Civil Engineering and Development Department

EP-344/2009 – New Sewage Pumping Stations Serving KTD and
EP-337/2009 – New Distributor Roads Serving the Planned KTD

Contract No. KL/2010/03
Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities

Monthly EM&A Report

February 2014

(Version 1.0)

Approved By	(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

Introduction

1. This is the 28th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2010/03-Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities" (Hereafter referred to as "the Project"). This contract comprises two Schedule 2 designated projects (DPs), namely the new sewage pumping station PS1A serving the planned KTD and the new distributor road D2 serving the planned KTD. The two DPs are part of the designated projects under Environmental Permit No.: EP-344/2009 ("New sewage pumping stations serving Kai Tak Development) and EP-337/2009 ("New distributor roads serving the planned Kai Tak Development") respectively. This report documents the findings of EM&A Works conducted in February 2014.

2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in Table I (see Figure 2 and 3 for their locations).

Table I – Air Quality and Noise Monitoring Stations for this Project

Locations	Monitoring Stations In accordance with EM&A Manual	Alternative Monitoring Stations
Air Quality Monitoring Stations		
AM1 - Rhythm Garden	No	AM1(B) - Contractor Site Office (KL/2012/02)*
AM2 - Lee Kau Yan Memorial School	Yes	N/A
AM6 – Site 1B4 (Planned)	N/A	
Noise Monitoring Stations		
M1 - Buddhist Chi King Primary School	Yes	N/A
M2 - S.K.H. Kowloon Bay Kei Lok Primary School	Yes	N/A
M3 - Cognitio College	Yes	N/A
M4 - Lee Kau Yan Memorial School	Yes	N/A
M9 – Site 1B1 (Planned)	N/A	
M10 – Site 1B4 (Planned)		

Remark:* The Contractor Site Office of KL/2012/02 occupied the same location of previous KL/2008/09 site office of and therefore the location of monitoring station AM1(B) is remain unchanged.

3. According to the Environmental Monitoring and Audit Manual (EM&A Manual) of the Kai Tak Development (KTD) Schedule 3 Environmental Impact Assessment (EIA) Report, the impact monitoring at the designated monitoring stations as required in KTD EM&A Manual under two EPs, have been conducted in Contract No. KLN/2010/04 – Environmental Monitoring Works for Kai Tak Development under Schedule 3 of KTD, which is on-going starting from December 2010. The impact monitoring data under Contract No. KLN/2010/04 will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Contract No. KLN/2010/04.

4. The major site activities undertaken in the reporting month included:
   - Builder's works and E&M works of pumping station PS1A;
   - Surface drainage and ducting construction at pumping station PS1A;
   - Drainage works at Road L4, Road L5 & pedestrian streets;
   - Water supply pipeworks at Road L5;
   - Trimming formation along pedestrian streets;
   - Duct and irrigation pipe laying along pedestrian streets;
   - Construction of Box Culvert at Portions A & N; and
   - Site formation works at Portion I.

Environmental Monitoring Works

5. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

6. Summary of the non-compliance in the reporting month for the Project is tabulated in Table II.

Table II Non-compliance Record for the Project in the Reporting Month

Parameter	No. of Project-related Exceedance		Action Taken
	Action Level	Limit Level	
1-hr TSP	0	0	N/A
24-hr TSP	0	0	N/A
Noise	0	0	N/A

1-hour & 24-hour TSP Monitoring

7. All 1-hour & 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Environmental Permits No. EP-344/2009 and EP-337/2009 were issued on 23 April 2009.

10. Registration of Chemical Waste Producer (License: 5213-286-P1079-04).

11. Water Discharge License (License No.: WT00011274-2011 and WT00011276-2011).

12. Construction Noise Permit (License No.: GW-RE0865-13 and GW-RE0165-14).

Key Information in the Reporting Month

13. Summary of key information in the reporting month is tabulated in Table III.

Table III Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Reporting Changes	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues

14. The future key environmental issues in the coming month include:
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Water spraying for dust generating activity and on haul road;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks; and
- Review and implementation of temporary drainage system for the surface runoff.

1. INTRODUCTION

Background

1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 2 infrastructure works at North Apron Area of Kai Tak Airport for Public Housing and Government Office Developments is one of the construction stages of KTD. It contains various Schedule 2 DPs including new distributor roads serving the planned KTD and new sewage pumping stations serving the planned KTD. The general layout of the Project is shown in **Figure 1.**

1.2 Two Environmental Permits (EPs) No. EP-344/2009 and EP-337/2009 were also issued on 23 April 2009 for new sewage pumping stations serving the planned KTD and new distributor roads serving the planned KTD respectively to Civil Engineering and Development Department as the Permit Holder.

1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.

1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Peako Engineering Co., Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2010/03 - Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities. The construction work under KL/2010/03 comprises the construction of Road D2 & Sewage Pumping Station PS1A which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).

1.5 Cinotech Consultants Limited was commissioned by Peako Engineering Co., Ltd. to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract was on 24th October 2011 for Sewage Pumping Station PS1A. This is the 28th Monthly EM&A report summarizing the EM&A works for the Project in February 2014.

Project Organizations

1.6 Different parties with different levels of involvement in the project organization include:

- Project Proponent – Civil Engineering and Development Department (CEDD).
- The Engineer and the Engineer's Representative (ER) – Ove Arup & Partners (ARUP).
- Environmental Team (ET) – Cinotech Consultants Limited (CCL).
- Independent Environmental Checker (IEC) – EDMS Consultants Ltd. (EDMS).
- Contractor – Peako Engineering Co., Ltd. (Peako).

1.7 The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Alfred Lee	Engineer	2301 1449	2301 1277
ARUP	Engineer's Representative	Mr. Keith Cheung	SRE	2756 8132	2756 8236
		Ms. Gloria Kwok	RE		
Cinotech	Environmental Team	Dr. Priscilla Choy	Environmental Team Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
EDMS	Independent Environmental Checker	Mr. Adi Lee	Independent Environmental Checker	2230 7165	3007 8556
Peako	Contractor	Mr. C.P. Lam	Project Manager	27730511	

Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- Builder's works and E&M works of pumping station PS1A;
- Surface drainage and ducting construction at pumping station PS1A;
- Drainage works at Road L4, Road L5 & pedestrian streets;
- Water supply pipeworks at Road L5;
- Trimming formation along pedestrian streets;
- Duct and irrigation pipe laying along pedestrian streets;
- Construction of Box Culvert at Portions A & N; and
- Site formation works at Portion I.

1.9 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in Table 1.2.

Table 1.2 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Section 1.8	Noise, dust impact, water quality and waste generation	Sufficient watering of the works site with active dust emitting activities; Properly cover the stockpiles; On-site waste sorting and implementation of trip ticket system Appropriate desilting/sedimentation devices provided on site for treatment before discharge; Use of quiet plant and well-maintained construction plant; Provide movable noise barrier; Provide sufficient mitigation measures as recommended in Approved EIA

		Report/Lease requirement.

Summary of EM&A Requirements

1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the two EPs.

1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

1.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project in February 2014.

2. AIR QUALITY

Monitoring Requirements

2.1 According to EM&A Manual under the two EPs, 1-hour and 24-hour TSP monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 Three designated monitoring stations were selected for air quality monitoring programme. Impact dust monitoring was conducted at two air quality monitoring stations, Contractor Site Office (KL/2012/02) AM1(B) (1), Lee Kau Yan Memorial School (AM2) in the reporting month. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Stations	Locations	Location of Measurement
AM1(B)	Contractor Site Office (KL/2012/02)(1)	Ground Floor Area
AM2	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
#AM6	PA 15	Site 1B4 (Planned)

Remarks: # The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the building.

Note 1: The Contractor Site Office of KL/2012/02 occupied the same location of previous KL/2008/09 site office of and therefore the location of monitoring station AM1(B) is remain unchanged.

Monitoring Equipment

2.3 Table 2.2 summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix B**.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH - TE-5025A	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3, LD-3B	7
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	2
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1

Monitoring Parameters, Frequency and Duration

2.4 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

<u>Measuring Procedures</u>

2.5 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follows:

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

<u>Maintenance/Calibration</u>

2.6 The following maintenance/calibration was required for the direct dust meters:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

2.7 High volume (HVS) samplers (Model GMWS-2310 Accu-Vol) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

Operating/Analytical Procedures

2.8 Operating/analytical procedures for the operation of HVS were as follows:

- A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
- No two samplers were placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
- No furnaces or incineration flues were nearby.
- Airflow around the sampler was unrestricted.
- The sampler was more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

2.9 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.10 For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.

2.11 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.

2.12 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

2.13 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

2.14 The shelter lid was closed and secured with the aluminum strip.

2.15 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

2.16 After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time was also recorded.

2.17 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

2.18 The following maintenance/calibration was required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated at bi-monthly intervals using G25A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

2.19 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

2.20 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

2.21 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer set at Lee Kau Yan Memorial School from 26 April 2013. The location is shown in **Figure 4**. This weather information for the reporting month is summarized in **Appendix C.**

2.22 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.

2.23 The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.

2.24 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Station	Major Dust Source
AM1(B) – Contractor Site Office (KL/2012/02)	Road Traffic Dust Exposed site area and open stockpiles Site vehicle movement
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Excavation works Site vehicle movement

2.25 **Table 2.4** shows the summary of air quality monitoring results during the reporting month.

Table 2.4 Summary Table of Air Quality Monitoring Results during the reporting month

Parameter	Date	Concentration (µg/m3)	Action Level, µg/m3	Limit Level, µg/m3
AM1(B) – Contractor Site Office (KL/2012/02)				
1-hr TSP	5-Feb-14	75.7	342	500
	5-Feb-14	88.8		
	5-Feb-14	94.1		
	10-Feb-14	101.2		
	10-Feb-14	98.9		
	10-Feb-14	92.4		
	14-Feb-14	203.9		
	14-Feb-14	205.4		
	14-Feb-14	202.8		
	20-Feb-14	82.8		
	20-Feb-14	83.9		
	20-Feb-14	82.6		
	25-Feb-14	188.2		
	25-Feb-14	197.9		
	25-Feb-14	206.8		
24-hr TSP	4-Feb-14	78.2	159	260
	7-Feb-14	59.2		
	13-Feb-14	38.9		
	19-Feb-14	49.3		
	24-Feb-14	74.4		
	28-Feb-14	66.3		
AM2 – Lee Kau Yan Memorial School				
1-hr TSP	5-Feb-14	75.1	346	500
	5-Feb-14	78.4		
	5-Feb-14	80.1		
	10-Feb-14	104.1		
	10-Feb-14	101.4		
	10-Feb-14	109.6		
	14-Feb-14	196.2		

	14-Feb-14	195.2		
	14-Feb-14	198.0		
	20-Feb-14	73.9		
	20-Feb-14	61.7		
	20-Feb-14	68.6		
	25-Feb-14	177.1		
	25-Feb-14	182.0		
	25-Feb-14	197.1		
24-hr TSP	4-Feb-14	78.2	157	260
	7-Feb-14	59.2		
	13-Feb-14	38.9		
	19-Feb-14	49.3		
	24-Feb-14	74.4		
	28-Feb-14	66.3		

3. NOISE

Monitoring Requirements

3.1 According to EM&A Manuals under the two EPs, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities within KTD. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

3.2 Six designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at four designated monitoring stations (M1, M2, M3, M4(A)) in the reporting month. **Figure 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
M1	Buddhist Chi King Primary School	7/F Sport Area
M2	S.K.H. Kowloon Bay Kei Lok Primary School	7/F Podium
M3	Cognitio College	Rooftop (about 6/F) Area
M4	Lee Kau Yan Memorial College	Rooftop (about 7/F) Area
#M9	Site 1B1 (Planned)	-
#M10	Site 1B4 (Planned)	-

Remarks: # The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the building.

Monitoring Equipment

3.3 **Table 3.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix B**.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 955 & 957	6
Calibrator	SVAN 30A / B&K4231	6

Monitoring Parameters, Frequency and Duration

3.4 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency	Measurement
M1 M2 M3 M4	L_{10}(30 min.) dB(A) L_{90}(30 min.) dB(A) L_{eq}(30 min.) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - time measurement : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq}, L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

3.5 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.

3.6 The sound level meter and calibrator were checked and calibrated at yearly intervals.

3.7 Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

3.8 All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix H**.

3.9 The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.4**.

3.10 Noise monitoring results and graphical presentations are shown in **Appendix G**.

3.11 The major noise source identified at the designated noise monitoring stations are as follows:

Monitoring Stations	Locations	Major Noise Source
M1	Buddhist Chi King Primary School	Traffic Noise Site vehicle movement
M2	S.K.H. Kowloon Bay Kei Lok Primary School	
M3	Cognitio College	Traffic Noise Daily school activities Construction Noise from nearby Construction Sites
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works Piling works Daily school activities

Table 3.4 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A)	Noise Limit Level,dB (A)
M1	64.4 (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)
M2	61.3 (at 0700 – 1900 hrs on normal weekdays)	
M3	76.3(1)/78.6(2) (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)
M4	76.7 (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)

(*) Noise Limit Level is 65 dB(A) during school examination periods.

Note (1) : The alternative monitoring plan was approved by the EPD on 21st June 2013 to relocate the Noise Monitoring Stations from M3(A) - Kai Tak Operational Base (closed in mid of Year 2013) to M3 - Cognitio College with adopting the baseline noise level recorded at Rhythm Garden (i.e. 76.3dB(A) as both locations were affected by comparative traffic amount from Edward Road East.

(2) : Since the request to conduct the noise monitoring at the Rooftop was approved by Cognitio College, a baseline noise review report was submitted under Schedule 3 EIA Project – Tak Tai Development (KLN/2010/04) for M3 and was approved by EPD on 23rd August 2013. (Baseline Level was found to be 78.6dB(A) at Rooftop of Cognitio College)

Table 3.5 Summary Table of Noise Monitoring Results during the Reporting Month

Date	Measured Noise Level, Leq(30min) dB (A)	Baseline Level dB (A)	Construction Noise Level [(1)] : Leq(30min) dB (A)
M1 - Buddhist Chi King Primary School			
7-Feb-14	65.7	64.4	59.8
13-Feb-14	65.3		58.0
18-Feb-14	66.7		62.8
27-Feb-14	62.5		62.5 Measured ≦ Baseline
M2 - S.K.H. Kowloon Bay Kei Lok Primary School			
7-Feb-14	65.0	61.3	62.6
13-Feb-14	69.6		68.9
18-Feb-14	66.9		65.5
27-Feb-14	67.4		66.2
M3 - Cognitio College			
--	--	Background Noise[(2)]	--
5-Feb-14	79.3	79.1	65.8
10-Feb-14	78.9	81.4	67.1
20-Feb-14	79.7	79.5	63.3
25-Feb-14	79.9	80.5	66.4
M4 – Lee Kau Yan Memorial College			
5-Feb-14	72.6	76.7	72.6 Measured ≦ Baseline
10-Feb-14	73.0		73.0 Measured ≦ Baseline
20-Feb-14	75.2		75.2 Measured ≦ Baseline
25-Feb-14	69.9		69.9 Measured ≦ Baseline

Note (1) The noise level due to the construction work (CNL) was calculated by the following formula:

$CNL = 10 \log (10^{MNL/10} - 10^{BNL/10})$

Remarks: MNL = Measured Noise Level BNL = Baseline Noise Level

(2): Since the Background Noise Level recorded during the Lunch Hour of Construction Site (i.e. 12:00-13:00) on the same day of impact noise monitoring was considered more appropriate for compliance checking for Noise Action and Limit Level than the baseline noise level obtained during the baseline review in July 2013.The measurement of Background Noise Level at M3 was then commenced from 9 September 2013 to provide a referencing value for compliance checking for Noise Action and Limit Level.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The EM&A data was compared with the EIA predictions as summarized in **Tables 4.1 to 4.3**.

Table 4.1 Comparison of 1-hr TSP data with EIA predictions

Station	Predicted 1-hr TSP conc.		
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (Feb 14), µg/m3
AM1(B) – Contractor Site Office of KL/2012/02	192	298	134
AM 2 – Lee Kau Yan Memorial School	290	312	127

Table 4.2 Comparison of 24-hr TSP data with EIA predictions

Station	Predicted 24-hr TSP conc.		
	Scenario1 (Mid 2009 to Mid 2013), µg/m3	Scenario2 (Mid 2013 to Late 2016), µg/m3	Reporting Month (Feb 14), µg/m3
AM1(B) – Contractor Site Office of KL/2012/02	121	156	61
AM2 – Lee Kau Yan Memorial School	145	169	82

Table 4.3 Comparison of Noise Monitoring Data with EIA predictions

Stations	Predicted Mitigated Construction Noise Levels during Normal Working Hour ($L_{eq\ (30min)}$ dB(A))	Reporting Month (Feb 14), $L_{eq\ (30min)}$ dB(A)
M1 - Buddhist Chi King Primary School	51 – 68	58.0 – 62.8
M2 - S.K.H. Kowloon Bay Kei Lok Primary School	51 – 70	62.6 – 68.9
M3 - Cognitio College	47 – 75	63.3 – 67.1
M4 - Lee Kau Yan Memorial School	47 – 74	69.9 – 75.2(1)

Note 1: The recorded noise levels were considered non-valid exceedance of Noise Limit Level as the baseline level at noise monitoring station M4 was 76.7 dB(A) and

4.2 The 1-hour TSP concentrations in the reporting month were below to the prediction in the approved Environmental Impact Assessment (EIA) Report.

