Civil Engineering and Development Department

EP-337/2009 – New Distributor Roads Serving the Planned KTD

Contract No. KL/2012/02
Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area

Monthly EM&A Report

March 2016

(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 30th Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2012/02 - Kai Tak Development – Stage 3A Infrastructure at Former North Apron Area" (Hereafter referred to as "the Project"). This contract comprises one Schedule 2 designated project (DP), namely the new distributor road D1 serving the planned KTD. The DP is part of the designated project under Environmental Permit (EP) No.: EP-337/2009 ("New distributor roads serving the planned Kai Tak Development") respectively. This report documents the findings of EM&A Works conducted from 1 – 31 March 2016.

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		
M3 - Cognitio College	Yes	N/A
M4 - Lee Kau Yan Memorial School	Yes	N/A
M9 – Tak Long Estate	Yes	N/A
M10 – Site 1B4 (Planned)	N/A	

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 the EP, have been conducted in Contract No. KLN/2013/16 – 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/2013/16 will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Contract No. KLN/2013/16.

4. The major site activities undertaken in the reporting month included:
   - Site Clearance;
   - RC works for VT1 at Portion G;
   - Outstanding works at Portion F2 and B1;

- ELS for VT1 at CH260 to Ch300;
- Landscaping Work at Portion F2;
- Drainage Works at Portion F2, G & B6;
- Condition survey and monitoring survey;
- PERE Stage 5A works;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- RC works for SW3 at San Po Kong.

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 Recorded 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, EP-337/2009 issued on 23 April 2009.

10. Registration of Chemical Waste Producer (License: 5213-286-K3022-04).

11. Water Discharge License (License No.: WT00016873-2013 and WT00016723-2013).

12. Construction Noise Permit (License No.: GW-RE0934-15, GW-RE1044-15, GW-RE1045-15, GW-RE0029-16, GW-RE0032-16 & GW-RE0138-16).

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	1	The complainant complained about the mud disposed from the vehicles leaving construction site to the Concorde Road.	Investigation was conducted. After complaint received, the Contractor has taken immediate follow-up actions including cleared up the disposed mud at the Concorde Road by the Contractor including sweeping and cleaning the disposed mud immediately along the Concorde Road; Clear the silty water and mud regularly near the entrance of construction site areas that the silty water and mud runoff would be backflow into the site area and treated through the wastewater treatment facility in the site before discharging out; Ensure vehicles and plant were cleaned of mud and debris before leaving the construction site area, especially near the Concorde Road; ensure vehicles and plant were cleaned of mud and debris before leaving the construction site area, especially near the Concorde Road; and use of treated effluent from the wastewater treatment facility and the water in the wheel washing bay would be pumped back to wastewater treatment facility to increase the efficiency of wheel washing. The Contractor had also increased the frequency of clearing sediment and silt in the wheel washing facility in order to minimize the mud disposed from the vehicles leaving the construction site to the Concorde Road.	The situation is closed.	---
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;
- Proper storage of construction materials on site;
- 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 3A Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains one Schedule 2 DP including new distributor roads serving the planned KTD. The general layout of the Project is shown in **Figure 1.**

1.2 One Environmental Permit (EP) No. EP-337/2009 was also issued on 23 April 2009 for new distributor roads serving the planned KTD 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 Kaden Construction Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/02 – Stage 3A Infrastructure at Former North Apron Area. The construction work under KL/2012/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).

1.5 Cinotech Consultants Limited was commissioned by Kaden Construction Ltd. To undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract was on 24th October 2013 for Road D1. This is the 30th Monthly EM&A report summarizing the EM&A works for the Project from 1 – 31 March 2016.

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) – AnewR Consulting Limited (AnewR).
- Contractor – Kaden Construction Ltd. (Kaden).

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. Mike Cho / Mr. Thomas Fu	Engineer	2301 1465 / 2301 1473	2301 1277
ARUP	Engineer's Representative	Mr. Gary Cheung	SRE	2716 0122	2716 0232
		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	
AnewR	Independent Environmental Checker	Mr. Adi Lee	Independent Environmental Checker	2618 2836	3007 8648
Kaden	Contractor	Mr. Osbert Sit	Project Manager		

Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- Site Clearance;
- RC works for VT1 at Portion G;
- Outstanding works at Portion F2 and B1;
- ELS for VT1 at CH260 to Ch300;
- Landscaping Work at Portion F2;
- Drainage Works at Portion F2, G & B6;
- Condition survey and monitoring survey;
- PERE Stage 5A works;
- Footpath construction at Sam Chuk Street and Tsat Po Street; and
- RC works for SW3 at San Po Kong.

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;

		Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; 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 EP.

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 from 1 – 31 March 2016.

2. AIR QUALITY

Monitoring Requirements

2.1 According to EM&A Manual under the EP, 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), 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)	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.

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, AEROCET-531	9
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

(Equipment: Sibata; Model no. LD-3, LD-3B)

Measuring Procedures

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

- Pull up the air sampling inlet cover
- Change the Mode 0 to BG with once
- Push Start/Stop switch once
- Turn the knob to SENSI.ADJ and press it
- Push Start/Stop switch once
- Return the knob to the position MEASURE slowly
- Push the timer set switch to set measuring time
- Remove the cap and make a measurement

Maintenance/Calibration

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

Check the meter at a 3-month interval and calibrate the meter at a 1-year interval throughout all stages of the air quality monitoring.

(Equipment: Met One; Model no. AEROCET-531)

Measuring Procedures

2.8 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.

Maintenance/Calibration

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

- Check and calibrate the meter at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

2.5 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

2.6 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.

2.7 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.

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

2.9 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.

2.10 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.

2.11 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.

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

2.13 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).

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

2.15 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

2.16 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 TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

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

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

2.19 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 rooftop (about 8/F) Lee Kau Yan Memorial School. The location is shown in **Figure 4**. This weather information for the reporting month is summarized in **Appendix C.**

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

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

2.22 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

2.23 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	4-Mar-16	42.2	342	500
	4-Mar-16	34.6		
	4-Mar-16	35.7		
	10-Mar-16	49.5		
	10-Mar-16	51.7		
	10-Mar-16	50.6		
	16-Mar-16	261.9		
	16-Mar-16	257.9		
	16-Mar-16	258.6		
	22-Mar-16	223.6		
	22-Mar-16	222.5		
	22-Mar-16	220.9		
	24-Mar-16	126.2		
	24-Mar-16	140.5		
	24-Mar-16	135.4		
	30-Mar-16	196.3		
	30-Mar-16	195.6		
	30-Mar-16	193.6		
24-hr TSP	03-Mar-16	53.7	159	260
	09-Mar-16	38.3		
	15-Mar-16	86.6		
	21-Mar-16	30.3		
	23-Mar-16	40.5		
	29-Mar-16	40.4		
AM2 – Lee Kau Yan Memorial School				
1-hr TSP	4-Mar-16	41.1	346	500
	4-Mar-16	44.4		
	4-Mar-16	42.2		
	10-Mar-16	52.2		
	10-Mar-16	45.6		
	10-Mar-16	43.3		
	16-Mar-16	261.0		
	16-Mar-16	263.0		
	16-Mar-16	260.4		
	22-Mar-16	222.5		
	22-Mar-16	222.0		
	22-Mar-16	220.9		
	24-Mar-16	123.5		
	24-Mar-16	125.3		
	24-Mar-16	124.7		
	30-Mar-16	193.6		
	30-Mar-16	197.9		
	30-Mar-16	193.5		
24-hr TSP	03-Mar-16	125.3	157	260
	09-Mar-16	48.2		
	15-Mar-16	75.1		
	21-Mar-16	37.3		
	23-Mar-16	35.1		
	29-Mar-16	121.7		

3. NOISE

Monitoring Requirements

3.1 According to EM&A Manuals under the EP, 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 Four designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M3, M4, M9). **Figure 3** shows the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
M3	Cognitio College	Rooftop (about 6/F) Area
M4	Lee Kau Yan Memorial School	Rooftop (about 7/F) Area
M9	Tak Long Estate	Car Park Building (about 2/F)
#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	4

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
M3 M4 M9	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
M3	Cognitio College	Traffic Noise Daily school activities
M4	Lee Kau Yan Memorial School	Traffic Noise Site vehicle movement Excavation works Piling works Daily school activities
M9	Tak Long Estate	Traffic Noise Construction works

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

Station	Baseline Noise Level, dB (A)	Noise Limit Level,dB (A)
M3	76.3/78.6(1) (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)	
M9	59.9 (at 0700 – 1900 hrs on normal weekdays)	75 (at 0700 – 1900 hrs on normal weekdays)

(*) Noise Limit Level is 65 dB(A) during school examination periods.
Note (1): The baseline noise review report submitted under KLN/2013/16 for M3 was approved by EPD on 23rd August 2013. (Baseline Level was found to be 78.6 dB(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)
M3 – Cognitio College			
--	--	Background Noise(2)	--
4-Mar-16	77.6	77.1	68.0
10-Mar-16	75.4	74.4	68.5
16-Mar-16	79.9	79.6	68.1
24-Mar-16	76.8	76.2	67.9
30-Mar-16	72.9	72.1	65.2
M4 – Lee Kau Yan Memorial School			
4-Mar-16	72.5	76.7	72.5 Measured ≦ Baseline
10-Mar-16	71.0		71.0 Measured ≦ Baseline
16-Mar-16	76.0		76.0 Measured ≦ Baseline
24-Mar-16	71.1		71.1 Measured ≦ Baseline
30-Mar-16	73.1		73.1 Measured ≦ Baseline
M9 – Tak Long Estate			
1-Mar-16	62.3	59.9	58.6
7-Mar-16	61.2		55.3
17-Mar-16	63.9		61.7
23-Mar-16	62.5		59.0
29-Mar-16	60.3		49.7

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): The background Noise Level was recorded during the Lunch Hour of Construction Site (i.e. 12:00-13:00) and to be used as the 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 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 (Mar 16), µg/m3
AM1(B) – Contractor Site Office of KL/2008/09	192	298	149.9
AM 2 – Lee Kau Yan Memorial School	290	312	148.7

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 (Mar 16), µg/m3
AM1(B) – Contractor Site Office of KL/2008/09	121	156	48.3
AM2 – Lee Kau Yan Memorial School	145	169	73.8

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 (Mar 16), $L_{eq\ (30min)}$ dB(A)
M3 – Cognitio College	47 – 75	65.2 – 68.5(1)
M4 – Lee Kau Yan Memorial School	47 – 74	71.0 – 76.0(2)
M9 – Tak Long Estate	Not Predicted in EIA Report	49.7 – 61.7

Remark:
(1) Since the background noise level recorded during 12:00 to 13:00 was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.
(2) Since the baseline noise level was higher than those recorded during the construction period, the recorded noise levels were considered non-valid exceedance of Noise Limit Level.

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 Mitigated construction noise levels at M9 were not predicted in EIA Report. The noise monitoring results in the reporting month at M3 were within the range of predicted mitigated construction noise levels in the EIA report. For M3, please refer to remark in Table 4.3. The noise monitoring results in the reporting month at M4 were not within the range of predicted mitigated construction noise levels in the EIA report. The noise data at M4 exceeds the prediction of mitigated scenario in EIA report but did not exceed the baseline level.

5. LANDSCAPE AND 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 2nd, 9th, 17th, 23rd and 30th March 2016 in the reporting month. IEC site inspection was conducted on 17th March 2016. 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

1. The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
2. 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.

Table 6.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-337/2009	23/04/09	N/A	Construction of new distributor roads serving the planned Kai Tak development.	Valid
Effluent Discharge License				
WT00016873-2013	-	31/08/18	Wastewater from the construction site including contaminated surface run-off	Valid
WT00016723-2013	-	31/08/18		Valid
Registration of Chemical Waste Producer				
5213-286-K3022-04	-	N/A	Chemical Waste Types: Spent lubricating oil, Soil contaminated with lubricating oil, Spent battery containing heavy metals, Surplus paint, Spend solvent, Spend alkali and acid	Valid
Construction Noise Permit (CNP)				
GW-RE0934-15	16/09/15	15/03/16	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive pilling and performing prescribed construction work.	Valid until 15/03/16
GW-RE1044-15	23/10/15	22/04/16		Valid
GW-RE1045-15	23/10/15	22/04/16		Valid
GW-RE0029-16	26/01/16	25/07/16		Valid
GW-RE0032-16	26/01/16	25/07/16		Valid
GW-RE0138-16	15/03/16	14/09/16		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	--	--	--
Air Quality	17 March 2016	The dusty material and the stockpile of dusty material should be covered by impervious material at the site area near CLP and at SW3 respectively.	Rectification/improvement was observed during the follow-up audit session.
Noise	--	--	--
Waste/ Chemical Management	17 March 2016	The general refuse should be cleared regularly to prevent the accumulation at SW3.	Rectification/improvement was observed during the follow-up audit session.
	17 March 2016	Properly clear the empty cement bags as chemical waste at the site area near CLP.	Rectification/improvement was observed during the follow-up audit session.
Landscape and Visual	--	--	--
Permits/ Licenses	--	--	--

Summary of Mitigation Measures Implemented

6.8 The monthly IEC audit was carried out on 17th March 2016, the observations were recorded and they are presented as follows:

Observation:

1. At SW3 –
Accumulation of general refuse was observed. The Contractor was requested to clear the general refuse regularly.

2. At SW3 & site area near CLP –
Stockpiles and cement bags without covering were observed. The Contractor was requested to cover the cement bags with tarpaulin sheet or similar fabric.

3. At site area near CLP –
Improper disposal of used cement bags were observed. The Contractor was requested to dispose the cement bags as chemical waste.

