

# **Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2**

Annual EM&A Review Report

November 2013 to October 2014

**Submitted to**

Environmental Protection Department

**Prepared By**

Meinhardt Infrastructure and Environment Ltd

Meinhardt Infrastructure and Environment Limited

**Entrusted Portion of Widening of Tolo  
Highway / Fanling Highway between Island  
House Interchange and Fanling Stage 2**

Annual EM&A Review Report

(November 2013 to October 2014)

Certified by:

Fredrick Leong



Position:

Environmental Team Leader

Date:

19 November 2014



Our ref AFK/TK/jn/bw/T329380/22.05/L-0049

T 2828 5919

E terence.kong@mottmac.com.hk

Your ref

Hyder-Arup-Black & Veatch Joint Venture  
c/o Hyder Consulting Limited  
47/F Hopewell Centre  
183 Queen's Road East  
Wanchai, Hong Kong

Dear Sir,

19 November 2014

By Fax (2805 5028) & Post

**Attn: Mr. James Penny**

**EM&A for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works  
Environmental Permit No. EP-324/2008/B  
Annual EM&A Report for November 2013 to October 2014 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09**

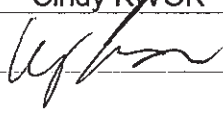
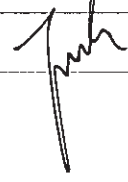
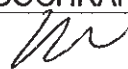
We refer to the Annual EM&A Report for November 2013 to October 2014 for the Project received on 13 and 17 November 2014 submitted by ET via email. We confirm we have no comment.

Yours faithfully  
for MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in black ink, appearing to read "Terence Kong".

Terence Kong  
Independent Environmental Checker

c.c. HyD – Mr. Raymond T W Kong/ Mr. Dennis Wong (Fax: 2714 5198)  
CEDD/BCP – Mr. Chris Wong / Mr. Desmond Lam (Fax: 2714 0103)  
AECOM – Mr. Alan Lee (Fax: 3922 9797)  
Meinhardt Infrastructure and Environment Limited – Mr. Fredrick Leong (Fax: 2540 1580)

Date	Revision	Prepared By	Checked By	Approved By
19 November 2014	0	Ivan TING Cindy KWOK	Fredrick LEONG	Helen COCHRANE
				

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## EXECUTIVE SUMMARY

This report documents the findings of EM&A works conducted during the period between November 2013 and October 2014.

The impact stage EM&A programme for the Project includes air quality, noise and water quality monitoring.

The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting period.

In the reporting period, a total of 36 exceedance events were recorded. Only 2 of the exceedances of Suspended Solids and Turbidity recorded on 18 December 2013 were concluded to be project related. Necessary remedial actions have been taken and the exceedances have been rectified.

No environmental non-compliance was noted. One environmental complaint, which was concluded as an invalid complaint under this Project after investigations, was received. No environmental related prosecution or notification of summons was received in the reporting period.

The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works were temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works. As such, impact monitoring for water quality is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

## **1 INTRODUCTION AND PROJECT INFORMATION**

### **1.1 Background**

1.1.1 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual were approved on 14 July 2000 (Register Number: EIA-043/2000). The Project is governed by an Environmental Permit (EP) (EP-324/2008) which was granted on 23 December 2008. A variation of EP (VEP) was applied and the VEP (EP-324/2008/A) was subsequently granted on 31 January 2012. An additional VEP has been applied on 24 February 2014 and the VEP (EP-324/2008/B) was subsequently granted on 17 March 2014.

1.1.2 Chun Wo Construction & Engineering Co Ltd (Chun Wo) was commissioned by the Civil Engineering and Development Department (CEDD) as the Civil Contractor for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. Meinhardt Infrastructure & Environment Ltd (MIEL) has been appointed by Chun Wo as the Environmental Team (ET) to fulfill the corresponding EM&A requirements pursuant to Environmental Permit No. EP-324/2008/B in accordance with the Updated EM&A Manual (dated October 2013) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. The EM&A programme commenced in 5 November 2013.

1.1.3 **Figure 1** shows the works areas for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2.

### **1.2 Construction Programme and Activities**

1.2.1 The master construction programme for the entire construction period is presented in **Appendix A**. The major construction activities undertaken in the reporting period are summarized below:

- Hoarding and fencing erection, initial survey and base slab demolition;
- Site clearance and tree felling;
- Excavation works and base slab demolition;
- Pre-drilling works and piling works;
- Piling works for Bridge E;
- Extension of box culverts;
- Cable detection and trial trenches;
- Tree Felling Works;
- Trial Pit Excavation;
- Bored pile and bored pile wall construction;
- Catch Fence Installation;



- Extension of Bored pile for bored pile wall;
- Erection of site office;
- Construction of haul road and temporary soil platform for geotechnical works;
- Slope upgrading works;
- Noise barrier installation;
- Mini pile construction;
- Load test for installed Mini pile;
- Water pipe Installation;
- Diversion of DN1400;
- Filling Works;
- Laying of storm drains;
- Laying of concrete pipe works;
- Pile Cap works;
- Receiving & Jacking Pit;
- Retaining Structure;
- Road works at Fanling Highway;
- Sewer works;
- Soil nail construction;
- RC structure of new valve control & Telemetry House;
- Demolition of Huts;
- Abutment construction for Bridge E;
- Excavation by trenchless method;
- Pier Construction;
- Socket H-pile installation;
- Site formation;
- Installation of DN1200 Drainage Pipe by Pipe Jacking Method Across Fanling Highway;
- Trim pile head for bored pile wall;

- Diversion of existing cycle track; and
- Utilities duct laying.

### 1.3 Project Organisation

1.3.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project, together with the general enquiry hotline, are summarised in **Table 1.1**.

**Table 1.1 Contact Information of Key Personnel**

Party	Role	Position	Name	Tele- phone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2171 3303	2171 3498
		Resident Engineer (Environmental)	Mr. Perry Yam	2171 3350	
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Terence Kong	2828 5919	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Senior Environmental Officer	Mr. Sam Lam	2638 6168	
		Environmental Officer	Mr. Victor Huang	2638 6181	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580
Enquiry Hotline	General Enquiry	--	Ms Helena Mak	6355 1731	--

### 1.4 Purpose of the Report

1.4.1 This is the Annual EM&A Review Report which summaries the impact monitoring results and audit findings for the Project during the reporting period between November 2013 and October 2014.

## 2 SUMMARY OF EM&A REQUIREMENTS

### 2.1 Environmental Impact Hypothesis under Monitoring

2.1.1 The EIA Report concluded that with proper mitigation measures implemented, fugitive dust emission during construction phase would be controlled and will not exceed the acceptable criteria.

2.1.2 For construction noise, exceedances were predicted only at 2 schools (SR41 Wong Shiu Chi Middle School and SR45 HK Teacher's Association Secondary School) but they are out of the scope of this EM&A Programme. Hence the EIA did not anticipate any noise exceedances during construction phase within the scope of this EM&A Programme.

2.1.3 For water quality, it is also anticipated that with proper protection measures being implemented, the water quality during construction phase would be locally confined and controllable.

2.1.4 The above criteria have been tested under this EM&A Programme during the reporting period.

## 2.2 Monitoring Requirements

2.2.1 In accordance with the Updated EM&A Manual, environmental parameters including air quality, noise and water quality have been monitored. The specific parameters, monitoring frequency and the respective Action and Limit Levels are given in **Table 2.1** and the location of the monitoring station is shown in the **Figure 2**.

**Table 2.1 Monitoring Parameter**

Parameter	Unit	Action Level	Limit Level	Frequency
<b>Air Quality</b>				
1-hour TSP	µg/m <sup>3</sup>	292.7	500	Three times every 6 days
24-hour TSP	µg/m <sup>3</sup>	170.3	260	Once every 6 days
<b>Construction Noise</b>				
Leq 30min	dB(A)	When one documented valid complaint is received	75	Once every Week
<b>Water Quality</b>				
Depth		--	--	Three occasions per week
Temperature	°C	--	--	Three occasions per week
Salinity	ppt	--	--	Three occasions per week
pH	--	--	--	Three occasions per week
DO	mg/L	6.7	4mg/L or 40% saturation at 15 degree Celsius	Three occasions per week
DO Saturation	%	--	--	Three occasions per week
Turbidity	NTU	81.9NTU or 120% of upstream control station's Tby of the same day	91.9NTU or 130% of upstream control station's Tby of the same day	Three occasions per week
SS	mg/L	42.6 mg/L or 120% of upstream control station's SS of the same day	46.8 mg/L or 130% of upstream station's SS of the same day and specific sensitive receiver water quality requirements	Three occasions per week

2.2.2 The Event and Action Plan for the occurrence of non-compliance of the criteria of the monitoring parameters is annexed in Appendix C.

### Temporary Suspension of Box Culvert Works and Water Quality Monitoring

2.2.3 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, which is the installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works are temporarily suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works. As such, impact monitoring for water quality is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

## 2.3 Environmental Mitigation Measures

2.3.1 Environmental mitigation measures have been recommended in the EM&A Manual and is given in **Appendix D**. The implementation status for the reporting period is also given in the Appendix.

## 3 SUMMARY OF EM&A MONITORING DATA

### 3.1 Monitoring Data

3.1.1 Monitoring has been conducted in accordance with the specification in the EM&A Manual in the reporting period. Meteorological data for the reporting period have been extracted from Hong Kong Observatory and are given in **Appendix E**. Monitoring data with graphical presentation for the reporting period have been given in **Appendix F**. A summary on the monitoring results has also been given in **Table 3.1**.

**Table 3.1 Summary of Monitoring Data in the Reporting Period**

Monitoring Location	Minimum	Maximum	Average
<b>Air Quality</b>			
1-hour Total Suspended Particulate			
SR77	34.6µg/m <sup>3</sup>	283.0µg/m <sup>3</sup>	135.5µg/m <sup>3</sup>
24-hour Total Suspended Particulate			
SR77	14.7µg/m <sup>3</sup>	402.1µg/m <sup>3</sup>	137.8µg/m <sup>3</sup>
<b>Construction Noise</b>			
SR77	54.5dB(A)	73.5dB(A)	64.4dB(A)
<b>Water Quality</b>			
DO			
I5	4.4mg/L	10.1mg/L	8.0mg/L
Baseline Data	6.6mg/L	8.8mg/L	8.0mg/L
30% disturbance due to human activity	4.6mg/L	6.2mg/L	5.6mg/L
Turbidity			
I5	6.3NTU	86.7NTU	24.7NTU
Baseline Data	12.4NTU	91.5NTU	26.1NTU
30% disturbance due to human activity	16.1NTU	118.9NTU	34.0NTU
SS			
I5	2.0mg/L	72.5mg/L	11.9mg/L
Baseline Data	6.5mg/L	46.5mg/L	16.4mg/L
30% disturbance due to human activity	8.5mg/L	60.5mg/L	21.3mg/L

### 3.2 Summary of Monitoring Exceedances

3.2.1 The number of exceedance events recorded in the reporting period is summarized in **Table 3.2**.

3.2.2 Investigations for the exceedance events in the reporting period have been completed. Only 2 of the exceedances of Suspended Solids and Turbidity respectively recorded on 18 December 2013 were concluded to be project related. Necessary remedial actions have been taken and the exceedances have been rectified. The respective investigation reports have been presented in the respective Monthly EM&A Reports.

**Table 3.2 Summary of Exceedance Events in the Reporting Period**

Parameter		Number of Exceedance Events	Number of Project Related Exceedance Events
<b>Air Quality</b>			
1-hour Total Suspended Particulates	Action Level	0	0
	Limit Level	0	0
24-hour Total Suspended Particulates	Action Level	17	0
	Limit Level	4	0
<b>Construction Noise</b>			
Leq 30min	Action Level	0	0
	Limit Level	0	0
<b>Water Quality</b>			
DO	Action Level	2	0
	Limit Level	0	0
Turbidity	Action Level	2	0
	Limit Level	2	1
SS	Action Level	1	0
	Limit Level	8	1

3.2.3 The Contractor has been reminded to strengthen the mitigation measures including:

- Building a river diversion structure at the river channel to protect the river from potential site runoff and fill up the leakage and strengthen the river diversion works to avoid future leakage;
- Pay attention on accidental site runoff, including construction of additional protection structure if necessary, to minimize the risk of site runoff;
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel;
- Channels or earth bunds or sand bag barriers should be provided on site to prevent surface runoff and properly direct stormwater to silt removal facilities;
- Covering of exposed slopes near the river,
- Watering and covering of exposed slopes and stockpiles to avoid fugitive dust emission;
- Water spraying should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas;

- All vehicles should be washed to remove any dusty materials before leaving the construction site, and the wheel washing facilities should be properly maintained to ensure proper functioning;
- Ensuring regular maintenance and cleaning of waste storage area;
- All types of wastes, both on land and floating in the river stream, should be collected and sorted properly, and also be disposed timely and properly;
- Refuse collection bins should be labelled properly;
- Ensuring the provision of tree protection zone for all existing trees to be transplanted or retained; and
- All chemicals stored on site should be provided with drip trays.

## **4 ENVIRONMENTAL NON-CONFORMANCE**

### **4.1 Summary of Environmental Non-Compliance**

4.1.1 No environmental non-compliance was recorded in the reporting period.

### **4.2 Summary of Environmental Complaints**

4.2.1 One (1) environmental complaint was received in the reporting period regarding water quality of Ma Wat River. Investigation has been conducted and the complaint was considered as invalid under this Project.

### **4.3 Summary of Environmental Summon and Successful Prosecutions**

4.3.1 No environmental related prosecution or notification of summons was received in the reporting period. The cumulative statistics are provided in is provided in **Appendix G**.

## **5 REVIEW OF THE VALIDITY OF EIA PREDICTIONS**

5.1.1 The EIA report predicted that with proper implementation of the mitigation measures for air, noise and water quality, environmental impact would be locally confined and controllable. During the reporting period, only 2 exceedances were recorded in 1 day due to a leakage at the bund used for river diversion. The exceedance event is rectified after the leakage has been blocked. Other exceedances were concluded not project related. Hence, it is considered that the EIA predictions is valid for the reporting period.

## **6 REVIEW OF EM&A PROGRAMME**

6.1.1 The EM&A programme was considered successfully and adequately conducted during the course of the reporting period.

6.1.2 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, which is the installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works were temporarily suspended. The 4-week post construction water quality monitoring will be

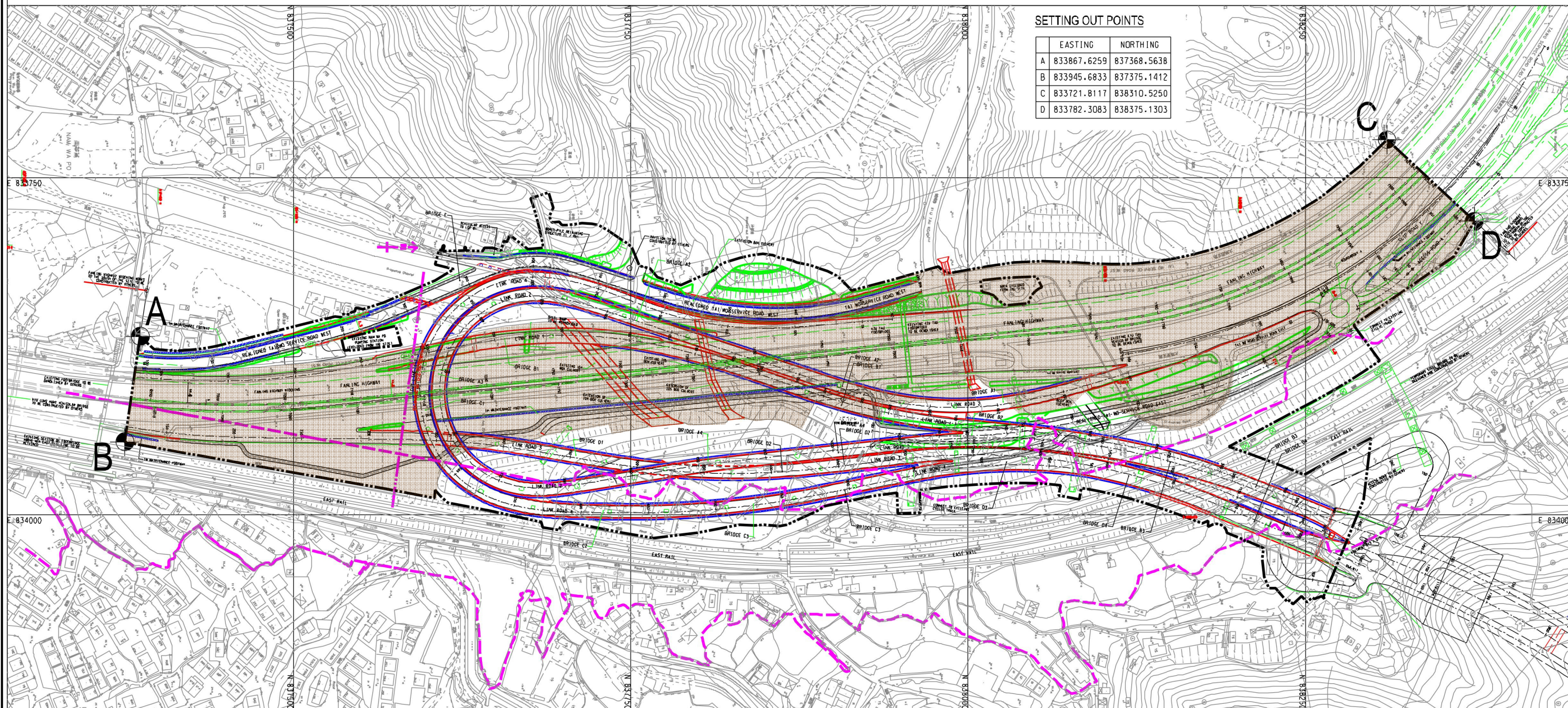
conducted after the installation of the base slab finishes, hence the completion of the box culvert works. As such, impact monitoring for water quality is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

## **7 CONCLUSIONS**

- 7.1.1 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting period.
- 7.1.2 In the reporting period, a total of 36 exceedance events have been recorded. Only 2 of the exceedances of Suspended Solids and Turbidity recorded on 18 December 2013 were concluded to be project related. Necessary remedial actions have been taken and the exceedances have been rectified.
- 7.1.3 No environmental non-compliances were noted. One environmental complaint, which was concluded as an invalid complaint under this Project after investigations, was received. No environmental related prosecution or notification of summons were received in the reporting period.
- 7.1.4 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works are temporarily suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works. As such, impact monitoring for water quality was not necessary in the reporting period due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