4.3 The 24-hour TSP concentrations in the reporting month were below to the prediction in the approved Environmental Impact Assessment (EIA) Report.

4.4 The noise monitoring results in the reporting month at monitoring station M4 was slightly higher than those predicted mitigated construction noise level in the EIA report and the discrepancy was considered to be contributed from the major noise sources during the monitoring; i.e. the road traffic noise and noise generated from the nearby construction site.

5. LANDSCAPE OF VISUAL

Monitoring Requirements

5.1 According to EM&A Manual of the Kai Tak Development EIA Study, ET shall monitor and audit the contractor's operation during the construction period on a weekly basis, and to report on the contractor's compliance.

Results and Observations

5.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.

5.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

5.4 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.

6. ENVIRONMENTAL AUDIT

Site Audits

6.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix I**.

6.2 Site audits were conducted on 4th, 13th, 18th and 26th February 2014 in the reporting month. IEC site inspections were conducted on 18th February 2014. No non-compliance was observed during the site audits.

Review of Environmental Monitoring Procedures

6.3 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Status of Environmental Licensing and Permitting

6.4 All permits/licenses obtained for the Project are summarized in Table 6.1.

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-344/2009	23/04/09	N/A	Construction of a new sewage pumping station serving the planned Kai Tak development with installed capacity of more than 2,000 m^3 per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid

Permit No.	Valid Period		Details	Status
	From	To		
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
Effluent Discharge License				
WT00011274-2011	-	31/12/16	Industrial discharge (near Kai Tak Tunnel)	Valid
WT00011276-2011	-	31/12/16	Industrial discharge (near Concorde Road)	Valid
Registration of Chemical Waste Producer				
5213-286-P1079-04	-	N/A	Chemical Waste Types: Spent lubricating oil, spent solvent and spent battery containing heavy metals	Valid
Construction Noise Permit (CNP)				
GW-RE0865-13	22/08/13	21/02/14	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive pilling and performing prescribed construction work at Construction site of Kai Tak Development at north apron area of Kai Tak Airport near Eastern Road. Box Culvert & Sewage Pumping Station No. PS1A, Kowloon	Expired
GW-RE0165-14	21/02/14	20/08/14	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive pilling and performing prescribed construction work at Construction site of Kai Tak Development at north apron area of Kai Tak Airport near Eastern Road. Box Culvert & Sewage Pumping Station No. PS1A, Kowloon	Valid

Status of Waste Management

6.5 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix M**.

6.6 In respect of the dump truck cover, the Contractor is advised to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

Implementation Status of Environmental Mitigation Measures

6.7 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 6.2.

Table 6.2 Observations and Recommendations of Site Inspections

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	13/2/14	Stockpile at Road L4/L5 should be covered during rainy day to prevent generation of runoff.	Rectification/improvement was observed during the follow-up audit session.
	26/2/14	Groundwater should be treated with sediment tank before discharge. (Opposite to KTOB)	Rectification/improvement was observed during the follow-up audit session.
Air Quality	4/2/14	To enhance the water spraying for unpaved area to reduce dust generation. (Road D2 and Pumping station PS1A)	Rectification/improvement was observed during the follow-up audit session.
	4/2/14	To cover the opened cement bags and wasted cement bags should be	Rectification/improvement was observed during the follow-up audit session.
	18/2/14	Exposed stockpile should be covered by tarpaulin sheet to reduce dust generation. (Road L5)	Rectification/improvement was observed during the follow-up audit session.
	26/2/14	Dusty Stockpile should be covered by impervious materials to prevent dust generation. (Road L5)	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/Chemical Management	18/2/14	To provide drip tray to contain chemical containers to prevent leakage. (PS1A)	Rectification/improvement was observed during the follow-up audit session.
	18/2/14	General refuse, such as cigarette boxes, should be regularly cleared or properly disposed of. (PS1A)	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	--	--	--
Permits /Licences	--	--	--

Summary of Mitigation Measures Implemented

6.8 The monthly IEC audit was carried out on 18th February 2014, the observations were recorded and they are presented as follows:

Observations:

- Area next to Road L5 – Dusty stockpile without proper cover was observed. The contractor should provide tarpaulin cover for overnight stocking.
- At pumping station PS1A – Used cigarette boxes on bare ground was observed. Although the contactor has provided rubbish bin for dumping cigarette boxes, the contractor should improve the housekeeping practice and remove it a.s.a.p.
- At pumping station PS1A – Chemical container without drip tray was observed, the contractor should provide drip tray to the chemical container in order to prevent chemical leakage.

Follow up of last site inspection:

- Area of Road L4/L5 – Dry, unpaved haul roads/areas were wetted by water spraying. Observation closed.
- At operation base – Bottle of suspected chemicals were removed. Observation closed.

6.9 An updated summary of the EMIS is provided in **Appendix K**.

Implementation Status of Event Action Plans

6.10 The Event Action Plans for air quality, noise and landscape and visual are presented in **Appendix J**.

<u>1-hr TSP Monitoring</u>

6.11 No Action/Limit Level exceedance was recorded in the reporting month.

<u>24-hr TSP Monitoring</u>

6.12 No Action/Limit Level exceedance was recorded in the reporting month.

<u>Construction Noise</u>

6.13 No Action/Limit Level exceedance was recorded in the reporting month.

<u>Landscape and visual</u>

6.14 No non-compliance was recorded in the reporting month.

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

6.15 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix L**.

7. FUTURE KEY ISSUES

7.1 Major site activities undertaken for the coming two months include:

- Builder's works and E&M works of pumping station PS1A;
- Surface drainage and ducting construction at pumping station PS1A;
- Drainage works at Road L4, Road L5 & pedestrian streets;
- Water supply pipeworks at Road L4;
- Trimming formation along pedestrian streets;
- Ducting and irrigation pipe laying along pedestrian streets; and
- Construction of Box Culvert at Portions A & N.

Key Issues for the Coming Month

7.2 Key environmental issues in the coming month include:

- Review and implementation of temporary drainage system for the surface runoff;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- To properly sort the construction waste;
- Dust generation should be mitigated by adequate water spraying, especially in dry days;
- Watering for dust generating activity and on haul road;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site.

7.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. March and April 2014 are summarized as follows:

Construction Works	**Major Impact Prediction**	**Control Measures**
As mentioned in Section 7.1	Air quality impact (dust)	a) Frequent watering of haul road and unpaved/exposed areas; b) Frequent watering or covering stockpiles with tarpaulin or similar means; and c) Watering of any earth moving activities.
	Water quality impact (surface run-off)	d) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains; e) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge; f) Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and g) Provision of measures to prevent discharge into the stream.
	Noise Impact	h) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation; i) Controlling the number of plants use on site; j) Regular maintenance of machines; and k) Use of acoustic barriers if necessary.

Monitoring Schedule for the Next Month

7.4 The tentative environmental monitoring schedules for the next month are shown in **Appendix D**.

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

8.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.

1-hr TSP Monitoring

8.2 All 1-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hr TSP Monitoring

8.3 All 24-hr TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise Monitoring

8.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Landscape and visual

8.5 No non-compliance was recorded in the reporting month.

Complaint and Prosecution

8.6 No environmental complaints and environmental prosecution were received in the reporting month.

Recommendations

8.7 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality Impact
- To regularly maintain the quality of machinery and vehicles on site.
- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To provide hoarding along the entire length of that portion of the site boundary.
- To mitigate the dust generation by adequate water spraying in dry days.

Noise Impact
- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise

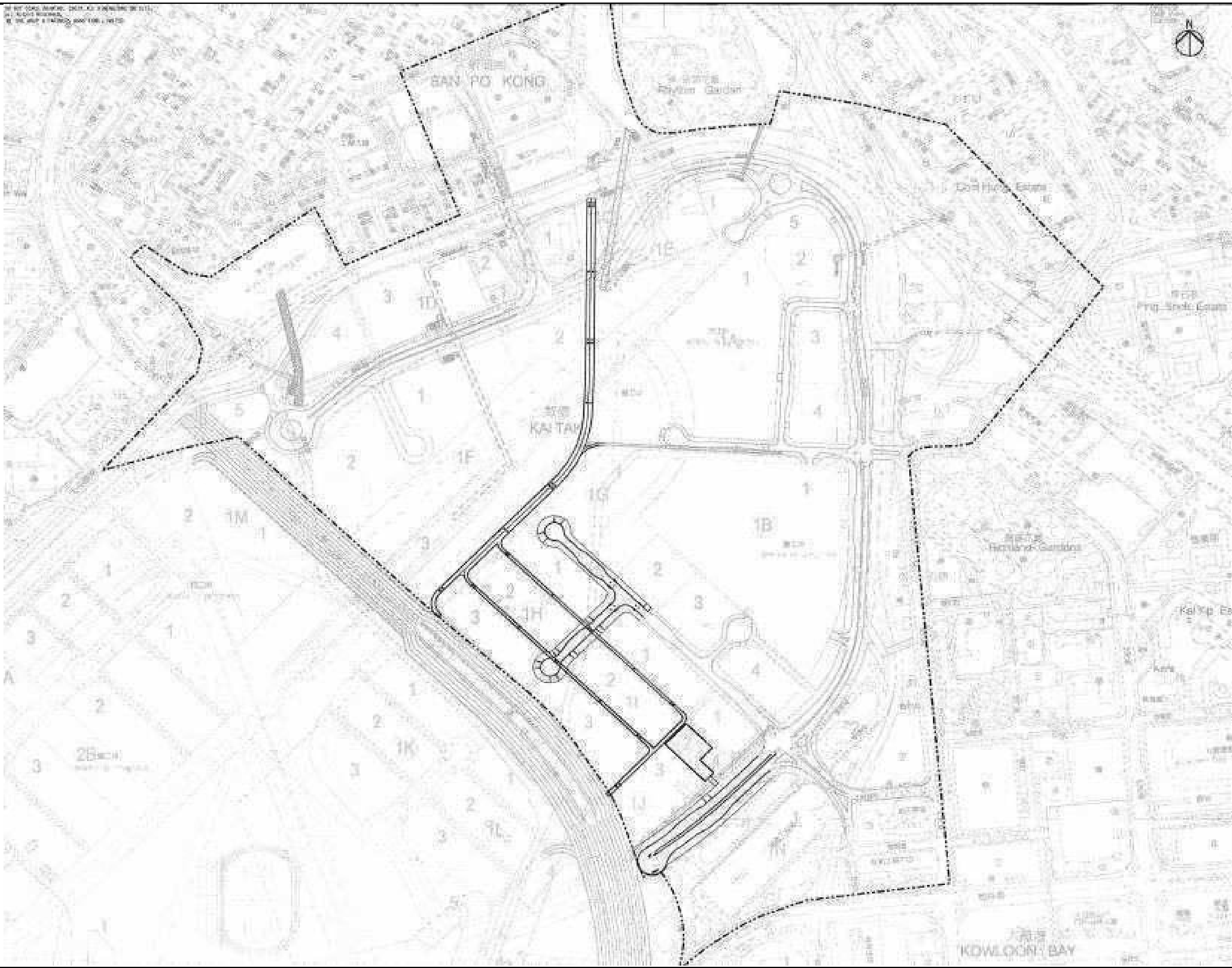
sensitive receivers in an appropriate location.
- To well maintain the mechanical equipment/ machineries to avoid abnormal noise nuisance.

Water Impact
- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To clear the silt and sediment in the sedimentation tanks.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.

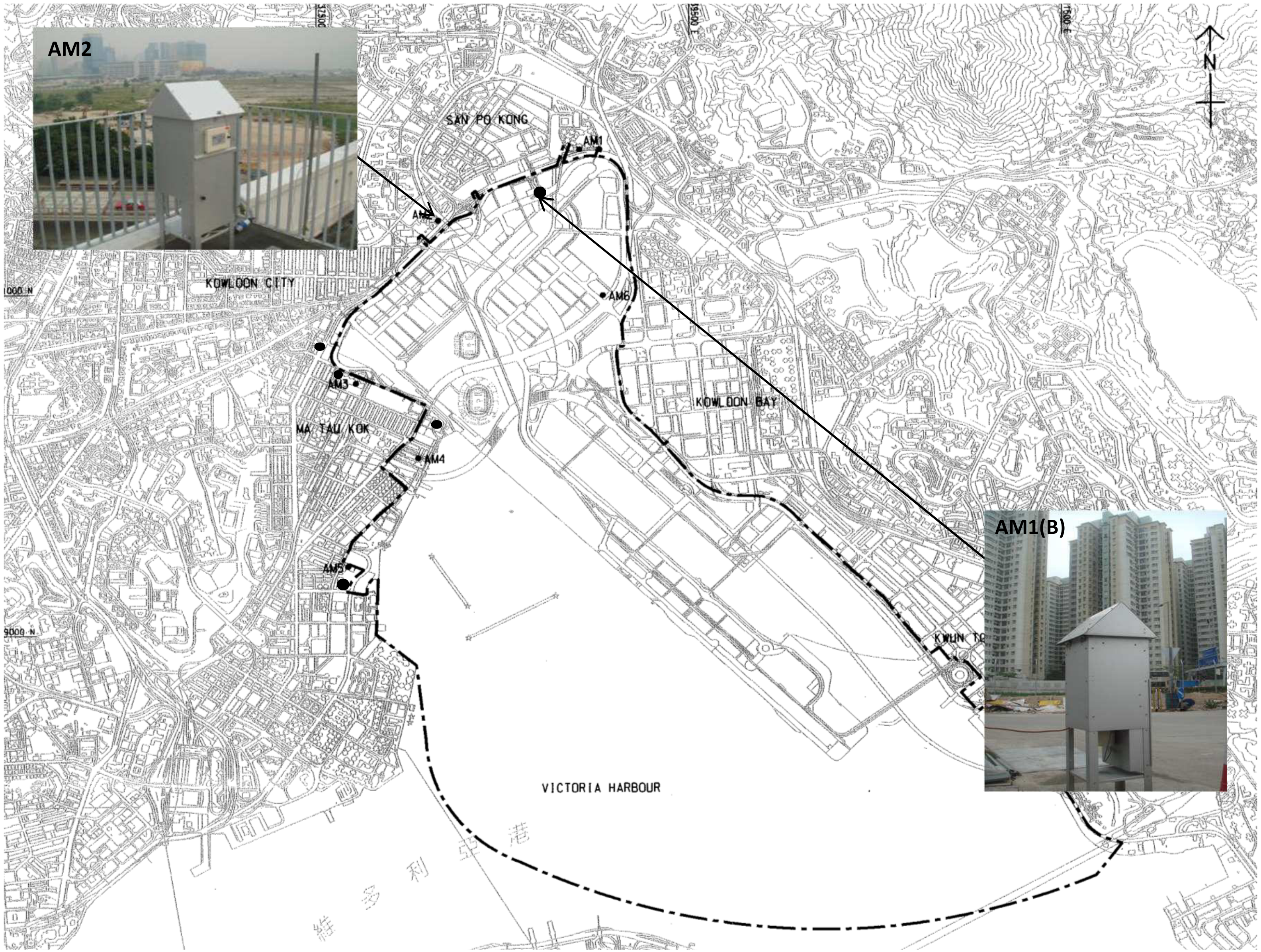
Waste/Chemical Management
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To provide proper storage area or drip trays for oil containers/ equipment on site.
- To avoid improper handling or storage of oil drum on site.
- To keep machines and equipments in good condition to avoid oil leakage.

Landscape and Visual
- To protect the existing trees to be retained.
- To transplant the trees unavoidably affected by the works.
- To control of night-time lighting.
- To provide decorative screen hoarding.
- To complete landscape works at site area as early as possible.

