Civil Engineering and Development Department

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

Contract No. KL/2012/03
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

Monthly EM&A Report

July 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.

CINOTECH accepts no responsibility for changes made to this report by third parties

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EXECUTIVE SUMMARY

Introduction

1. This is the 32nd Monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Ltd. for "Contract No. KL/2012/03 - Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area" (Hereafter referred to as "the Project"). This contract comprises the construction of Schedule 2 Designated Projects (DP) Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two Environmental Permits (EP), EP-337/2009 and EP-344/2009. The title of the designated projects under Environmental Permit No.: EP-344/2009 is "New sewage pumping stations serving Kai Tak Development" and under Environmental Permit No.: EP-337/2009 is "New distributor roads serving the planned Kai Tak Development". This report documents the findings of EM&A Works conducted from 1 to 31 July 2016.

2. The major site activities undertaken in the reporting month included:
   - Installation of hand-railing & ladder inside Box Culvert B5;
   - Construction of staircase and landing, E&M Works at PS2;
   - Chamber construction, backfill and sheet pile removal at 7A;
   - Segment tunneling, corrugated steel pipe installation at 7B;
   - Chamber construction, erection of formwork for cast in situ work, concreting of cast in situ Box Culver B6;
   - Outfall construction at Box Culvert B6;
   - Road widening works (excavation and UU works) and water mains laying at Sung Wong Toi Road;
   - Maintenance & Servicing Engineer's Office at Portion 9;
   - Pipe Jacking at Pit 1, 4, 9 and 10;
   - Lay HDPE pipe at Pit 5 and 6/7;
   - Chamber construction at Pit 5 and Pit 11;
   - Installation of drainage, UU laying works and Road works at Road D2;
   - Construction of staircase and landing, E&M Works at NPS;
   - Chamber construction, carry out trench excavation for drainage, sewerage and watermains and Road works at Road L19 & Bailey St; and
   - Storage of excavated material at Portion 6.

Environmental Monitoring Works

3. 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.

4. Summary of the breaches of action and limit levels in the reporting month for the Project is tabulated in **Table I**.

Table I Breaches of Action and Limit Levels 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

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

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

Construction Noise Monitoring

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

Environmental Licenses and Permits

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

9. Registration of Chemical Waste Producer (Waste Producer Number: 5213-286-K2958-05).

10. Water Discharge License (WT00020971-2015).

Key Information in the Reporting Month

11. Summary of complaint received, reporting changes and notifications of any summons and successful prosecutions in the reporting month is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Month

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

Future Key Issues

12. 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; 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 4 Infrastructure at Former North Apron Area is one of the construction stages of KTD. Schedule 2 DPs in this Project include new distributor roads serving the planned KTD and new sewage pumping stations serving the planned KTD. The general layout of the Project is shown in **Figure 1.**

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

1.3 A study of environmental impact assessment (EIA) was undertaken to identify the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and recommend possible mitigation measures associated with the works. The 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) is commissioned by Kwan On Construction Co., Ltd. (the Contractor) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2012/03 - Stage 4 Infrastructure at Former North Apron Area. The construction work under KL/2012/03 comprises the construction of Road D2 & Sewage Pumping Station PS2 and PS NPS which forms a part of the works under two EPs (EP-337/2009 and EP-344/2009).

1.5 The construction commencement of this Contract was on 1st December 2013 for Road D2, Sewage Pumping Station PS2 and PS NPS. This is the 32nd Monthly EM&A report summarizing the EM&A works for the Project from 1 to 31 July 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) – AECOM.
- Environmental Team (ET) – Cinotech Consultants Limited (CCL).
- Independent Environmental Checker (IEC) – Hyder Consulting Limited. (Hyder).
- Contractor –Kwan On Construction Co., Ltd. (Kwan On).

1.7 The key contacts of the Project are shown in **Table 1.1** and **Figure 5**.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Position	Phone No.	Fax No.
CEDD	Project Proponent	Mr. C. K. Choi	Senior Engineer	2301 1174	2301 1277
AECOM	Engineer's Representative	Mr. John Yam	SRE	2798 0771	3013 8864
		Mr. Ivan Yim	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	
Hyder	Independent Environmental Checker	Mr. Wong Fu Nam	Independent Environmental Checker	2911 2744	2805 5028
Kwan On	Contractor	Mr. Albert Ng	Site Agent	3689 7752	3689 7726
				6146 6761 (Hotline telephone number)	

Construction Activities undertaken during the Reporting Month

1.8 The site activities undertaken in the reporting month included:

- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing, E&M Works at PS2;
- Chamber construction, backfill and sheet pile removal at 7A;
- Segment tunneling, corrugated steel pipe installation at 7B;
- Chamber construction, erection of formwork for cast in situ work, concreting of cast in situ Box Culver B6;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) and water mains laying at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Pipe Jacking at Pit 1, 4, 9 and 10;
- Lay HDPE pipe at Pit 5 and 6/7;
- Chamber construction at Pit 5 and Pit 11;
- Installation of drainage, UU laying works and Road works at Road D2;
- Construction of staircase and landing, E&M Works at NPS;
- Chamber construction, carry out trench excavation for drainage, sewerage and watermains and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6.

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

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

Construction Works	Generated Major Environmental Impact	Control Measures
Construction of superstructure of Pumping Station PS2 and NPS;	Dust, Water Quality, Waste Management	• Sufficient watering of the works site with active dust emitting activities; • Properly cover the stockpiles; • Appropriate desilting/sedimentation devices provided on site for treatment before discharge; • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall; and • On-site waste sorting and implementation of trip ticket system.
Backfilling between sewerage manholes 1K1_1 and FMH10_340 and construction of manhole FMH10_370a at L6;	Dust, Noise	• Use of quiet plant and well-maintained construction plant; and • Properly cover the stockpiles;
Installation of precast unit and construction of in-situ portions of Box Culvert B6; Construction of jacking pits nos. 1 and 2; Installation of gas pipe at pit no. 10; Construction of washout chamber at pit no. 11;	Noise, Waste Management	• Use of quiet plant and well-maintained construction plant; and • Provide hoarding. • Good management and control on construction waste reduction
Construction of sewerage manhole FMH 10 at Bailey Street; Widening works of Sung Wong Toi Road.	Noise	• Use of quiet plant and well-maintained construction plant; and • Provide hoarding.
Pipe laying from manhole SMH2204 to Box Culvert B6; Laying of rising mains from PS2 to chainage CHA-18; Pipe laying from stormwater manholes SMH1962 to SMH1963 and construction of manholes SMH1953 and SMH1963 at L6; Installation of DCS;	Noise, Water Quality	• Use of quiet plant and well-maintained construction plant; and • Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall.

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 implementation of the EM&A programme for the Project from 1 to 31 July 2016.

1.13 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 1.3** (see **Figure 2 and 3** for their locations).

Table 1.3 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		
AM2 - Lee Kau Yan Memorial School	Yes	N/A
AM3 – Sky Tower	No	AM3(A) – Holy Trinity Bradbury Centre
AM4 – Grand Waterfront	No	AM4(A) – EMSD Workshop
AM5 – CCC Kei To Secondary School	No	AM5(A) – Po Leung Kuk Ngan Po Ling College
AM6 – Site 1B4 (Planned)	N/A	
Noise Monitoring Stations		
M6 – Holy Carpenter Primary School	No	M6(A) – Oblate Primary School
M7 – CCC Kei To Secondary School	Yes	N/A
M8 – Po Leung Kuk Ngan Po Ling College	Yes	N/A
M9 – Tak Long Estate	Yes	N/A
M10 – Site 1B4 (Planned)	N/A	

Remarks:
- "Yes" - Monitoring station is the same as that stated in EM&A Manual
- No - Monitoring station is not the same as that stated in EM&A Manual. Request for carrying monitoring works at the monitoring stations stated in EM&A Manual was rejected by owner of premise. Alternative monitoring stations were proposed by the ET of Schedule 3 EIA and approved by the EPD.
- N/A - No alternative monitoring station is required.

1.14 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, has been conducted in 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 Schedule 3 of KTD will be adopted for the Project. Therefore, this report presents the air quality and noise monitoring works extracted from Schedule 3 of KTD.

Status of Compliance with Environmental Permits Conditions

1.15 The status of required submission related to this Project under the Environmental Permits No. EP-337/2009 and EP-344/2009 is summarized in the **Table 1.4** and **Table 1.5** respectively:

Table 1.4 Summary Table for Required Submission under EP No. EP-337/2009

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Road D2
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Road D2
2.11	Landscape Mitigation Plan(s) for distributors road(s)	7 January 2014	For Road D2
2.12	As-built drawing(s) for the distributor road(s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No. 32 (June 2016)	15 July 2016	Monthly EM&A Report for Contract No. KL/2012/03

Table 1.5 Summary Table for Required Submission under EP No. EP-344/2009

EP Conditions	Submission	Submission Date	Remark
1.11	Notification of Commencement Date of Construction of Project	31 October 2013	For Pumping Station PS2 and PS NPS
2.3	Management Organization of Main Construction Companies	31 October 2013	For Contract No. KL/2012/03
2.4	Design Drawing(s) of the Project	28 October 2013	For Pumping Station PS2 and PS NPS
2.11	Landscape Mitigation Plan(s) for sewage pumping station(s)	7 January 2014	For Pumping Station PS2 and PS NPS
2.12	As-built drawing(s) for the sewage pumping station (s)	To be submitted at least one week before the commencement of operation of distributor road(s)	
3.2	Baseline Monitoring Report	26 November 2010 (Part I) 24 December 2010 (Part II)	/
3.3	Four hard copies and one electronic copy of the Monthly EM&A Report No.32 (June 2016)	15 July 2016	Monthly EM&A Report for Contract No. KL/2012/03

2. AIR QUALITY

Monitoring Requirements

2.1 According to EM&A Manual under the EPs, 1-hour and 24-hour Total Suspended Particulates (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 Five designated monitoring stations were selected for air quality monitoring programme. Impact dust monitoring was conducted at four of the air quality monitoring stations (AM2, AM3(A), AM4(A) and AM5(A)). **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
AM2	Lee Kau Yan Memorial School	Rooftop (about 8/F) Area
AM3(A)	Holy Trinity Bradbury Centre	Rooftop (about 8/F) Area
AM4(A)	EMSD Workshops	Rooftop (about 6/F) Area
AM5(A)	Po Leung Kuk Ngan Po Ling College	Rooftop (about 10/F) Area
#AM6	PA 15	Site 1B4 (Planned)

Remarks: # The impact monitoring at these locations will only be carried out until the sensitive receivers at the building are resided.

Monitoring Equipment

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

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	G25A	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3, LD-3B and AEROCET-531	5
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	4
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	At least three times every 6 days
24-hr TSP	At least once every 6 days

Monitoring Methodology and Quality Assurance and Quality Control (QA/QC) Procedure

1-hour TSP Monitoring

Measuring Procedures

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

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

Maintenance/Calibration

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

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

24-hour TSP Monitoring

Instrumentation

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

Operating/Analytical Procedures

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

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

2.9 Prior to the commencement of the 24-hour TSP sampling, the flow rate of the high volume sampler was properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.10 For 24-hour TSP sampling, fiberglass filters having a collection efficiency of ≥ 99% for particles of 0.3μm (DOP) diameter were used.

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

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

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

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

2.15 The timer was then programmed so that the TSP will be sampled for 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).

2.16 After completion of sampling, the filter was removed and sent to Wellab Ltd., which is accredited under HOKLAS for laboratory analysis. The elapsed time was also recorded.

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

Maintenance/Calibration

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

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

Results, Observations and Action/Limit Level Exceedance

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

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

2.21 The air temperature, precipitation and the relative humidity data were 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.**

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

2.23 The summary of exceedance record in the reporting month is shown in **Appendix H**. No exceedance in Action/Limit Levels of 1-hour and 24-hour TSP was recorded for the air quality monitoring.

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

Table 2.4 Major dust source identified at the designated air quality monitoring stations

Station	Major Dust Source
AM2 – Lee Kau Yan Memorial School	Road Traffic Dust Exposed site area and open stockpiles Site vehicle movement
AM3(A) – Holy Trinity Bradbury Centre	Road Traffic Dust Exposed site area Excavation works Site vehicle movement
AM4(A) – EMSD Workshops	Site vehicle movement
AM5(A) – Po Leung Kuk Ngan Po Ling College	Road Traffic Dust Excavation works at the site (Contract No.: 1/WSD/14(K)) facing Po Leung Kuk Ngan Po Ling College

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 to 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 Five designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at four designated monitoring stations (M6, M7, M8 and M9). **Figure 3** shows the locations of these stations.