Follow up of last observation:

- At SW3 – Leaked oil on bare ground was cleared up. Observation closed.
- At SW3 – Copy of environmental permit was provided. 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**.

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise

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

Landscape and visual

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:

- Site Clearance for all possessed portion;
- RC works for VT1 at Portion G;
- Waterworks at Portions G and B6;
- Outstanding works at Portion F2 and B1;
- Sheet piling and earthworks for VT1;
- Excavation for VT1 at Portion G, C and B6;
- Sheet piling for SW2 and SW3;
- Condition survey and monitoring survey;
- PERE Stage 5A works; and
- Excavation and RC works for VT1 at Ch300 to Ch350.
-

Key Issues for the Coming Month

7.2 Key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
- 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;
- Water spraying for dust generating activity and on haul road;
- Proper storage of construction materials on site;
- 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. April 2016 and May 2016 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 1 public complaint about the mud disposed from the vehicles leaving construction site to the Concorde Road was referred from EPD on 3 March 2016.

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

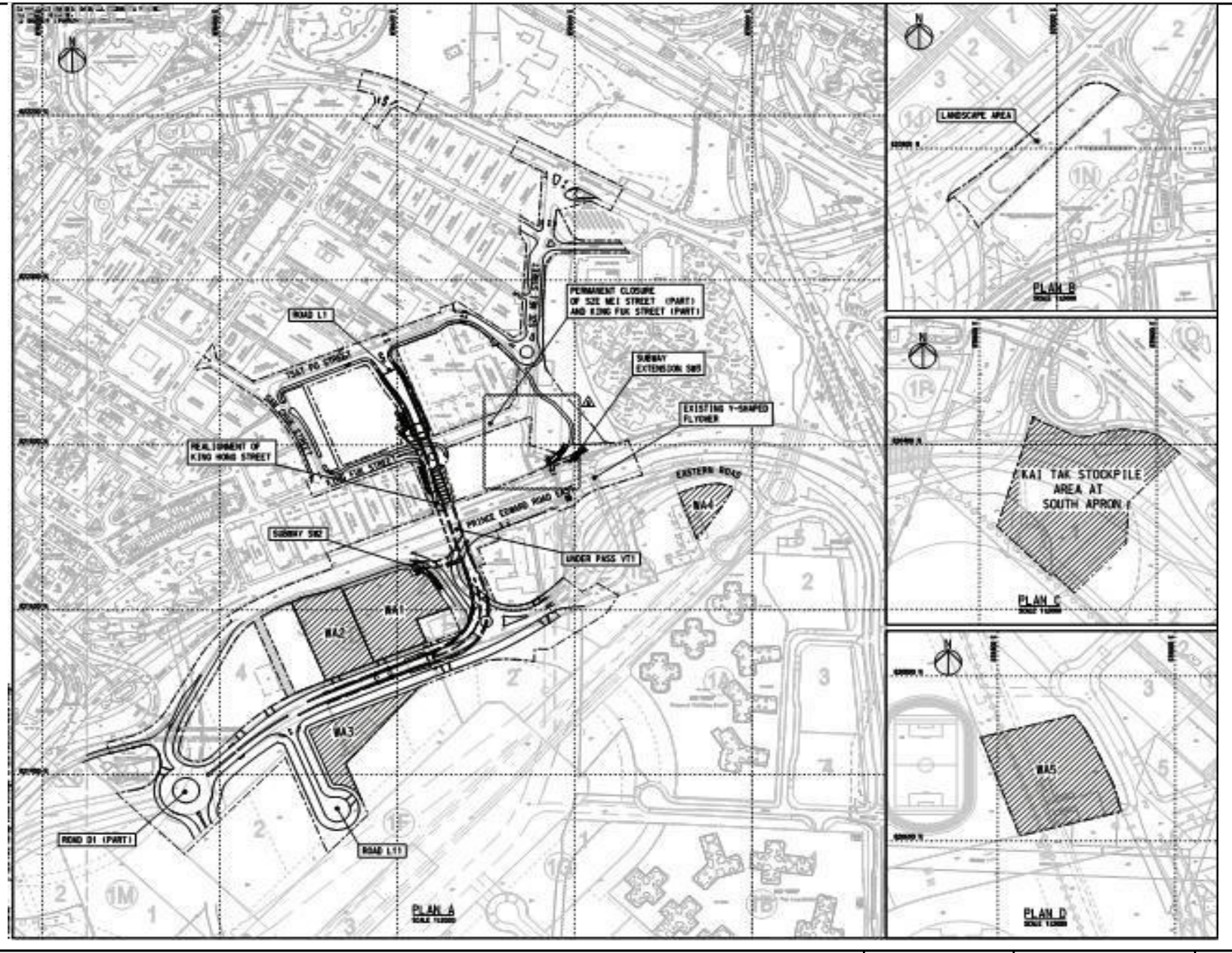
Recommendations

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

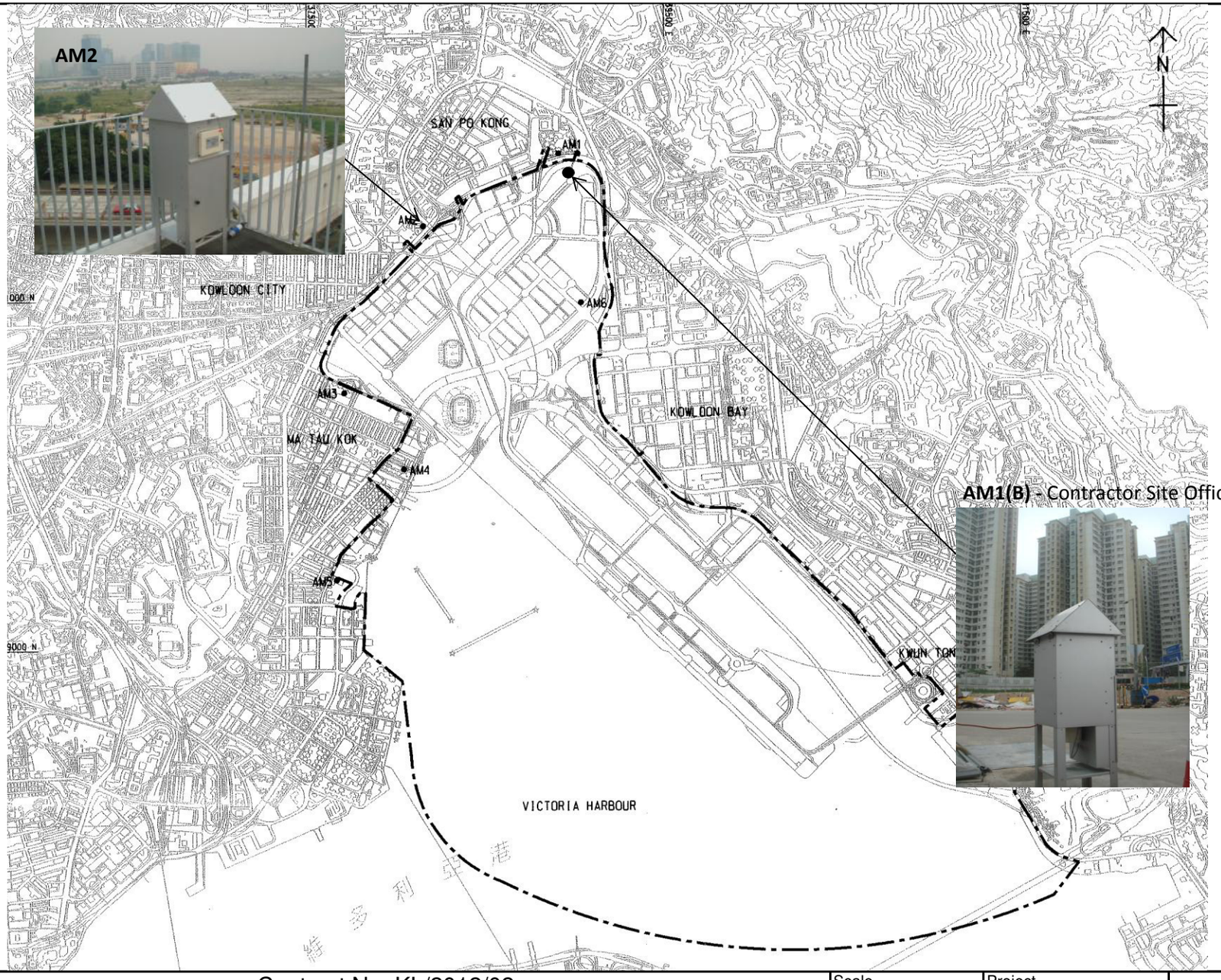
Air Quality Impact
- To implement dust suppression measures on all haul roads, stockpiles, dry unpaved surfaces.

Waste / Chemical Management
- To proper clear the general refuse to prevent the accumulation on the site; and
- To proper clear the empty cement bags as chemical waste on the site.