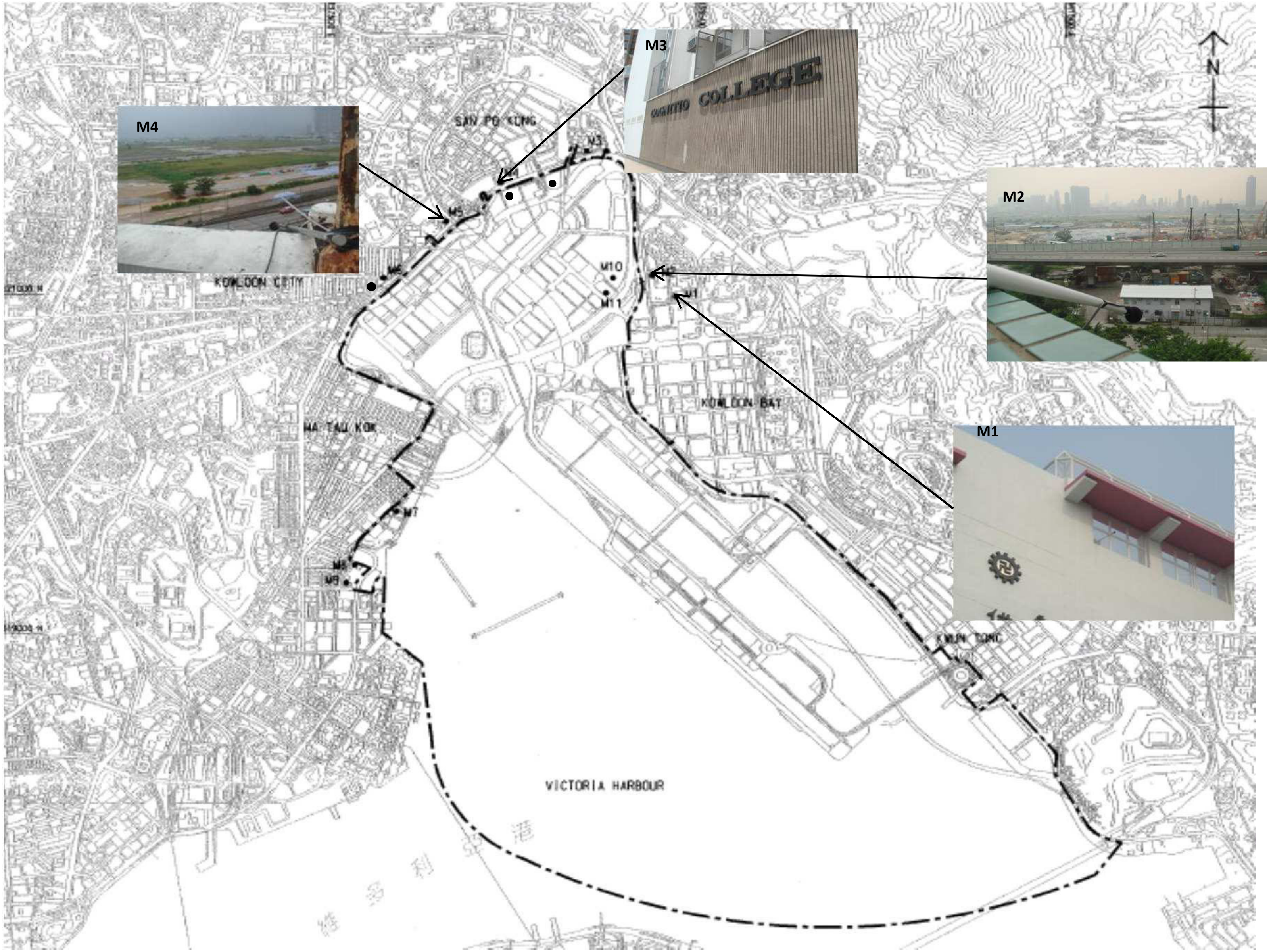
FIGURES



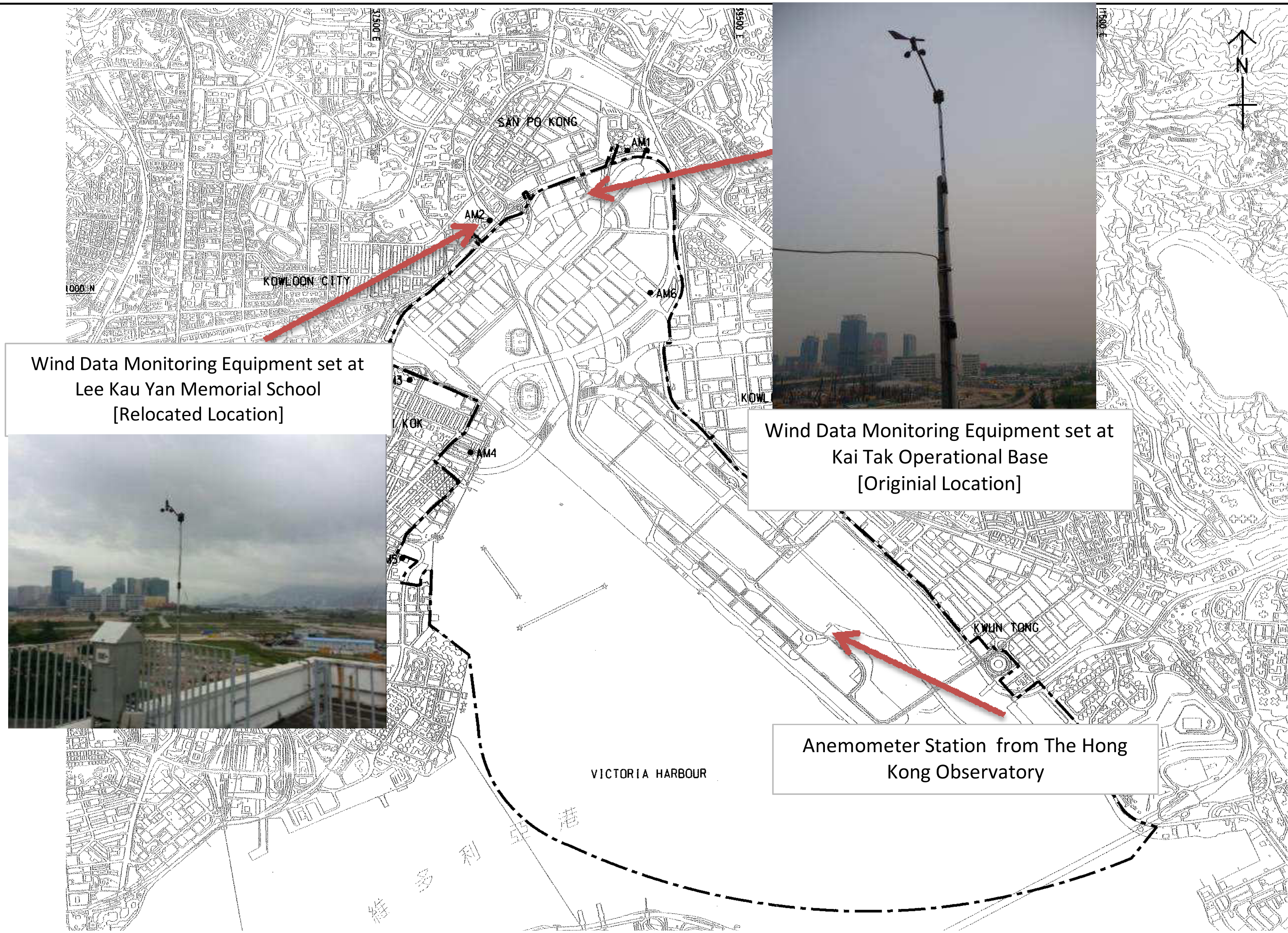
Title	Scale	Project	
EP-344/2009 – New Sewage Pumping Stations Serving KTD and EP-337/2009 – New Distributor Roads Serving the Planned KTD	N.T.S	No. MA11038	CINOTECH
Site Layout Plan	Date Sep-11	Figure 1	



Title			
Contract No. KL/2010/03 Environmental Monitoring Works for Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities Location of Air Quality Monitoring Stations	Scale N.T.S	Project No. MA11038	CINOTECH
	Date Jul 13	Figure 2	



Title	Contract No. KL/2010/03 Environmental Monitoring Works for Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities Location of Noise Monitoring Stations	Scale N.T.S	Project No. MA11038	CINOTECH
		Date Jul-13	Figure 3	



Title	Scale	Project No.	
Contract No. KL/2010/03 Environmental Monitoring Works for Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities Location of Wind Data Monitoring Equipment	N.T.S	MA11038	CINOTECH
	Date: May 12	Figure: 4	

APPENDIX A
ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1(B)	342	500
AM2	346	

Table A-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1(B)	159	260
AM2	157	

Table A-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. *70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX B
COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0040/58/0020

Station: AM1(B) - Outside RLJV site office (KL/2008/09)　Operator: WK
Date: 27-Dec-13　Next Due Date: 26-Feb-14
Equipment No.: A-01-58　Serial No. 2357

Ambient Condition			
Temperature, Ta (K)	298.5	Pressure, Pa (mmHg)	765.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.8	3.44	59.36	7.5	2.75
2	9.7	3.12	53.89	6.3	2.52
3	7.5	2.75	47.49	4.9	2.22
4	5.4	2.33	40.41	3.4	1.85
5	3.2	1.79	31.29	2.0	1.42

By Linear Regression of Y on X

Slope , mw = 0.0478　**Intercept, bw = -0.0736**

Correlation coefficient* = 0.9995

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.91**

Remarks:

Conducted by: Wk. Tang　Signature: Kwai　Date: 27/12/13
Checked by: [signature]　Signature: [signature]　Date: 27 December 2013

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/58/0021

Station: AM1(B) - Outside RLJV site office (KL/2008/09) Operator: WK
Date: 27-Feb-14 Next Due Date: 26-Apr-14
Equipment No.: A-01-58 Serial No. 2357

Ambient Condition			
Temperature, Ta (K)	292.8	Pressure, Pa (mmHg)	768.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	29-Sep-14	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.7	3.47	59.79	7.7	2.81
2	9.8	3.18	54.79	6.4	2.57
3	7.4	2.76	47.71	5.0	2.27
4	5.4	2.36	40.87	3.4	1.87
5	3.3	1.84	32.12	2.1	1.47

By Linear Regression of Y on X

Slope , mw = 0.0489 **Intercept, bw : -0.1026**

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

mw x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.89**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 27/2/14
Checked by: [signature] Signature: [signature] Date: 27 February 2014

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0040/59/0021

Station	AM2 - Lee Kau Yan Memorial School	Operator:	WK
Date:	6-Jan-14	Next Due Date:	5-Mar-14
Equipment No.:	A-01-59	Serial No.	2354

Ambient Condition			
Temperature, Ta (K)	288.7	Pressure, Pa (mmHg)	766.8

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.0	3.54	60.91	7.9	2.87
2	9.8	3.19	55.12	6.4	2.58
3	7.6	2.81	48.63	4.9	2.26
4	5.4	2.37	41.11	3.3	1.85
5	3.3	1.85	32.31	2.0	1.44

By Linear Regression of Y on X

Slope , mw = **0.0502** **Intercept, bw =** **-0.1906**

Correlation coefficient* = **0.9998**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.72**

Remarks:

Conducted by:	WK Tang	Signature:	Kwan	Date:	6/1/14
Checked by:	W	Signature:		Date:	6 January 2014

WELLAB 滙力 Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	300.8
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	759.3
Date	30 September 2013	**Equipment No.:**	A-04-04

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4103	3.4	2.00
2	1.00	0.9980	6.8	4.00
3	1.00	0.8970	8.5	5.00
4	1.00	0.8540	9.4	5.50
5	1.00	0.7060	13.6	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9853	0.6986	1.4069
0.9808	0.9828	1.9897
0.9786	1.0910	2.2245
0.9775	1.1446	2.3331
0.9720	1.3768	2.8138

Y axis= SQRT[H_2O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.07768
Intercept (b) = -0.04613
Coefficient (r) = 0.99997

Va	(X axis) Qa	(Y axis)
0.9955	0.7059	0.8901
0.9910	0.9930	1.2589
0.9888	1.1023	1.4074
0.9876	1.1565	1.4761
0.9821	1.3911	1.7803

Y axis= SQRT[H_2O(Ta/Pa)]

Qa Slope (m) = 1.30101
Intercept (b) = -0.02919
Coefficient (r) = 0.99997

CALCULATIONS

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

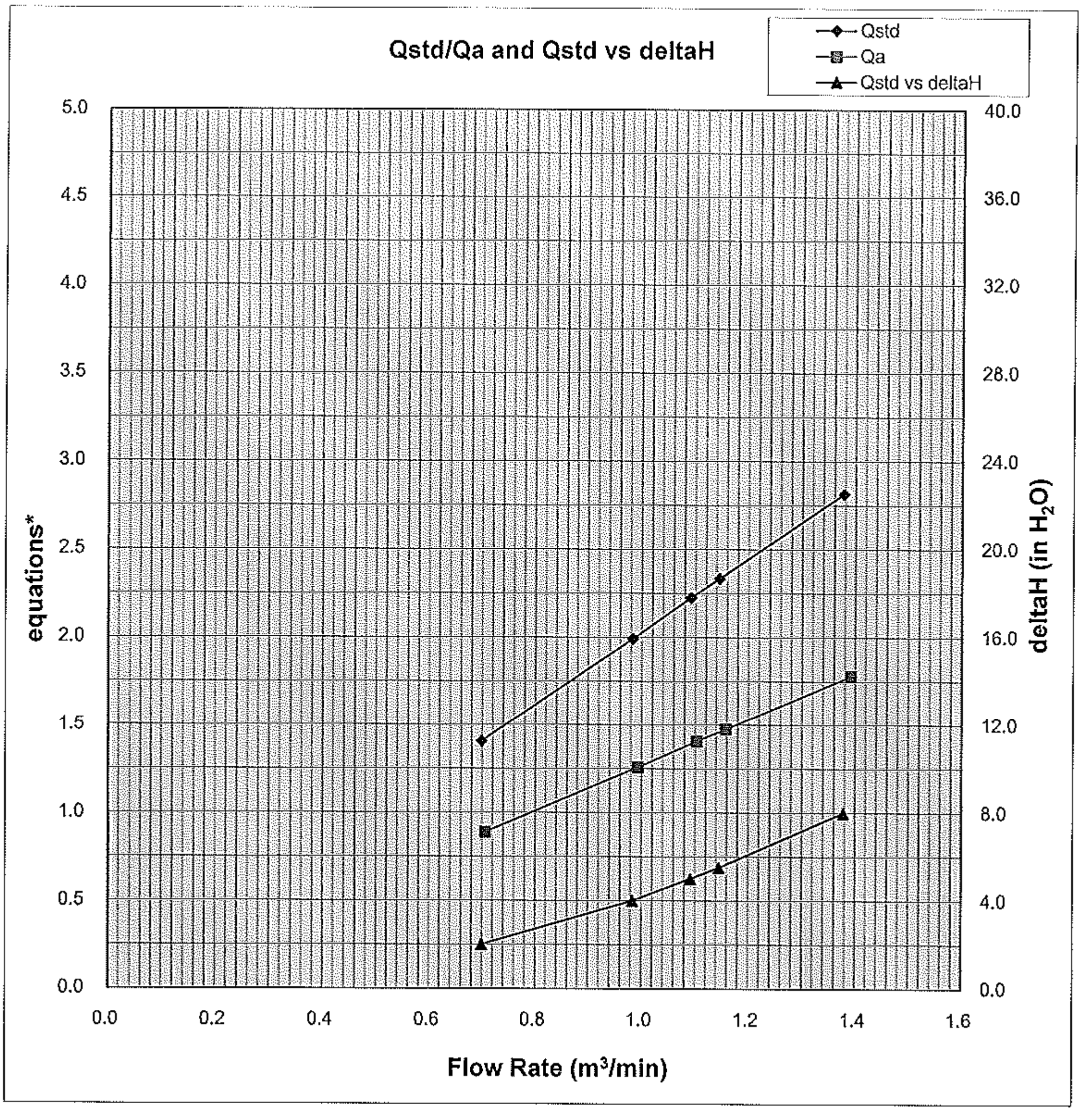
For subsequent flow rate calculations:
Qstd=l/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=l/m{[SQRT H_2O(Ta/Pa)]-b}

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

TEST REPORT



Y-axis equations:

Qstd series: SQRT[ΔH(Pa/Pstd)(Tstd/Ta)]

Qa series: SQRT[ΔH(Ta/Pa)]

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/131019A
Date of Issue:	2013-10-19
Date Received:	2013-10-19
Date Tested:	2013-10-19
Date Completed:	2013-10-19
Next Due Date:	2014-04-18

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC20813A11

Test conditions:

Room Temperature	: 20 degree Celsius
Relative Humidity	: 53%

Test Specifications:

1. Performance check of anemometer
2. Performance check of wind direction sensor

Methodology:

