

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

Monthly EM&A Report

February 2014

Submitted to

Environmental Protection Department

Meinhardt Infrastructure and Environment Limited

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

Monthly EM&A Report

(February 2014)

Certified by: Fredrick Leong 

Position: Environmental Team Leader

Date: 12 March 2014



Our ref AFK/TK/jn/bw/T329380/22.05/L-0017

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,

12 March 2014

By Fax (2805 5028) & Post

Attn: Mr. James Penny

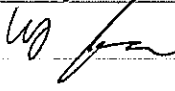


**EM&A for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works
Environmental Permit No. EP-324/2008/A
Condition 3.3 – Submission of Monthly EM&A Report – February 2014 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09**

We refer to the revised Monthly EM&A Report – February 2014 received on 7 and 10 March 2014 submitted by ET via email. Pursuant to EP Condition 3.3, I hereby verify the Monthly EM&A Report – February 2014 (Rev. 0) for the portion of works under Stage 2 of the captioned Project which is entrusted to CEDD under Contract No. CV/2012/09.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin (Fax: 2714 5198) / Ms. Jackei Yin (Fax: 2761 4864)
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
12 March 2014	0	Ivan TING Cindy KWOK	Fredrick LEONG	Helen COCHRANE
				

Contents

	Page
EXECUTIVE SUMMARY	v
1 INTRODUCTION	1
1.2 Purpose of the Report	1
1.3 Report Structure	1
2 PROJECT INFORMATION	2
2.1 Background	2
2.2 Site Description	2
2.3 Construction Programme and Activities	3
2.4 Project Organisation	3
3 STATUS OF ENVIRONMENTAL LICENSES, NOTIFICATION AND PERMITS	5
4 AIR QUALITY MONITORING	6
4.1 Monitoring Requirement	6
4.2 Monitoring Equipment	6
4.3 Monitoring Location	6
4.4 Monitoring Parameters, Frequency and Duration	7
4.5 Monitoring Methodology	7
4.6 Monitoring Schedule for the Reporting month.....	8
4.7 Monitoring Results.....	8
5 NOISE MONITORING	9
5.1 Monitoring Requirements	9
5.2 Monitoring Equipment	9
5.3 Monitoring Locations	9
5.4 Monitoring Parameters, Frequency and Duration	9
5.5 Monitoring Methodology	10
5.6 Monitoring Schedule for the Reporting Month.....	10
5.7 Monitoring Results.....	10
6 WATER MONITORING	12
6.1 Monitoring Requirements	12
6.2 Monitoring Equipment	12
6.3 Monitoring Parameters, Frequency and Duration	12
6.4 Monitoring Locations	12
6.5 Monitoring Methodology	13
6.6 Monitoring Schedule for the Reporting Month.....	13
6.7 Monitoring Results.....	13
7 WASTE MANAGEMENT	15

8	ENVIRONMENTAL SITE INSPECTION AND AUDIT	16
8.1	Site Inspection.....	16
9	IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES	17
10	ENVIRONMENTAL NON-CONFORMANCE	18
10.1	Summary of Monitoring Exceedances	18
10.2	Summary of Environmental Non-Compliance	18
10.3	Summary of Environmental Complaints.....	18
10.4	Summary of Environmental Summon and Successful Prosecutions.....	18
11	FUTURE KEY ISSUES	19
11.1	Construction Programme for the Next Month.....	19
11.2	Key Issues for the Coming Month.....	19
11.3	Monitoring Schedule for the Next Month.....	19
12	CONCLUSIONS AND RECOMMENDATIONS	20
12.1	Conclusions.....	20
12.2	Recommendations	20

List of Tables

Table 2.1	Contact Information of Key Personnel
Table 3.1	Status of Environmental Licenses, Notifications and Permits
Table 4.1	Air Quality Monitoring Equipment
Table 4.2	Location of Air Quality Monitoring
Table 4.3	Air Quality Monitoring Parameters, Frequency and Duration
Table 4.4	Summary of 1-hr TSP Monitoring Results
Table 4.5	Summary of 24-hr TSP Monitoring Results
Table 5.1	Noise Monitoring Equipment
Table 5.2	Location of Noise Monitoring
Table 5.3	Noise Monitoring Parameters, Frequency and Duration
Table 5.4	Summary of Noise Monitoring Results
Table 6.1	Water Quality Monitoring Equipment
Table 6.2	Water Quality Monitoring Parameters, Frequency and Duration
Table 6.3	Locations of Water Quality Monitoring
Table 6.4	Action and Limit Levels for Water Quality Monitoring
Table 8.1	Observations and Recommendations of Site Audit
Table 9.1	Status of Required Submission under Environmental Permit

List of Figures

Figure 1	Demarcation of Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling – Stage 2
Figure 2	Air and Noise Monitoring Locations
Figure 3	Water Quality Monitoring Locations

List of Appendices

Appendix A	Construction Programme
Appendix B	Project Organization Structure
Appendix C	Calibration Certificates of Monitoring Equipment
Appendix D	EM&A Monitoring Schedules
Appendix E	Meteorological Data Extracted from Hong Kong Observatory
Appendix F	Air Quality Monitoring Results and their Graphical Presentation
Appendix G	Summary of Event and Action Plan
Appendix H	Noise Monitoring Results and their Graphical Presentation
Appendix I	Laboratory Results for Water Quality
Appendix J	Water Quality Monitoring Results and their Graphical Presentation
Appendix K	Waste Flow Table
Appendix L	Implementation Schedule of Environmental Mitigation Measures (EMIS)
Appendix M	Investigation Report for Exceedances
Appendix N	Statistics on Complaints, Notifications of Summons and Successful Prosecutions

EXECUTIVE SUMMARY

The Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2 (hereafter called “the Project”) covers part of the construction of the widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling which aimed to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic. The Project covers construction activities at Yuen Leng along the existing Fanling Highway.

The impact EM&A for the Project includes air quality, noise and water quality monitoring. The EM&A programme commenced on 5 November 2013.

This report documents the findings of EM&A works conducted in February 2014. As informed by the Contractor, the major activities in the reporting period were:

- Cable detection and trial trenches;
- Tree felling works;
- Pre-drilling works and piling works;
- Extension of box culvert ID04, ID05 and BC01;
- Bored pile wall construction;
- Construction of haul road and temporary soil platform for geotechnical works;
- Slope upgrading works;
- Noise barrier installation; and
- Waterworks.

Breach of Action and Limit Levels for Air Quality

Two (2) Action Level exceedances of 24-hour TSP monitoring were recorded at the monitoring location AM1(SR77) on 22 and 28 February 2014 in the reporting month. Investigation for the exceedances was conducted which concluded that the exceedances was not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.

No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.

Breach of Action and Limit Levels for Noise

No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.

Breach of Action and Limit Levels for Water Quality

One (1) exceedance of Limit Level of Suspended Solids was recorded at the monitoring location I5 on 7 February 2014 in the reporting month. Investigation for the exceedance was conducted

which concluded that the exceedance was not related to the project works. The investigation reports are presented in **Appendix M**.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons and successful prosecution was received in the reporting month.

Reporting Change

There was no reporting of change recorded in the reporting month.

Future Key Issues

The major construction works in the coming reporting month are anticipated to include:

- Cable detection and trial trenches;
- Pre-drilling works and piling works;
- Extension of box culvert ID04, ID05 and BC01;
- Pile cap works;
- Tree felling and transplanting works, waterworks;
- Slope upgrading works;
- Noise barrier installation;
- Construction of haul road and temporary soil platform for geotechnical works ;
- Laying of concrete pipe works; and
- Bored pile wall construction.

Potential environmental impacts arising from the above construction activities are anticipated to be mainly associated with construction dust, noise, water quality and waste management.

1 INTRODUCTION

1.1.1 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/A 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.

1.2 Purpose of the Report

1.2.1 This is the monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting month of February 2014.

1.3 Report Structure

1.3.1 This monthly EM&A Report comprises the following sections:

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Status of Environmental Licenses, Notifications and Permits
- Section 4: Air Quality Monitoring
- Section 5: Noise Monitoring
- Section 6: Water Monitoring
- Section 7: Waste Management
- Section 8: Environmental Site Inspection and Audit
- Section 9: Implementation Status of Environmental Mitigation Measures
- Section 10: Environmental Non-conformance
- Section 11: Future Key Issues
- Section 12: Conclusions and Recommendations

2 PROJECT INFORMATION

2.1 Background

- 2.1.1 Tolo Highway and Fanling Highway are expressways in the North East New Territories connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 1, which links Hong Kong Island to Shenzhen. At present, this section of Route 1 is a dual 3-lane carriageway. However, at several major interchanges along this section of Route 1, the highway is only dual-2 lane. Severe congestion is a frequent occurrence during peak periods, particularly in the Kowloon bound direction.
- 2.1.2 The objective of the Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.
- 2.1.3 The construction works for the Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling are to be delivered in 2 stages:
- Stage 1 – Construction works between Island House Interchange and Tai Hang; and
 - Stage 2 – Construction works between Tai Hang and Wo Hop Shek Interchange.
- 2.1.4 The construction works of Stage 1 under the EP commenced in November 2009 and was planned to be completed in December 2013 tentatively. The works of Stage 2 was planned to commence in November 2013 and complete by end of 2016. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) was appointed by the Highways Department (HyD) as the consultants for the design and construction assignment for the Project. Mott MacDonald Hong Kong Ltd is the Independent Environmental Checker (IEC) of both Stage 1 and Stage 2 works.
- 2.1.5 A portion of Stage 2 works of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling (hereafter called “the Project”) is entrusted to the contractor of Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works Contract 3, i.e. Chun Wo. AECOM Asia Co Ltd was appointed by the CEDD as the consultant for the design and construction assignment for the Liantang development.
- 2.1.6 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 a VEP (EP-324/2008/A) was subsequently granted on 31 January 2012.

2.2 Site Description

- 2.2.1 The major construction activities under the Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2 include:

- At-Grade Road Works – Temporary and permanent road formation, pipe laying, road drainage, footpath and noise barrier construction;
- Demolition of existing Kiu Tau Footbridge and Footbridge Re-provision; and
- Box Culvert Extension – Flow diversion of existing stream, excavation, sub-base and blinding, base, wall and top slab construction.

2.2.2 **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.

2.3 Construction Programme and Activities

2.3.1 The major construction activities undertaken in the reporting month are summarized below:

- Cable detection and trial trenches;
- Tree felling works;
- Pre-drilling works and piling works;
- Extension of box culvert ID04, ID05 and BC01;
- Bored pile wall construction;
- Construction of haul road and temporary soil platform for geotechnical works;
- Slope upgrading works;
- Noise barrier installation; and
- Waterworks.

2.3.2 The construction programme is presented in **Appendix A**.

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 2.1**.

Table 2.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2472 7228	2472 0132
		Resident Engineer (Environmental)	Mr. Perry Yam	2674 2273	--
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Terence Kong	2828 5919	2827 1823

Party	Role	Position	Name	Telephone	Fax
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Environmental Officer	Mr. Victor Huang	2638 6115	
		Environmental Officer	Mr. Sam Lam	2638 6147	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580

3 STATUS OF ENVIRONMENTAL LICENSES, NOTIFICATION AND PERMITS

3.1.1 The relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 3.1**.

Table 3.1 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
<i>Environmental Permit</i>				
EP-324/2008/A	31 Jan 2012	--	Valid	--
<i>Construction Noise Permit</i>				
GW-RN0004-14	26 Jan 2014	22 Jun 2014	Valid	For tree felling / transplanting works
GW-RN0109-14	25 Feb 2014	17 May 2014	Valid	For erection of catch fence in the night time
<i>Wastewater Discharge License</i>				
WT00016832-2013	28 Aug 2013	31 Aug 2018	Valid	--
<i>Chemical Waste Producer Registration</i>				
5113-634-C3817-01	7 Oct 2013	--	Valid	--
<i>Billing Account for Construction Waste Disposal</i>				
7017914	2 Aug 2013	--	Account Active	--
<i>Notification Under Air Pollution Control (Construction Dust) Regulation</i>				
--	31 Jul 2013	30 Jul 2019	Notified	--

4 AIR QUALITY MONITORING

4.1 Monitoring Requirement

4.1.1 In accordance with the Updated EM&A Manual, 1-hr and 24-hr total suspended particulate (TSP) levels at the designated air quality monitoring station are required. Impact 24-hour TSP monitoring should be carried out for at least once every 6 days. For the 1-hr TSP impact monitoring, the sampling frequency of at least three times in every 6 days should be undertaken when the highest dust impact occurs.

4.2 Monitoring Equipment

4.2.1 The 24-hr TSP air quality monitoring was performed using a High Volume Sampler (HVS), of which its location and operation satisfy, as far as practicable, all the requirements as specified in the Updated EM&A Manual. A portable direct reading dust meter, which was proven to be capable of achieving comparable results as that of the HVS, was used to carry out the 1-hr TSP monitoring. The brand and model of the equipment are given in **Table 4.1**.

Table 4.1 Air Quality Monitoring Equipment

Equipment	Brand and Model	Quantity	Serial Number
Portable direct reading dust meter (1-hr TSP)	TSI (Model No. AM 510)	1	11008019
High Volume Sampler (24-hr TSP)	Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170 MFC)	1	2359

4.2.2 The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.

4.2.3 Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. The HVS calibration orifice and the portable direct reading dust meter will be calibrated annually. Calibration certificate of the TE-5025A Calibration Kit, the portable direct reading dust meter and the HVS are provided in **Appendix C**.

4.3 Monitoring Location

4.3.1 Air quality monitoring was conducted at the location specified in the Updated EM&A Manual. **Table 4.2** describes the details of the air quality monitoring station with its location as shown in **Figure 2**.

Table 4.2 Location of Air Quality Monitoring

Air Monitoring Station ID	Monitoring Location	Description
AM1(SR77) *	Yuen Leng 2 ⁽¹⁾	Residential, Ground floor

Remark:

* Station / ASR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

4.4 Monitoring Parameters, Frequency and Duration

4.4.1 **Table 4.3** summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 4.3 Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Frequency and Duration
1-hour TSP	At least three times in every 6 days should be undertaken when the highest dust impact occur
24-hour TSP	Once every 6 days

4.5 Monitoring Methodology

24-hr TSP Monitoring

- 4.5.1 With the consideration of criteria stated in the Updated EM&A Manual, the HVS was installed in the vicinity of the air sensitive receivers.
- 4.5.2 The relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any special phenomena observed were recorded. The weather information was referenced from Hong Kong Observatory (<http://www.weather.gov.hk/wxinfo/pastwx/extractc.htm>).
- 4.5.3 A HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (HOKLAS no.: 066), with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments, to handle the 24-hr TSP samples, was employed for sample analysis, and equipment calibration and maintenance.
- 4.5.4 Filter papers of size 8"x10" were labelled before sampling. They were inspected to be clean with no pin holes and conditioned in a humidity controlled chamber for over 24-hr and were pre-weighed before use for the sampling.
- 4.5.5 The 24-hr TSP levels were measured by following the standard high volume sampling method for TSP as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B. TSP was sampled by drawing air through a conditioned, pre-weighted filter paper inside the HVS at a controlled air flow rate. After 24-hr sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag, and then returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg.
- 4.5.6 All the collected samples were kept in a good condition for 6 months before disposal.

1-hr TSP Monitoring

- 4.5.7 The 1-hr TSP measurement followed manufacturer's instruction manual. Before initiating a measurement, zeroing the portable dust monitor was carried out to ensure maximum accuracy of concentration measurements.
- 4.5.8 The 1-hr TSP was sampled by drawing air into the portable dust monitor where particular concentrations were measured instantaneously with an in-built silicon

detector sensing light scattered by the particulates in the sampled air. Continuous TSP levels were indicated and logged by a built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

4.6 Monitoring Schedule for the Reporting month

4.6.1 The schedule for environmental monitoring for the reporting month is provided in **Appendix D**. Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix E**.

4.7 Monitoring Results

4.7.1 The monitoring results for 1-hr and 24-hr TSP are summarised in **Table 4.4** and **Table 4.5** respectively. Detailed air quality monitoring results and the graphical presentation of air quality monitoring data for the current and past two reporting months are presented in **Appendix F**.

Table 4.4 Summary of 1-hr TSP Monitoring Results

ASR ID	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1(SR77) *	182.1	147.0 – 221.0	292.7	500

Remark:

* Station / ASR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

Table 4.5 Summary of 24-hr TSP Monitoring Results

ASR ID	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1(SR77) *	156.2	69.9 – 221.5	170.3	260

Remark:

* Station / ASR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

4.7.2 Two (2) Action Level exceedances of 24-hour TSP monitoring were recorded at the monitoring location AM1(SR77) on 22 and 28 February 2014 in the reporting month. Investigation for the exceedances was conducted which concluded that the exceedances were not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.

4.7.3 No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.

4.7.4 The Event and Action Plan for the occurrence of non-compliance of the air quality criteria is annexed in **Appendix G**.

4.7.5 Details of monitoring conditions including influencing factors such as weather conditions and site observation are presented in **Appendix E**.

5 NOISE MONITORING

5.1 Monitoring Requirements

5.1.1 In accordance with the Updated EM&A Manual, the impact noise monitoring frequency shall depend on the scale of the construction activities. An initial guide on the regular monitoring frequency should be at least once per week when noise generating activities are underway.

5.2 Monitoring Equipment

5.2.1 Noise monitoring was performed using a sound level meter at the monitoring station. The sound level meter deployed complies with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. An acoustic calibrator was deployed to check the sound level meter at a known sound pressure level. The brand and model of the equipment is given in **Table 5.1**.

Table 5.1 Noise Monitoring Equipment

Equipment	Brand and Model	Quantity	Serial Number
Acoustic Calibrator	B&K (Model No. 4231)	1	2685684
Integrated Sound Level Meter	Rion (Model No. NL-52)	1	00220553

5.2.2 The sound level meter and acoustic calibrator were verified by the certified laboratory once every two years. Calibration certificates of the sound level meter and acoustic calibrator are provided in **Appendix C**.

5.3 Monitoring Locations

5.3.1 Impact noise monitoring was conducted at the location specified in the Updated EM&A Manual. **Table 5.2** describes the details of the noise monitoring station with its location as shown in **Figure 2**.

Table 5.2 Location of Noise Monitoring

NSR ID	Monitoring Location	Description
M1(SR77) *	Yuen Leng 2 ⁽¹⁾	Residential, Ground floor

Remark:

* Location / Station / NSR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

5.4 Monitoring Parameters, Frequency and Duration

5.4.1 **Table 5.3** summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 5.3 Noise Monitoring Parameters, Frequency and Duration

Parameter and Duration	Frequency
30-mins measurement at between 0700 and 1900 on normal weekdays. Leq, L10 and L90 would be recorded.	At least once per week

5.5 Monitoring Methodology

5.5.1 The monitoring procedures are summarised as below:

- (a) The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- (b) The battery condition was checked to ensure good functioning of the meter.
- (c) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - (i) frequency weighting: A
 - (ii) time weighting: Fast
 - (iii) parameters: Leq, L10 and L90
 - (iv) time measurement: Leq(30-minutes) during non-restricted hours i.e. 07:00 – 1900 hrs on normal weekdays; Leq(5-minutes) during restricted hours i.e. 19:00 – 23:00 hrs and 23:00 – 07:00 hrs of normal weekdays, whole day of Sundays and Public Holidays
- (d) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- (e) At the end of the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- (f) A façade correction of +3dB (A) shall be made to the noise parameter obtained by free field measurement.

5.6 Monitoring Schedule for the Reporting Month

5.6.1 The schedule for environmental monitoring for the reporting month is provided in **Appendix D**. Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix E**.

5.7 Monitoring Results

5.7.1 The monitoring results for noise are summarized in **Table 5.4** and the monitoring results and the graphical presentation of noise level for the current and past two reporting months are presented in **Appendix H**.

Table 5.4 Summary of Noise Monitoring Results

Noise Monitoring Station ID	Average, dB(A), Leq (30min) ⁽²⁾	Range, dB(A), Leq (30min) ⁽²⁾	Action Level	Limit Level, dB(A)
M1(SR77) ⁽¹⁾	60.1	54.5 – 65.5	When one documented valid complaint is received	75

Remark:

(1) Station / NSR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

(2) +3dB(A) façade correction included

- 5.7.2 Major noise sources during the noise monitoring included construction activities of the Project and that along Tai Wo Service Road East, and nearby traffic noise.
- 5.7.3 No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.
- 5.7.4 The Event and Action Plan for the occurrence of non-compliance of the noise criteria is annexed in **Appendix G**.

6 WATER MONITORING

6.1 Monitoring Requirements

6.1.1 In accordance with the Updated EM&A Manual, during the course of the culvert extension works, monitoring shall be undertaken on three occasions per week. The interval between two sets of monitoring shall not be less than 36 hours except where there are exceedances of Action and/or Limit levels.

6.2 Monitoring Equipment

6.2.1 The equipment used in the water quality monitoring programme is summarised in **Table 6.1**.

Table 6.1 Water Quality Monitoring Equipment

Equipment	Model and Make
Turbidity meter	HACH Model 2100Q is (Serial No. 11050C001264)
Multimeter (Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity and Temperature)	YSI Proplus (Serial No. 09K100735)

6.2.2 The monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS before use and subsequently re-calibrated at 3-monthly intervals throughout all stages of the water quality monitoring. Copies of the calibration certificates for the water quality monitoring equipment are attached in **Appendix C**.

6.3 Monitoring Parameters, Frequency and Duration

6.3.1 Measurements for each monitoring station were conducted 3 days per week for the reporting month. **Table 6.2** summarises the monitoring parameters, frequency and duration of the baseline water quality monitoring.

Table 6.2 Water Quality Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter, unit	Frequency
Control Stations: C3a and C3b Impact Station: I5	- Depth, m - Temperature, °C - Salinity, ppt - pH - DO, mg/L - DO Saturation, % - Turbidity, NTU - SS, mg/L	3 days per week

6.4 Monitoring Locations

6.4.1 According to the Updated EM&A Manual, measurements were taken at all impact and control stations as summarised in **Table 6.3**. The locations of the monitoring stations are shown in **Figure 3**.

Table 6.3 Locations of Water Quality Monitoring

Station	Description	Easting	Northing
I5	Downstream of Ma Wat River (Yuen Leng)	833931	837859
C3a	Upstream of Ma Wat River (Nam Wa Po)	833816	837644
C3b	Upstream of Ma Wat River (Yuen Leng)	833931	837736

6.5 Monitoring Methodology

Instrumentation

- 6.5.1 The parameters of in-situ measurements included water depth, dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity level, pH value and water temperature.

Operating/Analytical Procedures

- 6.5.2 Since water depths for all monitoring stations were less than 1m throughout the whole baseline measurement period, only mid-depth level was monitored.
- 6.5.3 At each monitoring station, at least duplicate readings of dissolved oxygen content and turbidity were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement.
- 6.5.4 Water samples were collected by the water sampler and filled into polyethylene bottles for laboratory determination of suspended solids. Sampling bottles were pre-rinsed with the same water samples, and filled up to the rim, capped tightly and labeled immediately. The sample bottles were then packed into a cool-box kept at 4 °C, and delivered to a HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd for analysis. The results for laboratory analysis of suspended solids are presented in **Appendix I**.

6.6 Monitoring Schedule for the Reporting Month

- 6.6.1 The schedule for environmental monitoring for the reporting month is provided in **Appendix D**. Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix E**.

6.7 Monitoring Results

- 6.7.1 The water quality criteria, namely Action and Limit Levels, as specified in the Updated EM&A Manual are shown in **Table 6.4**.

Table 6.4 Action and Limit Levels for Water Quality Monitoring

Parameters	Action	Limit
DO in mg/L	6.7 mg/L	4 mg/L or 40% saturation at 15 degree Celsius
SS in 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

Parameters	Action	Limit
Turbidity (Tby) in 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

Notes:

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

For SS and Tby, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

- 6.7.2 The detailed water quality monitoring results and the graphical presentation of water quality monitoring data for the current and past two reporting months are presented in **Appendix J**.
- 6.7.3 The possible influences in monitoring results were suspected to be natural variation.
- 6.7.4 One (1) exceedance of Limit Level of Suspended Solids at the monitoring location I5 on 7 February 2014 was in the reporting month. Investigation for the exceedance was conducted which concluded that the exceedance was not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.
- 6.7.5 The Event and Action Plan for the occurrence of non-compliance of the water quality criteria is annexed in **Appendix G**.

7 WASTE MANAGEMENT

- 7.1.1 The Contractor has registered as a chemical waste producer of the Project. The C&D materials and waste sorting were carried out on-site. Receptacles were provided for general refuse collection.
- 7.1.2 As advised by the Contractor, a total of 2,209m³ of excavated material has been generated. 1,473m³ of inert C&D materials was disposed of at public fill to Tuen Mun Area 38. 0.38m³ of inert C&D materials was reused on site. 40m³ of general refuse was disposed of at North East New Territories (NENT) Landfill. No plastics, paper/cardboard packaging was collected, and 2m³ of metals was collected by recycling contractor in the reporting month. 19m³ of chemical waste was collected by licensed contractor in the reporting period. Details of the waste management data are presented in **Appendix K**.
- 7.1.3 In the reporting month, the Contractor was reminded to properly maintain the site tidiness and dispose of wastes accumulated site regularly and properly.

8 ENVIRONMENTAL SITE INSPECTION AND AUDIT

8.1 Site Inspection

- 8.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the site inspection is provided in **Appendix L**.
- 8.1.2 In the reporting month, 4 site inspections were carried out on 5, 10, 17 and 24 February 2014. The one held on 24 February 2014 was a joint inspection with the IEC, ER, ET and Contractor. No site inspection was conducted by the EPD during the reporting month. No non-compliance was recorded during the site inspection. A summary of the reminders and observations recorded during the site inspections are presented in **Table 8.1**.