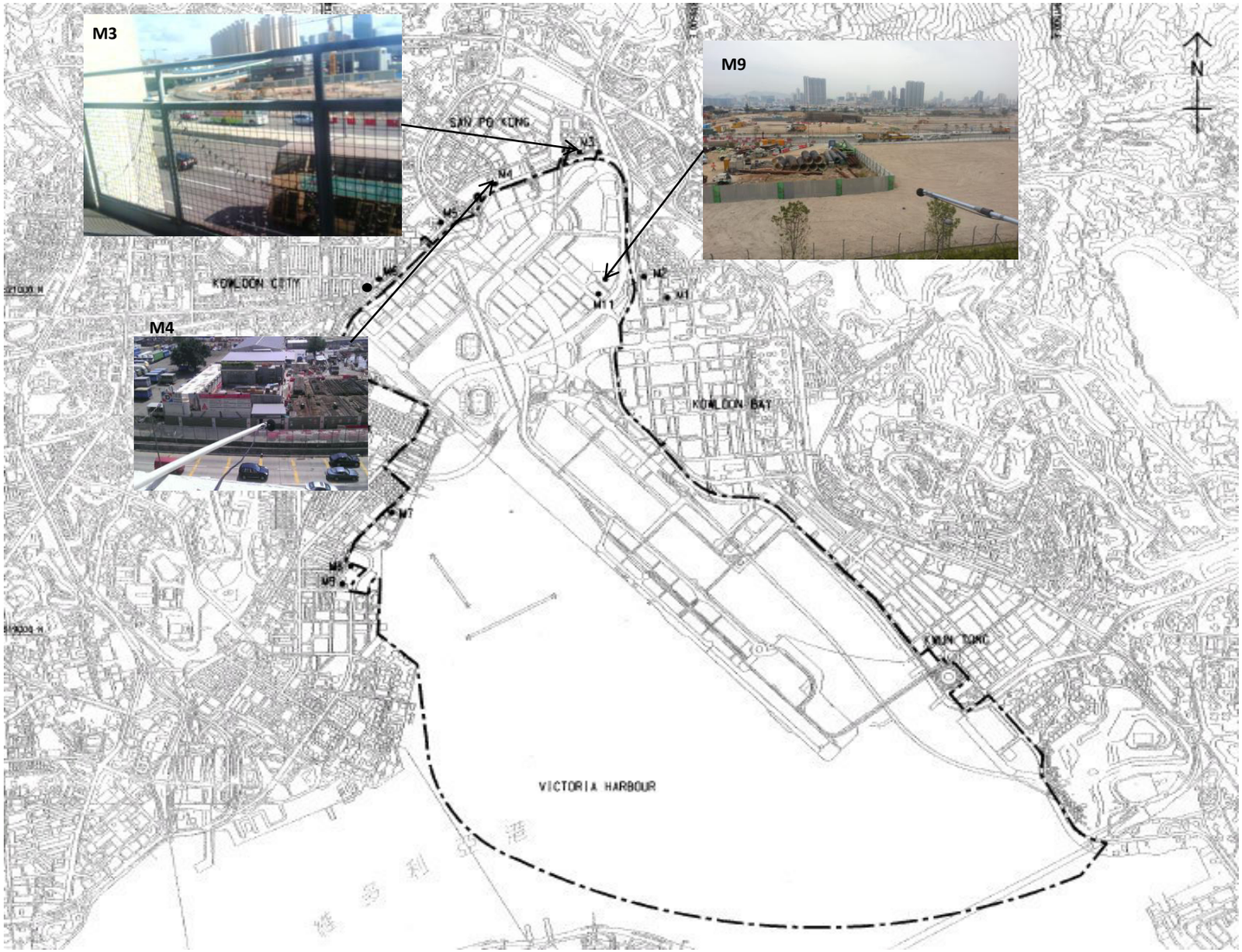
FIGURES



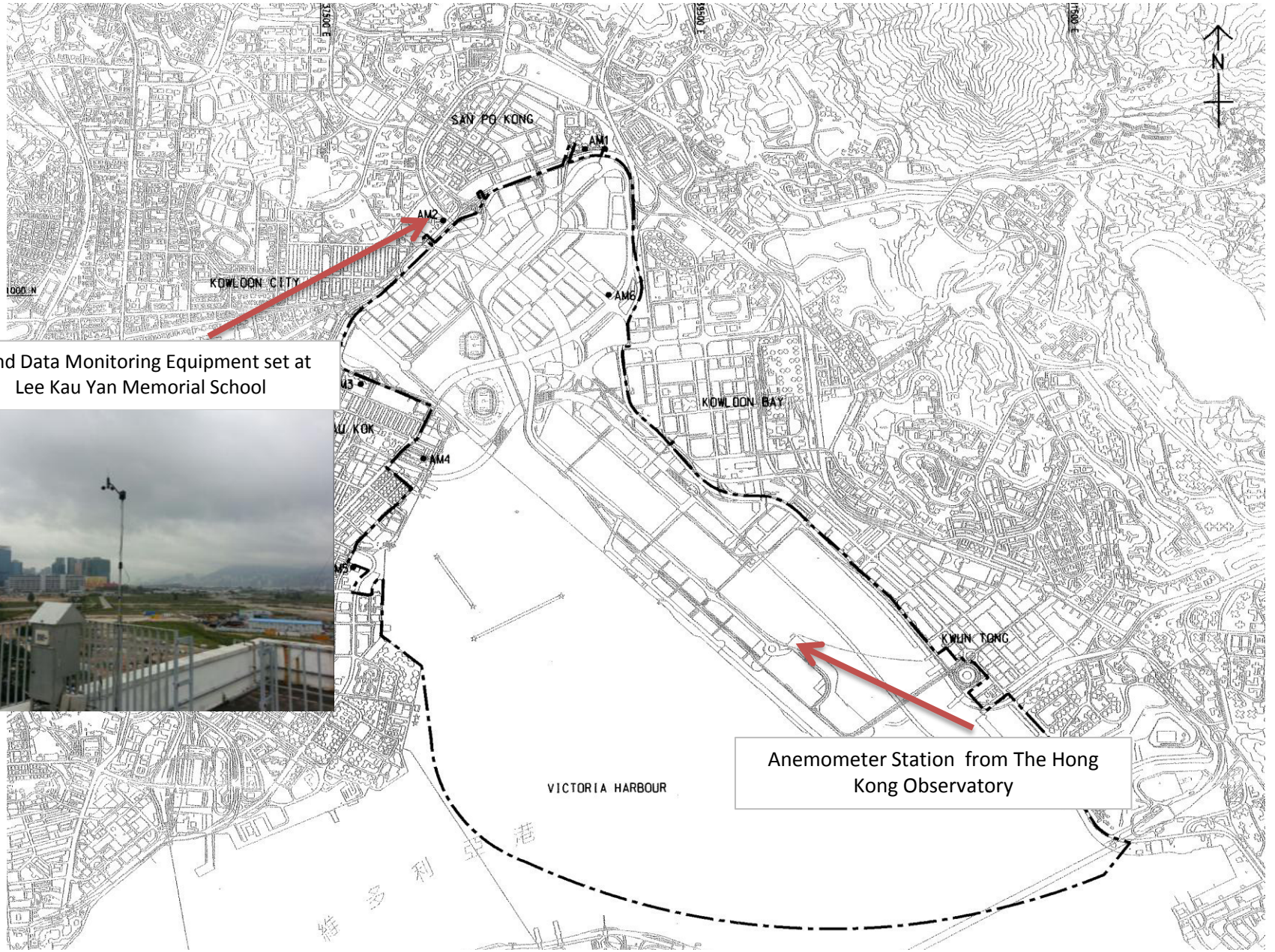
Title	Contract No. KL/2012/02	Scale N.T.S	Project No. MA13043
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area	Date Aug-13	Figure 1
	Site Layout Plan		CINOTECH



Title	Contract No. KL/2012/02	Scale N.T.S	Project No. MA13043
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area	Date Apr-14	Figure 2
	Air Quality Monitoring Stations under Contract No.: KLN/2013/16		CINOTECH



Title	Contract No. KL/2012/02	Scale N.T.S	Project No. MA13043
	Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area	Date Apr-14	Figure 3
	Noise Monitoring Stations under Contract No.: KLN/2013/16		CINOTECH



Title	Contract No. KL/2012/02 Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area Location of Wind Data Monitoring Equipment	Scale: N.T.S Date: Oct-13	Project No.: MA13043 Figure: 4

CINOTECH

APPENDIX A
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

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. MA14008/58/0032

Station: AM1(B) - Outside RLJV site office (KL/2008/09) Operator: WK

Date: 1-Feb-16 Next Due Date: 31-Mar-16

Equipment No.: A-01-58 Serial No. 2357

Ambient Condition			
Temperature, Ta (K)	283.4	Pressure, Pa (mmHg)	770

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.9	3.56	60.45	7.9	2.90
2	9.8	3.23	54.89	6.5	2.63
3	7.6	2.85	48.38	5.0	2.31
4	5.4	2.40	40.84	3.4	1.90
5	3.3	1.88	32.01	2.1	1.50

By Linear Regression of Y on X

Slope , mw = 0.0499 **Intercept, bw :** -0.1114

Correlation coefficient* = 0.9997

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.88**

Remarks:

Conducted by: Ivk Tang Signature: Kwan Date: 1/2/16

Checked by: LT Signature: Date: 1 February 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0034

Station: AM2 - Lee Kau Yan Memorial School
Operator: WK
Date: 1-Feb-16
Next Due Date: 31-Mar-16
Equipment No.: A-01-59
Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	283.6	Pressure, Pa (mmHg)	769.4

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc (CFM)	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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 water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.4	3.48	59.13	7.6	2.84
2	9.8	3.23	54.85	6.8	2.69
3	7.6	2.84	48.35	5.2	2.35
4	5.1	2.33	39.67	3.3	1.87
5	3.1	1.82	31.01	1.9	1.42

By Linear Regression of Y on X

Slope , mw = 0.0515 **Intercept, bw :** -0.1662

Correlation coefficient* = 0.9989

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.95**

Remarks:

Conducted by: Wk. Tang Signature: Kwai Date: 1/2/16

Checked by: A Signature: Date: 1 February 2016

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145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
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513.467.9009 FAX

TISCH Environmental

Equipment No A-04-06

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 04, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233		0.9958	0.6825	0.8799
1.0044	0.9723	2.0129		0.9916	0.9599	1.2443
1.0023	1.0835	2.2505		0.9895	1.0697	1.3912
1.0011	1.1377	2.3603		0.9884	1.1231	1.4591
0.9959	1.3718	2.8467		0.9832	1.3542	1.7598
Qstd slope (m) =		2.09317		Qa slope (m) =		1.31071
intercept (b) =		-0.02195		intercept (b) =		-0.01357
coefficient (r) =		0.99997		coefficient (r) =		0.99997
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 04, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 755.65

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4340	3.2	2.00
2	NA	NA	1.00	1.0250	6.4	4.00
3	NA	NA	1.00	0.9150	7.9	5.00
4	NA	NA	1.00	0.8770	8.7	5.50
5	NA	NA	1.00	0.7210	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0001	0.6974	1.4173
0.9959	0.9716	2.0044
0.9938	1.0861	2.2410
0.9928	1.1320	2.3503
0.9875	1.3696	2.8346

Qstd slope (m) = 2.11176
intercept (b) = -0.05079
coefficient (r) = 0.99982

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.6944	0.8836
0.9915	0.9674	1.2496
0.9894	1.0814	1.3971
0.9885	1.1271	1.4653
0.9831	1.3636	1.7672

Qa slope (m) = 1.32235
intercept (b) = -0.03166
coefficient (r) = 0.99982

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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/151010A
Date of Issue:	2015-10-10
Date Received:	2015-10-10
Date Tested:	2015-10-10
Date Completed:	2015-10-10
Next Due Date:	2016-04-09
Page:	1 of 2

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	: 24 degree Celsius
Relative Humidity	: 52 %

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)

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

Patrick Tse

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

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18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Test Report No.:	C/151010A
Date of Issue:	2015-10-10
Date Received:	2015-10-10
Date Tested:	2015-10-10
Date Completed:	2015-10-10
Next Due Date:	2016-04-09
Page:	2 of 2

Results:

1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 – V2
2.00	2.00	0.00

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0	0	0
45.3	45	0.3
90.2	90	0.2
135.1	135	0.1
180.2	180	0.2
225.2	225	0.2
270	270	0
315.3	315	0.3
360	360	0

**********END OF REPORT**********

WELLAB 匯力 Testing & Research

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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/160304/1
Date of Issue:	2016-03-07
Date Received:	2016-03-04
Date Tested:	2016-03-04
Date Completed:	2016-03-07
Next Due Date:	2016-05-06
Page:	1 of 1

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	: 24 degree Celsius
Relative Humidity	: 63 %

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

****

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

PATRICK TSE
Laboratory Manager

WELLAB 匯力 Testing & Research

WELLAB LIMITED
Rms 1516, 1701 & 1716, Technology Park,
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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/160304/2
Date of Issue:	2016-03-07
Date Received:	2016-03-04
Date Tested:	2016-03-04
Date Completed:	2016-03-07
Next Due Date:	2016-05-06
Page:	1 of 1

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	: 24 degree Celsius
Relative Humidity	: 63 %

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)	0.0036

****

PREPARED AND CHECKED BY:
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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/160304/3
Date of Issue:	2016-03-07
Date Received:	2016-03-04
Date Tested:	2016-03-04
Date Completed:	2016-03-07
Next Due Date:	2016-05-06

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.	: 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	: 24 degree Celsius
Relative Humidity	: 63 %

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

****

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

Test Report No.:	C/160226/1
Date of Issue:	2016-02-29
Date Received:	2016-02-26
Date Tested:	2016-02-26
Date Completed:	2016-02-29
Next Due Date:	2016-04-25
Page:	1 of 1

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	: 22 degree Celsius
Relative Humidity	: 54 %

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,
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Shatin, NT, Hong Kong

Test Report No.:	C/160226/2
Date of Issue:	2016-02-29
Date Received:	2016-02-26
Date Tested:	2016-02-26
Date Completed:	2016-02-29
Next Due Date:	2016-04-25
Page:	1 of 1

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

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	: 22 degree Celsius
Relative Humidity	: 54 %

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

Test Report No.:	C/160226/3
Date of Issue:	2016-02-29
Date Received:	2016-02-26
Date Tested:	2016-02-26
Date Completed:	2016-02-29
Next Due Date:	2016-04-25
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	: 22 degree Celsius
Relative Humidity	: 54 %

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)	0.0032

****

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/160212/2
Date of Issue:	2016-02-15
Date Received:	2016-02-12
Date Tested:	2016-02-12
Date Completed:	2016-02-15
Next Due Date:	2016-04-14
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-531
Serial No.	: N6733
Flow rate	:0.1 cfm
Zero Count Test	:0 mg (The result of the 2-minute sample)
Equipment No.	: A-02-12

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 57 %

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 Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.111

****

PREPARED AND CHECKED BY:
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W. K. Tang**

Test Report No.:	C/160226/4
Date of Issue:	2016-02-29
Date Received:	2016-02-26
Date Tested:	2016-02-26
Date Completed:	2016-02-29
Next Due Date:	2016-04-25
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-531
Serial No.	: N6734
Flow rate	:0.1 cfm
Zero Count Test	:0 mg (The result of the 2-minute sample)
Equipment No.	: A-02-13

Test Conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 54 %

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 Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.099

****

PREPARED AND CHECKED BY:
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/160212/3
Date of Issue:	2016-02-15
Date Received:	2016-02-12
Date Tested:	2016-02-12
Date Completed:	2016-02-15
Next Due Date:	2016-04-14
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Dust Monitor
Manufacturer	: Met One Instruments
Model No.	: AEROCET-531
Serial No.	: N6735
Flow rate	:0.1 cfm
Zero Count Test	:0 mg (The result of the 2-minute sample)
Equipment No.	: A-02-14

Test Conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 57 %

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 Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Results:

Correlation Factor (CF)	1.082

****

PREPARED AND CHECKED BY:
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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/151231
Date of Issue:	2016-01-04
Date Received:	2015-12-31
Date Tested:	2015-12-31
Date Completed:	2016-01-04
Next Due Date:	2017-01-03

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 955
Serial No.	: 14303
Microphone No.	: 35222
Equipment No.	: N-08-05

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 53%

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:
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150828/1
Date of Issue:	2015-08-31
Date Received:	2015-08-28
Date Tested:	2015-08-28
Date Completed:	2015-08-31
Next Due Date:	2016-08-30
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

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:
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TEST REPORT

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

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

Test Report No.:	C/N/150821/3
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

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	: 22 degree Celsius
Relative Humidity	: 54%

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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TEST REPORT

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

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

Test Report No.:	C/N/150821/1
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21460
Microphone No.	: 43679
Equipment No.	: N-08-09

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 54%

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

Test Report No.:	C/N/151127/1
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 62%

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

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

Test Report No.:	C/N/151127/3
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29
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	: 24 degree Celsius
Relative Humidity	: 62%

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

Test Report No.:	C/N/151003/1
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03
Page:	1 of 1

Item for calibration:

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

Test conditions:

Room Temperatre	: 23 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

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

Test Report No.:	C/N/151003/3
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

ATTN: **Mr. W.K. Tang** Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperatre	: 23 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

APPLICANT: **Cinotech Consultants Limited**
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Test Report No.:	C/N/151003/2
Date of Issue:	2015-10-04
Date Received:	2015-10-03
Date Tested:	2015-10-03
Date Completed:	2015-10-04
Next Due Date:	2016-10-03

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

Page: 1 of 1

Item for calibration:

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

Test conditions:

Room Temperatre	: 23 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
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

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

Test Report No.:	C/N/150821/4
Date of Issue:	2015-08-24
Date Received:	2015-08-21
Date Tested:	2015-08-21
Date Completed:	2015-08-24
Next Due Date:	2016-08-23
Page:	1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 54%

