil.	Recommendations based on the observation on 14 July 2009 were followed.
23 Jul 09	General refuse was observed, house keeping shall be improved to maintain site tidiness.	Recommendations will be followed in next reporting month.
28 Jul 09	No adverse environmental impacts were observed during the site inspection	N/A
4 Aug 09	The Contractor was reminded to maintain good site tidiness at KT-14A.	Recommendations based on the observation on 7 August 2009 were followed.
11 Aug 09	The Contractor is reminded to clear the obstacles that were washed out from the site due to heavy rainfall	Recommendations based on the observation on 21 August 2009 were followed.
21 Aug 09	General refuse was observed, house keeping	Recommendations based on the

Date	Findings / Deficiencies	Follow-Up Status
	shall be improved to maintain site tidiness.	observation on 25 August 2009 were followed.
25 Aug 09	No adverse environmental impacts were observed during the site inspection	N/A

5 CONCLUSIONS

This is the fourth (4th) Quarterly EM&A Summary Report for Designated Project works during the period from 26 June 2009 to 28 August 2009 summarizing the environmental impact monitoring and audit results on air quality, construction noise, water quality and waste management.

Monitoring results demonstrated that no exceedance of environmental quality criteria of air quality and construction noise occurred during the Reporting Period.

A total of 30 exceedances of water quality A/L Levels of which 15 were exceedances of Action Levels and 15 Limit Levels, were recorded. The overall compliance rate of water quality monitoring in the third quarter is 91.1%. Investigation showed that all exceedances were not works related. No corrective actions were recommended.

No adverse environmental impacts were observed during the weekly site inspection and environmental audit which indicated that the implemented mitigation measures for air quality, construction noise, water quality and ecology were effective. 5 minor deficiencies were found in the weekly site inspection and audit which were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

This is the last quarterly EM&A summary report to present the relevant site environmental performance as substantial completion was certified by the Engineer's Representative on 21 August 2009. Upon receipt of the Contractor's notification on 28 August 2009, the EM&A programme for the captioned site ceased on 28 August 2009 with immediate effect.

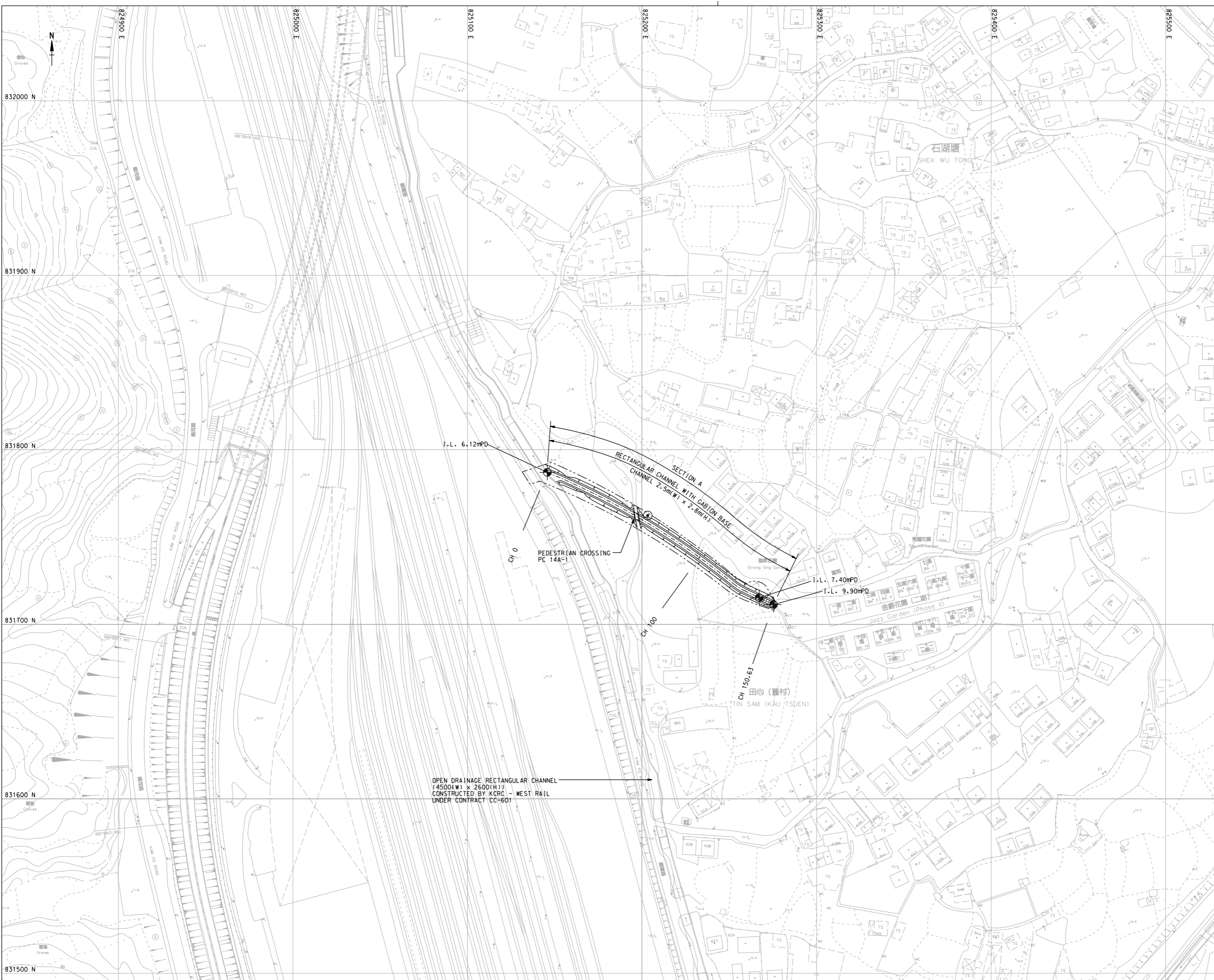
Nevertheless, CRBC should still keep in mind the construction noise, air quality, water quality and other environmental issues identified in the EM&A Manual. Mitigation measures recommended in the EIA and summarized in Mitigation Measure Implementation Schedule should be fully implemented during the maintenance period.

END OF TEXT

Appendix A

**Location Plan of the Project and
Environmental Monitoring Locations**

NOTES :
1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 021.



Revision	Date	Description	Initial	
	Designed	Checked	Drawn	Verified
Initial	BW	WLC	LWL	KIL
Date	09/07	09/07	09/07	09/07
Approved				

CONTRACT NO. DC /2007 /17

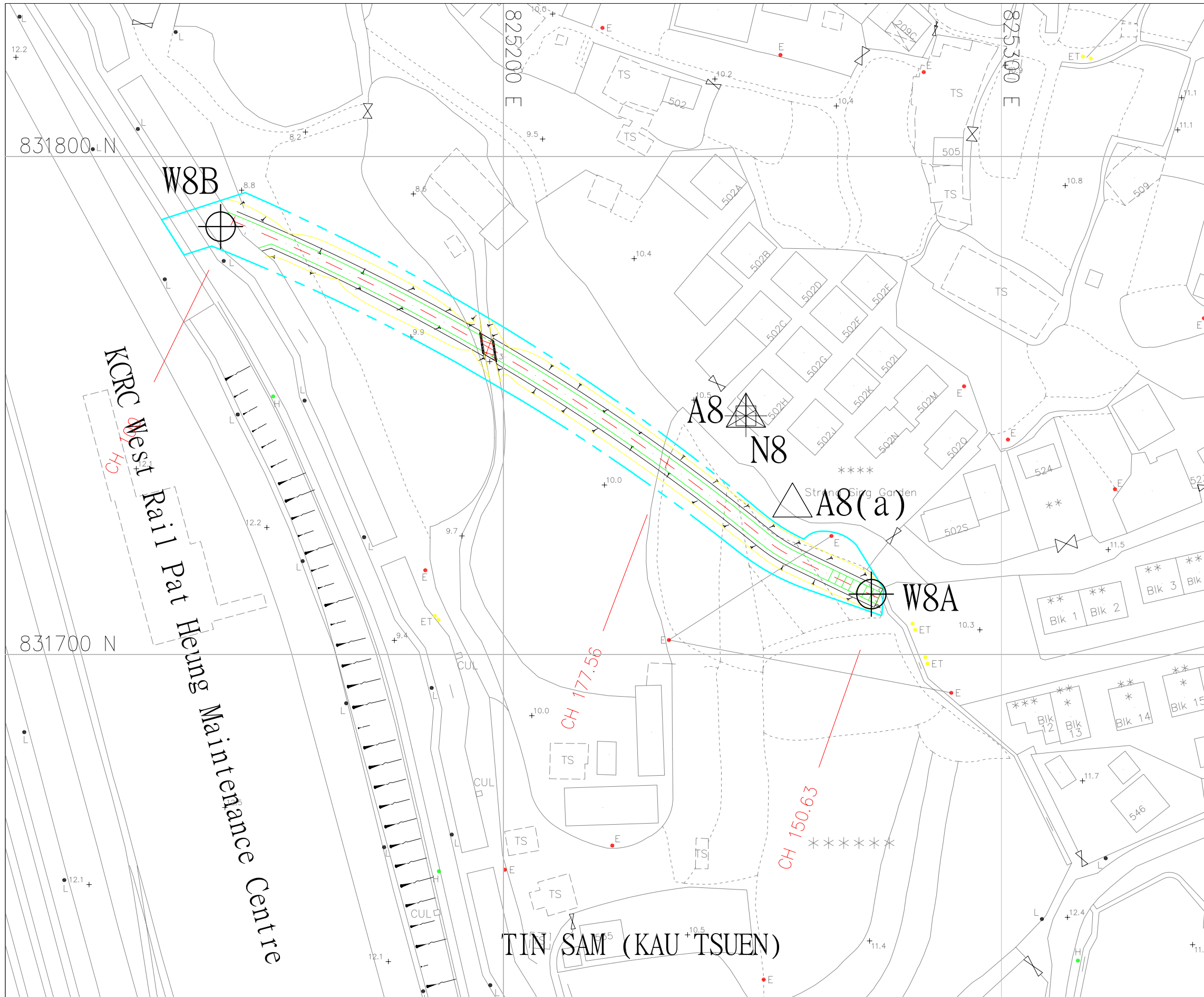
Contract title
DRAINAGE IMPROVEMENT WORKS
IN CHEUNG PO, MA ON KONG,
YUEN KONG SAN TSUEN AND TIN SAM
TSUEN OF YUEN LONG DISTRICT AND
SEWERAGE AT TSENG TAU CHUNG TSUEN,
TUEN MUN

Drawing title
CHANNEL KT14
GENERAL LAYOUT PLAN
(SHEET 1 OF 2)

Drawing no.	Scale
024	1:1000 A1 1:2000 A3



Plot Date : 9/25/2007



Legends

- Construction Noise Monitoring Location
- Air Quality Monitoring Location
- Water Quality Monitoring Location
- Monitoring Location access is not allow (Air or Noise or Water) for measurement

Table

Monitoring Parameter	Location ID	Address	Remarks
Water	W8A	E825274 / N831712	
Water	W8B	E825143 / N831786	
Air	A8		Replaced by A8(a)
Air	A8(a)	Entrance of Strong Sing Garden	Recommended Location
Noise	N8	No. 205H of Strong Sing Garden	

Note:
 Air Monitoring Location A8 are proposed to relocate at the entrance of Strong Sing Garden A8(a) due to request of the property management. The relocated monitoring point is considered suitable as representative sensitive receiver for Strong Sing Garden.

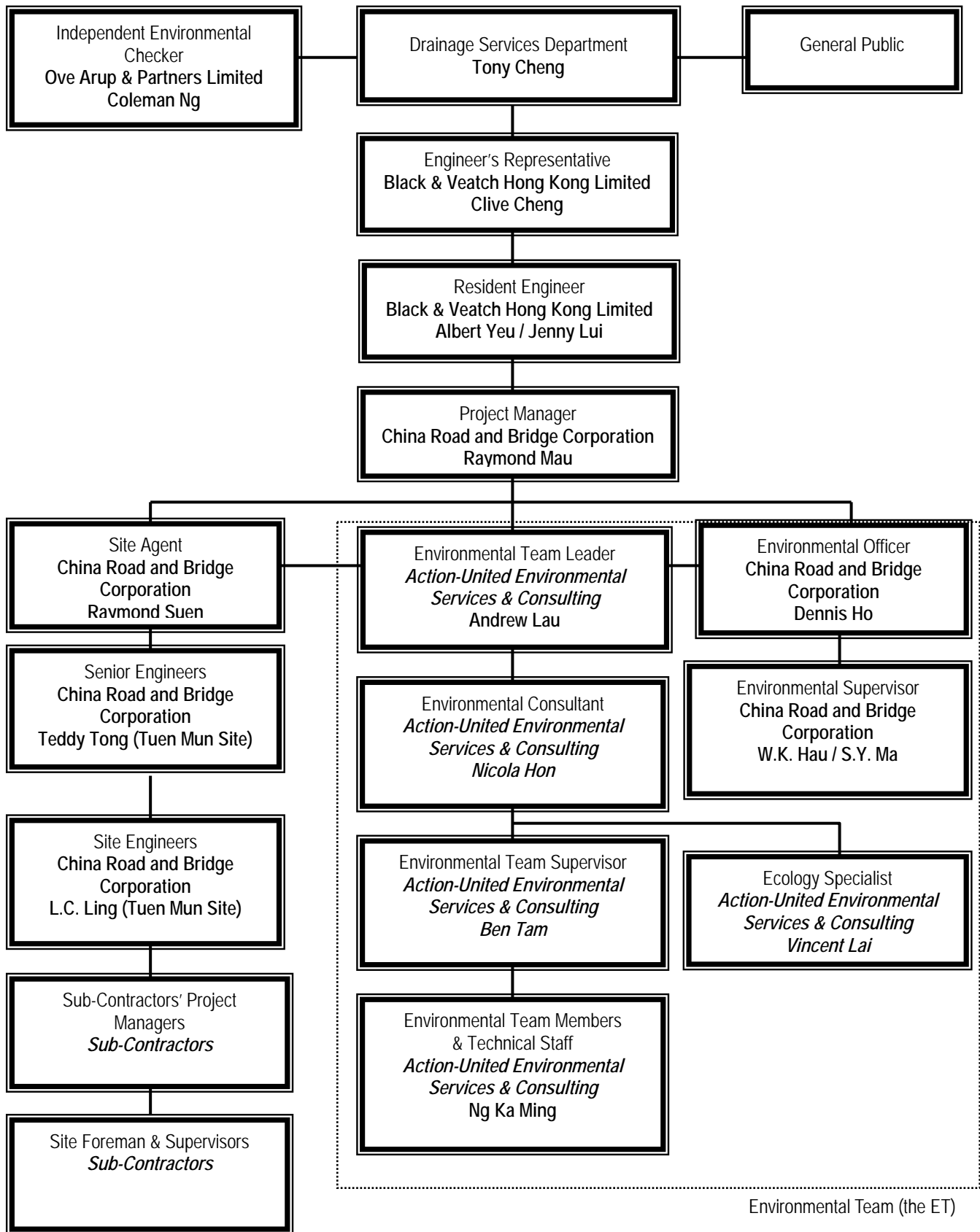
Drawing:
 Air, Noise and Stream Water Monitoring Location at KT-14A