Table 8.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	N/A	N/A	N/A
Air Quality	5 Feb 2014	Observation: Exposed slope at Gate SA13 needs enhancement on dust suppression. (watering or covering)	Watering has been carried out at the exposed slope at Gate SA13 as observed during the site inspection on 10 Feb 2014.
	24 Feb 2014	Reminder: Exposed earth are reminded to be minimized or compacted as far as possible, especially before holidays at Site SA13	The stockpiles have been reduced in size and been compacted as observed during the site inspection on 3 Mar 2014
	24 Feb 2014	Reminder: Watering at southern part of construction site SA12 is reminded to enhance watering	The area has been watered and compacted as observed during the site inspection on 3 Mar 2014.
Noise	N/A	N/A	N/A
Waste / Chemical Management	10 Feb 2014	Observation: General site cleanliness need improvement at Gate SA12.	The site cleanliness was improved. Rubbish bins and also recycle bins have been provided at the site as observed during the site inspection on 17 Feb 2014.
Landscape & Visual	10 Feb 2014	Observation: Fences at trees at southern end of the site at Gate SA12 need enhancement.	Trees at southern end of the site at Gate SA12 have been already removed and no mitigation measures would be necessary as observed during the site inspection on 17 Feb 2014.
	24 Feb 2014	Reminder: Trees at Site SA12 is reminded to be fenced properly	The area has been screened off properly as observed during the site inspection on 3 Mar 2014.
Permits / Licenses	N/A	N/A	N/A

9 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

9.1.1 The Contractor has implemented the relevant environmental mitigation measures as specified in the EIA Reports, EPs and updated EM&A Manual. The implementation status of environmental mitigation measures during the reporting period is summarized in **Appendix L**. The status of the required submissions under the EP during the reporting period is summarized in **Table 9.1**.

Table 9.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.3	Monthly EM&A Report	14 February 2014

9.1.2 The Quarterly EM&A Summary Report (November 2013 to January 2014) was prepared and submitted on 14 February 2014 in accordance to Section 8.3.4 of the EM&A Manual.

10 ENVIRONMENTAL NON-CONFORMANCE

10.1 Summary of Monitoring Exceedances

- 10.1.1 Two (2) Action Level exceedances of 24-hour TSP monitoring were recorded at the monitoring location AM1(SR77) on 22 and 28 February 2014 in the reporting month. Investigation for the exceedances was conducted which concluded that the exceedances were not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.
- 10.1.2 No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 10.1.3 No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.
- 10.1.4 One (1) exceedance of Limit Level of Suspended Solids at the monitoring location I5 on 7 February 2014 was recorded in the reporting month. Investigation for the exceedance was conducted which concluded that the exceedance was not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.

10.2 Summary of Environmental Non-Compliance

- 10.2.1 No environmental non-compliance was recorded in the reporting month. The cumulative statistics are provided in **Appendix N**.

10.3 Summary of Environmental Complaints

- 10.3.1 No environmental complaint was received in the reporting month. The cumulative statistics are provided in **Appendix N**.

10.4 Summary of Environmental Summon and Successful Prosecutions

- 10.4.1 No environmental related prosecution or notification of summons was received in the reporting month. The cumulative statistics are provided in **Appendix N**.

11 FUTURE KEY ISSUES

11.1 Construction Programme for the Next Month

11.1.1 The major construction works in the coming reporting month are anticipated to include:

- Cable detection and trial trenches;
- Pre-drilling works and piling works;
- Extension of box culvert ID04, ID05 and BC01;
- Pile cap works;
- Tree felling and transplanting works, waterworks;
- Slope upgrading works;
- Noise barrier installation;
- Construction of haul road and temporary soil platform for geotechnical works ;
- Laying of concrete pipe works; and
- Bored pile wall construction.

11.2 Key Issues for the Coming Month

11.2.1 Key issues to be considered in the coming month are anticipated to include:

- Site runoff should be properly collected and treated prior to discharge;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Chemical, chemical waste and waste management;
- Tree protective measures for all retained trees should be well maintained;
- Expose slopes and dusty stockpile should be covered up properly if no temporary work will be conducted; and
- Operation of construction plant should be sequenced where practicable.

11.3 Monitoring Schedule for the Next Month

11.3.1 The tentative schedule for environmental monitoring for the coming month is provided in **Appendix D**.

12 CONCLUSIONS AND RECOMMENDATIONS

12.1 Conclusions

- 12.1.1 The construction phase EM&A programme of the Project commenced on 5 November 2013.
- 12.1.2 The 1-hr TSP, 24-hr TSP, noise and water monitoring were carried out in the reporting period.
- 12.1.3 Two (2) Action Level exceedances of 24-hour TSP monitoring were recorded at the monitoring location AM1(SR77) on 22 and 28 February 2014 in the reporting month. Investigation for the exceedances was conducted which concluded that the exceedances were not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.
- 12.1.4 No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 12.1.5 No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.
- 12.1.6 One (1) exceedance of Limit Level of Suspended Solids was recorded at the monitoring location I5 on 7 February 2014 in the reporting month. Investigation for the exceedance was conducted which concluded that the exceedance was not related to the project works. The investigation reports for the incidents are presented in **Appendix M**.
- 12.1.7 Four (4) environmental site inspections were carried out in the reporting month. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audit.

12.2 Recommendations

- 12.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality

- Watering of exposed slope and earths to avoid fugitive dust emission.

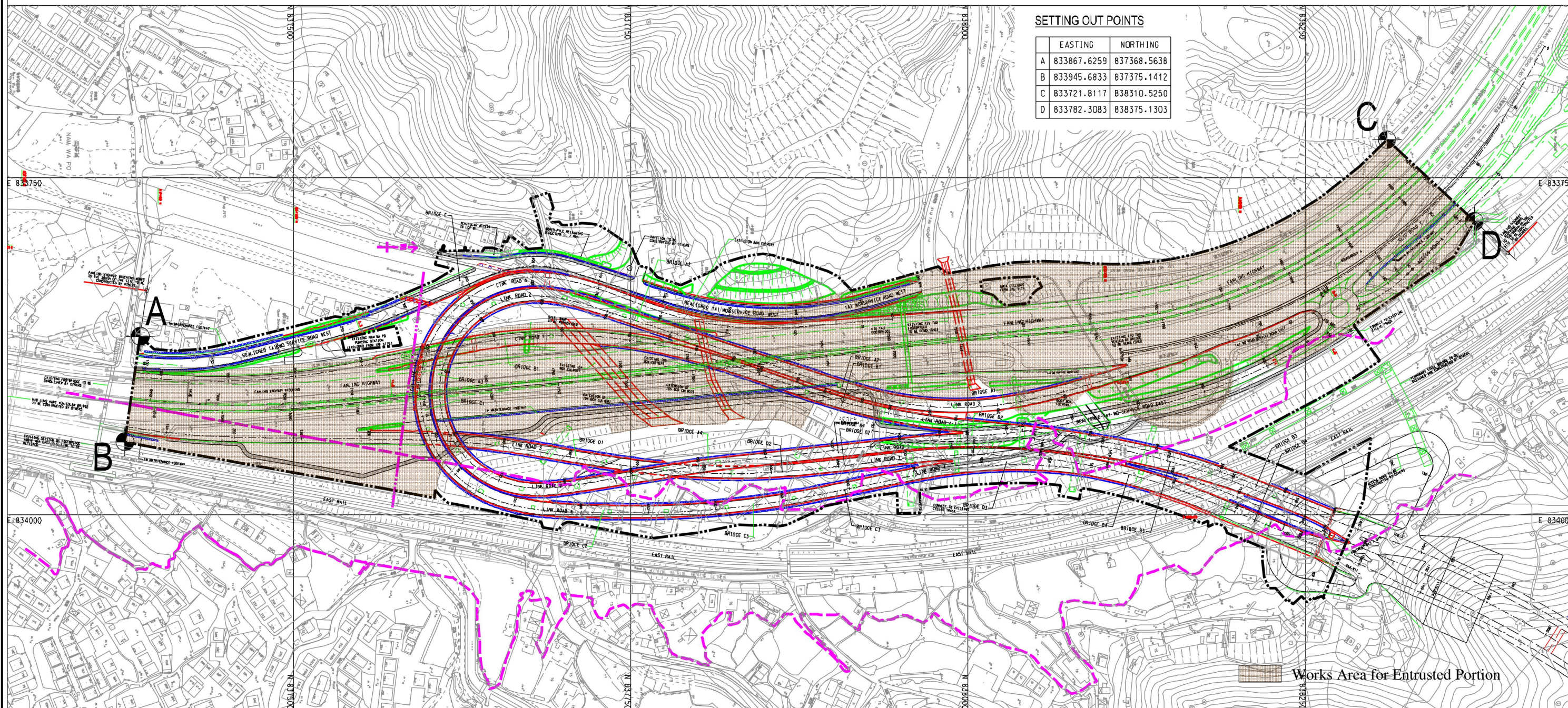
Chemical and Chemical Waste Management

- Improving site cleanliness especially avoid general refuse being left within the construction site.

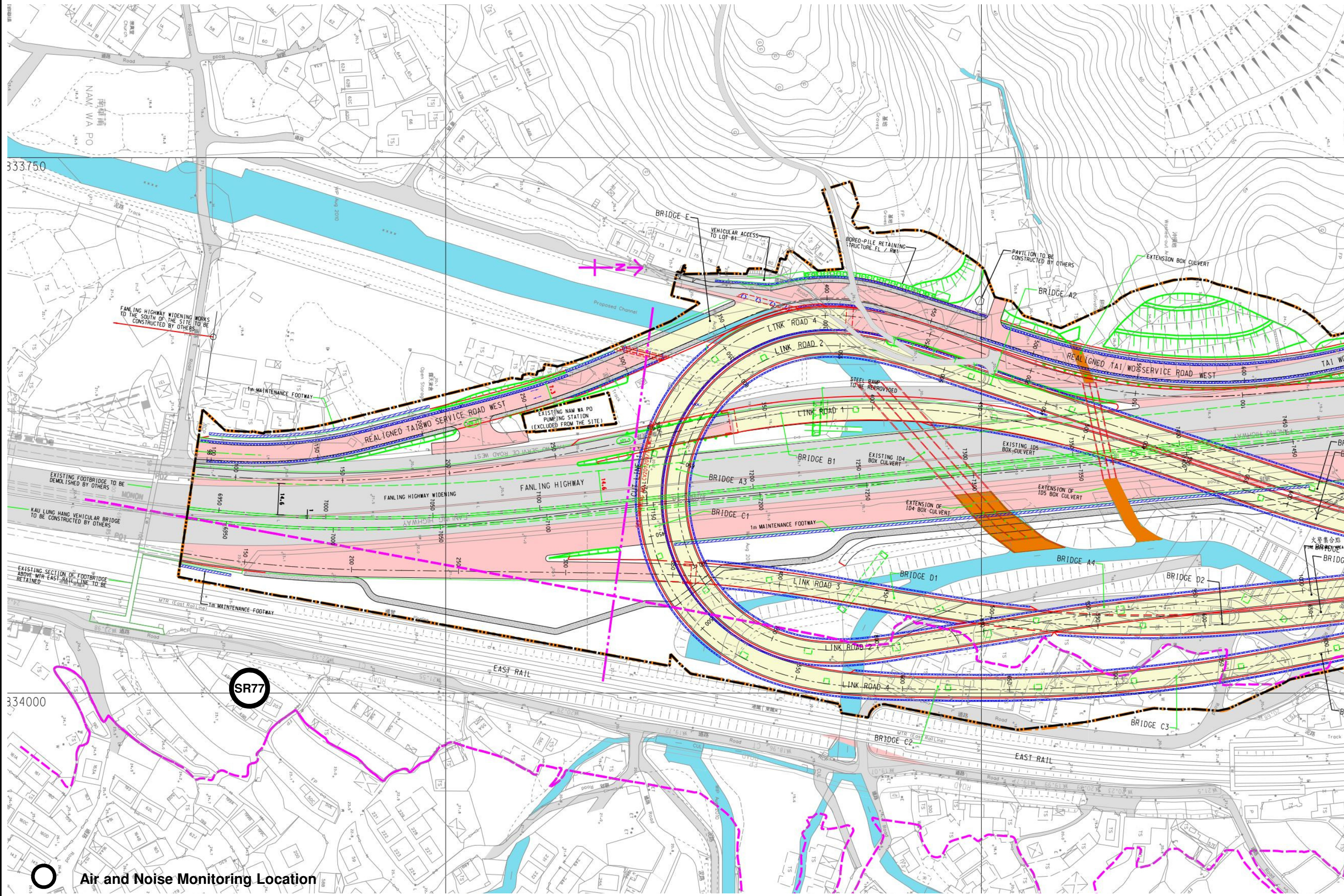
Landscape & Visual

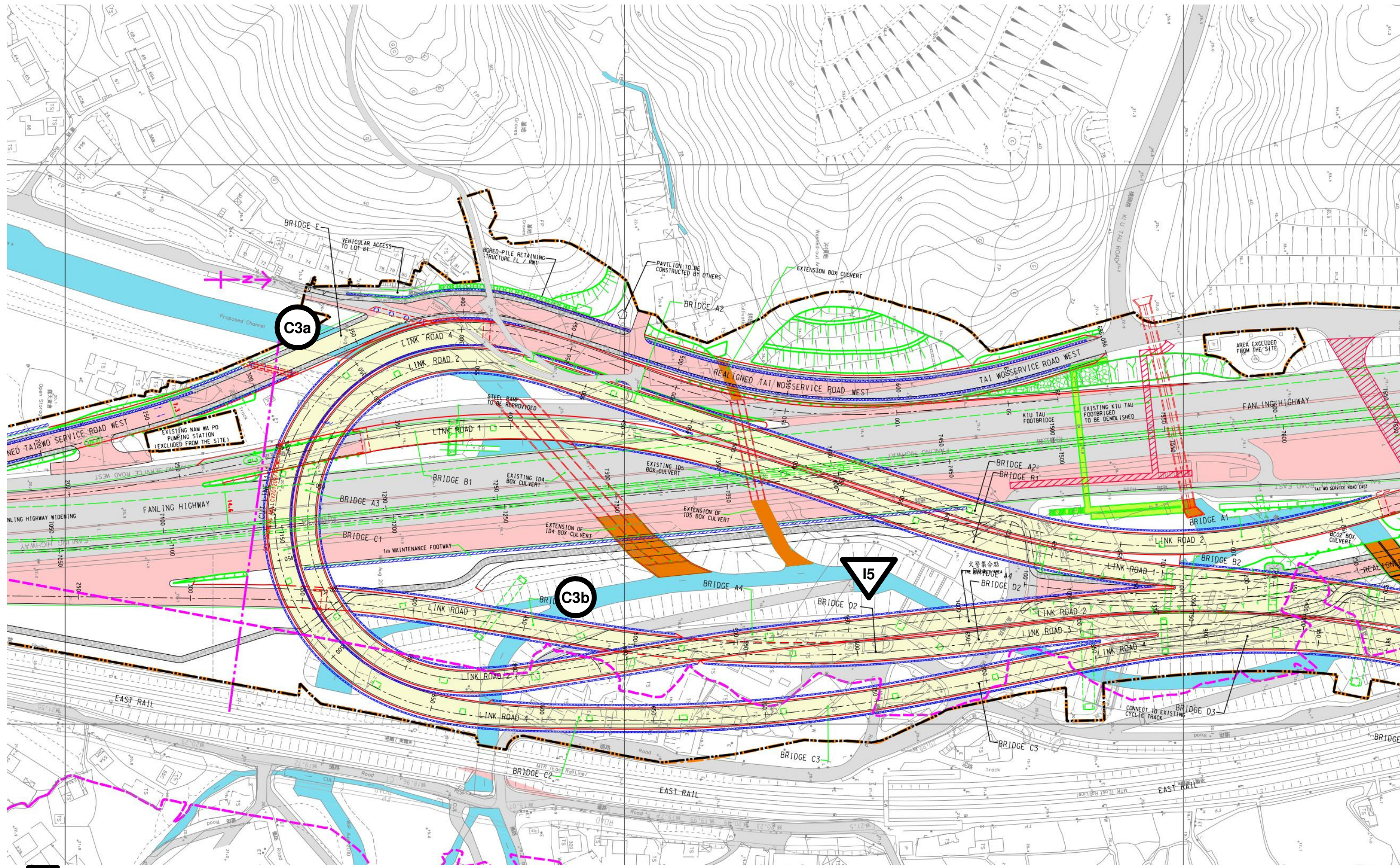
- Ensuring the provision of tree protection zone for all existing trees to be transplanted or retained.

Figure



CV/201209-T-CWC-SK-001g_AD_edit.dgn 22/1/2014 17:10:34

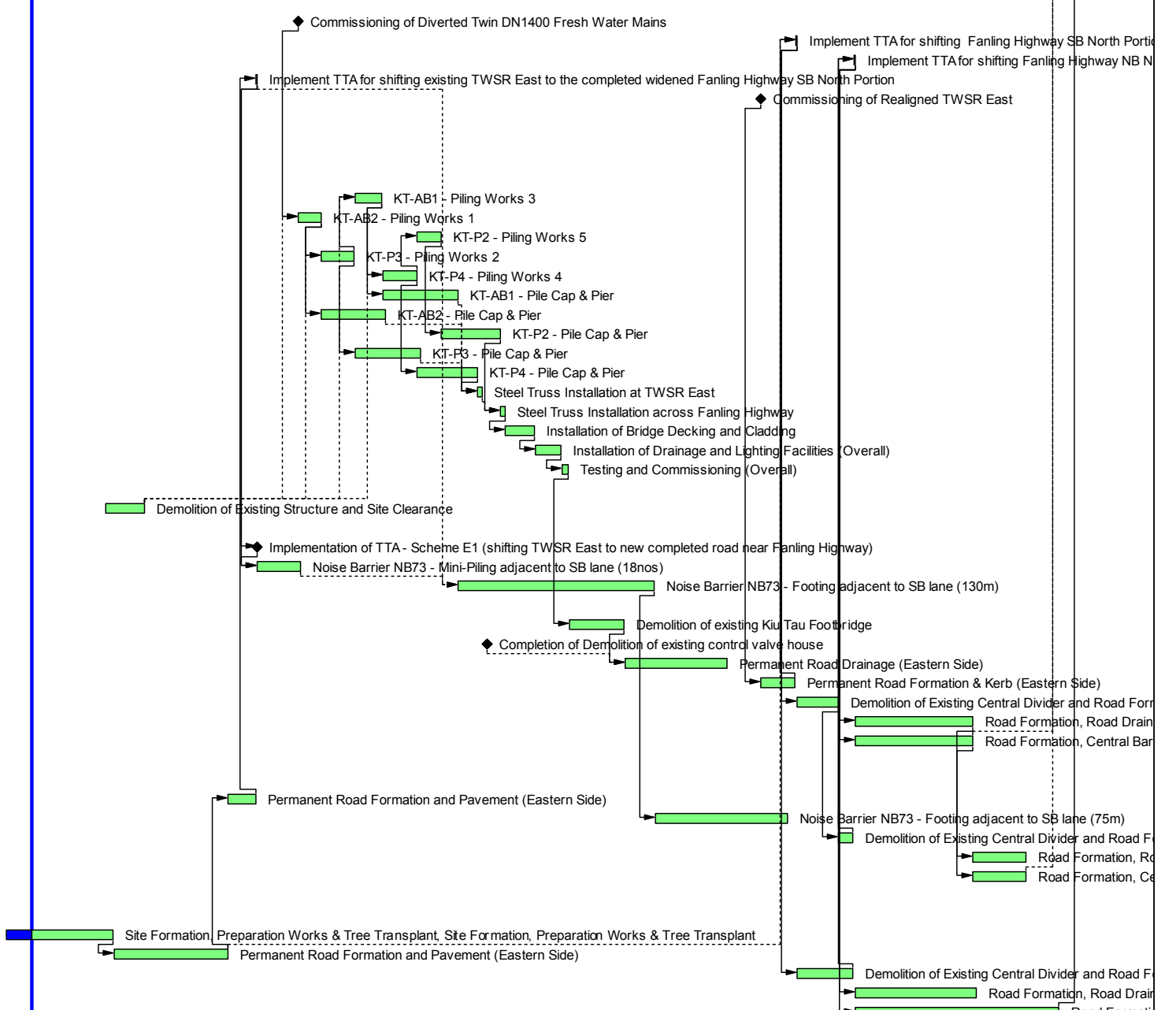




 Impact Water Monitoring Location
 Control Water Monitoring Location

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
CWP - Under Development (Postpone Pipe Jacking)																																																																	
Key Dates (Forecast)																																																																	
Major Works																																																																	
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																																																												
Major Milestones and Events																																																																	
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																																																												
Section IA & IB - Fanling Highway Widening (KD-1 & KD-2)																																																																	
Fanling Highway North Portion between CH7470 and CH7925																																																																	
Fanling Highway Zone 6 between CH7470 and CH7600 (Provision of Kiu Tau Footbridge)																																																																	
Kiu Tau Footbridge Re-provision (East)																																																																	
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																																																												
At-Grade Road Works (130m)																																																																	
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																																																												
Fanling Highway Zone 7 between CH7600 and CH7660 (Existing Vehicular Bridge)																																																																	
At-Grade Roadworks (60m)																																																																	
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																																																												
Fanling Highway Zone 8 between CH7660 and CH7925																																																																	
At-Grade Roadworks (265m)																																																																	
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	