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

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For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/131231/1
Date of Issue:	2014-01-02
Date Received:	2013-12-31
Date Tested:	2013-12-31
Date Completed:	2014-01-02
Next Due Date:	2014-03-01

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3
Serial No.	: 251634
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 550 CPM
Equipment No.	: A-02-01

Test Conditions:

Room Temperature	: 18 degree Celsius
Relative Humidity	: 50%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Test Report No.:	C/131231/2
Date of Issue:	2014-01-02
Date Received:	2013-12-31
Date Tested:	2013-12-31
Date Completed:	2014-01-02
Next Due Date:	2014-03-01

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description : Laser Dust Monitor
Manufacturer : Sibata
Model No. : LD-3B
Serial No. : 853944
Sensitivity (K) 1 CPM : 0.001 mg/m^3
Sen. Adjustment Scale Setting : 685 CPM
Equipment No. : A-02-04

Test Conditions:

Room Temperature : 18 degree Celsius
Relative Humidity : 50%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0031

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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Shatin, NT, Hong Kong

Test Report No.:	C/131223/1
Date of Issue:	2013-12-23
Date Received:	2013-12-20
Date Tested:	2013-12-20
Date Completed:	2013-12-23
Next Due Date:	2014-02-22

ATTN: **Mr. WK Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 954253
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 772 CPM
Equipment No.	: A-02-05

Test Conditions:

Room Temperature	: 18 degree Celsius
Relative Humidity	: 62%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0030

****

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For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/131231/3
Date of Issue:	2014-01-02
Date Received:	2013-12-31
Date Tested:	2013-12-31
Date Completed:	2014-01-02
Next Due Date:	2014-03-01

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 014750
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 790 CPM
Equipment No.	: A-02-06

Test Conditions:

Room Temperature	: 18 degree Celsius
Relative Humidity	: 50%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0033

****

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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Test Report No.:	C/140103/1
Date of Issue:	2014-01-06
Date Received:	2014-01-03
Date Tested:	2014-01-03
Date Completed:	2014-01-06
Next Due Date:	2014-03-05

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095039
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 764 CPM
Equipment No.	: A-02-08

Test Conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 53%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0030

****

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Patrick Tse

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **Room 1710, Technology Park,** **18 On Lai Street,** **Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/140103/2 2014-01-06 2014-01-03 2014-01-03 2014-01-06 2014-03-05
ATTN:	**Mr. W. K. Tang**	Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095050
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 577 CPM
Equipment No.	: A-02-09

Test Conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 53%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0034

****

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Patrick Tse

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/140103/3 2014-01-06 2014-01-03 2014-01-03 2014-01-06 2014-03-05
ATTN:	**Mr. W. K. Tang**	Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 095029
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 551 CPM
Equipment No.	: A-02-10

Test Conditions:

Room Temperature	: 19 degree Celsius
Relative Humidity	: 53%

Test Specifications & Methodology:

1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	0.0033

****

PREPARED AND CHECKED BY:
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
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Test Report No.:	C/N/130919/1
Date of Issue:	2013-09-21
Date Received:	2013-09-19
Date Tested:	2013-09-21
Date Completed:	2013-09-21
Next Due Date:	2014-09-20

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 955
Serial No. : 12553
Microphone No. : 35222
Equipment No. : N-08-02

Test conditions:

Room Temperatre : 22 degree Celsius
Relative Humidity : 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/N/130919/2
Date of Issue:	2013-09-21
Date Received:	2013-09-19
Date Tested:	2013-09-21
Date Completed:	2013-09-21
Next Due Date:	2014-09-20

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 955
Serial No. : 12563
Microphone No. : 34377
Equipment No. : N-08-03

Test conditions:

Room Temperatre : 22 degree Celsius
Relative Humidity : 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PatrickTse

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
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Test Report No.:	C/N/140104
Date of Issue:	2014-01-05
Date Received:	2014-01-04
Date Tested:	2014-01-04
Date Completed:	2014-01-05
Next Due Date:	2015-01-04

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 955
Serial No. : 14303
Microphone No. : 35222
Equipment No. : N-08-05

Test conditions:

Room Temperatre : 19 degree Celsius
Relative Humidity : 52%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

Remark: 1)This report supersedes the one dated 2012/01/21 with certificate number C/N/120120/1.

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/130824/1
Date of Issue:	2013-08-25
Date Received:	2013-08-24
Date Tested:	2013-08-24
Date Completed:	2013-08-25
Next Due Date:	2014-08-24

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 955
Serial No. : 21139
Microphone No. : 43690
Equipment No. : N-08-06

Test conditions:

Room Temperatre : 20 degree Celsius
Relative Humidity : 65%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

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Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/130830/2
Date of Issue:	2013-08-31
Date Received:	2013-08-30
Date Tested:	2013-08-30
Date Completed:	2013-08-31
Next Due Date:	2014-08-30

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 957
Serial No. : 21459
Microphone No. : 43676
Equipment No. : N-08-08

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 69%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT:	**Cinotech Consultants Limited Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed: Next Due Date:	C/N/131129/3 2013-11-30 2013-11-29 2013-11-29 2013-11-30 2014-11-29
ATTN:	**Mr. W.K. Tang**	Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter
Manufacturer : SVANTEK
Model No. : SVAN 957
Serial No. : 23851
Microphone No. : 48532
Equipment No. : N-08-12

Test conditions:

Room Temperatre : 19 degree Celsius
Relative Humidity : 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/N/131101/1
Date of Issue:	2013-11-02
Date Received:	2013-11-01
Date Tested:	2013-11-01
Date Completed:	2013-11-02
Next Due Date:	2014-11-01

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : SVANTEK
Model No. : SV30A
Serial No. : 10965
Equipment No. : N-09-02

Test conditions:

Room Temperatre : 20 degree Celsius
Relative Humidity : 52%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/N/131004/1
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : SVANTEK
Model No. : SV30A
Serial No. : 24803
Equipment No. : N-09-03

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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TEST REPORT

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Shatin, NT, Hong Kong

Test Report No.:	C/N/131004/2
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : SVANTEK
Model No. : SV30A
Serial No. : 24791
Equipment No. : N-09-04

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 滙力
Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/131004/3
Date of Issue:	2013-10-05
Date Received:	2013-10-04
Date Tested:	2013-10-04
Date Completed:	2013-10-05
Next Due Date:	2014-10-04

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : SVANTEK
Model No. : SV30A
Serial No. : 24780
Equipment No. : N-09-05

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 57%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 滙力
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WELLAB LIMITED
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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/131108/1
Date of Issue:	2013-11-09
Date Received:	2013-11-08
Date Tested:	2013-11-08
Date Completed:	2013-11-09
Next Due Date:	2014-11-08

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : Brüel & Kjær
Model No. : 4231
Serial No. : 2326353
Project No. : C13
Equipment No. : N-02-01

Test conditions:

Room Temperatre : 21 degree Celsius
Relative Humidity : 52 %

Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 匯力
Testing & Research

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/130830/4-v1
Date of Issue:	2014-03-07
Date Received:	2013-08-30
Date Tested:	2013-08-30
Date Completed:	2013-08-31
Next Due Date:	2014-08-30

ATTN: **Mr. W.K. Tang**

Item for calibration:

Description : Acoustical Calibrator
Manufacturer : Brüel & Kjær
Model No. : 4231
Serial No. : 2412367
Equipment No. : N-02-03

Test conditions:

Room Temperatre : 20 degree Celsius
Relative Humidity : 64%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

or tested.

APPENDIX C
WEATHER INFORMATION

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1 February 2014	18.3 – 22.2	68 – 93	0
2 February 2014	17.5 – 23.8	56 – 96	0
3 February 2014	17.4 – 24.6	52 – 83	0
4 February 2014	16.6 – 19.4	78 – 86	Trace
5 February 2014	15.9 – 19.0	74 – 94	Trace
6 February 2014	16.7 – 21.6	77 – 92	Trace
7 February 2014	18.1 – 23.4	76 – 94	Trace
8 February 2014	16.0 – 18.0	83 – 96	0.3
9 February 2014	10.4 – 16.7	92 – 99	13.1
10 February 2014	8.3 – 10.5	67 – 92	0.3
11 February 2014	7.5 – 9.7	63 – 78	Trace
12 February 2014	7.3 – 10.5	75 – 96	0.4
13 February 2014	8.0 – 9.8	74 – 99	21.4
14 February 2014	8.2 – 14.6	56 – 75	0
15 February 2014	9.7 – 13.6	73 – 84	Trace
16 February 2014	13.3 – 15.4	84 – 92	Trace
17 February 2014	15.3 – 20.9	84 – 99	0
18 February 2014	12.2 – 21.5	75 – 99	Trace
19 February 2014	7.9 – 12.4	64 – 96	3.8

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 February 2014	8.2 – 17.3	37 – 80	0
21 February 2014	12.3 – 15.2	63 – 86	0
22 February 2014	12.6 – 17.1	64 – 85	0.2
23 February 2014	14.4 – 19.2	65 – 87	0
24 February 2014	15.0 – 19.3	73 – 89	Trace
25 February 2014	17.3 – 20.9	77 – 95	0
26 February 2014	17.9 – 24.1	73 – 96	Trace
27 February 2014	18.7 – 21.1	84 – 93	Trace
28 February 2014	17.4 – 19.0	84 – 90	Trace

* The above information was extracted from the daily weather summary by Hong Kong Observatory.

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Feb-2014	00:00	2	ENE
1-Feb-2014	01:00	1.8	ENE
1-Feb-2014	02:00	1.4	ENE
1-Feb-2014	03:00	1.7	NE
1-Feb-2014	04:00	1.6	ENE
1-Feb-2014	05:00	1.5	ENE
1-Feb-2014	06:00	1.6	ENE
1-Feb-2014	07:00	1.6	ENE
1-Feb-2014	08:00	1.9	ENE
1-Feb-2014	09:00	1.6	WNW
1-Feb-2014	10:00	2	SW
1-Feb-2014	11:00	2	N
1-Feb-2014	12:00	2	WNW
1-Feb-2014	13:00	1.9	E
1-Feb-2014	14:00	1.8	N
1-Feb-2014	15:00	1.9	N
1-Feb-2014	16:00	1.7	ENE
1-Feb-2014	17:00	1.6	ENE
1-Feb-2014	18:00	1.3	ENE
1-Feb-2014	19:00	1.3	ENE
1-Feb-2014	20:00	1.9	ENE
1-Feb-2014	21:00	1.9	NE
1-Feb-2014	22:00	1.6	NE
1-Feb-2014	23:00	1.7	ENE
2-Feb-2014	00:00	1.6	NE
2-Feb-2014	01:00	1.1	NE
2-Feb-2014	02:00	1.3	ENE
2-Feb-2014	03:00	1.1	NE
2-Feb-2014	04:00	1.4	ENE
2-Feb-2014	05:00	0.5	ENE
2-Feb-2014	06:00	0.3	ENE
2-Feb-2014	07:00	0.2	N
2-Feb-2014	08:00	0.4	NE
2-Feb-2014	09:00	0.4	NE
2-Feb-2014	10:00	0.6	ENE
2-Feb-2014	11:00	0.8	ENE

II. Mean Wind Speed and Wind Direction

2-Feb-2014	12:00	1.5	NE
2-Feb-2014	13:00	1.8	ENE
2-Feb-2014	14:00	1.6	ENE
2-Feb-2014	15:00	1.3	ENE
2-Feb-2014	16:00	0.8	ENE
2-Feb-2014	17:00	1.1	ENE
2-Feb-2014	18:00	0.8	NNE
2-Feb-2014	19:00	0.7	NE
2-Feb-2014	20:00	0.9	SW
2-Feb-2014	21:00	1	S
2-Feb-2014	22:00	0.9	SW
2-Feb-2014	23:00	0.9	WSW
3-Feb-2014	00:00	0.7	SW
3-Feb-2014	01:00	0.8	SW
3-Feb-2014	02:00	0.5	W
3-Feb-2014	03:00	0.5	W
3-Feb-2014	04:00	0.7	N
3-Feb-2014	05:00	0.4	W
3-Feb-2014	06:00	0.2	SE
3-Feb-2014	07:00	0.2	NNW
3-Feb-2014	08:00	0.3	SSW
3-Feb-2014	09:00	0.6	SSW
3-Feb-2014	10:00	0.6	WNW
3-Feb-2014	11:00	0.8	ENE
3-Feb-2014	12:00	1.4	NE
3-Feb-2014	13:00	1.5	ENE
3-Feb-2014	14:00	1.8	SW
3-Feb-2014	15:00	1.6	SW
3-Feb-2014	16:00	1.6	SW
3-Feb-2014	17:00	1.5	ENE
3-Feb-2014	18:00	0.9	S
3-Feb-2014	19:00	0.9	NE
3-Feb-2014	20:00	1	N
3-Feb-2014	21:00	0.8	NE
3-Feb-2014	22:00	0.8	NE
3-Feb-2014	23:00	0.8	NE
4-Feb-2014	00:00	0.8	ENE

II. Mean Wind Speed and Wind Direction

4-Feb-2014	01:00	0.8	ENE
4-Feb-2014	02:00	0.9	NE
4-Feb-2014	03:00	0.9	NE
4-Feb-2014	04:00	0.6	NE
4-Feb-2014	05:00	0.6	NE
4-Feb-2014	06:00	0.8	NE
4-Feb-2014	07:00	0.5	NE
4-Feb-2014	08:00	0.6	ENE
4-Feb-2014	09:00	0.8	NE
4-Feb-2014	10:00	1.6	ENE
4-Feb-2014	11:00	2.1	NE
4-Feb-2014	12:00	2.3	ENE
4-Feb-2014	13:00	2.2	NE
4-Feb-2014	14:00	2.1	NE
4-Feb-2014	15:00	2.1	NE
4-Feb-2014	16:00	1.6	NE
4-Feb-2014	17:00	2	NE
4-Feb-2014	18:00	1.4	ENE
4-Feb-2014	19:00	1.5	ENE
4-Feb-2014	20:00	1.7	NE
4-Feb-2014	21:00	1.3	NE
4-Feb-2014	22:00	1.5	ENE
4-Feb-2014	23:00	1.4	NNE
5-Feb-2014	00:00	1.5	NNE
5-Feb-2014	01:00	1.6	NE
5-Feb-2014	02:00	2	NE
5-Feb-2014	03:00	2.1	N
5-Feb-2014	04:00	2	N
5-Feb-2014	05:00	2.1	N
5-Feb-2014	06:00	2	WSW
5-Feb-2014	07:00	2.1	W
5-Feb-2014	08:00	2	WSW
5-Feb-2014	09:00	2	SW
5-Feb-2014	10:00	1.9	SSW
5-Feb-2014	11:00	2	SW
5-Feb-2014	12:00	1.9	SW
5-Feb-2014	13:00	2.5	WSW

II. Mean Wind Speed and Wind Direction

5-Feb-2014	14:00	2.5	SW
5-Feb-2014	15:00	2.7	NE
5-Feb-2014	16:00	2.5	WSW
5-Feb-2014	17:00	2.3	SE
5-Feb-2014	18:00	2.2	NE
5-Feb-2014	19:00	1.8	SSW
5-Feb-2014	20:00	2	SW
5-Feb-2014	21:00	1.8	SW
5-Feb-2014	22:00	1.7	SSE
5-Feb-2014	23:00	1.3	SSE
6-Feb-2014	00:00	3.3	SSE
6-Feb-2014	01:00	3.3	SW
6-Feb-2014	02:00	2.3	SW
6-Feb-2014	03:00	2	SW
6-Feb-2014	04:00	2	SSW
6-Feb-2014	05:00	1.9	SW
6-Feb-2014	06:00	1.9	SSW
6-Feb-2014	07:00	2	SW
6-Feb-2014	08:00	1.8	SW
6-Feb-2014	09:00	2.5	ENE
6-Feb-2014	10:00	2.5	ENE
6-Feb-2014	11:00	2.7	WSW
6-Feb-2014	12:00	2.3	E
6-Feb-2014	13:00	2.7	E
6-Feb-2014	14:00	2	E
6-Feb-2014	15:00	1.9	E
6-Feb-2014	16:00	1.9	E
6-Feb-2014	17:00	2.2	E
6-Feb-2014	18:00	2.2	E
6-Feb-2014	19:00	2.4	SSW
6-Feb-2014	20:00	2.6	SSW
6-Feb-2014	21:00	2.5	NE
6-Feb-2014	22:00	2.3	NE
6-Feb-2014	23:00	2.3	NE
7-Feb-2014	00:00	2.7	NE
7-Feb-2014	01:00	2.2	SSW
7-Feb-2014	02:00	2	E