3.3 Construction noise monitoring at Station M6 – Holy Carpenter Primary School was rejected by the premise owner on 6th October 2014. The monitoring station has been relocated at a proposed alternative noise monitoring station M6(A) – Oblate Primary School since 10th October 2014 to carry out the monitoring works.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
*M6(A)	Oblate Primary School	Rooftop (about 7/F) Area
M7	CCC Kei To Secondary School	Rooftop (about 8/F) Area
M8	Po Leung Kuk Ngan Po Ling College	Staircase Area (about 9/F)
M9	Tak Long Estate	Car Park Building (about 2/F)
#M10	Site 1B4 (Planned)	-

Remarks:
* Alternative noise monitoring station for M6 – Holy Carpenter Primary School from 10th October 2014 onwards
\# The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the building.

Monitoring Equipment

3.4 **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	7
Calibrator	SVAN 30A	4
	B&K4231	2

Monitoring Parameters, Frequency and Duration

3.5 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	Type of Measurement
M7 M8 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 (*)
M6(A)	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	Free Field (*)

(*) Refer to bullet point 1 and 2 in the following section.

Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- 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

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

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

3.8 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, Observations and Action/Limit Level Exceedance

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

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

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

3.12 The major noise source identified at the designated noise monitoring stations is as follows:

Table 3.4 Major noise source identified at the designated noise monitoring stations

Monitoring Stations	Locations	Major Noise Source
M6(A)	Oblate Primary School	Road and marine traffic Noise
M7	CCC Kei To Secondary School	Road and marine traffic Noise
M8	Po Leung Kuk Ngan Po Ling College	Excavation works at the site (Contract No.: 1/WSD/14(K)) facing Po Leung Kuk Ngan Po Ling College
M9	Tak Long Estate	Road paving and asphalt paving works

Table 3.5 Baseline noise level and noise limit level for monitoring stations

Monitoring Stations	Baseline Noise Level, dB (A)	Noise Limit Level, dB (A)
M6(A)	63.9 (at 0700 – 1900 hrs on normal weekdays)	70* (at 0700 – 1900 hrs on normal weekdays)
M7	68.7 (at 0700 – 1900 hrs on normal weekdays)	
M8	61.9 (at 0700 – 1900 hrs on normal weekdays)	
M9	59.0 (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.

4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 According to Section 16.1.6 (vi) of the EM&A Manual, the EM&A data were compared with the EIA predictions as summarized in **Table 4.1** to **4.3** below.

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 (July 2016), µg/m3	
			Average	Range
AM2 – Lee Kau Yan Memorial School	290	312	85.1	50.2-138.8
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	217	247	75.1	53.8-120.7
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	246	258	79.3	48.2-121.6
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	159	221	71.5	48.2-111.4

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 (July 2016), µg/m3	
			Average	Range
AM2 – Lee Kau Yan Memorial School	145	169	35.2	23.9-49.0
AM3(A) - Holy Trinity Bradbury Centre (Alternative station for Sky Tower)	106	138	27.9	12.6-39.5
AM4(A) – EMSD Workshops (Alternative station for Grand Waterfront)	143	152	20.9	19.2-22.6
AM5(A) – Po Leung Kuk Ngan Po Ling College (Alternative station for CCC Kei To Secondary School)	103	128	20.0	15.3-24.9

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 (July 2016), $L_{eq\ (30min)}$ dB(A)
M6(A) - Oblate Primary School ^	N/A	58.0 – 63.4
M7 - CCC Kei To Secondary School	45 – 68	63.7 – 66.4
M8 - Po Leung Kuk Ngan Po Ling College	44 – 70	51.7 – 60.8
M9 – Tak Long Estate	Not predicted in EIA Report	46.6 – 59.8

(^) Alternative noise monitoring station for M6 – Holy Carpenter Primary School from 10th October 2014 onwards.

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

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

4.4 The noise monitoring results in the reporting month were within the range of predicted mitigated construction noise levels in the EIA report.

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 activities during the construction period on a weekly basis, and to report on the contractor's performance.

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 In accordance with the Action Plan presented in **Appendix J**, no corrective actions were required in the reporting month.

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 8th, 15th, 20th and 29th July 2016 in the reporting month. IEC site inspection was conducted on 20th June 2016. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

6.3 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
EP-344/2009	23/04/09	N/A	Construction of a new sewage pumping station serving the planned Kai Tak development with installed capacity of more than 2,000 m^3 per day and a boundary of which is less than 150m from an existing or planned residential area or educational institution.	Valid
Effluent Discharge License				
WT00020971-2015	22/04/15	N/A	Discharge Licence for the discharge of wastewater from the construction site including contaminated surface run-off to the communal storm water drain	Valid
Registration of Chemical Waste Producer				
5213-286-K2958-05	--	--	Registration of chemical waste producer for chemical waste produced during construction of Stage 4 at former North Apron Area Infrastructure.	Valid

Status of Waste Management

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

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

Implementation Status of Environmental Mitigation Measures

6.6 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 for EP-337/2009

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	--	--	**--**
	--	--	**--**
Air Quality	--	--	**--**
Noise	--	--	**--**
Waste/Chemical Management	--	--	**--**
	--	--	**--**
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

Table 6.3 Observations and Recommendations of Site Inspections for EP-344/2009

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	8 June 2016	Observation: Sediment tank should be provided for treating sewage before discharge. (Road L19 near Bailey Street Entrance)	No discharge was observed. Contractor was reminded to provide drainage maintenance.
Air Quality	--	--	**--**
Noise	--	--	**--**
Waste/Chemical Management	8 July 2016	Observation: Oil container should be provided with drip tray at NPS.	Drip tray was provided.
Landscape and Visual	--	--	**--**
Permits /Licences	--	--	**--**

Summary of Mitigation Measures Implemented

6.7 The monthly IEC audit was carried out on 20th June 2016, the observations were recorded and they are presented as follows:

Follow up of last monthly audit:
Nil

Observation(s) in the reporting month:
- No adverse environmental impacts were found. No additional mitigation measures are required.

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

Implementation Status of Event Action Plans

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

1-hr TSP Monitoring

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

24-hr TSP Monitoring

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

Construction Noise

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

Landscape and visual

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

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

6.14 No environmental complaints and environmental prosecution were received in the reporting month. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix L**.

7. FUTURE KEY ISSUES

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

- Installation of hand-railing & ladder inside Box Culvert B5;
- Construction of staircase and landing, E&M Works at PS2;
- Chamber construction, backfill and sheet pile removal at 7A;
- Segment tunneling, corrugated steel pipe installation at 7B;
- Chamber construction, erection of formwork for cast in situ work, concreting of cast in situ Box Culver B6;
- Outfall construction at Box Culvert B6;
- Road widening works (excavation and UU works) and water mains laying at Sung Wong Toi Road;
- Maintenance & Servicing Engineer's Office at Portion 9;
- Pipe Jacking at Pit 1, 4, 9 and 10;
- Lay HDPE pipe at Pit 5 and 6/7;
- Chamber construction at Pit 5 and Pit 11;
- Installation of drainage, UU laying works and Road works at Road D2;
- Construction of staircase and landing, E&M Works at NPS;
- Chamber construction, carry out trench excavation for drainage, sewerage and watermains and Road works at Road L19 & Bailey St; and
- Storage of excavated material at Portion 6

7.2 The tentative construction program for the Project is provided in **Appendix N.**

Key Issues for the Coming Month

7.3 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; and
- Review and implementation of temporary drainage system for the surface runoff.

7.4 The tentative program of major site activities and the impact prediction and environmental mitigation measures for the coming two months, i.e. August and September 2016 are summarized as follows:

Table 7.1 Summary of the tentative program of major site activities, the impact prediction and control measures for August and September 2016

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 site boundary bund 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

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

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

8.1 Environmental monitoring works required under the EM&A Manual were performed in the reporting month and all monitoring results were checked and reviewed.

1-hr TSP Monitoring

8.2 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. 1-hour TSP concentrations in all stations in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.

24-hr TSP Monitoring

8.3 All 24-hr TSP monitoring required under the EM&A Manual was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. 24-hour TSP concentrations in all stations in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.

Construction Noise Monitoring

8.4 All construction noise monitoring was conducted as scheduled in the reporting month. No Action and Limit Level exceedance was recorded. The construction noise levels in all stations in the reporting month were within the range of predicted mitigated construction noise levels in the approved Environmental Impact Assessment (EIA) report.

Complaints, Notification of any Summons and Prosecution Received

8.5 No environmental complaints and environmental prosecution were received in the reporting month. The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project are presented in **Appendix L**.

Recommendations

8.6 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 surfaces and excavation works.
- To mitigate the dust generation by adequate water spraying in dry days.

Noise Impact
- To inspect the noise sources inside the site.
- To disperse the locations of noisy equipments and position the equipments as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

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

Waste/Chemical Management
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To provide proper storage area or drip trays for oil containers/ equipment on site.
- To avoid improper handling or storage of oil drum on site.

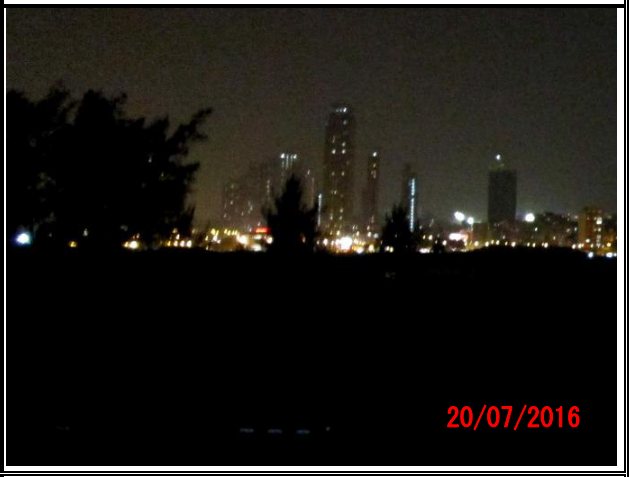
Landscape and Visual
- To protect the existing trees to be retained.
- To transplant the trees unavoidably affected by the works.
- To control of night-time lighting.
- To provide decorative screen hoarding.
- To complete landscape works at site area as early as possible.

Effectiveness of Environmental Management

8.7 The above recommendations and the recommended mitigation measures in the EM&A Manual were carried out by the Contractor during construction. No non-compliance was recorded during the environmental site inspections as shown in **Appendix I**.

8.8 The effectiveness of environmental management is satisfactory as the above recommendations are met. Some of the examples of mitigation measures for the following recommendations are given in **Table 8.1** below.
- Surface runoff discharge into any stream course is prevented;
- Provision of sedimentation facilities after identification of wastewater discharges from site;
- Discharge or accidental spillage of chemical waste or oil directly from the site is avoided;
- Improper handling or storage of oil drum on site is avoided;
- The existing trees to be retained are protected; and
- Night-time lighting is controlled.

Table 8.1 Examples of Mitigation Measures for Environmental Recommendations

	
To prevent any surface runoff discharge into any stream course.	Follow-up measure(s) after identification of wastewater discharges from site.
	
To avoid any discharge or accidental spillage of chemical waste or oil directly from the site	To avoid improper handling or storage of oil drum on site
	