Activity ID	Activity Name	OD	Start	Finish	Total Float	2014					2015					2016					2017					2018																																
						A	S	Oct	N	D	J	F	M	Apr	M	J	Jul	A	S	Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D	J	F	M	A	M	J	Jul	A	S	Oct	N	D
						Work	Remaining	Summary	Critical	Milestone																																																
CWP - Under Development (Postpone Pipe Jacking)																																																										
Key Dates (Forecast)																																																										
Major Works																																																										
KD-0105	KD1: Complete Section 1A - all HyD's entrustment works in Zone3 and SBZ2 except for landscaping works	0		07-Dec-17	53	KD1: Com																																																				
Major Milestones and Events																																																										
MS-2010	Implement TTA for shifting Fanling Highway SB South Portion (CH6960-7380) eastward to the completed ro	2	11-Sep-14	12-Sep-14	58	Implement TTA for shifting Fanling Highway SB South Portion (CH6960-7380) eastward to the completed road																																																				
MS-2020	Implement TTA for shifting Fanling Highway NB South Portion (CH6960-7380) & TWSR West eastward	2	01-Dec-14	02-Dec-14	58	Implement TTA for shifting Fanling Highway NB South Portion (CH6960-7380) & TWSR West eastward																																																				
MS-2030	Implement TTA for shifting Fanling Highway SB South Portion to the edge of box culvert	2	17-Nov-14	18-Nov-14	238	Implement TTA for shifting Fanling Highway SB South Portion to the edge of box culvert																																																				
MS-2040	Implement TTA for shifting the diverted TWSR West to the original alignment	2	09-Jul-15	10-Jul-15	54	Implement TTA for shifting the diverted TWSR West to the original alignment																																																				
MS-2050	Implement TTA for shifting Fanling Highway SB & NB South Portion westward	2	05-Dec-15	07-Dec-15	54	Implement TTA for shifting Fanling Highway SB & NB South Portion westward																																																				
MS-2060	Implement TTA for shifting Fanling Highway NB South Portion to the designed alignment	2	13-Jun-16	14-Jun-16	92	Implement TTA for shifting Fanling Highway NB South Portion to the designed alignment																																																				
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	Implement TTA for shifting existing TWSR East to the completed widened Fanling Highway SB North Portion																																																				
MS-3020	Commissioning of Realigned TWSR West	0	14-Dec-15		42	Commissioning of Realigned TWSR West																																																				
Section IA & IB - Fanling Highway Widening (KD-1 & KD-2)																																																										
Fanling Highway South Portion between CH6935 and CH7470																																																										
Fanling Highway Zone 1 between CH6935 and CH7130 (within SBZ2)																																																										
At-Grade Roadworks (195m)																																																										
FHW-1100	Site Formation, Preparation Works & Tree Transplant	65	12-Aug-13 A	21-Dec-13	32	Site Formation, Preparation Works & Tree Transplant																																																				
FHW-1110*	Pipe Laying - DN1200 Watermains (CHC) across Fanling Highway (total 80m for 2 shafts)	185	30-Dec-13	19-Aug-14	999	Pipe Laying - DN1200 Watermains (CHC) across Fanling Highway (total 80m for 2 shafts)																																																				
FHW-1130	Road Formation for Subsequent Traffic Diversion (Approx. 100m)	90	11-Apr-14	01-Aug-14	91	Road Formation for Subsequent Traffic Diversion (Approx. 100m)																																																				
FHW-1140	Noise Barrier NB70, NB6 and NB7 - Footing adjacent to SB lane (200m)	320	11-Nov-13	11-Dec-14	32	Noise Barrier NB70, NB6 and NB7 - Footing adjacent to SB lane (200m)																																																				
FHW-1150*	Pipe Laying - DN1200 Watermains (CHC) along Fanling Highway (75m long, 4m depth)	140	13-Mar-15	01-Sep-15	644	Pipe Laying - DN1200 Watermains (CHC) along Fanling Highway (75m long, 4m depth)																																																				
FHW-1160	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)	245	22-Jul-14	22-May-15	216	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)																																																				
FHW-1300	Noise Barrier NB68 - Footing at central median (60m)	90	15-Jun-16	29-Sep-16	92	Noise Barrier NB68 - Footing at central median (60m)																																																				
FHW-1310	Permanent Road Formation & Central Barrier (Middle Part)	180	30-Sep-16	17-May-17	212	Permanent Road Formation & Central Barrier (Middle Part)																																																				
Fanling Highway Zone 2 between CH7130 and CH7290																																																										
At-Grade Roadworks (160m)																																																										
FHW-2100*	Pipe Laying - Twin DN1400 Watermains (CHE & F) along Fanling Highway (44m long, 6m depth)	80	27-Jan-14	13-May-14	145	Pipe Laying - Twin DN1400 Watermains (CHE & F) along Fanling Highway (44m long, 6m depth)																																																				
FHW-2110	Noise Barrier NB71 - Footing adjacent to SB lane (up to road pavement level) (90m)	170	11-Nov-13	14-Jun-14	58	Noise Barrier NB71 - Footing adjacent to SB lane (up to road pavement level) (90m)																																																				
FHW-2120	Permanent Road Formation & Road Drainage (Eastern Side)	163	22-Feb-14	10-Sep-14	58	Permanent Road Formation & Road Drainage (Eastern Side)																																																				
FHW-2130*	Pipe Laying - DN1200 & DN600 Watermains (CHB & CHC) along Fanling Highway (183m long, 4m depth)	160	25-Aug-14	12-Mar-15	741	Pipe Laying - DN1200 & DN600 Watermains (CHB & CHC) along Fanling Highway (183m long, 4m depth)																																																				
FHW-2140	Noise Barrier NB71 - Upstand Wall adjacent to SB lane	105	08-Dec-15	22-Apr-16	54	Noise Barrier NB71 - Upstand Wall adjacent to SB lane																																																				
FHW-2150	Remaining Road Formation & Kerb (Eastern Side)	120	02-Feb-16	06-Jul-16	464	Remaining Road Formation & Kerb (Eastern Side)																																																				
FHW-2190	Footpath, DSD Access Track & Cycle Track adjacent to SB lane	108	23-Apr-16	31-Aug-16	416	Footpath, DSD Access Track & Cycle Track adjacent to SB lane																																																				
FHW-2200	Noise Barrier NB67 - Mini-Piling adjacent to NB lane (28nos)	84	03-Dec-14	20-Mar-15	70	Noise Barrier NB67 - Mini-Piling adjacent to NB lane (28nos)																																																				
FHW-2210	Noise Barrier NB67 - Footing adjacent to NB lane (83m)	160	07-Feb-15	28-Aug-15	70	Noise Barrier NB67 - Footing adjacent to NB lane (83m)																																																				
FHW-2220	Permanent Road Formation, Road Drainage & Kerb (Western Side)	200	13-May-15	11-Jan-16	210	Permanent Road Formation, Road Drainage & Kerb (Western Side)																																																				
FHW-2300	Noise Barrier NB68 - Mini-Piling at central median (6nos)	35	15-Jun-16	26-Jul-16	147	Noise Barrier NB68 - Mini-Piling at central median (6nos)																																																				
FHW-2310	Noise Barrier NB68 - Footing at central median (157m)	240	30-Sep-16	28-Jul-17	92	Noise Barrier NB68 - Footing at central median (157m)																																																				
FHW-2320	Permanent Road Formation & Central Barrier (Middle Part)	105	06-Jun-17	09-Oct-17	92	Permanent Road Formation & Central Barrier (Middle Part)																																																				
Fanling Highway Zone 3 between CH7290 and CH7380																																																										
Box Culvert Extension - ID4																																																										
Box Culvert Extension - ID5																																																										
At-Grade Roadworks (90m)																																																										
FHW-3100	Permanent Road Formation with 2/3 width of Permanent Road (Eastern Side)	60	23-Jan-14	10-Apr-14	91	Permanent Road Formation with 2/3 width of Permanent Road (Eastern Side)																																																				
FHW-3110	Filling Works	30	01-Apr-14	12-May-14	146	Filling Works																																																				
FHW-3120*	Pipe Laying - Twin DN1400 Watermains (CHE & F) along Fanling Highway (90m long, 3m depth)	90	14-May-14	28-Aug-14	145	Pipe Laying - Twin DN1400 Watermains (CHE & F) along Fanling Highway (90m long, 3m depth)																																																				
FHW-3120B	Temporary Road Formation for the Remaining Part of Permanent Road (Eastern Side)	65	29-Aug-14	15-Nov-14	238	Temporary Road Formation for the Remaining Part of Permanent Road (Eastern Side)																																																				
FHW-3130	Noise Barrier NB71 - Mini-Piling adjacent to SB lane (40nos)	120	08-Dec-15	11-May-16	181	Noise Barrier NB71 - Mini-Piling adjacent to SB lane (40nos)																																																				
FHW-3140	Noise Barrier NB71 - Footing adjacent to SB lane (130m)	249	26-Feb-16	24-Dec-16	181	Noise Barrier NB71 - Footing adjacent to SB lane (130m)																																																				
FHW-3150*	Pipe Laying - DN600, DN1200 Watermains (CHB & CHC) along Fanling Highway (90m long, 3m depth)	249	23-Apr-16	25-Feb-17	181	Pipe Laying - DN600, DN1200 Watermains (CHB & CHC) along Fanling Highway (90m long, 3m depth)																																																				
FHW-3160	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)	115	17-Oct-16	09-Mar-17	265	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)																																																				
FHW-3190	Footpath, DSD Access Track adjacent to SB lane	60	27-Feb-17	13-May-17	215	Footpath, DSD Access Track adjacent to SB lane																																																				
FHW-3200	Noise Barrier NB69 - Mini-Piling adjacent to NB lane (40nos)	120	09-Jul-15	28-Nov-15	54	Noise Barrier NB69 - Mini-Piling adjacent to NB lane (40nos)																																																				
FHW-3210	Noise Barrier NB69 - Footing adjacent to NB lane (108m)	160	17-Sep-15	08-Apr-16	54	Noise Barrier NB69 - Footing adjacent to NB lane (108m)																																																				
FHW-3220	Permanent Road Formation, Road Drainage & Kerb (Western Side)	112	19-Jan-16	11-Jun-16	92	Permanent Road Formation, Road Drainage & Kerb (Western Side)																																																				
FHW-3300	Noise Barrier NB68 - Mini-Piling at central median (40nos)	120	15-Jun-16	05-Nov-16	142	Noise Barrier NB68 - Mini-Piling at central median (40nos)																																																				
FHW-3310	Noise Barrier NB68 - Footing at central median (98m)	160	28-Feb-17	11-Sep-17	54	Noise Barrier NB68 - Footing at central median (98m)																																																				
FHW-3320	Permanent Road Formation & Central Barrier (Middle Part)	60	12-Sep-17	23-Nov-17	54	Permanent Road Formation & Central Barrier (Middle Part)																																																				
Fanling Highway Zone 4 between CH7380 and CH7470																																																										
At-Grade Roadworks (90m)																																																										
FHW-4100	Permanent Road Formation with 2/3 width of Permanent Road (Eastern Side)	60	11-Nov-13	22-Jan-14	91	Permanent Road Formation with 2/3 width of Permanent Road (Eastern Side)																																																				
FHW-4110*	Pipe Laying - Twin DN1400 Watermains (CHE & CHF) along Fanling Highway (90m long, 3m depth)	166	27-Jan-14	23-Aug-14	149	Pipe Laying - Twin DN1400 Watermains (CHE & CHF) along Fanling Highway (90m long, 3m depth)																																																				
FHW-4120	Temporary Road Formation for the Remaining Part of Permanent Road (Eastern Side)	65	25-Aug-14	11-Nov-14	242	Temporary Road Formation for the Remaining Part of Permanent Road (Eastern Side)																																																				
FHW-4130	Noise Barrier NB71 & NB72 - Footing adjacent to SB lane (90m)	170	23-Apr-16	15-Nov-16	54	Noise Barrier NB71 & NB72 - Footing adjacent to SB lane (90m)																																																				
FHW-4140*	Pipe Laying - DN600, DN1200 Watermains (CHB & CHC) along Fanling Highway (90m long, 3m depth)	170	18-Jun-16	10-Jan-17	215	Pipe Laying - DN600, DN1200 Watermains (CHB & CHC) along Fanling Highway (90m long, 3m depth)																																																				
FHW-4150	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)	120	03-Sep-16	27-Jan-17	294	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)																																																				
FHW-4160	Footpath, DSD Access Track adjacent to SB lane	60	11-Jan-17	28-Mar-17	249	Footpath, DSD Access Track adjacent to SB lane																																																				
FHW-4200	Permanent Road Formation, Road Drainage & Kerb (Western Side)	112	14-Dec-15	07-May-16	120	Permanent Road Formation, Road Drainage & Kerb (Western Side)																																																				
FHW-4210	Noise Barrier NB68A - Footing at central median (40m)	80	16-Nov-16	27-Feb-17	54	Noise Barrier NB68A - Footing at central median (40m)																																																				
FHW-4300	Permanent Road Formation & Central Barrier (Middle Part)	60	28-Feb-17	15-May-17	677	Permanent Road Formation & Central Barrier (Middle Part)																																																				
Miscellaneous Works for Facilitating Traffic Diversion of Fanling Highway																																																										
FHW-M-1000	Demolition of Central Barrier & Make Good of Road Pavement for further Traffic Diversion	65	13-Sep-14	29-Nov-14	58	Demolition of Central Barrier & Make Good of Road Pavement for further Traffic Diversion																																																				



■ Actual Work
 ■ Remaining Work
 ■ Summary Bar
 ■ Critical Remaining Work
 ◆ Milestone

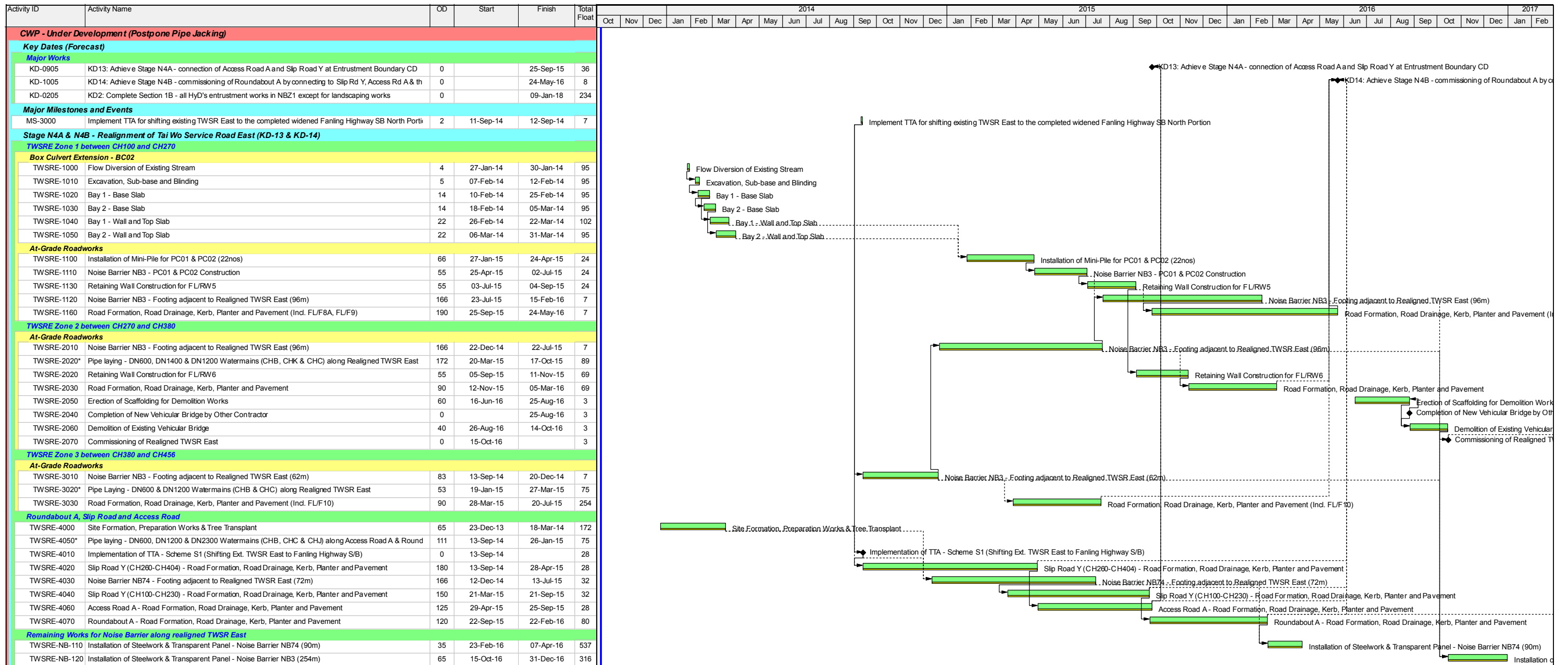
CEDD Contract No. CV/2012/09

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

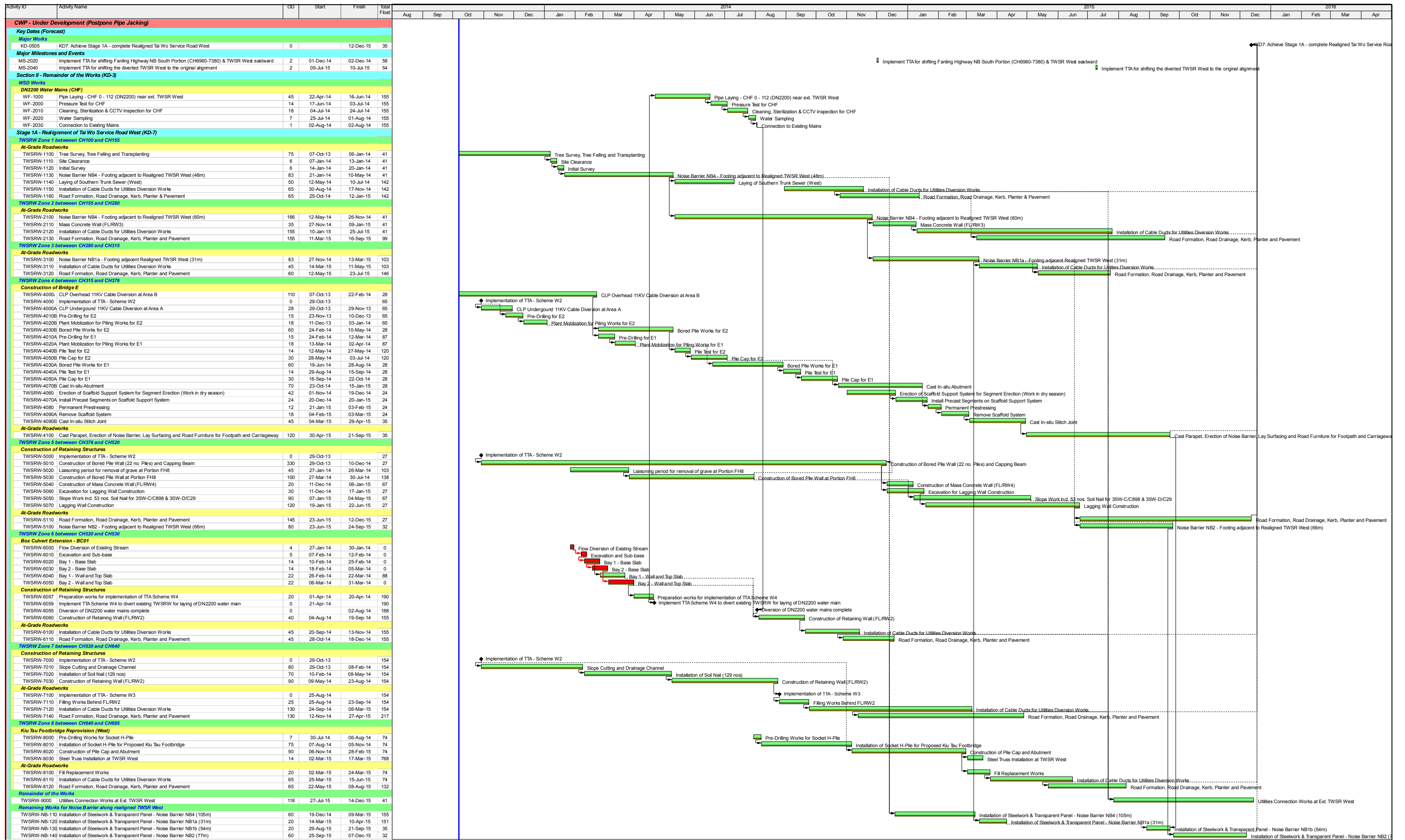
Date	Revision	Checked	Approved
11-Oct-13		SL	



█ 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 TWSRE
 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

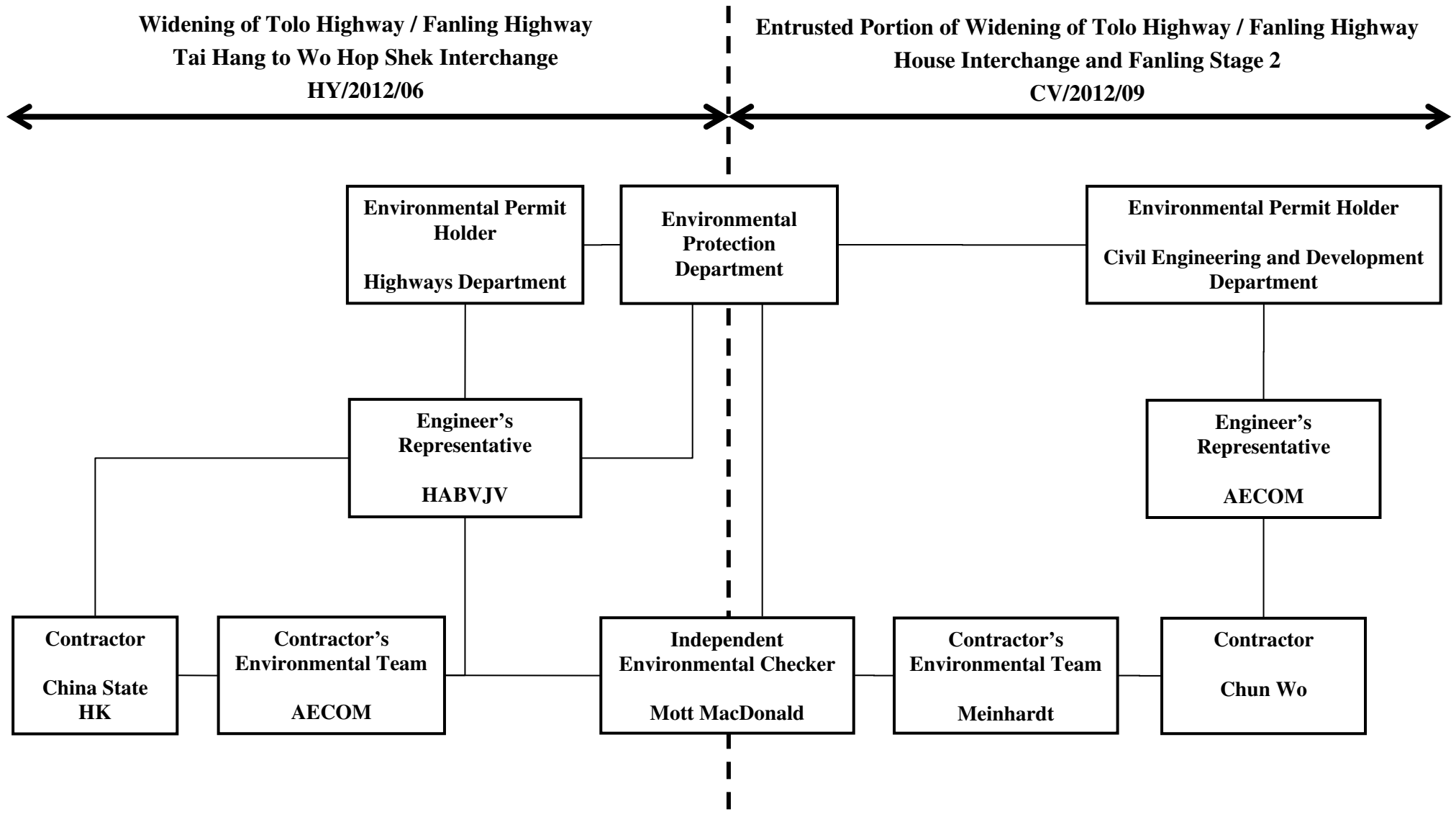
Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for TWSRW

Date	Revision	Checked	Approved
11-Sep-13		SL	

Appendix B

Project Organization Structure



Appendix C Calibration Certificates of Monitoring Equipment



REPORT OF EQUIPMENT CALIBRATION

INSTRUMENT DESCRIPTION

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler and the filter paper is weighted by HOKLAS laboratory.

Instrument: Handheld TSP meter
Brand Name: TSI
Model No.: AM510
Serial No.: 11008019
Date Received: 16/10/2013
Date of Issue: 27/10/2013
Date of Calibration: 22/10/2013
Date of Next Calibration : 22/10/2014

ISSUING ORGANISATION

Address

Enovative Environmental Service Limited
Flat 6, 3/F, Block E, Wah Lok Industrial Centre
31-35 Shan Mei Street
Shatin, N.T.
Hong Kong

Phone: 852-2242 1020
Fax: 852-3691 9240
Email: info@eno.com.hk



Thomas

Mr Wong Siu Ho, Thomas
Manager

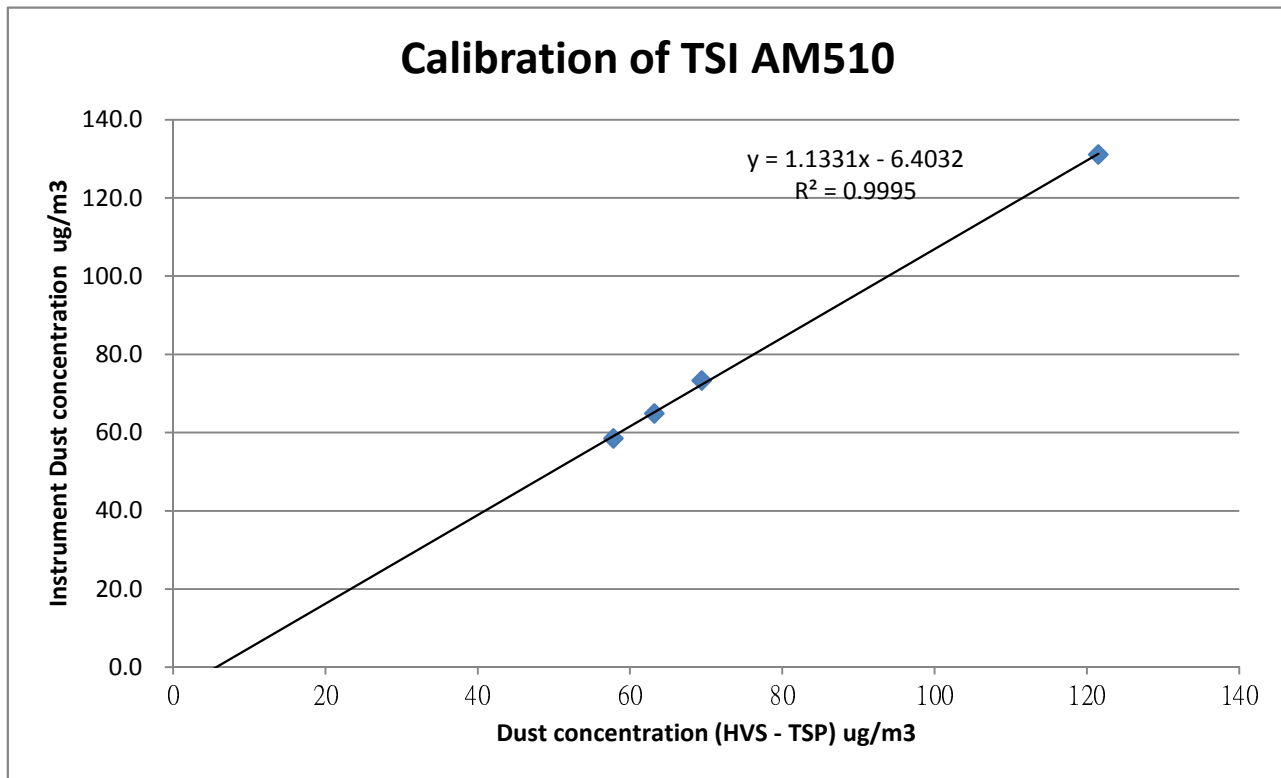


Enovative Environmental Service Limited

Brand Name: TSI
Model No.: AM510
Serial No.: 11008019
HVS No.: A12-TSP-102
HVS Calibration Kit No.: Tisch 1941
Date of Calibration: 22/10/2013
Date of next Calibration: 22/10/2014

Calibration Record

HVS - TSP ug/m3	121.5	57.8	63.2	69.4
TSI AM510	131.1	58.5	64.9	73.3



*** Filter paper being used in the calibrator 205472, 205476, 205480, 205483
Those filter papers are weighted by HOKLAS laboratory (ALS Technichem (HK) Pty Ltd.)