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

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 March 2016	14.6 – 19.7	58 – 82	0
2 March 2016	14.4 – 20.6	51 – 87	0
3 March 2016	15.4 – 23.8	55 – 89	0
4 March 2016	18.1 – 23.2	75 – 87	0
5 March 2016	19.2 – 23.1	69 – 85	Trace
6 March 2016	19.2 – 25.9	64 – 89	0
7 March 2016	18.9 – 21.3	86 – 94	0.2
8 March 2016	18.9 – 21.5	89 – 95	0
9 March 2016	17.1 – 22.9	89 – 98	15.5
10 March 2016	10.0 – 17.2	81 – 98	16.8
11 March 2016	10.0 – 14.3	68 – 86	0.1
12 March 2016	12.7 – 14.5	77 – 94	0.1
13 March 2016	14.4 – 17.0	93 – 98	6.8
14 March 2016	14.2 – 16.5	77 – 95	0.8
15 March 2016	14.0 – 15.5	66 – 90	Trace
16 March 2016	14.1 – 16.3	87 – 96	1.1
17 March 2016	15.6 – 17.4	96 – 98	2.2
18 March 2016	17.2 – 21.9	91 – 100	Trace
19 March 2016	20.3 – 24.9	85 – 99	Trace

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 March 2016	17.6 – 23.1	83 – 98	0.3
21 March 2016	16.4 – 18.2	88 – 99	59.6
22 March 2016	15.9 – 17.3	94 – 98	1.7
23 March 2016	17.1 – 20.6	94 – 99	8.7
24 March 2016	12.7 – 17.7	95 – 99	33.4
25 March 2016	11.6 – 15.7	56 – 96	1.4
26 March 2016	12.6 – 20.2	53 – 83	0
27 March 2016	14.6 – 22.4	28 – 76	0
28 March 2016	15.2 – 19.9	48 – 82	0
29 March 2016	15.7 – 19.4	48 – 71	Trace
30 March 2016	18.4 – 22.2	68 – 91	Trace
31 March 2016	19.1 – 25.5	71 – 95	0

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

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Speed m/s	Direction
1-Mar-2016	0:00	1.1	WNW
1-Mar-2016	1:00	1	W
1-Mar-2016	2:00	0.7	WNW
1-Mar-2016	3:00	0.8	W
1-Mar-2016	4:00	0.9	W
1-Mar-2016	5:00	1.1	W
1-Mar-2016	6:00	1	W
1-Mar-2016	7:00	0.7	WNW
1-Mar-2016	8:00	0.8	WNW
1-Mar-2016	9:00	1.5	W
1-Mar-2016	10:00	2.1	W
1-Mar-2016	11:00	2.5	W
1-Mar-2016	12:00	2.1	W
1-Mar-2016	13:00	2.3	NW
1-Mar-2016	14:00	2.4	WNW
1-Mar-2016	15:00	2.7	W
1-Mar-2016	16:00	2.4	WNW
1-Mar-2016	17:00	2	WNW
1-Mar-2016	18:00	2.3	W
1-Mar-2016	19:00	2	WSW
1-Mar-2016	20:00	1.8	WSW
1-Mar-2016	21:00	1.7	SSW
1-Mar-2016	22:00	1.5	WSW
1-Mar-2016	23:00	1.8	SSW
2-Mar-2016	0:00	2.2	W
2-Mar-2016	1:00	2	WNW
2-Mar-2016	2:00	2.1	W
2-Mar-2016	3:00	2.1	W
2-Mar-2016	4:00	1.8	WNW
2-Mar-2016	5:00	1.5	WNW
2-Mar-2016	6:00	1.4	W
2-Mar-2016	7:00	1.5	WSW
2-Mar-2016	8:00	1.8	W
2-Mar-2016	9:00	2	W
2-Mar-2016	10:00	2.5	W
2-Mar-2016	11:00	3.2	W

II. Mean Wind Speed and Wind Direction

2-Mar-2016	12:00	2.7	W
2-Mar-2016	13:00	2.2	SSW
2-Mar-2016	14:00	2.5	SSW
2-Mar-2016	15:00	2.1	WNW
2-Mar-2016	16:00	2	NE
2-Mar-2016	17:00	2.1	NE
2-Mar-2016	18:00	2	ENE
2-Mar-2016	19:00	1.5	WNW
2-Mar-2016	20:00	1.5	NNE
2-Mar-2016	21:00	2	NNE
2-Mar-2016	22:00	2.3	NE
2-Mar-2016	23:00	2	E
3-Mar-2016	0:00	1.3	E
3-Mar-2016	1:00	0.8	ENE
3-Mar-2016	2:00	0.7	E
3-Mar-2016	3:00	1.5	NE
3-Mar-2016	4:00	0.9	NNE
3-Mar-2016	5:00	0.6	E
3-Mar-2016	6:00	0.6	WNW
3-Mar-2016	7:00	0.6	W
3-Mar-2016	8:00	0.8	SW
3-Mar-2016	9:00	0.8	W
3-Mar-2016	10:00	1.1	S
3-Mar-2016	11:00	1.7	S
3-Mar-2016	12:00	2	SW
3-Mar-2016	13:00	3.1	SW
3-Mar-2016	14:00	3	SW
3-Mar-2016	15:00	2.5	SW
3-Mar-2016	16:00	2.8	SW
3-Mar-2016	17:00	2.7	SW
3-Mar-2016	18:00	2.2	SW
3-Mar-2016	19:00	2.4	WSW
3-Mar-2016	20:00	1	WNW
3-Mar-2016	21:00	0.5	WNW
3-Mar-2016	22:00	0.4	WNW
3-Mar-2016	23:00	0.3	SSW
4-Mar-2016	0:00	0.3	SSW

II. Mean Wind Speed and Wind Direction

4-Mar-2016	1:00	0.8	WNW
4-Mar-2016	2:00	0.6	WNW
4-Mar-2016	3:00	1.1	WNW
4-Mar-2016	4:00	1	WNW
4-Mar-2016	5:00	1.1	WNW
4-Mar-2016	6:00	1.3	W
4-Mar-2016	7:00	1.7	SE
4-Mar-2016	8:00	2.4	ESE
4-Mar-2016	9:00	2.8	SW
4-Mar-2016	10:00	3.2	SW
4-Mar-2016	11:00	3.1	WNW
4-Mar-2016	12:00	4	WNW
4-Mar-2016	13:00	3.9	WNW
4-Mar-2016	14:00	3.5	WNW
4-Mar-2016	15:00	3.9	WNW
4-Mar-2016	16:00	3.1	WNW
4-Mar-2016	17:00	2.7	WNW
4-Mar-2016	18:00	3.1	WNW
4-Mar-2016	19:00	2.5	SSW
4-Mar-2016	20:00	2.1	SSW
4-Mar-2016	21:00	2.5	SW
4-Mar-2016	22:00	2.2	SSW
4-Mar-2016	23:00	1.8	WNW
5-Mar-2016	0:00	2.2	WNW
5-Mar-2016	1:00	2.5	WNW
5-Mar-2016	2:00	2.6	W
5-Mar-2016	3:00	3	SW
5-Mar-2016	4:00	2.4	SW
5-Mar-2016	5:00	2.3	SW
5-Mar-2016	6:00	2.4	SW
5-Mar-2016	7:00	2.2	SW
5-Mar-2016	8:00	2	WSW
5-Mar-2016	9:00	2.4	WSW
5-Mar-2016	10:00	3.2	WSW
5-Mar-2016	11:00	3.1	SW
5-Mar-2016	12:00	3.4	W
5-Mar-2016	13:00	3.2	SW

II. Mean Wind Speed and Wind Direction

5-Mar-2016	14:00	3.2	W
5-Mar-2016	15:00	3.5	SW
5-Mar-2016	16:00	3.7	WSW
5-Mar-2016	17:00	3	WSW
5-Mar-2016	18:00	2.4	WSW
5-Mar-2016	19:00	2.5	WSW
5-Mar-2016	20:00	2.6	SW
5-Mar-2016	21:00	2.4	WSW
5-Mar-2016	22:00	2.2	WSW
5-Mar-2016	23:00	2.5	W
6-Mar-2016	0:00	2.4	WNW
6-Mar-2016	1:00	2.6	WSW
6-Mar-2016	2:00	2.2	SSW
6-Mar-2016	3:00	2	SW
6-Mar-2016	4:00	2	SW
6-Mar-2016	5:00	2	WSW
6-Mar-2016	6:00	2.1	WSW
6-Mar-2016	7:00	2.1	SW
6-Mar-2016	8:00	2.2	WSW
6-Mar-2016	9:00	3	SW
6-Mar-2016	10:00	2.7	SSW
6-Mar-2016	11:00	2.8	SW
6-Mar-2016	12:00	3.2	SW
6-Mar-2016	13:00	3.2	W
6-Mar-2016	14:00	3.2	WNW
6-Mar-2016	15:00	3	WNW
6-Mar-2016	16:00	3.2	WNW
6-Mar-2016	17:00	2.5	WNW
6-Mar-2016	18:00	2	W
6-Mar-2016	19:00	2.1	W
6-Mar-2016	20:00	2.1	W
6-Mar-2016	21:00	1.7	WNW
6-Mar-2016	22:00	2.1	W
6-Mar-2016	23:00	2	WNW
7-Mar-2016	0:00	2	WNW
7-Mar-2016	1:00	2	WNW
7-Mar-2016	2:00	2	WSW

II. Mean Wind Speed and Wind Direction

7-Mar-2016	3:00	2.1	W
7-Mar-2016	4:00	1.8	W
7-Mar-2016	5:00	2.1	W
7-Mar-2016	6:00	2.2	WNW
7-Mar-2016	7:00	2.6	WNW
7-Mar-2016	8:00	2.4	W
7-Mar-2016	9:00	2.5	SSW
7-Mar-2016	10:00	2.1	SSW
7-Mar-2016	11:00	2.1	S
7-Mar-2016	12:00	2.6	W
7-Mar-2016	13:00	2.8	WNW
7-Mar-2016	14:00	2.8	NNE
7-Mar-2016	15:00	2.5	NE
7-Mar-2016	16:00	3	W
7-Mar-2016	17:00	2.9	W
7-Mar-2016	18:00	3.7	WNW
7-Mar-2016	19:00	3.8	WNW
7-Mar-2016	20:00	3.9	WNW
7-Mar-2016	21:00	3.8	W
7-Mar-2016	22:00	4.1	SW
7-Mar-2016	23:00	4.1	ENE
8-Mar-2016	0:00	4.7	ENE
8-Mar-2016	1:00	3.9	SSW
8-Mar-2016	2:00	3	SSW
8-Mar-2016	3:00	3.1	SSW
8-Mar-2016	4:00	4.3	WNW
8-Mar-2016	5:00	4.2	WNW
8-Mar-2016	6:00	2.8	WNW
8-Mar-2016	7:00	3.9	W
8-Mar-2016	8:00	3.3	W
8-Mar-2016	9:00	3.1	WSW
8-Mar-2016	10:00	3.2	ENE
8-Mar-2016	11:00	3.8	ENE
8-Mar-2016	12:00	3.3	ENE
8-Mar-2016	13:00	4.6	SSW
8-Mar-2016	14:00	4.3	SW
8-Mar-2016	15:00	4.2	W

II. Mean Wind Speed and Wind Direction

8-Mar-2016	16:00	4.2	WNW
8-Mar-2016	17:00	4.5	WNW
8-Mar-2016	18:00	4.5	WNW
8-Mar-2016	19:00	3.5	WNW
8-Mar-2016	20:00	3.6	WNW
8-Mar-2016	21:00	3.9	WNW
8-Mar-2016	22:00	2.2	W
8-Mar-2016	23:00	1.7	W
9-Mar-2016	0:00	1.1	WNW
9-Mar-2016	1:00	1.5	WNW
9-Mar-2016	2:00	1.4	WNW
9-Mar-2016	3:00	1.4	W
9-Mar-2016	4:00	1.7	W
9-Mar-2016	5:00	2.2	WNW
9-Mar-2016	6:00	2	WNW
9-Mar-2016	7:00	1.5	WNW
9-Mar-2016	8:00	1.5	SW
9-Mar-2016	9:00	1.5	WNW
9-Mar-2016	10:00	2	WNW
9-Mar-2016	11:00	2.5	WNW
9-Mar-2016	12:00	2.6	WNW
9-Mar-2016	13:00	3	W
9-Mar-2016	14:00	2.2	W
9-Mar-2016	15:00	2.2	WNW
9-Mar-2016	16:00	2.2	W
9-Mar-2016	17:00	2.8	WNW
9-Mar-2016	18:00	2	W
9-Mar-2016	19:00	1.3	WSW
9-Mar-2016	20:00	1.1	WNW
9-Mar-2016	21:00	1.1	W
9-Mar-2016	22:00	1	W
9-Mar-2016	23:00	0.7	WNW
10-Mar-2016	0:00	1.8	W
10-Mar-2016	1:00	2.1	SW
10-Mar-2016	2:00	2	SW
10-Mar-2016	3:00	2.1	WNW
10-Mar-2016	4:00	1.8	WNW

II. Mean Wind Speed and Wind Direction

10-Mar-2016	5:00	1.8	WSW
10-Mar-2016	6:00	1.7	W
10-Mar-2016	7:00	1.4	WSW
10-Mar-2016	8:00	1.7	WSW
10-Mar-2016	9:00	2.1	SW
10-Mar-2016	10:00	2.8	SW
10-Mar-2016	11:00	3.1	WNW
10-Mar-2016	12:00	3.2	WNW
10-Mar-2016	13:00	3.2	WNW
10-Mar-2016	14:00	2.8	W
10-Mar-2016	15:00	2.5	WNW
10-Mar-2016	16:00	2.5	SSW
10-Mar-2016	17:00	2.2	SSW
10-Mar-2016	18:00	2.3	SSW
10-Mar-2016	19:00	1.3	SSW
10-Mar-2016	20:00	1.7	SSW
10-Mar-2016	21:00	1.5	SW
10-Mar-2016	22:00	1.4	SW
10-Mar-2016	23:00	1.3	WNW
11-Mar-2016	0:00	1.5	WNW
11-Mar-2016	1:00	1.5	WNW
11-Mar-2016	2:00	1.5	W
11-Mar-2016	3:00	1.1	W
11-Mar-2016	4:00	1.3	ESE
11-Mar-2016	5:00	0.1	WSW
11-Mar-2016	6:00	0.3	WNW
11-Mar-2016	7:00	0.1	SW
11-Mar-2016	8:00	1.1	WNW
11-Mar-2016	9:00	0.4	W
11-Mar-2016	10:00	0.5	W
11-Mar-2016	11:00	1	SSW
11-Mar-2016	12:00	1.1	W
11-Mar-2016	13:00	1.5	SW
11-Mar-2016	14:00	1.3	WSW
11-Mar-2016	15:00	1.4	W
11-Mar-2016	16:00	1.1	WSW
11-Mar-2016	17:00	1.1	WSW