To protect the existing trees to be retained	To control of night-time lighting

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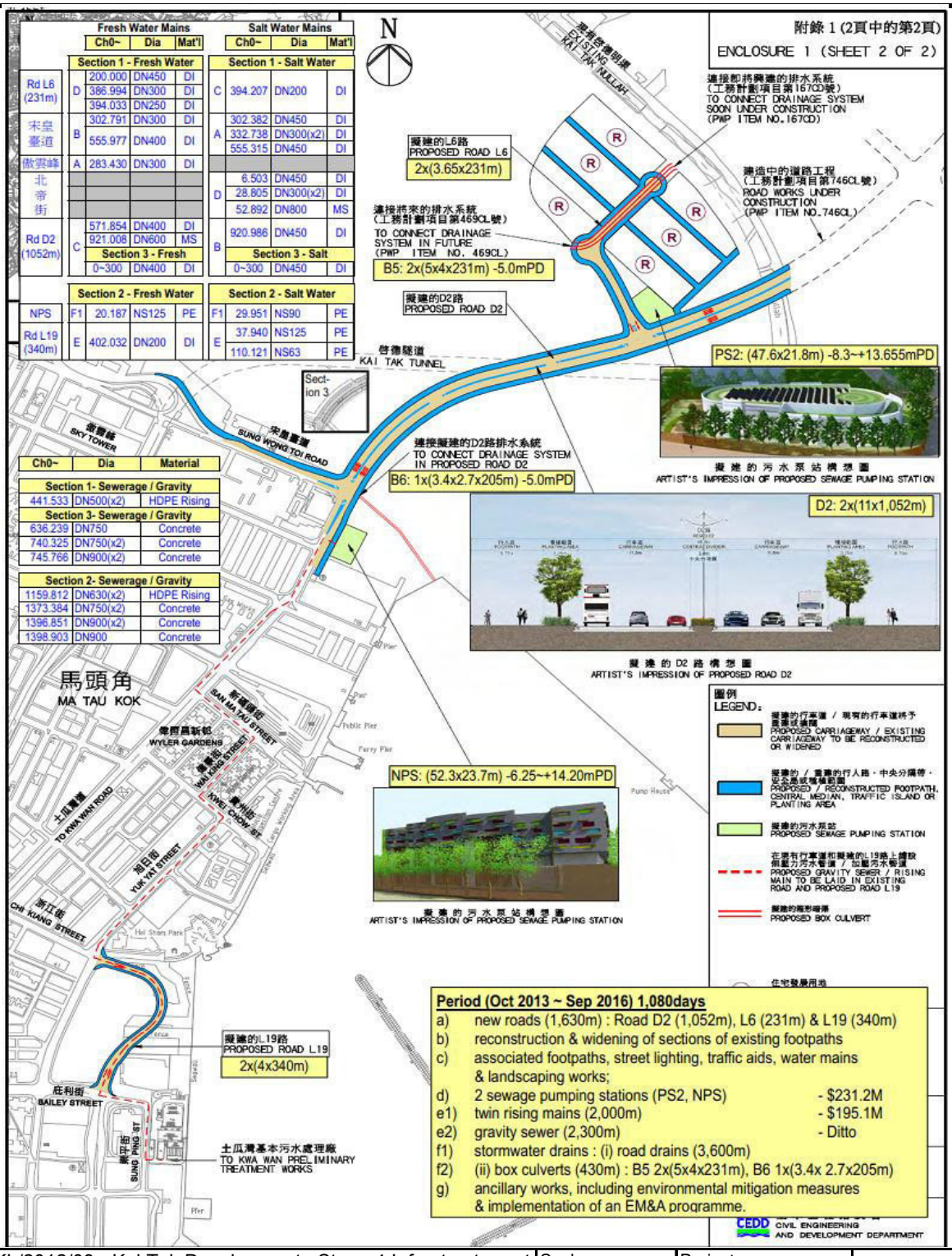
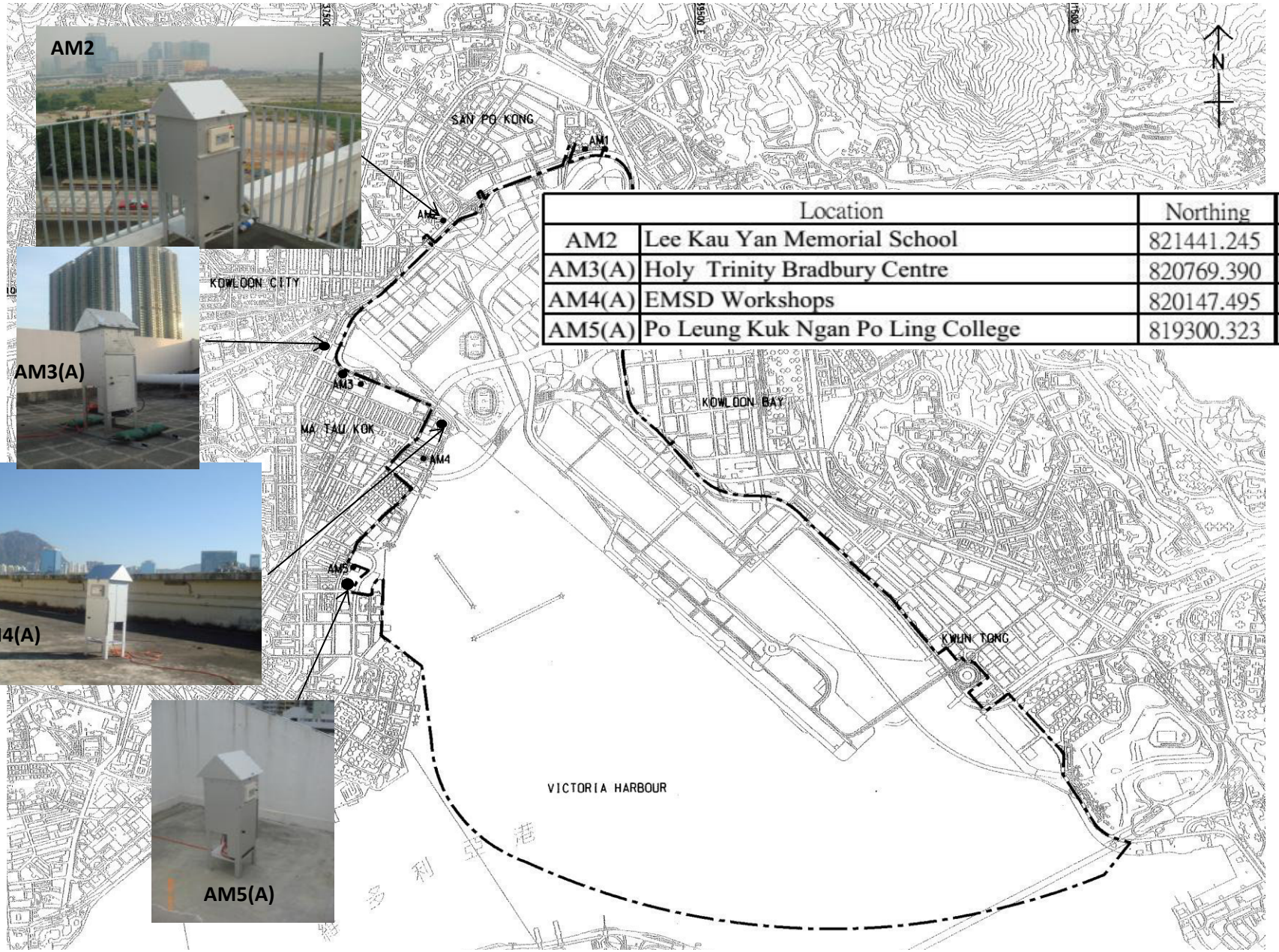


Title	KL/2012/03 - Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale N.T.S	Project No. MA13056	CINOTECH
	Site Layout Plan	Date Sep-13	Figure 1	



	Location	Northing	Easting
AM2	Lee Kau Yan Memorial School	821441.245	838153.917
AM3(A)	Holy Trinity Bradbury Centre	820769.390	837522.115
AM4(A)	EMSD Workshops	820147.495	838155.791
AM5(A)	Po Leung Kuk Ngan Po Ling College	819300.323	837659.613

Title

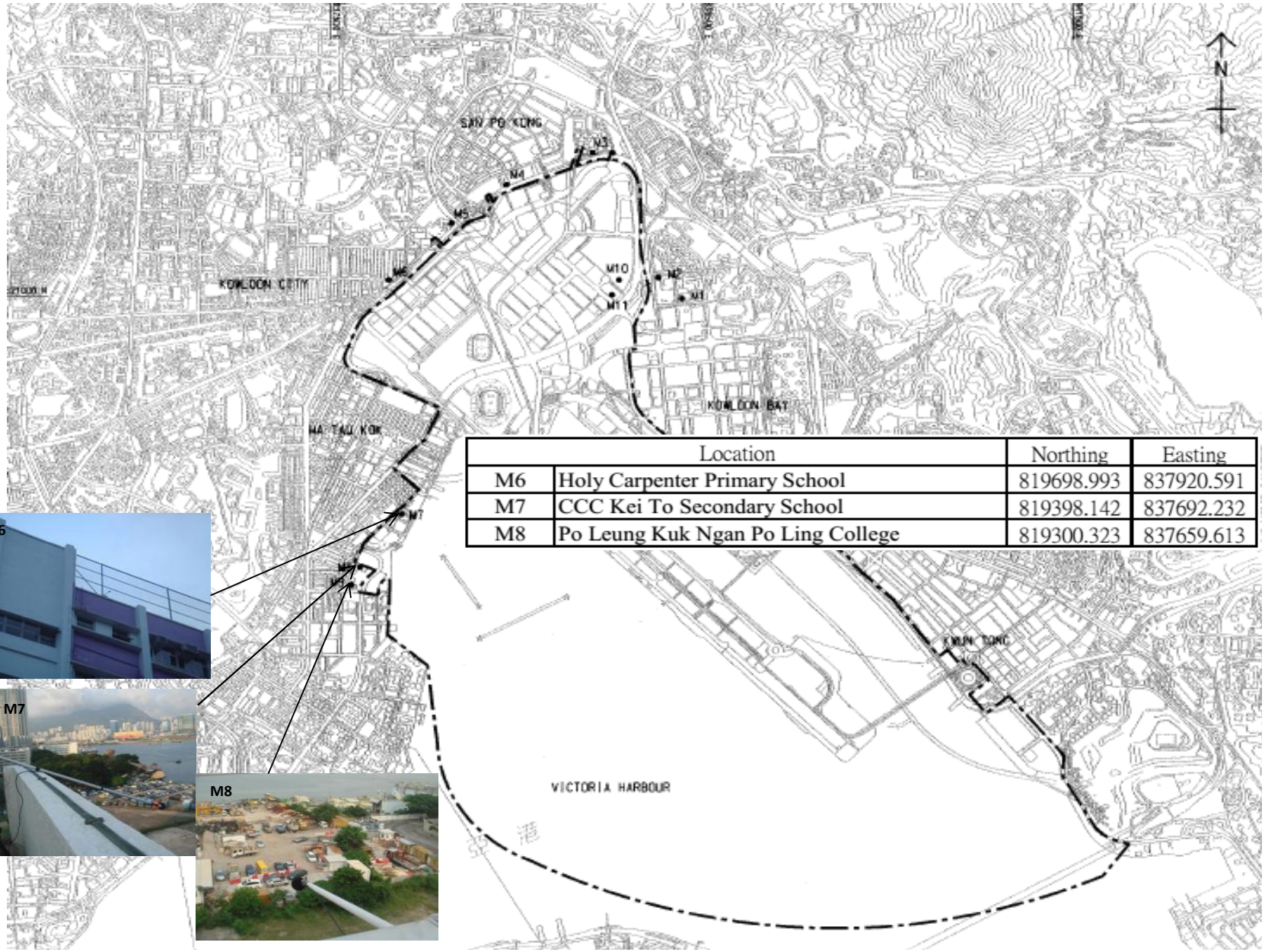
Contract No. KL/2012/03

Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

Air Quality Monitoring Stations under this Project

Scale	N.T.S
Project No.	MA13056
Date	Jan-14
Figure	2

CINOTECH



	Location	Northing	Easting
M6	Holy Carpenter Primary School	819698.993	837920.591
M7	CCC Kei To Secondary School	819398.142	837692.232
M8	Po Leung Kuk Ngan Po Ling College	819300.323	837659.613