Mr Wong Siu Ho, Thomas
Manager



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT
 ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Apr 09, 2013 Rootsmeter S/N 0438320 Ta (K) - 296
 Operator Tisch Orifice I.D. - 1941 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4710	3.3	2.00
2	NA	NA	1.00	1.0370	6.4	4.00
3	NA	NA	1.00	0.9270	7.9	5.00
4	NA	NA	1.00	0.8840	8.8	5.50
5	NA	NA	1.00	0.7300	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9916	0.6741	1.4113	0.9956	0.6768	0.8874
0.9874	0.9521	1.9959	0.9914	0.9560	1.2549
0.9854	1.0630	2.2315	0.9894	1.0673	1.4030
0.9843	1.1134	2.3405	0.9883	1.1180	1.4715
0.9790	1.3410	2.8227	0.9829	1.3465	1.7747
Qstd slope (m) = 2.11662			Qa slope (m) = 1.32539		
intercept (b) = -0.01714			intercept (b) = -0.01078		
coefficient (r) = 0.99999			coefficient (r) = 0.99999		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760)(298/Ta))] - b}
 Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}

TSP Sampler Calibration

SITE

Location: Lian Tang 3 Date: January 4, 2014
 Sampler: TE-5170 MFC (Serial # : 2359) Tech: Sam Wong

CONDITIONS

Barometric Pressure (in Hg): 40.20 Corrected Pressure (mm Hg): 1021
 Temperature (deg F): 59 Temperature (deg K): 288
 Average Press. (in Hg): 40.20 Corrected Average (mm Hg): 1021
 Average Temp. (deg F): 59 Average Temp. (deg K): 288

CALIBRATION ORIFICE

Make: Tisch Qstd Slope: 2.11662
 Model: TE-5025A Qstd Intercept: -0.01714
 Serial#: 1941 Date Certified: April 9, 2013

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION
1	12.40	1.970	58.0	68.39	Slope = 33.7251 Intercept = 1.4016
2	10.20	1.787	52.0	61.31	
3	8.00	1.584	46.0	54.24	Corr. coeff.= 0.9994
4	5.20	1.278	38.0	44.80	
5	3.20	1.005	30.0	35.37	# of Observations: 5

Calculations

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

Tstd = 298 deg K

Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

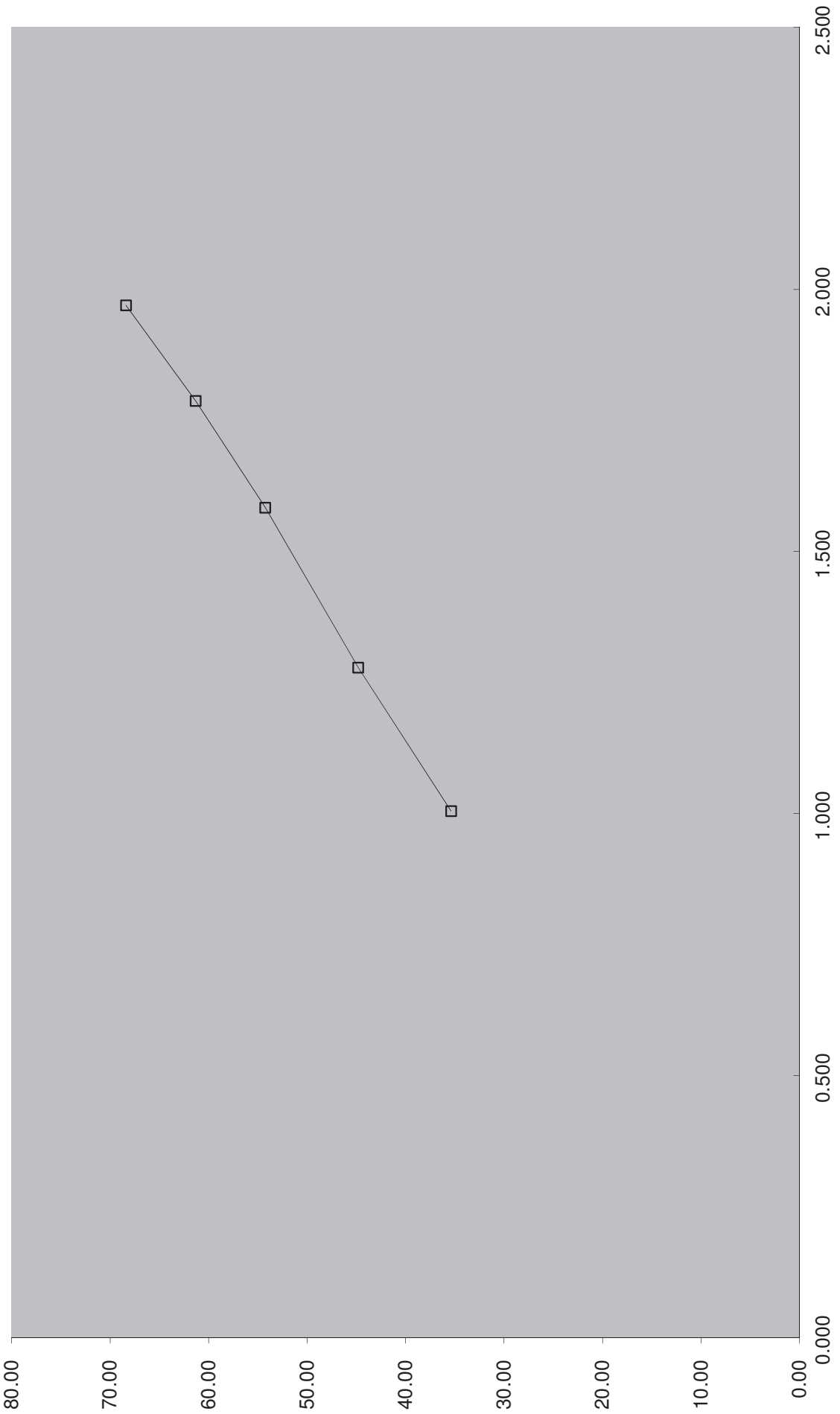
Pav = daily average pressure

Calibrated By : Sam WONG



Checked By : Thomas WONG







Calibration Certificate

Certificate No. 37521

Page 1 of 2 Pages

Customer : Enovative Environmental Service Limited

Address : Room 3, 12/F., New City Centre, 2 Lei Yue Mun Road, Kwun Tong, Kowloon, H.K.

Order No. : Q32432

Date of receipt : 16-Oct-13

Item Tested

Description : Sound Level Calibrator

Manufacturer : B&K

Model : Type 4231

Serial No. : 2685684

Test Conditions

Date of Test : 31-Oct-13

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the IEC 942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	35730	NIM-PRC & SCL-HKSAR
S205	Ref. Sound Level Calibrator	PHCO40002	SCL-HKSAR
S041	Universal Counter	34621	SCL-HKSAR
S206	Sound Level Meter	36203	SCL-HKSAR
S031	6½ dgt. Multimeter	30128	NIM-PRC

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 
Dorothy Cheuk

Approved by : 
Steve Kwan

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

Date: 31-Oct-13



Calibration Certificate

Certificate No. 37521

Page 2 of 2 Pages

Results :

1. Level Accuracy

UUT Nominal Value (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	94.08	± 0.3 dB
114	114.07	

Uncertainty : ± 0.1 dB

2. Frequency

UUT Nominal Value	Measured Value	IEC 942 Class 1 Spec.
1 kHz	1.002 kHz	± 2 %

Uncertainty : ± 3.6 x 10⁻⁶

- 3. Level Stability** : 0.0 dB
IEC 942 Class 1 Spec. : ± 0.1 dB
Uncertainty : ± 0.01 dB

- 4. Total Harmonic Distortion** : < 0.7 %
IEC 942 Class 1 Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

- Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1014 hPa.

----- END -----



Calibration Certificate

Certificate No. **36604**

Page 1 of 4 Pages

Customer : Enovative Environmental Service Limited

Address : Room 3, 12/F., New City Centre, 2 Lei Yue Mun Road, Kwun Tong, Kowloon, H.K.

Order No. : Q32395

Date of receipt : 4-Sep-13

Item Tested

Description : Sound Level Meter (N12-RION-004)

Manufacturer : Rion

Model : NL-52

Serial No. : 00220553

Test Conditions

Date of Test : 10-Sep-13

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 61672 Type1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C127181	SCL-HKSAR
S205	Ref. Sound Level Calibrator	PHCO40002	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 
Dorothy Cheuk

Approved by : 
Steve Kwan

Date: 16-Sep-13

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
Tel: 2425 8801 Fax: 2425 8646



Calibration Certificate

Certificate No. 36604

Page 2 of 4 Pages

Results :

1. Self-generated noise: 16.4 dBA (Mfr's Spec ≤ 17 dBA)
2. Acoustical signal test

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
30 – 130	L _A	Fast	94.0	94.0
		Slow		94.0
	L _C	Fast		94.0
	L _Z	Fast		94.0
	L _A	Fast	114.0	114.0
		Slow		114.0
	L _C	Fast		114.0
	L _Z	Fast		114.0

IEC 61672 Type 1 Spec. : ± 1.1 dB

Uncertainty : ± 0.1 dB

3 Electrical signal tests of frequency weightings (A weighting)

Frequency	Attenuation (dB)	IEC 61672 Type 1 Spec.
31.5 Hz	-39.8	- 39.4 dB, ± 2 dB
63 Hz	-26.4	- 26.2 dB, ± 1.5 dB
125 Hz	-16.3	- 16.1 dB, ± 1.5 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.3	- 3.2 dB, ± 1.4 dB
1 kHz	0.0 (Ref)	0 dB, ± 1.1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1.6 dB
4 kHz	+0.9	+ 1.0 dB, ± 1.6 dB
8 kHz	-1.1	- 1.1 dB, + 2.1 dB \sim -3.1 dB
16 kHz	-8.0	- 6.6 dB, + 3.5 dB \sim - 17.0 dB

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 36604

Page 3 of 4 Pages

4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
A	94.0	94.0 (Ref.)	--	± 0.4 dB
C	94.0	94.0	0.0	
Z	94.0	94.0	0.0	

4.2 Time Weighting (A-weighted)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	94.0	94.0 (Ref.)	--	± 0.3 dB
Slow	94.0	94.0	0.0	
Time-averaging	94.0	94.0	0.0	

Uncertainty : ± 0.1 dB

5. Level linearity on the reference level range

UUT Range	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
130 dB (Ref Level)	129.0	129.0	0.0	± 1.1 dB
	124.0	124.0	0.0	
	119.0	119.0	0.0	
	114.0	114.0	0.0	
	109.0	109.0	0.0	
	104.0	104.0	0.0	
	99.0	99.0	0.0	
	94.0	94.0 (Ref)	--	
	89.0	89.0	0.0	
	84.0	84.0	0.0	
	79.0	79.0	0.0	
	74.0	74.0	0.0	
	69.0	69.0	0.0	
	64.0	64.0	0.0	
	59.0	59.0	0.0	
	54.0	54.0	0.0	
	49.0	49.0	0.0	
44.0	44.0	0.0		

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. **36604**

Page 4 of 4 Pages

6. Toneburst response (4kHz)

UUT Setting	Tone Burst Duration(ms)	UUT Reading(dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	Steady	127.0(Ref)	--	--
	200	126.0	-1.0	-1.0 ± 0.8dB
	2	108.9	-18.1	-18.0, +1.3 dB ~ -1.8 dB
	0.25	99.9	-27.1	-27.0, +1.3 dB ~ -3.3 dB
Slow	Steady	127.0(Ref)	--	--
	200	120.2	-6.8	-7.4 ± 0.8dB
	2	100.6	-26.4	-27.0, +1.3 dB ~ -3.3 dB
Time averaging	Steady	127.0(Ref)	--	--
	200	120.1	-6.9	-7.0±0.8dB
	2	99.5	-27.5	-27.0, +1.3 dB ~ -1.8 dB
	0.25	91.7	-35.3	-36.0, +1.3 dB ~ -3.3 dB

Uncertainty : ± 0.1 dB

7. Overload indication (130 dB range, A-weighted, Time-average, 4kHz)

UUT Reading at overload (dB)		Difference (dB)	IEC 61672 Type 1 Spec.
+ ve one half cycle	- ve one half cycle		
138.4	138.2	0.2	< 1.8 dB

The overload indicator latched on until reset

Uncertainty : ± 0.1 dB

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 996 hPa.

4. Preamplifier model : NH-25 , S/N : 10553

5. Firmware Version: 1.2

6. Power Supply Check: OK

7. The UUT was adjusted with the laboratory's sound calibrator at the reference sound pressure level before the calibration.

----- END -----



ALS Technichem (HK) Pty Ltd
11/F, Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung, N.T., Hong Kong
T: +852 2610 1044
F: +852 2610 2021
www.alsglobal.com

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR THOMAS WONG
CLIENT: ENOVATIVE ENVIRONMENTAL SERVICE LTD
ADDRESS: RM811, HIN PUI HOUSE,
HIN KENG ESTATE,
TAI WAI,
N.T., HONG KONG

WORK ORDER: HK1403404
LABORATORY: HONG KONG
DATE RECEIVED: 04/02/2014
DATE OF ISSUE: 20/02/2014

PROJECT:

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Turbidity
Description: Turbidimeter
Brand Name: HACH
Model No.: 2100Q is
Serial No.: 11050C001264
Equipment No.: --
Date of Calibration: 04 February, 2014

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.


Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1403404
Date of Issue: 20/02/2014
Client: ENOVATIVE ENVIRONMENTAL SERVICE LTD



Description: Turbidimeter
Brand Name: HACH
Model No.: 2100Q is
Serial No.: 11050C001264
Equipment No.: --
Date of Calibration: 04 February, 2014

Parameters:

Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.18	--
4	4.09	2.3
40	38.0	-5.0
80	87.4	9.3
400	364	-9.0
800	823	2.9
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong



ALS Technichem (HK) Pty Ltd
11/F, Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung, N.T., Hong Kong
T: +852 2610 1044
F: +852 2610 2021
www.alsglobal.com

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR THOMAS WONG
CLIENT: ENOVATIVE ENVIRONMENTAL SERVICE LIMITED
ADDRESS: RM 3704, SIK MAN HOUSE,
HOMANTIN ESTATE,
KOWLOON,
HONG KONG

WORK ORDER: HK1334794
LABORATORY: HONG KONG
DATE RECEIVED: 01/12/2013
DATE OF ISSUE: 27/12/2013

PROJECT: --

COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity and Temperature
Equipment Type: Multimeter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 09K100735
Equipment No.: --
Date of Calibration: 01 December, 2013

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.


Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION



Work Order: HK1334794
Date of Issue: 27/12/2013
Client: ENOVATIVE ENVIRONMENTAL SERVICE LIMITED

Description: Multimeter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 09K100735
Equipment No.: --

Date of Calibration: 01 December, 2013 **Date of next Calibration:** 01 March, 2014

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	148.9	1.4
6667	6326	-5.1
12890	12227	-5.1
58670	54000	-8.0
Tolerance Limit (±%)		10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.11	3.30	0.19
5.16	5.36	0.20
8.82	8.82	0.00
Tolerance Limit (±mg/L)		0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.20	0.20
7.0	7.16	0.16
10.0	10.06	0.06
Tolerance Limit (±pH unit)		0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.09	0.9
20	20.01	0.1
30	30.26	0.9
Tolerance Limit (±%)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
 General Manager -
 Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Work Order: HK1334794
Date of Issue: 27/12/2013
Client: ENOVATIVE ENVIRONMENTAL SERVICE LIMITED



Description: Multimeter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 09K100735
Equipment No.: --
Date of Calibration: 01 December, 2013 **Date of next Calibration:** 01 March, 2014

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical
Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
9.0	8.4	-0.6
20.0	19.6	-0.4
38.0	38.3	0.3
	Tolerance Limit (\pm °C)	2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

Appendix D

EM&A Monitoring Schedules

**Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2
Impact Monitoring & Site Auditing Schedule for February 2014**

February 2014						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 The second day of Lunar New Year
2	3 The fourth day of Lunar New Year	4 Construction site holiday	5 Water (I5, C3a, C3b) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC	6	7 Water (I5, C3a, C3b)	8
9	10 Water (I5, C3a, C3b) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC	11 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	12 Water (I5, C3a, C3b)	13	14 Water (I5, C3a, C3b)	15
16	17 Water (I5, C3a, C3b) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC + SSEMC	18	19 Water (I5, C3a, C3b)	20	21 Water (I5, C3a, C3b)	22 24-hour TSP + 3 x 1-hour TSP
23	24 Water (I5, C3a, C3b) ET Site Walk(09:30 – 11:00) with Fanling Stage 2 IEC & Liangtang Project-wide ET and IEC	25	26 Water (I5, C3a, C3b)	27	28 Water (I5, C3a, C3b) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	

**Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2
Impact Monitoring & Site Auditing Schedule for March 2014**

March 2014						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 Water (I5, C3a, C3b) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC	4	5 Water (I5, C3a, C3b)	6 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	7 Water (I5, C3a, C3b)	8
9	10 Water (I5, C3a, C3b) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC	11	12 Water (I5, C3a, C3b) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	13	14 Water (I5, C3a, C3b)	15
16	17 Water (I5, C3a, C3b) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC	18 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	19 Water (I5, C3a, C3b)	20	21 Water (I5, C3a, C3b)	22
23	24 Water (I5, C3a, C3b) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77) ET Site Walk(09:30 – 11:00) with Liangtang Project-wide ET and IEC + SSEMC	25	26 Water (I5, C3a, C3b)	27	28 Water (I5, C3a, C3b)	29 24-hour TSP + 3 x 1-hour TSP
30	31 Water (I5, C3a, C3b) ET Site Walk(09:30 – 11:00) with Fanling Stage 2 IEC & Liangtang Project-wide ET and IEC					

Appendix E

Meteorological Data Extracted from Hong Kong Observatory

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, February 2014 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Feb 1	1015.5	25.8	19.4	14.8	15.4	97	79	49
Feb 2	1011.7	26.3	18.6	13.2	13.8	96	76	45
Feb 3	1010.2	27.4	19.1	12.9	13.8	95	74	43
Feb 4	1013.3	21.2	17.9	15.0	13.7	93	77	62
Feb 5	1013.9	21.0	17.9	16.3	13.4	85	75	63
Feb 6	1012.0	23.0	19.3	17.0	15.9	89	81	68
Feb 7	1010.8	24.3	20.5	18.0	17.5	92	83	68
Feb 8	1012.0	18.4	14.5	12.8	12.1	96	86	68
Feb 9	1013.2	16.6	13.3	7.6	11.3	96	88	69
Feb 10	1020.6	8.2	7.2	6.2	1.4	81	67	57
Feb 11	1021.2	7.7	6.4	5.5	-0.9	65	60	53
Feb 12	1020.0	8.1	6.6	5.0	3.5	93	81	62
Feb 13	1022.9	8.1	6.9	6.1	4.6	93	86	66
Feb 14	1023.1	15.9	9.8	6.8	1.8	69	58	40
Feb 15	1021.0	13.8	10.6	7.6	5.1	79	69	59
Feb 16	1018.5	15.8	14.9	13.8	12.0	91	83	74
Feb 17	1018.0	23.6	18.2	15.7	16.4	97	90	71
Feb 18	1017.0	22.6	16.2	10.6	14.3	98	89	72
Feb 19	1022.9	10.8	8.8	6.8	3.3	94	69	55
Feb 20	1025.4	21.8	11.1	4.8	2.4	88	60	18
Feb 21	1024.8	16.6	12.3	6.8	6.6	95	70	40
Feb 22	1023.2	18.9	15.0	12.5	8.3	77	64	43
Feb 23	1022.7	23.5	17.4	14.6	10.6	80	65	41
Feb 24	1020.5	21.8	17.9	14.1	12.9	90	73	56
Feb 25	1018.5	23.5	19.5	16.5	15.9	91	80	68
Feb 26	1017.9	24.9	20.4	18.2	17.9	95	86	65
Feb 27	1018.8	23.1	19.9	18.0	16.8	95	83	70
Feb 28	1016.8	20.4	19.1	18.1	15.7	87	81	77
Mean	1018.1	19.0	15.0	12.0	10.6	89	76	58
Maximum	1025.4	27.4	20.5	18.2	17.9	98	90	77
Minimum	1010.2	7.7	6.4	4.8	-0.9	65	58	18

**Extract of Meteorological Observations for Sheung Shui Automatic Weather Station,
February 2014 (Table 2)**

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Feb 1	0.0	***	*****
Feb 2	0.0	***	*****
Feb 3	0.0	***	*****
Feb 4	0.0	***	*****
Feb 5	0.0	***	*****
Feb 6	0.0	***	*****
Feb 7	0.0	***	*****
Feb 8	1.0	***	*****
Feb 9	10.0	***	*****
Feb 10	0.5	***	*****
Feb 11	0.0	***	*****
Feb 12	2.5	***	*****
Feb 13	10.5	***	*****
Feb 14	0.0	***	*****
Feb 15	0.0	***	*****
Feb 16	0.0	***	*****
Feb 17	0.0	***	*****
Feb 18	0.0	***	*****
Feb 19	8.5	***	*****
Feb 20	0.0	***	*****
Feb 21	0.0	***	*****
Feb 22	0.5	***	*****
Feb 23	0.0	***	*****
Feb 24	0.0	***	*****
Feb 25	0.0	***	*****
Feb 26	0.5	***	*****
Feb 27	0.0	***	*****
Feb 28	0.0	***	*****
Mean	-----	***	*****
Total	34.0	---	-----
Maximum	10.5	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Appendix F Air Quality Monitoring Results and their Graphical Presentation

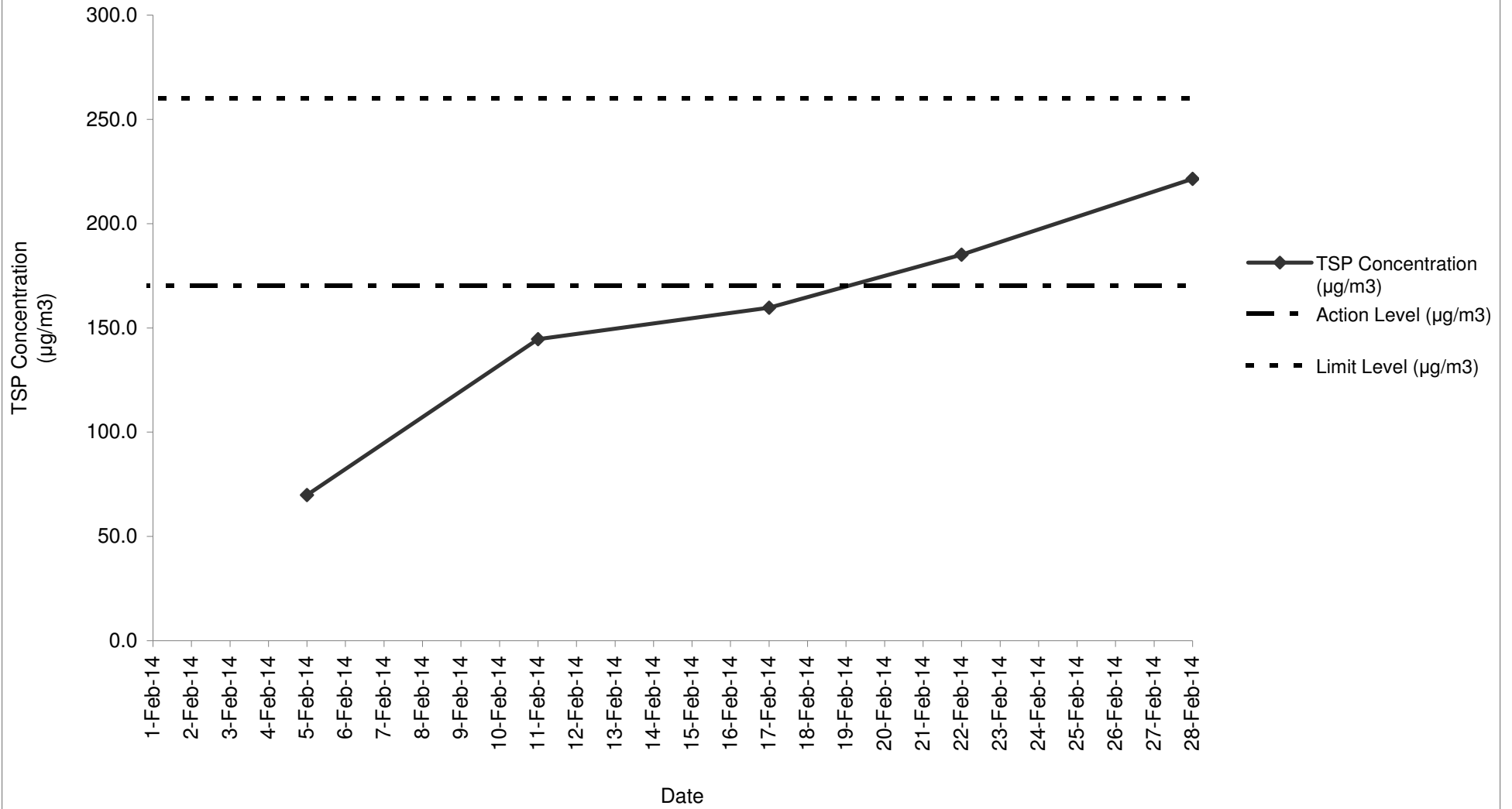
Appendix F
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at station: SR77

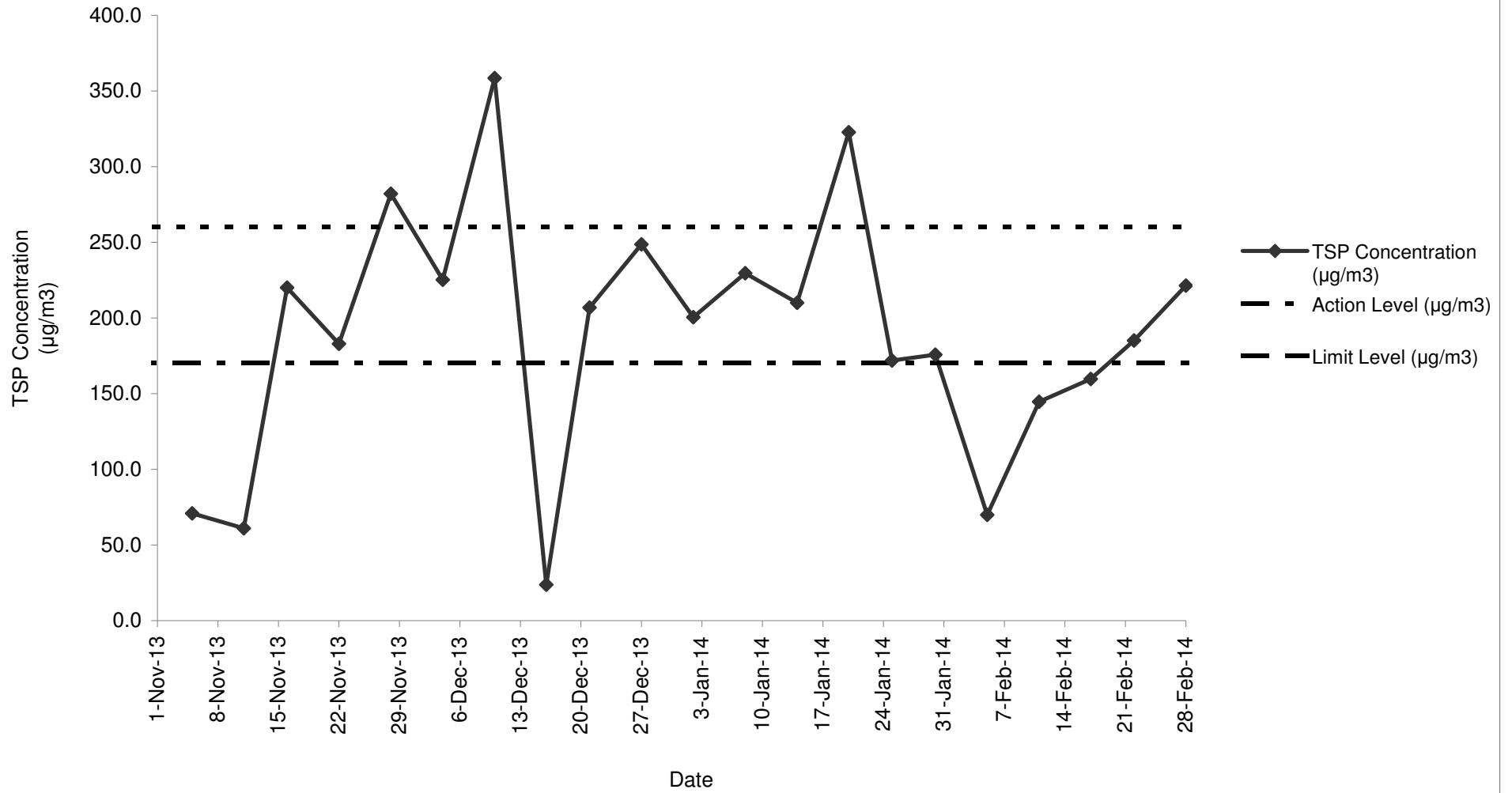
Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m ³ /min)			Total Volume (m ³)	TSP Concentration (μg/m ³)	Action Level (μg/m ³)	Limit Level (μg/m ³)	Wind speed m/s	Wind direction
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate						
5-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	<u>221.5</u>	170.3	260.0	<5	N
																Average	156.2			
																Min	69.9			
																Max	221.5			