## Figure

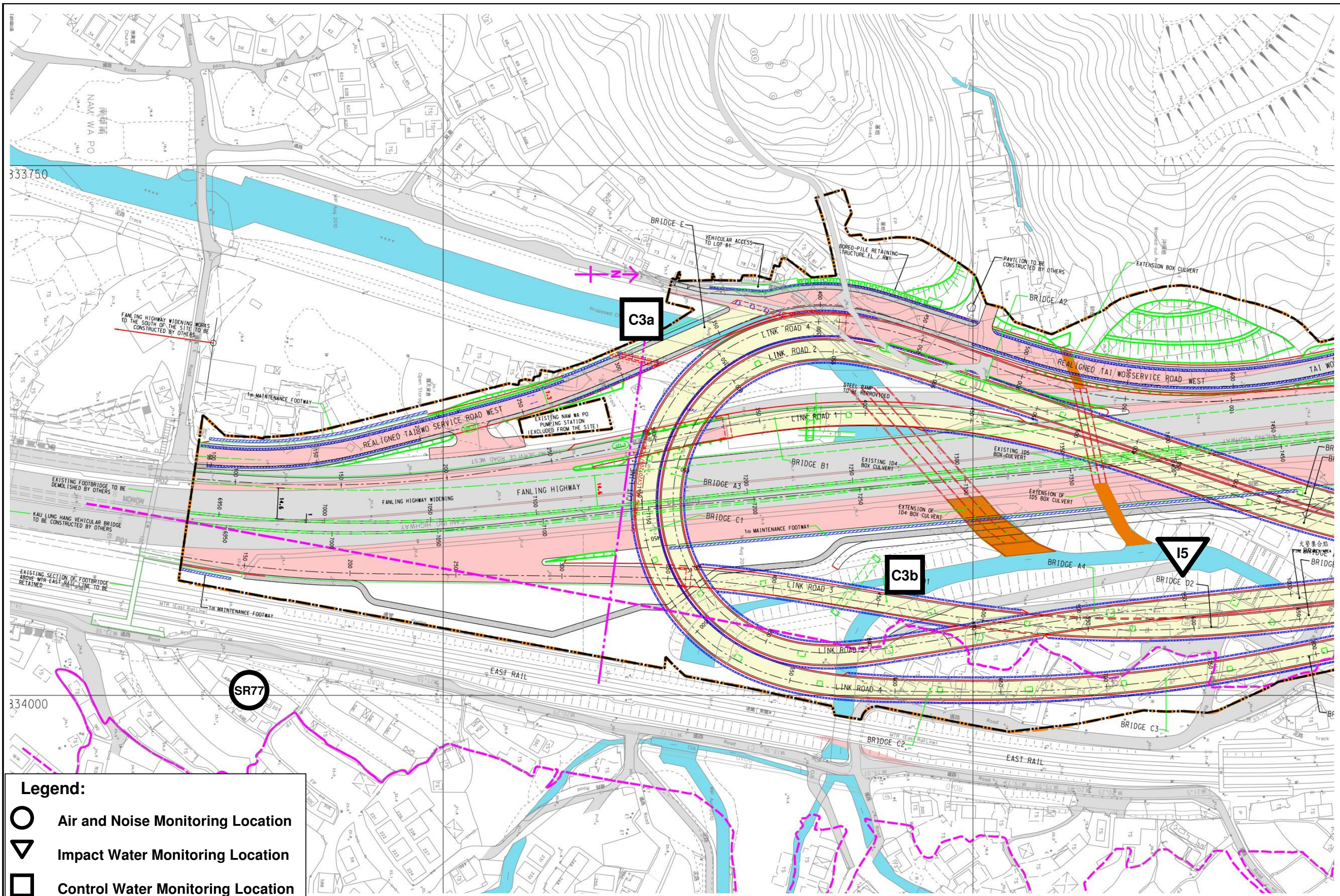




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**Legend:**

 Works Area for Entrusted Portion

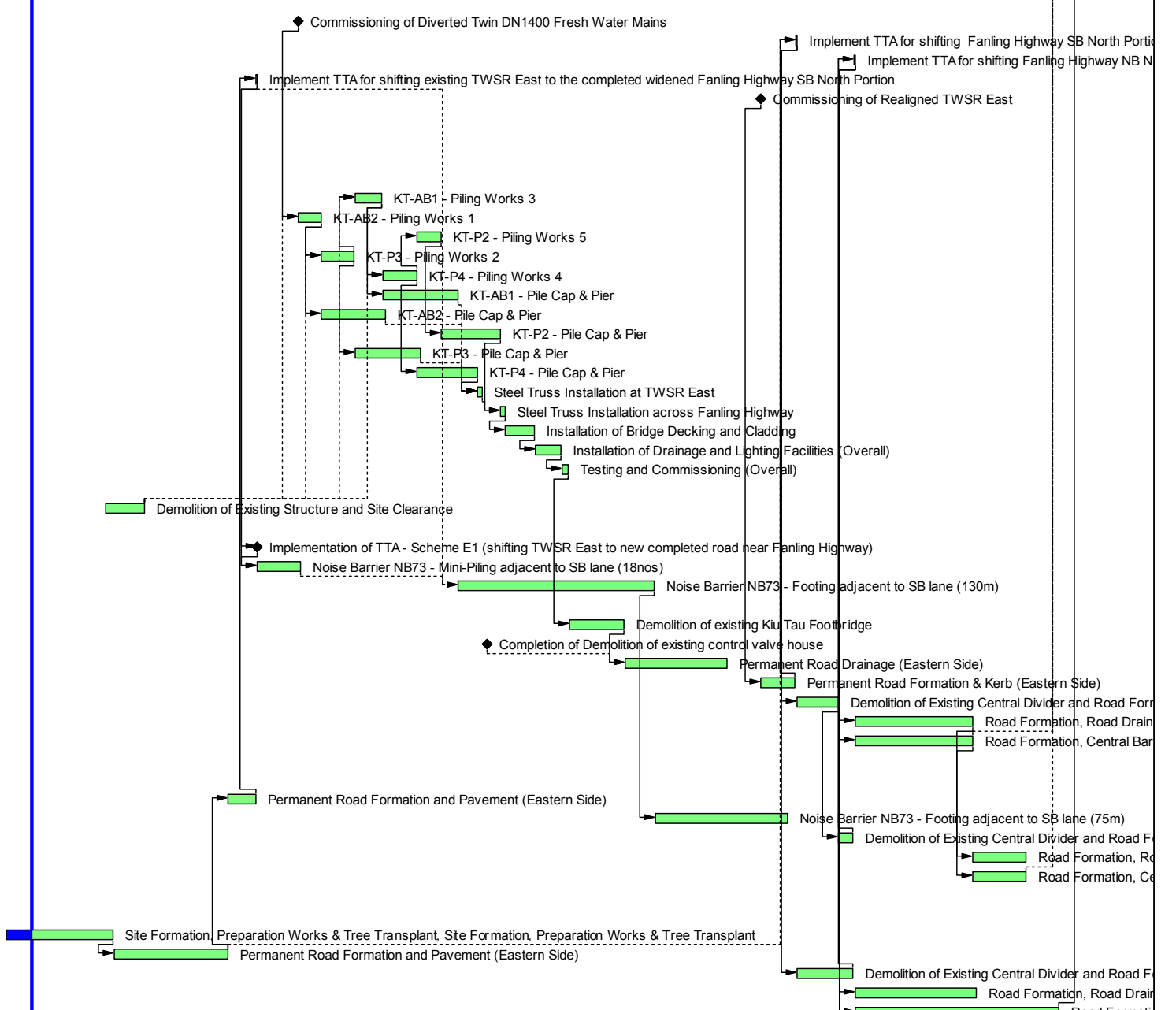


- Legend:**
- Air and Noise Monitoring Location
  - ▽ Impact Water Monitoring Location
  - Control Water Monitoring Location

Figure 2: Environmental Monitoring Locations

# Appendix A Construction Programme

Activity ID	Activity Name	OD	Start	Finish	Total Float	2014												2015												2016												2017												2018											
						A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J
<b>CWP - Under Development (Postpone Pipe Jacking)</b>																																																																	
<b>Key Dates (Forecast)</b>																																																																	
<b>Major Works</b>																																																																	
KD-0105	KD1: Complete Section 1A - all HyD's entrustment works in Zone3 and SBZ2 except for landscaping works	0		07-Dec-17	53																																																												
KD-0205	KD2: Complete Section 1B - all HyD's entrustment works in NBZ1 except for landscaping works	0		09-Jan-18	234																																																												
<b>Major Milestones and Events</b>																																																																	
MS-0220	Commissioning of Diverted Twin DN1400 Fresh Water Mains	0		14-Nov-14	132																																																												
MS-1000A	Implement TTA for shifting Fanling Highway SB North Portion (CH7470-7925) eastward to the completed road near TWSI	2	07-Dec-16	08-Dec-16	3																																																												
MS-1000B	Implement TTA for shifting Fanling Highway NB North Portion (CH7470-7925) eastward to the designed alignment	2	06-Mar-17	07-Mar-17	3																																																												
MS-3000	Implement TTA for shifting existing TWSR East to the completed widened Fanling Highway SB North Portion	2	11-Sep-14	12-Sep-14	7																																																												
MS-3010	Commissioning of Realigned TWSR East	0	15-Oct-16		3																																																												
<b>Section IA &amp; IB - Fanling Highway Widening (KD-1 &amp; KD-2)</b>																																																																	
<b>Fanling Highway North Portion between CH7470 and CH7925</b>																																																																	
<b>Fanling Highway Zone 6 between CH7470 and CH7600 (Provision of Kiu Tau Footbridge)</b>																																																																	
<b>Kiu Tau Footbridge Re-provision (East)</b>																																																																	
FHW-5000A	KT-AB1 - Piling Works 3	30	09-Feb-15	21-Mar-15	612																																																												
FHW-5000B	KT-AB2 - Piling Works 1	30	15-Nov-14	19-Dec-14	132																																																												
FHW-5000C	KT-P2 - Piling Works 5	30	14-May-15	18-Jun-15	612																																																												
FHW-5000D	KT-P3 - Piling Works 2	40	20-Dec-14	07-Feb-15	612																																																												
FHW-5000E	KT-P4 - Piling Works 4	40	23-Mar-15	13-May-15	612																																																												
FHW-5010A	KT-AB1 - Pile Cap & Pier	90	23-Mar-15	14-Jul-15	660																																																												
FHW-5010B	KT-AB2 - Pile Cap & Pier	75	20-Dec-14	27-Mar-15	745																																																												
FHW-5010C	KT-P2 - Pile Cap & Pier	75	19-Jun-15	16-Sep-15	612																																																												
FHW-5010D	KT-P3 - Pile Cap & Pier	75	09-Feb-15	19-May-15	705																																																												
FHW-5010E	KT-P4 - Pile Cap & Pier	75	14-May-15	12-Aug-15	635																																																												
FHW-5020	Steel Truss Installation at TWSR East	7	13-Aug-15	20-Aug-15	635																																																												
FHW-5030	Steel Truss Installation across Fanling Highway	7	17-Sep-15	24-Sep-15	612																																																												
FHW-5040	Installation of Bridge Decking and Cladding	35	25-Sep-15	07-Nov-15	612																																																												
FHW-5050	Installation of Drainage and Lighting Facilities (Overall)	35	09-Nov-15	18-Dec-15	612																																																												
FHW-5060	Testing and Commissioning (Overall)	7	19-Dec-15	29-Dec-15	612																																																												
<b>At-Grade Road Works (130m)</b>																																																																	
FHW-5100	Demolition of Existing Structure and Site Clearance	45	27-Jan-14	26-Mar-14	135																																																												
FHW-5110*	Pipe Laying & Connection - Twin DN1400 Watermains (CHE & CHG) adjacent to existing TWSRE (90m, 9m depth)	186	31-Mar-14	14-Nov-14	132																																																												
FHW-5120	Implementation of TTA - Scheme E1 (shifting TWSR East to new completed road near Fanling Highway)	0	13-Sep-14		573																																																												
FHW-5130	Noise Barrier NB73 - Mini-Piling adjacent to SB lane (18nos)	54	13-Sep-14	17-Nov-14	573																																																												
FHW-5140	Noise Barrier NB73 - Footing adjacent to SB lane (130m)	240	14-Jul-15	07-May-16	332																																																												
FHW-5150*	Pipe Laying - DN1200 & DN600 Watermains (CHB & CHC) along existing TWSRE (120m long, 3m depth)	240	04-Sep-15	02-Jul-16	373																																																												
FHW-5160	Demolition of existing Kiu Tau Footbridge	65	30-Dec-15	22-Mar-16	885																																																												
FHW-5170	Completion of Demolition of existing control valve house	0		28-Aug-15	1050																																																												
FHW-5180	Permanent Road Drainage (Eastern Side)	125	23-Mar-16	24-Aug-16	885																																																												
FHW-5190	Permanent Road Formation & Kerb (Eastern Side)	45	15-Oct-16	06-Dec-16	3																																																												
FHW-5200	Demolition of Existing Central Divider and Road Formation (Middle Part, Pavement Only)	45	09-Dec-16	09-Feb-17	3																																																												
FHW-5300	Road Formation, Road Drainage, Kerb, Noise Barrier (Western Side)	145	08-Mar-17	01-Sep-17	520																																																												
FHW-5400	Road Formation, Central Barrier (Remaining Works at Middle Part)	145	08-Mar-17	01-Sep-17	57																																																												
<b>Fanling Highway Zone 7 between CH7600 and CH7660 (Existing Vehicular Bridge)</b>																																																																	
<b>At-Grade Roadworks (60m)</b>																																																																	
FHW-6100	Permanent Road Formation and Pavement (Eastern Side)	35	31-Jul-14	10-Sep-14	7																																																												
FHW-6110	Noise Barrier NB73 - Footing adjacent to SB lane (75m)	166	09-May-16	24-Nov-16	332																																																												
FHW-6200	Demolition of Existing Central Divider and Road Formation (Middle Part, Pavement Only)	20	10-Feb-17	04-Mar-17	3																																																												
FHW-6300	Road Formation, Road Drainage, Kerb (Western Side)	65	02-Sep-17	20-Nov-17	520																																																												
FHW-6400	Road Formation, Central Barrier (Remaining Works at Middle Part)	65	02-Sep-17	20-Nov-17	57																																																												
<b>Fanling Highway Zone 8 between CH7660 and CH7925</b>																																																																	
<b>At-Grade Roadworks (265m)</b>																																																																	
FHW-7100	Site Formation, Preparation Works & Tree Transplant	127	30-Aug-13 A	07-Feb-14	7																																																												
FHW-7110	Permanent Road Formation and Pavement (Eastern Side)	140	08-Feb-14	30-Jul-14	7																																																												
FHW-7200	Demolition of Existing Central Divider and Road Formation (Middle Part, Pavement Only)	65	09-Dec-16	04-Mar-17	3																																																												
FHW-7300	Road Formation, Road Drainage, Kerb (Western Side)	150	08-Mar-17	07-Sep-17	3																																																												
FHW-7400	Road Formation, Central Barrier (Remaining Works at Middle Part)	250	08-Mar-17	09-Jan-18	187																																																												



- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Milestone

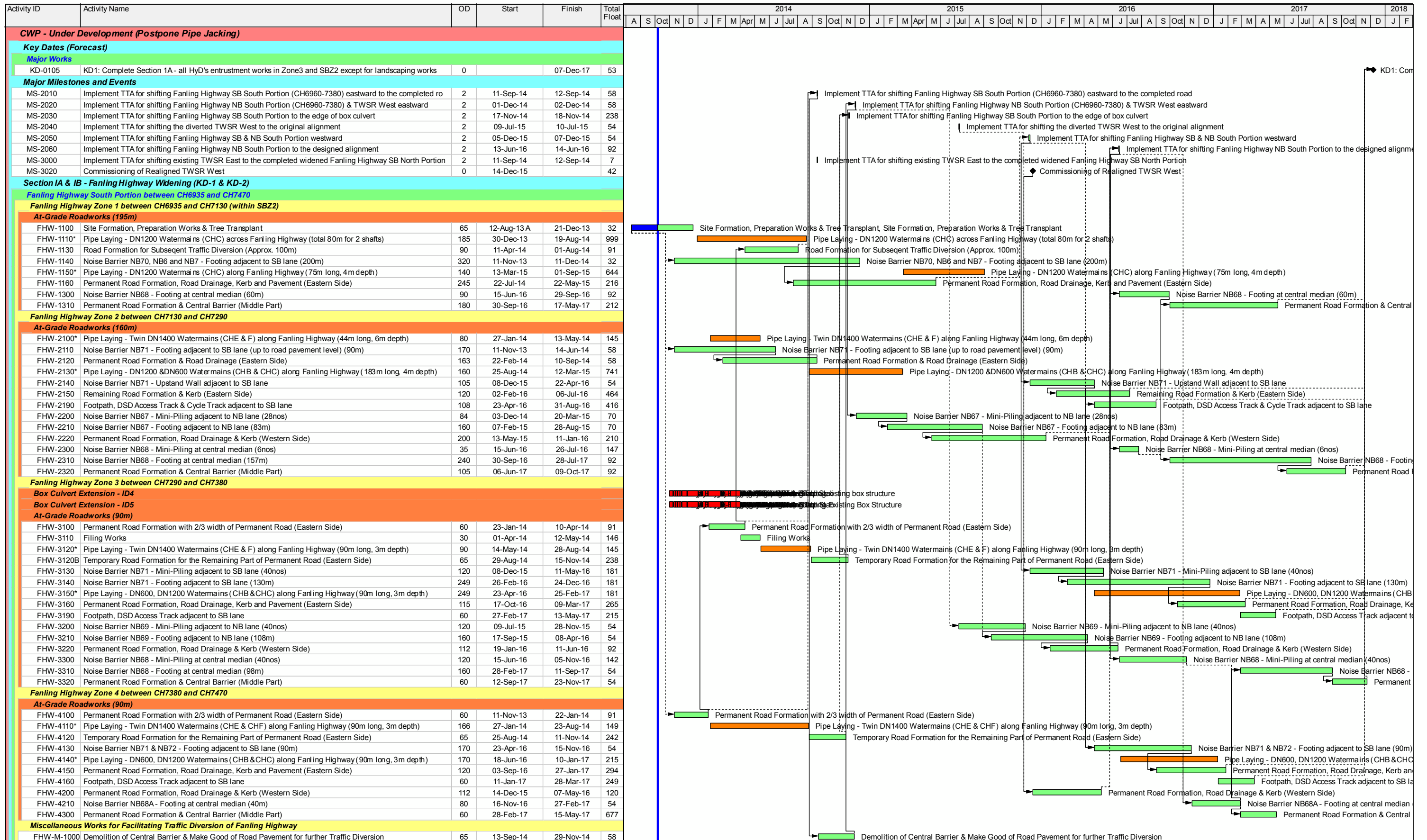
CEDD Contract No. CV/2012/09

Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for Fanling Highway North Portion

CWP004-1 Page 1 of 1 11-Oct-13

Date	Revision	Checked	Approved
11-Oct-13		SL	



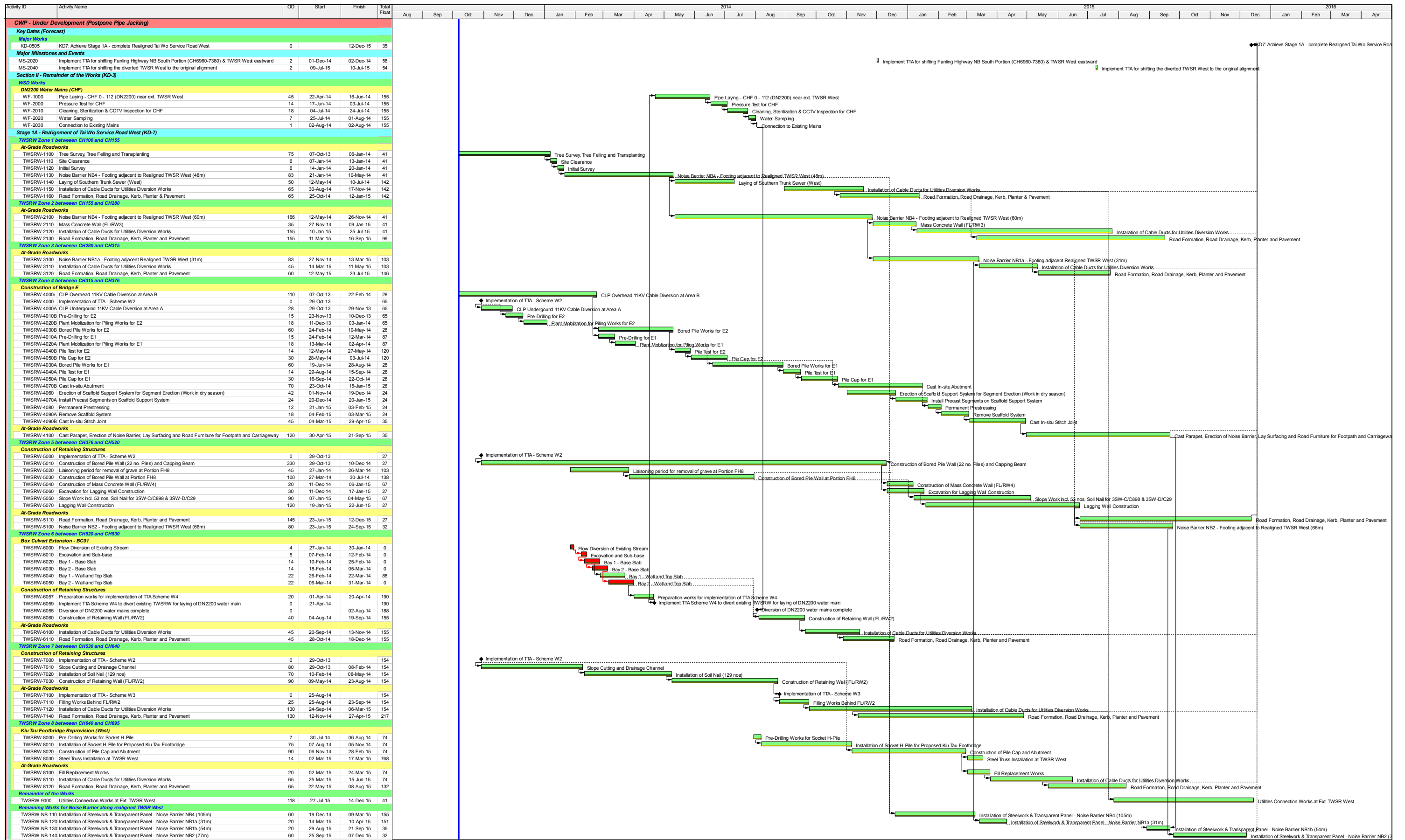

**俊和建築工程有限公司**  
**CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.**

- █ Actual Work
- █ Remaining Work
- █ Summary Bar
- █ Critical Remaining Work
- ◆ Milestone

**CEDD Contract No. CV/2012/09**  
**Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3**  
**Works Sequence for Fanling Highway South Portion**  
 CWP004-1 Page 1 of 1 11-Oct-13