Contract No. DC/2007/17-
 Drainage Improvement Works in Cheung Po, Ma On Kong, Yuen Kong San Tsuen and Tin Sam Tsuen of Yuen Long District and Sewerage at Tseng Tau Chung Tsuen, Tuen Mun

AUES

Appendix B

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



Environmental Management Organization

Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. Tony Cheng	2594-7264	2827-8526
B&V	Engineer's Representative	Mr. Clive Cheng	2478-9161	2478-9369
B&V	Resident Engineer	Mr. Albert Yeu	2478-9161	2478-9369
B&V	Resident Engineer	Mr. Jenny Lui	2478-9161	2478-9369
OAP	Independent Environmental Checker	Mr. Coleman Ng	2268-3097	2268-3950
CRBC	Project Director	Mr. Wang Yanhua	2283-1688	2283-1689
CRBC	Project Manager	Mr. Raymond Mau	9048-3669	2283-1689
CRBC	Site Agent	Mr. Raymond Suen	9779-8871	2283-1689
CRBC	Senior Engineer (Tuen Mun Site)	Mr. Teddy Tong	6283-9684	2283-1689
CRBC	Site Engineer (Tuen Mun Site)	Mr. L.C. Ling	6770-4010	2283-1689
CRBC	Environmental Officer	Mr. Dennis Ho	6474-6975	2283-1689
CRBC	Environmental / Construction Supervisor (Tuen Mun and Yuen Long site)	Mr. W.K. Hau	6283-9696	2283-1689
CRBC	Environmental / Construction Supervisor (Yuen Long site)	Mr. S.Y. Ma	9401-6296	2283-1689
CRBC	Safety Officer	Kenny Sze	9374-8954	2283-1689
AUES	Environmental Team Leader	Mr. Andrew Lau	2959-6059	2959-6079
AUES	Environmental Consultant	Miss Nicola Hon	2959-6059	2959-6079
AUES	Environmental Site Inspector	Mr. Ben Tam	2959-6059	2959-6079
AUES	Ecologist	Mr. Vincent Lai	2959-6059	2959-6079

Legend:

DSD (Employer) – Drainage Services Department

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

CRBC (Main Contractor) – China Road and Bridge Corporation

OAP (IEC) – Ove Arup & Partners Ltd

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

Appendix C

Construction Program

Three Months Rolling Programme - August 2009 to October 2009

ID	Task Name	Duration	Start	Finish	2009/8					2009/9					2009/10					
					26/7	2/8	9/8	16/8	23/8	30/8	6/9	13/9	20/9	27/9	4/10	11/10	18/10	25/10	1/11	
98	Section II (Channel KT13)	76 days	2009/8/1	2009/10/31	[Gantt bar for Section II (Channel KT13) from 2009/8/1 to 2009/10/31]															
99	Section III (Channel KT14A - Tin Sam Tsuen)	76 days	2009/8/1	2009/10/31	[Gantt bar for Section III (Channel KT14A - Tin Sam Tsuen) from 2009/8/1 to 2009/10/31]															
100	Regular Environmental Impact Monitoring	43 days	2009/8/1	2009/9/19	[Gantt bar for Regular Environmental Impact Monitoring from 2009/8/1 to 2009/9/19]															
101	Regular Tree Survey	76 days	2009/8/1	2009/10/31	[Gantt bar for Regular Tree Survey from 2009/8/1 to 2009/10/31]															
102	Regular Structural Condition Survey	43 days	2009/8/1	2009/9/19	[Gantt bar for Regular Structural Condition Survey from 2009/8/1 to 2009/9/19]															
103	Compensatory Planting	26 days	2009/8/1	2009/8/31	[Gantt bar for Compensatory Planting from 2009/8/1 to 2009/8/31]															
104																				
105	Section IV (Channel KT14B & 14C and Portion 8A & 8B)	76 days	2009/8/1	2009/10/31	[Gantt bar for Section IV (Channel KT14B & 14C and Portion 8A & 8B) from 2009/8/1 to 2009/10/31]															
217																				
218	Section V	76 days	2009/8/1	2009/10/31	[Gantt bar for Section V from 2009/8/1 to 2009/10/31]															
220																				
221	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	76 days	2009/8/1	2009/10/31	[Gantt bar for Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work) from 2009/8/1 to 2009/10/31]															
224																				
225	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	76 days	2009/8/1	2009/10/31	[Gantt bar for Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work) from 2009/8/1 to 2009/10/31]															

Monthly Rolling Programme - July 2009

ID	Task Name	Duration	Start	Finish	2009/7				
					28/6	5/7	12/7	19/7	26/7
1	Section II (Channel KT13)	26 days	2009/7/2	2009/7/31	[Summary bar]				
2	Regular Environmental Impact Monitoring	26 days	2009/7/2	2009/7/31	[Task bar]				
3	Regular Tree Survey & Protection	26 days	2009/7/2	2009/7/31	[Task bar]				
4	Regular Structural Condition Survey	26 days	2009/7/2	2009/7/31	[Task bar]				
5	Section A	26 days	2009/7/2	2009/7/31	[Summary bar]				
6	Excavation to channel formation & laying of rock fill material (A CH0.00 - A CH402.00)	26 days	2009/7/2	2009/7/31	[Summary bar]				
7	Bay A7 (A CH44.00 - A CH51.00) - Transition	2 days	2009/7/2	2009/7/3	[Task bar]				
8	Bay A8 (A CH51.00 - A CH59.00) - Transition	2 days	2009/7/4	2009/7/6	[Task bar]				
9	Bay A9 (A CH59.00 - A CH71.00) - TG2	2 days	2009/7/7	2009/7/8	[Task bar]				
10	Bay A10 (A CH71.00 - A CH83.00) - TG2	2 days	2009/7/9	2009/7/10	[Task bar]				
11	Bay A11 (A CH83.00 - A CH95.00) - TG2	2 days	2009/7/11	2009/7/13	[Task bar]				
12	Bay A12 (A CH95.00 - A CH108.00) - TG2	2 days	2009/7/14	2009/7/15	[Task bar]				
13	Bay A13 (A CH108.00 - A CH120.00) - TG2	2 days	2009/7/16	2009/7/17	[Task bar]				
14	Bay A14 (A CH120.00 - A CH133.00) - TG2	2 days	2009/7/18	2009/7/20	[Task bar]				
15	Bay A15 (A CH133.00 - A CH145.00) - TG2	4 days	2009/7/21	2009/7/24	[Task bar]				
16	Bay A16 (A CH145.00 - A CH157.00) - TG2	4 days	2009/7/25	2009/7/29	[Task bar]				
17	Bay A17 (A CH157.00 - A CH170.00) - TG2	2 days	2009/7/30	2009/7/31	[Task bar]				
18	Construction of channel structure (RC2, Transition, and TG2)	26 days	2009/7/2	2009/7/31	[Summary bar]				
19	Bay A6 (A CH41.00 - A CH44.00) & Pedestrian Crossing	3 days	2009/7/2	2009/7/4	[Task bar]				
20	Bay A7 (A CH44.00 - A CH51.00) - Transition	8 days	2009/7/6	2009/7/14	[Task bar]				
21	Bay A8 (A CH51.00 - A CH59.00) - Transition	8 days	2009/7/15	2009/7/23	[Task bar]				
22	Bay A9 (A CH59.00 - A CH71.00) - TG2	4 days	2009/7/24	2009/7/28	[Task bar]				
23	Bay A10 (A CH71.00 - A CH83.00) - TG2	3 days	2009/7/29	2009/7/31	[Task bar]				
24	Bay A11 (A CH83.00 - A CH95.00) - TG2	4 days	2009/7/13	2009/7/16	[Task bar]				
25	Bay A12 (A CH95.00 - A CH108.00) - TG2	4 days	2009/7/17	2009/7/21	[Task bar]				
26	Bay A13 (A CH108.00 - A CH120.00) - TG2	4 days	2009/7/22	2009/7/25	[Task bar]				
27	Bay A14 (A CH120.00 - A CH133.00) - TG2	4 days	2009/7/27	2009/7/30	[Task bar]				
28	Section of Box Culvert BC13-1	15 days	2009/7/15	2009/7/31	[Summary bar]				
29	Construct box culvert BC13-1 (BC CH0.00 - BC CH386.00)	15 days	2009/7/15	2009/7/31	[Summary bar]				
30	Excavation for box culvert formation & laying of rock fill material (BC CH0.00 - BC CH386.00)	15 days	2009/7/15	2009/7/31	[Summary bar]				
31	Bay BC17 (BC CH202.00 - BC CH217.00)	7 days	2009/7/15	2009/7/22	[Task bar]				
32	Bay BC18 (BC CH217.00 - BC CH232.00)	7 days	2009/7/23	2009/7/30	[Task bar]				
33	Bay BC19 (BC CH232.00 - BC CH247.00)	1 day	2009/7/31	2009/7/31	[Task bar]				
34	Section B	26 days	2009/7/2	2009/7/31	[Summary bar]				

Task [Task bar] Split [Split bar] Progress [Progress bar] Milestone [Milestone bar] Summary [Summary bar]

Monthly Rolling Programme - July 2009

ID	Task Name	Duration	Start	Finish	2009/7				
					28/6	5/7	12/7	19/7	26/7
35	Excavation for channel formation & laying of rock fill material (B CH0.00 - B CH316.00)	14 days	2009/7/10	2009/7/25					
36	Bay B2 (B CH07.00 - B CH14.00) - Transition	7 days	2009/7/10	2009/7/17					
37	Bay B1 (B CH00.00 - B CH07.00) - Transition	7 days	2009/7/18	2009/7/25					
38	Construction of channel structure (Transition, TG3, TG4, TG5, and TG8)	26 days	2009/7/2	2009/7/31					
39	Bay B13 (B CH129.00 - B CH137.00) - Transition	10 days	2009/7/2	2009/7/13					
40	Bay B6 (B CH46.00 - B CH57.00) - TG3	7 days	2009/7/2	2009/7/9					
41	Bay B5 (B CH34.00 - B CH46.00) - TG3	7 days	2009/7/10	2009/7/17					
42	Bay B2 (B CH07.00 - B CH14.00) - Transition	10 days	2009/7/18	2009/7/29					
43	Bay B1 (B CH00.00 - B CH07.00) - Transition	2 days	2009/7/30	2009/7/31					
44	Backfilling along the sides of channel & laying of underground drain	26 days	2009/7/2	2009/7/31					
45	Bay B12 (B CH119.00 - B CH129.00) - TG3	3 days	2009/7/2	2009/7/4					
46	Bay B11 (B CH107.00 - B CH119.00) - TG3	3 days	2009/7/6	2009/7/8					
47	Bay B10 (B CH94.00 - B CH107.00) - TG3	3 days	2009/7/9	2009/7/11					
48	Bay B9 (B CH80.00 - B CH94.00) - TG3	3 days	2009/7/13	2009/7/15					
49	Bay B8 (B CH68.00 - B CH80.00) - TG3	3 days	2009/7/16	2009/7/18					
50	Bay B7 (B CH57.00 - B CH68.00) - TG3	3 days	2009/7/20	2009/7/22					
51	Bay B6 (B CH46.00 - B CH57.00) - TG3	3 days	2009/7/23	2009/7/25					
52	Bay B5 (B CH34.00 - B CH46.00) - TG3	3 days	2009/7/27	2009/7/29					
53	Bay B4 (B CH24.00 - B CH34.00) - TG3	2 days	2009/7/30	2009/7/31					
54	Installation of Type 2 railing on top of channel wall	26 days	2009/7/2	2009/7/31					
55	Bay A15 (A CH133.00 - A CH145.00) - TG2	5 days	2009/7/2	2009/7/7					
56	Bay A14 (A CH120.00 - A CH133.00) - TG2	5 days	2009/7/8	2009/7/13					
57	Bay B13 (B CH129.00 - B CH137.00) - Transition	4 days	2009/7/14	2009/7/17					
58	Bay B12 (B CH119.00 - B CH129.00) - TG3	4 days	2009/7/18	2009/7/22					
59	Bay B11 (B CH107.00 - B CH119.00) - TG3	4 days	2009/7/23	2009/7/27					
60	Bay B10 (B CH94.00 - B CH107.00) - TG3	4 days	2009/7/28	2009/7/31					
61									
62	Section III (Channel KT14A - Tin Sam Tsuen)	26 days	2009/7/2	2009/7/31					
63	Regular Environmental Impact Monitoring	26 days	2009/7/2	2009/7/31					
64	Regular Tree Survey	26 days	2009/7/2	2009/7/31					
65	Regular Structural Condition Survey	26 days	2009/7/2	2009/7/31					
66	Construction of catchpit / manhole / drain pipe along the sides of channel	24 days	2009/7/2	2009/7/29					
67	Bay A8 (CH65.00 - CH77.00)	3 days	2009/7/2	2009/7/4					
68	Bay A9 (CH77.00 - CH89.00)	3 days	2009/7/6	2009/7/8					
69	Bay A10 (CH89.00 - CH101.00)	3 days	2009/7/9	2009/7/11					