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



**24-Hour TSP Monitoring Result at Station: SR77
(November 2013 - February 2014)**



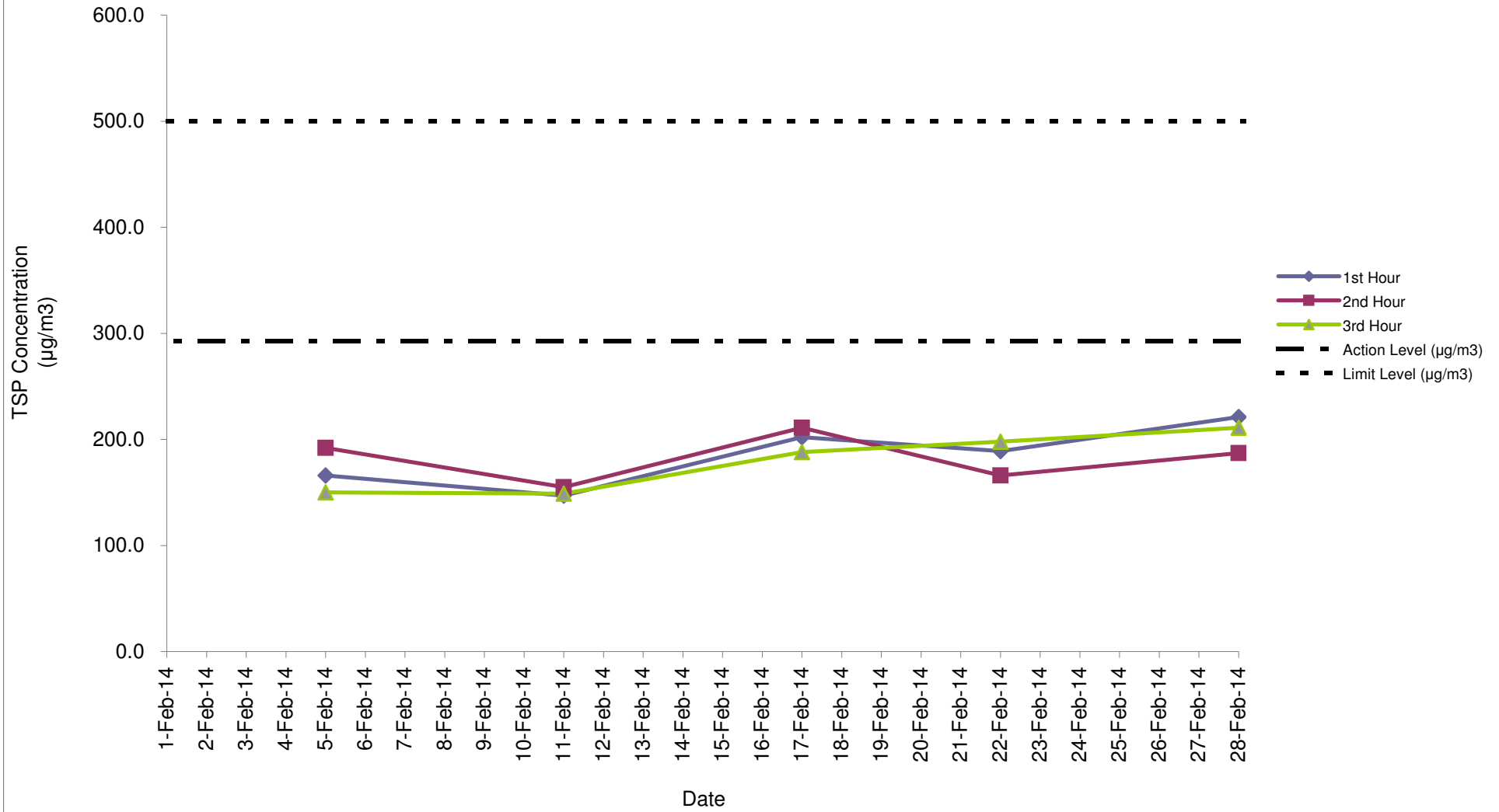
Appendix F
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at station: SR77

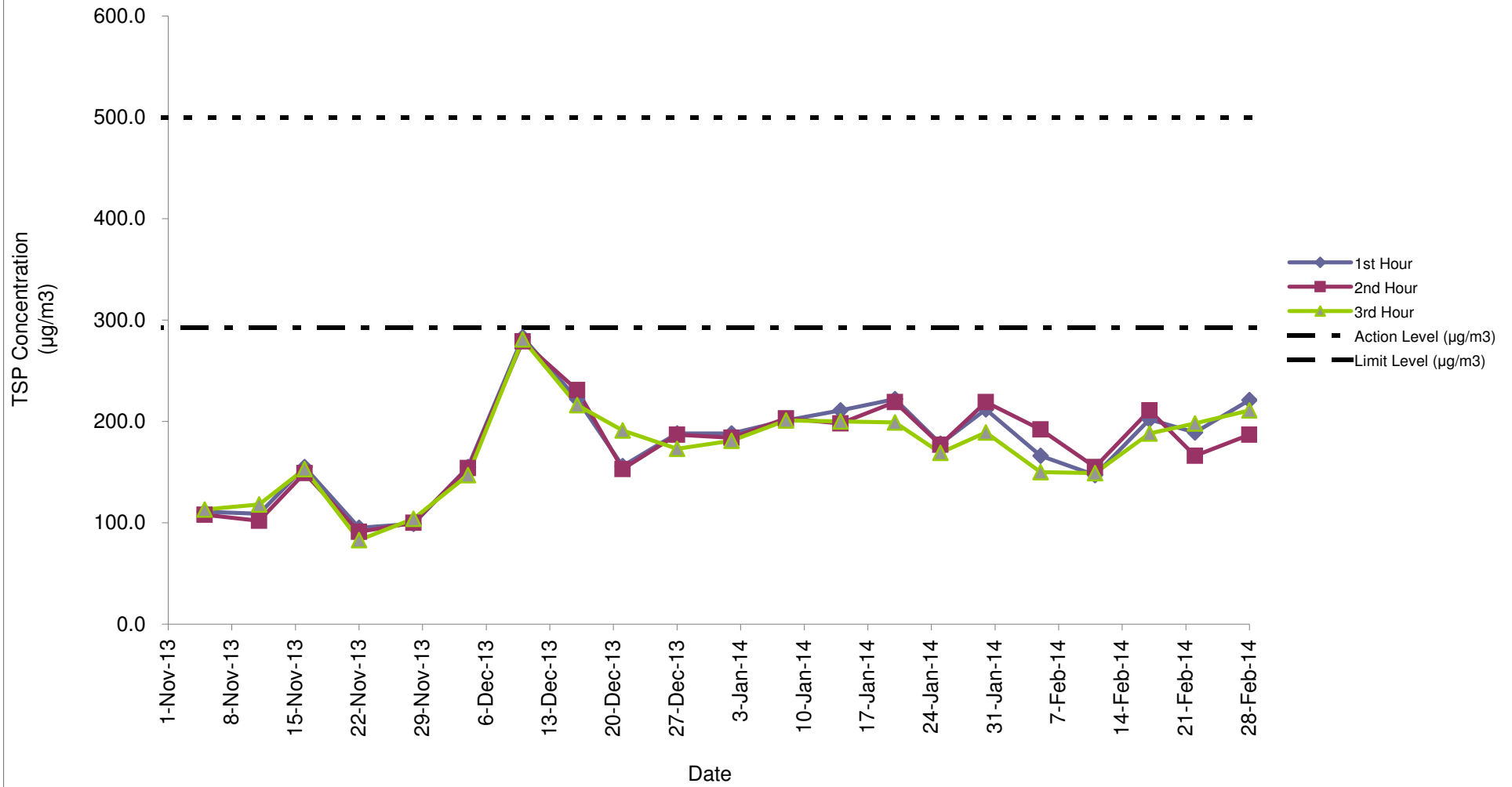
Date	Weather Condition	Time	Conc.(µg/m ³)			Action Level (µg/m3)	Limit Level (µg/m3)
			1 st Hour	2 nd Hour	3 rd Hour		
5-Feb-14	Fine	9:00 - 12:04	166.0	192.0	150.0	292.7	500.0
11-Feb-14	Cloudy	10:00 - 13:04	147.0	155.0	149.0	292.7	500.0
17-Feb-14	Fine	10:30 - 13:34	202.0	211.0	188.0	292.7	500.0
22-Feb-14	Fine	9:00 - 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
Average					182.1		
Min					147.0		
Max					221.0		

Note: No major dust source observed during the monitoring period

1-Hour TSP Monitoring Result at station: SR77



1-Hour TSP Monitoring Result at station: SR77 (November 2013 - February 2014)



Appendix G

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

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

Event and Action Plan for Noise Quality

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

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

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

Appendix H Noise 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

Noise Monitoring Result at SR77

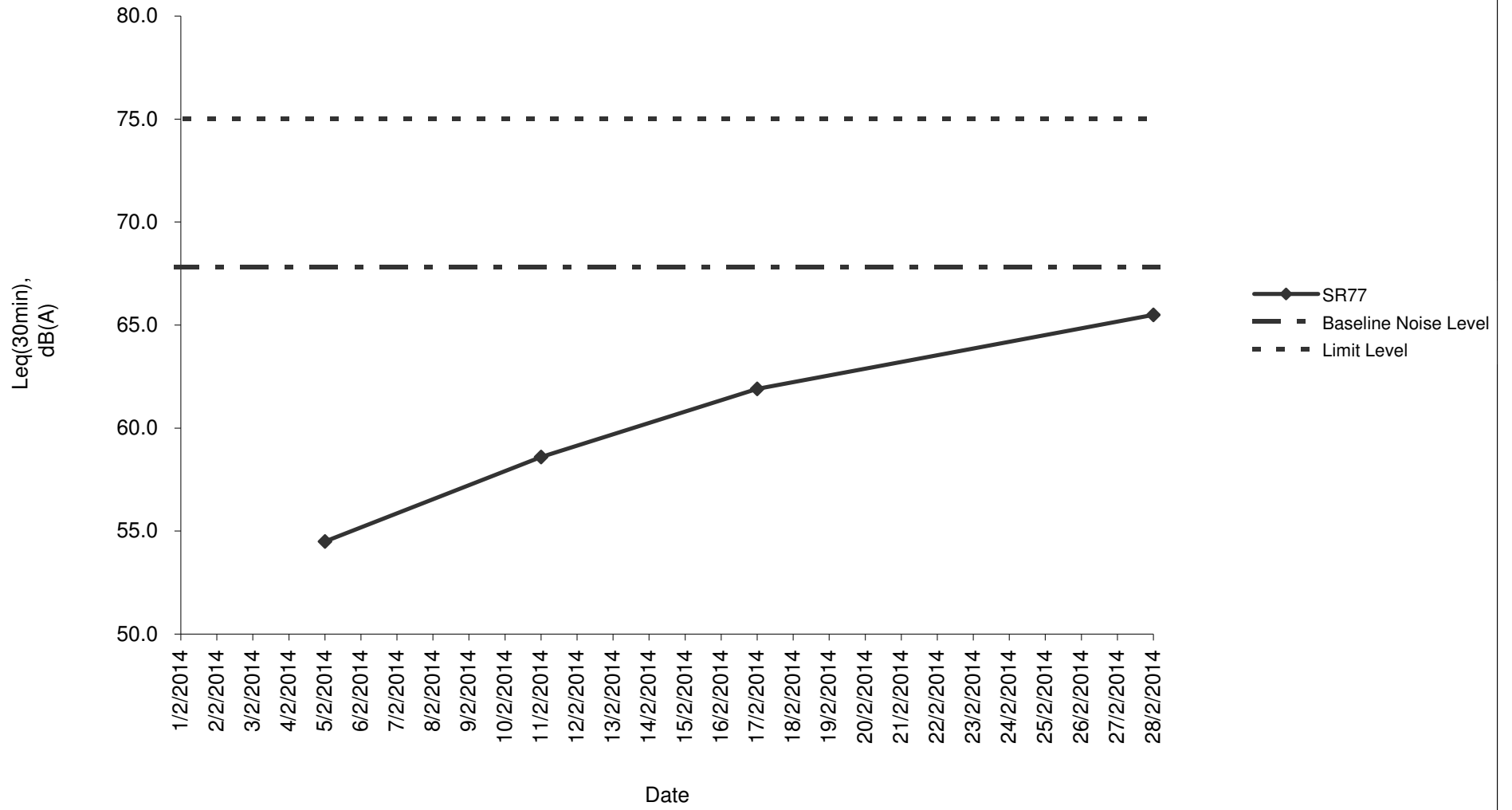
Date	Weather Condition	Start Time	End Time	Measured Noise Level (dB(A))*			Baseline Corrected Level, dB(A)**	Baseline Noise Level (dB(A)), Leq(30min)	Limit Level dB(A)	Exceedance (Y / N)
				L10(30min)	L90(30min)	Leq(30min)				
2014/02/05	Fine	14:30	15:00	61.3	64.7	54.5	-	67.8	75.0	N
2014/02/11	Cloudy	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
						Average	60.1			
						Minimum	54.5			
						Maximum	65.5			

Remarks

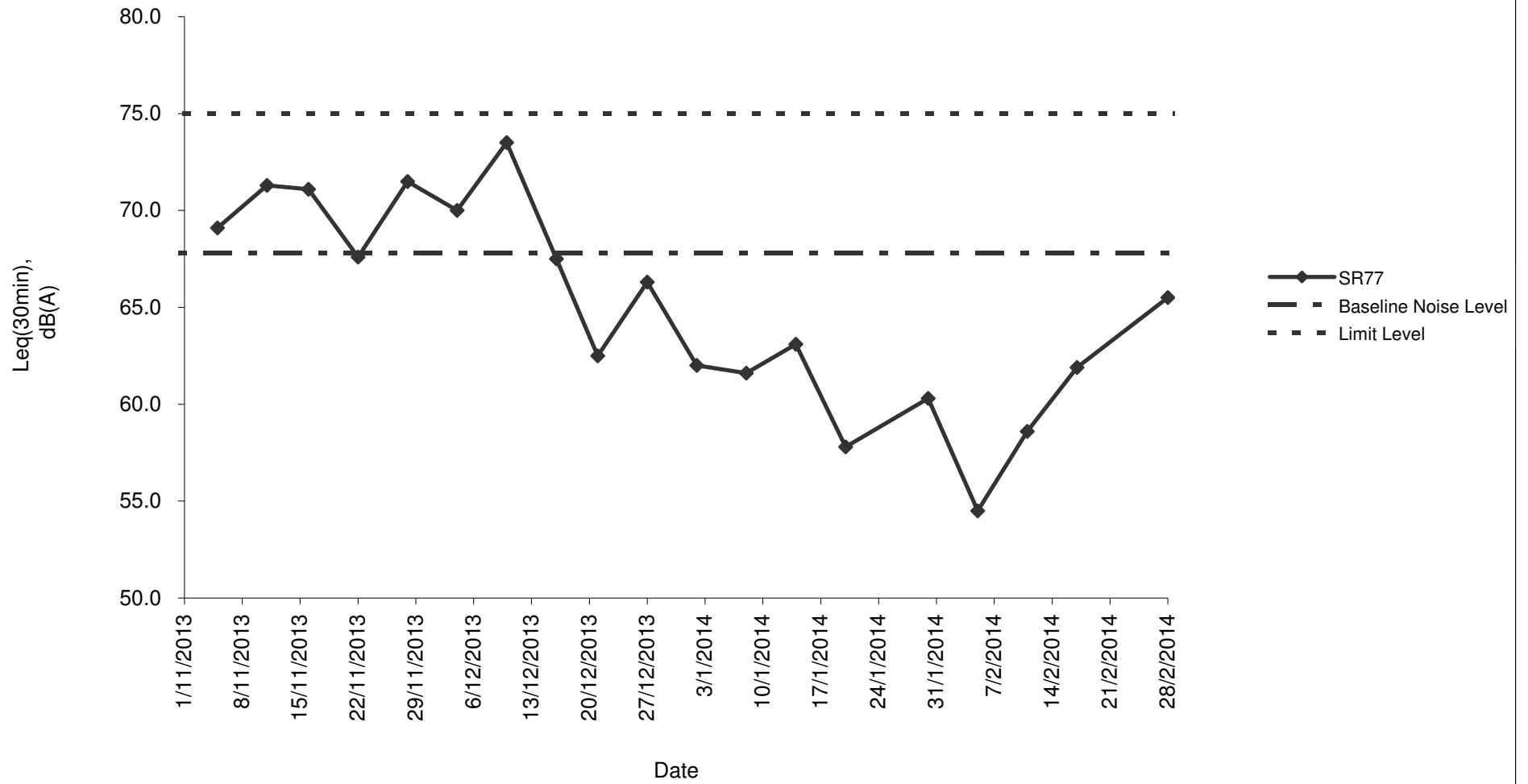
* +3dB(A) Façade effect correction included

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

Noise monitoring result: SR77



**Noise monitoring result: SR77
(November 2013 - February 2014)**



Appendix I

Laboratory Results for Water Quality



CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 3
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: HK1403291
<i>Address</i>	: RM811, HIN PUI HOUSE, HIN KENG ESTATE, TAI WAI, N.T., HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: Thomas.wong@eno.com.hk	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: CONTRACT NO CV_2012_09 LIANTANG_HEUNG YUEN WAI BOUNDARY CONTROL POINT SITE FORMATION	<i>Quote number</i>	: ----	<i>Date received</i>	: 05-FEB-2014
<i>Order number</i>	: ----			<i>Date of issue</i>	: 10-FEB-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- <i>Received</i> : 6
<i>Site</i>	: ----				- <i>Analysed</i> : 6

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1403291 supersedes any previous reports with this reference. The completion date of analysis is 07-FEB-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1403291 : 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.
Sample(s) were received in a chilled condition.
Water sample(s) analysed and reported on an as received basis.

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



Analytical Results

Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
C3A-1	[05-FEB-2014]	HK1403291-001	9				
C3A-2	[05-FEB-2014]	HK1403291-002	9				
C3B-1	[05-FEB-2014]	HK1403291-003	6				
C3B-2	[05-FEB-2014]	HK1403291-004	5				
I5-1	[05-FEB-2014]	HK1403291-005	9				
I5-2	[05-FEB-2014]	HK1403291-006	10				



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3283468)								
HK1402248-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	5	4	0.0
HK1403269-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	21	20	7.3

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3283468)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	102	----	87	111	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 3
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: HK1403564
<i>Address</i>	: RM811, HIN PUI HOUSE, HIN KENG ESTATE, TAI WAI, N.T., HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: Thomas.wong@eno.com.hk	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: CONTRACT NO CV_2012_09 LIANTANG_HEUNG YUEN WAI BOUNDARY CONTROL POINT SITE FORMATION	<i>Quote number</i>	: ----	<i>Date received</i>	: 07-FEB-2014
<i>Order number</i>	: ----			<i>Date of issue</i>	: 12-FEB-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- <i>Received</i> : 6
<i>Site</i>	: ----				- <i>Analysed</i> : 6

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1403564 supersedes any previous reports with this reference. The completion date of analysis is 10-FEB-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1403564 : 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.
Sample(s) were received in a chilled condition.
Water sample(s) analysed and reported on an as received basis.

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



Analytical Results

Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
C3A-1	[07-FEB-2014]	HK1403564-001	5				
C3A-2	[07-FEB-2014]	HK1403564-002	6				
C3B-1	[07-FEB-2014]	HK1403564-003	4				
C3B-2	[07-FEB-2014]	HK1403564-004	5				
I5-1	[07-FEB-2014]	HK1403564-005	9				
I5-2	[07-FEB-2014]	HK1403564-006	9				



Laboratory Duplicate (DUP) Report

Matrix: WATER

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3286735)								
HK1403563-006	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1403567-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	10	10	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3286735)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	101	----	87	111	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 3
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: HK1403773
<i>Address</i>	: RM811, HIN PUI HOUSE, HIN KENG ESTATE, TAI WAI, N.T., HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: Thomas.wong@eno.com.hk	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: CONTRACT NO CV_2012_09 LIANTANG_HEUNG YUEN WAI BOUNDARY CONTROL POINT SITE FORMATION	<i>Quote number</i>	: ----	<i>Date received</i>	: 10-FEB-2014
<i>Order number</i>	: ----			<i>Date of issue</i>	: 13-FEB-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 6
<i>Site</i>	: ----				- Analysed : 6

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1403773 supersedes any previous reports with this reference. The completion date of analysis is 10-FEB-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1403773 : 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.
Sample(s) were received in a chilled condition.
Water sample(s) analysed and reported on an as received basis.

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



Analytical Results

Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
C3A-1	[10-FEB-2014]	HK1403773-001	58				
C3A-2	[10-FEB-2014]	HK1403773-002	57				
C3B-1	[10-FEB-2014]	HK1403773-003	8				
C3B-2	[10-FEB-2014]	HK1403773-004	10				
I5-1	[10-FEB-2014]	HK1403773-005	7				
I5-2	[10-FEB-2014]	HK1403773-006	7				



Laboratory Duplicate (DUP) Report

Matrix: WATER

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3287969)								
HK1403752-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	43	44	2.8
HK1403774-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	11	11	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER

			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3287969)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	99.0	----	87	111	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



CERTIFICATE OF ANALYSIS

<i>Client</i>	: ENOVATIVE ENVIRONMENTAL SERVICE LTD	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 3
<i>Contact</i>	: MR THOMAS WONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: HK1404222
<i>Address</i>	: RM811, HIN PUI HOUSE, HIN KENG ESTATE, TAI WAI, N.T., HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: Thomas.wong@eno.com.hk	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: ----	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: CONTRACT NO CV_2012_09 LIANTANG_HEUNG YUEN WAI BOUNDARY CONTROL POINT SITE FORMATION	<i>Quote number</i>	: ----	<i>Date received</i>	: 12-FEB-2014
<i>Order number</i>	: ----			<i>Date of issue</i>	: 17-FEB-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 6
<i>Site</i>	: ----				- Analysed : 6

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1404222 supersedes any previous reports with this reference. The completion date of analysis is 13-FEB-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1404222 : 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.
Sample(s) were received in a chilled condition.
Water sample(s) analysed and reported on an as received basis.

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



Analytical Results

Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
C3A-1	[12-FEB-2014]	HK1404222-001	17				
C3A-2	[12-FEB-2014]	HK1404222-002	15				
C3B-1	[12-FEB-2014]	HK1404222-003	7				
C3B-2	[12-FEB-2014]	HK1404222-004	6				
I5-1	[12-FEB-2014]	HK1404222-005	4				
I5-2	[12-FEB-2014]	HK1404222-006	4				



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3293078)								
HK1404024-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
HK1404065-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	10	11	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 3293079)								
HK1404222-003	C3B-1	EA025: Suspended Solids (SS)	----	2	mg/L	7	7	0.0
HK1404224-007	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	11	11	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER			Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 3293078)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	99.0	----	87	111	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 3293079)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	98.5	----	87	111	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO. : 14020419
DATE OF ISSUE : 18 February 2014 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Received Date : 14 Feb 2014
Testing Period : 14 Feb 2014 to 18 Feb 2014

3. Test Methods

Parameters	Reference Methods	LOD ^a
Total Suspended Solids (TSS)	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	3.7	mg/L
C3a-2	002	TSS	4.0	mg/L
C3b-1	003	TSS	7.3	mg/L
C3b-2	004	TSS	9.5	mg/L
IS-1	005	TSS	3.9	mg/L
IS-2	006	TSS	3.4	mg/L


--- END OF REPORT ---

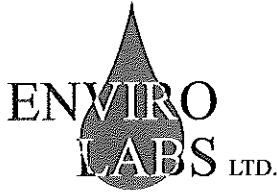
^a LOD denotes Limit of detection

^b APHA Standard Methods for the Examination of Water and Wastewater

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO. : 14020479
DATE OF ISSUE : 20 February 2014
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Received Date : 17 Feb 2014
Testing Period : 17 Feb 2014 to 19 Feb 2014

3. Test Methods

Parameters	Reference Methods	LOD ^a
Total Suspended Solids (TSS)	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	48	mg/L
C3a-2	002	TSS	42	mg/L
C3b-1	003	TSS	21	mg/L
C3b-2	004	TSS	25	mg/L
IS-1	005	TSS	41	mg/L
IS-2	006	TSS	36	mg/L


--- END OF REPORT ---

^a LOD denotes Limit of detection

^b APHA Standard Methods for the Examination of Water and Wastewater

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO. : 14020534
DATE OF ISSUE : 25 February 2014
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Sampling Date^a : 19 Feb 2014
Received Date : 20 Feb 2014
Testing Period : 20 Feb 2014 to 24 Feb 2014

3. Test Methods

Parameters	Reference Methods	LOD ^b
Total Suspended Solids (TSS)	APHA ^c 17e 2540 D	2.5 mg/L

4. Test Results^d

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	<3.1	mg/L
C3a-2	002	TSS	<3.1	mg/L
C3b-1	003	TSS	16	mg/L
C3b-2	004	TSS	16	mg/L
IS-1	005	TSS	5.3	mg/L
IS-2	006	TSS	5.1	mg/L

--- END OF REPORT ---

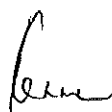
^a Information provided by the customer

^b LOD denotes Limit of detection

^c APHA Standard Methods for the Examination of Water and Wastewater

^d Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO.	: 14020669	PAGE	: Page 1 of 1
DATE OF ISSUE	: 26 February 2014		

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Sampling Date^a : 21 Feb 2014
Received Date : 21 Feb 2014
Testing Period : 21 Feb 2014 to 25 Feb 2014

3. Test Methods

Parameters	Reference Methods	LOD ^b
Total Suspended Solids (TSS)	APHA ^c 17e 2540 D	2.5 mg/L

4. Test Results^d

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	15	mg/L
C3a-2	002	TSS	12	mg/L
C3b-1	003	TSS	16	mg/L
C3b-2	004	TSS	16	mg/L
IS-1	005	TSS	11	mg/L
IS-2	006	TSS	10	mg/L

--- END OF REPORT ---

^a Information provided by the customer

^b LOD denotes Limit of detection

^c APHA Standard Methods for the Examination of Water and Wastewater

^d Test results relate only to the items received

APPROVED SIGNATORY:

Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO. : 14020670
DATE OF ISSUE : 04 March 2014
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) and one paper sample were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Sampling Date^a : 24 Feb 2014
Received Date : 24 Feb 2014
Testing Period : 24 Feb 2014 to 26 Feb 2014