Date	Revision	Checked	Approved
11-Oct-13		SL	





**俊和建築工程有限公司**  
**CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.**

- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- Project Baseline Bar

**CEDD Contract No. CV/2012/09**

**Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3**

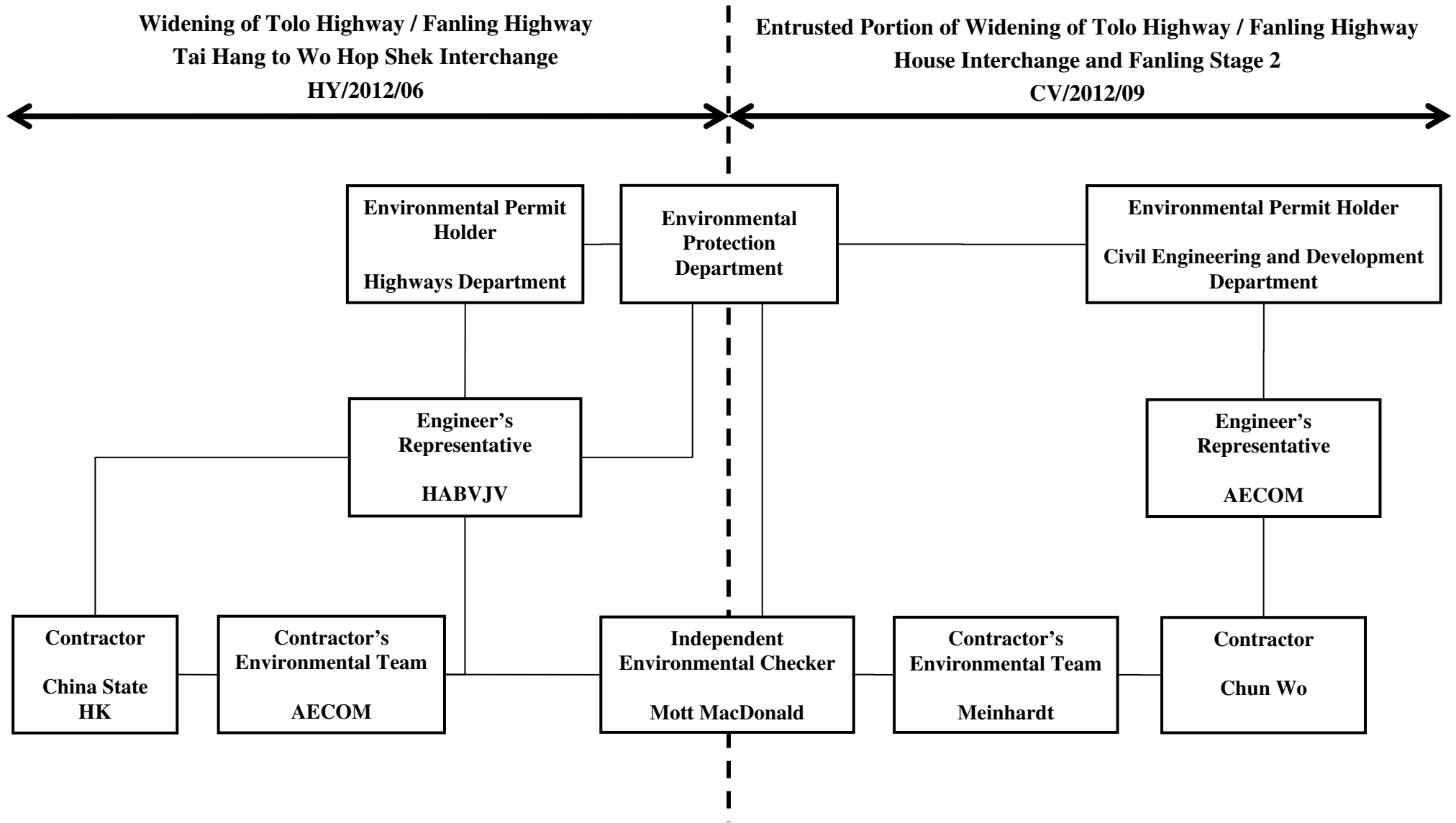
**Works Sequence for TWSRW**

Date	Revision	Checked	Approved
11-Sep-13		SL	

# Appendix B

## Project Organization Structure





# Appendix C

## Summary of Event and Action Plan

**Event and Action Plan for Air Quality**

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Discuss with IEC and Contractor on remedial actions required;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>

Event	Action			
	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC, ER, Contractor and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor, and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase frequency to daily;</li> <li>5. Analyse Contractor's working procedures to determine possible mitigation to be;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. 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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by ER until the exceedance is abated.</li> </ol>

**Event and Action Plan for Noise Quality**

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

**Event and Action Plan for Water Quality**

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement on next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, Contractor &amp; ER;</li> <li>4. Check monitoring data, all plant, equipment &amp; contractor's working methods;</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET &amp; Contractor's working methods;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing; Notify, Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER &amp; confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Amend working methods if appropriate.</li> </ol>
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat measurement on next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, Contractor, ER &amp; EPD;</li> <li>4. Check monitoring data, all plant, equipment &amp; Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, ER &amp; Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase monitoring to daily until no exceedance of Action level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET &amp; Contractor's working method;</li> <li>2. Discuss with ET &amp; Contractor on possible remedial actions;</li> <li>3. Review the proposed mitigation measures submitted by Contractor &amp; advise the ER accordingly;</li> <li>4. Supervise the implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IEC on the proposed mitigation measures;</li> <li>2. Ensure mitigation measures properly implemented;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer &amp; confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant &amp; equipment &amp; consider changes of working methods;</li> <li>4. Submit proposal of mitigation measures to ER within 3 working days of notification &amp; discuss with ET, IEC &amp; ER;</li> <li>5. Implement the agreed mitigation measures.</li> </ol>

Event	Action			
	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat measurement on next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, contractor, ER &amp; EPD;</li> <li>4. Check monitoring data, all plant, equipment &amp; contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, Contractor &amp; ER.</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET &amp; Contractor's working method;</li> <li>2. Discuss with ET &amp; Contractor on the possible mitigation measures;</li> <li>3. Review the proposed mitigation measures submitted by Contractor &amp; advise the ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Discuss with IEC, ET &amp; Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to review the working methods.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER &amp; confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant &amp; equipment &amp; consider changes of working methods;</li> <li>4. Submit proposal of mitigation measures to ER within 3 working days of notification &amp; discuss with ET, IEC &amp; ER.</li> </ol>
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat measurement on the next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, Contractor, ER &amp; EPD;</li> <li>4. Check monitoring data, all plant, equipment &amp; Contractor's working methods;</li> <li>5. Discuss mitigation measures within IEC, Contractor &amp; ER;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET &amp; Contractor's working method;</li> <li>2. Discuss with ET &amp; Contractor on potential remedial actions;</li> <li>3. Review Contractor's mitigation measures whenever necessary to assure their effectiveness &amp; advise the ER accordingly;</li> <li>4. Supervise the implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IEC, ET &amp; Contractor on the proposed mitigation measures;</li> <li>2. Request Contractor to critically review the working methods;</li> <li>3. Make agreement on the mitigation measures to be implemented;</li> <li>4. Ensure mitigation measures are properly implemented;</li> <li>5. Consider &amp; instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposal of mitigation measures to ER within 3 working days of notification &amp; discuss with ET, IEC &amp; ER;</li> <li>3. Implement the agreed mitigation measures;</li> <li>4. Resubmit proposals of mitigation measures if problem still not under control;</li> <li>5. As directed by the Engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>

# **Appendix D Implementation Schedule of Environmental Mitigation Measures (EMIS)**



Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
<b>Air Quality</b>				
Air Quality during Construction	<ul style="list-style-type: none"> <li>Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.</li> <li>All stockpiles of excavated materials or spoil of more than 50m<sup>3</sup> shall be enclosed, covered or dampened during dry or windy conditions.</li> <li>Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas.</li> <li>All spraying of materials and surfaces shall avoid excessive water usage.</li> <li>Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards.</li> <li>Materials shall be dampened, if necessary, before transportation.</li> <li>Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks.</li> <li>Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads.</li> </ul>	During Construction	Contractor	✓  Rem and Obs  Rem  ✓ ✓  ✓ ✓  Rem and Obs
Air Quality during Operation	Not required	N/A	N/A	N/A
<b>Noise</b>				
Noise during Construction	<ul style="list-style-type: none"> <li>Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant.</li> <li>Reduce the number of equipment and their percentage on-time.</li> </ul>	During Construction	Contractor	✓  ✓
Noise during Operation	Not required	N/A	N/A	N/A
<b>Water Quality</b>				
Water Quality during Construction	<u>Road Widening Works, Earthworks and Culvert Extension Works</u> <ul style="list-style-type: none"> <li>Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settleable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required.</li> </ul>	During Construction	Contractor	Obs

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> <li>Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained.</li> </ul>			✓
	<ul style="list-style-type: none"> <li>Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls.</li> <li>Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system.</li> <li>Open stockpiles should be covered with a tarpaulin cover.</li> <li>During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded.</li> <li>Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains.</li> <li>Fuels should be stored in bunded areas such that spillage can be easily collected.</li> </ul>			Rem and Obs  Obs  ✓  Rem  Rem and Obs  Obs
Water Quality during Operation	Not required	N/A	N/A	N/A
<b>Waste Management</b>				
Waste Management during Construction	<u>General Waste</u> <ul style="list-style-type: none"> <li>Transport of wastes off site as soon as possible.</li> <li>Maintenance of accurate waste records.</li> <li>Minimisation of waste generation for disposal (via reduction/recycling/re-use).</li> <li>No on-site burning will be permitted.</li> <li>Use of re-useable metal hoardings/signboards.</li> </ul> <u>Vegetation from site clearance</u> <ul style="list-style-type: none"> <li>Segregation of materials to facilitate disposal.</li> <li>Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.</li> </ul>	During Construction           During Construction	Contractor           Contractor	✓  ✓  ✓  ✓  ✓  ✓  ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<p><u>Demolition Wastes</u></p> <ul style="list-style-type: none"> <li>• Segregation of materials to facilitate disposal.</li> <li>• Appropriate stockpile management.</li> </ul> <p><u>Excavated Materials</u></p> <ul style="list-style-type: none"> <li>• Segregation of materials to facilitate disposal / reuse.</li> <li>• Appropriate stockpile management.</li> <li>• Re-use of excavated material on or off site (where possible).</li> <li>• Special handling and disposal procedures in the event that contaminated materials are excavated.</li> </ul> <p><u>Construction Wastes</u></p> <ul style="list-style-type: none"> <li>• Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles).</li> <li>• Appropriate stockpile management.</li> <li>• Planning to reduce over ordering and waste generation.</li> <li>• Recycling and re-use of materials where possible (e.g. metal, wood from formwork)</li> <li>• For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal.</li> </ul> <p><u>Bentonite Slurries</u></p> <ul style="list-style-type: none"> <li>• Bentonite slurries should be reused as far as possible.</li> <li>• Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94.</li> </ul> <p><u>Chemical Wastes</u></p> <ul style="list-style-type: none"> <li>• Storage within locked, covered and bunded area.</li> <li>• The storage area shall not be located adjacent to sensitive receivers e.g. drains.</li> </ul>	<p>During Construction</p> <p>During Construction</p> <p>During Construction</p> <p>During Construction</p> <p>During Construction</p>	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>N/A</p> <p>✓</p> <p>Obs</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>N/A</p> <p>N/A</p> <p>Obs</p> <p>✓</p>

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> <li>Minimise waste production and recycle oils/solvents where possible.</li> <li>A spill response procedure shall be in place and absorption material available for minor spillages.</li> <li>Use appropriate and labelled containers.</li> <li>Educate site workers on site cleanliness/waste management procedures.</li> <li>If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer.</li> <li>The chemical wastes shall be collected by a licensed chemical waste collector.</li> </ul> <p><u>Municipal Wastes</u></p> <ul style="list-style-type: none"> <li>Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal.</li> <li>Regular, daily collections are required by an approved waste collector.</li> </ul>	During Construction	Contractor	✓ Obs ✓ Rem and Obs ✓ ✓ Rem and Obs ✓
Waste Management during Operation	Not required.	N/A	N/A	N/A
<b>Ecology</b>				
Ecology during Construction	<p><u>Accurate Delineation of Works Area</u></p> <ul style="list-style-type: none"> <li>Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats.</li> <li>Individual trees which fall within the works areas but which work plans show do not require removal are to be retained and fenced off to maximise protection.</li> </ul> <p><u>Dust generation</u></p> <p>There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction:</p> <ul style="list-style-type: none"> <li>vehicle washing facilities to be provided at every discernible or designated vehicle exit point;</li> </ul>	During Construction	Contractor	✓ Obs
		During Construction	Contractor	Rem and Obs

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> <li>• all temporary site access roads shall be sprayed with water to suppress dust as necessary;</li> <li>• all dusty materials should be sprayed with water immediately prior to any handling; and</li> <li>• all debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.</li> </ul> <p><u>Surface Run-off</u></p> <p>In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include:</p> <ul style="list-style-type: none"> <li>• Bund and cover stockpiles to avoid run-off;</li> <li>• Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical;</li> <li>• All vehicle maintenance to be undertaken within a bunded area; and</li> <li>• Maximise vegetation retention on-site to maximise absorption (minimise transport).</li> </ul>	During Construction	Contractor	✓  Rem  ✓  Rem and Obs Obs  N/A ✓
Ecology during Operation	<ul style="list-style-type: none"> <li>• To conduct compensatory ecological planting as specified in the latest landscape plans approved by EPD (Clause 2.6 of the Environmental Permit refers).</li> </ul>	During Construction and operation	Contractor (during construction) / LCSD* (during operation) (Note: * The division of vegetation planting and maintenance responsibilities shall follow the guidelines stipulated in ETWB TCW No. 2/2004.)	N/A
<b>Landscape and Visual</b>				
Landscape and Visual during Construction	<p><u>Preservation of Existing Vegetation</u></p> <ul style="list-style-type: none"> <li>• Trees identified for retention within the project limit would be protected during the works</li> <li>• The tree transplanting and planting works shall be implemented by approved Landscape Contractors</li> </ul>	During Construction	Contractor	Obs  ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<p><u>Temporary Works Areas</u>                      Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.</p> <p><u>Hoarding</u>                      A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.</p> <p><u>Top Soils</u>                      The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.</p> <p><u>Protection of Important Landscape Features</u>                      Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.</p>	During Construction	Contractor	✓
		During Construction	Contractor	✓
		During Construction	Contractor	N/A
		During Construction	Contractor	N/A
Landscape and Visual during Operation	Not required.	N/A	N/A	N/A

# **Appendix E**

## **Meteorological Data Extracted from Hong Kong Observatory**

# 1 Meteorological Data Extracted From The Hong Kong Observatory

## 1.1 November 2013

1.1.1 Mainly attributed by Severe Typhoon Krosa and Super Typhoon Haiyan, the weather of November 2013 was wetter than usual. The total rainfall of the month was 83.1 millimetres, more than double of the normal figure of 37.6 millimetres. The accumulated rainfall since 1 January was 2759.0 millimetres, about 16 percent above the normal figure of 2371.6 millimetres for the same period. It was also gloomier than usual with 133.4 hours bright sunshine, about 26 percent below normal. The monthly mean temperature of 21.7 degrees was slightly below the normal figure of 21.8 degrees.

## 1.2 December 2013

1.2.1 Under the influence of cold spells brought by the winter monsoon during the second half of the month, the weather of December 2013 was significantly colder than usual. The monthly mean temperature of 16.1 degrees was 1.8 degrees below the normal figure of 17.9 degrees, the lowest for December since 1975. The active winter monsoon also maintained generally dry conditions for most parts of the month, and yet the month turned out to be much wetter than usual in terms of rainfall due to the rainy episode between 14 and 17 December. The total rainfall of the month was 88.3 millimetres, more than three times the normal figure of 26.8 millimetres and the tenth highest for December on record. The annual total rainfall of 2013 was 2847.3 millimetres, about 19 percent above the normal figure of 2398.5 millimetres.

## 1.3 January 2014

1.3.1 Under the dominance of a dry northeast monsoon for most part of the month, the weather in January 2014 was sunnier and drier than usual. The mean amount of cloud for the month was 32 percent, tied with 1986 as the fourth lowest record for January. With less cloud cover, the total duration of bright sunshine in the month was 238.8 hours, tying with 1902 as the sixth highest record for January. Only traces of rainfall were recorded in the month, making it one of the second driest Januaries on record. The monthly mean temperature of 16.3 degrees was on par with the normal.

## 1.4 February 2014

1.4.1 With several rounds of transition between warm and cold air masses along the coast of Guangdong, the weather of Hong Kong in February 2014 was marked by fluctuating temperatures. The mild episodes in the first and last weeks of the month contrasted sharply against the chilly weather that prevailed in mid-February. On the whole, February 2014 was cooler than usual with a monthly mean temperature of 15.5 degrees, 1.3 degrees below the normal figure of 16.8 degrees. February 2014 was also drier than normal. The monthly rainfall of 39.5 millimetres was about 27 percent below the normal figure of 54.4 millimetres. Without any measurable rainfall in January 2014, the accumulated rainfall of 39.5 millimetres in the first two months of the year was only about half of the normal figure of 78.9 millimetres for the same period.

## 1.5 March 2014

1.5.1 March 2014 was characterized by gloomy weather during the first-half of the month and heavy rain episodes towards the end of the month. While the monthly total



duration of bright sunshine of 86.0 hours was slightly below normal by 5 percent, there were only 5.0 hours of bright sunshine from 1 to 15 March.

- 1.5.2 The month was also cooler and wetter than usual. The monthly mean temperature of 18.7 degrees was 0.4 degree below the normal figure of 19.1 degrees. The total rainfall of the month was 207.6 millimetres, more than double of the normal figure of 82.2 millimetres. About 99 percent of the monthly rainfall fell between 29 and 31 March. The accumulated rainfall of 247.1 millimetres since 1 January was about 53 percent above the normal figure of 161.3 millimetres for the same period.

## **1.6 April 2014**

- 1.6.1 The weather of April 2014 was drier and sunnier than usual. The total rainfall of the month was 132.4 millimetres, about 24 percent below the normal figure of 174.7 millimetres. However, the accumulated rainfall since 1 January of 379.5 millimetres was about 13 percent above the normal figure of 336.1 millimetres for the same period. The total duration of bright sunshine of the month was 119.4 hours, about 17 percent above the normal figure of 101.7 hours. The mean temperature of 22.6 degrees for the month was on par with normal.

## **1.7 May 2014**

- 1.7.1 May 2014 was characterized by gloomy and rainy conditions during the first part of the month and persistent hot weather in the latter part. The total rainfall of 687.3 millimetres was more than double the normal amount for May and the seventh highest May rainfall on record. The accumulated rainfall since 1 January of 1066.8 millimetres was about 67 percent above the normal figure of 640.7 millimetres for the same period. With about three quarters of the sunshine occurring in the second half of the month, the total duration of bright sunshine of the month was 107.8 hours, about 23 percent below the normal figure of 140.4 hours. Sunny and hot weather in the last week of the month also brought the average temperature for the month up to 26.4 degrees, half a degree above the normal figure of 25.9 degrees.

## **1.8 June 2014**

- 1.8.1 With the monthly mean temperature reaching 29.0 degrees, June 2014 was the hottest June in Hong Kong since records began in 1884. The monthly mean minimum temperature of 27.0 degrees and maximum temperature of 31.5 degrees were respectively one of the second and the third highest for June. Such high temperatures were attained despite the facts that sunshine duration and rainfall for the month were not far from normal. The total rainfall of the month was 436.6 millimetres, about 4 percent below the normal figures of 456.1 millimetres. The accumulated rainfall since 1 January of 1503.4 millimetres was about 37 percent above the normal figure of 1096.9 millimetres for the same period.

## **1.9 July 2014**

- 1.9.1 Under the dominance of a subtropical ridge over southern China for most part of the month, and with episodes of continental air flow brought by passages of tropical cyclones over the East China Sea, July 2014 emerged as the hottest July in Hong Kong with a record-breaking monthly mean temperature of 29.8 degrees. The monthly mean minimum temperature of 27.6 degrees equalled the July record, while the monthly mean maximum temperature of 32.6 degrees also ranked as one of the second highest for July. The month was relatively sunny and drier than usual with a monthly rainfall amount of 260.5 millimetres, about 31 percent below the July normal of

376.5 millimetres. The accumulated rainfall since 1 January was 1763.9 millimetres, about 20 percent above the normal of 1473.3 millimetres for the same period.

## **1.10 August 2014**

1.10.1 The weather of August 2014 was hotter than usual due to prolonged spells of fine and sunny weather during the month. The monthly mean temperature of 29.0 degrees was 0.4 degree higher than the normal figure of 28.6 degrees, while the monthly duration of bright sunshine of 212.0 hours was about 12 percent above the normal figure of 188.9 hours. With two heavy rain episodes around mid-August, the month was also wetter than usual with a monthly rainfall amount of 548.2 millimetres, about 27 percent above the August normal of 432.2 millimetres. The accumulated rainfall since 1 January was 2312.1 millimetres, about 21 percent above the normal of 1905.5 millimetres for the same period.

## **1.11 September 2014**

1.11.1 Under the dominance of the subtropical ridge over southern China, September 2014 was the hottest September on record. The monthly mean minimum temperature of 27.0 degrees and mean temperature of 29.0 degrees were respectively the highest and one of the highest for September since record began in 1884. The month was also drier than usual with a monthly total rainfall amount of 140.6 millimetres, only about 43 percent of the September normal of 327.6 millimetres. The accumulated rainfall since 1 January was 2452.7 millimetres, about 10 percent above the normal of 2233.1 millimetres for the same period.

## **1.12 October 2014**

1.12.1 Under the dominance of a relatively dry northeast monsoon, October 2014 was much warmer and sunnier than usual. The mean temperature for the month was 26.2 degrees, 0.7 degrees above the normal figure of 25.5 degrees and also the one of the fifth highest for October since record began in 1884. The monthly total duration of sunshine was 222.9 hours, about 15 percent above the normal figure of 193.9 hours.

1.12.2 The monthly total rainfall of 109.8 millimetres was slightly above the normal figure of 100.9 millimetres. The accumulated rainfall since 1 January was 2562.5 millimetres, about 10 percent above the normal of 2334.0 millimetres for the same period.