Task Split Progress Milestone Summary

Monthly Rolling Programme - July 2009

ID	Task Name	Duration	Start	Finish	2009/7
					28/6 5/7 12/7 19/7 26/7
70	Bay A11 (CH101.00 - CH113.00)	3 days	2009/7/13	2009/7/15	
71	Bay A12 (CH113.00 - CH119.00)	3 days	2009/7/16	2009/7/18	
72	Bay A13 (CH119.00 - CH134.00)	3 days	2009/7/20	2009/7/22	
73	Bay A14 (CH134.00 - CH145.00)	3 days	2009/7/23	2009/7/25	
74	Bay A14-1 (CH134.00 - CH145.00)	3 days	2009/7/27	2009/7/29	
75	Installation of Type 2 railing on top of rectangular channel (CH0.00 - CH150.00)	16 days	2009/7/14	2009/7/31	
76	Bay A12 (CH113.00 - CH119.00)	4 days	2009/7/14	2009/7/17	
77	Bay A13 (CH119.00 - CH134.00)	4 days	2009/7/18	2009/7/22	
78	Bay A14 (CH134.00 - CH145.00)	4 days	2009/7/23	2009/7/27	
79	Bay A14-1 (CH134.00 - CH145.00)	4 days	2009/7/28	2009/7/31	
80	Installation of sign plate along the sides of channel/Street furniture	8 days	2009/7/20	2009/7/28	
81	Hydroseeding	1 day	2009/7/30	2009/7/30	
82	Compensatory Planting	1 day	2009/7/31	2009/7/31	
83					
84	Section IV (Channel KT14B & 14C and Portion 8A & 8B)	26 days	2009/7/2	2009/7/31	
85	Regular Environmental Impact Monitoring	26 days	2009/7/2	2009/7/31	
86	Regular Tree Survey & Protection	26 days	2009/7/2	2009/7/31	
87	Regular Structural Condition Survey	26 days	2009/7/2	2009/7/31	
88	Portion 8B (CP1 to CP9) - Kam Sheung Road (1050 Dia. Pipe)	26 days	2009/7/2	2009/7/31	
89	Catchpit CP2 - Manhole MH1	5 days	2009/7/2	2009/7/7	
90	Manhole MH7A - Manhole 7	5 days	2009/7/8	2009/7/13	
91	Manhole MH1 - Catchpit CP1	16 days	2009/7/14	2009/7/31	
92	Manhole MH7 - Manhole MH6 (Pipe Jacking)	19 days	2009/7/10	2009/7/31	
93	Construction of Jacking Pit and Receiving Pit	15 days	2009/7/10	2009/7/27	
94	Construction of Thrust Frame and setting up of equipments	4 days	2009/7/28	2009/7/31	
95	Channel 14B	26 days	2009/7/2	2009/7/31	
96	Construction of rectangular channel Type RC1 (CH0.00 - CH339.00)	26 days	2009/7/2	2009/7/31	
97	Construction of channel structure (CH0.00 - CH335.00)	18 days	2009/7/2	2009/7/22	
98	Bay 31 (CH303.00 - CH317.00)	8 days	2009/7/2	2009/7/10	
99	Bay 30 (CH299.00 - CH303.00) & Pedestrian Crossing PC14B-1	10 days	2009/7/11	2009/7/22	
100	Backfilling along the sides of the channel structure / Laying underground drain pipe	8 days	2009/7/23	2009/7/31	
101	Bay 31 (CH303.00 - CH317.00)	4 days	2009/7/23	2009/7/27	
102	Bay 30 (CH299.00 - CH303.00) & Pedestrian Crossing PC14B-1	4 days	2009/7/28	2009/7/31	
103	Construction of catchpit / manhole / drain pipe along the sides of the channel	26 days	2009/7/2	2009/7/31	
104	Existing U-channel to CP14B-13 (Upstream)	5 days	2009/7/2	2009/7/7	

Task Split Progress Milestone Summary

Monthly Rolling Programme - July 2009

ID	Task Name	Duration	Start	Finish	
105	Bay 1 (CH00.00 - CH05.00)	4 days	2009/7/8	2009/7/11	
106	Bay 2 (CH05.00 - CH08.00) & Pedestrian Crossing PC14B-3	4 days	2009/7/13	2009/7/16	
107	Bay 3 (CH08.00 - CH13.00)	4 days	2009/7/17	2009/7/21	
108	Bay 4 (CH13.00 - CH25.00)	4 days	2009/7/22	2009/7/25	
109	Bay 5 (CH25.00 - CH37.00)	5 days	2009/7/27	2009/7/31	
110	Channel KT14C	26 days	2009/7/2	2009/7/31	
111	Rectangular channel 2.5m(W) x 2.0m(H) Type RC-1 (CH0.00 -CH475.00)	26 days	2009/7/2	2009/7/31	
112	Excavation to channel formation (CH180.00 - CH475.00) & Laying rock fill material	26 days	2009/7/2	2009/7/31	
113	Bay 18E (CH285.00 - CH279.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	5 days	2009/7/2	2009/7/7	
114	Bay 19E (CH279.00 - CH267.00)	5 days	2009/7/8	2009/7/13	
115	Bay 1E (CH475.00 - CH466.00) & Vehicular Crossing VC14C-1	2 days	2009/7/30	2009/7/31	
116	Construction of channel structure (CH180.00 - CH475.00)	24 days	2009/7/2	2009/7/29	
117	Bay 17W-2 (CH178.00 - CH187.00) & Vehicular Crossing VC14C-3	10 days	2009/7/2	2009/7/13	
118	Bay 18E (CH285.00 - CH279.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	7 days	2009/7/14	2009/7/21	
119	Bay 19E (CH279.00 - CH267.00)	7 days	2009/7/22	2009/7/29	
120	Backfilling along the sides of the channel structure & laying underground drain pipe	16 days	2009/7/14	2009/7/31	
121	Bay 17W-2 (CH178.00 - CH187.00) & Vehicular Crossing VC14C-3	4 days	2009/7/14	2009/7/17	
122	Bay 18E (CH285.00 - CH279.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	1 day	2009/7/30	2009/7/30	
123	Bay 19E (CH279.00 - CH267.00)	1 day	2009/7/31	2009/7/31	
124	Installation of Type 2 railing on top of channel walls	15 days	2009/7/15	2009/7/31	
125	Bay 20E (CH267.00 - CH255.00)	5 days	2009/7/15	2009/7/20	
126	Bay 21E (CH255.00 - CH243.00)	5 days	2009/7/21	2009/7/25	
127	Bay 22E (CH243.00 - CH235.00)	5 days	2009/7/27	2009/7/31	
128					
129	Section V	26 days	2009/7/2	2009/7/31	
130	Preservation and protection of tree for Section I, II, III and IV	26 days	2009/7/2	2009/7/31	
131					
132	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	26 days	2009/7/2	2009/7/31	
133	Structural Survey and Monitoring	26 days	2009/7/2	2009/7/31	
134	Construction of Manhole, Timber Box and Trench Excavation	26 days	2009/7/2	2009/7/31	
135					
136	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	26 days	2009/7/2	2009/7/31	
137	Structural Survey and Monitoring	26 days	2009/7/2	2009/7/31	
138	Construction of Manhole, Timber Box and Trench Excavation	26 days	2009/7/2	2009/7/31	

Task Split Progress Milestone Summary

Contract No. : DC/2007/17
 Drainage Improvement Works in Cheung Po, Ma On Kong, Yuen Kong San Tsuen and Tin Sam Tsuen of Yuen Long District and Sewerage at Tseng Tau Chung Tsuen, Tuen Mun

Three Months Rolling Programme - September 2009 to November 2009

ID	Task Name	Duration	Start	9/2009					10/2009			11/2009						
				30/8	6/9	13/9	20/9	27/9	4/10	11/10	18/10	25/10	1/11	8/11	15/11	22/11	29/11	
1	Section II (Channel KT13)	75 days	2009/9/1															
116																		
117	Section III (Channel KT14A - Tin Sam Tsuen)	17 days	2009/9/1															
118	Regular Environmental Impact Monitoring	17 days	2009/9/1															
119	Regular Tree Survey	17 days	2009/9/1															
120	Regular Structural Condition Survey	17 days	2009/9/1															
121																		
122	Section IV (Channel KT14B & 14C and Portion 8A & 8B)	75 days	2009/9/1															
235																		
236	Section V	75 days	2009/9/1															
238																		
239	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	75 days	2009/9/1															
242																		
243	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	75 days	2009/9/1															

Task Split Progress Milestone Summary

Monthly Rolling Programme - August 2009

ID	Task Name	Duration	Start	2009/8					
				26/7	2/8	9/8	16/8	23/8	30/8
1	Section II (Channel KT13)	26 days	2009/8/1	[Summary bar from 26/7 to 30/8]					
2	Regular Environmental Impact Monitoring	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
3	Regular Tree Survey & Protection	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
4	Regular Structural Condition Survey	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
5	Section A	26 days	2009/8/1	[Summary bar from 26/7 to 30/8]					
6	Excavation to channel formation & laying of rock fill material (A CH0.00 - A CH402.00)	26 days	2009/8/1	[Summary bar from 26/7 to 30/8]					
7	Bay A2 (A CH09.00 - A CH18.00) - RC2	3 days	2009/8/1	[Task bar from 26/7 to 28/7]					
8	Bay A11 (A CH83.00 - A CH95.00) - TG2	3 days	2009/8/5	[Task bar from 29/7 to 31/7]					
9	Bay A18 (A CH170.00 - A CH180.00) - TG2	3 days	2009/8/8	[Task bar from 31/7 to 2/8]					
10	Bay A19 (A CH180.00 - A CH191.00) - TG2	3 days	2009/8/12	[Task bar from 5/8 to 7/8]					
11	Bay A20 (A CH191.00 - A CH201.00) - TG2	3 days	2009/8/15	[Task bar from 8/8 to 10/8]					
12	Bay A21 (A CH201.00 - A CH214.00) - TG2	3 days	2009/8/19	[Task bar from 11/8 to 13/8]					
13	Bay A22 (A CH214.00 - A CH226.00) - TG2	3 days	2009/8/22	[Task bar from 14/8 to 16/8]					
14	Bay A23 (A CH226.00 - A CH245.00) - TG2	3 days	2009/8/26	[Task bar from 17/8 to 19/8]					
15	Bay A24 (A CH245.00 - A CH258.00) - TG2	2 days	2009/8/29	[Task bar from 20/8 to 21/8]					
16	Construction of channel structure (RC2, Transition, and TG2)	26 days	2009/8/1	[Summary bar from 26/7 to 30/8]					
17	Bay A15 (A CH133.00 - A CH145.00) - TG2	2 days	2009/8/1	[Task bar from 26/7 to 27/7]					
18	Bay A17 (A CH157.00 - A CH170.00) - TG2	2 days	2009/8/4	[Task bar from 28/7 to 29/7]					
19	Bay A2 (A CH09.00 - A CH18.00) - RC2	4 days	2009/8/6	[Task bar from 30/7 to 3/8]					
20	Bay A11 (A CH83.00 - A CH95.00) - TG2	4 days	2009/8/11	[Task bar from 5/8 to 8/8]					
21	Bay A18 (A CH170.00 - A CH180.00) - TG2	4 days	2009/8/15	[Task bar from 9/8 to 12/8]					
22	Bay A19 (A CH180.00 - A CH191.00) - TG2	4 days	2009/8/20	[Task bar from 13/8 to 16/8]					
23	Bay A20 (A CH191.00 - A CH201.00) - TG2	4 days	2009/8/25	[Task bar from 17/8 to 20/8]					
24	Bay A21 (A CH201.00 - A CH214.00) - TG2	2 days	2009/8/29	[Task bar from 21/8 to 22/8]					
25	Backfilling along the channel sides / laying underground drain pipe	26 days	2009/8/1	[Summary bar from 26/7 to 30/8]					
26	Bay A3 (A CH18.00 - A CH26.00) - RC2	2 days	2009/8/1	[Task bar from 26/7 to 27/7]					
27	Bay A4 (A CH26.00 - A CH34.00) - Transition	2 days	2009/8/4	[Task bar from 28/7 to 29/7]					
28	Bay A5 (A CH34.00 - A CH41.00) - Transition	2 days	2009/8/6	[Task bar from 30/7 to 31/7]					
29	Bay A6 (A CH41.00 - A CH44.00) & Pedestrian Crossing	2 days	2009/8/8	[Task bar from 2/8 to 3/8]					
30	Bay A7 (A CH44.00 - A CH51.00) - Transition	2 days	2009/8/11	[Task bar from 5/8 to 6/8]					
31	Bay A8 (A CH51.00 - A CH59.00) - Transition	2 days	2009/8/13	[Task bar from 7/8 to 8/8]					
32	Bay A11 (A CH83.00 - A CH95.00) - TG2	2 days	2009/8/15	[Task bar from 9/8 to 10/8]					