II. Mean Wind Speed and Wind Direction

11-Mar-2016	18:00	0.7	SSW
11-Mar-2016	19:00	0.9	SSW
11-Mar-2016	20:00	0.6	WSW
11-Mar-2016	21:00	0.4	SSW
11-Mar-2016	22:00	0.8	WNW
11-Mar-2016	23:00	0.9	WNW
12-Mar-2016	0:00	0.6	N
12-Mar-2016	1:00	0.7	N
12-Mar-2016	2:00	0.4	NNE
12-Mar-2016	3:00	0.6	WSW
12-Mar-2016	4:00	0.6	N
12-Mar-2016	5:00	0.8	N
12-Mar-2016	6:00	0.8	NNE
12-Mar-2016	7:00	0.9	E
12-Mar-2016	8:00	0.9	E
12-Mar-2016	9:00	0.1	E
12-Mar-2016	10:00	0.5	E
12-Mar-2016	11:00	1.7	E
12-Mar-2016	12:00	2.4	NE
12-Mar-2016	13:00	2.1	NNE
12-Mar-2016	14:00	2	N
12-Mar-2016	15:00	2.1	SSW
12-Mar-2016	16:00	2.1	SW
12-Mar-2016	17:00	1.5	WSW
12-Mar-2016	18:00	1.4	WSW
12-Mar-2016	19:00	0.9	WSW
12-Mar-2016	20:00	1.1	SW
12-Mar-2016	21:00	0.8	WSW
12-Mar-2016	22:00	0.9	WSW
12-Mar-2016	23:00	0.7	WSW
13-Mar-2016	0:00	0.3	WSW
13-Mar-2016	1:00	0.4	SW
13-Mar-2016	2:00	0.7	SW
13-Mar-2016	3:00	0.5	SW
13-Mar-2016	4:00	0.4	WSW
13-Mar-2016	5:00	0.4	SW
13-Mar-2016	6:00	0.1	SW

II. Mean Wind Speed and Wind Direction

13-Mar-2016	7:00	0.4	W
13-Mar-2016	8:00	0.4	W
13-Mar-2016	9:00	0.4	W
13-Mar-2016	10:00	0.4	WSW
13-Mar-2016	11:00	1	WSW
13-Mar-2016	12:00	0.8	SW
13-Mar-2016	13:00	1	WSW
13-Mar-2016	14:00	0.8	W
13-Mar-2016	15:00	1.4	WSW
13-Mar-2016	16:00	0.8	W
13-Mar-2016	17:00	0.5	W
13-Mar-2016	18:00	0.5	W
13-Mar-2016	19:00	0.7	W
13-Mar-2016	20:00	0.3	W
13-Mar-2016	21:00	0.4	WSW
13-Mar-2016	22:00	0.6	S
13-Mar-2016	23:00	0.9	W
14-Mar-2016	0:00	1	W
14-Mar-2016	1:00	1	SSE
14-Mar-2016	2:00	1	W
14-Mar-2016	3:00	1.1	WSW
14-Mar-2016	4:00	1	WSW
14-Mar-2016	5:00	0.9	W
14-Mar-2016	6:00	1.4	W
14-Mar-2016	7:00	1	W
14-Mar-2016	8:00	1.7	NE
14-Mar-2016	9:00	2	SSW
14-Mar-2016	10:00	2	SSW
14-Mar-2016	11:00	1.8	SW
14-Mar-2016	12:00	2	SSW
14-Mar-2016	13:00	2.4	SSW
14-Mar-2016	14:00	1.1	W
14-Mar-2016	15:00	0.7	W
14-Mar-2016	16:00	1	W
14-Mar-2016	17:00	0.9	W
14-Mar-2016	18:00	1	WNW
14-Mar-2016	19:00	0.3	WNW

II. Mean Wind Speed and Wind Direction

14-Mar-2016	20:00	0.1	W
14-Mar-2016	21:00	0.8	WNW
14-Mar-2016	22:00	0.8	W
14-Mar-2016	23:00	0.6	WNW
15-Mar-2016	0:00	0.8	W
15-Mar-2016	1:00	0.7	W
15-Mar-2016	2:00	0.3	S
15-Mar-2016	3:00	0.1	WSW
15-Mar-2016	4:00	0.5	SSW
15-Mar-2016	5:00	0.5	W
15-Mar-2016	6:00	0.6	N
15-Mar-2016	7:00	0.4	N
15-Mar-2016	8:00	0.5	N
15-Mar-2016	9:00	0.7	ENE
15-Mar-2016	10:00	1.1	NE
15-Mar-2016	11:00	1.2	NNE
15-Mar-2016	12:00	0.7	ESE
15-Mar-2016	13:00	1.1	W
15-Mar-2016	14:00	1.5	W
15-Mar-2016	15:00	1.4	N
15-Mar-2016	16:00	1.5	NNE
15-Mar-2016	17:00	1.7	N
15-Mar-2016	18:00	1.5	N
15-Mar-2016	19:00	1	NE
15-Mar-2016	20:00	1.1	NNW
15-Mar-2016	21:00	1	WNW
15-Mar-2016	22:00	1	N
15-Mar-2016	23:00	1	WNW
16-Mar-2016	0:00	1	N
16-Mar-2016	1:00	0.9	NNW
16-Mar-2016	2:00	1	NW
16-Mar-2016	3:00	1	NE
16-Mar-2016	4:00	0.7	NE
16-Mar-2016	5:00	0.7	NNE
16-Mar-2016	6:00	0.7	NE
16-Mar-2016	7:00	0.7	NNE
16-Mar-2016	8:00	1	NNE

II. Mean Wind Speed and Wind Direction

16-Mar-2016	9:00	0.8	NNE
16-Mar-2016	10:00	1.1	NNE
16-Mar-2016	11:00	1.5	NNE
16-Mar-2016	12:00	1.8	NNE
16-Mar-2016	13:00	2.4	NE
16-Mar-2016	14:00	2.4	N
16-Mar-2016	15:00	2	N
16-Mar-2016	16:00	2	NNE
16-Mar-2016	17:00	1.5	N
16-Mar-2016	18:00	0.8	N
16-Mar-2016	19:00	0.9	N
16-Mar-2016	20:00	0.8	N
16-Mar-2016	21:00	1.1	ENE
16-Mar-2016	22:00	0.9	N
16-Mar-2016	23:00	0.7	N
17-Mar-2016	0:00	0.4	N
17-Mar-2016	1:00	0.4	N
17-Mar-2016	2:00	0.1	N
17-Mar-2016	3:00	0.1	N
17-Mar-2016	4:00	0.3	NNE
17-Mar-2016	5:00	0.3	N
17-Mar-2016	6:00	0.3	N
17-Mar-2016	7:00	0.3	N
17-Mar-2016	8:00	0.4	N
17-Mar-2016	9:00	0.8	N
17-Mar-2016	10:00	0.3	NNE
17-Mar-2016	11:00	1.1	W
17-Mar-2016	12:00	1.3	W
17-Mar-2016	13:00	1.1	W
17-Mar-2016	14:00	1.5	W
17-Mar-2016	15:00	1.7	NNE
17-Mar-2016	16:00	2	W
17-Mar-2016	17:00	1.2	W
17-Mar-2016	18:00	1.5	W
17-Mar-2016	19:00	1.4	W
17-Mar-2016	20:00	1	W
17-Mar-2016	21:00	0.7	WSW

II. Mean Wind Speed and Wind Direction

17-Mar-2016	22:00	0.8	W
17-Mar-2016	23:00	0.6	WSW
18-Mar-2016	0:00	0.5	W
18-Mar-2016	1:00	1.1	W
18-Mar-2016	2:00	1.1	W
18-Mar-2016	3:00	1.5	W
18-Mar-2016	4:00	1.3	W
18-Mar-2016	5:00	1	W
18-Mar-2016	6:00	0.6	WNW
18-Mar-2016	7:00	1	W
18-Mar-2016	8:00	1.1	WSW
18-Mar-2016	9:00	1.3	SW
18-Mar-2016	10:00	2	W
18-Mar-2016	11:00	2.3	SSW
18-Mar-2016	12:00	3.2	SSW
18-Mar-2016	13:00	3.1	W
18-Mar-2016	14:00	3.1	W
18-Mar-2016	15:00	3.1	W
18-Mar-2016	16:00	3.1	W
18-Mar-2016	17:00	2.6	WSW
18-Mar-2016	18:00	2.2	SW
18-Mar-2016	19:00	2.6	WSW
18-Mar-2016	20:00	2	W
18-Mar-2016	21:00	2.7	W
18-Mar-2016	22:00	2.6	W
18-Mar-2016	23:00	2.1	WSW
19-Mar-2016	0:00	2.3	W
19-Mar-2016	1:00	2.4	W
19-Mar-2016	2:00	2.1	S
19-Mar-2016	3:00	2.1	SW
19-Mar-2016	4:00	2.2	WSW
19-Mar-2016	5:00	2	WSW
19-Mar-2016	6:00	2	WSW
19-Mar-2016	7:00	1.3	SW
19-Mar-2016	8:00	1.4	W
19-Mar-2016	9:00	2	WSW
19-Mar-2016	10:00	1.8	WSW

II. Mean Wind Speed and Wind Direction

19-Mar-2016	11:00	2	W
19-Mar-2016	12:00	2.4	W
19-Mar-2016	13:00	2.7	W
19-Mar-2016	14:00	2.8	WNW
19-Mar-2016	15:00	2.7	W
19-Mar-2016	16:00	2.3	N
19-Mar-2016	17:00	2.4	N
19-Mar-2016	18:00	2.2	N
19-Mar-2016	19:00	2.1	NE
19-Mar-2016	20:00	1.8	W
19-Mar-2016	21:00	1.7	WSW
19-Mar-2016	22:00	1.8	W
19-Mar-2016	23:00	1.8	N
20-Mar-2016	0:00	1.5	NNE
20-Mar-2016	1:00	1.7	NE
20-Mar-2016	2:00	1.7	W
20-Mar-2016	3:00	1.3	N
20-Mar-2016	4:00	1.4	NNE
20-Mar-2016	5:00	1.3	NNE
20-Mar-2016	6:00	1.2	NE
20-Mar-2016	7:00	1.3	S
20-Mar-2016	8:00	1.2	WSW
20-Mar-2016	9:00	2.2	WSW
20-Mar-2016	10:00	2.2	W
20-Mar-2016	11:00	2.8	WSW
20-Mar-2016	12:00	2.4	W
20-Mar-2016	13:00	2.9	W
20-Mar-2016	14:00	3.7	WNW
20-Mar-2016	15:00	3.7	N
20-Mar-2016	16:00	3.2	ENE
20-Mar-2016	17:00	2.9	NE
20-Mar-2016	18:00	2.5	ENE
20-Mar-2016	19:00	2.4	NE
20-Mar-2016	20:00	2.1	NE
20-Mar-2016	21:00	2.2	NE
20-Mar-2016	22:00	2.1	N
20-Mar-2016	23:00	2.1	N

II. Mean Wind Speed and Wind Direction

21-Mar-2016	0:00	1.5	NNE
21-Mar-2016	1:00	2	ENE
21-Mar-2016	2:00	1.7	NW
21-Mar-2016	3:00	1.5	N
21-Mar-2016	4:00	1.1	NE
21-Mar-2016	5:00	1.3	NE
21-Mar-2016	6:00	1	NNE
21-Mar-2016	7:00	0.8	NNE
21-Mar-2016	8:00	0.8	WSW
21-Mar-2016	9:00	0.7	W
21-Mar-2016	10:00	1.7	W
21-Mar-2016	11:00	2.5	W
21-Mar-2016	12:00	2.6	W
21-Mar-2016	13:00	2.6	S
21-Mar-2016	14:00	3.1	SSE
21-Mar-2016	15:00	2.5	SSW
21-Mar-2016	16:00	2.5	N
21-Mar-2016	17:00	2.4	ENE
21-Mar-2016	18:00	2.7	ESE
21-Mar-2016	19:00	2.6	SW
21-Mar-2016	20:00	2	W
21-Mar-2016	21:00	2	W
21-Mar-2016	22:00	1.8	WNW
21-Mar-2016	23:00	1.5	WNW
22-Mar-2016	0:00	1.7	WSW
22-Mar-2016	1:00	2	W
22-Mar-2016	2:00	1.5	W
22-Mar-2016	3:00	1.8	W
22-Mar-2016	4:00	2	W
22-Mar-2016	5:00	2	SSW
22-Mar-2016	6:00	1.8	SW
22-Mar-2016	7:00	2.1	SW
22-Mar-2016	8:00	2.2	WNW
22-Mar-2016	9:00	2.7	WNW
22-Mar-2016	10:00	2.5	ENE
22-Mar-2016	11:00	2.7	ENE
22-Mar-2016	12:00	2.7	ENE