# **Appendix F Environmental Monitoring Data for Air, Noise and Water Quality**

Appendix F  
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m <sup>3</sup> /min)			Total Volume (m <sup>3</sup> )	TSP Concentration (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Wind speed m/s	Wind direction
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate						
5-Nov-13	Cloudy	026046	2.7344	2.8817	0.1473	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	70.8	170.3	260.0	<5	N
11-Nov-13	Cloudy	026047	2.7294	2.8564	0.1270	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	61.1	170.3	260.0	<5	N
16-Nov-13	Fine	205789	2.7214	3.1790	0.4576	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	220.0	170.3	260.0	<5	N
22-Nov-13	Fine	205791	2.7471	3.1275	0.3804	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	182.9	170.3	260.0	<5	N
28-Nov-13	Fine	205792	2.5360	3.1228	0.5868	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	282.2	170.3	260.0	<5	N
4-Dec-13	Fine	205793	2.7256	3.1940	0.4684	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	225.2	170.3	260.0	<5	N
10-Dec-13	Fine	205794	2.5920	3.3377	0.7457	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	358.6	170.3	260.0	<5	N
16-Dec-13	Rainy	205831	2.7374	2.7867	0.0493	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	23.7	170.3	260.0	<5	N
21-Dec-13	Fine	205832	2.7435	3.1737	0.4302	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	206.9	170.3	260.0	<5	N
27-Dec-13	Sunny	205833	2.7321	3.2491	0.5170	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	248.6	170.3	260.0	<5	N
2-Jan-14	Sunny	205834	2.6667	3.0836	0.4169	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	200.5	170.3	260.0	<5	N
8-Jan-14	Fine	205904	2.8976	3.3749	0.4773	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	229.5	170.3	260.0	<5	N
14-Jan-14	Fine	205835	2.7456	3.1824	0.4368	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	210.0	170.3	260.0	<5	N
20-Jan-14	Fine	205836	2.7541	3.4253	0.6712	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	322.8	170.3	260.0	<5	N
25-Jan-14	Sunny	205837	2.7496	3.1072	0.3576	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	172.0	170.3	260.0	<5	N
30-Jan-14	Fine	205838	2.7561	3.1216	0.3655	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	175.8	170.3	260.0	<5	N
5-Feb-14	Fine	205839	2.7351	2.8805	0.1454	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	69.9	170.3	260.0	<5	N
11-Feb-14	Cloudy	205840	2.7582	3.0589	0.3007	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	144.6	170.3	260.0	<5	N
17-Feb-14	Fine	205907	2.9323	3.2644	0.3321	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	159.7	170.3	260.0	<5	N
22-Feb-14	Fine	1	2.6884	3.0733	0.3849	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	185.1	170.3	260.0	<5	N
28-Feb-14	Fine	2	2.6782	3.1388	0.4606	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	221.5	170.3	260.0	<5	N
6-Mar-14	Cloudy	3	2.7216	3.0258	0.3042	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	146.3	170.3	260.0	<5	N
12-Mar-14	Cloudy	6	2.7007	3.0468	0.3461	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	166.4	170.3	260.0	<5	N
18-Mar-14	Fine	7	2.7102	2.9790	0.2688	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	129.3	170.3	260.0	<5	N
24-Mar-14	Fine	8	2.6925	3.0836	0.3911	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	188.1	170.3	260.0	<5	N
29-Mar-14	Rainy	9	2.6958	2.8354	0.1396	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	67.1	170.3	260.0	<5	N
4-Apr-14	Cloudy	10	2.6869	2.8690	0.1821	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	87.6	170.3	260.0	<5	N
10-Apr-14	Fine	11	2.6915	2.9070	0.2155	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.6	170.3	260.0	<5	N
16-Apr-14	Sunny	12	2.7313	3.0336	0.3023	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	145.4	170.3	260.0	<5	N
22-Apr-14	Sunny	13	2.7088	2.9072	0.1984	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	95.4	170.3	260.0	<5	N
28-Apr-14	Sunny	14	2.6694	2.8877	0.2183	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	105.0	170.3	260.0	<5	N
3-May-14	Fine	15	2.7172	3.0659	0.3487	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	167.7	170.3	260.0	<5	N
9-May-14	Rainy	21	2.7012	2.7317	0.0305	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	14.7	170.3	260.0	<5	N
15-May-14	Cloudy	212	2.7112	2.9339	0.2227	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	107.1	170.3	260.0	<5	N
21-May-14	Rainy	22	2.7506	2.8765	0.1259	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	60.5	170.3	260.0	<5	N
27-May-14	Fine	23	2.7061	3.1128	0.4067	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	195.6	170.3	260.0	<5	N
31-May-14	Fine	24	2.6975	2.9550	0.2575	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	123.8	170.3	260.0	<5	N
6-Jun-14	Cloudy	41	2.6798	2.8375	0.1577	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	75.8	170.3	260.0	<5	N
12-Jun-14	Fine	50	2.6908	2.9028	0.2120	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	101.9	170.3	260.0	<5	N
18-Jun-14	Cloudy	44	2.7198	2.8389	0.1191	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	57.3	170.3	260.0	<5	N
24-Jun-14	Rainy	46	2.6996	2.7792	0.0796	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	38.3	170.3	260.0	<5	N
30-Jun-14	Rainy	47	2.7035	2.7728	0.0693	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	33.3	170.3	260.0	<5	N
5-Jul-14	Rainy	50	2.7048	2.8380	0.1332	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	64.1	170.3	260.0	<5	N
11-Jul-14	Fine	51	2.7072	2.8157	0.1085	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	52.2	170.3	260.0	<5	N
17-Jul-14	Fine	53	2.7005	2.8421	0.1416	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.1	170.3	260.0	<5	N
23-Jul-14	Fine	57	2.6795	3.5157	0.8362	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	402.1	170.3	260.0	<5	N
29-Jul-14	Fine	59	2.7073	2.8783	0.1710	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	82.2	170.3	260.0	<5	N

Appendix F  
Air Quality Monitoring Results and their Graphical Presentation

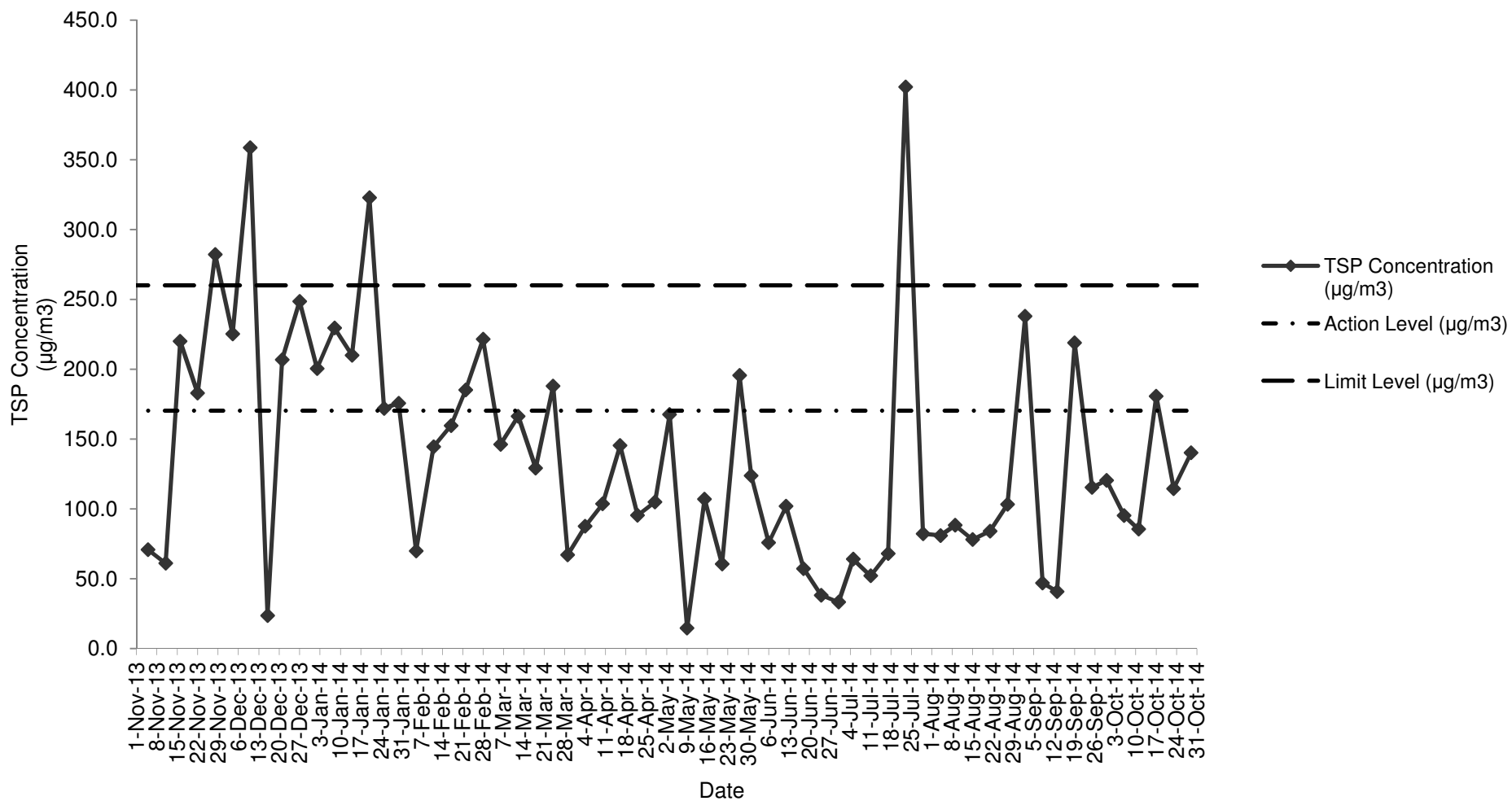
24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m <sup>3</sup> /min)			Total Volume (m <sup>3</sup> )	TSP Concentration (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Wind speed m/s	Wind direction
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate						
4-Aug-14	Sunny	72	2.6718	2.8402	0.1684	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	81.0	170.3	260.0	<5	N
9-Aug-14	Fine	62	2.7200	2.9037	0.1837	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.3	170.3	260.0	<5	N
15-Aug-14	Fine	64	2.7060	2.8683	0.1623	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	78.0	170.3	260.0	<5	N
21-Aug-14	Fine	69	2.6983	2.8733	0.1750	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	84.2	170.3	260.0	<5	N
27-Aug-14	Sunny	68	2.6756	2.8903	0.2147	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.2	170.3	260.0	<5	N
2-Sep-14	Fine	66	2.7036	3.1984	0.4948	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	<b>237.9</b>	170.3	260.0	<5	N
8-Sep-14	Sunny	85	2.7183	2.8161	0.0978	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	47.0	170.3	260.0	<5	N
13-Sep-14	Sunny	84	2.7229	2.8078	0.0849	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	40.8	170.3	260.0	<5	N
19-Sep-14	Fine	87	2.7231	3.1784	0.4553	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	<b>218.9</b>	170.3	260.0	<5	N
25-Sep-14	Sunny	89	2.7889	3.0289	0.2400	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	115.4	170.3	260.0	<5	N
30-Sep-14	Fine	91	2.7064	2.9570	0.2506	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	120.5	170.3	260.0	<5	N
6-Oct-14	Fine	93	2.7227	2.9208	0.1981	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	95.3	170.3	260.0	<5	N
11-Oct-14	Sunny	94	2.6914	2.8693	0.1779	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	85.5	170.3	260.0	<5	N
17-Oct-14	Sunny	97	2.8002	3.1761	0.3759	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	<b>180.8</b>	170.3	260.0	<5	N
23-Oct-14	Sunny	101	2.7829	3.0210	0.2381	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	114.5	170.3	260.0	<5	N
29-Oct-14	Fine	100	2.7114	3.0030	0.2916	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	140.2	170.3	260.0	<5	N

Summary For the Reporting Period (Nov 2013 - Oct 2014)	
Average	137.8
Minimum	14.7
Maximum	402.1

Note: No major dust source observed during the monitoring period  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level

### 24-Hour TSP Monitoring Result at Station: SR77 (Nov 2013 - Oct 2014)



**Appendix F**  
**Air Quality Monitoring Results and their Graphical Presentation**

**1-Hour TSP Monitoring Result at Station: SR77**

Date	Weather Condition	Time	Conc.( $\mu\text{g}/\text{m}^3$ )			Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
			1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour		
5-Nov-13	Cloudy	09:30 - 12:34	111.0	108.0	113.0	292.7	500.0
11-Nov-13	Cloudy	09:00 - 12:04	109.0	102.0	118.0	292.7	500.0
16-Nov-13	Fine	09:00 - 12:04	155.0	149.0	153.0	292.7	500.0
22-Nov-13	Fine	13:30 - 16:34	95.0	91.0	83.0	292.7	500.0
28-Nov-13	Fine	10:00 - 13:04	99.0	100.0	104.0	292.7	500.0
4-Dec-13	Fine	11:00 - 14:04	155.0	154.0	147.0	292.7	500.0
10-Dec-13	Fine	13:00 - 16:04	283.0	279.0	281.0	292.7	500.0
16-Dec-13	Rainy	10:00 - 13:04	222.0	231.0	216.0	292.7	500.0
21-Dec-13	Fine	08:00 - 11:04	156.0	153.0	191.0	292.7	500.0
27-Dec-13	Fine	11:30 - 14:34	188.0	187.0	173.0	292.7	500.0
2-Jan-14	Sunny	09:30 - 12:34	188.0	184.0	181.0	292.7	500.0
8-Jan-14	Fine	09:30 - 12:34	201.0	203.0	201.0	292.7	500.0
14-Jan-14	Fine	13:00 - 16:04	211.0	198.0	200.0	292.7	500.0
20-Jan-14	Fine	13:00 - 16:04	222.0	219.0	199.0	292.7	500.0
25-Jan-14	Sunny	09:00 - 12:04	178.0	177.0	169.0	292.7	500.0
30-Jan-14	Fine	14:00 - 17:04	212.0	219.0	189.0	292.7	500.0
5-Feb-14	Fine	09:00 - 12:04	166.0	192.0	150.0	292.7	500.0
11-Feb-14	Cloudy	10:00 - 13:04	147.0	155.0	149.0	292.7	500.0
17-Feb-14	Fine	10:30 - 13:34	202.0	211.0	188.0	292.7	500.0
22-Feb-14	Fine	09:00 - 12:04	189.0	166.0	198.0	292.7	500.0
28-Feb-14	Fine	10:45 - 13:49	221.0	187.0	211.0	292.7	500.0
6-Mar-14	Cloudy	11:00 - 14:04	211.0	218.0	197.0	292.7	500.0
12-Mar-14	Cloudy	11:00 - 14:04	197.0	199.0	232.0	292.7	500.0
18-Mar-14	Fine	14:00 - 17:04	212.0	216.0	203.0	292.7	500.0
24-Mar-14	Fine	11:00 - 14:04	199.0	198.0	221.0	292.7	500.0
29-Mar-14	Rainy	10:00 - 13:04	167.0	161.0	173.0	292.7	500.0
4-Apr-14	Cloudy	08:00 - 11:04	189.0	191.0	203.0	292.7	500.0
10-Apr-14	Fine	10:30 - 13:34	156.0	171.0	163.0	292.7	500.0
16-Apr-14	Sunny	11:01 - 14:05	144.0	147.0	151.0	292.7	500.0
22-Apr-14	Sunny	11:30 - 14:34	152.0	136.0	129.0	292.7	500.0
28-Apr-14	Sunny	11:00 - 14:04	163.0	166.0	139.0	292.7	500.0
3-May-14	Fine	10:30 - 13:34	144.0	141.0	157.0	292.7	500.0
9-May-14	Rainy	10:30 - 13:34	122.0	129.0	116.0	292.7	500.0
15-May-14	Cloudy	09:00 - 12:04	116.0	134.0	129.0	292.7	500.0
21-May-14	Rainy	14:30 - 17:34	112.0	153.0	117.0	292.7	500.0
27-May-14	Fine	10:30 - 13:34	137.0	124.0	121.0	292.7	500.0
31-May-14	Fine	10:30 - 13:34	116.0	117.0	136.0	292.7	500.0
6-Jun-14	Cloudy	14:30 - 17:34	166.0	173.0	158.0	292.7	500.0
12-Jun-14	Fine	09:00 - 12:04	178.9	161.6	130.4	292.7	500.0
18-Jun-14	Cloudy	09:00 - 12:00	58.9	61.2	54.2	292.7	500.0
24-Jun-14	Rainy	09:00 - 12:00	34.6	36.9	35.8	292.7	500.0
30-Jun-14	Rainy	09:00 - 12:00	35.8	34.6	38.1	292.7	500.0
5-Jul-14	Rainy	09:00 - 12:00	64.6	66.9	70.4	292.7	500.0
11-Jul-14	Fine	09:00 - 12:00	56.5	51.9	62.3	292.7	500.0
17-Jul-14	Fine	09:00 - 12:00	50.8	51.9	54.2	292.7	500.0
23-Jul-14	Fine	09:00 - 12:00	78.5	72.7	69.2	292.7	500.0
29-Jul-14	Fine	09:00 - 12:00	73.9	69.2	66.9	292.7	500.0
4-Aug-14	Sunny	09:00 - 12:00	65.8	57.7	68.1	292.7	500.0
9-Aug-14	Fine	09:00 - 12:00	84.2	78.5	79.6	292.7	500.0
15-Aug-14	Fine	09:00 - 12:00	69.2	65.8	65.8	292.7	500.0
21-Aug-14	Fine	09:00 - 12:00	81.9	75.0	86.6	292.7	500.0
27-Aug-14	Sunny	09:00 - 12:00	72.7	90.0	99.3	292.7	500.0
2-Sep-14	Fine	09:00 - 12:00	65.8	71.6	61.2	292.7	500.0
8-Sep-14	Sunny	09:00 - 12:00	43.9	47.3	41.5	292.7	500.0
13-Sep-14	Sunny	09:00 - 12:00	47.3	68.1	51.9	292.7	500.0
19-Sep-14	Fine	09:00 - 12:00	229.7	218.1	220.4	292.7	500.0
25-Sep-14	Sunny	09:00 - 12:00	93.5	90.0	87.7	292.7	500.0
30-Sep-14	Fine	09:00 - 12:00	86.6	80.8	84.2	292.7	500.0

**Appendix F**  
**Air Quality Monitoring Results and their Graphical Presentation**

**1-Hour TSP Monitoring Result at Station: SR77**

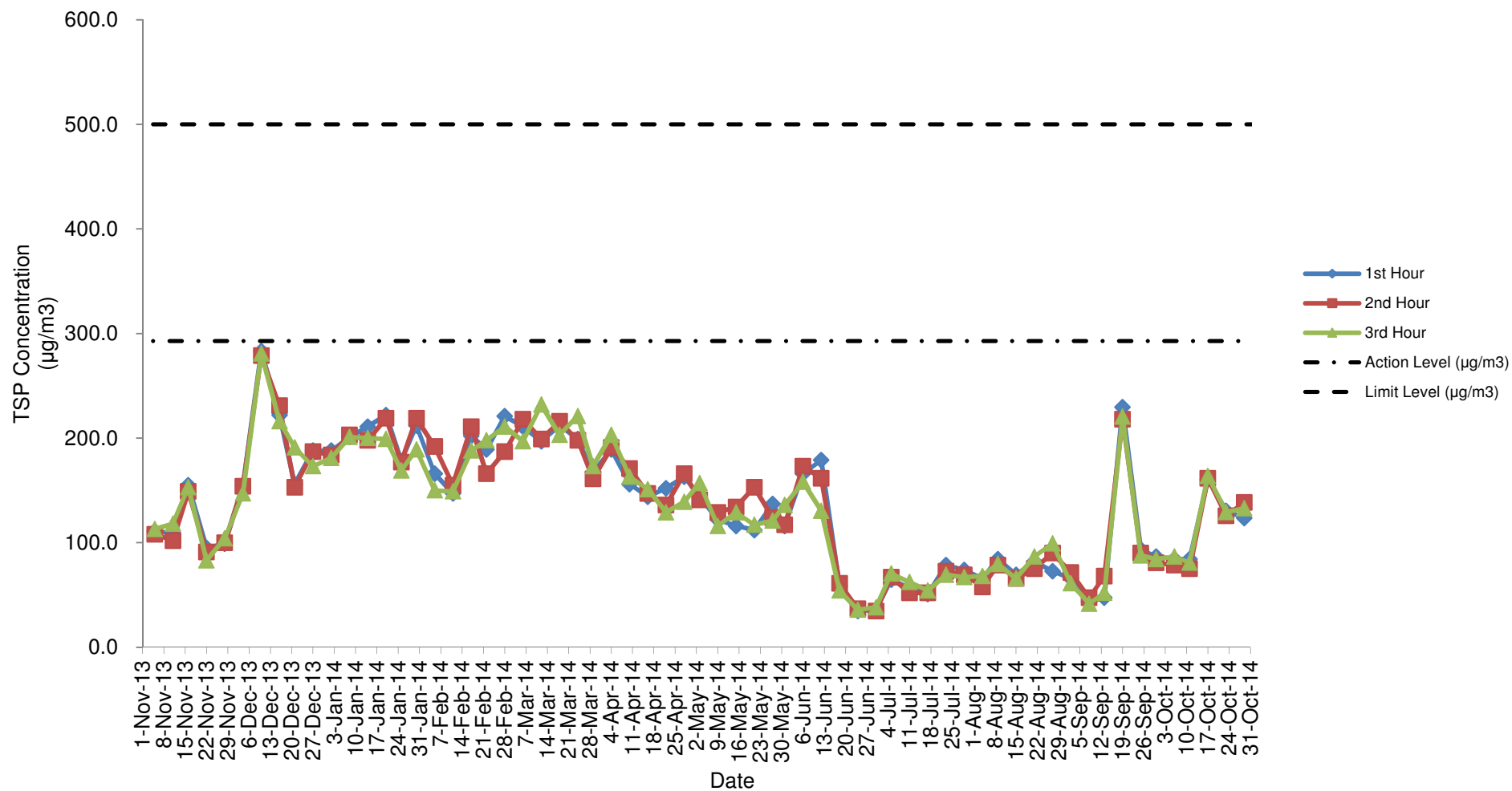
Date	Weather Condition	Time	Conc.(µg/m <sup>3</sup> )			Action Level (µg/m3)	Limit Level (µg/m3)
			1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour		
6-Oct-14	Fine	09:00 - 12:00	84.2	78.5	86.6	292.7	500.0
11-Oct-14	Sunny	09:00 - 12:00	84.2	75.0	80.8	292.7	500.0
17-Oct-14	Sunny	09:00 - 12:00	160.4	161.6	163.9	292.7	500.0
23-Oct-14	Sunny	09:00 - 12:00	130.4	125.8	129.3	292.7	500.0
29-Oct-14	Fine	09:00 - 12:00	123.5	138.5	132.7	292.7	500.0