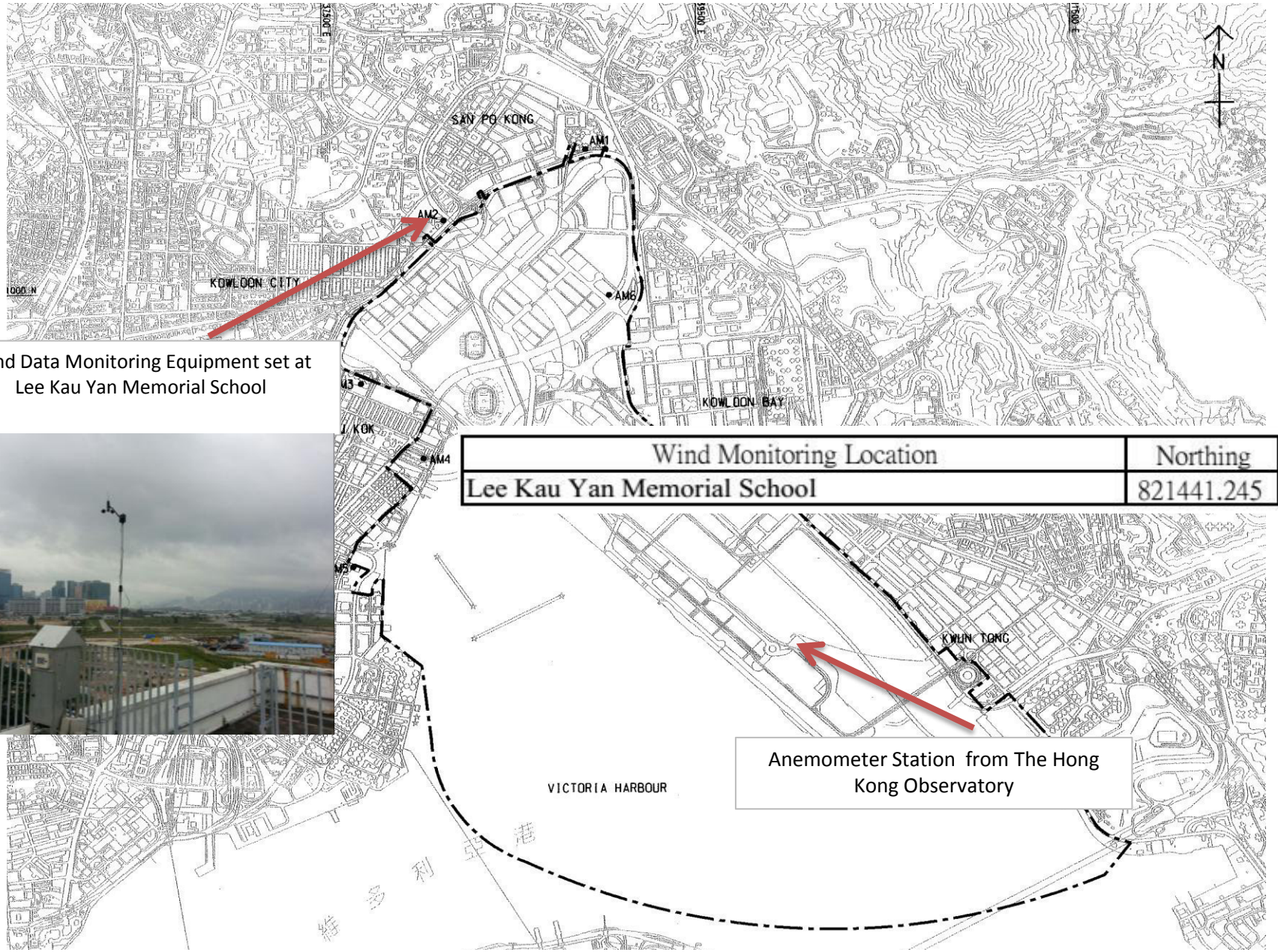
Title

Contract No. KL/2012/03
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

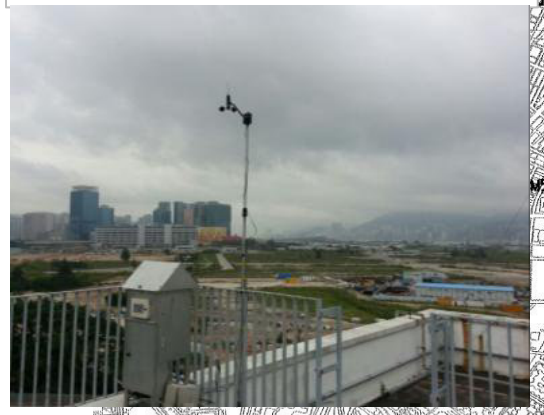
Noise Monitoring Stations under this Project

Scale	N.T.S
Project No.	MA13056
Date	Dec-13
Figure	3

CINOTECH

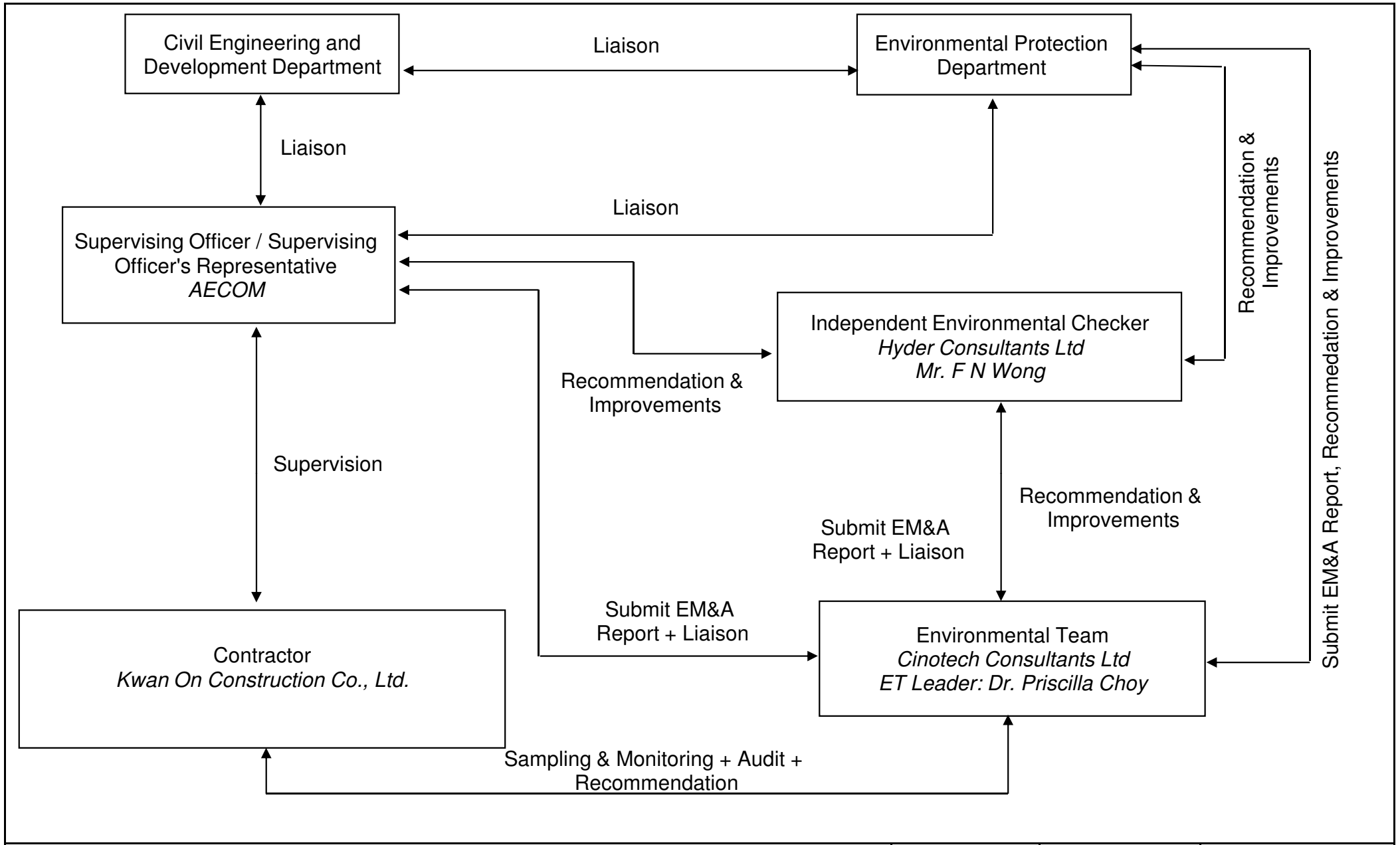


Wind Monitoring Location	Northing	Easting
Lee Kau Yan Memorial School	821441.245	838153.917



Title	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Location of Wind Data Monitoring Equipment	Scale: N.T.S Date: Dec-13	Project No.: MA13056 Figure: 4

CINOTECH



Title	Scale	Project
Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Management Structure	N.T.S	No. MA13056
	Date: May-14	Figure: 5

CINOTECH

APPENDIX A
ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM2	346	500
AM3(A)	351	
AM4(A)	371	
AM5(A)	345	

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

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM2	157	260
AM3(A)	167	
AM4(A)	187	
AM5(A)	156	

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. MA14008/59/0036

Station: AM2 - Lee Kau Yan Memorial School Operator: WK

Date: 27-May-16 Next Due Date: 26-Jul-16

Equipment No.: A-01-59 Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	299.7	Pressure, Pa (mmHg)	757.2

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.8	3.42	58.03	7.6	2.74
2	9.6	3.08	52.43	6.4	2.52
3	7.3	2.69	45.83	4.8	2.18
4	5.1	2.25	38.44	3.2	1.78
5	3.3	1.81	31.09	2.0	1.41

By Linear Regression of Y on X

Slope , mw = 0.0504 **Intercept, bw :** -0.1482

Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.11**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 27/5/16

Checked by: [illegible] Signature: Date: 27 May 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/59/0037

Station: AM2 - Lee Kau Yan Memorial School
Operator: WK
Date: 22-Jul-16
Next Due Date: 21-Sep-16
Equipment No.: A-01-59
Serial No. 2354

Ambient Condition			
Temperature, Ta (K)	301.4	Pressure, Pa (mmHg)	761.5

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	11.8	3.42	58.03	7.9	2.80
2	9.4	3.05	51.89	6.6	2.56
3	7.3	2.69	45.83	4.9	2.20
4	4.9	2.20	37.70	3.3	1.81
5	3.3	1.81	31.09	2.2	1.48

By Linear Regression of Y on X

Slope , mw = 0.0498 **Intercept, bw =** -0.0698

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.34**

Remarks:

Conducted by: WK Tang Signature: Date: 22/7/16

Checked by: Signature: Date: 22 July 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/49/0034

Station: AM3(A) - Holy Trinity Bradbury Centre Operator: WK

Date: 27-May-16 Next Due Date: 26-Jul-16

Equipment No.: A-01-49 Serial No. 1793

Ambient Condition			
Temperature, Ta (K)	298.6	Pressure, Pa (mmHg)	757.8

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	11.3	3.35	56.93	7.8	2.79
2	9.7	3.11	52.81	6.6	2.56
3	7.6	2.75	46.85	5.1	2.25
4	5.4	2.32	39.62	3.4	1.84
5	3.1	1.76	30.23	2.0	1.41

By Linear Regression of Y on X

Slope , mw = 0.0519 **Intercept, bw =** -0.1823

Correlation coefficient* = 0.9992

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.23**

Remarks:

Conducted by: wk Tang Signature: Kwai Date: 27/5/16

Checked by: [illegible] Signature: Date: 27 May 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/49/0035

Station: AM3(A) - Holy Trinity Bradbury Centre Operator: WK

Date: 22-Jul-16 Next Due Date: 21-Sep-16

Equipment No.: A-01-49 Serial No. 1793

Ambient Condition			
Temperature, Ta (K)	302.8	Pressure, Pa (mmHg)	760.4

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	11.6	3.38	57.38	7.9	2.79
2	9.8	3.11	52.81	6.8	2.59
3	7.5	2.72	46.30	5.2	2.26
4	5.3	2.28	39.06	3.4	1.83
5	3.3	1.80	31.00	2.1	1.44

By Linear Regression of Y on X

Slope , mw = 0.0522 **Intercept, bw =** -0.1816

Correlation coefficient* = 0.9991

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.31**

Remarks:

Conducted by: W K Tang Signature: Date: 22/7/16

Checked by: Signature: Date: 22 July 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/62/0035

Station: AM4(A) - EMSD Workshops Operator: WK

Date: 27-May-16 Next Due Date: 26-Jul-16

Equipment No.: A-01-62 Serial No. 2351

Ambient Condition			
Temperature, Ta (K)	299.6	Pressure, Pa (mmHg)	756.1

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.9	3.43	58.24	7.4	2.71
2	9.3	3.03	51.59	6.1	2.46
3	7.8	2.78	47.32	5.0	2.22
4	5.2	2.27	38.79	3.3	1.81
5	3.4	1.83	31.53	2.2	1.48

By Linear Regression of Y on X

Slope , mw = 0.0470 **Intercept, bw :** -0.0035

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

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.11**

Remarks:

Conducted by: WK Tang Signature: Date: 27/5/16

Checked by: Signature: Date: 27 May 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/62/0036

Station: AM4(A) - EMSD Workshops Operator: WK

Date: 22-Jul-16 Next Due Date: 21-Sep-16

Equipment No.: A-01-62 Serial No. 2351

Ambient Condition			
Temperature, Ta (K)	303.5	Pressure, Pa (mmHg)	761.7

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	11.2	3.32	56.38	7.2	2.66
2	9.7	3.09	52.52	6.5	2.53
3	7.6	2.73	46.59	5.0	2.22
4	5.2	2.26	38.68	3.4	1.83
5	3.3	1.80	30.99	2.1	1.44

By Linear Regression of Y on X

Slope , mw = 0.0490 **Intercept, bw =** -0.0696

Correlation coefficient* = 0.9991

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.21**

Remarks:

Conducted by: wk Tang Signature: Date: 22/7/16

Checked by: LH Signature: Date: 22 July 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/60/0036

Station: AM5(A) - Po Leung Kuk Ngan Po Ling College Operator: WK

Date: 27-May-16 Next Due Date: 26-Jul-16

Equipment No.: A-01-60 Serial No. 2358

Ambient Condition			
Temperature, Ta (K)	299.8	Pressure, Pa (mmHg)	756.4

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	**mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Mar-17	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.7	3.40	57.75	7.7	2.76
2	9.4	3.05	51.85	6.1	2.46
3	7.6	2.74	46.71	5.2	2.27
4	5.2	2.27	38.78	3.4	1.83
5	3.2	1.78	30.61	2.1	1.44

By Linear Regression of Y on X

Slope , mw = 0.0485 **Intercept, bw =** -0.0395

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **4.24**

Remarks:

Conducted by: wk Tang Signature: Kwan Date: 27/5/16

Checked by: AY Signature: Date: 27 May 2016

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA14008/60/0037

Station: AM5(A) - Po Leung Kuk Ngan Po Ling College Operator: WK

Date: 22-Jul-16 Next Due Date: 21-Sep-16

Equipment No.: A-01-60 Serial No. 2358

Ambient Condition			
Temperature, Ta (K)	303.3	Pressure, Pa (mmHg)	760.1

Orifice Transfer Standard Information					
Serial No.:	2896	Slope, mc (CFM)	0.0598	Intercept, bc	-0.05079
Last Calibration Date:	4-Mar-16	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Mar-17	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	11.6	3.38	57.32	7.4	2.70
2	9.8	3.10	52.75	6.5	2.53
3	7.7	2.75	46.86	5.1	2.24
4	5.1	2.24	38.29	3.2	1.77
5	3.4	1.83	31.42	2.2	1.47

By Linear Regression of Y on X

Slope , mw = 0.0486 **Intercept, bw =** -0.0626

Correlation coefficient* = 0.9988

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.19**

Remarks:

Conducted by: wk Tang Signature: Date: 22/7/16

Checked by: [illegible] Signature: Date: 22 July 2016

TISCH ENVIRONMENTAL, INC.
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VILLAGE OF CLEVES, OH
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513.467.9009 FAX

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}

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WELLAB LIMITED
Rms 1516, 1701 & 1716, 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/160225A
Date of Issue:	2016-02-25
Date Received:	2016-02-25
Date Tested:	2016-02-25
Date Completed:	2016-02-25
Next Due Date:	2016-08-24

ATTN: **Miss Mei Ling Tang**

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC01010A44

Test conditions:

Room Temperature	: 21 degree Celsius
Relative Humidity	: 54 %

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 LIMITED
Rms 1516, 1701 & 1716, Technology Park,
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TEST REPORT

Test Report No.:	C/160225A
Date of Issue:	2016-02-25
Date Received:	2016-02-25
Date Tested:	2016-02-25
Date Completed:	2016-02-25
Next Due Date:	2016-08-24
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
45.1	45	0.1
89.8	90	-0.2
135.4	135	0.4
180.1	180	0.1
225.2	225	0.2
270	270	0
315.2	315	0.2
360	360	0

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

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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/160630/A
Date of Issue:	2016-07-04
Date Received:	2016-06-30
Date Tested:	2016-06-30
Date Completed:	2016-07-04
Next Due Date:	2016-09-03
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	: 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 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)	0.0035

****

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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/160630/B
Date of Issue:	2016-07-04
Date Received:	2016-06-30
Date Tested:	2016-06-30
Date Completed:	2016-07-04
Next Due Date:	2016-09-03

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.	: 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	: 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 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:

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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

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

Test Report No.:	C/160630/C
Date of Issue:	2016-07-04
Date Received:	2016-06-30
Date Tested:	2016-06-30
Date Completed:	2016-07-04
Next Due Date:	2016-09-03
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	: 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 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.**

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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/160630/D
Date of Issue:	2016-07-04
Date Received:	2016-06-30
Date Tested:	2016-06-30
Date Completed:	2016-07-04
Next Due Date:	2016-09-03
Page:	1 of 1

Certificate of Calibration

Item for Calibration:

Description	: Laser Dust Monitor
Manufacturer	: Sibata
Model No.	: LD-3B
Serial No.	: 541146
Sensitivity (K) 1 CPM	: 0.001 mg/m^3
Sen. Adjustment Scale Setting	: 625 CPM
Equipment No.	: A-02-07

Test Conditions:

Room Temperature	: 24 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 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)	0.0035

****

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

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

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

Test Report No.:	C/160624/1
Date of Issue:	2016-06-27
Date Received:	2016-06-24
Date Tested:	2016-06-24
Date Completed:	2016-06-27
Next Due Date:	2016-08-26
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	: 23 degree Celsius
Relative Humidity	: 58 %

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:
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

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

Test Report No.:	C/N/150918/1
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20
Page:	1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperatre	: 25 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:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

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

Test Report No.:	C/N/150918/2
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20
Page:	1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperatre	: 25 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:
For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/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:
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/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:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse
PATRICK TSE
Laboratory Manager

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/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
PATRICK TSE
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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/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.**

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

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

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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Website: www.wellab.com.hk

TEST REPORT

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

Test Report No.:	C/N/151031/1
Date of Issue:	2015-11-02
Date Received:	2015-10-31
Date Tested:	2015-10-31
Date Completed:	2015-11-02
Next Due Date:	2016-11-01
Page:	1 of 1

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 56%

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

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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/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

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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	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.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

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

Test Report No.:	C/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
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

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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/151106/1
Date of Issue:	2015-11-07
Date Received:	2015-11-06
Date Tested:	2015-11-06
Date Completed:	2015-11-07
Next Due Date:	2016-11-06

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 56 %

Methodology:

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

Results:

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

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

Patrick Tse

PATRICK TSE
Laboratory Manager

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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/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 July 2016	27.7 – 33.0	68 – 92	3.4
2 July 2016	26.9 – 32.0	71 – 92	20.8
3 July 2016	27.3 – 31.5	74 – 91	2.7
4 July 2016	28.0 – 33.0	69 – 91	3.8
5 July 2016	25.8 – 32.6	70 – 96	9.8
6 July 2016	24.7 – 28.8	88 – 98	33.6
7 July 2016	27.9 – 34.0	61 – 89	Trace
8 July 2016	28.1 – 34.2	59 – 88	0
9 July 2016	26.4 – 35.6	55 – 88	10.3
10 July 2016	26.2 – 31.3	70 – 91	1.7
11 July 2016	26.1 – 31.1	73 – 96	11.7
12 July 2016	27.0 – 29.0	78 – 90	0.1
13 July 2016	25.6 – 31.7	78 – 98	35.2
14 July 2016	26.4 – 30.3	78 – 97	10.2
15 July 2016	28.6 – 33.0	69 – 90	1.0
16 July 2016	29.0 – 33.2	69 – 86	0.3
17 July 2016	29.0 – 33.2	67 – 88	0
18 July 2016	28.7 – 32.4	60 – 84	0.6
19 July 2016	26.7 – 32.3	69 – 94	4.4

APPENDIX C –
WEATHER CONDITIONS DURING THE MONITORING PERIOD

I. General Information

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
20 July 2016	25.6 – 31.9	68 – 97	16.8
21 July 2016	27.5 – 33.3	63 – 86	0.3
22 July 2016	28.1 – 32.9	61 – 88	0
23 July 2016	28.0 – 32.8	63 – 87	0
24 July 2016	28.0 – 34.0	53 – 86	0
25 July 2016	28.3 – 35.0	57 – 88	0
26 July 2016	27.0 – 32.0	76 – 93	8.0
27 July 2016	28.0 – 33.4	60 – 87	Trace
28 July 2016	28.1 – 32.9	58 – 88	0
29 July 2016	27.6 – 33.7	56 – 86	0
30 July 2016	28.7 – 33.5	59 – 89	Trace

* 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-Jul-2016	0:00	1.9	WNW
1-Jul-2016	1:00	1.7	WNW
1-Jul-2016	2:00	1.9	WNW
1-Jul-2016	3:00	2	WNW
1-Jul-2016	4:00	1.4	W
1-Jul-2016	5:00	1.5	W
1-Jul-2016	6:00	1.4	W
1-Jul-2016	7:00	1.7	W
1-Jul-2016	8:00	1.7	W
1-Jul-2016	9:00	1.9	WNW
1-Jul-2016	10:00	2	WNW
1-Jul-2016	11:00	1.9	WNW
1-Jul-2016	12:00	2.3	WNW
1-Jul-2016	13:00	2.6	WNW
1-Jul-2016	14:00	1.9	WNW
1-Jul-2016	15:00	2.3	W
1-Jul-2016	16:00	1.9	WNW
1-Jul-2016	17:00	2.4	W
1-Jul-2016	18:00	2.1	W
1-Jul-2016	19:00	2.2	W
1-Jul-2016	20:00	1.8	W
1-Jul-2016	21:00	1.6	W
1-Jul-2016	22:00	2.2	WNW
1-Jul-2016	23:00	2.3	WSW
2-Jul-2016	0:00	2.1	WSW
2-Jul-2016	1:00	1.6	W
2-Jul-2016	2:00	1.8	W
2-Jul-2016	3:00	1.6	W
2-Jul-2016	4:00	1.3	WNW
2-Jul-2016	5:00	1.2	WNW
2-Jul-2016	6:00	0.8	W
2-Jul-2016	7:00	1	N
2-Jul-2016	8:00	1.2	W
2-Jul-2016	9:00	1.5	W
2-Jul-2016	10:00	2	NE
2-Jul-2016	11:00	1.8	NE

II. Mean Wind Speed and Wind Direction

2-Jul-2016	12:00	2.5	NE
2-Jul-2016	13:00	1.9	NE
2-Jul-2016	14:00	2.2	NE
2-Jul-2016	15:00	2.4	NE
2-Jul-2016	16:00	1.4	NE
2-Jul-2016	17:00	1.7	W
2-Jul-2016	18:00	1.5	NE
2-Jul-2016	19:00	1.1	NE
2-Jul-2016	20:00	1.3	ESE
2-Jul-2016	21:00	1.4	E
2-Jul-2016	22:00	1.4	SE
2-Jul-2016	23:00	1.8	SE
3-Jul-2016	0:00	1.9	SE
3-Jul-2016	1:00	1.9	SE
3-Jul-2016	2:00	1.8	SE
3-Jul-2016	3:00	1.2	WNW
3-Jul-2016	4:00	1.2	NNE
3-Jul-2016	5:00	1.1	NE
3-Jul-2016	6:00	0.9	NE
3-Jul-2016	7:00	0.9	NE
3-Jul-2016	8:00	1.1	ENE
3-Jul-2016	9:00	1.2	ENE
3-Jul-2016	10:00	1.7	ENE
3-Jul-2016	11:00	1.8	N
3-Jul-2016	12:00	1.9	NE
3-Jul-2016	13:00	2.3	E
3-Jul-2016	14:00	2	SW
3-Jul-2016	15:00	2.3	E
3-Jul-2016	16:00	2.2	WSW
3-Jul-2016	17:00	2.9	WSW
3-Jul-2016	18:00	2	WSW
3-Jul-2016	19:00	1.8	SW
3-Jul-2016	20:00	2	W
3-Jul-2016	21:00	2.3	SSW
3-Jul-2016	22:00	2.2	W
3-Jul-2016	23:00	3	SSW
4-Jul-2016	0:00	2.8	SW

II. Mean Wind Speed and Wind Direction

4-Jul-2016	1:00	3.1	SW
4-Jul-2016	2:00	3	SW
4-Jul-2016	3:00	2.7	W
4-Jul-2016	4:00	3	W
4-Jul-2016	5:00	3.1	WNW
4-Jul-2016	6:00	3.2	WNW
4-Jul-2016	7:00	2.9	WNW
4-Jul-2016	8:00	2.5	SW
4-Jul-2016	9:00	2.7	S
4-Jul-2016	10:00	3.1	S
4-Jul-2016	11:00	3	SSW
4-Jul-2016	12:00	2.6	S
4-Jul-2016	13:00	2.5	WNW
4-Jul-2016	14:00	1.9	WNW
4-Jul-2016	15:00	2.5	WNW
4-Jul-2016	16:00	2.4	SE
4-Jul-2016	17:00	2.6	SE
4-Jul-2016	18:00	2.6	ESE
4-Jul-2016	19:00	2.2	SSW
4-Jul-2016	20:00	2	SSW
4-Jul-2016	21:00	2.1	WNW
4-Jul-2016	22:00	2.3	SW
4-Jul-2016	23:00	2.4	SW
5-Jul-2016	0:00	2.2	WNW
5-Jul-2016	1:00	2.3	SW
5-Jul-2016	2:00	2.5	SW
5-Jul-2016	3:00	2.3	SSW
5-Jul-2016	4:00	2.4	SSW
5-Jul-2016	5:00	2.8	SSW
5-Jul-2016	6:00	2.3	SSW
5-Jul-2016	7:00	2.2	WNW
5-Jul-2016	8:00	2.4	WNW
5-Jul-2016	9:00	2.8	WNW
5-Jul-2016	10:00	3.1	WNW
5-Jul-2016	11:00	3.8	WNW
5-Jul-2016	12:00	4.2	W
5-Jul-2016	13:00	4	WSW