II. Mean Wind Speed and Wind Direction

22-Mar-2016	13:00	2.4	E
22-Mar-2016	14:00	2.2	E
22-Mar-2016	15:00	2	ENE
22-Mar-2016	16:00	2	NE
22-Mar-2016	17:00	2	ENE
22-Mar-2016	18:00	1.7	NE
22-Mar-2016	19:00	1.7	ENE
22-Mar-2016	20:00	1.7	ENE
22-Mar-2016	21:00	1.7	ENE
22-Mar-2016	22:00	2	NNE
22-Mar-2016	23:00	1.5	E
23-Mar-2016	0:00	2	NNE
23-Mar-2016	1:00	1.8	N
23-Mar-2016	2:00	2.1	N
23-Mar-2016	3:00	1.8	N
23-Mar-2016	4:00	1.7	SSE
23-Mar-2016	5:00	1.4	WSW
23-Mar-2016	6:00	0.8	ENE
23-Mar-2016	7:00	0.9	E
23-Mar-2016	8:00	2	SW
23-Mar-2016	9:00	2.8	WNW
23-Mar-2016	10:00	3.1	W
23-Mar-2016	11:00	3	WSW
23-Mar-2016	12:00	2.9	SSW
23-Mar-2016	13:00	3	SSW
23-Mar-2016	14:00	3.1	W
23-Mar-2016	15:00	3	WNW
23-Mar-2016	16:00	2.5	WSW
23-Mar-2016	17:00	2.4	WSW
23-Mar-2016	18:00	1.7	W
23-Mar-2016	19:00	1	W
23-Mar-2016	20:00	1.4	WSW
23-Mar-2016	21:00	1.5	WSW
23-Mar-2016	22:00	1.8	W
23-Mar-2016	23:00	1.8	SW
24-Mar-2016	0:00	1.1	SW
24-Mar-2016	1:00	0.7	WNW

II. Mean Wind Speed and Wind Direction

24-Mar-2016	2:00	0.9	WNW
24-Mar-2016	3:00	1.1	WNW
24-Mar-2016	4:00	1.2	WNW
24-Mar-2016	5:00	1.2	ENE
24-Mar-2016	6:00	1.3	E
24-Mar-2016	7:00	1.3	NE
24-Mar-2016	8:00	2.2	ENE
24-Mar-2016	9:00	3.1	ENE
24-Mar-2016	10:00	3.6	ENE
24-Mar-2016	11:00	2.9	ENE
24-Mar-2016	12:00	3.1	NE
24-Mar-2016	13:00	3.1	ENE
24-Mar-2016	14:00	2.8	ENE
24-Mar-2016	15:00	2.8	ENE
24-Mar-2016	16:00	2.3	ENE
24-Mar-2016	17:00	1.6	ENE
24-Mar-2016	18:00	1.6	WNW
24-Mar-2016	19:00	2.3	WNW
24-Mar-2016	20:00	2	SW
24-Mar-2016	21:00	1.6	WSW
24-Mar-2016	22:00	1.6	SW
24-Mar-2016	23:00	1.8	E
25-Mar-2016	0:00	2.1	W
25-Mar-2016	1:00	2.4	SW
25-Mar-2016	2:00	2.3	E
25-Mar-2016	3:00	2.1	N
25-Mar-2016	4:00	2.1	ENE
25-Mar-2016	5:00	2.2	ENE
25-Mar-2016	6:00	2.4	ENE
25-Mar-2016	7:00	1.8	ENE
25-Mar-2016	8:00	2.6	ENE
25-Mar-2016	9:00	2.2	ENE
25-Mar-2016	10:00	2.4	NE
25-Mar-2016	11:00	2.6	ENE
25-Mar-2016	12:00	3.2	ENE
25-Mar-2016	13:00	2.7	NE
25-Mar-2016	14:00	2.6	NE

II. Mean Wind Speed and Wind Direction

25-Mar-2016	15:00	2.4	NE
25-Mar-2016	16:00	2.4	NE
25-Mar-2016	17:00	2.4	NE
25-Mar-2016	18:00	1.7	NE
25-Mar-2016	19:00	1.1	NE
25-Mar-2016	20:00	1	NE
25-Mar-2016	21:00	0.7	ENE
25-Mar-2016	22:00	1.3	NE
25-Mar-2016	23:00	1.1	ENE
26-Mar-2016	0:00	1.5	ENE
26-Mar-2016	1:00	1.7	ENE
26-Mar-2016	2:00	1.5	NE
26-Mar-2016	3:00	1.3	N
26-Mar-2016	4:00	1.5	ENE
26-Mar-2016	5:00	1.2	ENE
26-Mar-2016	6:00	0.5	NE
26-Mar-2016	7:00	0.8	ENE
26-Mar-2016	8:00	1	ENE
26-Mar-2016	9:00	1.7	ENE
26-Mar-2016	10:00	3.4	ENE
26-Mar-2016	11:00	3.2	ENE
26-Mar-2016	12:00	3.4	ENE
26-Mar-2016	13:00	3.4	SW
26-Mar-2016	14:00	3	SW
26-Mar-2016	15:00	3	SW
26-Mar-2016	16:00	1.7	SSW
26-Mar-2016	17:00	0.9	S
26-Mar-2016	18:00	1	S
26-Mar-2016	19:00	1.5	S
26-Mar-2016	20:00	1.1	SSW
26-Mar-2016	21:00	1.2	SSW
26-Mar-2016	22:00	1.1	WSW
26-Mar-2016	23:00	0.9	SW
27-Mar-2016	0:00	1	N
27-Mar-2016	1:00	1.1	WSW
27-Mar-2016	2:00	1.3	W
27-Mar-2016	3:00	1.1	SE

II. Mean Wind Speed and Wind Direction

27-Mar-2016	4:00	1.3	NNW
27-Mar-2016	5:00	1.4	WSW
27-Mar-2016	6:00	1.5	WSW
27-Mar-2016	7:00	1.3	WSW
27-Mar-2016	8:00	1.7	SSW
27-Mar-2016	9:00	3.1	SSW
27-Mar-2016	10:00	3.4	SSW
27-Mar-2016	11:00	4.4	SW
27-Mar-2016	12:00	4.3	SW
27-Mar-2016	13:00	3.8	SSW
27-Mar-2016	14:00	3.4	SSW
27-Mar-2016	15:00	3.1	SSW
27-Mar-2016	16:00	2.9	SE
27-Mar-2016	17:00	2.2	SE
27-Mar-2016	18:00	2.2	SW
27-Mar-2016	19:00	2	WSW
27-Mar-2016	20:00	2.1	SW
27-Mar-2016	21:00	1.8	ENE
27-Mar-2016	22:00	1.3	ENE
27-Mar-2016	23:00	1.5	ENE
28-Mar-2016	0:00	1.3	NE
28-Mar-2016	1:00	1.4	ENE
28-Mar-2016	2:00	1.1	ENE
28-Mar-2016	3:00	1.3	ENE
28-Mar-2016	4:00	1.3	ESE
28-Mar-2016	5:00	1.4	ENE
28-Mar-2016	6:00	1.1	ENE
28-Mar-2016	7:00	2.3	SW
28-Mar-2016	8:00	2.1	SW
28-Mar-2016	9:00	2	SW
28-Mar-2016	10:00	2.1	ESE
28-Mar-2016	11:00	2.6	SSW
28-Mar-2016	12:00	2.4	SW
28-Mar-2016	13:00	2.6	S
28-Mar-2016	14:00	2.8	N
28-Mar-2016	15:00	2.2	N
28-Mar-2016	16:00	2.2	NE

II. Mean Wind Speed and Wind Direction

28-Mar-2016	17:00	2	NE
28-Mar-2016	18:00	1.2	NE
28-Mar-2016	19:00	1	ENE
28-Mar-2016	20:00	0.6	ENE
28-Mar-2016	21:00	0.6	ENE
28-Mar-2016	22:00	0.3	ENE
28-Mar-2016	23:00	0.1	NE
29-Mar-2016	0:00	0.9	ENE
29-Mar-2016	1:00	1	NE
29-Mar-2016	2:00	0.8	ENE
29-Mar-2016	3:00	0.8	ENE
29-Mar-2016	4:00	1.3	NE
29-Mar-2016	5:00	2.1	NE
29-Mar-2016	6:00	1.3	NE
29-Mar-2016	7:00	0.8	ENE
29-Mar-2016	8:00	1.4	NE
29-Mar-2016	9:00	2.4	ENE
29-Mar-2016	10:00	2.2	NE
29-Mar-2016	11:00	1.7	NE
29-Mar-2016	12:00	1.5	NE
29-Mar-2016	13:00	1.7	ENE
29-Mar-2016	14:00	1.8	NE
29-Mar-2016	15:00	2.4	ENE
29-Mar-2016	16:00	2.4	ENE
29-Mar-2016	17:00	1.8	ENE
29-Mar-2016	18:00	1.5	NE
29-Mar-2016	19:00	1.5	NE
29-Mar-2016	20:00	1	NE
29-Mar-2016	21:00	0.8	NE
29-Mar-2016	22:00	0.7	NE
29-Mar-2016	23:00	0.8	ENE
30-Mar-2016	0:00	0.7	ENE
30-Mar-2016	1:00	1.4	NE
30-Mar-2016	2:00	0.9	E
30-Mar-2016	3:00	0.9	ENE
30-Mar-2016	4:00	1.3	ENE
30-Mar-2016	5:00	1.7	NNE

II. Mean Wind Speed and Wind Direction

30-Mar-2016	6:00	1.4	N
30-Mar-2016	7:00	1.7	N
30-Mar-2016	8:00	1.8	N
30-Mar-2016	9:00	2.3	WSW
30-Mar-2016	10:00	2.7	SW
30-Mar-2016	11:00	2.5	SW
30-Mar-2016	12:00	2.5	SW
30-Mar-2016	13:00	2.3	SW
30-Mar-2016	14:00	2.7	W
30-Mar-2016	15:00	2.4	WSW
30-Mar-2016	16:00	1.7	SW
30-Mar-2016	17:00	1.8	ENE
30-Mar-2016	18:00	1.7	SSW
30-Mar-2016	19:00	1.7	SW
30-Mar-2016	20:00	1.4	SW
30-Mar-2016	21:00	1.3	WSW
30-Mar-2016	22:00	1.1	SSW
30-Mar-2016	23:00	1	WNW
31-Mar-2016	0:00	0.5	NE
31-Mar-2016	1:00	1	ENE
31-Mar-2016	2:00	1.4	SW
31-Mar-2016	3:00	1.7	SW
31-Mar-2016	4:00	1.7	SW
31-Mar-2016	5:00	1.8	WSW
31-Mar-2016	6:00	1.5	SW
31-Mar-2016	7:00	1.8	SSW
31-Mar-2016	8:00	2.1	SSW
31-Mar-2016	9:00	1.7	SSW
31-Mar-2016	10:00	2.1	SSW
31-Mar-2016	11:00	2.2	SW
31-Mar-2016	12:00	2	SW
31-Mar-2016	13:00	2	W
31-Mar-2016	14:00	1.5	ENE
31-Mar-2016	15:00	1.5	NE
31-Mar-2016	16:00	1.5	SSW
31-Mar-2016	17:00	1.5	W
31-Mar-2016	18:00	1.1	WNW

II. Mean Wind Speed and Wind Direction

31-Mar-2016	19:00	1.1	WNW
31-Mar-2016	20:00	0.9	WNW
31-Mar-2016	21:00	0.8	WNW
31-Mar-2016	22:00	1	WNW
31-Mar-2016	23:00	1.1	WNW

APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Contract No. KL/2012/02
Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area
Impact Air and Noise Monitoring Schedule for March 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Mar	2-Mar	3-Mar	4-Mar	5-Mar
		Noise (M9)		24 hr TSP	1 hr TSP X3 Noise (M3, M4)	
6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar
	Noise (M9)		24 hr TSP	1 hr TSP X3 Noise (M3, M4)		
13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar	19-Mar
		24 hr TSP	1 hr TSP X3 Noise (M3, M4)	Noise (M9)		
20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	**25-Mar**	**26-Mar**
	24 hr TSP	1 hr TSP X3	Noise (M9) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)		
27-Mar	**28-Mar**	29-Mar	30-Mar	31-Mar		
		Noise (M9) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)			

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2012/02
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M3 - Cognitio College
M4 - Lee Kau Yan Memorial School
M9 - Tak Long Estate

Contract No. KL/2012/02
Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area
Tentative Impact Air and Noise Monitoring Schedule for April 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Apr	2-Apr
					24 hr TSP	
3-Apr	**4-Apr**	5-Apr	6-Apr	7-Apr	8-Apr	9-Apr
		1 hr TSP X3		Noise (M9) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)	
10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	16-Apr
			Noise (M9) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)		
17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr
		Noise (M9) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)			
24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr	30-Apr
	Noise (M9) 24 hr TSP	1 hr TSP X3 Noise (M3, M4)			24 hr TSP	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

AM1(B) -Boundary of KTD/Outside Contractor's site office of Contract KL/2012/02
AM2 - Lee Kau Yan Memorial School