<b>Summary For the Reporting Period (Nov 2013 - Oct 2014)</b>	
<b>Average</b>	135.5
<b>Minimum</b>	34.6
<b>Maximum</b>	283.0

Note: No major dust source observed during the monitoring period



### 1-Hour TSP Monitoring Result at station: SR77 (Nov 2013 - Oct 2014)



**Appendix F**  
**Noise Monitoring Results and their Graphical Presentation**

**Noise Monitoring Result at SR77**

Date	Weather Condition	Start Time	End Time	Measured Noise Level (dB(A))*			Baseline Corrected Level, dB(A)**	Baseline Noise Level (dB(A)), Leq(30min)	Limit Level dB(A)	Exceedance (Y / N)
				L10(30min)	L90(30min)	Leq(30min)				
2013/11/05	Cloudy	09:30	10:00	72.4	61.1	69.1	-	67.8	75.0	N
2013/11/11	Cloudy	10:30	11:00	72.9	62.2	71.3	-	67.8	75.0	N
2013/11/16	Fine	10:00	10:30	73.2	63.1	71.1	-	67.8	75.0	N
2013/11/22	Fine	13:30	14:00	70.5	58.5	67.6	-	67.8	75.0	N
2013/11/28	Fine	10:30	11:00	74.1	77.5	71.5	-	67.8	75.0	N
2013/12/04	Fine	11:30	12:00	75.1	63.0	70.0	-	67.8	75.0	N
2013/12/10	Fine	13:00	13:30	79.6	67.5	73.5	-	67.8	75.0	N
2013/12/16	Rainy	10:00	10:30	71.6	77.1	67.5	-	67.8	75.0	N
2013/12/21	Fine	08:00	08:30	68.6	74.1	62.5	-	67.8	75.0	N
2013/12/27	Sunny	11:30	12:00	70.1	75.4	66.3	-	67.8	75.0	N
2014/01/02	Sunny	09:30	10:00	70.8	72.3	62.0	-	67.8	75.0	N
2014/01/08	Fine	09:30	10:00	71.2	76.1	61.6	-	67.8	75.0	N
2014/01/14	Fine	13:00	13:30	70.4	74.5	63.1	-	67.8	75.0	N
2014/01/20	Fine	13:00	13:30	76.8	72.1	57.8	-	67.8	75.0	N
2014/01/30	Fine	14:00	14:30	70.8	72.9	60.3	-	67.8	75.0	N
2014/02/05	Fine	14:30	15:00	61.3	64.7	54.5	-	67.8	75.0	N
2014/02/11	Cloudy	10:00	10:30	67.4	71.3	58.6	-	67.8	75.0	N
2014/02/17	Fine	10:30	11:00	69.4	72.1	61.9	-	67.8	75.0	N
2014/02/28	Fine	10:45	11:15	71.6	75.5	65.5	-	67.8	75.0	N
2014/03/06	Cloudy	11:00	11:30	70.8	76.1	64.9	-	67.8	75.0	N
2014/03/12	Cloudy	11:00	11:30	71.8	88.1	66.1	-	67.8	75.0	N
2014/03/18	Fine	14:00	14:30	74.2	89.1	66.9	-	67.8	75.0	N
2014/03/24	Fine	11:00	11:30	71.8	83.3	61.6	-	67.8	75.0	N
2014/04/04	Cloudy	08:00	08:30	70.5	72.5	63.5	-	67.8	75.0	N
2014/04/10	Fine	10:30	11:00	68.5	71.3	62.1	-	67.8	75.0	N
2014/04/16	Sunny	11:01	11:31	69.3	71.9	61.1	-	67.8	75.0	N
2014/04/22	Sunny	11:30	12:00	70.1	71.8	60.2	-	67.8	75.0	N
2014/04/28	Sunny	11:00	11:30	69.9	72.4	61.5	-	67.8	75.0	N
2014/05/09	Rainy	10:30	11:00	66.6	71.9	60.8	-	67.8	75.0	N
2014/05/15	Cloudy	09:00	09:30	65.5	70.5	58.5	-	67.8	75.0	N
2014/05/21	Rainy	14:30	15:00	63.6	70.1	60.2	-	67.8	75.0	N
2014/05/27	Fine	10:30	11:00	63.3	69.8	59.4	-	67.8	75.0	N
2014/06/06	Cloudy	14:30	15:00	62.5	70.5	59.5	-	67.8	75.0	N
2014/06/12	Fine	09:00	09:30	61.8	69.9	58.5	-	67.8	75.0	N
2014/06/18	Cloudy	13:00	13:30	61.8	68.6	59.8	-	67.8	75.0	N
2014/06/24	Rainy	11:00	11:30	62.4	70.6	58.8	-	67.8	75.0	N
2014/06/30	Rainy	14:30	15:00	63.1	69.3	58.5	-	67.8	75.0	N
2014/07/11	Fine	14:30	15:00	63.3	68.5	59.0	-	67.8	75.0	N
2014/07/17	Fine	09:00	09:30	63.6	68.9	58.9	-	67.8	75.0	N
2014/07/23	Fine	14:00	14:30	67.4	72.5	63.5	-	67.8	75.0	N
2014/07/29	Fine	09:30	10:00	72.1	73.5	64.0	-	67.8	75.0	N
2014/08/04	Sunny	10:00	10:30	73.7	63.4	71.7	-	67.8	75.0	N
2014/08/15	Fine	15:00	15:30	73.5	63.0	69.5	-	67.8	75.0	N
2014/08/21	Fine	14:30	15:00	72.4	62.0	67.9	-	67.8	75.0	N
2014/08/27	Sunny	11:00	11:30	71.6	61.5	66.8	-	67.8	75.0	N
2014/09/02	Fine	10:00	10:30	70.7	60.5	65.9	-	67.8	75.0	N
2014/09/08	Sunny	10:00	10:30	71.5	61.0	66.5	-	67.8	75.0	N
2014/09/19	Sunny	14:00	14:30	70.5	59.5	66.9	-	67.8	75.0	N
2014/09/25	Fine	11:30	12:00	73.5	64.5	69.5	-	67.8	75.0	N
2014/09/30	Sunny	14:30	15:00	73.0	61.0	69.2	-	67.8	75.0	N
2014/10/06	Fine	11:00	11:30	73.0	61.5	69.9	-	67.8	75.0	N
2014/10/17	Sunny	11:30	12:00	73.0	60.5	68.5	-	67.8	75.0	N
2014/10/23	Sunny	11:30	12:00	76.0	63.5	71.5	-	67.8	75.0	N
2014/10/29	Fine	10:30	11:00	74.0	65.0	71.2	-	67.8	75.0	N

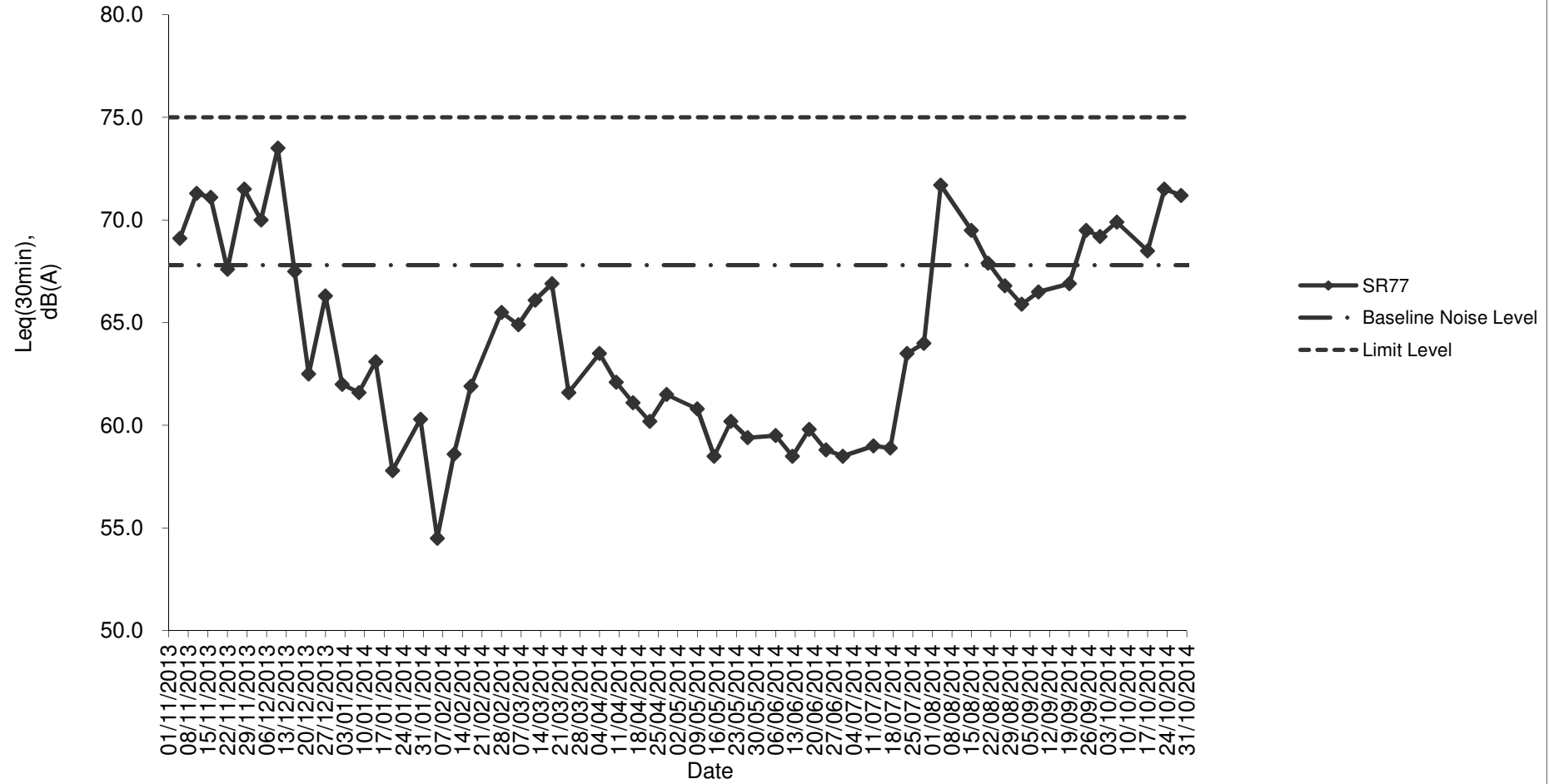
Summary For the Reporting Period (Nov 2013 - Oct 2014)	
Average	64.4
Minimum	54.5
Maximum	73.5

**Remarks**

\* +3dB(A) Façade effect correction included

\*\* Baseline corrected level is only calculated when measured noise level (Leq) > limit level.

**Noise monitoring result: SR77  
(Nov 2013 - Oct 2014)**



**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

Project Name: **Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3**  
**Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2**

Date of Monitoring 05/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:53	<0.5	24.1	24.1	7.6	7.6	7.0	7.0	83.7	83.7	13.6	12.9	0.1	0.1	8	8.5
			24.1		7.6		7.0		83.6		12.1		9			
			23.7	8.1	6.9	81.2	35	52								
C3b	10:41	<0.5	23.7	23.7	8.1	8.1	6.9	6.9	81.2	81.2	37.3	36.2	0.1	0.1	52	52
			23.7		8.1		6.9		81.2		37.3		7			
			23.5	7.9	7.1	83.8	9.69	6								
I5	10:24	<0.5	23.5	23.5	7.9	7.9	7.0	7.1	83.1	83.1	10.1	9.9	0.1	0.1	7	6.5
			23.5		7.9		7.0		82.3		10.1		6			

Date of Monitoring 07/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:53	<0.5	27.4	27.4	7.6	7.6	8.2	8.2	104.3	104.3	15.1	14.6	<0.1	<0.1	17	16.5
			27.4		7.6		8.2		104.2		14.1		16			
			25.7	8	7.4	90.6	29.2	37								
C3b	10:41	<0.5	25.7	25.7	8	8.0	7.4	7.4	90.6	90.6	28.7	29.0	<0.1	<0.1	38	37.5
			25.7		8		7.4		90.6		28.7		38			
			26.1	7.8	7.7	95.4	32.5	32								
I5	10:24	<0.5	26.1	26.1	7.8	7.8	7.7	7.7	95.4	95.4	29.8	31.2	<0.1	<0.1	31	31.5
			26.1		7.8		7.7		95.4		29.8		31			

Date of Monitoring 09/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:02	<0.5	27.2	27.2	7.6	7.6	6.4	6.4	80.3	80.2	21.8	22.0	<0.1	<0.1	24	24
			27.2		7.6		6.4		80.1		22.1		24			
			25.9	8	5.4	66.3	38.7	27								
C3b	10:50	<0.5	25.9	25.9	8	8.0	5.4	5.4	66.1	66.2	41	39.9	<0.1	<0.1	27	27
			25.9		8		5.4		66.1		41		27			
			25.3	7.7	6.1	74.5	19.5	20								
I5	10:33	<0.5	25.3	25.3	7.7	7.7	6.1	6.1	73.9	74.2	17.5	18.5	<0.1	<0.1	22	21
			25.3		7.7		6.1		73.9		17.5		22			

Date of Monitoring 11/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:46	<0.5	24.5	24.5	7.7	7.7	6.2	6.2	74.7	74.6	28.2	26.2	<0.1	<0.1	34	33.5
			24.5		7.7		6.2		74.4		24.2		33			
			24.1	8	6.8	81.3	87.3	130								
C3b	11:34	<0.5	24.1	24.1	8	8.0	6.8	6.8	81.4	81.4	89.6	88.5	<0.1	<0.1	136	133
			24.1		8		6.8		81.4		89.6		136			
			24.4	7.8	7.0	84	17	12								
I5	11:17	<0.5	24.4	24.4	7.8	7.8	7.0	7.0	83.9	84.0	17.0	17.0	<0.1	<0.1	14	13
			24.4		7.8		7.0		83.9		16.9		14			

Date of Monitoring 13/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:38	<0.5	21.7	21.7	7.7	7.7	5.7	5.6	65	64.2	17.1	17.5	<0.1	<0.1	18	17.5
			21.7		7.7		5.6		63.3		17.9		17			
			20.9	7.9	6.9	77.7	60.1	88								
C3b	11:14	<0.5	20.9	20.9	7.9	7.9	7.1	7.0	79.7	78.7	60.2	60.2	<0.1	<0.1	84	86
			20.9		7.9		7.1		79.7		60.2		84			
			21.2	7.8	7.1	79.3	23	20								
I5	11:25	<0.5	21.2	21.2	7.8	7.8	7.1	7.1	79.4	79.4	21.8	22.4	<0.1	<0.1	21	20.5
			21.2		7.8		7.1		79.4		21.8		21			

Date of Monitoring 15/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:57	<0.5	25.5	25.5	7.7	7.7	8.2	8.1	99.6	99.6	36.5	36.0	<0.1	<0.1	25	25.5
			25.5		7.7		8.1		99.5		35.5		26			
			23.2	8	8.0	93.7	37.4	30								
C3b	11:21	<0.5	23.2	23.2	8	8.0	8.0	8.0	93.6	93.7	38.7	38.1	<0.1	<0.1	38	34
			23.2		8		8.0		93.6		38.7		38			
			23.2	7.8	8.1	94.6	21	11								
I5	11:34	<0.5	23.3	23.3	7.8	7.8	8.1	8.1	94.3	94.5	21	21.0	<0.1	<0.1	8	9.5
			23.3		7.8		8.1		94.3		21		8			

Date of Monitoring 18/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	17:39	<0.5	22.1	22.5	7.7	7.7	4.0	4.2	46.2	48.9	7.81	6.9	<0.1	<0.1	10	9.5
			22.5		7.7		4.5		51.6		5.98		9			
			21.4	8	5.8	65.6	31.6	32								
C3b	18:07	<0.5	21.4	21.4	8	8.0	5.8	5.8	65.5	65.6	31.1	31.4	<0.1	<0.1	32	32
			21.4		8		5.8		65.5		31.1		32			
			21.3	7.8	4.5	50.2	26.8	18								
I5	18:19	<0.5	21.3	21.3	7.8	7.8	4.4	4.4	50.2	50.2	23.9	25.4	<0.1	<0.1	18	18
			21.3		7.8		4.4		50.2		23.9		18			

Date of Monitoring 20/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	16:09	<0.5	22.1	22.1	7.7	7.7	5.7	5.7	65.3	65.2	14.8	14.0	<0.1	<0.1	10	9
			22.1		7.7		5.7		65		13.2		8			
			21.4	8	6.5	73.7	18.7	8								
C3b	15:45	<0.5	21.4	21.4	8	8.0	6.5	6.5	73	73.4	18.6	18.7	<0.1	<0.1	10	9
			21.4		8		6.5		73		18.6		10			
			22.2	7.9	8.5	97.7	13.5	6								
I5	15:15	<0.5	22.2	22.3	7.9	7.9	8.5	8.5	98	97.9	13.4	13.5	<0.1	<0.1	8	7
			22.3		7.9		8.5		98		13.4		8			

Date of Monitoring 22/11/2013 Weather : Fine

NOTE:  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level

**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

**Project Name:** Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
 Entrusted Portion of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:38	<0.5	25.5	25.5	7.7	7.7	7.4	7.7	90.6	94.0	12.2	12.2	<0.1	<0.1	6	5
			25.5		7.7		8.0		97.3		12.1		<0.1		4	
C3b	14:21	<0.5	23.8	23.8	8	8.0	8.1	8.1	95.7	95.8	60.3	59.7	<0.1	<0.1	35	35
			23.8		8		8.1		95.8		59		<0.1		35	
I5	14:07	<0.5	24.6	24.6	7.7	7.7	8.7	8.7	104.5	104.4	6.2	6.3	<0.1	<0.1	9	8.5
			24.6		7.7		8.7		104.3		6.32		<0.1		8	

Date of Monitoring 25/11/2013 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:32	<0.5	23.2	23.2	7.4	7.4	8.1	8.1	95.1	95.1	25.9	27.4	<0.1	<0.1	9	9.5
			23.2		7.38		8.1		95.1		28.8		<0.1		10	
C3b	11:19	<0.5	22.1	22.1	8.32	8.3	8.4	8.3	95.8	95.7	15.5	15.0	<0.1	<0.1	22	22.5
			22.1		8.32		8.3		95.5		14.4		<0.1		23	
I5	10:58	<0.5	21.7	21.7	7.45	7.5	8.7	8.7	99	98.8	24	24.3	<0.1	<0.1	18	18.5
			21.7		7.45		8.7		98.6		24.5		<0.1		19	

Date of Monitoring 27/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:11	<0.5	23.4	23.4	7.8	7.8	8.1	8.1	95.3	95.3	22.1	21.9	<0.1	<0.1	10	11
			23.4		7.8		8.1		95.3		21.6		<0.1		12	
C3b	10:26	<0.5	22.7	22.7	8	8.0	8.3	8.3	95.5	95.5	24.3	24.0	<0.1	<0.1	14	14
			22.7		8		8.3		95.5		23.7		<0.1		14	
I5	10:45	<0.5	23.2	23.2	7.7	7.7	8.7	8.7	98.7	98.7	20.5	20.1	<0.1	<0.1	8	9
			23.2		7.7		8.7		98.6		19.7		<0.1		10	

Date of Monitoring 29/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:24	<0.5	21.5	21.5	7.8	7.8	8.9	8.9	100.3	100.4	12.1	12.1	<0.1	<0.1	6	5
			21.5		7.8		8.9		100.4		12		<0.1		4	
C3b	14:05	<0.5	20.3	20.3	8	8.0	8.2	8.2	90.9	91.0	27.5	28.0	<0.1	<0.1	15	12.5
			20.3		8		8.2		91.1		28.5		<0.1		10	
I5	13:48	<0.5	21.4	21.4	7.6	7.6	9.5	9.5	107.7	107.0	15.8	15.9	<0.1	<0.1	15	12.5
			21.4		7.6		9.4		106.3		15.9		<0.1		10	