II. Mean Wind Speed and Wind Direction

5-Jul-2016	14:00	4	SW
5-Jul-2016	15:00	3.9	W
5-Jul-2016	16:00	3.8	W
5-Jul-2016	17:00	3.6	W
5-Jul-2016	18:00	3.5	W
5-Jul-2016	19:00	3.7	SW
5-Jul-2016	20:00	4	W
5-Jul-2016	21:00	3.8	W
5-Jul-2016	22:00	4.3	WNW
5-Jul-2016	23:00	4.1	WNW
6-Jul-2016	0:00	0.8	WSW
6-Jul-2016	1:00	0.7	WSW
6-Jul-2016	2:00	1.4	WSW
6-Jul-2016	3:00	1.8	WSW
6-Jul-2016	4:00	1.3	WSW
6-Jul-2016	5:00	1.1	WSW
6-Jul-2016	6:00	1.6	SW
6-Jul-2016	7:00	1.2	SW
6-Jul-2016	8:00	1.7	SW
6-Jul-2016	9:00	2	SW
6-Jul-2016	10:00	2.3	SW
6-Jul-2016	11:00	2.4	SW
6-Jul-2016	12:00	2.2	WSW
6-Jul-2016	13:00	2.7	WSW
6-Jul-2016	14:00	3.2	WSW
6-Jul-2016	15:00	3.4	WSW
6-Jul-2016	16:00	3.1	WSW
6-Jul-2016	17:00	2.4	SW
6-Jul-2016	18:00	2	SW
6-Jul-2016	19:00	1.6	SSW
6-Jul-2016	20:00	1.7	SSW
6-Jul-2016	21:00	1.5	WSW
6-Jul-2016	22:00	1.5	SW
6-Jul-2016	23:00	1.1	W
7-Jul-2016	0:00	0.9	W
7-Jul-2016	1:00	1.2	WNW
7-Jul-2016	2:00	1	WNW

II. Mean Wind Speed and Wind Direction

7-Jul-2016	3:00	1.1	WNW
7-Jul-2016	4:00	1.2	W
7-Jul-2016	5:00	0.7	W
7-Jul-2016	6:00	1.2	SW
7-Jul-2016	7:00	0.4	SW
7-Jul-2016	8:00	0.8	W
7-Jul-2016	9:00	0.6	W
7-Jul-2016	10:00	1	WNW
7-Jul-2016	11:00	1.4	WNW
7-Jul-2016	12:00	2.7	W
7-Jul-2016	13:00	2.5	SSW
7-Jul-2016	14:00	2.2	SSW
7-Jul-2016	15:00	1.5	S
7-Jul-2016	16:00	1.7	W
7-Jul-2016	17:00	1.9	NNE
7-Jul-2016	18:00	1.5	E
7-Jul-2016	19:00	1.7	W
7-Jul-2016	20:00	0.7	W
7-Jul-2016	21:00	0.6	W
7-Jul-2016	22:00	0.8	W
7-Jul-2016	23:00	0.5	W
8-Jul-2016	0:00	0.5	W
8-Jul-2016	1:00	0.4	W
8-Jul-2016	2:00	0.3	WNW
8-Jul-2016	3:00	0.6	WNW
8-Jul-2016	4:00	0.5	SW
8-Jul-2016	5:00	0.5	ENE
8-Jul-2016	6:00	0.5	ENE
8-Jul-2016	7:00	0.7	SSW
8-Jul-2016	8:00	1.5	SSW
8-Jul-2016	9:00	2.2	WNW
8-Jul-2016	10:00	2.5	WNW
8-Jul-2016	11:00	1.7	W
8-Jul-2016	12:00	1.9	SW
8-Jul-2016	13:00	2.2	W
8-Jul-2016	14:00	3.3	W
8-Jul-2016	15:00	2.9	WNW

II. Mean Wind Speed and Wind Direction

8-Jul-2016	16:00	2.5	WNW
8-Jul-2016	17:00	3.1	WNW
8-Jul-2016	18:00	2.1	WNW
8-Jul-2016	19:00	2.4	W
8-Jul-2016	20:00	2.4	W
8-Jul-2016	21:00	2.9	WNW
8-Jul-2016	22:00	3	WNW
8-Jul-2016	23:00	2.6	W
9-Jul-2016	0:00	2.7	WNW
9-Jul-2016	1:00	2.8	SW
9-Jul-2016	2:00	2.4	SW
9-Jul-2016	3:00	2.4	SW
9-Jul-2016	4:00	2.2	WNW
9-Jul-2016	5:00	1.5	W
9-Jul-2016	6:00	1.6	W
9-Jul-2016	7:00	1.3	WNW
9-Jul-2016	8:00	1.8	WNW
9-Jul-2016	9:00	2.4	WNW
9-Jul-2016	10:00	2.6	WNW
9-Jul-2016	11:00	3.2	W
9-Jul-2016	12:00	3	W
9-Jul-2016	13:00	2.3	WSW
9-Jul-2016	14:00	2.4	SW
9-Jul-2016	15:00	2.6	NW
9-Jul-2016	16:00	2.4	WNW
9-Jul-2016	17:00	1.9	WSW
9-Jul-2016	18:00	1.6	WNW
9-Jul-2016	19:00	0.9	WNW
9-Jul-2016	20:00	1	WNW
9-Jul-2016	21:00	1.8	W
9-Jul-2016	22:00	1.7	WSW
9-Jul-2016	23:00	1.4	SW
10-Jul-2016	0:00	1.4	WSW
10-Jul-2016	1:00	1.4	W
10-Jul-2016	2:00	1.6	W
10-Jul-2016	3:00	2.5	WNW
10-Jul-2016	4:00	2.1	W

II. Mean Wind Speed and Wind Direction

10-Jul-2016	5:00	1.6	W
10-Jul-2016	6:00	0.7	SW
10-Jul-2016	7:00	1.1	SW
10-Jul-2016	8:00	1.7	SW
10-Jul-2016	9:00	2.3	SW
10-Jul-2016	10:00	3.8	SW
10-Jul-2016	11:00	4.1	WSW
10-Jul-2016	12:00	4.4	W
10-Jul-2016	13:00	4.3	W
10-Jul-2016	14:00	3	WNW
10-Jul-2016	15:00	2	SSW
10-Jul-2016	16:00	2.5	SW
10-Jul-2016	17:00	2.1	WSW
10-Jul-2016	18:00	1.7	WSW
10-Jul-2016	19:00	1.7	WNW
10-Jul-2016	20:00	2	WSW
10-Jul-2016	21:00	1.3	WNW
10-Jul-2016	22:00	1.5	WNW
10-Jul-2016	23:00	1.7	W
11-Jul-2016	0:00	2.4	WNW
11-Jul-2016	1:00	1.9	WNW
11-Jul-2016	2:00	1.8	SW
11-Jul-2016	3:00	1.5	SSW
11-Jul-2016	4:00	2.2	SSW
11-Jul-2016	5:00	1.8	SSW
11-Jul-2016	6:00	2.7	SSW
11-Jul-2016	7:00	2.4	SSW
11-Jul-2016	8:00	2.5	SW
11-Jul-2016	9:00	3.6	WNW
11-Jul-2016	10:00	3.2	WNW
11-Jul-2016	11:00	3.1	W
11-Jul-2016	12:00	2.8	WSW
11-Jul-2016	13:00	2.9	WNW
11-Jul-2016	14:00	3.7	WNW
11-Jul-2016	15:00	3.4	WNW
11-Jul-2016	16:00	2.4	WNW
11-Jul-2016	17:00	2.9	WNW

II. Mean Wind Speed and Wind Direction

11-Jul-2016	18:00	2.7	W
11-Jul-2016	19:00	2	SSW
11-Jul-2016	20:00	2.1	WNW
11-Jul-2016	21:00	1.6	WNW
11-Jul-2016	22:00	1.3	W
11-Jul-2016	23:00	1.6	W
12-Jul-2016	0:00	2	WNW
12-Jul-2016	1:00	1.6	WNW
12-Jul-2016	2:00	1.2	WNW
12-Jul-2016	3:00	1.7	W
12-Jul-2016	4:00	2	W
12-Jul-2016	5:00	1.9	W
12-Jul-2016	6:00	1.5	WNW
12-Jul-2016	7:00	1.1	WNW
12-Jul-2016	8:00	1.5	WNW
12-Jul-2016	9:00	2.6	WNW
12-Jul-2016	10:00	2.4	SW
12-Jul-2016	11:00	2.5	WNW
12-Jul-2016	12:00	3.6	WNW
12-Jul-2016	13:00	3.1	WNW
12-Jul-2016	14:00	3.1	WNW
12-Jul-2016	15:00	2.5	W
12-Jul-2016	16:00	2.7	WNW
12-Jul-2016	17:00	2.9	WNW
12-Jul-2016	18:00	2.6	WNW
12-Jul-2016	19:00	2.5	W
12-Jul-2016	20:00	2.3	W
12-Jul-2016	21:00	2.4	WNW
12-Jul-2016	22:00	2.6	WNW
12-Jul-2016	23:00	3	WSW
13-Jul-2016	0:00	3.4	SW
13-Jul-2016	1:00	3	WSW
13-Jul-2016	2:00	2.5	SW
13-Jul-2016	3:00	2.6	WNW
13-Jul-2016	4:00	1.8	WNW
13-Jul-2016	5:00	2.1	W
13-Jul-2016	6:00	2	WNW

II. Mean Wind Speed and Wind Direction

13-Jul-2016	7:00	2	WNW
13-Jul-2016	8:00	2.5	W
13-Jul-2016	9:00	3.1	W
13-Jul-2016	10:00	3.5	WSW
13-Jul-2016	11:00	4.6	WNW
13-Jul-2016	12:00	4.1	NW
13-Jul-2016	13:00	4.7	ESE
13-Jul-2016	14:00	4.6	WSW
13-Jul-2016	15:00	4	WNW
13-Jul-2016	16:00	3.4	WNW
13-Jul-2016	17:00	3.4	WNW
13-Jul-2016	18:00	3.1	NE
13-Jul-2016	19:00	3.1	SW
13-Jul-2016	20:00	2.8	WNW
13-Jul-2016	21:00	3	WNW
13-Jul-2016	22:00	2.5	WNW
13-Jul-2016	23:00	2.4	WSW
14-Jul-2016	0:00	2.7	SW
14-Jul-2016	1:00	2.9	SW
14-Jul-2016	2:00	3	SW
14-Jul-2016	3:00	2.5	SW
14-Jul-2016	4:00	2.9	WSW
14-Jul-2016	5:00	3	W
14-Jul-2016	6:00	2.7	W
14-Jul-2016	7:00	3.7	W
14-Jul-2016	8:00	3.7	W
14-Jul-2016	9:00	4.4	WSW
14-Jul-2016	10:00	3.7	WSW
14-Jul-2016	11:00	3.4	WSW
14-Jul-2016	12:00	3.2	W
14-Jul-2016	13:00	3.4	W
14-Jul-2016	14:00	2.3	WSW
14-Jul-2016	15:00	2.6	W
14-Jul-2016	16:00	3.3	WNW
14-Jul-2016	17:00	2.8	W
14-Jul-2016	18:00	2	W
14-Jul-2016	19:00	2.5	WSW

II. Mean Wind Speed and Wind Direction

14-Jul-2016	20:00	2.4	WSW
14-Jul-2016	21:00	2.9	W
14-Jul-2016	22:00	3	WSW
14-Jul-2016	23:00	2.8	WNW
15-Jul-2016	0:00	3.1	WNW
15-Jul-2016	1:00	2.5	WNW
15-Jul-2016	2:00	2.6	SW
15-Jul-2016	3:00	3.2	WNW
15-Jul-2016	4:00	2.4	W
15-Jul-2016	5:00	2	WSW
15-Jul-2016	6:00	2.1	WSW
15-Jul-2016	7:00	2.4	SW
15-Jul-2016	8:00	2.8	WNW
15-Jul-2016	9:00	2.4	WNW
15-Jul-2016	10:00	3.2	SW
15-Jul-2016	11:00	2.6	W
15-Jul-2016	12:00	2.5	WSW
15-Jul-2016	13:00	2.3	SW
15-Jul-2016	14:00	2.8	WSW
15-Jul-2016	15:00	2.6	SW
15-Jul-2016	16:00	2.5	WSW
15-Jul-2016	17:00	2.5	WSW
15-Jul-2016	18:00	2.1	WSW
15-Jul-2016	19:00	1.9	WNW
15-Jul-2016	20:00	1.7	WSW
15-Jul-2016	21:00	1.6	WNW
15-Jul-2016	22:00	1.6	WNW
15-Jul-2016	23:00	1.6	WNW
16-Jul-2016	0:00	2.3	WNW
16-Jul-2016	1:00	2.3	WNW
16-Jul-2016	2:00	1.5	WNW
16-Jul-2016	3:00	1.7	W
16-Jul-2016	4:00	2.4	SSW
16-Jul-2016	5:00	2.3	SW
16-Jul-2016	6:00	2.3	SW
16-Jul-2016	7:00	2.7	SW
16-Jul-2016	8:00	2.6	WNW