II. Mean Wind Speed and Wind Direction

7-Feb-2014	03:00	1.9	SW
7-Feb-2014	04:00	1.8	SW
7-Feb-2014	05:00	2.5	NNE
7-Feb-2014	06:00	1.6	E
7-Feb-2014	07:00	2.1	E
7-Feb-2014	08:00	2.5	E
7-Feb-2014	09:00	3	N
7-Feb-2014	10:00	3.2	W
7-Feb-2014	11:00	3.2	N
7-Feb-2014	12:00	3.8	N
7-Feb-2014	13:00	4.1	NE
7-Feb-2014	14:00	4	E
7-Feb-2014	15:00	4.4	E
7-Feb-2014	16:00	4.1	ESE
7-Feb-2014	17:00	3.5	WSW
7-Feb-2014	18:00	2.8	NNW
7-Feb-2014	19:00	1.8	SW
7-Feb-2014	20:00	1.9	SW
7-Feb-2014	21:00	2.9	N
7-Feb-2014	22:00	3.1	SSE
7-Feb-2014	23:00	1.9	NNE
8-Feb-2014	00:00	1	SW
8-Feb-2014	01:00	0.9	SSW
8-Feb-2014	02:00	0.9	SW
8-Feb-2014	03:00	0.9	W
8-Feb-2014	04:00	0.9	SSW
8-Feb-2014	05:00	1	SW
8-Feb-2014	06:00	0.7	S
8-Feb-2014	07:00	0.7	S
8-Feb-2014	08:00	0.8	E
8-Feb-2014	09:00	1.2	E
8-Feb-2014	10:00	1.8	E
8-Feb-2014	11:00	1.4	E
8-Feb-2014	12:00	1.9	NW
8-Feb-2014	13:00	2.2	NE
8-Feb-2014	14:00	2.2	NE
8-Feb-2014	15:00	2.1	NE

II. Mean Wind Speed and Wind Direction

8-Feb-2014	16:00	1.9	SSW
8-Feb-2014	17:00	1	SW
8-Feb-2014	18:00	0.8	E
8-Feb-2014	19:00	0.6	E
8-Feb-2014	20:00	0.4	E
8-Feb-2014	21:00	0.4	WSW
8-Feb-2014	22:00	0.4	E
8-Feb-2014	23:00	0.6	E
9-Feb-2014	00:00	1.3	E
9-Feb-2014	01:00	1	N
9-Feb-2014	02:00	0.9	W
9-Feb-2014	03:00	1	E
9-Feb-2014	04:00	0.9	E
9-Feb-2014	05:00	1	ESE
9-Feb-2014	06:00	0.9	SSW
9-Feb-2014	07:00	1.2	SW
9-Feb-2014	08:00	0.9	WSW
9-Feb-2014	09:00	1.7	N
9-Feb-2014	10:00	2.4	SSW
9-Feb-2014	11:00	2.1	N
9-Feb-2014	12:00	1.7	SW
9-Feb-2014	13:00	2.4	SW
9-Feb-2014	14:00	2.1	SW
9-Feb-2014	15:00	2.5	NE
9-Feb-2014	16:00	2	W
9-Feb-2014	17:00	1.3	S
9-Feb-2014	18:00	1.3	SW
9-Feb-2014	19:00	1	SW
9-Feb-2014	20:00	0.8	SW
9-Feb-2014	21:00	0.8	SW
9-Feb-2014	22:00	0.9	SW
9-Feb-2014	23:00	0.6	SW
10-Feb-2014	00:00	0.8	SW
10-Feb-2014	01:00	1.5	SW
10-Feb-2014	02:00	1.7	WSW
10-Feb-2014	03:00	1.5	W
10-Feb-2014	04:00	2.4	NNE

II. Mean Wind Speed and Wind Direction

10-Feb-2014	05:00	2.3	ENE
10-Feb-2014	06:00	2.8	ENE
10-Feb-2014	07:00	2.7	NE
10-Feb-2014	08:00	2.5	NE
10-Feb-2014	09:00	2.5	NE
10-Feb-2014	10:00	2.2	N
10-Feb-2014	11:00	2.2	ENE
10-Feb-2014	12:00	2.4	SSE
10-Feb-2014	13:00	2.6	SSE
10-Feb-2014	14:00	2.5	WSW
10-Feb-2014	15:00	2.6	WSW
10-Feb-2014	16:00	2.7	S
10-Feb-2014	17:00	3	SSW
10-Feb-2014	18:00	2.7	WNW
10-Feb-2014	19:00	2.6	W
10-Feb-2014	20:00	2.3	S
10-Feb-2014	21:00	1.5	W
10-Feb-2014	22:00	1.6	WSW
10-Feb-2014	23:00	1.8	SW
11-Feb-2014	00:00	2.3	SW
11-Feb-2014	01:00	1.9	SW
11-Feb-2014	02:00	1.8	SW
11-Feb-2014	03:00	0.8	SW
11-Feb-2014	04:00	0.6	W
11-Feb-2014	05:00	1.9	WSW
11-Feb-2014	06:00	1.7	SW
11-Feb-2014	07:00	1.2	W
11-Feb-2014	08:00	1.4	SSE
11-Feb-2014	09:00	2.3	SSE
11-Feb-2014	10:00	2.4	W
11-Feb-2014	11:00	2.5	SW
11-Feb-2014	12:00	3.1	ESE
11-Feb-2014	13:00	3.1	NW
11-Feb-2014	14:00	3.3	SSW
11-Feb-2014	15:00	2.9	S
11-Feb-2014	16:00	2.6	SSW
11-Feb-2014	17:00	2.7	WNW

II. Mean Wind Speed and Wind Direction

11-Feb-2014	18:00	2.2	WNW
11-Feb-2014	19:00	0.9	WSW
11-Feb-2014	20:00	1.7	WSW
11-Feb-2014	21:00	2	W
11-Feb-2014	22:00	1.6	W
11-Feb-2014	23:00	1.1	WSW
12-Feb-2014	00:00	1.3	WSW
12-Feb-2014	01:00	1.5	SW
12-Feb-2014	02:00	1.1	W
12-Feb-2014	03:00	1.2	W
12-Feb-2014	04:00	0.9	SW
12-Feb-2014	05:00	1	SSW
12-Feb-2014	06:00	0.7	W
12-Feb-2014	07:00	0.6	W
12-Feb-2014	08:00	0.8	WSW
12-Feb-2014	09:00	0.6	W
12-Feb-2014	10:00	1.5	W
12-Feb-2014	11:00	2	WSW
12-Feb-2014	12:00	2.4	W
12-Feb-2014	13:00	2.4	NE
12-Feb-2014	14:00	2.1	NE
12-Feb-2014	15:00	1.6	NE
12-Feb-2014	16:00	1.8	W
12-Feb-2014	17:00	1.9	W
12-Feb-2014	18:00	1.7	W
12-Feb-2014	19:00	0.9	SSW
12-Feb-2014	20:00	0.6	ENE
12-Feb-2014	21:00	0.6	S
12-Feb-2014	22:00	0.5	WNW
12-Feb-2014	23:00	0.6	SSW
13-Feb-2014	00:00	0.6	W
13-Feb-2014	01:00	0.5	W
13-Feb-2014	02:00	0.6	WSW
13-Feb-2014	03:00	0.5	WSW
13-Feb-2014	04:00	0.5	SW
13-Feb-2014	05:00	0.6	WSW
13-Feb-2014	06:00	0.5	SW

II. Mean Wind Speed and Wind Direction

13-Feb-2014	07:00	0.6	WSW
13-Feb-2014	08:00	0.6	SSW
13-Feb-2014	09:00	0.9	W
13-Feb-2014	10:00	1.8	WNW
13-Feb-2014	11:00	2.1	WSW
13-Feb-2014	12:00	2.3	WNW
13-Feb-2014	13:00	1.8	WSW
13-Feb-2014	14:00	1.8	WSW
13-Feb-2014	15:00	1.9	WSW
13-Feb-2014	16:00	1.7	SW
13-Feb-2014	17:00	1.6	WSW
13-Feb-2014	18:00	1.1	WNW
13-Feb-2014	19:00	1.3	W
13-Feb-2014	20:00	1.3	WSW
13-Feb-2014	21:00	1.5	WNW
13-Feb-2014	22:00	0.9	WSW
13-Feb-2014	23:00	1.1	WSW
14-Feb-2014	00:00	1.2	WNW
14-Feb-2014	01:00	1.3	WNW
14-Feb-2014	02:00	1.5	WNW
14-Feb-2014	03:00	1.2	WNW
14-Feb-2014	04:00	0.9	SW
14-Feb-2014	05:00	0.8	WSW
14-Feb-2014	06:00	0.9	WSW
14-Feb-2014	07:00	0.9	SW
14-Feb-2014	08:00	0.9	W
14-Feb-2014	09:00	1.2	W
14-Feb-2014	10:00	2	WSW
14-Feb-2014	11:00	2.2	SSW
14-Feb-2014	12:00	3	WSW
14-Feb-2014	13:00	2.6	SW
14-Feb-2014	14:00	2.3	W
14-Feb-2014	15:00	2.8	WSW
14-Feb-2014	16:00	2.4	SW
14-Feb-2014	17:00	2.1	WSW
14-Feb-2014	18:00	1.8	SW
14-Feb-2014	19:00	1.8	WSW

II. Mean Wind Speed and Wind Direction

14-Feb-2014	20:00	1.3	WSW
14-Feb-2014	21:00	1.7	WSW
14-Feb-2014	22:00	1.7	WSW
14-Feb-2014	23:00	1.1	SW
15-Feb-2014	00:00	1.7	WSW
15-Feb-2014	01:00	1	W
15-Feb-2014	02:00	1.1	WNW
15-Feb-2014	03:00	1.5	WNW
15-Feb-2014	04:00	1.2	WSW
15-Feb-2014	05:00	1	NE
15-Feb-2014	06:00	1.4	ENE
15-Feb-2014	07:00	1.3	WNW
15-Feb-2014	08:00	1.5	WNW
15-Feb-2014	09:00	2.2	WNW
15-Feb-2014	10:00	2.6	WNW
15-Feb-2014	11:00	2.6	WNW
15-Feb-2014	12:00	3.1	WNW
15-Feb-2014	13:00	3.1	W
15-Feb-2014	14:00	2.6	WNW
15-Feb-2014	15:00	2.7	WNW
15-Feb-2014	16:00	2.7	E
15-Feb-2014	17:00	2.4	SSE
15-Feb-2014	18:00	2	W
15-Feb-2014	19:00	1.4	SW
15-Feb-2014	20:00	1.2	SW
15-Feb-2014	21:00	0.9	W
15-Feb-2014	22:00	1.3	SSW
15-Feb-2014	23:00	1.2	SW
16-Feb-2014	00:00	1	WSW
16-Feb-2014	01:00	1.2	WSW
16-Feb-2014	02:00	0.8	W
16-Feb-2014	03:00	0.7	SW
16-Feb-2014	04:00	0.7	W
16-Feb-2014	05:00	0.9	W
16-Feb-2014	06:00	0.6	W
16-Feb-2014	07:00	0.8	W
16-Feb-2014	08:00	0.8	WNW

II. Mean Wind Speed and Wind Direction

16-Feb-2014	09:00	1.6	SW
16-Feb-2014	10:00	2	WSW
16-Feb-2014	11:00	2	W
16-Feb-2014	12:00	2.1	W
16-Feb-2014	13:00	2.4	WNW
16-Feb-2014	14:00	2	WNW
16-Feb-2014	15:00	1.8	W
16-Feb-2014	16:00	2.3	WSW
16-Feb-2014	17:00	2.1	WSW
16-Feb-2014	18:00	1.6	WSW
16-Feb-2014	19:00	1	WSW
16-Feb-2014	20:00	1.1	WSW
16-Feb-2014	21:00	1.7	WSW
16-Feb-2014	22:00	0.9	WSW
16-Feb-2014	23:00	0.7	WSW
17-Feb-2014	00:00	0.8	WNW
17-Feb-2014	01:00	1	W
17-Feb-2014	02:00	0.7	WNW
17-Feb-2014	03:00	1	WNW
17-Feb-2014	04:00	1	WNW
17-Feb-2014	05:00	1	WSW
17-Feb-2014	06:00	1.2	WNW
17-Feb-2014	07:00	1.3	WSW
17-Feb-2014	08:00	1.8	W
17-Feb-2014	09:00	1.5	WNW
17-Feb-2014	10:00	2.2	W
17-Feb-2014	11:00	2.8	WSW
17-Feb-2014	12:00	2.8	W
17-Feb-2014	13:00	2.5	W
17-Feb-2014	14:00	2.3	WSW
17-Feb-2014	15:00	2.9	WSW
17-Feb-2014	16:00	2.5	W
17-Feb-2014	17:00	1.9	W
17-Feb-2014	18:00	1.4	W
17-Feb-2014	19:00	1.2	WSW
17-Feb-2014	20:00	1.2	SSW
17-Feb-2014	21:00	1.1	S

II. Mean Wind Speed and Wind Direction

17-Feb-2014	22:00	1	S
17-Feb-2014	23:00	0.7	W
18-Feb-2014	00:00	0.8	SW
18-Feb-2014	01:00	1.2	WNW
18-Feb-2014	02:00	0.8	W
18-Feb-2014	03:00	0.8	WNW
18-Feb-2014	04:00	0.8	WNW
18-Feb-2014	05:00	0.9	WNW
18-Feb-2014	06:00	0.6	W
18-Feb-2014	07:00	0.6	WNW
18-Feb-2014	08:00	1	WNW
18-Feb-2014	09:00	1.7	WSW
18-Feb-2014	10:00	2.4	W
18-Feb-2014	11:00	2	WSW
18-Feb-2014	12:00	2.8	WSW
18-Feb-2014	13:00	2.4	WSW
18-Feb-2014	14:00	2.4	WSW
18-Feb-2014	15:00	3.1	WNW
18-Feb-2014	16:00	2.9	WNW
18-Feb-2014	17:00	2.8	WNW
18-Feb-2014	18:00	2.7	WNW
18-Feb-2014	19:00	2.3	WNW
18-Feb-2014	20:00	2.7	WNW
18-Feb-2014	21:00	2.9	SSW
18-Feb-2014	22:00	2.6	WSW
18-Feb-2014	23:00	3.1	WSW
19-Feb-2014	00:00	2.9	NE
19-Feb-2014	01:00	2.8	NE
19-Feb-2014	02:00	3.3	WSW
19-Feb-2014	03:00	2.8	WSW
19-Feb-2014	04:00	2.5	WSW
19-Feb-2014	05:00	2.7	SSW
19-Feb-2014	06:00	2.9	SSW
19-Feb-2014	07:00	2.4	SSW
19-Feb-2014	08:00	2.3	W
19-Feb-2014	09:00	2.5	SW
19-Feb-2014	10:00	2.7	WSW

II. Mean Wind Speed and Wind Direction

19-Feb-2014	11:00	2.9	WSW
19-Feb-2014	12:00	3.8	SW
19-Feb-2014	13:00	2.7	WSW
19-Feb-2014	14:00	3.3	WSW
19-Feb-2014	15:00	2.8	SW
19-Feb-2014	16:00	3.2	W
19-Feb-2014	17:00	2.7	SW
19-Feb-2014	18:00	2.7	W
19-Feb-2014	19:00	2.6	W
19-Feb-2014	20:00	2.4	WSW
19-Feb-2014	21:00	1.8	W
19-Feb-2014	22:00	1.5	W
19-Feb-2014	23:00	1.9	WSW
20-Feb-2014	00:00	1.5	WNW
20-Feb-2014	01:00	1	W
20-Feb-2014	02:00	1.4	W
20-Feb-2014	03:00	0.9	SW
20-Feb-2014	04:00	1	W
20-Feb-2014	05:00	0.9	SW
20-Feb-2014	06:00	0.9	SW
20-Feb-2014	07:00	0.9	W
20-Feb-2014	08:00	1.1	W
20-Feb-2014	09:00	1.8	W
20-Feb-2014	10:00	2.3	WSW
20-Feb-2014	11:00	2.4	SSW
20-Feb-2014	12:00	3	SW
20-Feb-2014	13:00	2.6	W
20-Feb-2014	14:00	2.8	W
20-Feb-2014	15:00	2.8	WNW
20-Feb-2014	16:00	2.5	WNW
20-Feb-2014	17:00	1.9	WSW
20-Feb-2014	18:00	1.9	WSW
20-Feb-2014	19:00	1.6	WSW
20-Feb-2014	20:00	1.4	N
20-Feb-2014	21:00	1.5	N
20-Feb-2014	22:00	1.6	NNE
20-Feb-2014	23:00	1.6	NNE