Date of Monitoring 02/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	15:13	<0.5	22.8	22.8	7.7	7.7	7.5	7.5	86.9	86.7	16.7	16.7	<0.1	<0.1	16	29.5
			22.8		7.7		7.4		86.4		16.6		<0.1		43	
C3b	14:47	<0.5	20.4	20.4	8	8.0	7.0	7.0	77.8	77.8	20.8	20.6	<0.1	<0.1	11	11
			20.4		8		7.0		77.8		20.4		<0.1		11	
I5	14:34	<0.5	22.9	22.9	7.6	7.6	7.4	7.4	86.9	86.9	21.1	20.6	<0.1	<0.1	14	13.5
			22.9		7.6		7.4		86.8		20.1		<0.1		13	

Date of Monitoring 04/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:23	<0.5	22.3	22.6	7.8	7.8	7.3	7.3	88.4	88.4	11.9	12.0	<0.1	<0.1	7	7.5
			22.6		7.8		7.3		88.3		12.1		<0.1		8	
C3b	13:04	<0.5	21.4	21.4	8	8.0	7.7	7.7	92.4	92.5	18.1	18.3	<0.1	<0.1	10	9.5
			21.4		8		7.7		92.5		18.4		<0.1		9	
I5	12:46	<0.5	21.9	21.9	7.6	7.6	7.9	7.9	95.2	94.9	18.5	18.1	<0.1	<0.1	8	7
			21.9		7.6		7.9		94.6		17.7		<0.1		6	

Date of Monitoring 06/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:25	<0.5	22.3	22.3	7.7	7.7	8.0	8.0	95.5	95.5	10.1	10.4	<0.1	<0.1	6	5
			22.3		7.7		8.0		95.5		10.6		<0.1		4	
C3b	13:59	<0.5	19.6	19.6	8	8.0	7.9	7.9	92.1	92.2	21.3	20.5	<0.1	<0.1	7	6.5
			19.6		8		7.9		92.2		19.6		<0.1		6	
I5	13:45	<0.5	21.3	21.3	7.6	7.6	8.0	8.0	91.7	91.6	20.8	20.1	<0.1	<0.1	8	<b>8.5</b>
			21.3		7.6		8.0		91.5		19.4		<0.1		9	

Date of Monitoring 09/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:43	<0.5	24.4	24.4	7.6	7.6	7.5	7.5	90.2	90.2	18	18.2	<0.1	<0.1	10	10
			24.4		7.6		7.5		90.2		18.3		<0.1		10	
C3b	14:18	<0.5	22.6	22.6	7.9	7.9	7.7	7.7	88.7	88.7	21.4	21.9	<0.1	<0.1	13	13.5
			22.6		7.9		7.7		88.7		22.4		<0.1		14	
I5	14:00	<0.5	25.1	25.1	7.5	7.5	8.7	8.7	105.2	105.2	19.2	19.1	<0.1	<0.1	8	7
			25.1		7.5		8.7		105.1		18.9		<0.1		6	

NOTE:  
 Data in **Bold** denotes exceedance of respective Action Level  
 Data in **Bold Underline** denotes exceedance of respective Limit Level

**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

**Project Name:** Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
 Entrusted Portion of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 11/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:41	<0.5	22.1	22.1	8.05	8.0	7.8	7.7	88.6	86.9	26.9	26.6	<0.1	<0.1	20	19.5
			22.2		8.04		7.5		85.2		26.3		<0.1		19	
C3b	14:16	<0.5	21.2	21.2	8.16	8.2	8.4	8.4	94.3	94.3	24	24.4	24.4	<0.1	17	16.5
			21.2		8.15		8.4		94.2		24.8		<0.1		16	
I5	14:00	<0.5	22.2	22.2	8.18	8.2	7.6	7.6	87.8	87.3	20.2	19.6	19.6	<0.1	6	5.5
			22.2		8.18		7.6		86.8		19		<0.1		5	

Date of Monitoring 13/12/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	09:49	<0.5	17.5	17.5	7.7	7.7	9.6	9.6	100.6	100.6	24.2	24.2	24.2	<0.1	21	21
			17.5		7.7		9.6		100.6		24.1		<0.1		21	
C3b	09:17	<0.5	17.3	17.3	8	8.0	9.5	9.5	96.2	96.2	12.9	12.9	12.9	<0.1	2	2.5
			17.3		8		9.5		96.1		12.8		<0.1		3	
I5	09:00	<0.5	17.3	17.3	7.2	7.2	8.8	8.8	99.2	99.2	13	13.0	13.0	<0.1	2	2
			17.3		7.2		8.8		99.2		13		<0.1		2	

Date of Monitoring 16/12/2013 Weather : Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:48	<0.5	15.6	15.6	7.7	7.7	9.4	9.4	94.4	94.4	34.5	36.1	36.1	<0.1	24	23.5
			15.6		7.7		9.4		94.4		37.7		<0.1		23	
C3b	11:01	<0.5	16.2	16.2	8	8.0	9.0	9.0	92.1	92.1	28	27.0	27.0	<0.1	10	9.5
			16.2		8		9.0		92.1		26		<0.1		9	
I5	11:18	<0.5	15.3	15.3	7.3	7.3	9.0	9.0	89.7	89.8	39.9	41.2	41.2	<0.1	20	19
			15.3		7.3		9.0		89.8		42.4		<0.1		18	

Date of Monitoring 18/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:33	<0.5	18.6	18.6	7.7	7.7	8.8	8.8	91.1	91.1	20.5	21.0	21.0	<0.1	15	14.5
			18.6		7.7		8.8		91.1		21.5		<0.1		14	
C3b	13:17	<0.5	16.5	16.5	8.1	8.1	8.6	8.6	93.3	93.3	17.9	18.0	18.0	<0.1	8	8
			16.5		8.1		8.6		93.3		18		<0.1		8	
I5	12:55	<0.5	16.9	16.9	7.5	7.5	8.4	8.6	87.6	87.6	48.6	48.7	48.7	<0.1	28	28
			16.9		7.5		8.8		87.6		48.7		<0.1		28	

Date of Monitoring 20/12/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:35	<0.5	20.4	20.4	7.7	7.7	7.7	7.5	85.2	83.0	30.1	29.8	29.8	<0.1	30	29.5
			20.4		7.7		7.3		80.7		29.4		<0.1		29	
C3b	13:16	<0.5	18.1	18.1	8.1	8.1	8.6	8.6	90.9	90.9	25.7	25.1	25.1	<0.1	13	12.5
			18.1		8.1		8.6		90.8		24.4		<0.1		12	
I5	12:49	<0.5	18.2	18.2	7.5	7.5	8.8	8.6	93.3	91.3	24.1	24.7	24.7	<0.1	13	13.5
			18.2		7.5		8.4		89.3		25.3		<0.1		14	

Date of Monitoring 23/12/2013 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:40	<0.5	18.2	18.2	7.7	7.7	9.5	9.3	96.7	95.0	42.9	43.5	43.5	<0.1	32	32.5
			18.2		7.7		9.1		93.2		44.1		<0.1		33	
C3b	11:21	<0.5	16.6	16.6	8	8.0	9.4	9.5	96.5	97.1	37.4	37.2	37.2	<0.1	9	9
			16.6		8		9.5		97.7		36.9		<0.1		9	
I5	11:03	<0.5	16.3	16.3	7.3	7.3	8.2	8.2	87.2	87.2	36.3	37.1	37.1	<0.1	13	13.5
			16.3		7.3		8.2		87.1		37.8		<0.1		14	

Date of Monitoring 24/12/2013 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:26	<0.5	15.3	15.3	7.6	7.6	8.5	8.4	85.2	84.3	42.8	42.0	42.0	<0.1	62	60
			15.3		7.6		8.3		83.3		41.1		<0.1		58	
C3b	10:07	<0.5	13.8	13.8	8	8.0	8.3	8.4	80.3	80.7	26.2	26.8	26.8	<0.1	4	3.5
			13.8		8		8.4		81		27.3		<0.1		3	
I5	09:51	<0.5	14.3	14.3	7.5	7.5	8.5	8.8	83.3	85.7	23.5	24.0	24.0	<0.1	6	5.5
			14.3		7.5		9.0		88		24.5		<0.1		5	

Date of Monitoring 27/12/2013 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:07	<0.5	15.2	15.2	7.6	7.6	8.5	8.6	84.6	85.0	20.1	20.2	20.2	<0.1	9	9
			15.2		7.6		8.6		85.3		20.3		<0.1		9	
C3b	10:44	<0.5	14	14.0	8	8.0	8.7	8.6	84.7	83.5	21.4	21.4	21.4	<0.1	14	14
			14		8		8.5		82.2		21.4		<0.1		14	
I5	10:30	<0.5	13.8	13.8	7.4	7.4	9.6	9.4	93.2	90.6	28.8	28.8	28.8	<0.1	9	9
			13.8		7.4		9.1		87.9		28.8		<0.1		9	

NOTE:  
 Data in **Bold** denotes exceedance of respective Action Level  
 Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F  
Water Quality Monitoring Results and their Graphical Presentation

Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 30/12/2013 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:10	<0.5	16.7	16.7	7.6	7.6	8.2	8.3	84.3	85.1	52.1	52.0	<0.1	<0.1	58	57.5
			16.7		7.6		8.3		85.8		51.8		<0.1			
C3b	11:30	<0.5	14.4	14.4	8.1	8.1	9.1	9.0	88.9	87.5	26.9	26.6	<0.1	<0.1	16	17
			14.4		8.1		8.8		86		26.3		<0.1			
I5	11:44	<0.5	15.1	15.1	7.4	7.4	8.3	8.4	82.4	83.1	18.5	18.9	<0.1	<0.1	6	5.5
			15.1		7.4		8.4		83.7		19.3		<0.1			

Date of Monitoring 02/01/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:59	<0.5	17.2	17.2	7.7	7.7	8.4	8.4	87.7	87.7	18.6	18.9	<0.1	<0.1	17	17.5
			17.2		7.7		8.4		87.7		19.2		<0.1			
C3b	10:28	<0.5	15.9	15.9	8	8.0	8.5	8.6	86.4	86.8	25.7	25.9	<0.1	<0.1	21	21.5
			15.9		8		8.6		86.4		26.1		<0.1			
I5	10:44	<0.5	15.9	15.9	7.5	7.5	8.1	8.1	81.8	81.8	31.8	32.5	<0.1	<0.1	9	9
			15.9		7.5		8.1		81.8		33.1		<0.1			

Date of Monitoring 04/01/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:00	<0.5	16.4	16.4	7.7	7.7	8.5	8.5	86.7	86.7	36.1	36.2	<0.1	<0.1	18	19
			16.4		7.7		8.5		86.7		36.2		<0.1			
C3b	10:18	<0.5	16.8	16.8	8	8.0	8.8	8.8	90.4	90.4	33.4	34.8	<0.1	<0.1	6	6
			16.8		8		8.8		90.4		36.1		<0.1			
I5	10:29	<0.5	17.1	17.1	7.5	7.5	7.9	7.9	82.1	82.1	29.2	29.7	<0.1	<0.1	5	5.5
			17.1		7.5		7.9		82.1		30.2		<0.1			

Date of Monitoring 06/01/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:51	<0.5	18.7	18.7	7.6	7.6	7.1	7.1	75.8	75.8	26.1	25.6	<0.1	<0.1	22	21
			18.7		7.6		7.1		75.8		25.1		<0.1			
C3b	12:19	<0.5	18.1	18.1	8.1	8.1	8.2	8.2	86.7	86.7	15.4	15.7	<0.1	<0.1	9	9
			18.1		8.1		8.2		86.7		15.9		<0.1			
I5	12:33	<0.5	18.6	18.6	7.4	7.4	8.1	8.1	87.1	87.1	16.9	17.0	<0.1	<0.1	8	7.5
			18.6		7.4		8.1		87.1		17.1		<0.1			

Date of Monitoring 08/01/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:31	<0.5	20.2	20.2	7.6	7.6	7.9	7.9	86.8	86.8	41.8	41.5	<0.1	<0.1	36	35.5
			20.2		7.6		7.9		86.8		41.2		<0.1			
C3b	09:55	<0.5	20.4	20.4	8.1	8.1	7.8	7.8	86.3	86.3	41.6	41.4	<0.1	<0.1	9	9.5
			20.4		8.1		7.8		86.3		41.1		<0.1			
I5	10:13	<0.5	19.5	19.5	7.4	7.4	8.5	8.5	92.5	92.5	33.2	33.5	<0.1	<0.1	7	7
			19.5		7.4		8.5		92.5		33.7		<0.1			

Date of Monitoring 10/01/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:33	<0.5	17	17.0	7.7	7.7	7.6	7.6	78.4	78.4	25.5	25.5	<0.1	<0.1	14	14.5
			17		7.7		7.6		78.4		25.5		<0.1			
C3b	10:05	<0.5	16.6	16.6	8	8.0	8.6	8.6	88.1	88.1	16.8	16.8	<0.1	<0.1	4	4
			16.6		8		8.6		88.1		16.8		<0.1			
I5	10:16	<0.5	17	17.0	7.5	7.5	8.6	8.6	89	89.0	15.6	15.6	<0.1	<0.1	7	6.5
			17		7.5		8.6		89		15.6		<0.1			

Date of Monitoring 13/01/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:00	<0.5	14	14.0	7.1	7.1	10.3	10.3	99.8	99.8	17	17.5	<0.1	<0.1	4	4.5
			14		7.1		10.3		99.7		18		<0.1			
C3b	10:17	<0.5	14	14.0	7.8	7.8	10.0	10.1	97.3	97.5	18.1	17.6	<0.1	<0.1	5	4.5
			14		7.8		10.1		97.6		17.1		<0.1			
I5	09:40	<0.5	14.5	14.5	7.4	7.4	10.1	10.1	98.58	98.7	16	16.7	<0.1	<0.1	3	3
			14.5		7.4		10.1		98.8		17.3		<0.1			

Date of Monitoring 15/01/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:01	<0.5	20.4	20.4	7.1	7.1	7.5	7.6	82.8	84.2	16.9	17.4	<0.1	<0.1	7	7
			20.4		7.1		7.7		85.6		17.8		<0.1			
C3b	13:46	<0.5	18.5	18.5	7.8	7.8	8.5	8.6	90.7	91.4	20.8	21.9	<0.1	<0.1	5	5.5
			18.5		7.8		8.6		92		22.9		<0.1			
I5	13:30	<0.5	20	20.0	7.4	7.4	8.0	7.8	87.5	85.0	21.7	22.1	<0.1	<0.1	10	11
			20		7.4		8.5		82.5		22.5		<0.1			

NOTE:  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level

**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 17/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:03	<0.5	19.5	19.5	7.7	7.7	7.9	7.8	85.6	84.9	25.6	25.4	<0.1	<0.1	9	9.5
			19.5		7.7		7.7		84.1		25.2		<0.1		10	
			19.5		8		8.4		91.1		21.2		<0.1		4	
C3b	13:41	<0.5	19.5	19.5	8	8.0	8.4	8.4	91.1	91.1	20.3	20.8	<0.1	<0.1	3	3.5
			19.5		8		8.4		91.1		20.3		<0.1		7	
			19.8		7.5		7.6		81.9		19		<0.1		7	
I5	13:27	<0.5	18.8	18.8	7.5	7.5	7.6	7.6	81.9	81.9	19.3	19.3	<0.1	<0.1	7	7
			18.8		7.5		7.6		81.9		19.3		<0.1		7	
			18.8		7.5		7.6		81.9		19.3		<0.1		7	

Date of Monitoring 20/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:07	<0.5	19.3	21.0	7.1	7.1	7.5	7.5	84	84.0	22.8	22.7	<0.1	<0.1	9	9
			21		7.1		7.5		84		22.5		<0.1		9	
			19.9		7.8		7.3		80.3		12.7		<0.1		5	
C3b	13:56	<0.5	19.9	19.9	7.8	7.8	7.3	7.3	80.3	80.3	12.8	12.8	<0.1	<0.1	5	5
			19.9		7.8		7.3		80.3		12.8		<0.1		5	
			20.8		7.4		7.9		87.9		14.1		<0.1		6	
I5	13:53	<0.5	20.8	20.8	7.4	7.4	7.9	7.9	87.9	87.9	13.8	14.0	<0.1	<0.1	6	6
			20.8		7.4		7.9		87.9		13.8		<0.1		6	
			20.8		7.4		7.9		87.9		13.8		<0.1		6	

Date of Monitoring 22/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:01	<0.5	19.3	19.3	7.7	7.7	8.7	8.7	94.2	94.2	22.9	22.3	<0.1	<0.1	6	6
			19.3		7.7		8.7		94.2		21.6		<0.1		6	
			18.1		8		8.4		89.4		23.8		<0.1		6	
C3b	13:41	<0.5	18.1	18.1	8	8.0	8.4	8.4	89.4	89.4	23.1	23.5	<0.1	<0.1	7	6.5
			18.1		8		8.4		89.4		23.1		<0.1		7	
			19.7		7.5		7.9		86.4		13.4		<0.1		6	
I5	13:33	<0.5	19.7	19.7	7.5	7.5	7.9	7.9	86.4	86.4	13.7	13.6	<0.1	<0.1	5	5.5
			19.7		7.5		7.9		86.4		13.7		<0.1		5	
			19.7		7.5		7.9		86.4		13.7		<0.1		5	

Date of Monitoring 24/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:28	<0.5	21.5	21.5	7.7	7.7	7.2	7.2	81.7	81.7	15.7	15.9	<0.1	<0.1	4	4
			21.5		7.7		7.2		81.7		16		<0.1		4	
			19.8		8		8.2		89.8		28.8		<0.1		7	
C3b	13:49	<0.5	19.8	19.8	8	8.0	8.2	8.2	89.8	89.8	29.9	29.4	<0.1	<0.1	5	6
			19.8		8		8.2		89.8		29.9		<0.1		5	
			20.8		7.5		8.0		89		31		<0.1		10	
I5	13:33	<0.5	20.8	20.8	7.5	7.5	8.0	8.0	89	89.0	29.7	30.4	<0.1	<0.1	9	<b>9.5</b>
			20.8		7.5		8.0		89		29.7		<0.1		9	
			20.8		7.5		8.0		89		29.7		<0.1		9	

Date of Monitoring 27/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:55	<0.5	21.1	21.1	7.7	7.7	7.4	7.4	83.8	83.8	22.1	22.2	<0.1	<0.1	7	6.5
			21.1		7.7		7.4		83.8		22.2		<0.1		6	
			20.9		8		7.4		82.7		26.1		<0.1		9	
C3b	14:31	<0.5	20.9	20.9	8	8.0	7.4	7.4	82.7	82.7	26	26.1	<0.1	<0.1	10	9.5
			20.9		8		7.4		82.7		26		<0.1		10	
			22.1		7.5		7.9		90.9		14.2		<0.1		8	
I5	14:11	<0.5	22.1	22.1	7.5	7.5	7.9	7.9	90.9	90.9	14.1	14.2	<0.1	<0.1	8	8
			22.1		7.5		7.9		90.9		14.1		<0.1		8	
			22.1		7.5		7.9		90.9		14.1		<0.1		8	

Date of Monitoring 29/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:40	<0.5	23	23.0	7.7	7.7	7.4	7.4	86.3	86.3	24	23.8	<0.1	<0.1	3	3
			23		7.7		7.4		86.3		23.5		<0.1		3	
			21.9		8		7.4		84.4		22.7		<0.1		4	
C3b	14:19	<0.5	21.9	21.9	8	8.0	7.4	7.4	84.4	84.4	22.6	22.7	<0.1	<0.1	4	4
			21.9		8		7.4		84.4		22.6		<0.1		4	
			23.1		7.5		7.7		90.2		22.3		<0.1		4	
I5	14:32	<0.5	23	23.1	7.5	7.5	7.7	7.7	90.2	90.2	23.1	22.7	<0.1	<0.1	5	4.5
			23		7.5		7.7		90.2		23.1		<0.1		5	
			23		7.5		7.7		90.2		23.1		<0.1		5	

Date of Monitoring 30/01/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:35	<0.5	23.1	23.1	7.7	7.7	6.9	6.9	81.3	81.3	29.9	29.5	<0.1	<0.1	5	5
			23.1		7.7		6.9		81.3		29		<0.1		5	
			22.9		8		7.5		87.9		22.7		<0.1		5	
C3b	14:03	<0.5	22.9	22.9	8	8.0	7.9	7.7	91.8	89.9	22.9	22.8	<0.1	<0.1	4	4.5
			22.9		8		7.9		91.8		22.9		<0.1		4	
			23.9		7.5		7.0		82.8		24.8		<0.1		6	
I5	14:17	<0.5	23.9	23.9	7.5	7.5	7.0	7.0	82.8	82.8	24.9	24.9	<0.1	<0.1	6	6
			23.9		7.5		7.0		82.8		24.9		<0.1		6	
			23.9		7.5		7.0		82.8		24.9		<0.1		6	