II. Mean Wind Speed and Wind Direction

16-Jul-2016	9:00	2.9	WNW
16-Jul-2016	10:00	2	WNW
16-Jul-2016	11:00	2	WSW
16-Jul-2016	12:00	2.4	SSW
16-Jul-2016	13:00	2.8	WSW
16-Jul-2016	14:00	2.7	W
16-Jul-2016	15:00	2.8	SSW
16-Jul-2016	16:00	3	SSW
16-Jul-2016	17:00	3.2	W
16-Jul-2016	18:00	2.1	W
16-Jul-2016	19:00	2	WNW
16-Jul-2016	20:00	1.5	WNW
16-Jul-2016	21:00	1.6	WNW
16-Jul-2016	22:00	1.4	WNW
16-Jul-2016	23:00	1.9	W
17-Jul-2016	0:00	2.2	WSW
17-Jul-2016	1:00	2.2	WSW
17-Jul-2016	2:00	2.1	SW
17-Jul-2016	3:00	2.2	WSW
17-Jul-2016	4:00	1.6	WNW
17-Jul-2016	5:00	1.4	W
17-Jul-2016	6:00	1.7	W
17-Jul-2016	7:00	1.8	SW
17-Jul-2016	8:00	1.8	WNW
17-Jul-2016	9:00	2.1	WNW
17-Jul-2016	10:00	2.6	WNW
17-Jul-2016	11:00	2.8	WNW
17-Jul-2016	12:00	2.9	W
17-Jul-2016	13:00	2.6	W
17-Jul-2016	14:00	3.2	SSW
17-Jul-2016	15:00	3.2	SSW
17-Jul-2016	16:00	2.6	WNW
17-Jul-2016	17:00	1.9	WNW
17-Jul-2016	18:00	1.8	W
17-Jul-2016	19:00	1.6	N
17-Jul-2016	20:00	1.4	N
17-Jul-2016	21:00	1.1	NNE

II. Mean Wind Speed and Wind Direction

17-Jul-2016	22:00	1.6	W
17-Jul-2016	23:00	1.1	W
18-Jul-2016	0:00	0.9	W
18-Jul-2016	1:00	0.9	W
18-Jul-2016	2:00	0.8	WSW
18-Jul-2016	3:00	0.8	W
18-Jul-2016	4:00	0.9	W
18-Jul-2016	5:00	0.9	WSW
18-Jul-2016	6:00	1	WSW
18-Jul-2016	7:00	1	WNW
18-Jul-2016	8:00	1.7	WSW
18-Jul-2016	9:00	3.4	S
18-Jul-2016	10:00	3	W
18-Jul-2016	11:00	3.5	W
18-Jul-2016	12:00	3.4	SW
18-Jul-2016	13:00	3.5	WSW
18-Jul-2016	14:00	3	WSW
18-Jul-2016	15:00	2.8	W
18-Jul-2016	16:00	2.8	WSW
18-Jul-2016	17:00	2.5	WSW
18-Jul-2016	18:00	2.2	SSW
18-Jul-2016	19:00	1.7	SSW
18-Jul-2016	20:00	1.7	SW
18-Jul-2016	21:00	1.2	WSW
18-Jul-2016	22:00	1.5	WSW
18-Jul-2016	23:00	1.5	W
19-Jul-2016	0:00	1.9	WSW
19-Jul-2016	1:00	1.5	W
19-Jul-2016	2:00	1.5	W
19-Jul-2016	3:00	1.5	WSW
19-Jul-2016	4:00	1.8	W
19-Jul-2016	5:00	1.4	WSW
19-Jul-2016	6:00	1	WNW
19-Jul-2016	7:00	1.4	WNW
19-Jul-2016	8:00	1.5	W
19-Jul-2016	9:00	2.2	WNW
19-Jul-2016	10:00	3.6	WNW

II. Mean Wind Speed and Wind Direction

19-Jul-2016	11:00	3.8	WNW
19-Jul-2016	12:00	3.3	WNW
19-Jul-2016	13:00	3	WNW
19-Jul-2016	14:00	3.1	WNW
19-Jul-2016	15:00	3.2	WNW
19-Jul-2016	16:00	3.2	WNW
19-Jul-2016	17:00	3	WNW
19-Jul-2016	18:00	2.1	WNW
19-Jul-2016	19:00	1.3	W
19-Jul-2016	20:00	0.8	WNW
19-Jul-2016	21:00	1	NW
19-Jul-2016	22:00	1	WNW
19-Jul-2016	23:00	0.9	WNW
20-Jul-2016	0:00	0.9	WNW
20-Jul-2016	1:00	1	WNW
20-Jul-2016	2:00	1.2	WNW
20-Jul-2016	3:00	1.1	WNW
20-Jul-2016	4:00	1.1	WNW
20-Jul-2016	5:00	1.2	W
20-Jul-2016	6:00	1.1	WSW
20-Jul-2016	7:00	1.2	WSW
20-Jul-2016	8:00	2.1	WNW
20-Jul-2016	9:00	2.5	WNW
20-Jul-2016	10:00	3.5	WNW
20-Jul-2016	11:00	3.4	WSW
20-Jul-2016	12:00	3.6	WSW
20-Jul-2016	13:00	3.6	WSW
20-Jul-2016	14:00	3.2	SW
20-Jul-2016	15:00	2.8	W
20-Jul-2016	16:00	2.9	WNW
20-Jul-2016	17:00	2.3	WNW
20-Jul-2016	18:00	1.9	WSW
20-Jul-2016	19:00	1.7	WSW
20-Jul-2016	20:00	1.5	W
20-Jul-2016	21:00	1.2	WNW
20-Jul-2016	22:00	1.4	WNW
20-Jul-2016	23:00	1.2	WNW

II. Mean Wind Speed and Wind Direction

21-Jul-2016	0:00	2.1	WNW
21-Jul-2016	1:00	2	WNW
21-Jul-2016	2:00	2.3	SW
21-Jul-2016	3:00	2.2	WSW
21-Jul-2016	4:00	2.1	WNW
21-Jul-2016	5:00	1.7	WNW
21-Jul-2016	6:00	1.2	WNW
21-Jul-2016	7:00	1	ENE
21-Jul-2016	8:00	1.3	SSE
21-Jul-2016	9:00	2.8	SSE
21-Jul-2016	10:00	2.8	ESE
21-Jul-2016	11:00	3.1	NNE
21-Jul-2016	12:00	2.8	E
21-Jul-2016	13:00	2.2	N
21-Jul-2016	14:00	1.9	NE
21-Jul-2016	15:00	2	NE
21-Jul-2016	16:00	2.3	W
21-Jul-2016	17:00	2.5	NNE
21-Jul-2016	18:00	1.5	W
21-Jul-2016	19:00	1	WNW
21-Jul-2016	20:00	0.9	WNW
21-Jul-2016	21:00	1.1	SW
21-Jul-2016	22:00	0.7	WSW
21-Jul-2016	23:00	0.8	WSW
22-Jul-2016	0:00	0.8	WNW
22-Jul-2016	1:00	1.2	E
22-Jul-2016	2:00	0.8	E
22-Jul-2016	3:00	0.9	E
22-Jul-2016	4:00	0.5	WNW
22-Jul-2016	5:00	0.6	WNW
22-Jul-2016	6:00	0.6	WNW
22-Jul-2016	7:00	0.9	W
22-Jul-2016	8:00	1.7	WNW
22-Jul-2016	9:00	1.6	WNW
22-Jul-2016	10:00	1.9	SW
22-Jul-2016	11:00	1.8	WSW
22-Jul-2016	12:00	2.9	WNW

II. Mean Wind Speed and Wind Direction

22-Jul-2016	13:00	2.3	W
22-Jul-2016	14:00	2.3	W
22-Jul-2016	15:00	1.9	W
22-Jul-2016	16:00	1.9	NNE
22-Jul-2016	17:00	1.6	WNW
22-Jul-2016	18:00	1.6	N
22-Jul-2016	19:00	1.2	N
22-Jul-2016	20:00	1.4	NE
22-Jul-2016	21:00	1.6	SE
22-Jul-2016	22:00	1.4	N
22-Jul-2016	23:00	1.4	NNE
23-Jul-2016	0:00	1.7	NNE
23-Jul-2016	1:00	1.9	WNW
23-Jul-2016	2:00	1.4	W
23-Jul-2016	3:00	1.4	N
23-Jul-2016	4:00	1.5	NNE
23-Jul-2016	5:00	1.3	WNW
23-Jul-2016	6:00	1.4	N
23-Jul-2016	7:00	1.2	N
23-Jul-2016	8:00	1.7	NNE
23-Jul-2016	9:00	1.7	NE
23-Jul-2016	10:00	2.4	NE
23-Jul-2016	11:00	3.1	SSE
23-Jul-2016	12:00	3.2	NNE
23-Jul-2016	13:00	3	ENE
23-Jul-2016	14:00	3.4	ENE
23-Jul-2016	15:00	2.9	ENE
23-Jul-2016	16:00	2.7	ESE
23-Jul-2016	17:00	2.8	ESE
23-Jul-2016	18:00	1.8	SE
23-Jul-2016	19:00	2.1	SE
23-Jul-2016	20:00	1.9	SE
23-Jul-2016	21:00	1.9	SSE
23-Jul-2016	22:00	2.4	SE
23-Jul-2016	23:00	1.8	SE
24-Jul-2016	0:00	2.1	SE
24-Jul-2016	1:00	2.5	S

II. Mean Wind Speed and Wind Direction

24-Jul-2016	2:00	2.3	NNW
24-Jul-2016	3:00	2.2	E
24-Jul-2016	4:00	2.1	ESE
24-Jul-2016	5:00	2.7	NNE
24-Jul-2016	6:00	2.1	N
24-Jul-2016	7:00	1.9	NW
24-Jul-2016	8:00	2.2	NNW
24-Jul-2016	9:00	3	NNW
24-Jul-2016	10:00	3.5	E
24-Jul-2016	11:00	3.8	SE
24-Jul-2016	12:00	3.4	SE
24-Jul-2016	13:00	3.5	SSE
24-Jul-2016	14:00	3.4	SSE
24-Jul-2016	15:00	3	SSE
24-Jul-2016	16:00	3.4	SSW
24-Jul-2016	17:00	3.2	SSE
24-Jul-2016	18:00	1.6	SE
24-Jul-2016	19:00	1.4	SE
24-Jul-2016	20:00	1.8	SW
24-Jul-2016	21:00	1.6	S
24-Jul-2016	22:00	2.4	ESE
24-Jul-2016	23:00	2.1	ESE
25-Jul-2016	0:00	2.2	SE
25-Jul-2016	1:00	2.5	NE
25-Jul-2016	2:00	2.2	ENE
25-Jul-2016	3:00	2.2	WSW
25-Jul-2016	4:00	1.6	SSW
25-Jul-2016	5:00	1.6	N
25-Jul-2016	6:00	1.6	WNW
25-Jul-2016	7:00	0.7	WNW
25-Jul-2016	8:00	0.8	W
25-Jul-2016	9:00	2.2	W
25-Jul-2016	10:00	3	SW
25-Jul-2016	11:00	3.7	SSW
25-Jul-2016	12:00	3.2	SSW
25-Jul-2016	13:00	3.1	SSW
25-Jul-2016	14:00	3.2	SW

II. Mean Wind Speed and Wind Direction

25-Jul-2016	15:00	3.1	S
25-Jul-2016	16:00	2.6	WSW
25-Jul-2016	17:00	1.9	W
25-Jul-2016	18:00	1.4	N
25-Jul-2016	19:00	1.2	NNE
25-Jul-2016	20:00	1.7	NE
25-Jul-2016	21:00	1.4	ENE
25-Jul-2016	22:00	1.6	ENE
25-Jul-2016	23:00	2.1	NNE
26-Jul-2016	0:00	2	NNE
26-Jul-2016	1:00	1.8	NNE
26-Jul-2016	2:00	1.1	NNE
26-Jul-2016	3:00	1	N
26-Jul-2016	4:00	1.7	NNE
26-Jul-2016	5:00	1	N
26-Jul-2016	6:00	0.4	N
26-Jul-2016	7:00	0.3	NNE
26-Jul-2016	8:00	0.4	W
26-Jul-2016	9:00	2	NNE
26-Jul-2016	10:00	2.4	NNE
26-Jul-2016	11:00	2	N
26-Jul-2016	12:00	3.1	W
26-Jul-2016	13:00	3.4	W
26-Jul-2016	14:00	3.3	SSW
26-Jul-2016	15:00	3.1	S
26-Jul-2016	16:00	2.4	W
26-Jul-2016	17:00	1.9	WSW
26-Jul-2016	18:00	0.9	W
26-Jul-2016	19:00	1	WSW
26-Jul-2016	20:00	0.6	SSE
26-Jul-2016	21:00	0.6	SSW
26-Jul-2016	22:00	0.5	WSW
26-Jul-2016	23:00	0.6	NNE
27-Jul-2016	0:00	0.4	NNE
27-Jul-2016	1:00	0.4	NNE
27-Jul-2016	2:00	0.6	NE
27-Jul-2016	3:00	1.8	N