Task [Task bar icon] Split [Split bar icon] Progress [Progress bar icon] Milestone [Milestone icon] Summary [Summary bar icon]

Monthly Rolling Programme - August 2009

ID	Task Name	Duration	Start	2009/8								
				26/7	2/8	9/8	16/8	23/8	30/8			
33	Bay A14 (A CH120.00 - A CH133.00) - TG2	2 days	2009/8/18				■					
34	Bay A15 (A CH133.00 - A CH145.00) - TG2	2 days	2009/8/20				■					
35	Bay A16 (A CH145.00 - A CH157.00) - TG2	2 days	2009/8/22				■					
36	Bay A17 (A CH157.00 - A CH170.00) - TG2	2 days	2009/8/25				■					
37	Bay A18 (A CH170.00 - A CH180.00) - TG2	2 days	2009/8/27				■					
38	Bay A19 (A CH180.00 - A CH191.00) - TG2	2 days	2009/8/29				■					
39	Section B	26 days	2009/8/1	—————								
40	Excavation for channel formation & laying of rock fill material (B CH0.00 - B CH316.00)	4 days	2009/8/15				■					
41	Bay B6 (B CH46.00 - B CH57.00) - TG3	2 days	2009/8/15				■					
42	Bay B5 (B CH34.00 - B CH46.00) - TG3	2 days	2009/8/18				■					
43	Construction of channel structure (Transition, TG3, TG4, TG5, and TG8)	8 days	2009/8/20				■					
44	Bay B6 (B CH46.00 - B CH57.00) - TG3	4 days	2009/8/20				■					
45	Bay B5 (B CH34.00 - B CH46.00) - TG3	4 days	2009/8/25				■					
46	Installation of Type 2 railing on top of channel wall	26 days	2009/8/1	—————								
47	Bay B14 (B CH137.00 - B CH144.00) - Transition	3 days	2009/8/1	■								
48	Bay B13 (B CH129.00 - B CH137.00) - Transition	3 days	2009/8/5		■							
49	Bay B12 (B CH119.00 - B CH129.00) - TG3	3 days	2009/8/8			■						
50	Bay B11 (B CH107.00 - B CH119.00) - TG3	3 days	2009/8/12				■					
51	Bay B10 (B CH94.00 - B CH107.00) - TG3	3 days	2009/8/15					■				
52	Bay B9 (B CH80.00 - B CH94.00) - TG3	3 days	2009/8/19						■			
53	Bay B8 (B CH68.00 - B CH80.00) - TG3	3 days	2009/8/22							■		
54	Bay B7 (B CH57.00 - B CH68.00) - TG3	3 days	2009/8/26								■	
55	Bay B6 (B CH46.00 - B CH57.00) - TG3	2 days	2009/8/29									■
56												
57	Section III (Channel KT14A - Tin Sam Tsuen)	26 days	2009/8/1	—————								
58	Regular Environmental Impact Monitoring	26 days	2009/8/1	▨								
59	Regular Tree Survey	26 days	2009/8/1	▨								
60	Regular Structural Condition Survey	26 days	2009/8/1	▨								
61	Compensatory Planting	10 days	2009/8/1	▨								
62												
63	Section IV (Channel KT14B & 14C and Portion 8A & 8B)	26 days	2009/8/1	—————								
64	Regular Environmental Impact Monitoring	26 days	2009/8/1	▨								

Task ■ Split Progress ——— Milestone ◆ Summary ▬

Monthly Rolling Programme - August 2009

ID	Task Name	Duration	Start	2009/8					
				26/7	2/8	9/8	16/8	23/8	30/8
65	Regular Tree Survey & Protection	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
66	Regular Structural Condition Survey	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
67	Portion 8B (CP1 to CP9) - Kam Sheung Road (1050 Dia. Pipe)	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
68	Manhole MH7 - Manhole MH6 (Pipe Jacking)	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
69	Construction of Jacking Pit and Receiving Pit	14 days	2009/8/1	[Task bar from 26/7 to 10/8]					
70	Construction of Thrust Frame and Setting up of Equipments	12 days	2009/8/18	[Task bar from 18/8 to 30/8]					
71	Channel 14B	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
72	Construction of rectangular channel Type RC1 (CH0.00 - CH339.00)	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
73	Installation of Type 2 railing on top of channel walls	16 days	2009/8/10	[Task bar from 10/8 to 26/8]					
74	Bay 29 (CH297.00 - CH299.00)	4 days	2009/8/10	[Task bar from 10/8 to 14/8]					
75	Bay 30 (CH299.00 - CH303.00) & Pedestrian Crossing PC14B-1	4 days	2009/8/14	[Task bar from 14/8 to 18/8]					
76	Bay 31 (CH303.00 - CH317.00)	4 days	2009/8/19	[Task bar from 19/8 to 23/8]					
77	Bay 32 (CH317.00 - CH326.00)	4 days	2009/8/24	[Task bar from 24/8 to 30/8]					
78	Laying of gabion block inside the channel structure	14 days	2009/8/15	[Task bar from 15/8 to 29/8]					
79	Bay 28 (CH285.00 - CH297.00)	3 days	2009/8/15	[Task bar from 15/8 to 18/8]					
80	Bay 29 (CH297.00 - CH299.00)	3 days	2009/8/19	[Task bar from 19/8 to 22/8]					
81	Bay 30 (CH299.00 - CH303.00) & Pedestrian Crossing PC14B-1	3 days	2009/8/22	[Task bar from 22/8 to 25/8]					
82	Bay 31 (CH303.00 - CH317.00)	3 days	2009/8/26	[Task bar from 26/8 to 29/8]					
83	Bay 32 (CH317.00 - CH326.00)	2 days	2009/8/29	[Task bar from 29/8 to 30/8]					
84	Construction of catchpit / manhole / drain pipe along the sides of the channel	26 days	2009/8/1	[Task bar from 26/7 to 30/8]					
85	Bay 6 (CH37.00 - CH50.00)	3 days	2009/8/1	[Task bar from 26/7 to 28/7]					
86	Bay 7 (CH50.00 - CH62.00)	3 days	2009/8/5	[Task bar from 30/7 to 2/8]					
87	Bay 8 (CH62.00 - CH74.00)	3 days	2009/8/8	[Task bar from 3/8 to 6/8]					
88	Bay 9 (CH74.00 - CH86.00)	3 days	2009/8/12	[Task bar from 7/8 to 10/8]					
89	Bay 10 (CH86.00 - CH98.00)	3 days	2009/8/15	[Task bar from 10/8 to 13/8]					
90	Bay 11 (CH98.00 - CH110.00)	3 days	2009/8/19	[Task bar from 13/8 to 16/8]					
91	Bay 12 (CH110.00 - CH122.00)	3 days	2009/8/22	[Task bar from 16/8 to 19/8]					
92	Bay 13 (CH122.00 - CH135.00)	3 days	2009/8/26	[Task bar from 19/8 to 22/8]					
93	Bay 14 (CH135.00 - CH147.00)	2 days	2009/8/29	[Task bar from 22/8 to 24/8]					
94	Channel KT14C	19 days	2009/8/10	[Task bar from 10/8 to 29/8]					
95	Rectangular channel 2.5m(W) x 2.0m(H) Type RC-1 (CH0.00 - CH475.00)	19 days	2009/8/10	[Task bar from 10/8 to 29/8]					
96	Excavation to channel formation (CH180.00 - CH475.00) & Laying rock fill material	19 days	2009/8/10	[Task bar from 10/8 to 29/8]					

Task [Pattern] Split [Pattern] Progress [Pattern] Milestone [Pattern] Summary [Pattern]

Monthly Rolling Programme - August 2009

ID	Task Name	Duration	Start	26/7	2/8	9/8	16/8	23/8	30/8
97	Bay 1E (CH475.00 - CH466.00) & Vehicular Crossing VC14C-1	5 days	2009/8/10			■			
98	Bay 2E (CH466.00 - CH460.00)	5 days	2009/8/15			■	■		
99	Bay 3E (CH460.00 - CH448.00)	5 days	2009/8/21				■	■	
100	Bay 4E (CH448.00 - CH435.00)	4 days	2009/8/27					■	■
101	Construction of channel structure (CH180.00 - CH475.00)	14 days	2009/8/15			■	■	■	■
102	Bay 1E (CH475.00 - CH466.00) & Vehicular Crossing VC14C-1	8 days	2009/8/15			■	■		
103	Bay 2E (CH466.00 - CH460.00)	6 days	2009/8/25					■	■
104	Construction of catchpit / manhole / drain pipe	19 days	2009/8/10			■	■	■	■
105	Bay 17E-1 (CH299.00 - CH292.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/8/10			■			
106	Bay 17E-2 (CH292.00 - CH285.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/8/14			■	■		
107	Bay 18E (CH285.00 - CH279.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/8/19				■	■	
108	Bay 19E (CH279.00 - CH267.00)	4 days	2009/8/24					■	■
109	Bay 20E (CH267.00 - CH255.00)	3 days	2009/8/28						■
110	Installation of Type 2 railing on top of channel walls	14 days	2009/8/15			■	■	■	■
111	Bay 16E (CH311.00 - CH299.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	2 days	2009/8/15				■		
112	Bay 17E-1 (CH299.00 - CH292.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	2 days	2009/8/18				■	■	
113	Bay 17E-2 (CH292.00 - CH285.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	2 days	2009/8/20					■	■
114	Bay 18E (CH285.00 - CH279.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	2 days	2009/8/22						■
115	Bay 19E (CH279.00 - CH267.00)	2 days	2009/8/25						■
116	Bay 23E (CH235.00 - CH222.00)	2 days	2009/8/27						■
117	Bay 24E (CH222.00 - CH210.00)	2 days	2009/8/29						■
118									
119	Section V	26 days	2009/8/1	■	■	■	■	■	■
120	Preservation and protection of tree for Section I, II, III and IV	26 days	2009/8/1	■	■	■	■	■	■
121									
122	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	26 days	2009/8/1	■	■	■	■	■	■
123	Structural Survey and Monitoring	26 days	2009/8/1	■	■	■	■	■	■
124	Construction of Manhole, Timber Box and Trench Excavation	26 days	2009/8/1	■	■	■	■	■	■
125									
126	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	26 days	2009/8/1	■	■	■	■	■	■
127	Structural Survey and Monitoring	26 days	2009/8/1	■	■	■	■	■	■
128	Construction of Manhole, Timber Box and Trench Excavation	26 days	2009/8/1	■	■	■	■	■	■

Task ■ Split Progress — Milestone ◆ Summary —

Monthly Rolling Programme - September 2009

ID	Task Name	Duration	Start	Complete	9/2009				
					30/8	6/9	13/9	20/9	27/9
1	Section II (Channel KT13)	26 days	2009/9/1	0	[Summary bar from 30/8 to 27/9]				
2	Regular Environmental Impact Monitoring	26 days	2009/9/1	0	[Task bar from 30/8 to 27/9]				
3	Regular Tree Survey & Protection	26 days	2009/9/1	0	[Task bar from 30/8 to 27/9]				
4	Regular Structural Condition Survey	26 days	2009/9/1	0	[Task bar from 30/8 to 27/9]				
5	Tree Transplanting	10 days	2009/9/10	0	[Task bar from 10/9 to 20/9]				
6	Section A	26 days	2009/9/1	0	[Summary bar from 30/8 to 27/9]				
7	Excavation to channel formation & laying of rock fill material (A CH0.00 - A CH402.00)	26 days	2009/9/1	0	[Summary bar from 30/8 to 27/9]				
8	Bay A24 (A CH245.00 - A CH258.00) - TG2 (W.B.)	4 days	2009/9/1	0	[Task bar from 30/8 to 6/9]				
9	Bay A25 (A CH258.00 - A CH271.00) - TG2 (W.B.)	4 days	2009/9/5	0	[Task bar from 5/9 to 13/9]				
10	Bay A18 (A CH170.00 - A CH180.00) - TG2 (W.B.)	4 days	2009/9/10	0	[Task bar from 10/9 to 17/9]				
11	Bay A19 (A CH180.00 - A CH191.00) - TG2 (W.B.)	4 days	2009/9/15	0	[Task bar from 15/9 to 20/9]				
12	Bay A26 (A CH271.00 - A CH283.00) - TG6 (W.B.)	4 days	2009/9/19	0	[Task bar from 19/9 to 27/9]				
13	Bay A27 (A CH283.00 - A CH295.00) - TG6 (W.B.)	4 days	2009/9/24	0	[Task bar from 24/9 to 30/8 (next month)]				
14	Bay A28 (A CH295.00 - A CH308.00) - TG6 (W.B.)	2 days	2009/9/29	0	[Task bar from 29/9 to 30/8 (next month)]				
15	Construction of channel structure (RC2, Transition, and TG2)	26 days	2009/9/1	0	[Summary bar from 30/8 to 27/9]				
16	Bay A2 (A CH09.00 - A CH18.00) - RC2	4 days	2009/9/1	0	[Task bar from 30/8 to 6/9]				
17	Bay A20 (A CH191.00 - A CH201.00) - TG2 (W.B.)	4 days	2009/9/5	0	[Task bar from 5/9 to 13/9]				
18	Bay A22 (A CH214.00 - A CH226.00) - TG2 (W.B.)	4 days	2009/9/10	0	[Task bar from 10/9 to 17/9]				
19	Bay A24 (A CH245.00 - A CH258.00) - TG2 (W.B.)	4 days	2009/9/15	0	[Task bar from 15/9 to 20/9]				
20	Bay A25 (A CH258.00 - A CH271.00) - TG2 (W.B.)	4 days	2009/9/19	0	[Task bar from 19/9 to 27/9]				
21	Bay A18 (A CH170.00 - A CH180.00) - TG2 (W.B.)	4 days	2009/9/24	0	[Task bar from 24/9 to 30/8 (next month)]				
22	Bay A19 (A CH180.00 - A CH191.00) - TG2 (W.B.)	2 days	2009/9/29	0	[Task bar from 29/9 to 30/8 (next month)]				
23	Backfilling along the channel sides / laying underground drain pipe	23 days	2009/9/4	0	[Summary bar from 30/8 to 27/9]				
24	Bay A21 (A CH201.00 - A CH214.00) - TG2 (W.B.)	3 days	2009/9/4	0	[Task bar from 30/8 to 6/9]				
25	Bay A23 (A CH226.00 - A CH245.00) - TG2 (W.B.)	3 days	2009/9/8	0	[Task bar from 8/9 to 13/9]				
26	Bay A2 (A CH09.00 - A CH18.00) - RC2	3 days	2009/9/11	0	[Task bar from 11/9 to 17/9]				
27	Bay A20 (A CH191.00 - A CH201.00) - TG2 (W.B.)	3 days	2009/9/15	0	[Task bar from 15/9 to 20/9]				
28	Bay A22 (A CH214.00 - A CH226.00) - TG2 (W.B.)	3 days	2009/9/18	0	[Task bar from 18/9 to 27/9]				
29	Bay A24 (A CH245.00 - A CH258.00) - TG2 (W.B.)	3 days	2009/9/22	0	[Task bar from 22/9 to 30/8 (next month)]				
30	Bay A25 (A CH258.00 - A CH271.00) - TG2 (W.B.)	3 days	2009/9/25	0	[Task bar from 25/9 to 30/8 (next month)]				
31	Bay A18 (A CH170.00 - A CH180.00) - TG2 (W.B.)	2 days	2009/9/29	0	[Task bar from 29/9 to 30/8 (next month)]				