II. Mean Wind Speed and Wind Direction

21-Feb-2014	00:00	1.9	NE
21-Feb-2014	01:00	1.5	ENE
21-Feb-2014	02:00	1.9	E
21-Feb-2014	03:00	1.7	E
21-Feb-2014	04:00	1.2	WSW
21-Feb-2014	05:00	1.2	WNW
21-Feb-2014	06:00	1.6	WNW
21-Feb-2014	07:00	1.2	WSW
21-Feb-2014	08:00	0.9	W
21-Feb-2014	09:00	1.6	WSW
21-Feb-2014	10:00	1.7	W
21-Feb-2014	11:00	1.9	W
21-Feb-2014	12:00	2	WNW
21-Feb-2014	13:00	1.9	WNW
21-Feb-2014	14:00	2.2	WSW
21-Feb-2014	15:00	2	WSW
21-Feb-2014	16:00	1.8	WNW
21-Feb-2014	17:00	1.6	WNW
21-Feb-2014	18:00	1.5	W
21-Feb-2014	19:00	1.2	WSW
21-Feb-2014	20:00	1.2	WSW
21-Feb-2014	21:00	1.3	WSW
21-Feb-2014	22:00	1.5	WSW
21-Feb-2014	23:00	2.1	WNW
22-Feb-2014	00:00	2.2	SW
22-Feb-2014	01:00	2.2	WSW
22-Feb-2014	02:00	2	W
22-Feb-2014	03:00	2	N
22-Feb-2014	04:00	2.5	N
22-Feb-2014	05:00	2.5	WNW
22-Feb-2014	06:00	1.9	W
22-Feb-2014	07:00	2.5	SSW
22-Feb-2014	08:00	3	W
22-Feb-2014	09:00	3.3	W
22-Feb-2014	10:00	3	WNW
22-Feb-2014	11:00	3.1	WNW
22-Feb-2014	12:00	2.7	WNW

II. Mean Wind Speed and Wind Direction

22-Feb-2014	13:00	2.5	W
22-Feb-2014	14:00	2.5	W
22-Feb-2014	15:00	2.2	W
22-Feb-2014	16:00	2.9	WNW
22-Feb-2014	17:00	2.2	WNW
22-Feb-2014	18:00	1.9	WNW
22-Feb-2014	19:00	2.7	N
22-Feb-2014	20:00	2.5	WNW
22-Feb-2014	21:00	2.6	SSW
22-Feb-2014	22:00	2.8	W
22-Feb-2014	23:00	2.5	S
23-Feb-2014	00:00	2.5	SSW
23-Feb-2014	01:00	2.9	WNW
23-Feb-2014	02:00	3.1	WNW
23-Feb-2014	03:00	2.9	WNW
23-Feb-2014	04:00	2.9	W
23-Feb-2014	05:00	3.3	W
23-Feb-2014	06:00	2.8	W
23-Feb-2014	07:00	2.8	NW
23-Feb-2014	08:00	3.1	WNW
23-Feb-2014	09:00	3.5	N
23-Feb-2014	10:00	4.1	N
23-Feb-2014	11:00	4.5	W
23-Feb-2014	12:00	4.2	ESE
23-Feb-2014	13:00	4.3	WNW
23-Feb-2014	14:00	4.3	WNW
23-Feb-2014	15:00	3.5	W
23-Feb-2014	16:00	3.9	W
23-Feb-2014	17:00	3.7	W
23-Feb-2014	18:00	3	WNW
23-Feb-2014	19:00	2.9	N
23-Feb-2014	20:00	3.2	ENE
23-Feb-2014	21:00	2.7	E
23-Feb-2014	22:00	3	E
23-Feb-2014	23:00	2.3	E
24-Feb-2014	00:00	2.2	E
24-Feb-2014	01:00	2.3	ENE

II. Mean Wind Speed and Wind Direction

24-Feb-2014	02:00	2.1	ESE
24-Feb-2014	03:00	2.2	E
24-Feb-2014	04:00	3	ENE
24-Feb-2014	05:00	2.7	ENE
24-Feb-2014	06:00	2.8	ENE
24-Feb-2014	07:00	2.3	ENE
24-Feb-2014	08:00	2.9	WSW
24-Feb-2014	09:00	3.1	ENE
24-Feb-2014	10:00	3.5	WSW
24-Feb-2014	11:00	3.8	SW
24-Feb-2014	12:00	3.2	SE
24-Feb-2014	13:00	3.3	WNW
24-Feb-2014	14:00	3.6	ENE
24-Feb-2014	15:00	3.4	W
24-Feb-2014	16:00	3.2	NE
24-Feb-2014	17:00	2.7	N
24-Feb-2014	18:00	1.9	SW
24-Feb-2014	19:00	1.1	W
24-Feb-2014	20:00	1.2	W
24-Feb-2014	21:00	1.4	ENE
24-Feb-2014	22:00	1.2	SE
24-Feb-2014	23:00	1.7	SSE
25-Feb-2014	00:00	2	WNW
25-Feb-2014	01:00	2.3	WSW
25-Feb-2014	02:00	1.8	ESE
25-Feb-2014	03:00	1.6	ESE
25-Feb-2014	04:00	1.7	SSE
25-Feb-2014	05:00	1.3	NE
25-Feb-2014	06:00	0.8	SW
25-Feb-2014	07:00	1.2	N
25-Feb-2014	08:00	1.9	SW
25-Feb-2014	09:00	2.2	NE
25-Feb-2014	10:00	2.4	WNW
25-Feb-2014	11:00	2.4	WNW
25-Feb-2014	12:00	1.9	ENE
25-Feb-2014	13:00	2.5	SE
25-Feb-2014	14:00	2.6	NNE

II. Mean Wind Speed and Wind Direction

25-Feb-2014	15:00	3.5	NNE
25-Feb-2014	16:00	3.2	ENE
25-Feb-2014	17:00	2.5	SW
25-Feb-2014	18:00	1.9	NE
25-Feb-2014	19:00	1.5	NE
25-Feb-2014	20:00	0.7	ESE
25-Feb-2014	21:00	0.3	SSE
25-Feb-2014	22:00	1	SW
25-Feb-2014	23:00	0.9	WSW
26-Feb-2014	00:00	0.9	SW
26-Feb-2014	01:00	0.8	E
26-Feb-2014	02:00	0.8	SSE
26-Feb-2014	03:00	0.9	SSE
26-Feb-2014	04:00	0.9	S
26-Feb-2014	05:00	0.8	S
26-Feb-2014	06:00	0.8	S
26-Feb-2014	07:00	0.8	WSW
26-Feb-2014	08:00	1.8	WSW
26-Feb-2014	09:00	1.9	NE
26-Feb-2014	10:00	1.4	SW
26-Feb-2014	11:00	0.9	SW
26-Feb-2014	12:00	1.3	N
26-Feb-2014	13:00	1.6	ESE
26-Feb-2014	14:00	1.6	W
26-Feb-2014	15:00	1.9	SW
26-Feb-2014	16:00	1.7	SW
26-Feb-2014	17:00	1.2	SW
26-Feb-2014	18:00	0.9	E
26-Feb-2014	19:00	0.9	E
26-Feb-2014	20:00	1.3	WSW
26-Feb-2014	21:00	1.8	WSW
26-Feb-2014	22:00	1.8	W
26-Feb-2014	23:00	1.9	W
27-Feb-2014	00:00	1.5	W
27-Feb-2014	01:00	1.5	WSW
27-Feb-2014	02:00	1.5	WSW
27-Feb-2014	03:00	1.3	SW

II. Mean Wind Speed and Wind Direction

27-Feb-2014	04:00	1.2	SW
27-Feb-2014	05:00	1	SSW
27-Feb-2014	06:00	0.9	NE
27-Feb-2014	07:00	0.9	NE
27-Feb-2014	08:00	1.3	ENE
27-Feb-2014	09:00	1.3	W
27-Feb-2014	10:00	1.2	W
27-Feb-2014	11:00	0.9	W
27-Feb-2014	12:00	1.7	W
27-Feb-2014	13:00	1.5	WNW
27-Feb-2014	14:00	1.6	WSW
27-Feb-2014	15:00	1.6	WSW
27-Feb-2014	16:00	1.5	WSW
27-Feb-2014	17:00	1.7	WSW
27-Feb-2014	18:00	1.3	WSW
27-Feb-2014	19:00	1	W
27-Feb-2014	20:00	0.7	SW
27-Feb-2014	21:00	0.8	SW
27-Feb-2014	22:00	0.7	SSE
27-Feb-2014	23:00	0.7	N
28-Feb-2014	00:00	0.5	ENE
28-Feb-2014	01:00	0.5	WSW
28-Feb-2014	02:00	0.4	WSW
28-Feb-2014	03:00	0.4	SW
28-Feb-2014	04:00	0.3	SW
28-Feb-2014	05:00	0.3	WSW
28-Feb-2014	06:00	0.3	WSW
28-Feb-2014	07:00	0.4	W
28-Feb-2014	08:00	0.4	E
28-Feb-2014	09:00	0.8	WNW
28-Feb-2014	10:00	1.7	SE
28-Feb-2014	11:00	2	SE
28-Feb-2014	12:00	2.2	NNE
28-Feb-2014	13:00	2.6	WSW
28-Feb-2014	14:00	2.5	SW
28-Feb-2014	15:00	2.6	W
28-Feb-2014	16:00	2.1	NE

II. Mean Wind Speed and Wind Direction

28-Feb-2014	17:00	2.7	ESE
28-Feb-2014	18:00	2	WNW
28-Feb-2014	19:00	1.9	WNW
28-Feb-2014	20:00	1.7	WSW
28-Feb-2014	21:00	1.6	WNW
28-Feb-2014	22:00	1.6	W
28-Feb-2014	23:00	2	WNW

APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Contract No. KLN/2010/03

Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities

Impact Air and Noise Monitoring Schedule for February 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Feb
2-Feb	**3-Feb**	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb
		24 hr TSP	1 hr TSP X3 Noise (M3, M4)		Noise (M1, M2) 24 hr TSP	
9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
	1 hr TSP X3 Noise (M3, M4)			Noise (M1, M2) 24 hr TSP	1 hr TSP X3	
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
		Noise (M1, M2)	24 hr TSP	1 hr TSP X3 Noise (M3, M4)		
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	
	24 hr TSP	1 hr TSP X3 Noise (M3, M4)		Noise (M1, M2)	24 hr TSP	

Remarks: *The construction nosie monitoring at Station M3 would be conducted at Rooftop of Cognitio College from 28 August 2013 onwards.

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2008/09
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M1 - Buddhist Chi King Primary School
M2 - S.K.H. Kowloon Bay Kei Lok Primary School
M3 - Cognitio College
M4 - Lee Kau Yan Memorial School

Contract No. KLN/2010/03
Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities
Tentative Impact Air and Noise Monitoring Schedule for March 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Mar
2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar
	1 hr TSP X3 Noise (M3, M4)		Noise (M1, M2)	24 hr TSP	1 hr TSP X3	
9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
			Noise (M1, M2) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)		
16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar
		Noise (M1, M2) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)			
23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar
	24 hr TSP	1 hr TSP X3 Noise (M3, M4)		Noise (M1, M2)	24 hr TSP	
30-Mar	31-Mar					
	1 hr TSP X3 Noise (M3, M4)					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)
Remarks: *The construction nosie monitoring at Station M3 would be conducted at Rooftop of Cognitio College from 28 August 2013 onwards.

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2008/09
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M1 - Buddhist Chi King Primary School
M2 - S.K.H. Kowloon Bay Kei Lok Primary School
M3 - Cognitio College
M4 - Lee Kau Yan Memorial School

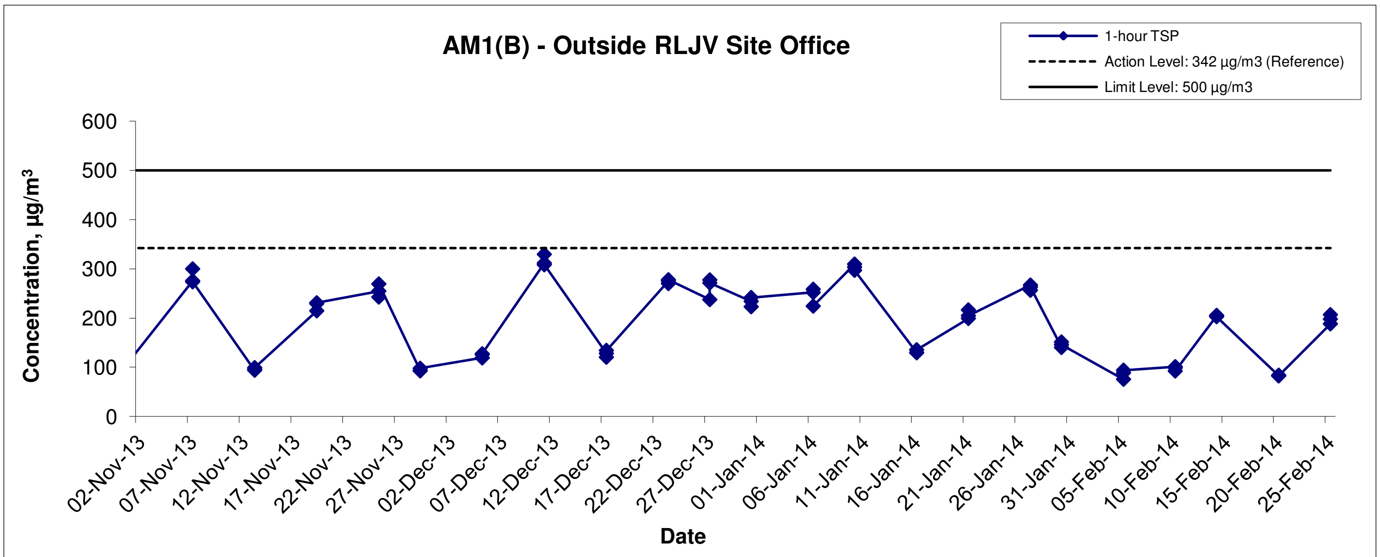
APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

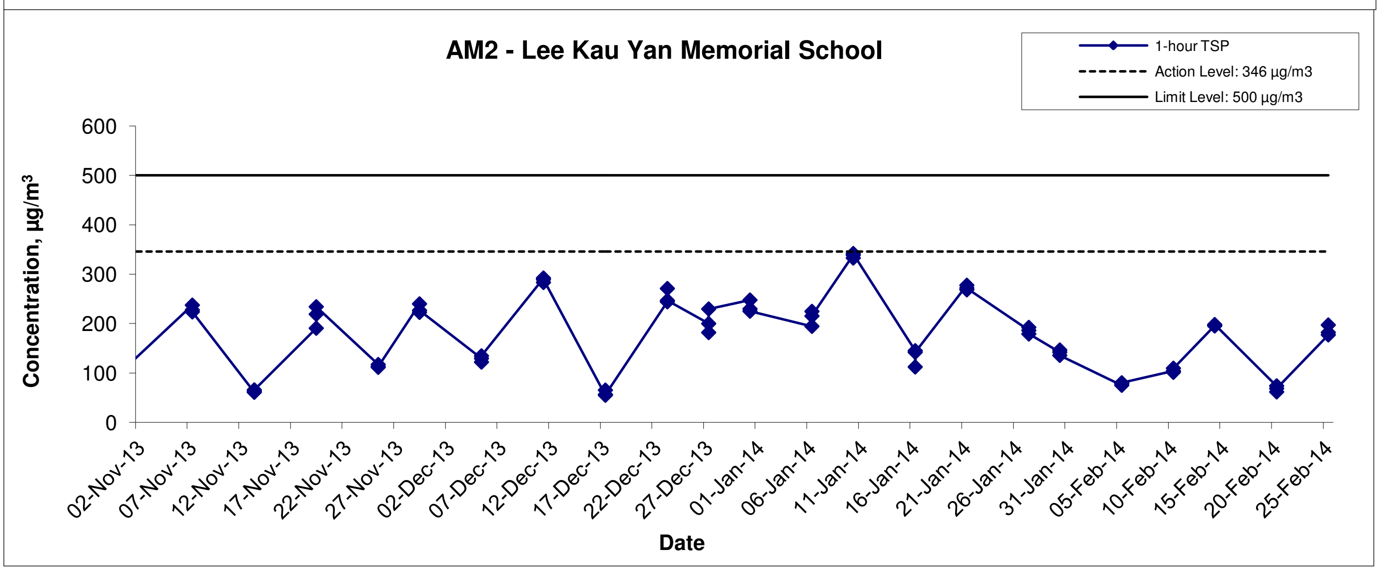
Appendix E - 1-hour TSP Monitoring Results