3. Test Methods

Parameters	Reference Methods	LOD ^b
Total Suspended Solids (TSS)	APHA ^c 17e 2540 D	2.5 mg/L

4. Test Results^d

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	15	mg/L
C3a-2	002	TSS	19	mg/L
C3b-1	003	TSS	8.2	mg/L
C3b-2	004	TSS	6.6	mg/L
IS-1	005	TSS	6.2	mg/L
IS-2	006	TSS	6.4	mg/L

--- END OF REPORT ---


^a Information provided by the customer

^b LOD denotes Limit of detection

^c APHA Standard Methods for the Examination of Water and Wastewater

^d Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO. : 14020718
DATE OF ISSUE : 03 March 2014
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Sampling Date^a : 26 Feb 2014
Received Date : 26 Feb 2014
Testing Period : 26 Feb 2014 to 27 Feb 2014

3. Test Methods

Parameters	Reference Methods	LOD ^b
Total Suspended Solids (TSS)	APHA ^c 17e 2540 D	2.5 mg/L

4. Test Results^d

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	15	mg/L
C3a-2	002	TSS	19	mg/L
C3b-1	003	TSS	8.2	mg/L
C3b-2	004	TSS	6.6	mg/L
IS-1	005	TSS	6.2	mg/L
IS-2	006	TSS	6.4	mg/L

--- END OF REPORT ---


^a Information provided by the customer

^b LOD denotes Limit of detection

^c APHA Standard Methods for the Examination of Water and Wastewater

^d Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm 611-612, Hong Leong Plaza, 33 Lok Yip Rd, Fanling, NT, HK
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO. : 14020809
DATE OF ISSUE : 04 March 2014 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Flat 6, 3/F., Block E,
Wah Lok Industrial Centre,
31-35 Shan Mei Street, Shatin, N.T.
Attn: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water sample(s) were submitted by the customer and received at the laboratory in cool condition.
Sampling : Conducted by the customer
Sampling Date^a : 28 Feb 2014
Received Date : 28 Feb 2014
Testing Period : 28 Feb 2014 to 03 Mar 2014

3. Test Methods

Parameters	Reference Methods	LOD ^b
Total Suspended Solids (TSS)	APHA ^c 17e 2540 D	2.5 mg/L

4. Test Results^d

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
C3a-1	001	TSS	22	mg/L
C3a-2	002	TSS	23	mg/L
C3b-1	003	TSS	14	mg/L
C3b-2	004	TSS	24	mg/L
I5-1	005	TSS	9.8	mg/L
I5-2	006	TSS	12	mg/L

--- END OF REPORT ---

^a Information provided by the customer

^b LOD denotes Limit of detection

^c APHA Standard Methods for the Examination of Water and Wastewater

^d Test results relate only to the items received

APPROVED SIGNATORY:

Kenneth, Kar-kin LAM
Senior Lab. Manager

Appendix J

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 5/2/2014 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		83.3		22.3		<0.1		9			
			20.6		7.9		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		87.4		23.3		<0.1		5			
			20.9		7.9		104.5		24.7		<0.1		9			
I5	13:47	<0.5	20.9	20.9	7.9	7.9	9.3	9.3	104.5	104.5	23.3	24.0	<0.1	<0.1	9	9.5
			20.9		7.9		9.3		104.4		23.3		<0.1		10	

Date of Monitoring 7/2/2014 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		82.2		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 10/2/2014 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
			13.2		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 12/2/2014 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 14/2/2014 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	3.85
			11.7		7.8		9.2		84.6		24.3		<0.1		4	
C3b	9:47	<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	3.65
			12.1		7.7		8.7		81		26.1		<0.1		3.4	

Date of Monitoring 17/2/2014 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 19/2/2014 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	<3
			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 21/2/2014 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	

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

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 24/2/2014 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	
			20.4		8.1		7.5		83.6		26.6		<0.1		7.8	
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	6.6	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	
			20.1		7.7		7.6		83.5		28.1		<0.1		6.5	

Date of Monitoring 26/2/2014 Weather : Fine

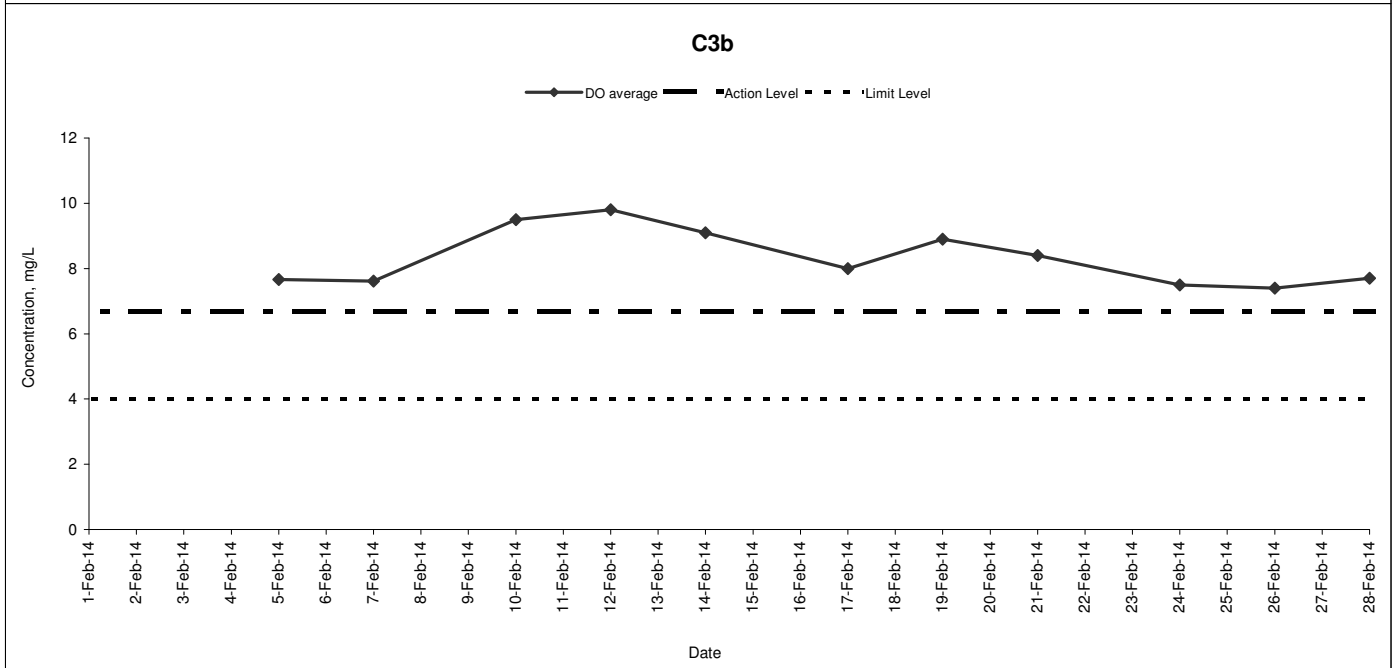
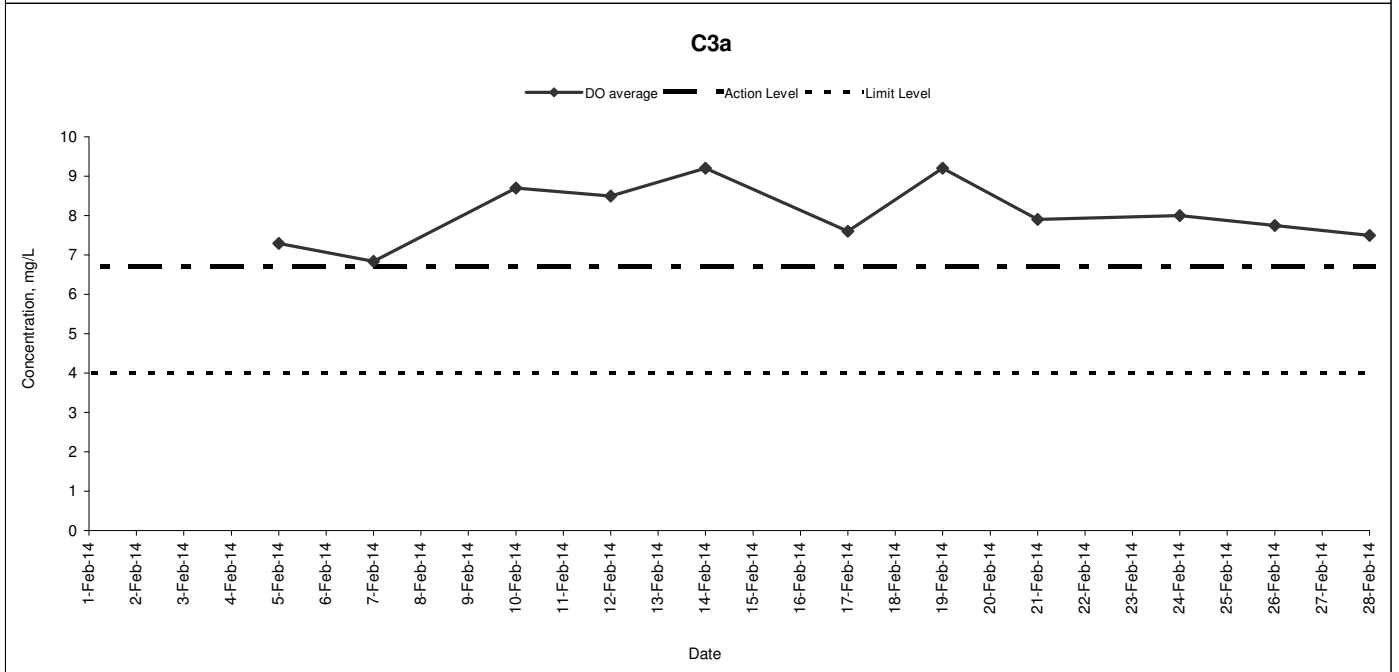
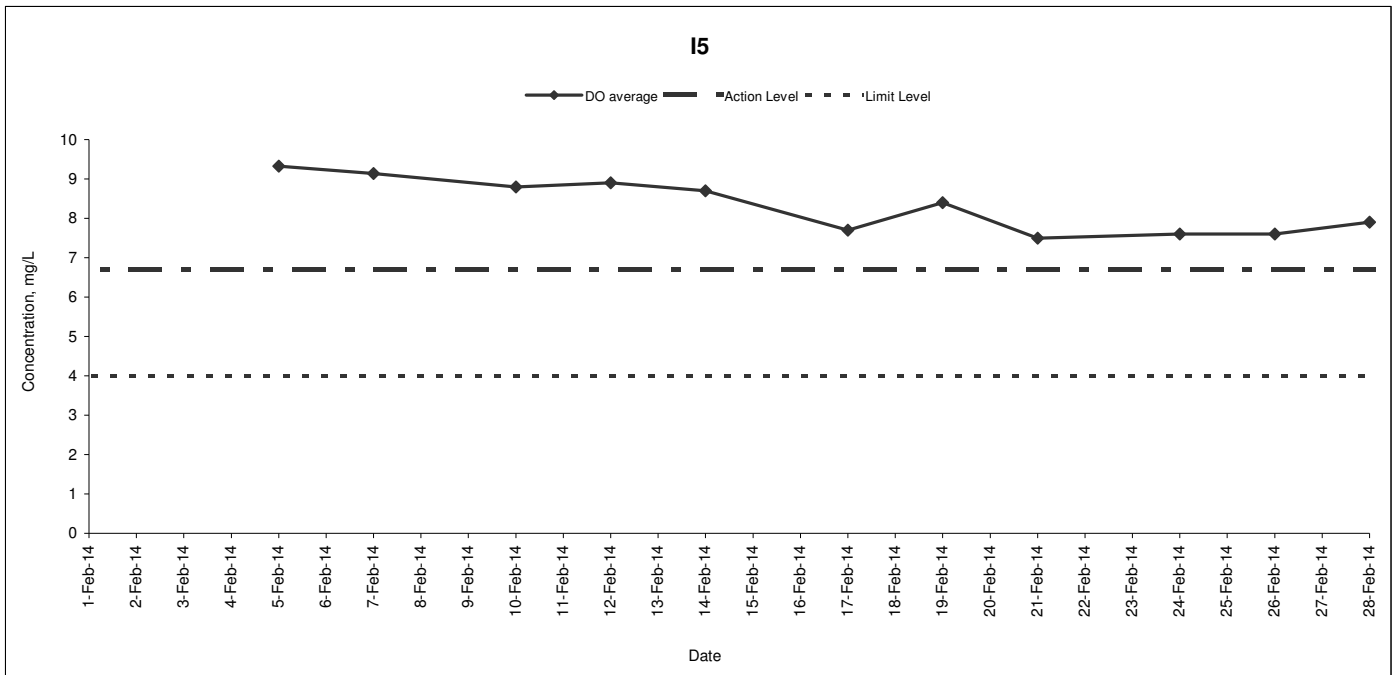
Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:04	<0.5	20.2	20.2	7.8	7.8	7.7	7.8	85.2	85.9	17.2	17.2	<0.1	<0.1	15	17
			20.2		7.8		7.8		86.6		17.2		<0.1		19	
			19.9		8		7.4		81.5		18.1		<0.1		8.2	
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	6.6	7.4
			19.9		8		7.4		81.5		18.1		<0.1		6.6	
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		6.4	
			19.7		7.7		7.6		83.7		17.9		<0.1		6.4	

Date of Monitoring 28/2/2014 Weather : Fine

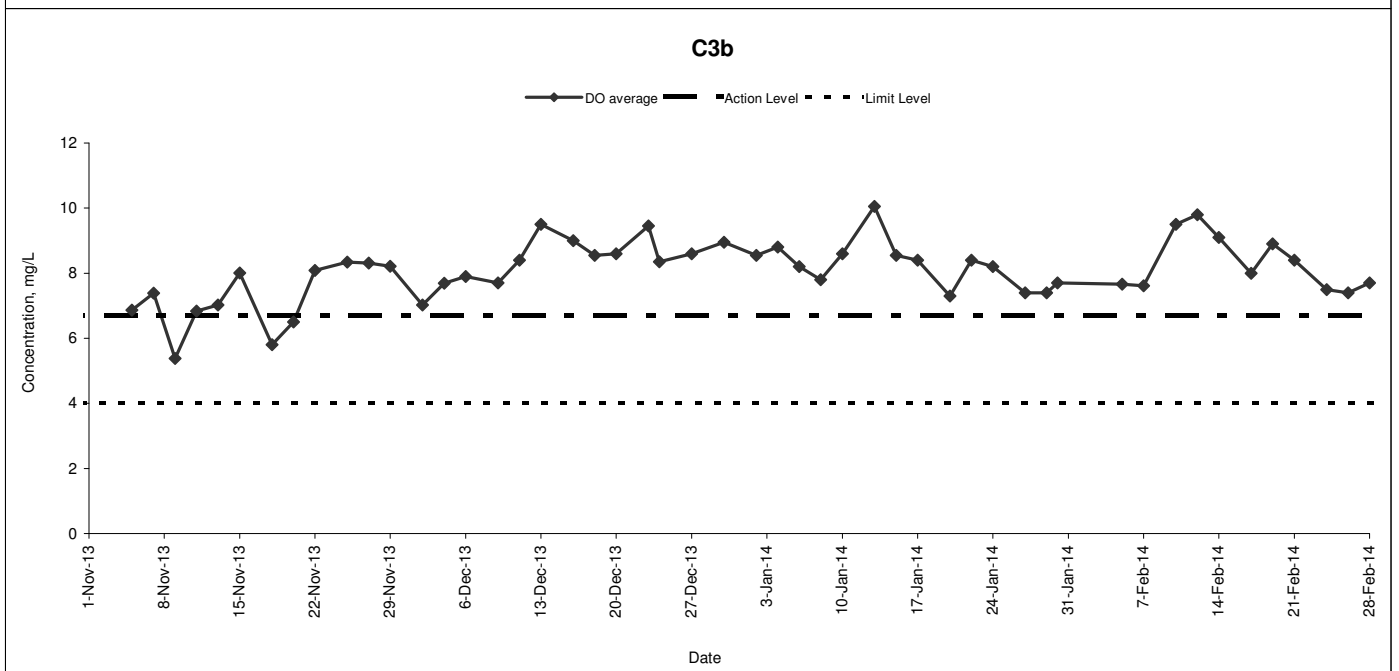
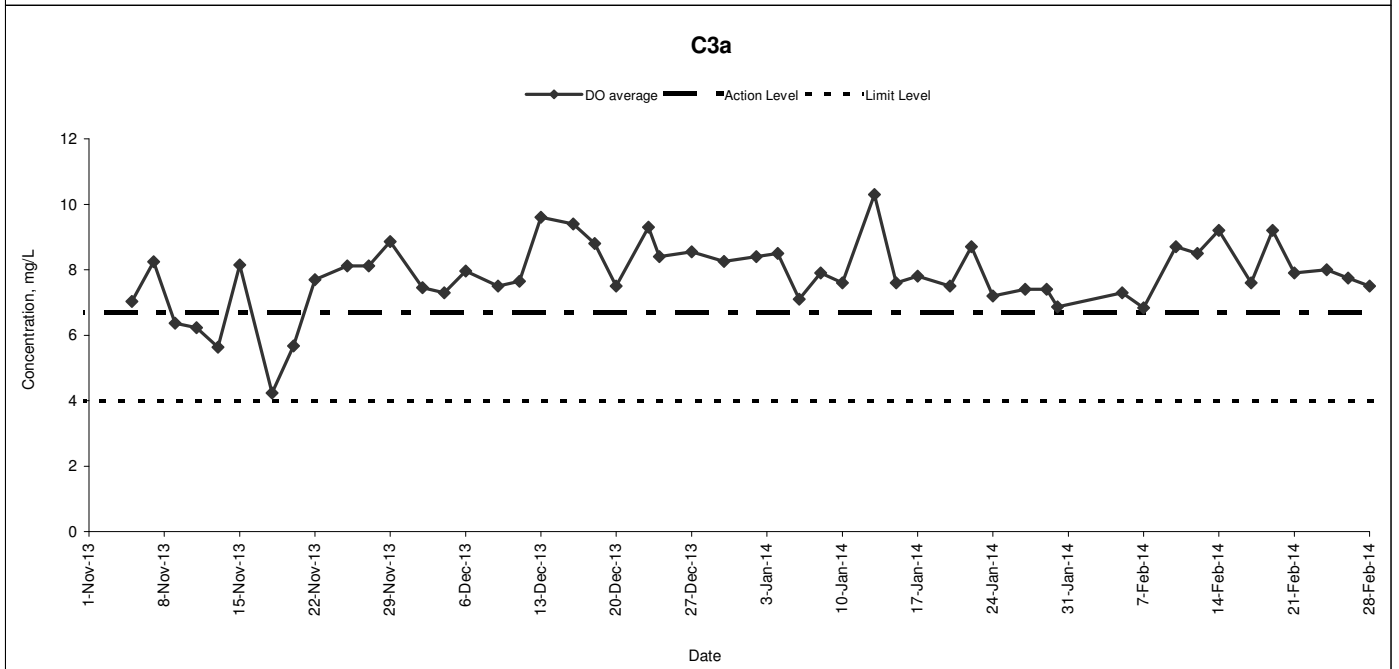
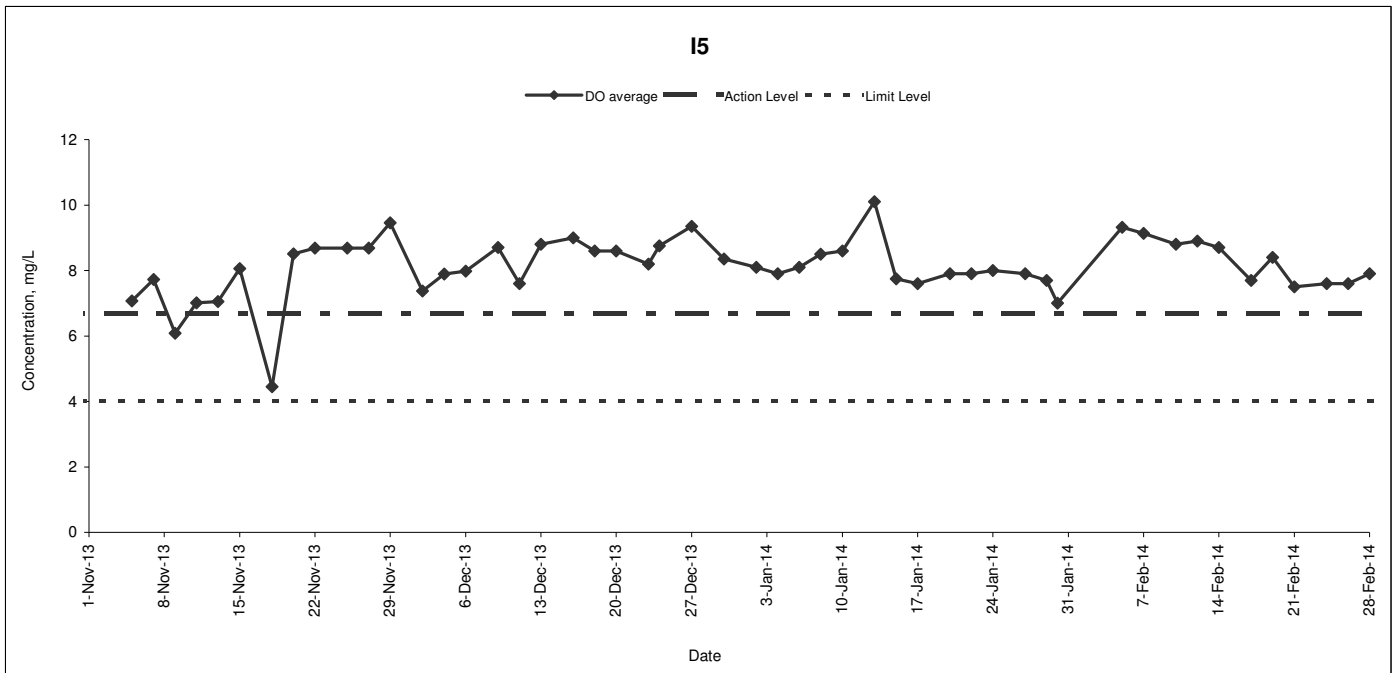
Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:48	<0.5	19.5	19.5	7.8	7.8	7.5	7.5	81.6	81.6	27.7	27.7	<0.1	<0.1	22	22.5
			19.5		7.8		7.5		81.6		27.7		<0.1		23	
			19.2		8		7.6		82.2		33.4		<0.1		14	
C3b	11:21	<0.5	19.2	19.2	8	8.0	7.6	7.7	83.1	83.1	33.4	33.4	<0.1	<0.1	24	19
			19.2		8		7.8		83.9		33.4		<0.1		24	
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		12	
			18.9		7.7		7.9		84.7		30.1		<0.1		12	