Task [Pattern] Split [Pattern] Progress [Pattern] Milestone [Pattern] Summary [Pattern]

Monthly Rolling Programme - September 2009

ID	Task Name	Duration	Start	Complete	9/2009				
					30/8	6/9	13/9	20/9	27/9
32	Section of Box Culvert BC13-1	14 days	2009/9/15	0					
33	Construct box culvert BC13-1 (BC CH0.00 - BC CH386.00)	14 days	2009/9/15	0					
34	Excavation for box culvert formation & laying of rock fill material (BC CH0.00 - BC CH386.00)	14 days	2009/9/15	0					
35	Bay BC17 (BC CH202.00 - BC CH217.00)	4 days	2009/9/15	0					
36	Bay BC18 (BC CH217.00 - BC CH232.00)	4 days	2009/9/19	0					
37	Bay BC19 (BC CH232.00 - BC CH247.00)	4 days	2009/9/24	0					
38	Bay BC20 (BC CH247.00 - BC CH262.00)	2 days	2009/9/29	0					
39	Section B	26 days	2009/9/1	0					
40	Construction of channel structure (Transition, TG3, TG4, TG5, and TG8)	10 days	2009/9/1	0					
41	Bay B6 (B CH46.00 - B CH57.00) - TG3 (S.B.)	5 days	2009/9/1	0					
42	Bay B5 (B CH34.00 - B CH46.00) - TG3 (S.B.)	5 days	2009/9/7	0					
43	Backfilling along the sides of channel & laying of underground drain	8 days	2009/9/12	0					
44	Bay B6 (B CH46.00 - B CH57.00) - TG3 (S.B.)	4 days	2009/9/12	0					
45	Bay B5 (B CH34.00 - B CH46.00) - TG3 (S.B.)	4 days	2009/9/17	0					
46	Installation of Type 2 railing on top of channel wall	8 days	2009/9/22	0					
47	Bay B6 (B CH46.00 - B CH57.00) - TG3 (S.B.)	2 days	2009/9/22	0					
48	Bay B5 (B CH34.00 - B CH46.00) - TG3 (S.B.)	2 days	2009/9/24	0					
49	Bay B4 (B CH24.00 - B CH34.00) - TG3 (S.B.)	2 days	2009/9/26	0					
50	Bay B3 (B CH14.00 - B CH24.00) - TG3 (S.B.)	2 days	2009/9/29	0					
51									
52	Section III (Channel KT14A - Tin Sam Tsuen)	26 days	2009/9/1	0					
53	Regular Tree Survey	26 days	2009/9/1	0					
54	Regular Structural Condition Survey	26 days	2009/9/1	0					
55	Compensatory Planting	2 days	2009/9/2	0					
56									
57	Section IV (Channel KT14B & 14C and Portion 8A & 8B)	26 days	2009/9/1	0					
58	Regular Environmental Impact Monitoring	26 days	2009/9/1	0					
59	Regular Tree Survey & Protection	26 days	2009/9/1	0					
60	Regular Structural Condition Survey	26 days	2009/9/1	0					
61	Portion 8B (CP1 to CP9) - Kam Sheung Road (1050 Dia. Pipe)	26 days	2009/9/1	0					
62	Manhole MH1 - Catchpit CP1	26 days	2009/9/1	0					

Task Split Progress Milestone Summary

Monthly Rolling Programme - September 2009

ID	Task Name	Duration	Start	Complete	9/2009				
					30/8	6/9	13/9	20/9	27/9
63	Manhole MH7 - Manhole MH6 (Pipe Jacking)	26 days	2009/9/1	0					
64	Pipe Jacking of Steel Ring	20 days	2009/9/1	0					
65	Installation of Drain Pipe	5 days	2009/9/24	0					
66	Grouting Works	1 day	2009/9/30	0					
67	Planting of Shrubs at planters	14 days	2009/9/15	0					
68	Channel 14B	26 days	2009/9/1	0					
69	Compensatory Planting	14 days	2009/9/15	0					
70	Construction of catchpit / manhole / drain pipe along the sides of the channel	26 days	2009/9/1	0					
71	Bay 14 (CH135.00 - CH147.00)	4 days	2009/9/1	0					
72	Bay 15 (CH147.00 - CH159.00)	4 days	2009/9/5	0					
73	Bay 16 (CH159.00 - CH171.00)	4 days	2009/9/10	0					
74	Bay 17 (CH171.00 - CH183.00)	4 days	2009/9/15	0					
75	Bay 18 (CH183.00 - CH195.00)	4 days	2009/9/19	0					
76	Bay 19 (CH195.00 - CH207.00)	4 days	2009/9/24	0					
77	Bay 20 (CH207.00 - CH216.00)	2 days	2009/9/29	0					
78	Laying of gabion block inside the channel structure	18 days	2009/9/10	0					
79	Bay 28 (CH285.00 - CH297.00)	5 days	2009/9/10	0					
80	Bay 29 (CH297.00 - CH299.00)	5 days	2009/9/16	0					
81	Bay 31 (CH303.00 - CH317.00)	5 days	2009/9/22	0					
82	Bay 32 (CH317.00 - CH326.00)	3 days	2009/9/28	0					
83	Construction of 3.5m maintenance access (CH225.00 - CH335.00) - East bank	14 days	2009/9/15	0					
84	Channel KT14C	26 days	2009/9/1	0					
85	Rectangular channel 2.5m(W) x 2.0m(H) Type RC-1 (CH0.00 -CH475.00)	18 days	2009/9/10	0					
86	Excavation to channel formation (CH180.00 - CH475.00) & Laying rock fill material	18 days	2009/9/10	0					
87	Bay 1E (CH475.00 - CH466.00) & Vehicular Crossing VC14C-1	4 days	2009/9/10	0					
88	Bay 2E (CH466.00 - CH460.00)	4 days	2009/9/15	0					
89	Bay 3E (CH460.00 - CH448.00)	4 days	2009/9/19	0					
90	Bay 4E (CH448.00 - CH435.00)	4 days	2009/9/24	0					
91	Bay 5E (CH435.00 - CH425.00)	2 days	2009/9/29	0					
92	Construction of channel structure (CH180.00 - CH475.00)	10 days	2009/9/19	0					
93	Bay 1E (CH475.00 - CH466.00) & Vehicular Crossing VC14C-1	8 days	2009/9/19	0					

Task Split Progress Milestone Summary

Monthly Rolling Programme - September 2009

ID	Task Name	Duration	Start	Complete	9/2009				
					30/8	6/9	13/9	20/9	27/9
94	Bay 2E (CH466.00 - CH460.00)	2 days	2009/9/29	0					
95	Laying gabion blocks	9 days	2009/9/21	0				—————	
96	Bay 8E (CH401.00 - CH390.00)	3 days	2009/9/21	0					
97	Bay 9E (CH390.00 - CH384.00)	3 days	2009/9/24	0					
98	Bay 10E (CH384.00 - CH371.00)	3 days	2009/9/28	0					
99	Construction of catchpit / manhole / drain pipe	26 days	2009/9/1	0	—————				
100	Bay 16E (CH311.00 - CH299.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/9/1	0					
101	Bay 17E-1 (CH299.00 - CH292.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/9/5	0					
102	Bay 17E-2 (CH292.00 - CH285.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/9/10	0					
103	Bay 16E (CH311.00 - CH299.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/9/15	0					
104	Bay 17E-1 (CH299.00 - CH292.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/9/19	0					
105	Bay 17E-2 (CH292.00 - CH285.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	4 days	2009/9/24	0					
106	Bay 20E (CH267.00 - CH255.00)	2 days	2009/9/29	0					
107	Installation of Type 2 railing on top of channel walls	14 days	2009/9/15	0			—————		
108	Bay 16E (CH311.00 - CH299.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	3 days	2009/9/15	0					
109	Bay 17E-1 (CH299.00 - CH292.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	3 days	2009/9/18	0					
110	Bay 17E-2 (CH292.00 - CH285.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	3 days	2009/9/22	0					
111	Bay 18E (CH285.00 - CH279.00) - 2.5m(W) x 2.0m(H) Box Culvert (Type BC2)	3 days	2009/9/25	0					
112	Bay 19E (CH279.00 - CH267.00)	2 days	2009/9/29	0					
113									
114	Section V	26 days	2009/9/1	0	—————				
115	Preservation and protection of tree for Section I, II, III and IV	26 days	2009/9/1	0	—————				
116					—————				
117	Section VI - Portion 9A & 9B (Tuen Mun Sewerage Work)	26 days	2009/9/1	0	—————				
118	Structural Survey and Monitoring	26 days	2009/9/1	0	—————				
119	Construction of Manhole, Timber Box and Trench Excavation	26 days	2009/9/1	0	—————				
120					—————				
121	Section VII - Portion 10A, 10B & 10C (Tuen Mun Sewerage Work)	26 days	2009/9/1	0	—————				
122	Structural Survey and Monitoring	26 days	2009/9/1	0	—————				
123	Construction of Manhole, Timber Box and Trench Excavation	26 days	2009/9/1	0	—————				

Task  Split  Progress  Milestone  Summary 

Appendix D

Mitigation Measure Implementation Schedule

Mitigation Measure Implementation Schedule – Construction Noise

Construction Noise Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Noise 1	<p>The Contractor is required to adopt Level 1 and 2 site-specific direct technical measures as specified below during the construction phase</p> <p><i>Level 1 Mitigation Measures</i></p> <ul style="list-style-type: none"> The use of equipment with sound power level lower than that stipulated in the Technical Memorandum on Noise from Construction Works Other Than Percussive Piling is recommended as the first level mitigation (Level 1 mitigation) for all construction works under this Project. Quiet plant is defined as PME whose actual sound power level is less than the value specified in the Technical Memorandum on Noise from Construction Works Other Than Percussive Piling for the same piece of equipment. BS5228 also provides examples of quiet construction plant and their sound power level. The quiet plant used in the noise calculation including the BS5228 reference number is shown in Attachment 1 for reference <p><i>Level 2 Mitigation Measures</i></p> <ul style="list-style-type: none"> In addition to the use of quiet plant purpose-built site noise barriers shall be used as hoarding where construction works would be undertaken close (about 30m or less) to the NSRs (Figure 5.4). Temporary noise barrier with a minimum height of 3m shall be erected along the part of site boundary closest to the NSRs. Notwithstanding the required minimum height these barriers shall be constructed in a way such that no construction works and PME can be visible from the NSRs nearby. The minimum height is estimated assuming the construction equipment activities will be located on the channel bed 2m below the surrounding ground level. 	Prevent noise impact at sensitive receivers	To be implemented at the works site of KT14 during the Construction Phase (Figure 5.4 show locations of proposed temporary noise barriers.)	Construction Contractor		√		EIAO

Construction Noise Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Noise 1 (Cont'd)	<ul style="list-style-type: none"> Stationary equipment shall be placed on the channel bed during construction works. For the construction works which are predicted to exceed 75dB(A) (Leq30min) at nearby NSR and whose line of sight cannot be blocked by the temporary noise barrier (i.e. further away from the hoardings), movable (mobile) noise barrier of more than 3m high shall be provided. A typical example is shown in Figure 5.7. The noise barriers or screens shall be constructed of appropriate material with a minimum surface density of 10kg/m². Generators and compressors, shall be completely screened by construction barriers giving a total noise reduction of 10dB(A) or more. The location of the proposed temporary noise barriers for KT14 is shown on Figures 5.4. 	Prevent noise impact at sensitive receivers	To be implemented at the works site of KT14 during the Construction Phase (Figure 5.4 show locations of proposed temporary noise barriers.)	Construction Contractor		√		EIAO