Location AM1(B) - Outside RLJV Site Office			
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Feb-14	9:00	Cloudy	75.7
5-Feb-14	10:00	Cloudy	88.8
5-Feb-14	11:00	Cloudy	94.1
10-Feb-14	9:00	Cloudy	101.2
10-Feb-14	10:00	Cloudy	98.9
10-Feb-14	11:00	Cloudy	92.4
14-Feb-14	9:00	Fine	203.9
14-Feb-14	10:00	Fine	205.4
14-Feb-14	11:00	Fine	202.8
20-Feb-14	13:00	Sunny	82.8
20-Feb-14	14:00	Sunny	83.9
20-Feb-14	15:00	Sunny	82.6
25-Feb-14	13:01	Cloudy	188.2
25-Feb-14	14:01	Cloudy	197.9
25-Feb-14	15:01	Cloudy	206.8
		Average	133.7
		Maximum	206.8
		Minimum	75.7

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration (μg/m^3)
5-Feb-14	9:00	Fine	75.1
5-Feb-14	10:00	Fine	78.4
5-Feb-14	11:00	Fine	80.1
10-Feb-14	13:01	Cloudy	104.1
10-Feb-14	14:01	Cloudy	101.4
10-Feb-14	15:01	Cloudy	109.6
14-Feb-14	9:00	Fine	196.2
14-Feb-14	10:00	Fine	195.2
14-Feb-14	11:00	Fine	198.0
20-Feb-14	13:00	Sunny	73.9
20-Feb-14	14:00	Sunny	61.7
20-Feb-14	15:00	Sunny	68.6
25-Feb-14	13:01	Cloudy	177.1
25-Feb-14	14:01	Cloudy	182.0
25-Feb-14	15:01	Cloudy	197.1
		Average	126.6
		Maximum	198.0
		Minimum	61.7

1-hr TSP Concentration Levels





Title	Scale	Project	CINOTECH
Contract No. KL/2010/03 Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities	N.T.S	No. MA11038	
Graphical Presentation of 1-hour TSP Monitoring Results	Date Feb 14	Appendix E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

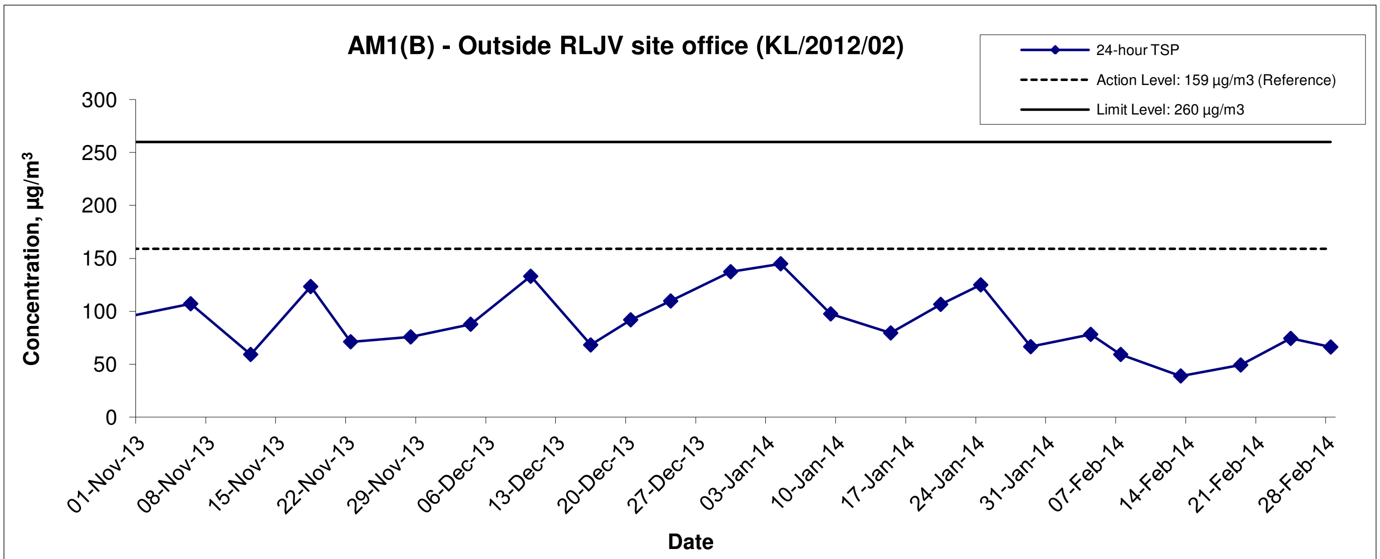
Location AM1(B) - Outside RLJV site office (KL/2012/02)

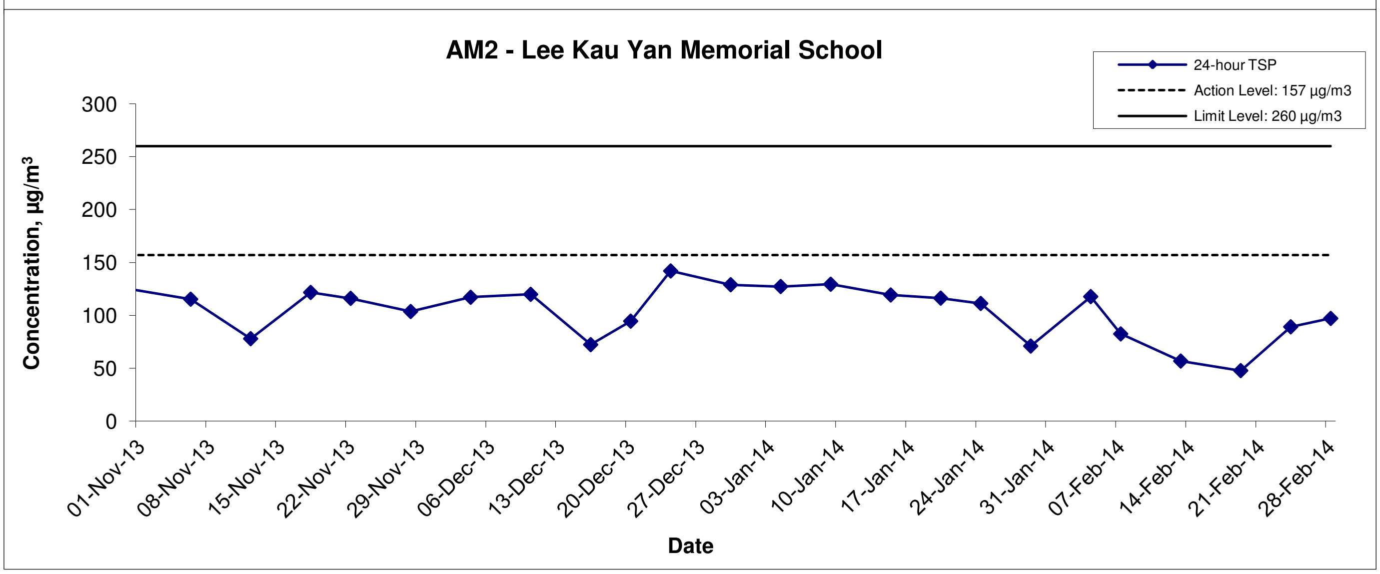
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
4-Feb-14	Sunny	290.8	763.3	3.8013	3.9398	0.1385	2764.8	2788.8	24.0	1.23	1.23	1.23	1770.8	78.2
7-Feb-14	Cloudy	291.9	762.0	3.6036	3.7082	0.1046	2788.8	2812.8	24.0	1.23	1.23	1.23	1766.1	59.2
13-Feb-14	Cloudy	279.2	769.9	3.8718	3.9424	0.0706	2812.8	2836.8	24.0	1.26	1.26	1.26	1813.6	38.9
19-Feb-14	Cloudy	280.3	770.3	3.5712	3.6604	0.0892	2836.8	2860.8	24.0	1.26	1.26	1.26	1810.5	49.3
24-Feb-14	Sunny	289.1	769.6	3.6640	3.7966	0.1326	2860.8	2884.8	24.0	1.24	1.24	1.24	1782.8	74.4
28-Feb-14	Cloudy	291.1	767.9	3.8579	3.9745	0.1166	2884.8	2908.8	24.0	1.22	1.22	1.22	1759.3	66.3
													Min	38.9
													Max	78.2
													Average	61.0

Location AM2 - Lee Kau Yan Memorial School

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
4-Feb-14	Sunny	290.8	763.3	3.8117	4.0164	0.2047	12796.7	12820.7	24.0	1.21	1.21	1.21	1738.9	117.7
7-Feb-14	Cloudy	291.9	762.0	3.6141	3.7571	0.1430	12820.7	12844.7	24.0	1.20	1.20	1.20	1734.5	82.4
13-Feb-14	Cloudy	279.2	769.9	3.8467	3.9475	0.1008	12844.8	12868.7	24.0	1.24	1.23	1.24	1774.8	56.8
19-Feb-14	Cloudy	280.3	770.3	3.8747	3.9595	0.0848	12868.7	12892.7	24.0	1.23	1.23	1.23	1775.7	47.8
24-Feb-14	Sunny	289.1	769.5	3.6718	3.8278	0.1560	12892.7	12916.7	24.0	1.22	1.21	1.22	1749.9	89.1
28-Feb-14	Cloudy	291.1	767.9	3.8460	4.0152	0.1692	12916.7	12940.7	24.0	1.21	1.21	1.21	1742.8	97.1
													Min	47.8
													Max	117.7
													Average	81.8

24-hr TSP Concentration Levels





Title	Scale	Project
Contract No. KL/2010/03 Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities	N.T.S	No. MA11038
Graphical Presentation of 24-hour TSP Monitoring Results	Date Feb 14	Appendix F

CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

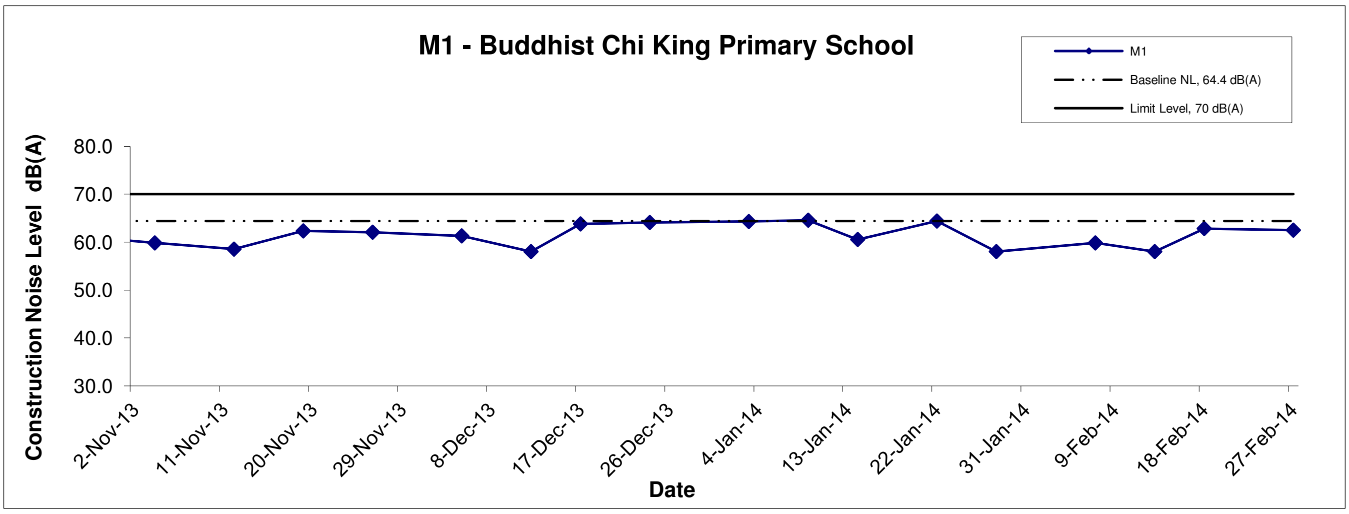
Location M1 - Buddhist Chi King Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
7-Feb-14	11:30	Cloudy	65.7	68.7	61.0	64.4	59.8
13-Feb-14	15:10	Cloudy	65.3	67.1	62.3		58.0 ≦
18-Feb-14	10:45	Cloudy	66.7	68.9	60.2		62.8
27-Feb-14	13:01	Cloudy	62.5	63.9	55.6		62.5 Measured Baseline

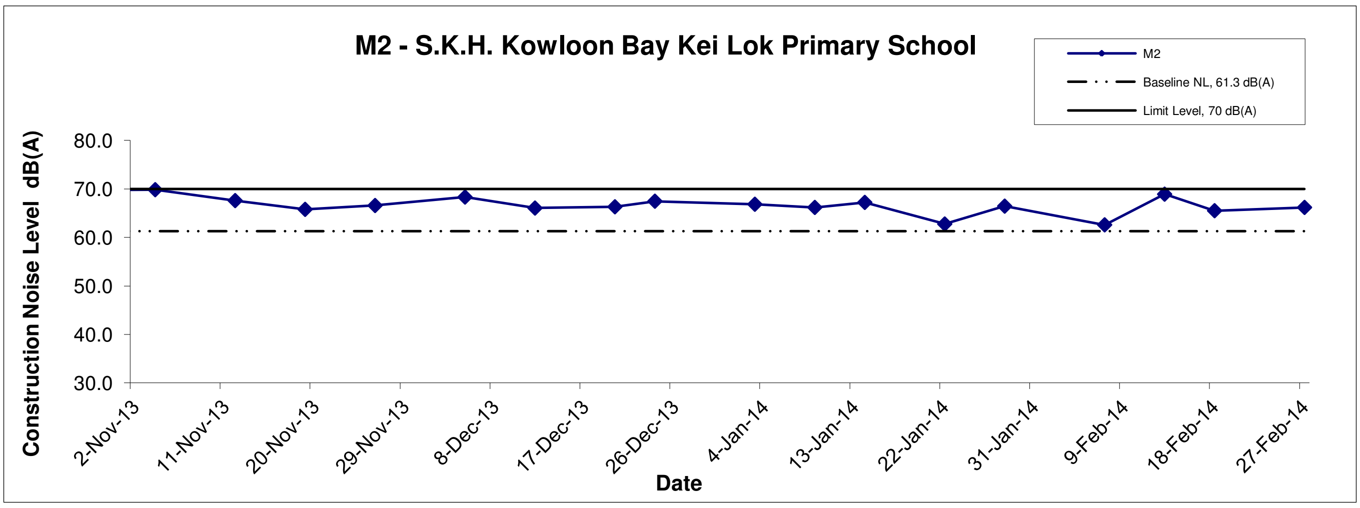
Location M2 - S.K.H. Kowloon Bay Kei Lok Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
7-Feb-14	10:40	Cloudy	65.0	66.7	61.4	61.3	62.6
13-Feb-14	15:50	Cloudy	69.6	71.4	67.4		68.9
18-Feb-14	9:50	Cloudy	66.9	68.8	61.4		65.5
27-Feb-14	11:00	Cloudy	67.4	69.3	64.3		66.2

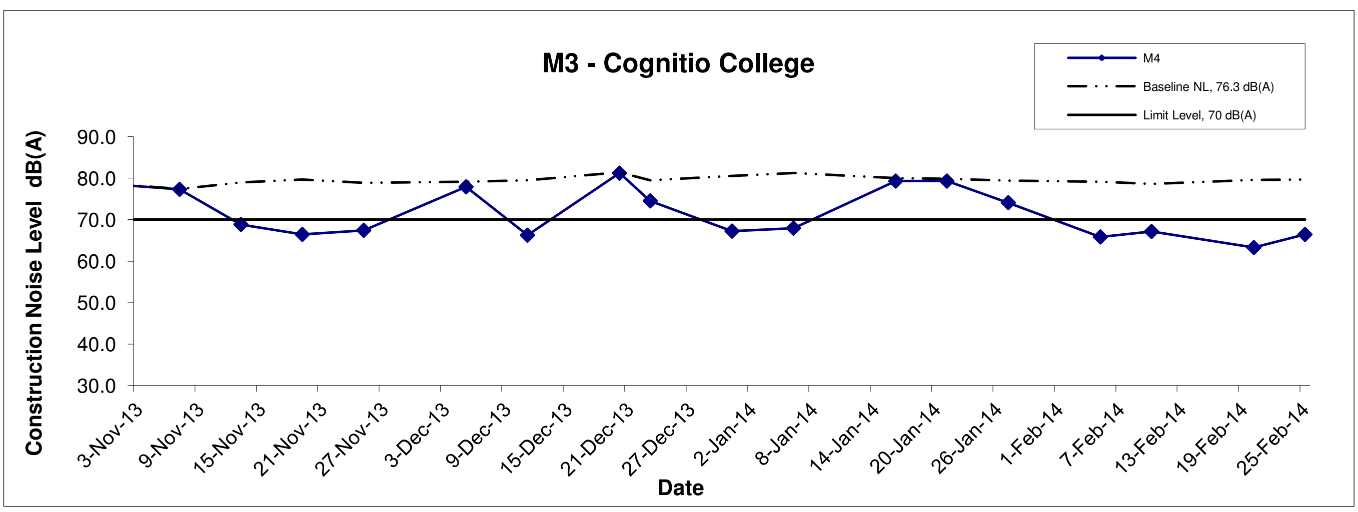
Location M3 - Cognitio College							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Background Noise	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Feb-14	15:00	Cloudy	79.3	80.8	76.9	79.1	65.8
10-Feb-14	15:00	Cloudy	78.9	81.4	74.2	78.6	67.1
20-Feb-14	15:00	Sunny	79.7	81.0	78.9	79.6	63.3
25-Feb-14	15:04	Cloudy	79.9	80.7	76.7	79.7	66.4