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

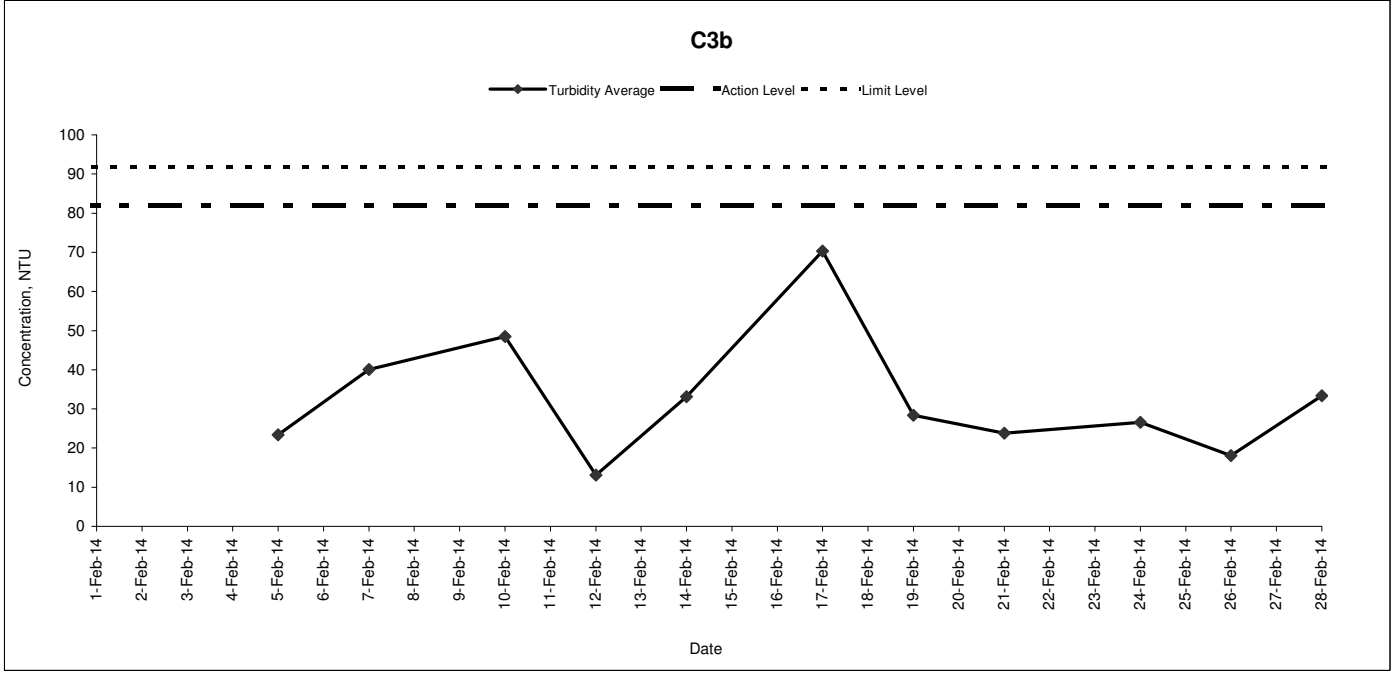
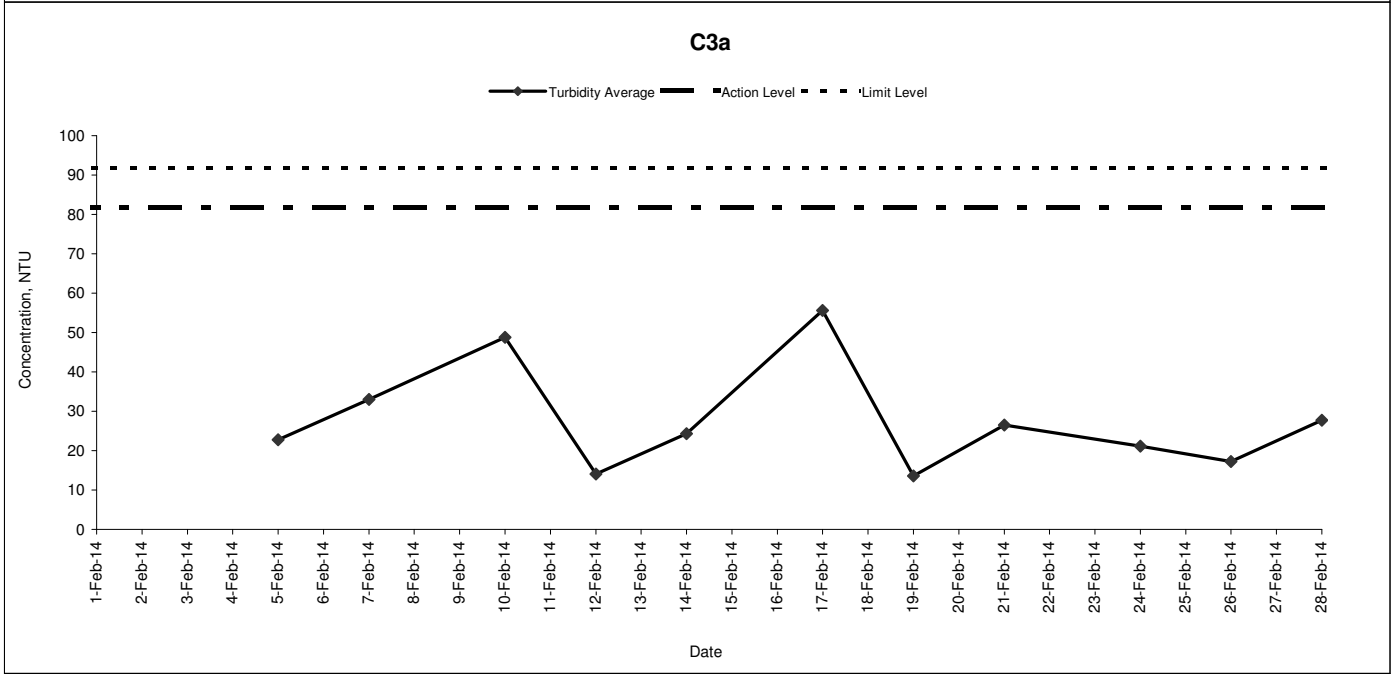
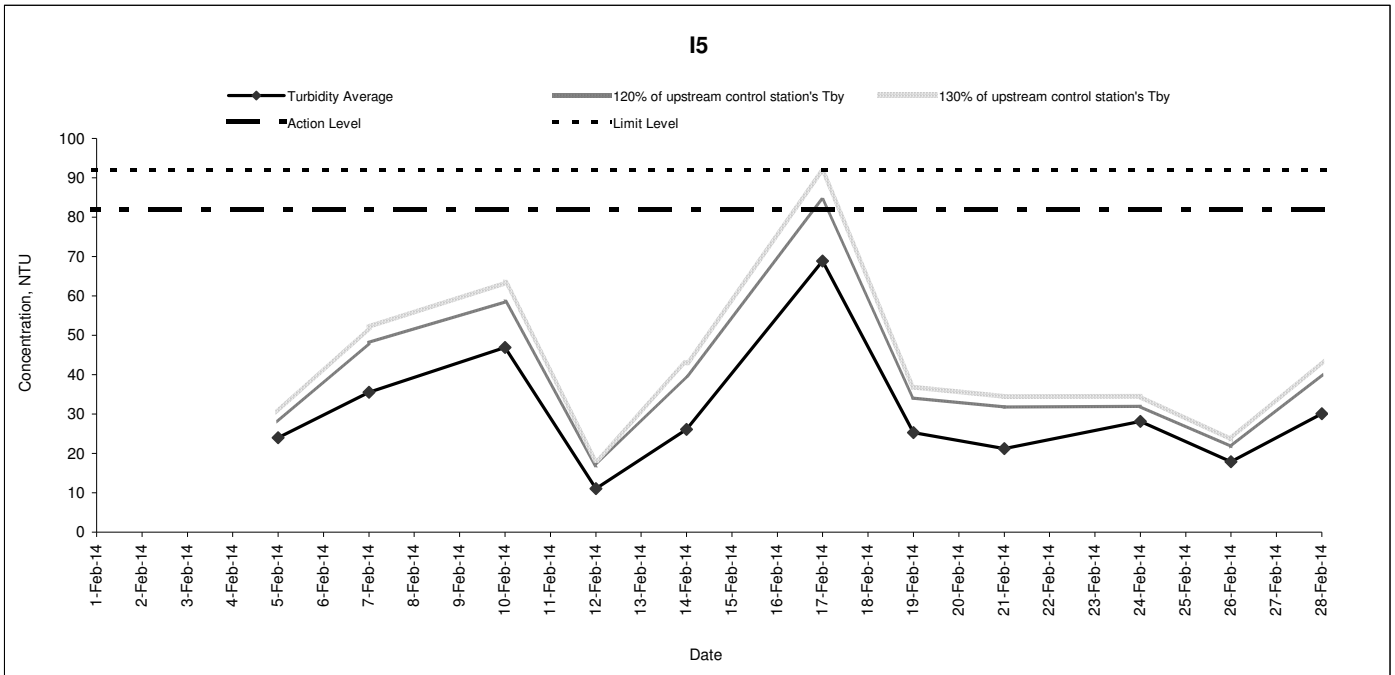
Dissolved Oxygen



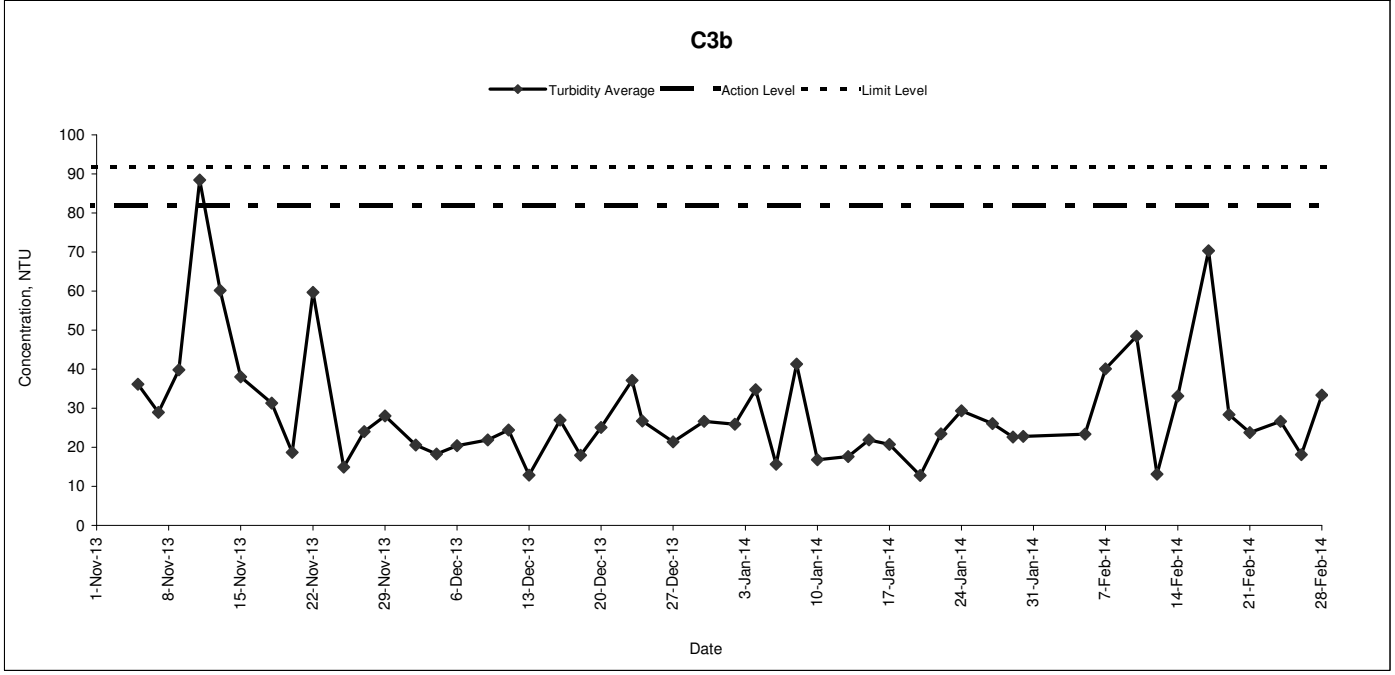
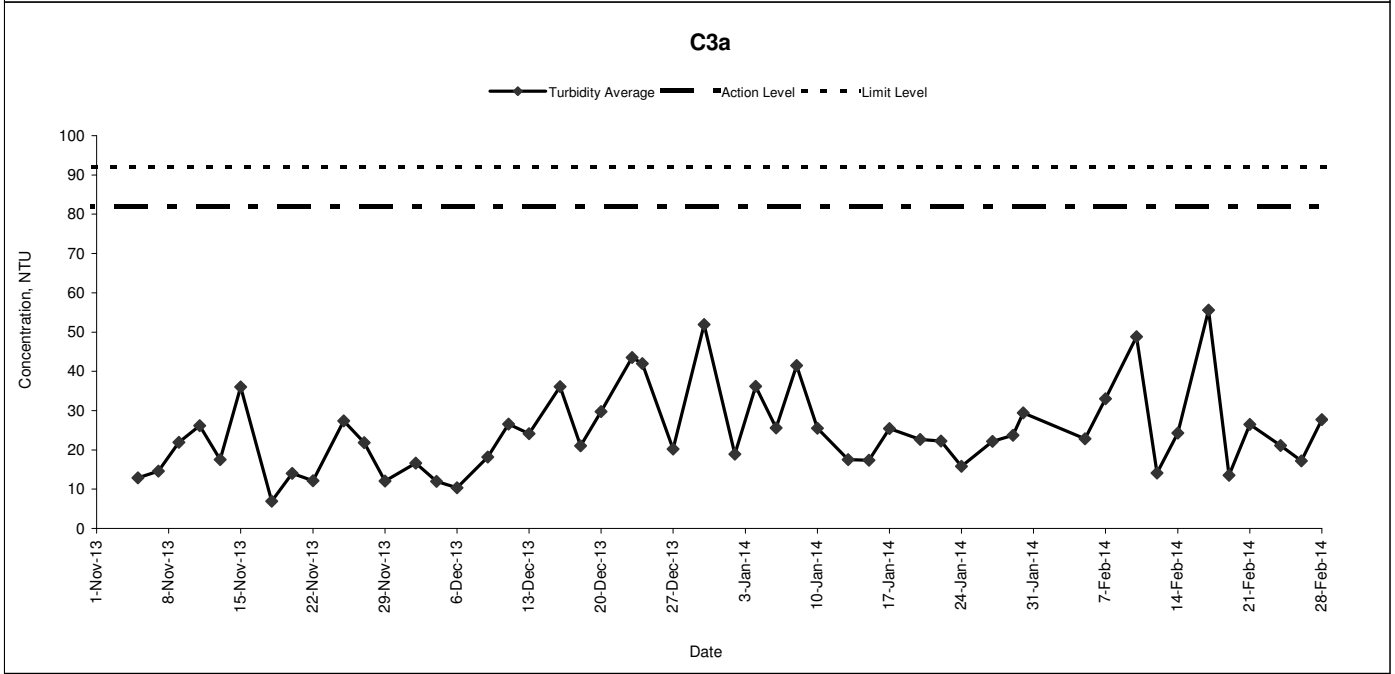
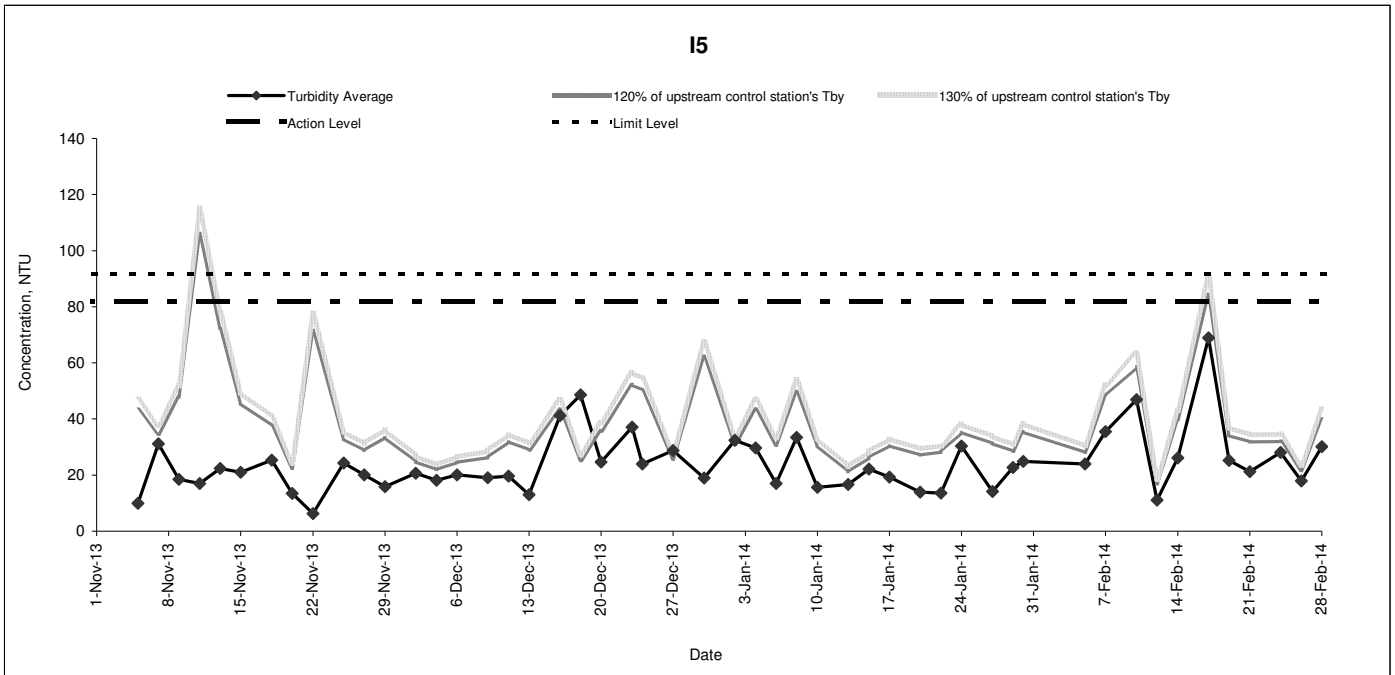
Dissolved Oxygen (November 2013 - February 2014)



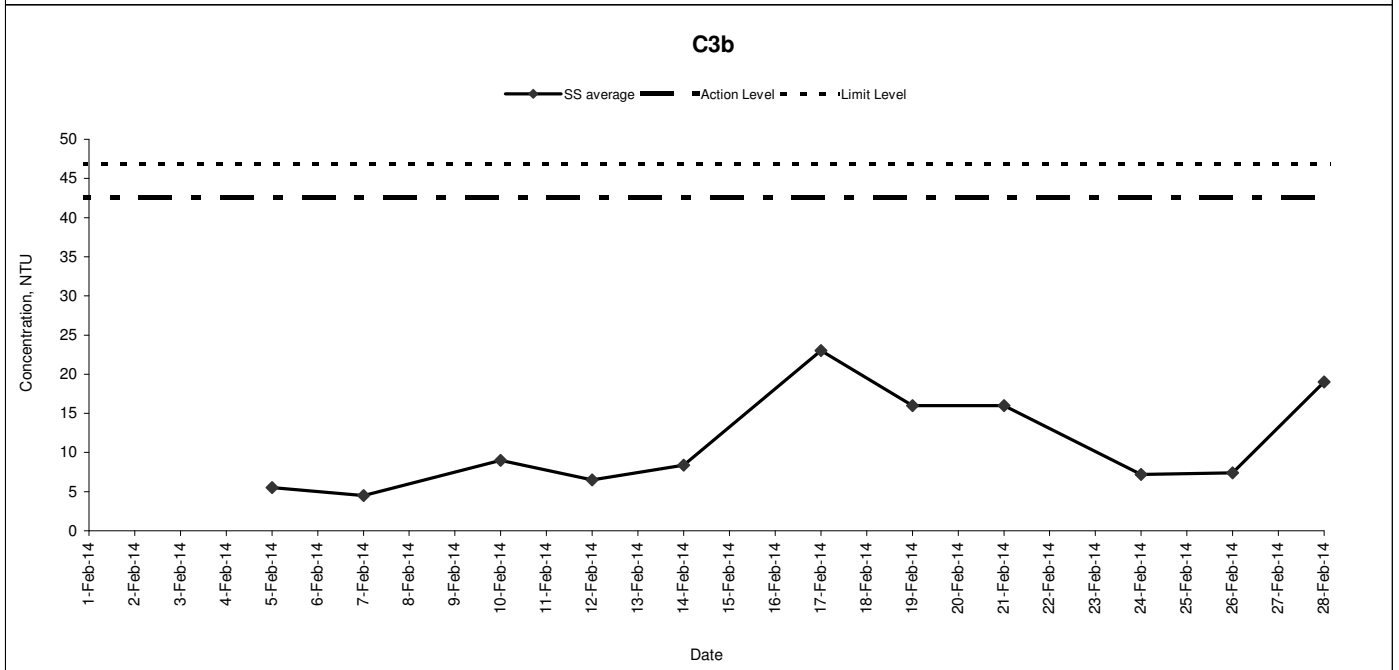
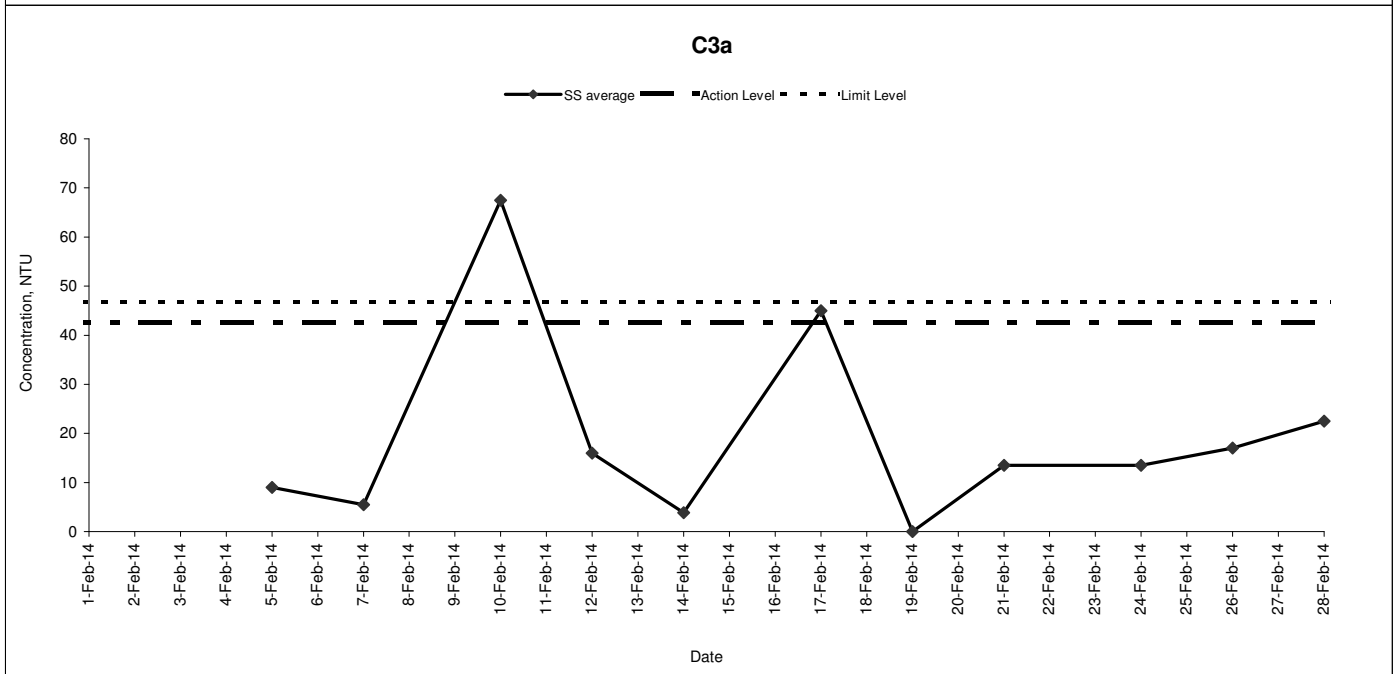
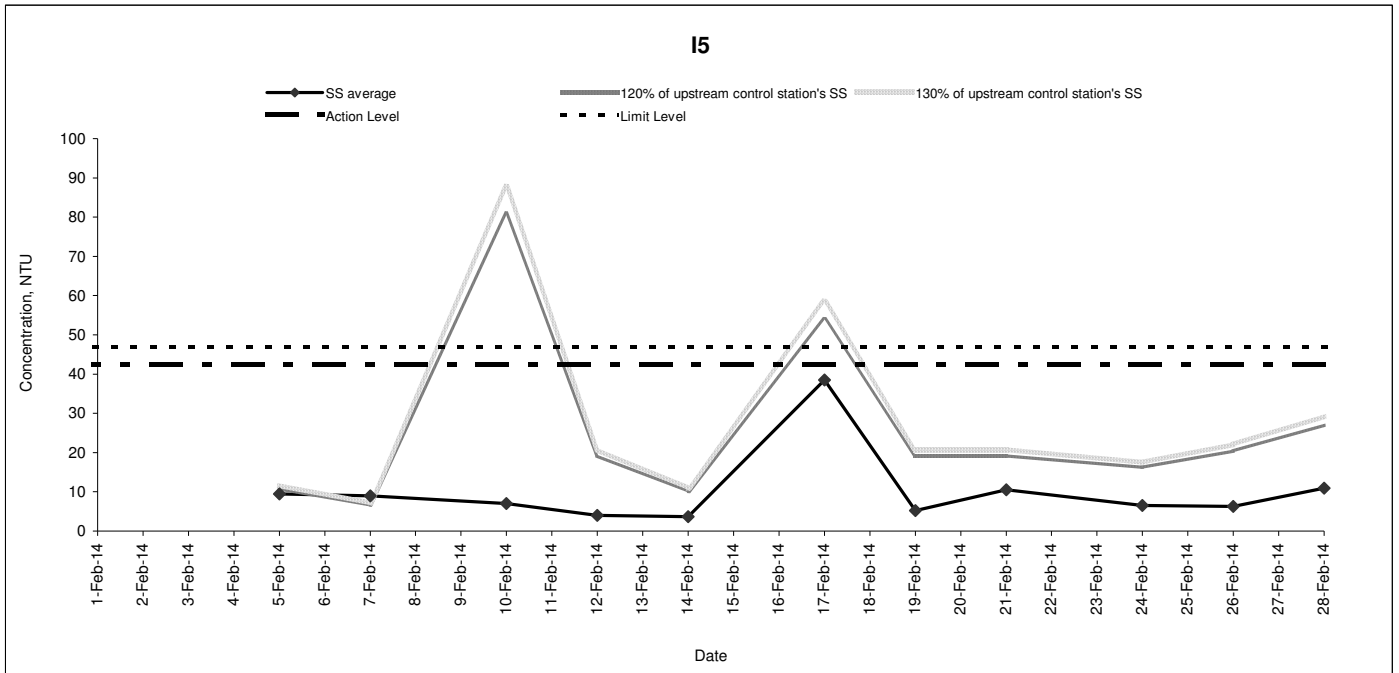
Turbidity