Noise Monitoring Station

M3 - Cognitio College
M4 - Lee Kau Yan Memorial School
M9 - Tak Long Estate

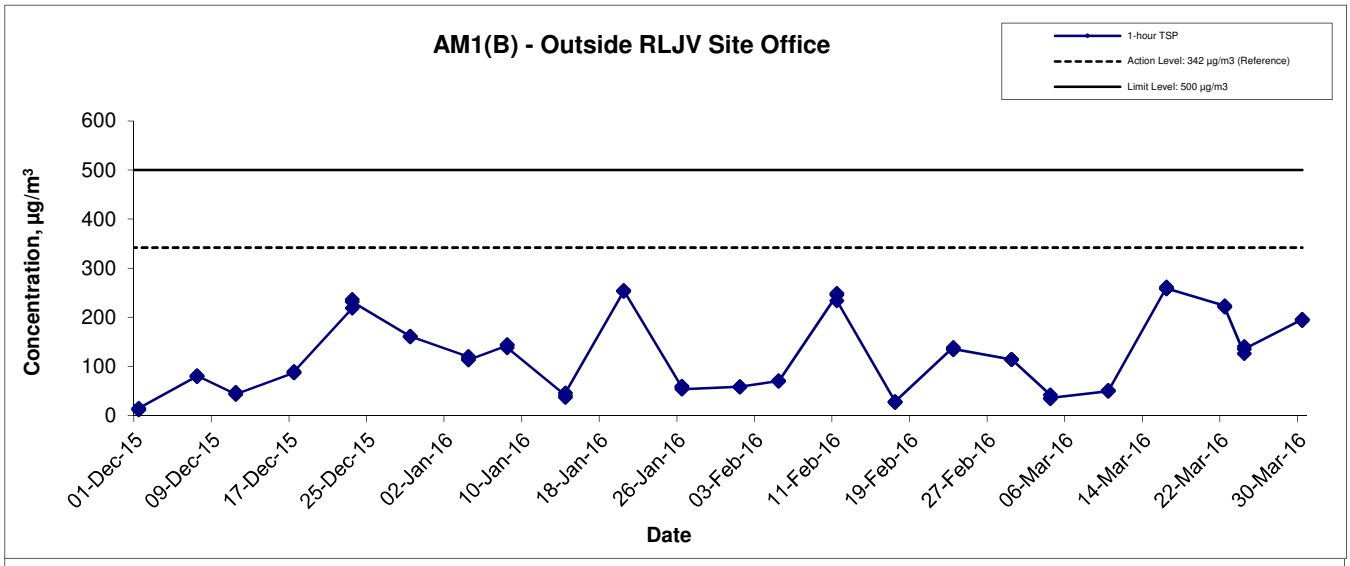
APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

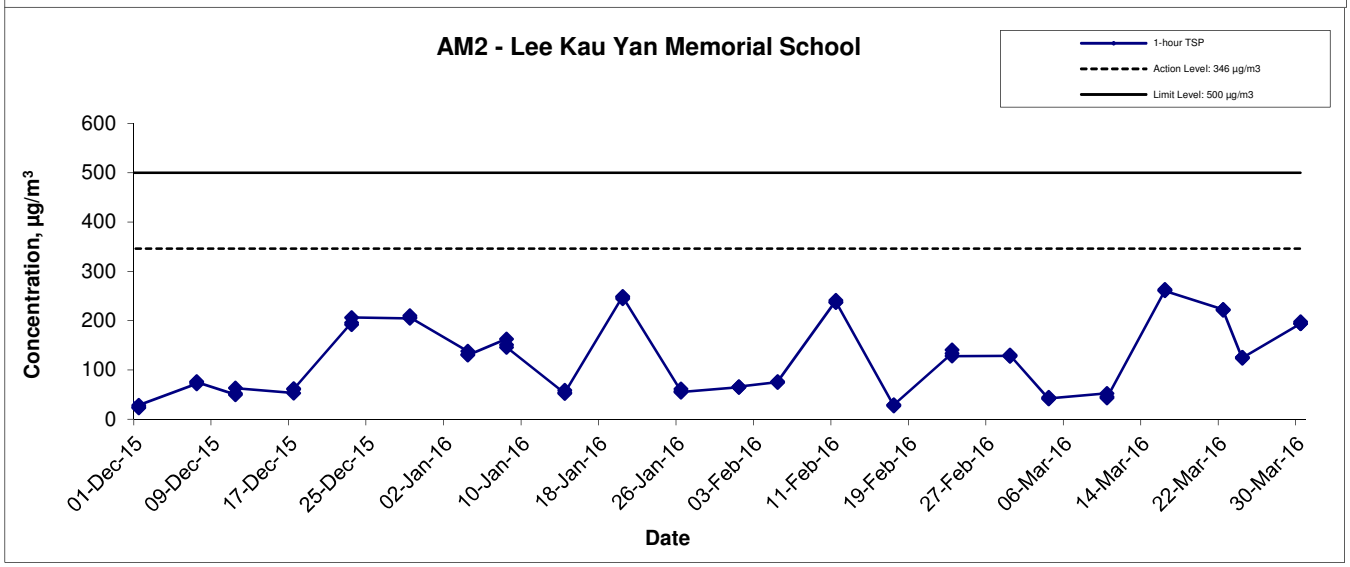
Appendix E - 1-hour TSP Monitoring Results

Location AM1(B) - Outside RLJV Site Office			
Date	Time	Weather	Particulate Concentration (µg/m3)
4-Mar-16	9:00	Cloudy	42.2
4-Mar-16	10:00	Cloudy	34.6
4-Mar-16	11:00	Cloudy	35.7
10-Mar-16	13:00	Cloudy	49.5
10-Mar-16	14:00	Cloudy	51.7
10-Mar-16	15:00	Cloudy	50.6
16-Mar-16	9:00	Cloudy	261.9
16-Mar-16	10:00	Cloudy	257.9
16-Mar-16	11:00	Cloudy	258.6
22-Mar-16	9:00	Cloudy	223.6
22-Mar-16	10:00	Cloudy	222.5
22-Mar-16	11:00	Cloudy	220.9
24-Mar-16	9:00	Cloudy	126.2
24-Mar-16	10:00	Cloudy	140.5
24-Mar-16	11:00	Cloudy	135.4
30-Mar-16	13:00	Cloudy	196.3
30-Mar-16	14:00	Cloudy	195.6
30-Mar-16	15:00	Cloudy	193.6
		Average	149.9
		Maximum	261.9
		Minimum	34.6

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration (µg/m3)
4-Mar-16	14:15	Cloudy	41.1
4-Mar-16	15:15	Cloudy	44.4
4-Mar-16	16:15	Cloudy	42.2
10-Mar-16	13:15	Cloudy	52.2
10-Mar-16	14:15	Cloudy	45.6
10-Mar-16	15:15	Cloudy	43.3
16-Mar-16	13:30	Cloudy	261.0
16-Mar-16	14:30	Cloudy	263.0
16-Mar-16	15:30	Cloudy	260.4
22-Mar-16	13:00	Cloudy	222.5
22-Mar-16	14:00	Cloudy	222.0
22-Mar-16	15:00	Cloudy	220.9
24-Mar-16	13:00	Cloudy	123.5
24-Mar-16	14:00	Cloudy	125.3
24-Mar-16	15:00	Cloudy	124.7
30-Mar-16	9:00	Cloudy	193.6
30-Mar-16	10:00	Cloudy	197.9
30-Mar-16	11:00	Cloudy	193.5
		Average	148.7
		Maximum	263.0
		Minimum	41.1

1-hr TSP Concentration Levels





Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S	Project No.: MA13043	CINOTECH
	Date: Mar 16	Appendix: E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

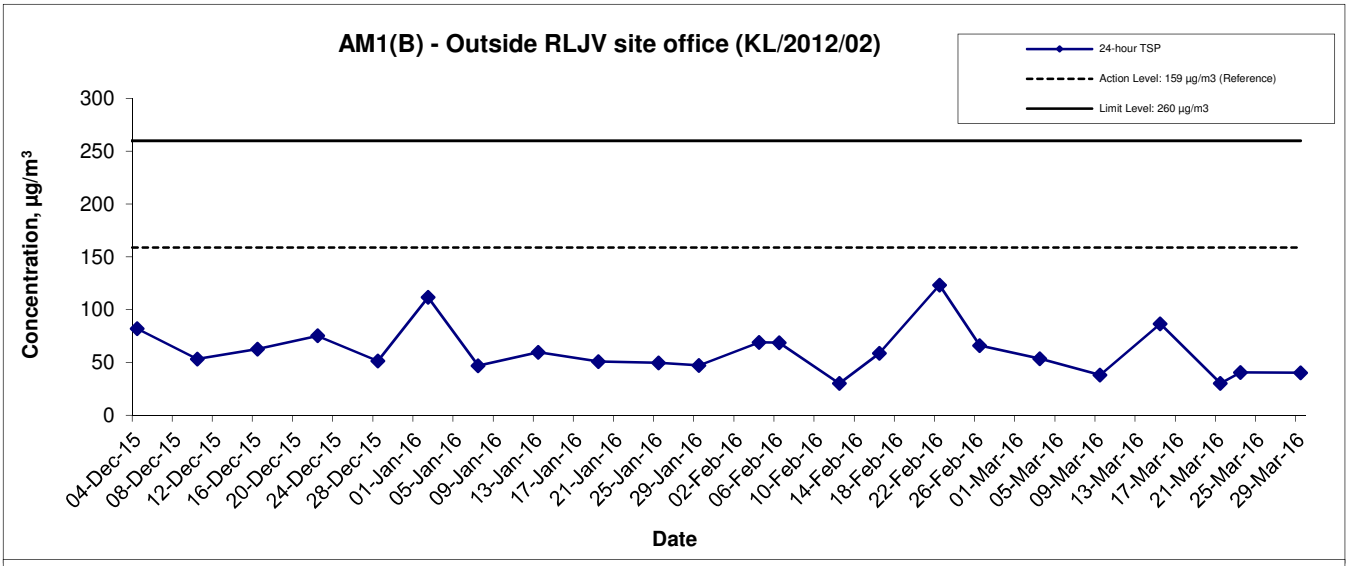
Location AM1(B) - Outside RLJV site office (KL/2012/02)

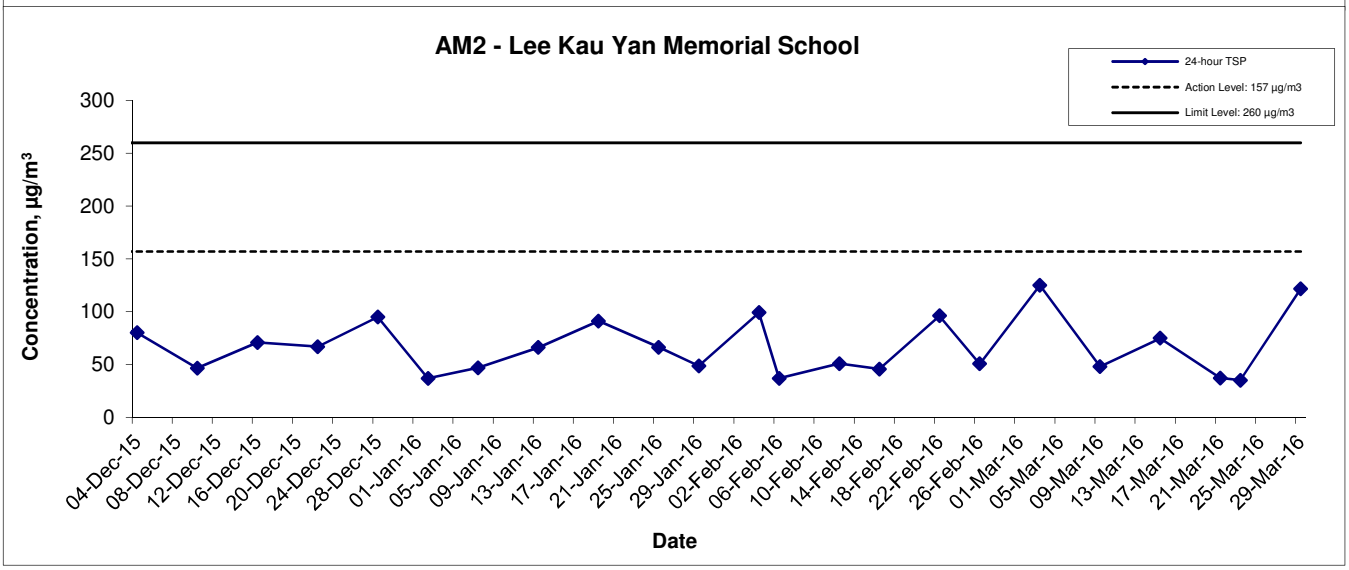
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
03-Mar-16	Cloudy	291.5	770.1	3.3338	3.4269	0.0931	6117.0	6141.0	24.0	1.20	1.20	1.20	1732.5	53.7
09-Mar-16	Sunny	293.1	762.2	3.3147	3.3805	0.0658	6141.0	6165.0	24.0	1.19	1.19	1.19	1719.6	38.3
15-Mar-16	Sunny	288.6	766.3	3.3294	3.4798	0.1504	6165.0	6189.0	24.0	1.21	1.21	1.21	1736.6	86.6
21-Mar-16	Rainy	289.7	764.9	3.2499	3.3023	0.0524	6189.0	6213.0	24.0	1.20	1.20	1.20	1732.0	30.3
23-Mar-16	Cloudy	290.3	769.3	3.3459	3.4162	0.0703	6213.0	6237.0	24.0	1.21	1.20	1.20	1735.0	40.5
29-Mar-16	Cloudy	290.9	769.7	3.3131	3.3832	0.0701	6237.0	6261.0	24.0	1.20	1.20	1.20	1733.8	40.4
													Min	30.3
													Max	86.6
													Average	48.3