Mitigation Measure Implementation Schedule – Air Quality

Air Quality Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Air 1	The Contractor shall prevent dust nuisance arising from the construction activities. The Contractor is required to follow all the requirements for dust control stipulated in the Air Pollution Control (Construction Dust) Regulation	Prevent dust nuisance	To be implemented at all works are of KT14 site during the Construction Phase.	Construction Contractor		√		Air Pollution Control Ordinance Air Pollution Control (Construction Dust Regulation)
Air 2	<p>The following dust suppression measures shall be installed as part of construction practice, and these shall be incorporated in the Contract Specification and implemented to minimize dust nuisance to within acceptable levels.</p> <ul style="list-style-type: none"> i) The Contractor shall frequently clean and water the site to minimise fugitive dust emissions. ii) Effective water sprays shall be used during the delivery and handling of aggregate, and other similar materials, when dust is likely to be created and to dampen all stored materials during dry and windy weather. iii) Watering of exposed surfaces shall be exercised at least three times a day. iv) Areas within the site where there is a regular movement of vehicles must be regularly watered at minimum three times a day. v) The Contractor shall restrict all motorised vehicles within the site, excluding those on public roads, to a maximum speed of 15 km per hour and confine haulage and delivery vehicles to designated road ways inside the site. vi) Any stockpiles of construction materials that are likely to generate fugitive dust shall be covered with tarpaulins including the materials on lorries or trucks. 	Prevent dust nuisance	To be implemented at all works are of KT14 site during the Construction Phase.	Construction Contractor		√		Air Pollution Control Ordinance Air Pollution Control (Construction Dust Regulation)

Air Quality Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Air 2 (Cont'd)	<p>vii) Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facility. Such wheel washing facilities shall be usable prior to any earthworks excavating activity on the site. The Contractor shall also provide a hard-surfaced road between any washing facility and the public road.</p> <p>viii) Any materials dropped on paved roads will need to be cleaned up immediately to prevent dust nuisance.</p>	Prevent dust nuisance	To be implemented at all works are of KT14 site during the Construction Phase.	Construction Contractor		√		<p>Air Pollution Control Ordinance</p> <p>Air Pollution Control (Construction Dust Regulation)</p>

Mitigation Measure Implementation Schedule – Water Quality

Water Quality Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Water 1	Wash facilities for workers and wheel wash waste result in muddy construction site runoff. Temporary earth hunds and sand barriers shall be used to direct such runoff to a designated settlement area within the site.	Prevent additional pollution load being added to stream due to KT14 works	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WPCO & ProPECC PN1/94
Water 1 (Cont'd)	The settlement area shall be located within the temporary site area. Construction site runoff shall be settled in this settlement area, while runoff from the surface should be channelled through a local site drainage system into the settlement area. When solids build up in the settlement area, and certainly before the onset of the wet season (Apr-Oct) solids shall be excavated from the base of the settlement area. No excavation shall be allowed in rainy weather.	Prevent additional pollution load being added to stream due to KT14 works	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WPCO & ProPECC PN1/94
Water 2	All discharged waters, including sewage and site runoff, should comply with the appropriate standards in the Technical Memorandum on Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters, prior to discharge. Licensed contractors shall dispose the collected sewage to the government sewers. No sewage shall be allowed to enter wash facilities or sediment setting area.	Prevent additional pollution load being added to stream due to KT14 works	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WPCO & ProPECC PN1/94

Mitigation Measure Implementation Schedule – Waste Management

Waste Management								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
	<p><i>Waste Management Plan</i></p> <p>Upon appointment, the main contractor of each construction contract should submit a Waste Management Plan (WMP) to the Engineer for approval. The WMP shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall take into account the recommended mitigation measures in the Project Profile report. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. All mitigation measures numbered Waste 1 to 6 shall be included in the WMP</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase.</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC No. 2/93, 2/93B, 16/96, 4/98, 4/98A, 25/99 25/99A, 25/99C, 12/2000, 19/2001</p> <p>ETWB TC No. 33/2002, 34/2002, 15/2003, 31/2004</p>
Waste 1	<p>i) Trip-ticket system – In order to monitor the disposal of C&D and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be included.</p> <p>ii) Records of wastes – A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) shall be proposed.</p> <p>iii) Training – Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase.</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC No. 2/93, 2/93B, 16/96, 4/98, 4/98A, 25/99 25/99A, 25/99C, 12/2000, 19/2001</p> <p>ETWB TC No. 33/2002, 34/2002, 15/2003, 31/2004</p>

Waste Management								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Waste 2	<p><i>Site Clearance Waste / Demolition Waste</i></p> <p>All construction waste shall be sorted on site into inert and non-inert components. Non-inert materials (wood, glass, metals and plastics) shall be recycled or reused and disposed to landfill only as a last resort. Inert materials (soil, rubble, sand, rock, brick and concrete) shall be separated and reused on site prior to final disposal at public filling facilities. The final disposal site for public fill shall be the Public Filling Facility at Tuen Mun Area 38. The final disposal site for construction and demolition waste shall be the North East New Territories (NENT) Landfill.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase.</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC No. 2/93, 2/93B, 16/96, 4/98, 4/98A, 25/99A, 25/99C, 12/2000, 19/2001</p> <p>ETWB(TC) W No. 33/2002, 34/2002, 15/2003, 31/2004</p>
Waste 3	<p>Excavated Material</p> <p>Any excavated material from the stream shall not be stockpiled, and shall be removed from site on the same day. The material shall be stored in covered impermeable skips while awaiting removal from site.</p> <p>Any leachate from skips shall be treated to meet discharge standard from Government sewers before being collected along with toilet waste by licensed contractor.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline. Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline.</p>	<p>To be implemented at the works sites of KT14 during the Construction Stage.</p> <p>To be implemented at the works sites of KT14 during the Construction Stage</p>	<p>Construction Contractor during Construction Stage</p> <p>Construction Contractor during Construction Stage</p>		<p>√</p> <p>√</p>		<p>ETWB(TC) W No. 34/2002,</p> <p>WBTC 12/2000</p> <p>ETWB(TC) W No. 34/2002,</p> <p>WBTC 12/2000</p>

Waste Management								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Waste 4	<p><i>Recycling the Use of Non-Reusable Materials on Site</i></p> <p>Hoarding, shutters, form works and false works made of reusable materials such as steel or plastic concrete panels shall be used as a preferred alternative to non-reusable materials such as wood and timber, with reference to WBTC No. 19/2001 – Metallic Site Hoarding and Signboards.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WBTC 19/2001</p>
Waste 5	<p><i>Chemical Waste</i></p> <p>Any Contractor generating waste oil, lubricants, paints or other chemicals as a result of his activities should register in a chemical waste producer. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD. Chemical waste should be collected by licensed collector.</p> <p>The Contractor shall provide a storage area with hard standing, impermeable surface for storing chemicals on site to prevent inadvertent release of waste oil or other chemicals into nearby water bodies. Oil and fuel bunkers should be bunded and/or enclosed on three sides to prevent discharge due to accidental spillages or breaches of tanks. Bunded area should be of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste, whichever is largest. For construction plant that is likely to leak oil, absorbent inert materials e.g. sand, shall be placed beneath it. This material should be replaced on a regular basis and the contaminated material disposed as chemical wastes. Storage areas should have adequate ventilation and be covered to prevent rain entering.</p>	<p>Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline</p>	<p>To be implemented at the works sites of KT14 during the Construction Phase</p>	<p>Construction Contractor</p>		<p>√</p>		<p>WDO Waste Disposal (Chemical Waste) General Regulation)</p>

Waste Management								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Waste 5 (Cont'd)	Grease traps shall be installed for site drains. These traps shall be cleared at least once a week. A licensed contractor shall regularly clear the traps and dispose waste oils. No chemicals should be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site. Training on safety codes and relevant manuals related to the chemicals stored on site should be obligatory for the personnel who handle the chemicals on site.	Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline	To be implemented at the works sites of KT14 during the Construction Phase	Construction Contractor		√		WDO Waste Disposal (Chemical Waste) General Regulation)
Waste 6	Domestic garbage generated by site staff shall be stored at dry locations in covered impermeable skips. It should be collected daily and disposed to the nearest Refuse Collection Point or arranged for collection by licensed contractors. The Engineer is responsible for checking that no chemical waste, sewage, excavated material or sorted reusable material is disposed as domestic garbage.	Planning for waste reduction, re-use, recycling and proper disposal and form compliance with Waste Disposal Ordinance and other guideline	To be implemented at all of KT14 construction site	Construction Contractor		√		Public Health and Municipal Services Ordinance

Mitigation Measure Implementation Schedule – Landscape / Visual

Landscape / Visual Impact Mitigation								
Item Ref:	Mitigation Measures	Objectives of Proposed Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent(s)	Implementation Stage			Relevant Legislation & Guidelines
					Design	Construction	Operation	
Land 1	A survey of existing trees shall be completed in accordance with Works Branch Technical Circular No. 14/2002. Management and Maintenance of Natural Vegetation and Landscape Works, and Tree Preservation during detailed design stage. The results of the survey shall form consideration in the detail design for the proposed Secondary Channels KT14, in order that any significant trees shall be protected during both the design and construction periods. Parameters assessed in the survey shall include species, health, form, transplant-ability and amenity value (assessed according to form, size, age, condition and situation of the tree). All surveyed trees should be checked with species listed under the “Animals and Plants (Protection of Endangered Species) Ordinance (CAP 187)” and Forestry and Countryside Ordinance (CAP. 96)” to ensure that no endangered species are affected. Where tree felling is unavoidable, compensatory planting proposal shall be prepared and submitted to EPD and LandsD for approval.	Protect visual quality of project area and proposed works Ensure protection of trees.	To be implemented along KT14 during the Detail Design Phase and Construction Phase.	Design Engineer to conduct tree survey during detailed design stage. Construction Contractor to follow the results during construction	√			Works Bureau Technical Circular No. 14/2002
					√			
		Protect visual quality of project area and proposed works Ensure protection of trees	To be implemented along KT14 during the Detail Design Phase and Construction Phase.	Design Engineer to conduct tree survey during detailed design stage. Construction Contractor to follow the results during construction				

Note:

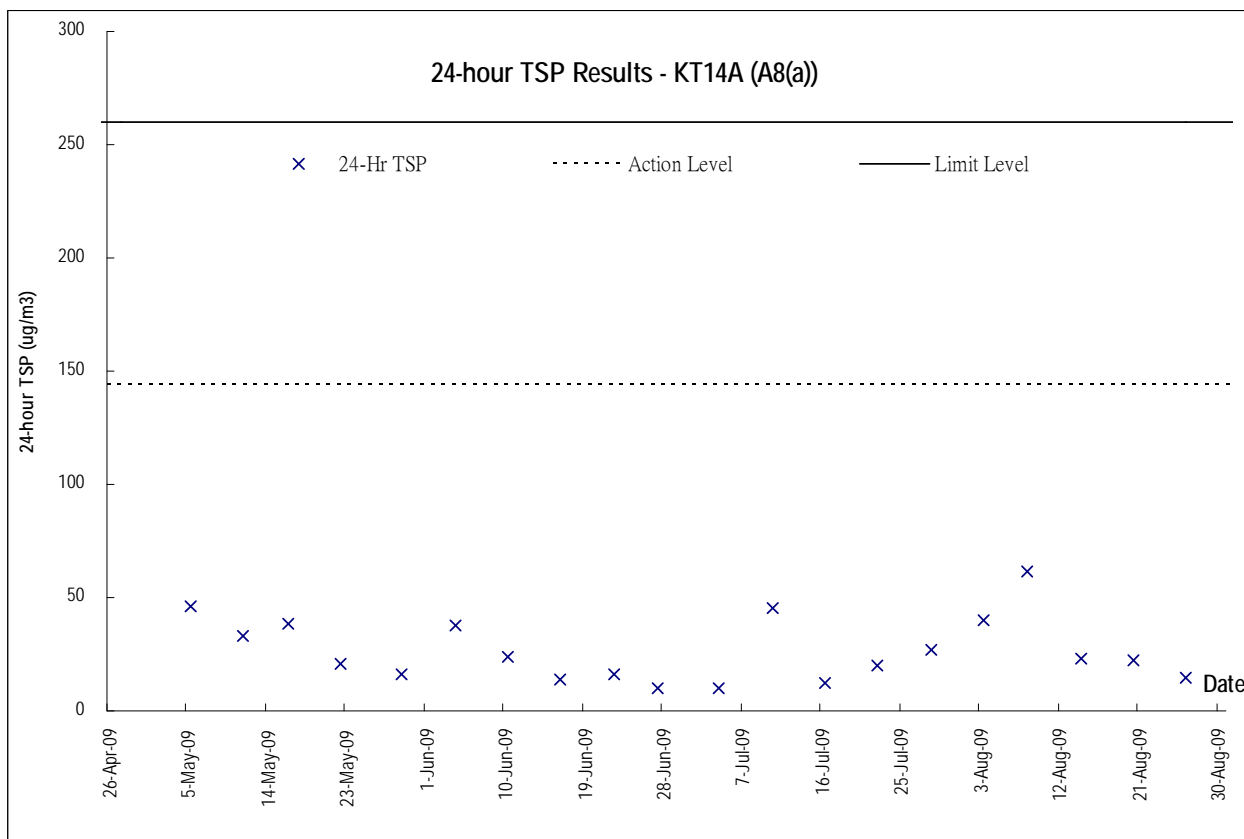
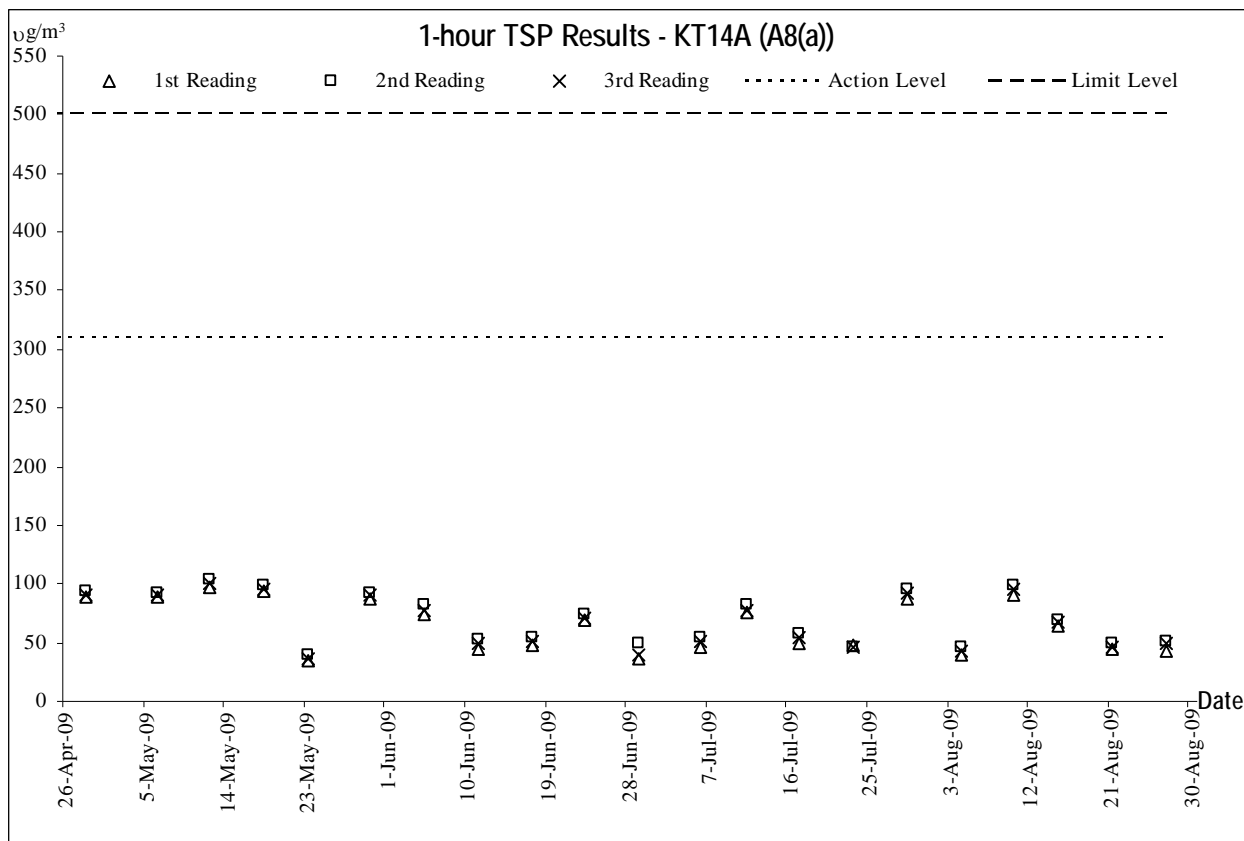
- EIAO Environmental Impact Assessment Ordinance
- WDO Waste Disposal Ordinance
- WPCO Water Pollution Control Ordinance
- TMEIA Technical Memorandum on Environmental Impact Assessment Process

Appendix E

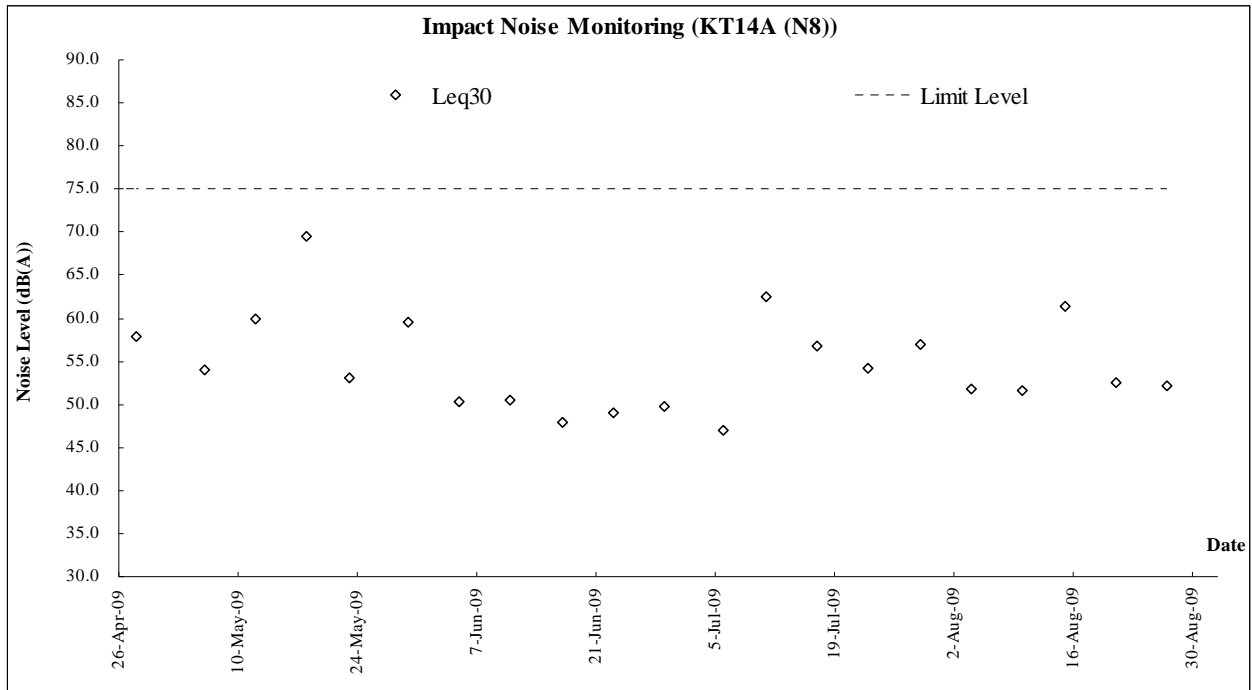
Graphic Plots of

- (a) Air Quality**
- (b) Construction Noise**
- (c) Water Quality**

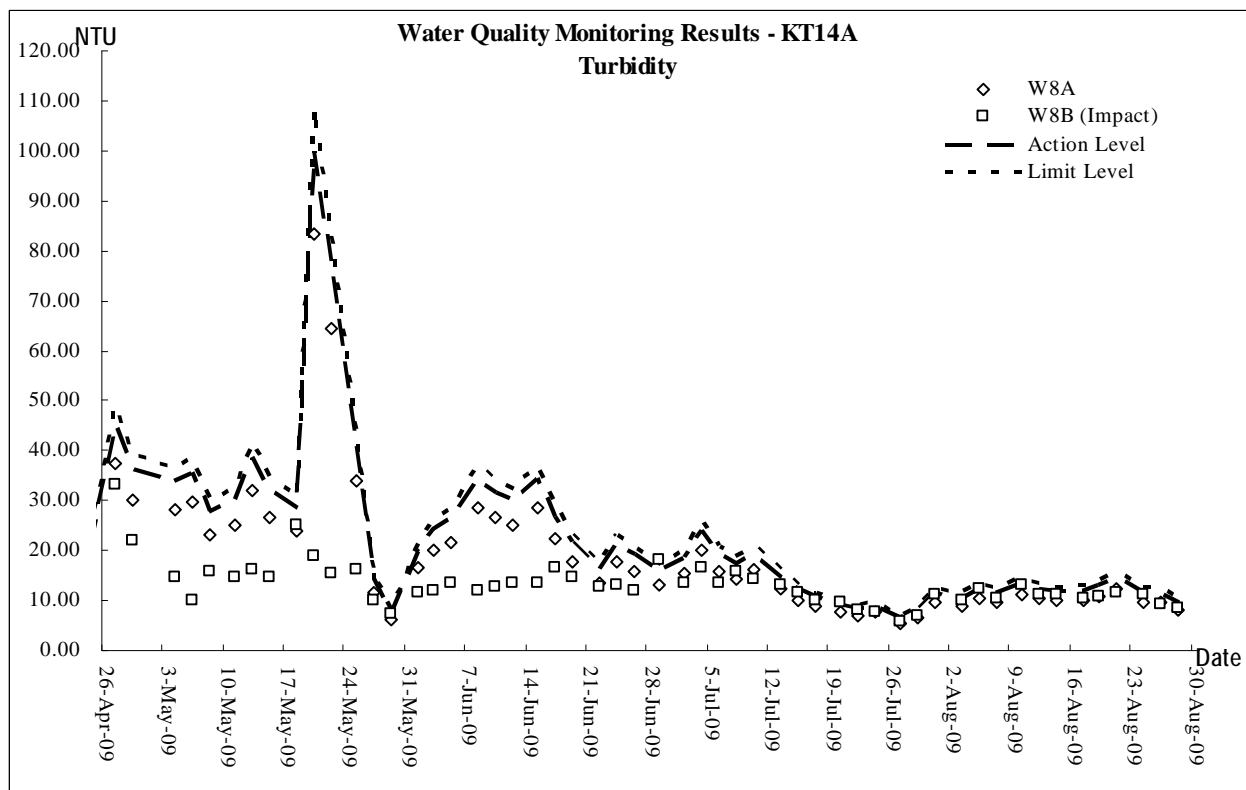
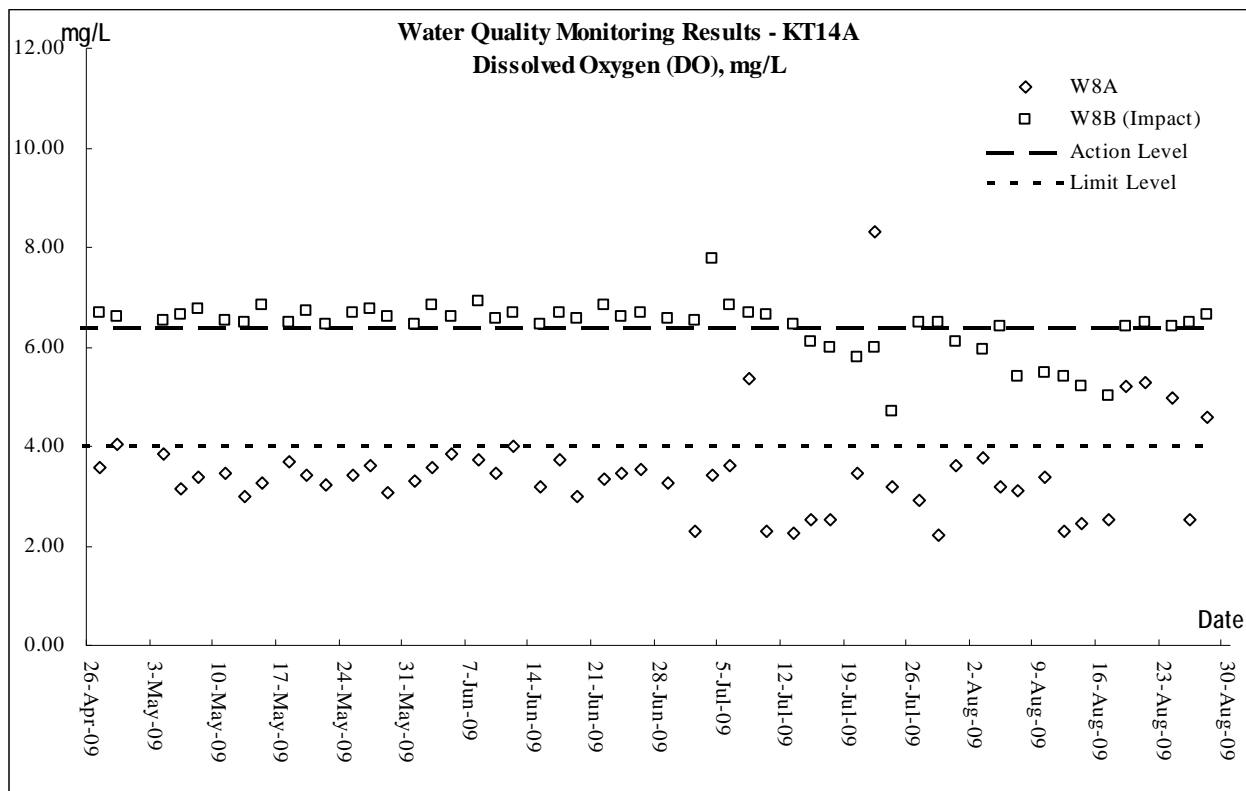
Air Quality