Date of Monitoring 05/02/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:13	<0.5	21.9	21.9	7.8	7.8	7.3	7.3	83.4	83.4	23.3	22.8	<0.1	<0.1	9	9
			21.9		7.8		7.3		83.3		22.3		<0.1		9	
			20.6		7.9		7.7		85.2		23.5		<0.1		6	
C3b	13:56	<0.5	20.6	20.6	7.9	7.9	7.7	7.7	85	85.1	23.3	23.4	<0.1	<0.1	5	5.5
			20.6		7.9		7.7		85		23.3		<0.1		5	
			20.9		7.9		9.3		104.5		24.7		<0.1		9	
I5	13:47	<0.5	20.9	20.9	7.9	7.9	9.3	9.3	104.4	104.5	23.3	24.0	<0.1	<0.1	10	9.5
			20.9		7.9		9.3		104.4		23.3		<0.1		10	
			20.9		7.9		9.3		104.4		23.3		<0.1		10	

NOTE:  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level



Appendix F  
Water Quality Monitoring Results and their Graphical Presentation

Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
Entrusted Portion of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 07/02/2014 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:19	<0.5	22.9	23.0	7.8	7.8	6.8	6.8	80.1	79.8	33.2	33.0	<0.1	<0.1	5	5.5
			23		7.8		6.9		79.4		32.8		<0.1		6	
C3b	14:07	<0.5	22.1	22.1	7.8	7.9	7.6	7.6	87.2	87.3	38.6	40.1	<0.1	<0.1	4	4.5
			22.1		7.9		7.6		87.4		41.6		<0.1		5	
I5	13:58	<0.5	22.5	22.6	7.7	7.8	9.2	9.1	105.6	105.5	33.8	35.5	<0.1	<0.1	9	9
			22.6		7.8		9.1		105.3		37.2		<0.1		9	

Date of Monitoring 10/02/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:44	<0.5	13.2	13.2	7.8	7.8	8.6	8.7	82.2	83.2	48.8	48.8	<0.1	<0.1	68	67.5
			13		7.8		8.8		84.1		48.8		<0.1		67	
C3b	11:29	<0.5	13	13.0	8	8.0	9.5	9.5	90	90.0	48.5	48.5	<0.1	<0.1	8	9
			13		8		9.5		90		48.4		<0.1		10	
I5	11:16	<0.5	13.5	13.5	7.9	7.9	8.8	8.8	85	85.0	46.9	46.9	<0.1	<0.1	7	7
			13.5		7.9		8.8		85		46.9		<0.1		7	

Date of Monitoring 12/02/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:56	<0.5	11.5	11.5	7.9	7.9	8.5	8.5	78.3	78.3	14.1	14.1	<0.1	<0.1	17	16
			11.5		7.9		8.5		78.3		14.1		<0.1		15	
C3b	11:24	<0.5	11.8	11.8	8.1	8.1	9.8	9.8	90.6	90.6	13.1	13.1	<0.1	<0.1	7	6.5
			11.8		8.1		9.8		90.6		13.1		<0.1		6	
I5	11:31	<0.5	11.6	11.6	7.9	7.9	8.9	8.9	82	82.0	11.1	11.1	<0.1	<0.1	4	4
			11.6		7.9		8.9		82		11		<0.1		4	

Date of Monitoring 14/02/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:23	<0.5	11.7	11.7	7.8	7.8	9.2	9.2	84.6	84.6	24.3	24.3	<0.1	<0.1	3.7	3.9
			11.7		7.8		9.2		84.6		24.3		<0.1		4	
C3b	09:47	<0.5	12	12.0	8	8.0	9.1	9.1	84.5	84.5	33.1	33.1	<0.1	<0.1	7.3	8.4
			12		8		9.1		84.5		33.1		<0.1		9.5	
I5	10:05	<0.5	12.1	12.1	7.7	7.7	8.7	8.7	80.9	81.0	26.1	26.1	<0.1	<0.1	3.9	3.7
			12.1		7.7		8.7		81		26.1		<0.1		3.4	

Date of Monitoring 17/02/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:29	<0.5	18.7	18.7	7.8	7.8	7.6	7.6	81.4	81.4	55.6	55.6	<0.1	<0.1	48	45
			18.7		7.8		7.6		81.4		55.6		<0.1		42	
C3b	11:06	<0.5	19.9	19.9	8	8.1	8.0	8.0	88	88.0	70.3	70.3	<0.1	<0.1	21	23
			19.9		8.1		8.0		88		70.3		<0.1		25	
I5	11:13	<0.5	19.8	19.8	7.7	7.7	7.7	7.7	84	84.0	68.9	68.9	<0.1	<0.1	41	38.5
			19.8		7.7		7.7		84		68.9		<0.1		36	

Date of Monitoring 19/02/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	17:44	<0.5	13.1	13.1	7.8	7.8	9.2	9.2	87.1	87.2	13.6	13.6	<0.1	<0.1	<3	#DIV/0!
			13.1		7.8		9.2		87.2		13.5		<0.1		<3	
C3b	17:11	<0.5	13.4	13.4	8	8.1	8.9	8.9	85.1	85.1	28.4	28.4	<0.1	<0.1	16	16
			13.4		8.1		8.9		85.1		28.4		<0.1		16	
I5	17:21	<0.5	13.4	13.4	7.7	7.7	8.4	8.4	80.5	80.5	25.3	25.3	<0.1	<0.1	5.3	5.2
			13.4		7.7		8.4		80.4		25.2		<0.1		5.1	

Date of Monitoring 21/02/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:03	<0.5	16.1	16.1	7.8	7.8	7.9	7.9	80.6	80.6	26.5	26.5	<0.1	<0.1	15	13.5
			16.1		7.8		7.9		80.6		26.5		<0.1		12	
C3b	10:31	<0.5	15.4	15.4	8	8.0	8.4	8.4	83.8	83.8	23.8	23.8	<0.1	<0.1	16	16
			15.4		8		8.4		83.8		23.8		<0.1		16	
I5	10:42	<0.5	15.8	15.8	7.7	7.7	7.5	7.5	75.5	75.5	21.2	21.2	<0.1	<0.1	11	10.5
			15.8		7.7		7.5		75.5		21.2		<0.1		10	

Date of Monitoring 24/02/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:34	<0.5	21.7	21.7	7.9	7.9	8.0	8.0	91.4	91.4	21.1	21.1	<0.1	<0.1	14	13.5
			21.7		7.9		8.0		91.4		21.1		<0.1		13	
C3b	11:01	<0.5	20.4	20.4	8.1	8.1	7.5	7.5	83.6	83.6	26.6	26.6	<0.1	<0.1	7.8	7.2
			20.4		8.1		7.5		83.6		26.6		<0.1		6.6	
I5	11:17	<0.5	20.1	20.1	7.7	7.7	7.6	7.6	83.5	83.5	28.1	28.1	<0.1	<0.1	6.5	6.5
			20.1		7.7		7.6		83.5		28.1		<0.1		6.5	

NOTE:  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level

**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

**Project Name:** Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 26/02/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:04	<0.5	19.5	20.2	7.8	7.8	7.7	7.8	85.2	85.9	17.2	17.2	<0.1	<0.1	15	17
			20.2		7.8		86.6		17.2		<0.1					
C3b	10:31	<0.5	19.9	19.9	8	8.0	7.4	7.4	81.5	81.5	18.1	18.1	<0.1	<0.1	8.2	7.4
			19.9		8		7.4		81.5		18.1		<0.1			
I5	10:47	<0.5	19.7	19.7	7.7	7.7	7.6	7.6	83.7	83.7	17.9	17.9	<0.1	<0.1	6.2	6.3
			19.7		7.7		7.6		83.7		17.9		<0.1			

Date of Monitoring 28/02/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:48	<0.5	17.7	19.5	7.8	7.8	7.5	7.5	81.6	81.6	27.7	27.7	<0.1	<0.1	22	22.5
			19.5		7.8		7.5		81.6		27.7		<0.1			
C3b	11:21	<0.5	19.2	19.2	8	8.0	7.6	7.7	82.2	83.1	33.4	33.4	<0.1	<0.1	14	19
			19.2		8		7.8		83.9		33.4		<0.1			
I5	11:29	<0.5	18.9	18.9	7.7	7.7	7.9	7.9	84.7	84.7	30.1	30.1	<0.1	<0.1	9.8	10.9
			18.9		7.7		7.9		84.7		30.1		<0.1			

Date of Monitoring 03/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:13	<0.5	17.7	17.7	7.18	7.2	8.3	8.3	87.1	87.2	27.8	27.8	<0.1	<0.1	29	30
			17.7		7.18		8.3		87.2		27.8		<0.1			
C3b	10:56	<0.5	17.6	17.6	8.27	8.3	6.8	6.8	71.2	71.2	61.6	61.8	<0.1	<0.1	8	7.8
			17.6		8.27		6.8		71.2		61.9		<0.1			
I5	10:45	<0.5	17.5	17.5	8.24	8.2	7.6	7.6	80	80.0	56.2	56.2	<0.1	<0.1	16	16
			17.5		8.24		7.6		80		56.1		<0.1			

Date of Monitoring 05/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	09:41	<0.5	17.7	17.7	7.4	7.4	8.3	8.3	86.7	86.7	11	11.1	<0.1	<0.1	10	10
			17.7		7.4		8.3		86.7		11.1		<0.1			
C3b	09:18	<0.5	17.5	17.5	8	8.0	8.2	8.2	85.7	85.7	8.7	8.7	<0.1	<0.1	4	4.2
			17.4		8		8.2		85.7		8.7		<0.1			
I5	09:25	<0.5	17.4	17.6	7.4	7.4	7.6	7.6	79.9	79.9	11.4	11.5	<0.1	<0.1	6.8	6.9
			17.7		7.4		7.6		79.9		11.5		<0.1			

Date of Monitoring 07/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	09:59	<0.5	16.4	16.4	7.6	7.6	7.9	7.9	81	81.0	13.6	13.7	<0.1	<0.1	22	22.5
			16.4		7.6		7.9		81		13.8		<0.1			
C3b	09:30	<0.5	16.2	16.2	8	8.0	7.8	7.8	79.3	79.3	6.39	6.5	<0.1	<0.1	9.3	8.1
			16.2		8		7.8		79.3		6.55		<0.1			
I5	09:41	<0.5	15.8	15.8	7.6	7.6	7.9	7.9	79.3	79.3	11	10.6	<0.1	<0.1	4.2	4.7
			15.8		7.6		7.9		79.3		10.1		<0.1			

Date of Monitoring 10/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:29	<0.5	14.9	14.9	7.8	7.8	8.5	8.6	84.1	84.7	16.1	16.1	<0.1	<0.1	12	15.5
			14.9		7.8		8.6		85.3		16.1		<0.1			
C3b	10:01	<0.5	15.1	15.1	8.3	8.3	8.7	8.7	86.4	86.4	9.88	9.9	<0.1	<0.1	6	6.4
			15.1		8.3		8.7		86.4		9.88		<0.1			
I5	10:09	<0.5	14.7	14.7	8.1	8.1	7.8	7.7	77.2	76.4	16.4	16.4	<0.1	<0.1	17	18.5
			14.7		8.1		7.7		75.6		16.4		<0.1			

Date of Monitoring 12/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:24	<0.5	17.6	16.8	7.5	7.5	8.2	8.2	78.1	78.1	8.2	8.2	<0.1	<0.1	9.6	9.8
			16.8		7.5		8.2		78.1		8.2		<0.1			
C3b	10:01	<0.5	16.9	16.9	7.9	7.9	7.8	7.8	74.2	74.2	7.7	7.7	<0.1	<0.1	6.6	7
			16.9		7.9		7.8		74.2		7.7		<0.1			
I5	10:09	<0.5	16.7	16.7	8	8.0	6.6	6.7	62.2	62.5	9.1	9.1	<0.1	<0.1	8.6	9
			16.7		8		6.7		62.7		9.1		<0.1			

Date of Monitoring 14/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:23	<0.5	17.6	17.6	7.8	7.8	8.1	8.1	84.5	84.5	15.4	15.4	<0.1	<0.1	6.6	6.6
			17.6		7.8		8.1		84.5		15.4		<0.1			
C3b	10:01	<0.5	17.4	17.4	8.1	8.1	8.4	8.4	87.6	87.6	33.1	33.1	<0.1	<0.1	22	22
			17.4		8.1		8.4		87.6		33.1		<0.1			
I5	10:08	<0.5	17.9	17.9	7.9	7.9	8.0	8.0	84.2	84.2	19.4	19.4	<0.1	<0.1	12	12
			17.9		7.9		8.0		84.2		19.4		<0.1			

NOTE:  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level

**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 17/03/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:21	<0.5	22.1	22.1	7.8	7.8	7.1	7.1	81.8	81.8	7.6	7.6	<0.1	<0.1	5.8	5.8
			24.4		7.8		81.8		7.6		<0.1		5.8			
C3b	14:00	<0.5	22.3	22.3	8.1	8.1	7.8	7.8	90.2	90.1	11.7	11.7	<0.1	<0.1	5.8	6.2
			22.3		8.1		7.8		89.9		11.7		<0.1		6.6	
I5	14:07	<0.5	22.2	22.2	7.9	7.9	7.5	7.5	85.6	85.6	10	10.0	<0.1	<0.1	6	6.8
			22.2		7.9		7.5		85.6		10		<0.1		7.6	

Date of Monitoring 19/03/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:39	<0.5	18.2	24.4	7.8	7.8	7.5	7.5	89.6	89.6	11.8	11.8	<0.1	<0.1	9.2	8.4
			24.4		7.8		7.5		89.6		11.8		<0.1		7.6	
C3b	10:15	<0.5	23.9	23.9	8.1	8.1	6.6	6.6	78.8	78.8	10.6	10.6	<0.1	<0.1	4.3	4.6
			23.9		8.1		6.6		78.8		10.6		<0.1		4.8	
I5	10:23	<0.5	23.4	23.4	7.9	7.9	7.2	7.2	84.2	84.2	9.4	9.4	<0.1	<0.1	8.4	7.5
			23.4		7.9		7.2		84.2		9.4		<0.1		6.6	

Date of Monitoring 21/03/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:31	<0.5	18.2	18.2	7.8	7.8	7.6	7.6	80.1	80.1	43.4	43.4	<0.1	<0.1	8.2	8.4
			18		7.8		7.6		80.1		43.4		<0.1		8.6	
C3b	10:15	<0.5	18	18.0	8.1	8.1	8.4	8.4	88.6	88.6	51.2	51.2	<0.1	<0.1	13	13
			18		8.1		8.4		88.6		51.2		<0.1		13	
I5	10:06	<0.5	17.8	17.8	7.9	7.9	7.6	7.6	79.8	79.8	49.7	49.7	<0.1	<0.1	11	9.9
			17.8		7.9		7.6		79.8		49.7		<0.1		8.8	

Date of Monitoring 24/03/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:34	<0.5	21	21.0	7.7	7.7	6.4	6.4	71.5	71.5	15.4	15.4	<0.1	<0.1	3.6	4.5
			21		7.7		6.4		71.5		15.4		<0.1		5.3	
C3b	10:11	<0.5	21	21.0	7.8	7.8	7.7	7.7	86.3	86.3	14.8	14.8	<0.1	<0.1	4.1	4.1
			21		7.8		7.7		86.3		14.8		<0.1		4	
I5	10:03	<0.5	20.3	20.3	7.9	7.9	8.6	8.6	95.3	95.3	12.3	12.3	<0.1	<0.1	13	<b>11.3</b>
			20.3		7.9		8.6		95.3		12.3		<0.1		9.6	

Date of Monitoring 26/03/2014 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:39	<0.5	24.3	24.3	7.8	7.8	6.9	6.9	82.9	82.9	13.5	13.5	<0.1	<0.1	4.4	4.6
			24.3		7.8		6.9		82.9		13.5		<0.1		4.8	
C3b	10:21	<0.5	24	24.0	8.1	8.1	6.6	6.6	78.1	78.1	9.81	9.81	<0.1	<0.1	3.2	4.9
			24		8.1		6.6		78.1		9.81		<0.1		6.6	
I5	10:09	<0.5	24.4	24.4	7.9	7.9	6.7	6.7	80.4	80.4	14.4	14.4	<0.1	<0.1	13	<b>13</b>
			24.4		7.9		6.7		80.4		14.4		<0.1		13	

Date of Monitoring 28/03/2014 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:47	<0.5	24.2	24.2	7.9	7.9	7.6	7.6	90.5	90.5	13.2	13.2	<0.1	<0.1	22	22
			24.2		7.9		7.6		90.5		13.2		<0.1		2.7	
C3b	10:01	<0.5	22.8	22.8	8.1	8.1	6.9	6.9	80.7	80.7	4.85	4.85	<0.1	<0.1	4.7	4.5
			22.8		8.1		6.9		80.7		4.85		<0.1		4.3	
I5	10:19	<0.5	23.4	23.4	7.9	7.9	6.8	6.8	79.5	79.5	13.3	13.3	<0.1	<0.1	10	9.7
			23.4		7.9		6.8		79.5		13.3		<0.1		9.4	

Date of Monitoring 31/03/2014 Weather : Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:31	<0.5	19.6	19.6	7.9	7.9	7.6	7.6	83.3	83.3	87.7	87.7	<0.1	<0.1	71	72
			19.6		7.9		7.6		83.3		87.7		<0.1		73	
C3b	11:01	<0.5	19.5	19.5	7.9	7.9	8.0	8.0	87.4	87.4	90.3	90.3	<0.1	<0.1	77	75
			19.5		7.9		8.0		87.4		90.3		<0.1		73	
I5	11:09	<0.5	19.3	19.3	7.3	7.3	7.4	7.4	80.5	80.5	86.7	86.7	<0.1	<0.1	73	<b>72.5</b>
			19.3		7.3		7.4		80.5		86.7		<0.1		72	

Date of Monitoring 02/04/2014 Weather : Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:13	<0.5	20	20.0	7.16	7.2	8.0	8.0	88.5	88.5	63.2	63.0	<0.1	<0.1	41	39
			20		7.16		8.0		88.5		62.8		<0.1		37	
C3b	11:35	<0.5	19.8	19.8	7.26	7.3	7.2	7.3	78.9	79.6	65	64.6	<0.1	<0.1	41	42.5
			19.8		7.26		7.3		80.2		64.1		<0.1		44	
I5	10:55	<0.5	19.8	19.8	7.52	7.5	7.5	7.5	82.3	82.3	73.1	72.0	<0.1	<0.1	46	<b>47.5</b>
			19.8		7.52		7.5		82.3		70.8		<0.1		49	

NOTE:  
Data in **Bold** denotes exceedance of respective Action Level  
Data in **Bold Underline** denotes exceedance of respective Limit Level