Location M4 - Lee Kau Yan Memorial School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
5-Feb-14	9:00	Cloudy	72.6	73.9	70.9	76.7	72.6 Measured ≤ Baseline
10-Feb-14	13:01	Cloudy	73.0	73.8	69.4		73.0 Measured ≤ Baseline
20-Feb-14	13:30	Sunny	75.2	76.4	72.1		75.2 Measured Baseline
25-Feb-14	13:30	Cloudy	69.9	71.2	64.8		69.9 Measured Baseline

Noise Levels

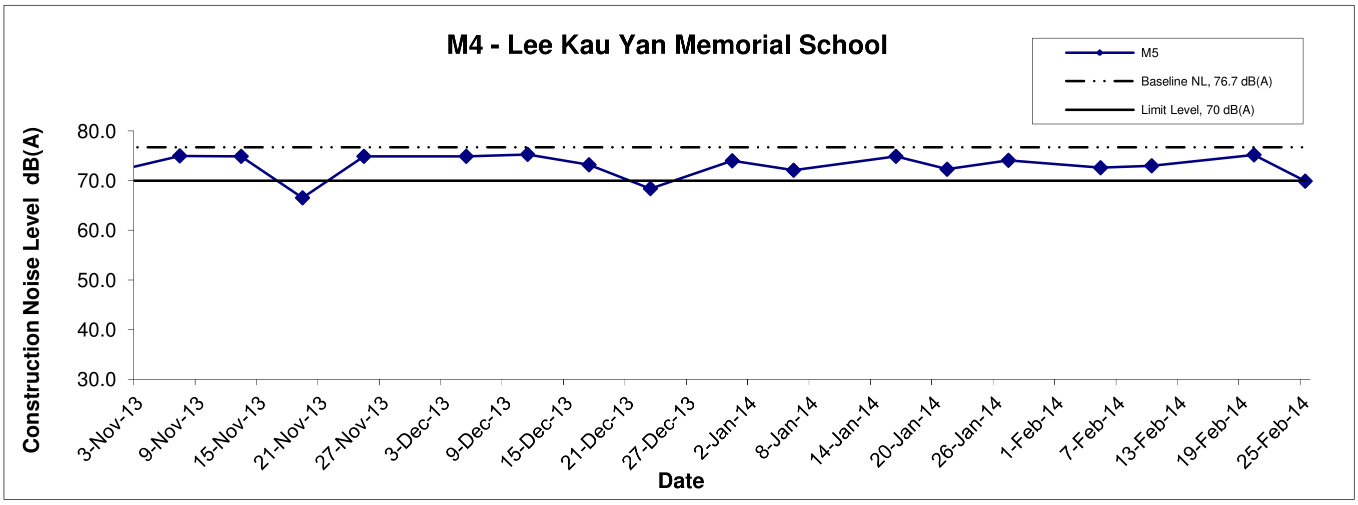






Title: Contract No. KL/2010/03 Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S	Project No. MA11038	CINOTECH
	Date: Feb 14	Appendix G	

Noise Levels



Title		Scale	Project No.	
	Contract No. KL/2010/03 Kai Tak Development - Stage 2 infrastructure works at north apron area of Kai Tak Airport for residential development and government, institution or community facilities	N.T.S	MA11038	CINOTECH
	Graphical Presentation of Construction Noise Monitoring Results	Date Feb 14	Appendix G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Contract No. KL/2010/03
Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2010/03

(A) Exceedance Report for Air Quality
(NIL in the reporting month)

(B) Exceedance Report for Construction Noise
(NIL in the reporting month)

(C) Exceedance Report for Landscape and Visual

(NIL in the reporting month)

APPENDIX I
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	140204
Date	4 February 2014
Time	09:50 – 10:40

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
140204-O01	• To enhance the water spraying for unpaved area to reduce dust generation. (Road D2 and Pumping station PS1A)	C 6
140204-O02	• To cover the opened cement bags and wasted cement bags should be properly disposed of. (Road L4 &L5)	C 7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous site audit session (Ref. No. 140128), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Gary Lau		4 February 2014
Checked by	Dr. Priscilla Choy		4 February 2014

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	140213
Date	13 February 2014
Time	14:30 – 15:20

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
140213-R01	• Stockpile at Road L4/L5 should be covered during rainy day to prevent generation of runoff.	B 6
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous site audit session (Ref. No. 140204), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Gary Lau		13 February 2014
Checked by	Dr. Priscilla Choy		13 February 2014

Contract No. KL/2010/03
Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities, Kai Tak Development – Stage 2

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	140218
Date	18 February 2014
Time	14:20 – 16:20

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
140218-O02	• Exposed stockpile should be covered by tarpaulin sheet to reduce dust generation. (Road L5)	C 7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140218-O01	• To provide drip tray to contain chemical containers to prevent leakage. (PS1A)	E 8
140218-R03	• General refuse, such as cigarette boxes, should be regularly cleared or properly disposed of. (PS1A)	E 1iii
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous site audit session (Ref. No. 140213), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Gary Lau		18 February 2014
Checked by	Dr. Priscilla Choy		18 February 2014

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	140226
Date	26 February 2014
Time	09:30 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
140226-R01	• Groundwater should be treated with sediment tank before discharge. (Opposite to KTOB)	B3
	C. Air Quality	
140226-O01	• Dusty stockpile should be covered by impervious materials to prevent dust generation. (Road L5)	C 7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Visual and Landscape	
	• No environmental deficiency was identified during site inspection.	
	G. Permits /Licences	
	• No environmental deficiency was identified during site inspection.	
	H. Others	
	Follow-up on previous site audit session (Ref. No. 140218), outstanding item 140218-O02 was remarked as 140226-O01, review shall be carried out during next site inspection.	

	Name	Signature	Date
Recorded by	Edmond Put		27 February 2014
Checked by	Dr. Priscilla Choy		27 February 2014

APPENDIX J
EVENT ACTION PLANS

Appendix J - Event Action Plans

Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contactor, IEC and ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded by two or more consecutive sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring.	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.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded by one sampling	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Assess effectiveness of Contractor's remedial actions and keep	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures;	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be	1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within three

Appendix J - Event Action Plans

	EPD, IEC and ER informed of the results.	4. Advise the ER on the effectiveness of the proposed remedial measures.	implemented; 4. Supervise implementation of remedial measures; 5. Conduct meeting with ET and IEC if exceedance continues.	working days of notification; 4. Implement the agreed proposals.
Limit Level being exceeded by two or more consecutive sampling	1. Notify IEC, ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor’s working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken; 6. Assess effectiveness of Contractor’s remedial actions and keep EPD, IEC and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor’s working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor’s remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Discuss with ET, ER and IEC on proper remedial actions; 3. Submit proposals for remedial actions to IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Appendix J - Event Action Plans

Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance;	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 the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals;

	5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 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. (The above actions should be taken within 2 working days after the exceedance is identified)	(The above actions should be taken within 2 working days after the exceedance is identified)	measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

Appendix J - Event Action Plans

Event/Action Plan for Landscape and Visual

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	1. Check final design conforms to the requirements of EP and prepare report.	1. Check report. 2. Recommend remedial design if necessary	1. Undertake remedial design if necessary	
Non-conformity on one occasion	1. Identify Source 2. Inform IEC and ER 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source Inform IEC and	1. Check monitoring report	1. Notify Contractor 2. Ensure remedial measures are properly	1. Amend working methods 2. Rectify damage and

	ER 2. Increase monitoring frequency 3. Discuss remedial actions with IEC, ER and Contractor 4. Monitor remedial actions until rectification has been completed 5. If non-conformity stops, cease additional monitoring	2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	implemented	undertake any necessary replacement

APPENDIX K
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix K - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

Types of Impacts	Mitigation Measures	Status
Construction Dust	8 times daily watering of the work site with active dust emitting activities.	*
	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.	
	• Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	*
	• Misting for the dusty material should be carried out before being loaded into the vehicle.	^
	• Any vehicle with an open load carrying area should have properly fitted side and tail boards.	^
	• Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	*
	• The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.	^
	• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials.	^
	• Vehicle washing facilities should be provided at every	^

	vehicle exit point. • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. • Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. • <u>DWFI compound for JVBC</u>: a DWFI compound is proposed at the downstream of JVC to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desiliting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of JVBC and hence fully mitigate the potential odour emissions from the headspace of JVBC near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high	^ ^ ^ ^ N/A

	efficiency deodorizers before discharge to the atmosphere. • Desilting compound for KTN: Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desiliting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of KTN and hence fully mitigate the potential odour emissions from the headspace of KTN near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere. • Decking or reconstruction of KTN within apron area: it is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with non-odorous fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more than 16m.	N/A N/A

	• <u>Localised maintenance dredging:</u> Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new development in the immediate vicinity of KTAC to avoid potential localized odour impacts at the future ASRs during the maintenance dredging operation. • <u>Improvement of water circulation in KTAC and KTTS:</u> 600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased. • <u>In-situ sediment treatment by bioremediation:</u> Bioremediation would be applied to the entire KTAC and KTTS.		^ N/A N/A

Construction Noise	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	^
	Good Site Practice: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	^
	• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	N/A(1)
	• Mobile plant, if any, should be sited as far away from NSRs as possible.	^
	• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.	^
	• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	^
	• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	^
	Scheduling of Construction Works during School Examination Period	^
	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A

	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A
	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 1I1; and	N/A
	(ii) Setback of building about 5m from site boundary.	N/A
	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and	N/A
	(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A
	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or	N/A
	(ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground.	N/A
	(i) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road	N/A

	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) SPS (ii) ESS (iii) Tunnel Ventilation Shaft (iv) EFTS depot Installation of retractable roof or other equivalent measures	 N/A N/A N/A N/A N/A

Construction Water Quality	The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: • Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply; • Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps; • An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and • For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities. **Construction Phase** Marine-based Construction *Capital and Maintenance Dredging for Cruise Terminal* Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.	 N/A N/A N/A N/A ^

	Fireboat Berth, Runway Opening and Road T2	
	Silt curtains should be deployed around the close grab dredger to minimize release of sediment and other contaminants for any dredging and filling activities in open water.	^
	Dredging at and near the seawall area for construction of the public landing steps cum fireboat berth should be carried out at a maximum production rate of 1,000m^3 per day using one grab dredger.	^
	The proposed construction method for runway opening should adopt an approach where the existing seawall at the runway will not be removed until completion of all excavation and dredging works for demolition of the runway. Thus, excavation of bulk fill and majority of the dredging works will be carried out behind the existing seawall, and the sediment plume can be effectively contained within the works area. As there is likely some accumulation of sediments alongside the runway, there will be a need to dredge the existing seabed after completion of all the demolition works. Dredging alongside the 600m opening should be carried out at a maximum production rate of 2,000m^3 per day using one grab dredger.	^
	Dredging for Road T2 should be conducted at a maximum rate of 8,000m^3 per day (using four grab dredgers) whereas the sand filling should be conducted at a maximum rate of 2,000m^3 per day (using two grab dredgers).	N/A (1)
	Silt screens shall be applied to seawater intakes at WSD seawater intake.	^

	<u>Land-based Construction</u> *Construction Runoff* Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: • use of sediment traps • adequate maintenance of drainage systems to prevent flooding and overflow Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^ ^ * ^

	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	^
	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	^
	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m^3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	^
	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	*

	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	^
	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	^
	Drainage	
	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	^

	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required. All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ. *Sewage Effluent* Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices. *Stormwater Discharges* Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	^ * ^ ^

	Debris and Litter		
	In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials. litter or wastes to marine waters does not occur		^
	Construction Works at or in Close Proximity of Storm Culvert or Seafront		
	The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.		^
	The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.		^
	Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.		^
	Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.		^
	Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.		^
	Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.		^

	Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.	^
	Construction effluent, site run-off and sewage should be properly collected and/or treated.	^
	Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.	^
	Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.	^
	Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.	^
	Supervisory staff should be assigned to station on site to closely supervise and monitor the works	^
	Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.	^

	Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include: • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical waste handling procedures • Provision of sufficient waste disposal points and regular collection for disposal • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers • A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)	^ ^ ^ ^ ^

	Waste Reduction Measures Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:	
	• Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals	^
	• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	^
	• Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force	^
	• Any unused chemicals or those with remaining functional capacity should be recycled	^
	• Proper storage and site practices to minimise the potential for damage or contamination of construction materials	^
	Dredged Marine Sediment	
	The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the Director of Environmental Protection (DEP)	^

	The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 - Open Sea Disposal. Contaminated sediment would require either Type 1 – Open Sea Disposal (Dedicated Sites), Type 2 - Confined Marine Disposal, or Type 3 – Special Treatment / Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment and disposed properly at the designated disposal site	^

	It will be the responsibility of the contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works should apply for allocation of marine disposal sites and all necessary permits from relevant authorities for the disposal of dredged sediment. During transportation and disposal of the dredged marine sediments requiring Type 1, Type 2, or Type 3 disposal, the following measures should be taken to minimise potential impacts on water quality:		
	• Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved		^
	• Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as required under the Dumping at Sea Ordinance and as specified by the DEP		^
	• Barges or hopper barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation		^

	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading	^ ^ ^ ^ ^ ^ ^ ^

	When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.		^
	Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*		*
	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem		^

Landscape and Visual	CM1 All existing trees should be carefully protected during construction. CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work. CM3 Control of night-time lighting. CM4 Erection of decorative screen hoarding.	^ ^ N/A(1) ^

Remarks:	^ Compliance of mitigation measure;	X Non-compliance of mitigation measure;
	N/A Not Applicable at this stage; N/A(1) Not observed;	•Non-compliance but rectified by the contractor;
	* Recommendation was made during site audit but improved/rectified by the contractor.	

APPENDIX L
SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

Contract No. KL/2010/03
Kai Tak Development – Stage 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities

Appendix L – Summary of environmental complaint, warning, summon and notification of successful prosecution

Reporting Month: February 2014

Contract No. KL/2010/03

Log Ref.	Location	Received Date	Details of Complaint/warning/summon and prosecution	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint/warning/summon and prosecution were received in the reporting period.

APPENDIX M
WASTE GENERATED QUANTITY

Department: CEDD
Contract No.: KL/2010/03
Project : KAI TAK DEVELOPMENT – STAGE 2 Infrastructure Works at North Apron Area of Kai Tak Airport for Residential Development and Government Facilities

Peako 必高工程

Monthly Summary Waste Flow Table for 2014

As at 10 March 2014

Month	Total Quantity Generated (in m³)	Actual Quantities Inert C & D Materials Generated Monthly					Actual Quantities of C & D Wastes Generated Monthly					
		Broken Concrete (in m³)	Reused in the Contract (in m³)	Reused in other Projects (in m³)	Disposed as Public Fill (in m³)	Imported Fill (in m³)	Metals (in kg)	Paper/ Cardboard packaging (in kg)	Plastics (see Note 3) (in kg)	Chemical Waste		Others, e.g. general refuse (in m³)
										Battery(No.)	Oil(in L)	
Accumulated (Jul 11-Dec	4985.82	7510	3280	0	601.99	0	0	0	0	0	0	153.83
Jan'2014	35.07	150	120	0	0	0	0	0	0	0	0	5.07
Feb'2014	-27.19	50	80	0	0	0	0	0	0	0	0	2.81
Mar'2014												
Apr'2014												
May'2014												
Jun'2014												
Sub-total (Jan 14-Jun 14)												
Jul'2014												
Aug'2014												
Sep'2014												
Oct'2014												
Nov'2014												
Dec'2014												
Total												

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*											
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see Note 3)	Chemical Waste		Others, e.g. general refuse
(in m³)	(in m³)	(in m³)	(in m³)	(in m³)	(in m³)	(in kg)	(in kg)	(in kg)	Battery(No.)	Oil(in L)	(in m³)
4650	7000	3300	0	700	0	0	0	0	0	0	250

Notes:
1 The performance targets are given in PS clause 25.20A(4)
2 The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.
3 Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.
4 The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.20A(4)