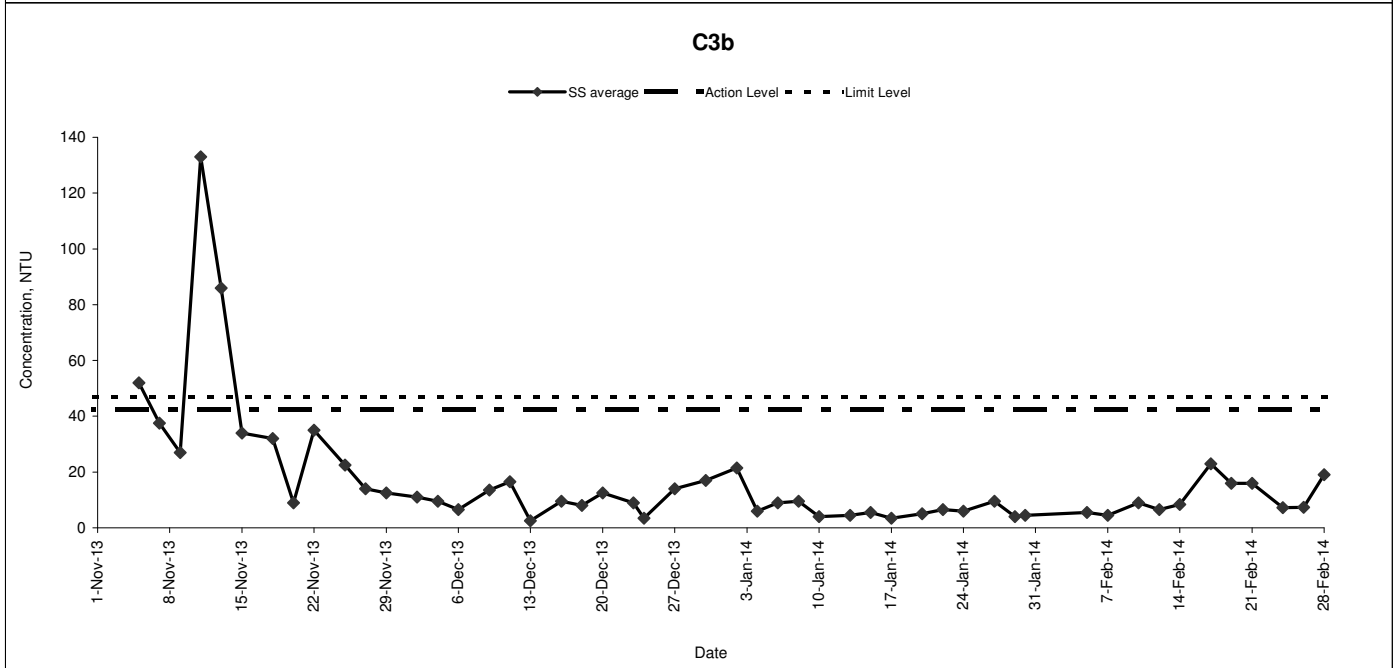
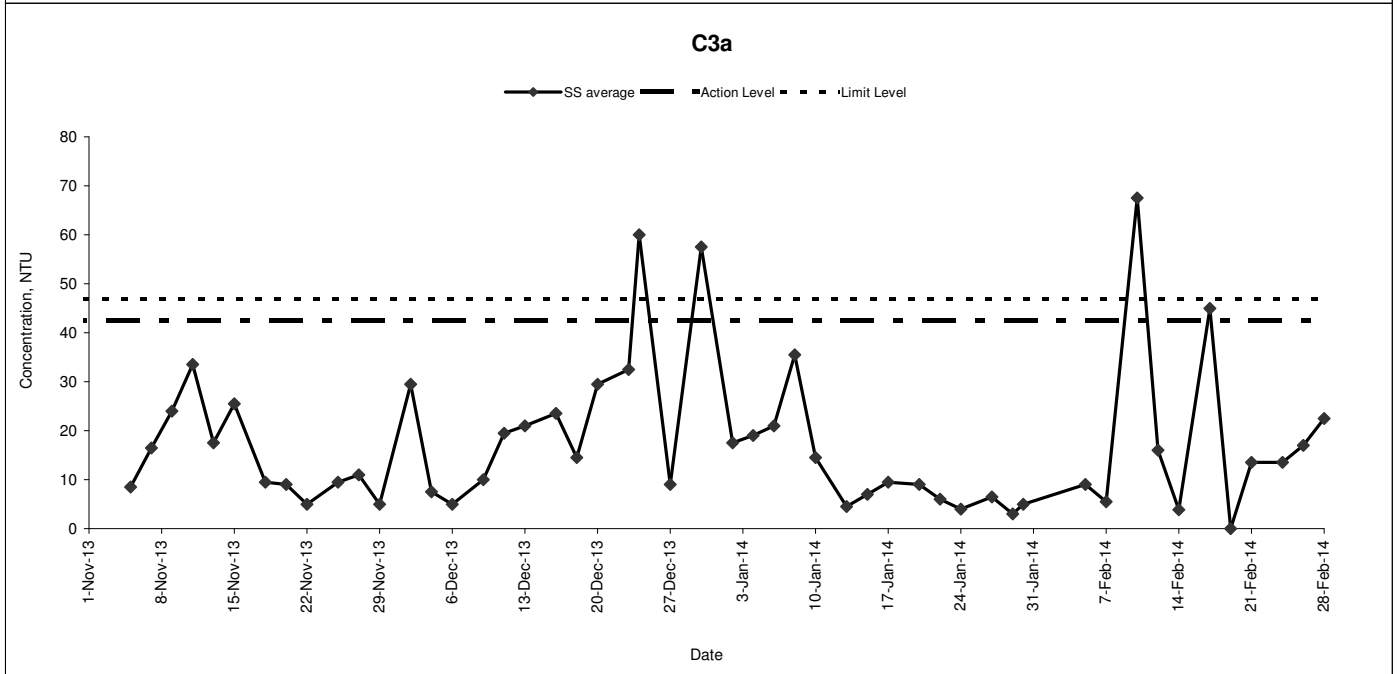
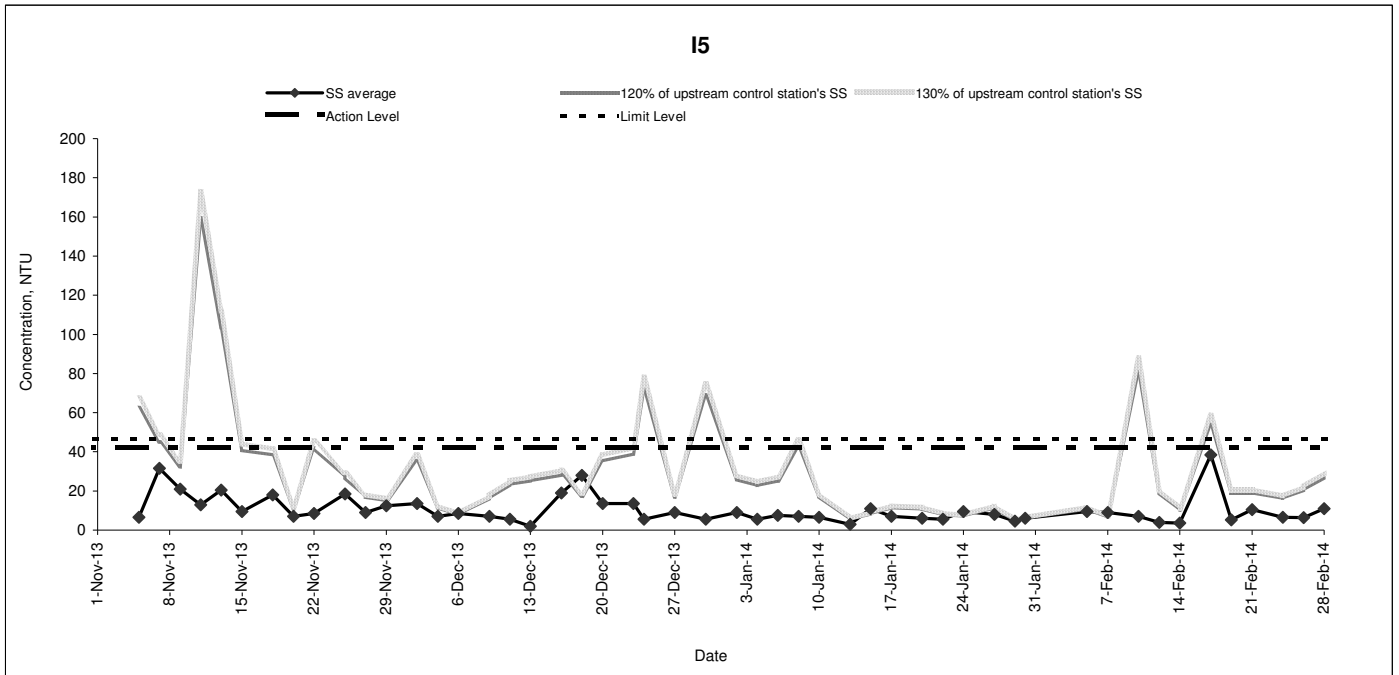
Turbidity (November 2013 - February 2014)



Suspended Solid



Suspended Solid (November 2013 - February 2014)



Appendix K Waste Flow Table

Appendix K Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Soil	Soil Reused in the Contract	Soil Reused in other Projects	Soil Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging (Note 3)	Plastics	Chemical Waste	General Refuse (Note 2)
Unit	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Jul-13	-	-	-	-	-	-	-	-	-	-	-	-
Aug-13	-	-	-	-	-	-	-	-	-	-	-	-
Sep-13	-	-	-	-	-	-	-	-	-	-	-	0.004
Oct-13	-	-	-	-	-	-	-	-	-	-	-	0.003
Nov-13	1.351	-	1.351	0.473	-	0.878	-	-	-	-	-	0.055
Dec-13	0.177	0.007	0.170	0.030	-	0.140	0.600	-	-	-	-	0.055
Sub-Total	1.528	0.007	1.521	0.503	-	1.018	0.600	-	-	-	-	0.117
Jan-14	0.493	0.084	0.409	-	-	0.409	0.200	-	-	0.010	-	0.110
Feb-14	2.209	0.356	1.853	0.380	-	1.473	-	0.002	-	-	0.019	0.040
Mar-14	-	-	-	-	-	-	-	-	-	-	-	-
Apr-14	-	-	-	-	-	-	-	-	-	-	-	-
May-14	-	-	-	-	-	-	-	-	-	-	-	-
Jun-14	-	-	-	-	-	-	-	-	-	-	-	-
Total	4.230	0.447	3.783	0.883	-	2.900	0.800	0.002	-	0.010	0.019	0.267

- Note:
1. Assume the density of soil fill is 2 ton/m3.
 2. Assume the density of rock and broken concrete is 2.5 ton/m3.
 3. Assume each truck of C&D wastes is 5m3.
 4. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38.
 5. The slurry and bentonite are disposed at Tseung Kwun O 137.
 6. The non-inert C&D wastes are disposed at NENT.

Appendix L Implementation Schedule of Environmental Mitigation Measures (EMIS)

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
Air Quality				
Air Quality during Construction	<ul style="list-style-type: none"> Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading. All stockpiles of excavated materials or spoil of more than 50m³ shall be enclosed, covered or dampened during dry or windy conditions. Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas. All spraying of materials and surfaces shall avoid excessive water usage. 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. Materials shall be dampened, if necessary, before transportation. Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks. Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads. 	During Construction	Contractor	✓ Obs Rem ✓ ✓ ✓ ✓ ✓
Air Quality during Operation	Not required	N/A	N/A	N/A
Noise				
Noise during Construction	<ul style="list-style-type: none"> Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant. Reduce the number of equipment and their percentage on-time. 	During Construction	Contractor	✓ ✓
Noise during Operation	Not required	N/A	N/A	N/A
Water Quality				
Water Quality during Construction	<u>Road Widening Works, Earthworks and Culvert Extension Works</u> <ul style="list-style-type: none"> 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. 	During Construction	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"> • Segregation of materials to facilitate disposal. • Appropriate stockpile management. <p><u>Excavated Materials</u></p> <ul style="list-style-type: none"> • Segregation of materials to facilitate disposal / reuse. • Appropriate stockpile management. • Re-use of excavated material on or off site (where possible). • Special handling and disposal procedures in the event that contaminated materials are excavated. <p><u>Construction Wastes</u></p> <ul style="list-style-type: none"> • Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). • Appropriate stockpile management. • Planning to reduce over ordering and waste generation. • Recycling and re-use of materials where possible (e.g. metal, wood from formwork) • For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal. <p><u>Bentonite Slurries</u></p> <ul style="list-style-type: none"> • Bentonite slurries should be reused as far as possible. • Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94. <p><u>Chemical Wastes</u></p> <ul style="list-style-type: none"> • Storage within locked, covered and bunded area. • The storage area shall not be located adjacent to sensitive receivers e.g. drains. 	<p>During Construction</p> <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>Contractor</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>N/A</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>N/A</p> <p>N/A</p> <p>✓</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"> • Minimise waste production and recycle oils/solvents where possible. • A spill response procedure shall be in place and absorption material available for minor spillages. • Use appropriate and labelled containers. • Educate site workers on site cleanliness/waste management procedures. • If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. • The chemical wastes shall be collected by a licensed chemical waste collector. <p><u>Municipal Wastes</u></p> <ul style="list-style-type: none"> • Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. • Regular, daily collections are required by an approved waste collector. 	During Construction	Contractor	✓ ✓ ✓ ✓ ✓ ✓ Obs ✓
Waste Management during Operation	Not required.	N/A	N/A	N/A
Ecology				
Ecology during Construction	<p><u>Accurate Delineation of Works Area</u></p> <ul style="list-style-type: none"> • Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. • 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. <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"> • vehicle washing facilities to be provided at every discernible or designated vehicle exit point; 	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"> • all temporary site access roads shall be sprayed with water to suppress dust as necessary; • all dusty materials should be sprayed with water immediately prior to any handling; and • all debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area. <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"> • Bund and cover stock piles to avoid run-off; • Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; • All vehicle maintenance to be undertaken within a bunded area; and • Maximise vegetation retention on-site to maximise absorption (minimise transport). 	During Construction	Contractor	✓ ✓ ✓ ✓ N/A ✓
Ecology during Operation	<ul style="list-style-type: none"> • To conduct compensatory ecological planting as specified in the latest landscape plans approved by EPD (Clause 2.6 of the Environmental Permit refers). 	During Construction and operation	Contractor (during construction) / LCS D* (during operation) (Note: * The division of vegetation planting and maintenance responsibilities shall follow the guidelines stipulated in ETWB TCW No. 2/2004.)	N/A
Landscape and Visual				
Landscape and Visual during Construction	<p><u>Preservation of Existing Vegetation</u></p> <ul style="list-style-type: none"> • Trees identified for retention within the project limit would be protected during the works • The tree transplanting and planting works shall be implemented by approved Landscape Contractors 	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></p> <ul style="list-style-type: none"> 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><u>Hoarding</u></p> <ul style="list-style-type: none"> A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs. <p><u>Top Soils</u></p> <ul style="list-style-type: none"> 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><u>Protection of Important Landscape Features</u></p> <ul style="list-style-type: none"> Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected. 	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

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

Appendix M Investigation Report for Exceedances

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

Investigation Report of Environmental Quality Exceedance(s)

Ref. No.: A140222_24TSP

Date	22 February 2014
Time	--
Monitoring Location	SR77
Parameter	24-Hr Total Suspended Particulate
Action / Limit Levels	Action Level: 170.3µg/m ³ Limit Level: 260µg/m ³
Measured Level	185.1µg/m ³ (Action level being exceeded)
Possible reason for the exceedance	<p>It was noticed that there were construction works being undertaken by another Contractor (under Contract No. TP/2010/02) which occurred immediately next to the High Volume Sampler (HVS) of the air quality monitoring station at SR77 (refer to the attached photo).</p> <p>Such works mainly involved excavation of earth materials, operation of excavator (with exhaust emission), handling and moving of earth materials, etc. These construction works are anticipated to cause considerable suspended particulates impact that may lead to high TSP levels as have been measured by our HVS.</p> <p>The construction works are anticipated to be completed by the end of April 2014.</p> <p>Also, the HVS is located close to roadside. When there is traffic, the vehicles may cause disturbance to the nearby open excavation sites, generate dust impact and affect the TSP results recorded by the HVS.</p> <p>On the other hand, the construction works carried out during the monitoring period included backfilling works being carried out at northern side of the site and extension of box culverts, which were at a much farther distance from the air quality monitoring station at SR77 (refer to the attached location plan showing the works activities of the entrusted portion).</p> <p>As such, the exceedance was unlikely due to the construction works of the project.</p>

Action taken / to be taken	<p>As the exceedance was non-project related, no further investigation and specific remedial measure(s) would be recommended for the Entrusted Works.</p> <p>Nevertheless, the following mitigation measures had been implemented on-site for dust suppression:</p> <ol style="list-style-type: none"> 1. Exposed slopes near the river were covered with impervious sheets; 2. Any open stockpile of construction materials were covered with impervious sheet; 3. Sufficient watering was applied along the haul road.
Remarks	-

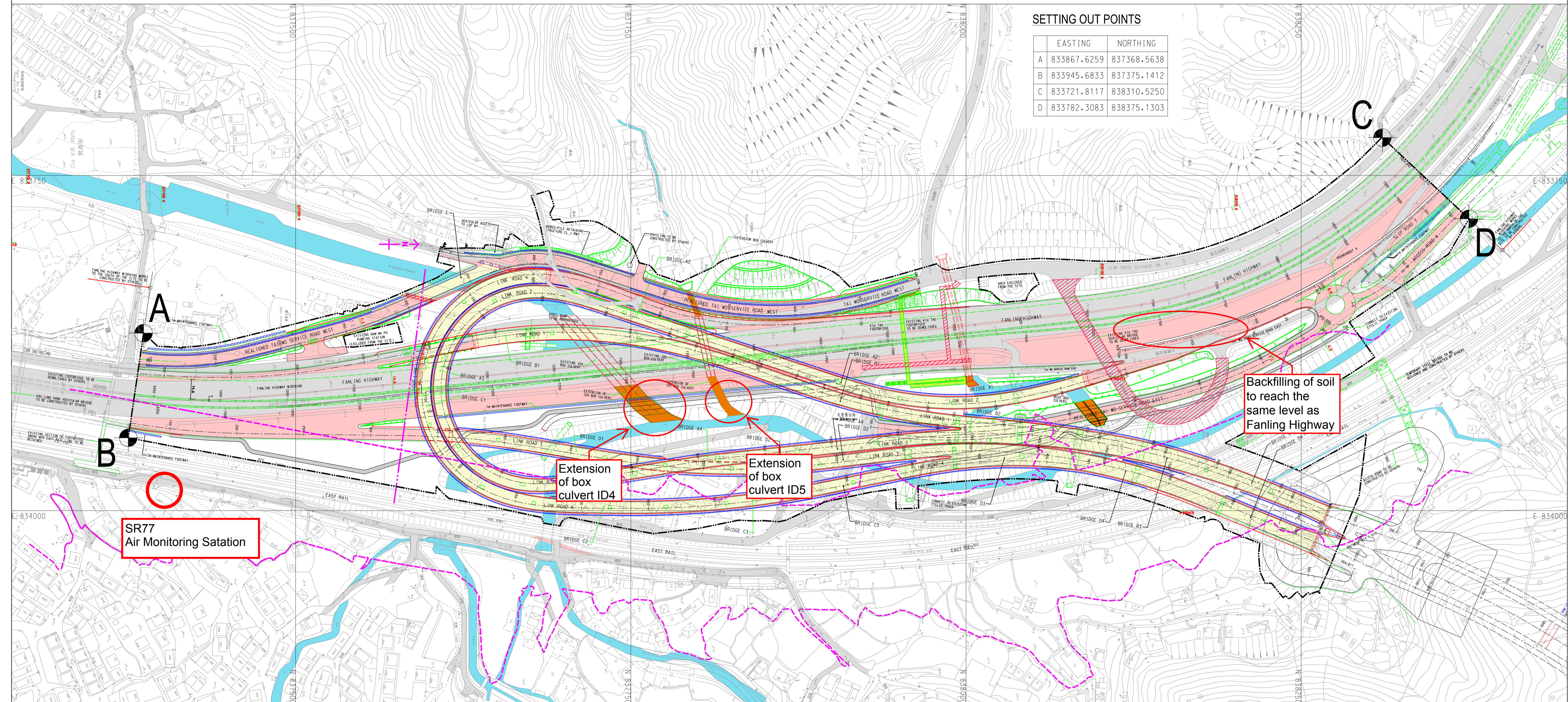
Construction works observed within close proximity of SR77 (Date: 22 February 2014)





SETTING OUT POINTS

	EASTING	NORTHING
A	833867.6259	837368.5638
B	833945.6833	837375.1412
C	833721.8117	838310.5250
D	833782.3083	838375.1303



Backfilling of soil to reach the same level as Fanling Highway

Extension of box culvert ID4

Extension of box culvert ID5

SR77
 Air Monitoring Satation

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

Investigation Report of Environmental Quality Exceedance(s)

Ref. No.: A140228_24TSP

Date	28 February 2014
Time	--
Monitoring Location	SR77
Parameter	24-Hr Total Suspended Particulate
Action / Limit Levels	Action Level: 170.3µg/m ³ Limit Level: 260µg/m ³
Measured Level	221.5µg/m ³ (Action level being exceeded)
Possible reason for the exceedance	<p>It was noticed that there were construction works being undertaken by another Contractor (under Contract No. TP/2010/02) which occurred immediately next to the High Volume Sampler (HVS) of the air quality monitoring station at SR77 (refer to the attached photo).</p> <p>Such works mainly involved excavation of earth materials, operation of excavator (with exhaust emission), handling and moving of earth materials, etc. These construction works are anticipated to cause considerable suspended particulates impact that may lead to high TSP levels as have been measured by our HVS.</p> <p>The construction works are anticipated to be completed by the end of April 2014.</p> <p>Also, the HVS is located close to roadside. When there is traffic, the vehicles may cause disturbance to the nearby open excavation sites, generate dust impact and affect the TSP results recorded by the HVS.</p> <p>On the other hand, the construction works carried out during the monitoring period included backfilling works being carried out at northern side of the site and extension of box culverts, which were at a much farther distance from the air quality monitoring station at SR77 (refer to the attached location plan showing the works activities of the entrusted portion).</p> <p>As such, the exceedance was unlikely due to the construction works of the project.</p>

Action taken / to be taken	<p>As the exceedance was non-project related, no further investigation and specific remedial measure(s) would be recommended for the Entrusted Works.</p> <p>Nevertheless, the following mitigation measures had been implemented on-site for dust suppression:</p> <ol style="list-style-type: none"> 1. Exposed slopes near the river were covered with impervious sheets; 2. Any open stockpile of construction materials were covered with impervious sheet; 3. Sufficient watering was applied along the haul road.
Remarks	-

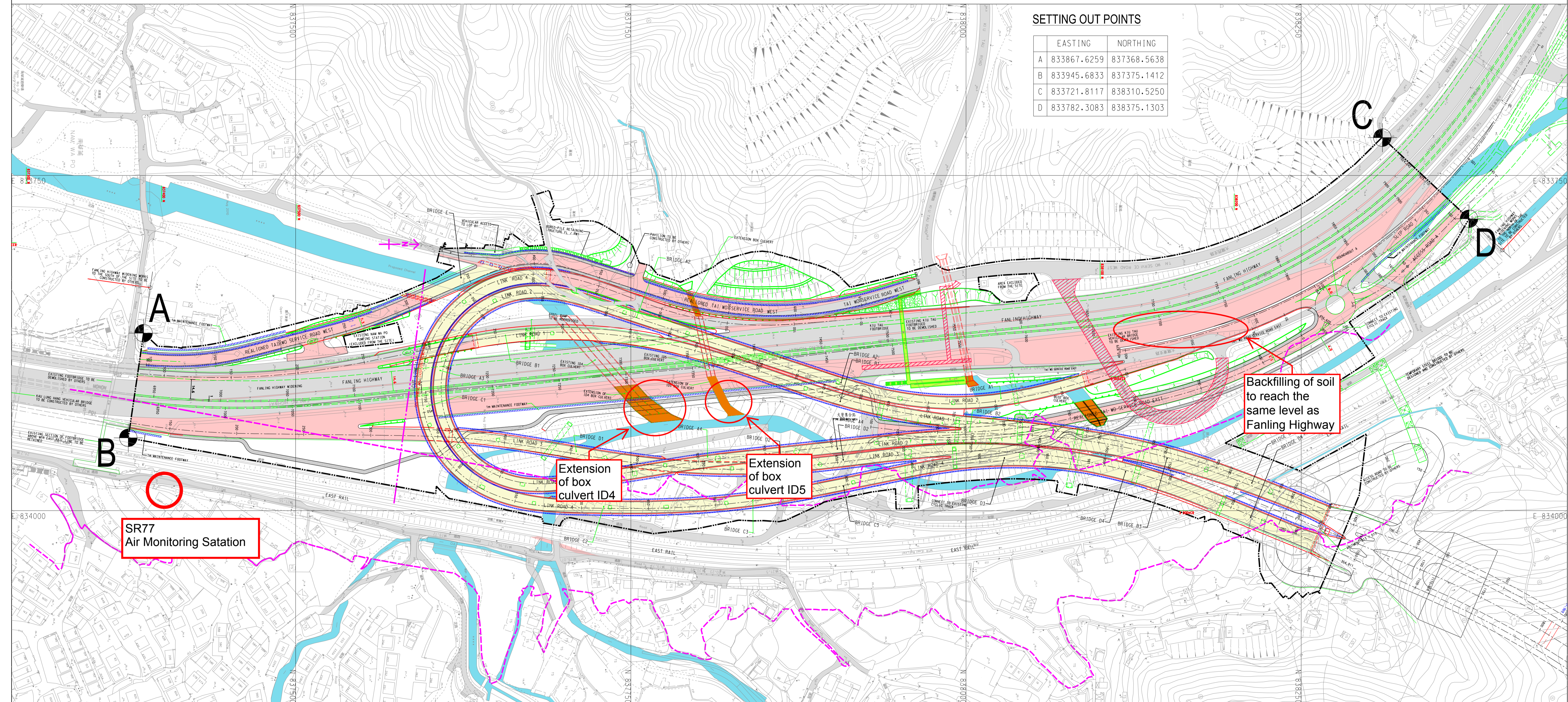
Construction works observed within close proximity of SR77 (Date: 28 February 2014)





SETTING OUT POINTS

	EASTING	NORTHING
A	833867.6259	837368.5638
B	833945.6833	837375.1412
C	833721.8117	838310.5250
D	833782.3083	838375.1303



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

Investigation Report of Environmental Quality Exceedance(s)

Ref. No.: W140207_SS

Date	7 February 2014
Time	--
Monitoring Location	I5
Parameter	Suspended Solids
Action / Limit Levels	Action Level: 42.6 mg/L or 120% of upstream control station's SS of the same day (i.e. 6.6mg/L) Limit Level: 46.8 mg/L or 130% of upstream control station's SS of the same day (i.e. 7.2mg/L)
Measured Level	9mg/L (Limit level being exceeded - 130% of C3a)
Possible reason for the exceedance	<p>Construction within proximity of the river channel is listed as follows:</p> <p><u>Box Culvert ID4</u> (refer to attached photos) - Removal of formworks of outfall</p> <p><u>Box Culvert ID5</u> (refer to attached photos) - Backfilling Bays 2 and 3</p> <p>Construction works at the river stream are properly enclosed by a bund to avoid site runoff. No spillage is identified. (refer to attached photos)</p> <p>Muddy water observed at upstream of C3b during sampling. (refer to attached photos)</p> <p>For comparison, suspended solids levels at C3a and C3b on 7 February 2014 are 5.5mg/L and 4.5mg/L respectively. The results are very low when comparing against the baseline monitoring where the suspended level can be as high as 51mg/L and 88mg/L at C3a and at C3b respectively. Also, recorded suspended solids level at I5 has not exceeded the maximum recorded level of 47mg/L during baseline monitoring and significantly below the absolute action level of 42.6mg/L.</p> <p>As 9mg/L is considered low level, and proper mitigations were fully implemented as a preventive measure to ensure no adverse water quality impact to the river environment, it is unlikely that the</p>

	<p>construction works activities would be the possible sources and reasons of contamination.</p> <p>It is therefore considered that elevation of suspended solids would be due to natural fluctuation.</p>
Action taken / to be taken	<p>As the non-compliance was non-project related, no further investigation and remedial measure(s) would be required.</p> <p>Nonetheless, contractor has been reminded to closely monitor the mitigation measures and ensure no site-runoff into the river channel.</p>
Remarks	-

Construction works at ID4 (7 February 2014)



Construction works at ID5 (7 February 2014)



The construction works are properly protected with sand bags. (Date: 7 February 2014)



Muddy water observed at upstream of C3b. (Date: 7 February 2014)



Appendix N Cumulative 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"> 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. 2) An EM&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. 3) The complaint is considered an invalid complaint under this Project. 	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
www.meinhardtgroup.com