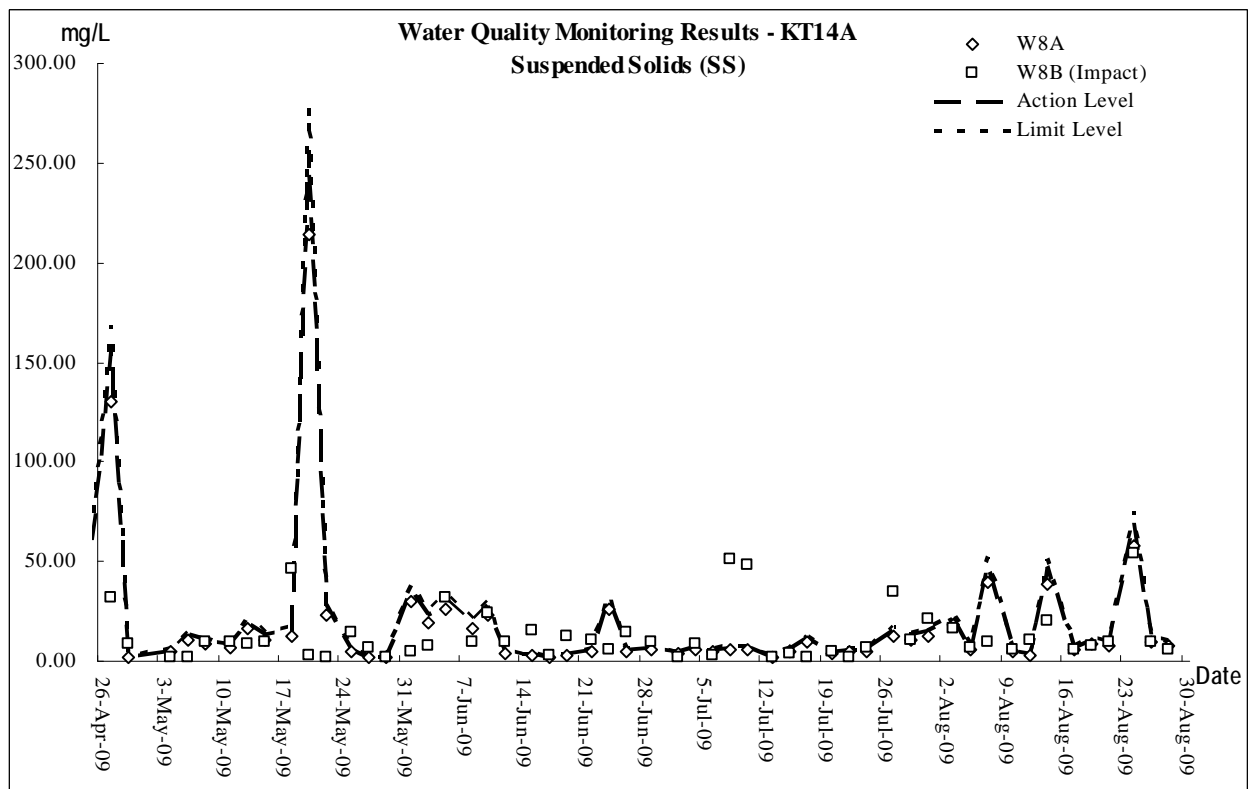
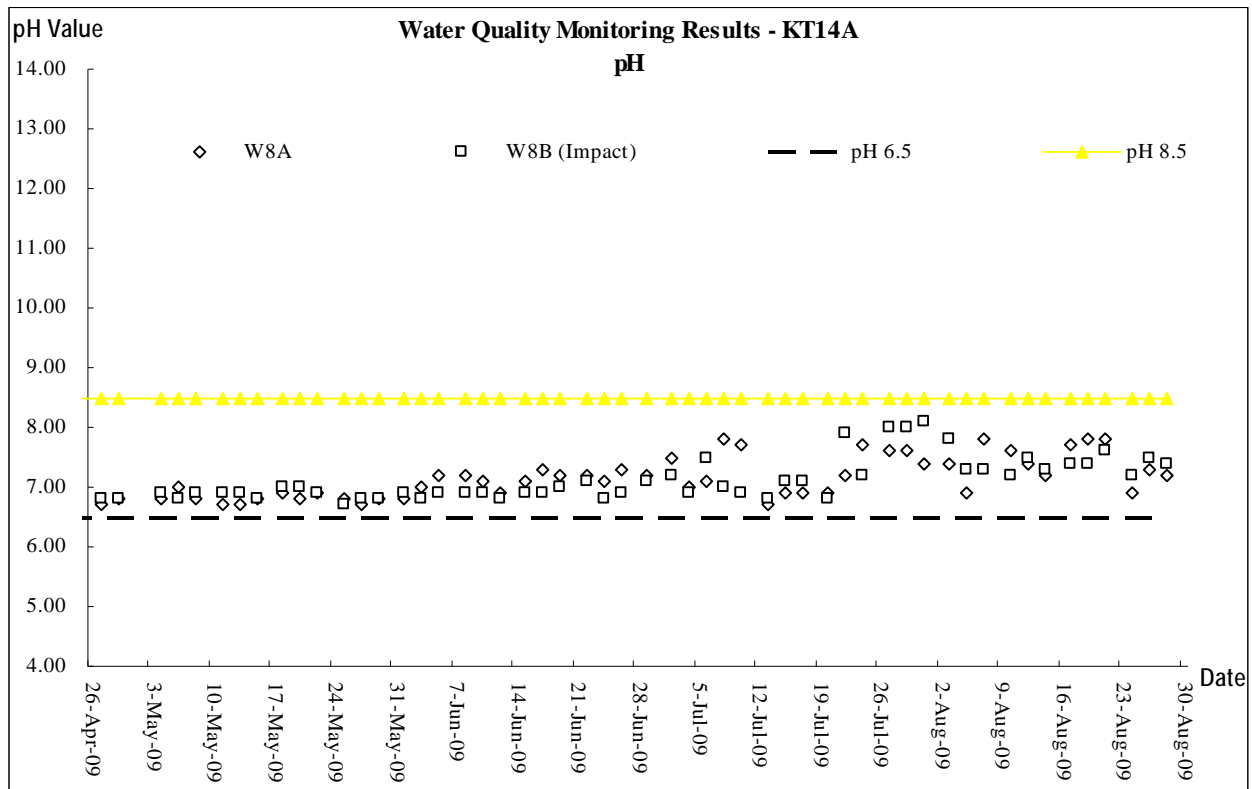


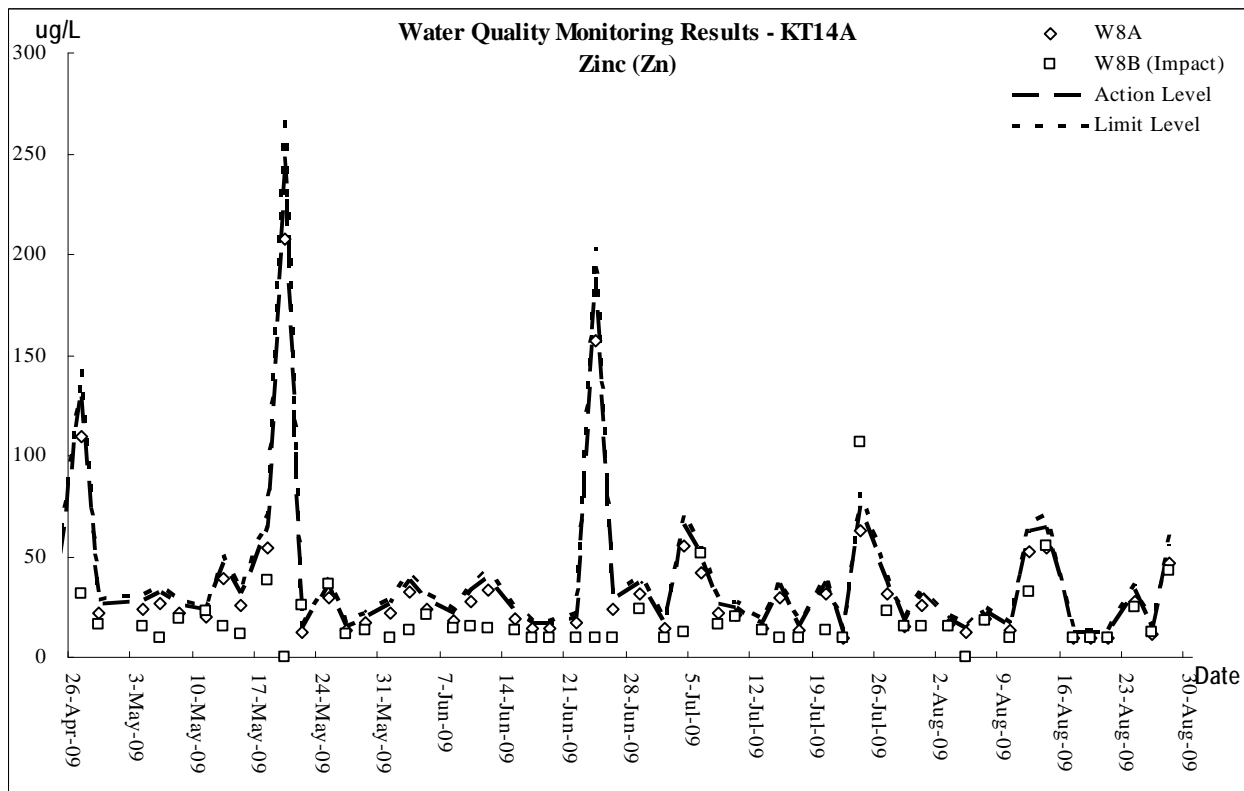
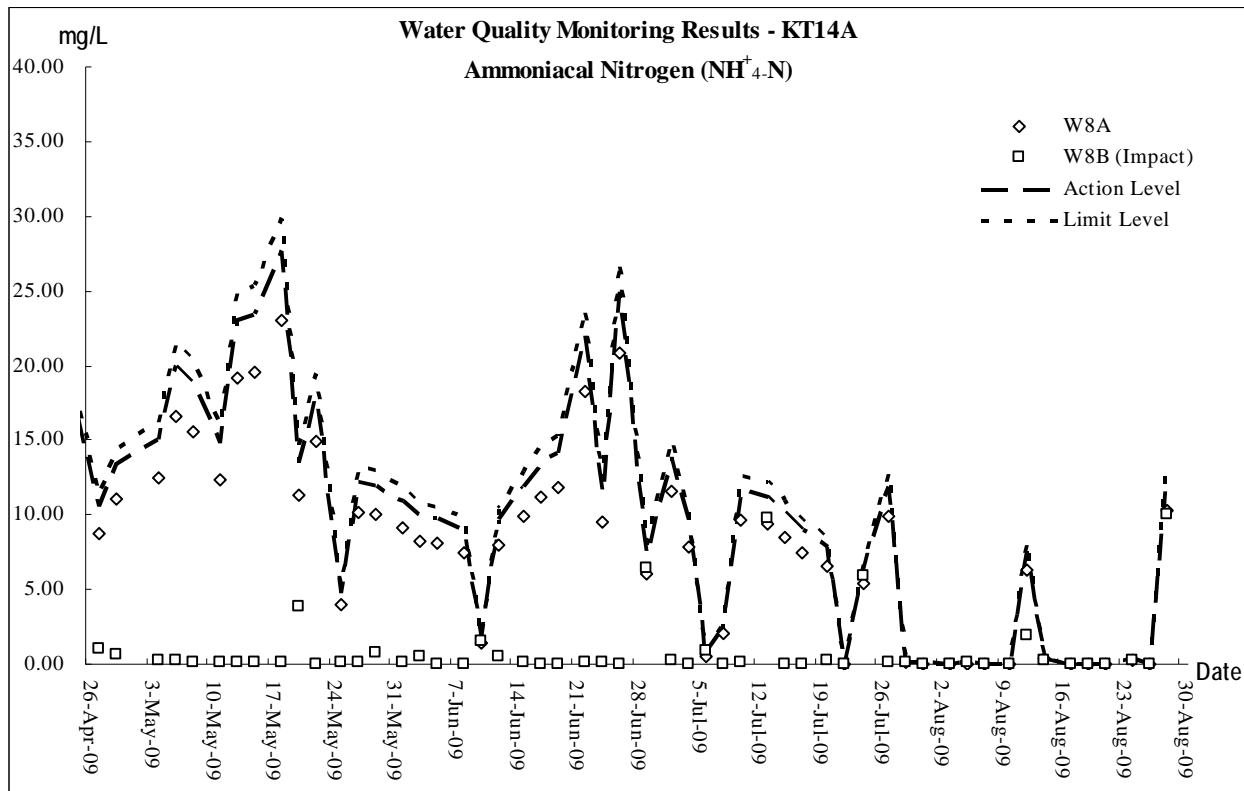
Construction Noise



Water Quality







Appendix F

Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table

Date: 31-Aug-09
Year/Month: Aug-09

Monthly Summary Waste Flow Table for Aug 2009										
Year	Actual Quantities of Inert C & D Materials Generated Monthly					Estimated Annual Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ Cardboard packaging	Plastics (see note 3)	Chemical Waste	Others, e.g. General refuse
	(in '000M ³)	(in '000M ³)	(in '000M ³)	(in '000M ³)	(in '000M ³)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000M ³)
Jan	6.716	0.008	6.708	0	0	0	0	0	0	0
Feb	8.001	0.009	7.632	0.360	0	0	0	0	0	0
Mar	5.792	0.014	5.778	0	0	0	0	0	0	0
Apr	6.622	0.004	6.864	-0.246	0	0	0	0	0	0
May	7.632	0.006	7.674	-0.048	0	0	0	0	0	0
Jun	6.002	0.008	5.676	-0.498	0.816	0	0	0	0	0
Sub-Total	40.76	0.049	40.332	-0.432	0.816	0	0	0	0	0
Jul	4.163	0.005	5.016	-0.858	0	0	0	0	0	0
Aug	5.666	0.007	6.354	-0.828	0.132	0	0	0	0	0
Sep										
Oct										
Nov										
Dec										
Total	50.593	0.061	51.702	-2.118	0.948	0.000	0.000	0.000	0.000	0.000

- Notes:
- (1) The performance targets are given in PS Clause 28.10(14)
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam form packaging material
 - (4) Broken concrete for recycling into aggregates