**Appendix F**  
**Water Quality Monitoring Results and their Graphical Presentation**

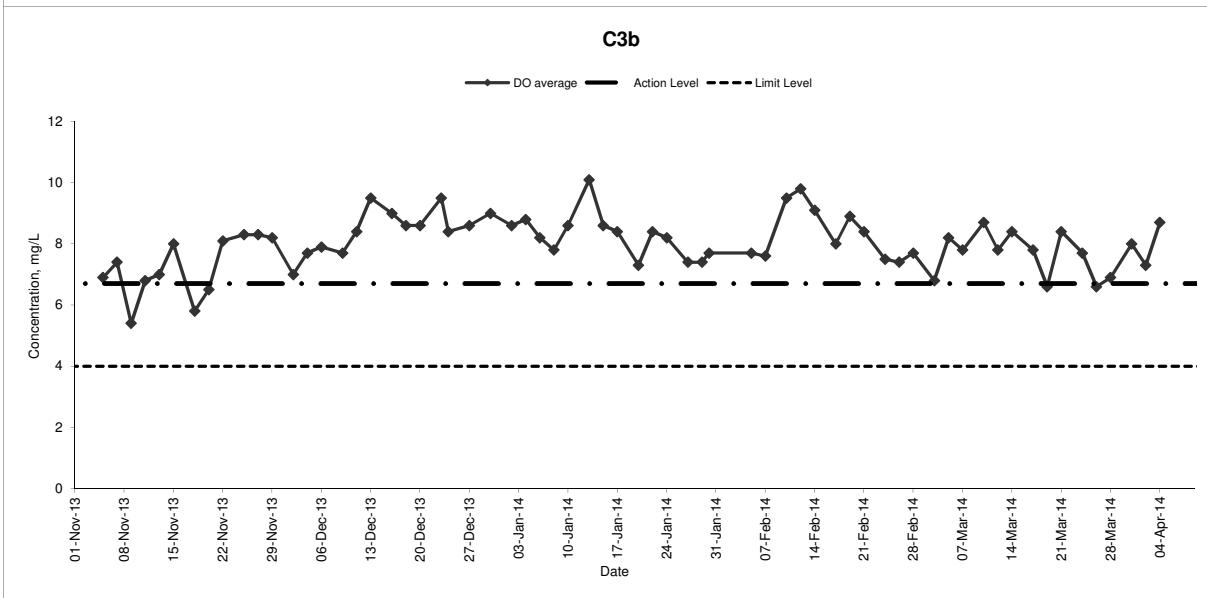
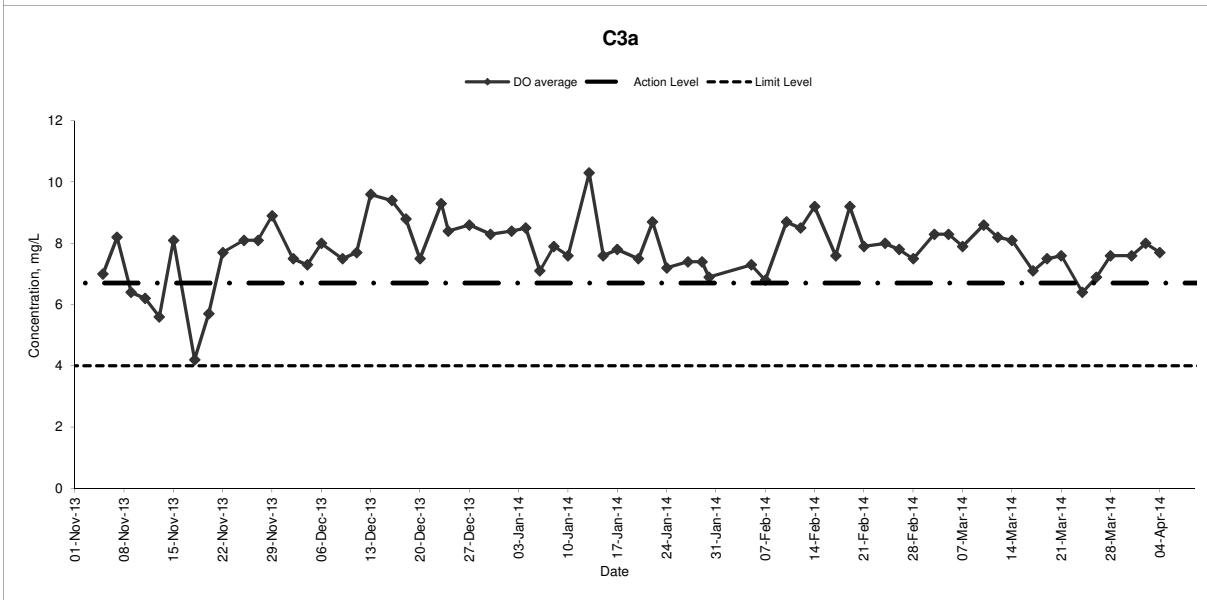
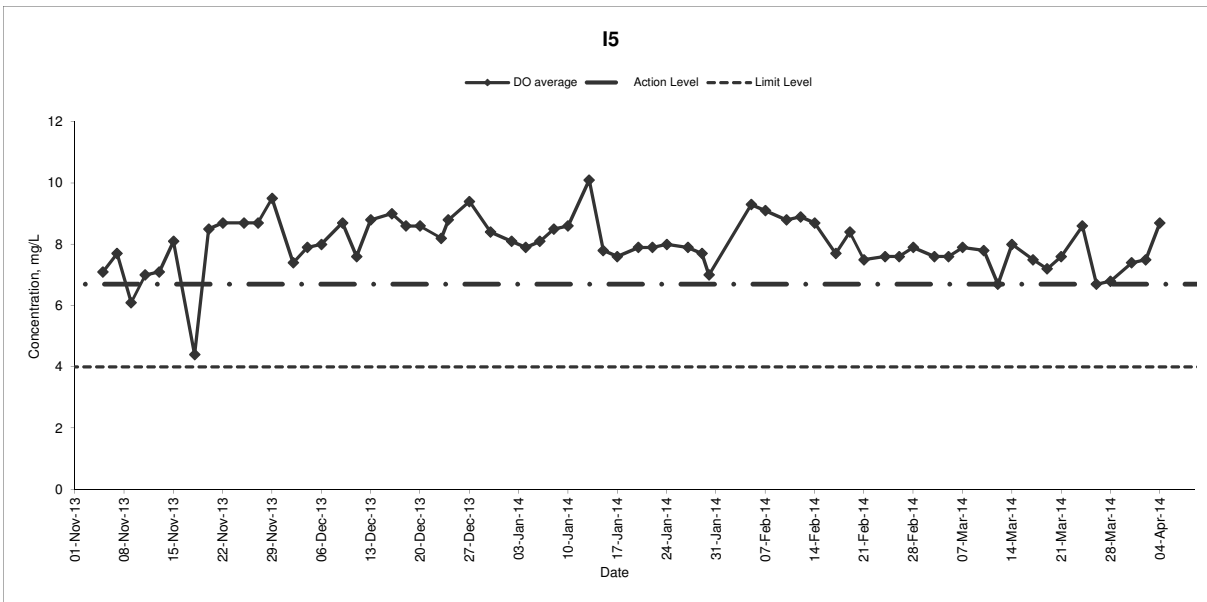
**Project Name:** Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3  
 Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring 04/04/2014 Weather : Cloudy

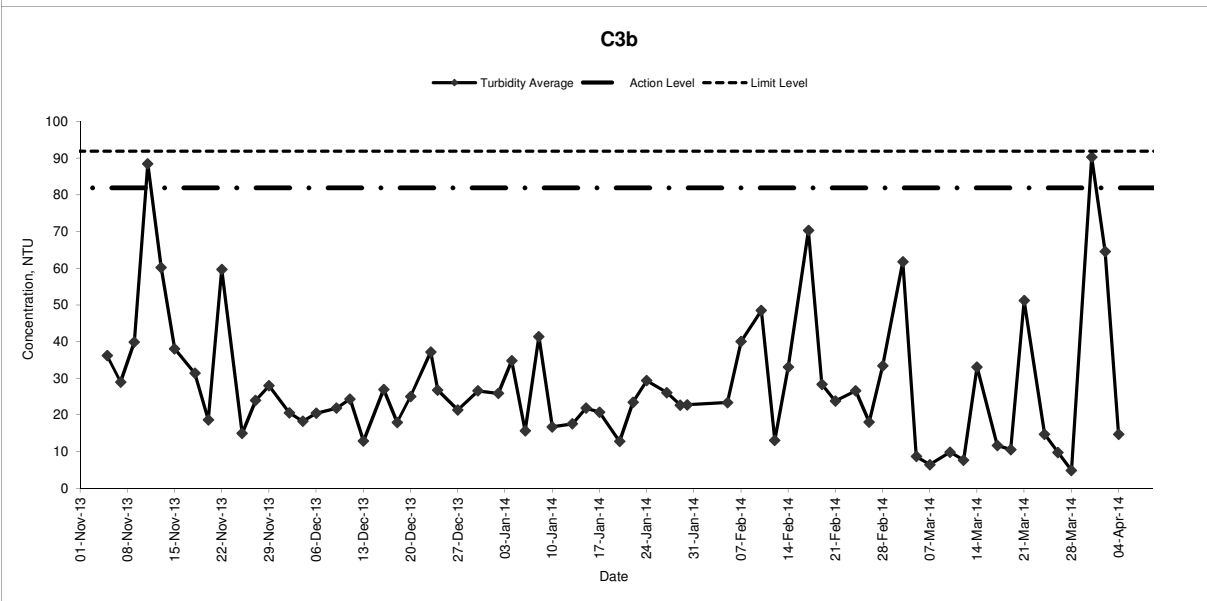
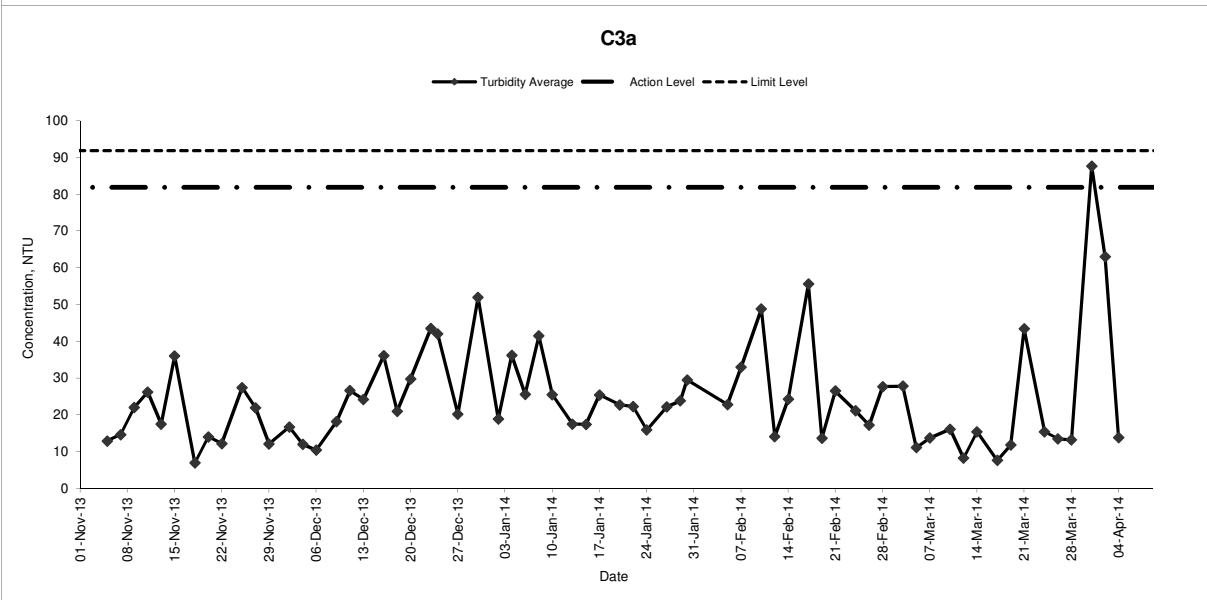
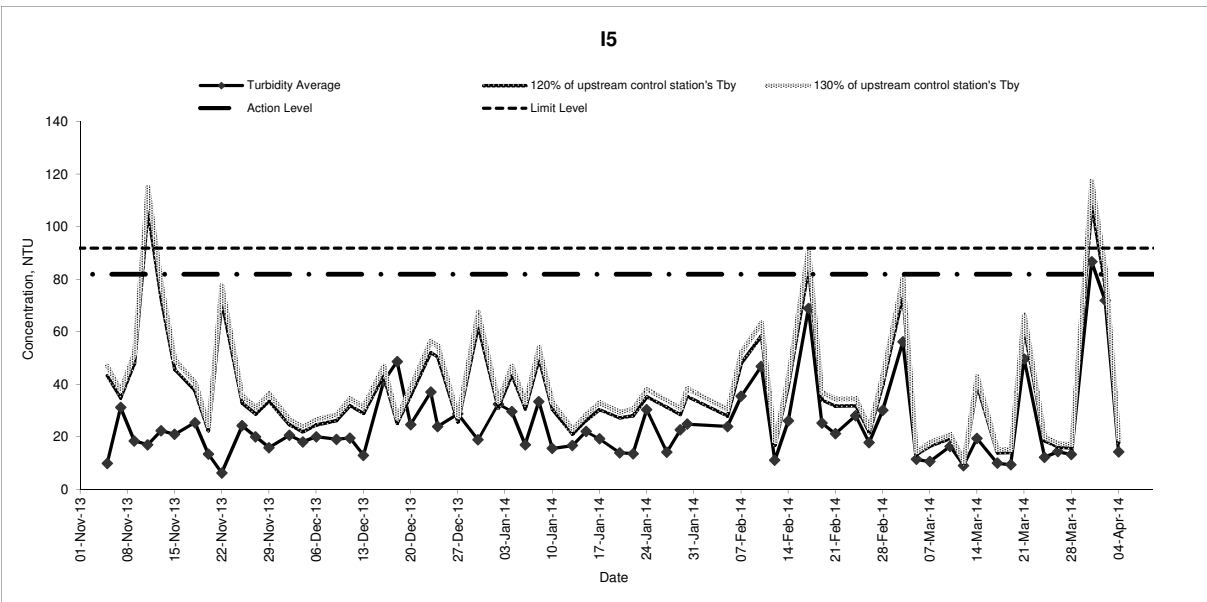
Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	08:58	<0.5	20.1	20.1	7.6	7.6	7.7	7.7	85.4	85.4	13.8	13.8	<0.1	<0.1	9	9
			20.1		7.6		7.7		85.4		13.7		<0.1		9	
			19.3		7.8		8.7		93.9		14.8		<0.1		5	
C3b	08:41	<0.5	19.3	19.3	7.8	7.8	8.7	8.7	93.9	93.9	14.8	14.8	<0.1	<0.1	5	5
			19.3		7.8		8.7		93.9		14.8		<0.1		5	
			19.6		8.1		8.7		94.4		14.3		<0.1		5.6	
I5	08:35	<0.5	19.6	19.6	8.1	8.1	8.7	8.7	94.4	94.4	14.3	14.3	<0.1	<0.1	5.6	5.7
			19.6		8.1		8.7		94.4		14.3		<0.1		5.8	
			19.6		8.1		8.7		94.4		14.3		<0.1		5.8	

NOTE:  
 Data in **Bold** denotes exceedance of respective Action Level  
 Data in **Bold Underline** denotes exceedance of respective Limit Level

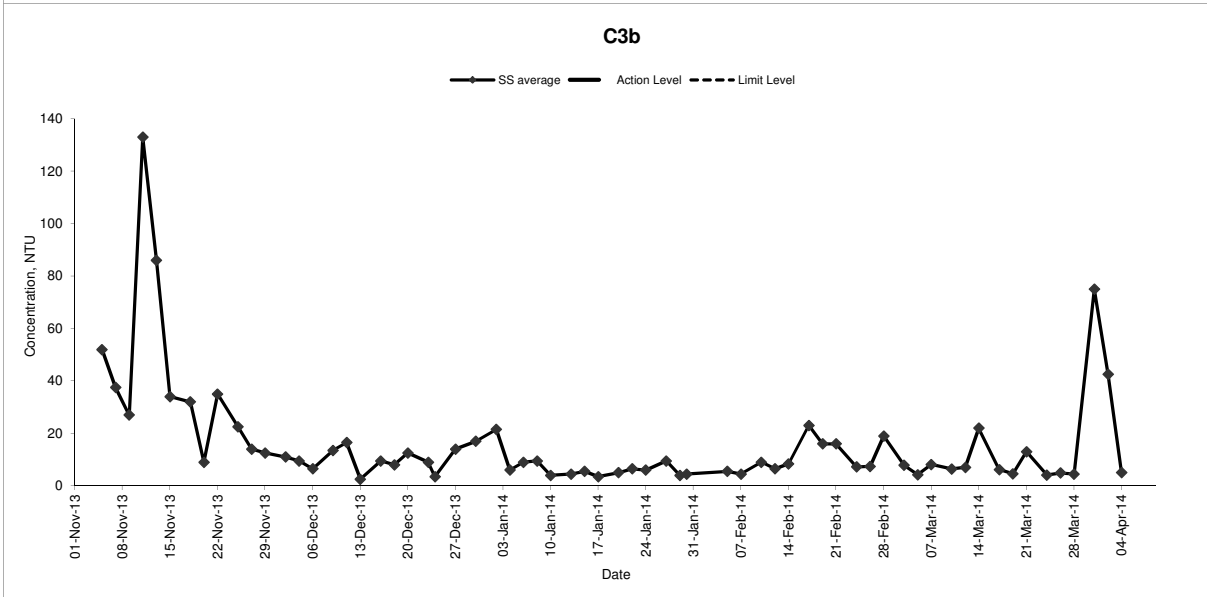
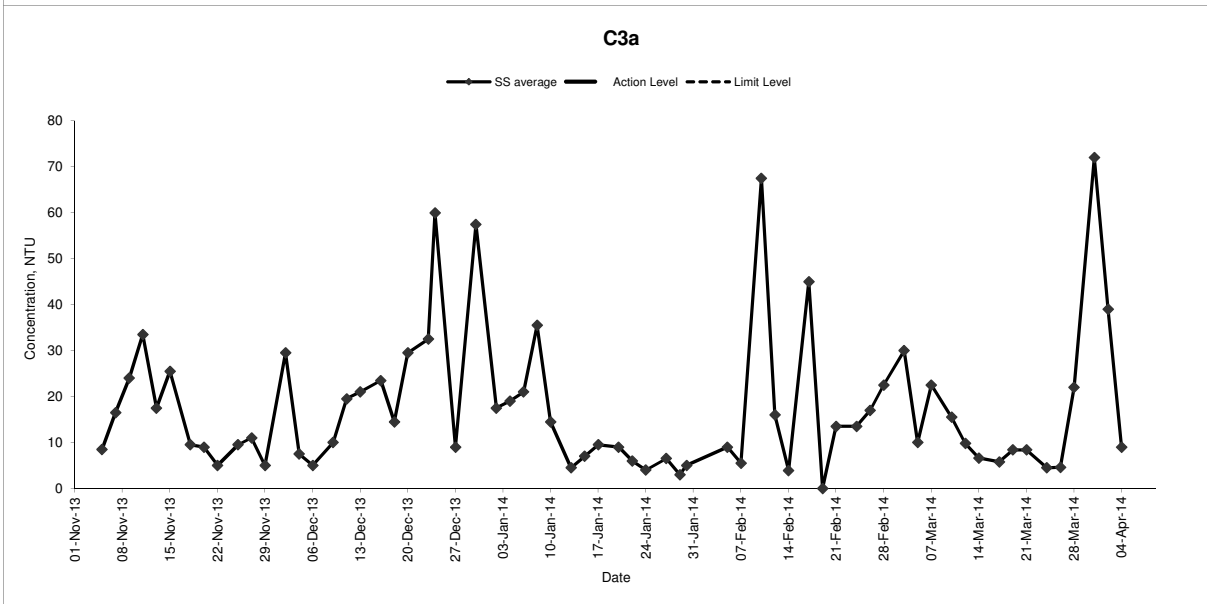
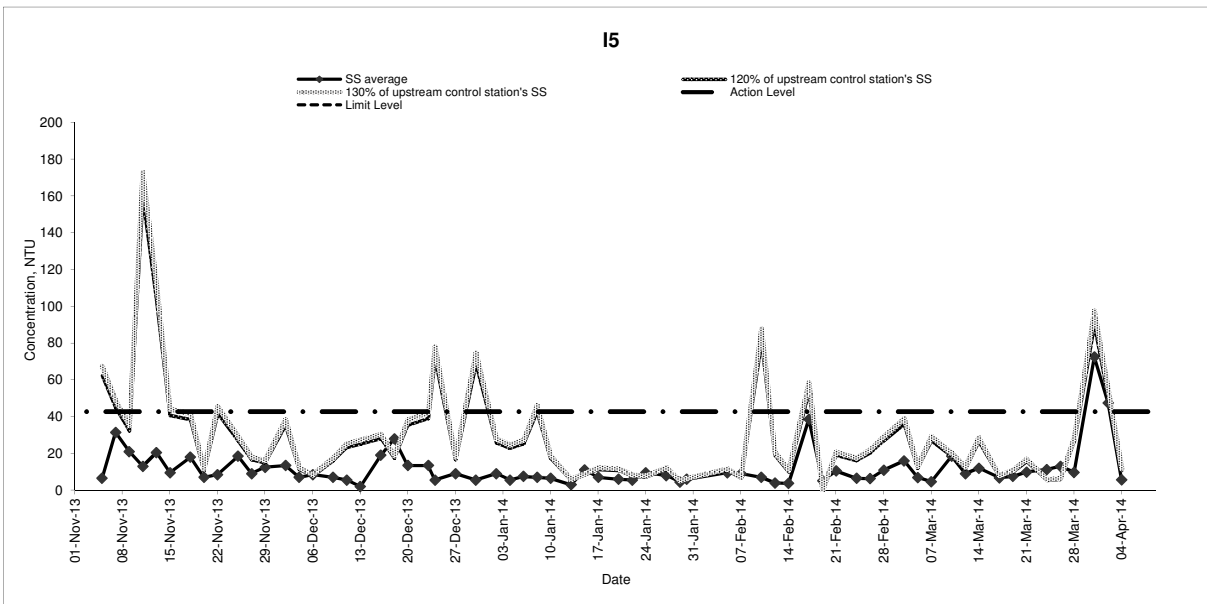
### Dissolved Oxygen (November 2013 - April 2014)



### Turbidity (November 2013 - April 2014)



### Suspended Solid (November 2013 - April 2014)



# **Appendix G Statistics on Complaints, Notifications of Summons and Successful Prosecutions**



### Cumulative Complaint Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
C131126	November 26, 2013	Mr. Tony Hung from WWF	Mat Wat River (works sites for box culvert extension)	Suspected unauthorised discharge of water from a construction site to Ma Wat River, Tai Wo Service Road East, Tai Po	<ol style="list-style-type: none"> <li>1) It was found that the water leaving the end of the steel pipes was the diverted water from the upstream of the existing box culverts, instead of being discharged from the construction works sites.</li> <li>2) An EM&amp;A Programme is being undertaken to monitoring the environmental performance of the construction works, and the Contractor has also implemented appropriate mitigation measures to avoid silt-laden runoff discharging from the works sites into the river.</li> <li>3) The complaint is considered an invalid complaint under this Project.</li> </ol>	Completed

**Cumulative Log for Notifications of Summons**

Log No.	Date/Location	Subject	Status	Total Received in this reporting month	Total no. Received since project commencement

**Cumulative log for Successful Prosecutions**

Log No.	Date/Location	Subject	Status	Total Received in this reporting month	Total no. Received since project commencement



**Meinhardt Infrastructure and  
Environment Ltd**  
邁進基建環保工程顧問有限公司

4/F Wah Ming Centre  
421 Queen's Road West  
Hong Kong  
香港皇后大道西421號華明中心4樓

Tel 電話: +852 2858 0738  
Fax 傳真: +852 2540 1580

[mail@meinhardt.com.hk](mailto:mail@meinhardt.com.hk)  
[www.meinhardt-china.com](http://www.meinhardt-china.com)  
[www.meinhardtgroup.com](http://www.meinhardtgroup.com)