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			
03-Mar-16	Cloudy	291.6	770.7	3.3638	3.5821	0.2183	16143.9	16167.9	24.0	1.21	1.21	1.21	1742.6	125.3
09-Mar-16	Sunny	294.2	763.9	3.3475	3.4308	0.0833	16167.9	16191.9	24.0	1.20	1.20	1.20	1728.4	48.2
15-Mar-16	Sunny	289.5	766.0	3.2909	3.4218	0.1309	16192.2	16216.2	24.0	1.21	1.21	1.21	1743.5	75.1
21-Mar-16	Rainy	288.7	765.6	3.2977	3.3628	0.0651	16216.2	16240.2	24.0	1.21	1.21	1.21	1745.5	37.3
23-Mar-16	Cloudy	289.7	769.8	3.3013	3.3626	0.0613	16240.2	16264.2	24.0	1.21	1.21	1.21	1746.9	35.1
29-Mar-16	Cloudy	290.5	769.1	3.3395	3.5517	0.2122	16264.2	16288.2	24.0	1.21	1.21	1.21	1744.0	121.7
													Min	35.1
													Max	125.3
													Average	73.8

24-hr TSP Concentration Levels





Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Mar 16	Project No.: MA13043 Appendix: F	CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

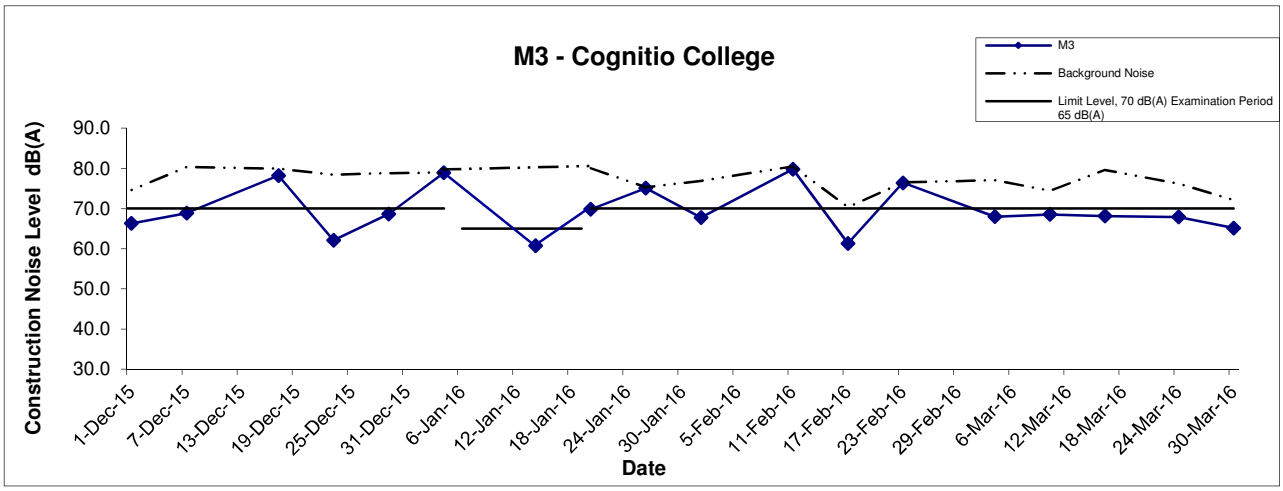
Appendix G - Noise Monitoring Results

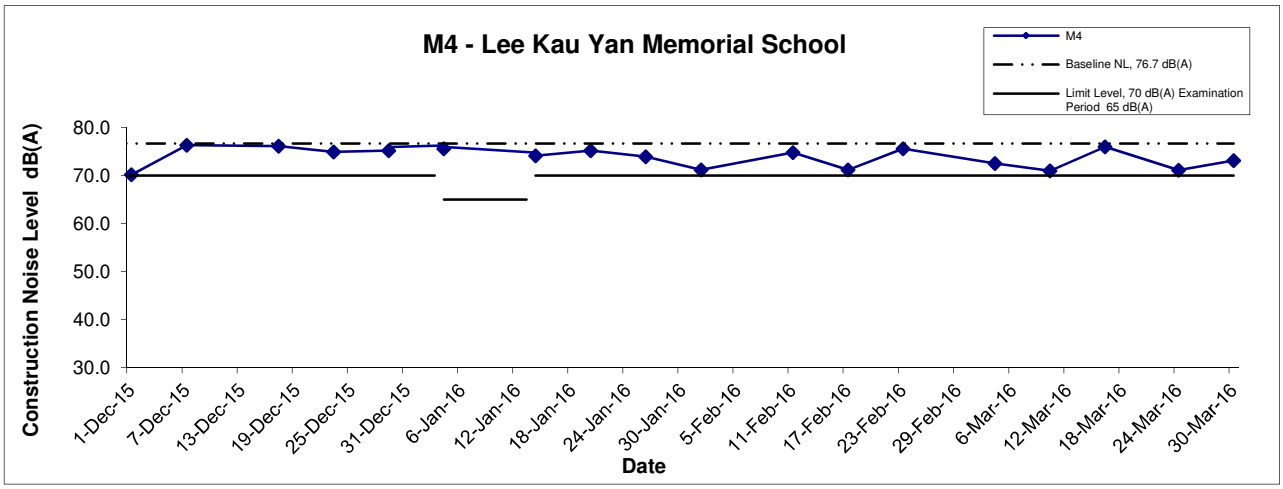
Location M3 - Cognitio College							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Background Noise	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
4-Mar-16	15:10	Cloudy	77.6	79.2	75.8	77.1	68.0
10-Mar-16	15:20	Cloudy	75.4	77.5	73.8	74.4	68.5
16-Mar-16	14:30	Cloudy	79.9	81.5	77.6	79.6	68.1
24-Mar-16	11:25	Cloudy	76.8	77.4	75.7	76.2	67.9
30-Mar-16	15:00	Cloudy	72.9	76.1	69.1	72.1	65.2

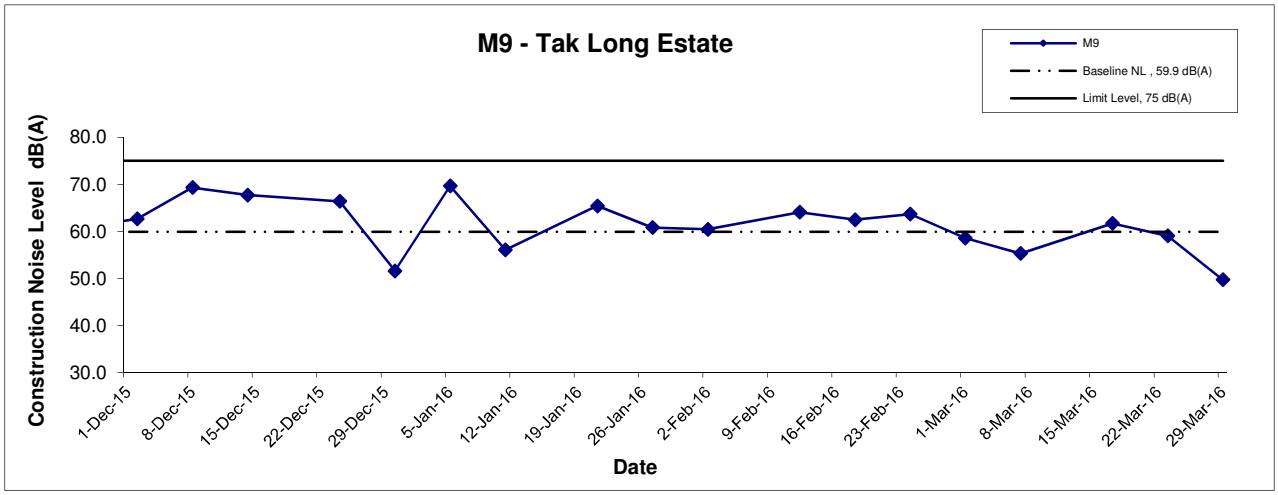
Location M4 - Lee Kau Yan Memorial School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
4-Mar-16	14:20	Cloudy	72.5	74.9	70.8	76.7	72.5 Measured $\leqq$ Baseline
10-Mar-16	13:15	Cloudy	71.0	72.8	68.3		71.0 Measured $\leqq$ Baseline
16-Mar-16	13:30	Cloudy	76.0	77.4	74.0		76.0 Measured $\leqq$ Baseline
24-Mar-16	14:00	Cloudy	71.1	72.4	70.5		71.1 Measured $\leqq$ Baseline
30-Mar-16	09:05	Cloudy	73.1	76.3	71.6		73.1 Measured $\leqq$ Baseline

Location M9 - Tak Long Estate							
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}
1-Mar-16	09:45	Sunny	62.3	64.2	60.1	59.9	58.6
7-Mar-16	16:30	Cloudy	61.2	62.9	59.0		55.3
17-Mar-16	09:00	Cloudy	63.9	67.7	60.2		61.7
23-Mar-16	16:00	Cloudy	62.5	64.1	60.1		59.0
29-Mar-16	11:30	Cloudy	60.3	61.8	57.9		49.7

Noise Levels







Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title: Contract No. KL/2012/02 Kai Tak Development - Stage 3A Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S	Project No.: MA13043	CINOTECH
	Date: Mar 16	Appendix: G	

APPENDIX H
SUMMARY OF EXCEEDANCE

Contract No. KL/2012/02
Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2012/02

(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	160302
Date	2 March 2016
Time	14:00 – 15:00

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	
	• 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 audit section (Ref. No.: 160223), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Janet Wai		2 March 2016
Checked by	Dr. Priscilla Choy		2 March 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160309
Date	9 March 2016
Time	14:00 – 15:15

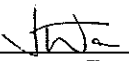
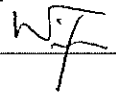
Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• 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 audit section (Ref. No.: 160302), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Janet Wai		9 March 2016
Checked by	Dr. Priscilla Choy		9 March 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160317
Date	17 March 2016
Time	14:30 – 16:30

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	
160317-R02	• The dusty material and the stockpile of dusty material should be covered by impervious material at the site area near CLP and at SW3 respectively.	C 7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
160317-R01	• The general refuse should be cleared regularly to prevent the accumulation at SW3.	E 1i
160317-R03	• Properly clear the empty cement bags as chemical waste at the site area near CLP.	E 2i
	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 audit section (Ref. No.: 160309), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Janet Wai		17 March 2016
Checked by	Dr. Priscilla Choy		17 March 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160323
Date	23 March 2016
Time	14:00 – 15:00

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	
	• 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 audit section (Ref. No.: 160317), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Janet Wai		23 March 2016
Checked by	Dr. Priscilla Choy		23 March 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160330
Date	30 March 2016
Time	14:00 – 15:00

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	
	• 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 audit section (Ref. No.: 160323), all environmental deficiencies have been rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Janet Wai		30 March 2016
Checked by	Dr. Priscilla Choy		30 March 2016

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

	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. • DWFI compound for JVBC: 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

	• Localised maintenance dredging: 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. • Improvement of water circulation in KTAC and KTTS: 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. • In-situ sediment treatment by bioremediation: 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. • 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.	^ N/A(1) ^ ^ ^ ^
	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.	^

Land-based Construction

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.

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	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.	N/A(1)
	CM4 Erection of decorative screen hoarding.	^

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/2012/02

Kai Tak Development –Stage 3A Infrastructure at Former North Apron Area

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

Reporting Month: March 2016

Contract No. KL/2012/02

Log Ref.	Location	Received Date	Details of Complaint/warning/summon and prosecution	Investigation/Mitigation Action	Status
16-04292	The Concorde Road	3 March 2016	Complainant alleged that the mud disposed from the vehicles leaving construction site to the Concorde Road which affecting the road condition and made the road muddy.	Investigation was conducted. After complaint received, the Contractor has taken immediate follow-up actions including cleared up the disposed mud at the Concorde Road by the Contractor including sweeping and cleaning the disposed mud immediately along the Concorde Road; Clear the silty water and mud regularly near the entrance of construction site areas that the silty water and mud runoff would be backflow into the site area and treated through the wastewater treatment facility in the site before discharging out; Ensure vehicles and plant were cleaned of mud and debris before leaving the construction site area, especially near the Concorde Road; ensure vehicles and plant were cleaned of mud and debris before leaving the construction site area, especially near the Concorde Road; and use of treated effluent from the wastewater treatment facility and the water in the wheel washing bay would be pumped back to wastewater treatment facility to increase the efficiency of wheel washing. The Contractor had also increased the frequency of clearing sediment and silt in the wheel washing facility in order to minimize the mud disposed from the vehicles leaving the construction site to the Concorde Road.	The situation is closed.

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

APPENDIX M
SUMMARY OF WASTE GENERATION AND DISPOSAL RECORDS

Name of Department : Civil Engineering and Development Department / Kowloon Development Office **Contract No. : KL/2012/02**

MONTHLY SUMMARY WASTE FLOW TABLE FOR 2016 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Borken Concrete (4)	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse
	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]
JAN	1.33977	0	0	0.89856	0.32871	0	0	0	0	0	0.11250
FEB	3.60932	0	0	3.47750	0.04472	0	0	0	0	0	0.08710
MAR	5.27182	0	0	5.08400	0.01982	0	0	0	0	0	0.16800
APR											
MAY											
JUNE											
SUB-TOTAL	10.22092	0	0	9.46006	0.39326	0	0	0	0	0	0.36760
JULY											
AUG											
SEPT											
OCT											
NOV											
DEC											
TOTAL	10.22092	0	0	9.46006	0.39326	0	0	0	0	0	0.36760

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *										
Total Quantity	Borken Concrete (4)	Reused in the Contract	Reused in other	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard	Plastics (3)	Chemical Waste	Other, e.g. general
[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]
27.972	26.472	0	0	0	0	0	0.9	0	1.8	1.5

Notes : (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the site.
(2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.