II. Mean Wind Speed and Wind Direction

27-Jul-2016	4:00	1.5	NE
27-Jul-2016	5:00	1.6	ENE
27-Jul-2016	6:00	1.6	ESE
27-Jul-2016	7:00	1.5	ESE
27-Jul-2016	8:00	1.9	SSE
27-Jul-2016	9:00	2.8	ENE
27-Jul-2016	10:00	3.3	ENE
27-Jul-2016	11:00	4.7	SE
27-Jul-2016	12:00	3.9	NE
27-Jul-2016	13:00	3.4	ENE
27-Jul-2016	14:00	3.3	SSE
27-Jul-2016	15:00	3	SE
27-Jul-2016	16:00	3.1	SE
27-Jul-2016	17:00	2.8	ESE
27-Jul-2016	18:00	1.9	SSE
27-Jul-2016	19:00	2.2	SSE
27-Jul-2016	20:00	2.5	E
27-Jul-2016	21:00	2.7	E
27-Jul-2016	22:00	1.8	E
27-Jul-2016	23:00	1.6	ESE
28-Jul-2016	0:00	1.6	ESE
28-Jul-2016	1:00	2.1	SE
28-Jul-2016	2:00	2.2	SE
28-Jul-2016	3:00	2.1	SE
28-Jul-2016	4:00	1.7	ESE
28-Jul-2016	5:00	1.7	SE
28-Jul-2016	6:00	1.6	SE
28-Jul-2016	7:00	1.6	SSE
28-Jul-2016	8:00	2.1	ESE
28-Jul-2016	9:00	3.3	SE
28-Jul-2016	10:00	4.3	ESE
28-Jul-2016	11:00	4.5	ESE
28-Jul-2016	12:00	4.2	SSE
28-Jul-2016	13:00	4.4	SSE
28-Jul-2016	14:00	3.8	SE
28-Jul-2016	15:00	3.5	SE
28-Jul-2016	16:00	3.9	ESE

II. Mean Wind Speed and Wind Direction

28-Jul-2016	17:00	3.3	ESE
28-Jul-2016	18:00	2.6	ESE
28-Jul-2016	19:00	2.2	S
28-Jul-2016	20:00	1.9	ENE
28-Jul-2016	21:00	1.9	ENE
28-Jul-2016	22:00	1.7	NE
28-Jul-2016	23:00	1.7	NE
29-Jul-2016	0:00	1.7	SSE
29-Jul-2016	1:00	1.6	SSE
29-Jul-2016	2:00	1.7	ESE
29-Jul-2016	3:00	1.3	ESE
29-Jul-2016	4:00	2	SE
29-Jul-2016	5:00	1.9	ESE
29-Jul-2016	6:00	1.5	SSE
29-Jul-2016	7:00	1.7	SSE
29-Jul-2016	8:00	2.1	SSE
29-Jul-2016	9:00	3.3	SSE
29-Jul-2016	10:00	4.2	SE
29-Jul-2016	11:00	3.9	SSE
29-Jul-2016	12:00	3.2	SSE
29-Jul-2016	13:00	2.8	ESE
29-Jul-2016	14:00	2.8	SSE
29-Jul-2016	15:00	2.7	ESE
29-Jul-2016	16:00	2.4	SSE
29-Jul-2016	17:00	2.4	ESE
29-Jul-2016	18:00	1.5	NE
29-Jul-2016	19:00	1	SSE
29-Jul-2016	20:00	1	E
29-Jul-2016	21:00	0.9	E
29-Jul-2016	22:00	1.1	SSE
29-Jul-2016	23:00	0.7	ENE
30-Jul-2016	0:00	1.1	S
30-Jul-2016	1:00	1.2	E
30-Jul-2016	2:00	0.6	NNE
30-Jul-2016	3:00	0.9	S
30-Jul-2016	4:00	1.3	S
30-Jul-2016	5:00	1.4	SSW

II. Mean Wind Speed and Wind Direction

30-Jul-2016	6:00	1.6	SSW
30-Jul-2016	7:00	2.2	W
30-Jul-2016	8:00	3.3	W
30-Jul-2016	9:00	3.1	WNW
30-Jul-2016	10:00	3.8	ESE
30-Jul-2016	11:00	3.8	NE
30-Jul-2016	12:00	3.6	NE
30-Jul-2016	13:00	3.6	NNE
30-Jul-2016	14:00	3	E
30-Jul-2016	15:00	3.4	NNE
30-Jul-2016	16:00	2.8	NNE
30-Jul-2016	17:00	3.1	ENE
30-Jul-2016	18:00	2.6	SSW
30-Jul-2016	19:00	2.1	SW
30-Jul-2016	20:00	2	NNE
30-Jul-2016	21:00	1.6	NE
30-Jul-2016	22:00	1.3	NW
30-Jul-2016	23:00	1.4	SSW
31-Jul-2016	0:00	2	SW
31-Jul-2016	1:00	2.1	NNE
31-Jul-2016	2:00	2	N
31-Jul-2016	3:00	2.1	N
31-Jul-2016	4:00	2	S
31-Jul-2016	5:00	2	NW
31-Jul-2016	6:00	2.1	SSW
31-Jul-2016	7:00	1.7	SW
31-Jul-2016	8:00	2.3	SW
31-Jul-2016	9:00	2.5	W
31-Jul-2016	10:00	3	SW
31-Jul-2016	11:00	2.6	WNW
31-Jul-2016	12:00	2.6	WNW
31-Jul-2016	13:00	2.9	W
31-Jul-2016	14:00	2.5	WNW
31-Jul-2016	15:00	2.7	NW
31-Jul-2016	16:00	2.4	WSW
31-Jul-2016	17:00	2.6	SW
31-Jul-2016	18:00	2	WSW

II. Mean Wind Speed and Wind Direction

31-Jul-2016	19:00	1.9	SW
31-Jul-2016	20:00	1.5	SW
31-Jul-2016	21:00	1.6	W
31-Jul-2016	22:00	1.9	WNW
31-Jul-2016	23:00	1.8	WNW

APPENDIX D
ENVIRONMENTAL MONITORING SCHEDULES

Contract No. KL/2012/03
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area
Impact Air and Noise Monitoring Schedule for July 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jul	2-Jul
3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul
		Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)		Noise (M6(A) and M7)	
10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
	Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)	Noise (M6(A) and M7)		24 hr TSP	
17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul
	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)			Noise (M6(A), M7, M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A)	
24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul
	Noise (M6(A) and M7)		Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)		
31-Jul						

Air Quality Monitoring Station

AM2 - Lee Kau Yan Memorial School
AM3(A) - Holy Trinity Bradbury Centre
AM4(A) - EMSD Workshops
AM5(A) - Po Leung Kuk Ngan Po Ling College

Noise Monitoring Station

M6(A) - Oblate Primary School
M7 - CCC Kei To Secondary School
M8 - Po Leung Kuk Ngan Po Ling College
M9 - Tak Long Estate

Contract No. KL/2012/03

Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

Tentative Impact Air and Noise Monitoring Schedule for August 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug
		Noise (M6(A), M7 and M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)			
7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug
	Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)	Noise (M6(A) and M7)		24 hr TSP	
14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug
	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)		Noise (M6(A) and M7)	Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A)	
21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug
	Noise (M6(A) and M7)		Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)		
28-Aug	29-Aug	30-Aug	31-Aug			
		Noise (M9) 24 hr TSP	1 hr TSP X3 AM2, AM3(A), AM4(A) & AM5(A) Noise (M8)			

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

Air Quality Monitoring Station

AM2 - Lee Kau Yan Memorial School
AM3(A) - Holy Trinity Bradbury Centre
AM4(A) - EMSD Workshops
AM5(A) - Po Leung Kuk Ngan Po Ling College

Noise Monitoring Station

M6(A) - Oblate Primary School
M7 - CCC Kei To Secondary School
M8 - Po Leung Kuk Ngan Po Ling College
M9 - Tak Long Estate

APPENDIX E
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix E - 1-hour TSP Monitoring Results

Location AM2 - Lee Kau Yan Memorial School			
Date	Time	Weather	Particulate Concentration (µg/m3)
6-Jul-16	8:45	Cloudy	108.2
6-Jul-16	9:45	Cloudy	104.7
6-Jul-16	10:45	Cloudy	107.1
12-Jul-16	13:00	Cloudy	55.9
12-Jul-16	14:00	Cloudy	51.1
12-Jul-16	15:00	Cloudy	51.8
18-Jul-16	13:00	Sunny	82.8
18-Jul-16	14:00	Sunny	81.1
18-Jul-16	15:00	Sunny	80.3
22-Jul-16	13:00	Sunny	51.2
22-Jul-16	14:00	Sunny	50.2
22-Jul-16	15:00	Sunny	51.5
28-Jul-16	9:00	Sunny	128.8
28-Jul-16	10:00	Sunny	132.5
28-Jul-16	11:00	Sunny	138.8
		Average	85.1
		Maximum	138.8
		Minimum	50.2

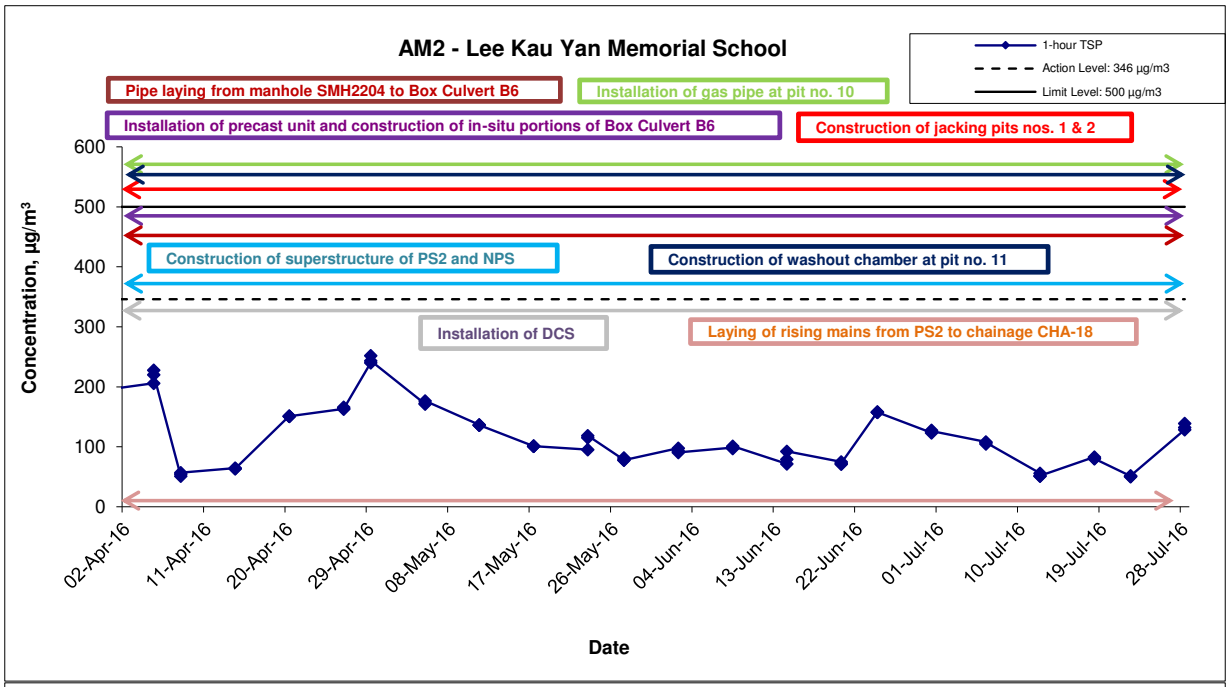
Location AM3(A) - Holy Trinity Bradbury Centre			
Date	Time	Weather	Particulate Concentration (µg/m3)
6-Jul-16	13:00	Cloudy	74.9
6-Jul-16	14:00	Cloudy	76.9
6-Jul-16	15:00	Cloudy	73.2
12-Jul-16	9:00	Cloudy	63.2
12-Jul-16	10:00	Cloudy	57.9
12-Jul-16	11:00	Cloudy	67.1
18-Jul-16	9:00	Sunny	67.4
18-Jul-16	10:00	Sunny	69.4
18-Jul-16	11:00	Sunny	65.6
22-Jul-16	9:00	Sunny	54.1
22-Jul-16	10:00	Sunny	53.9
22-Jul-16	11:00	Sunny	53.8
28-Jul-16	13:00	Sunny	120.7
28-Jul-16	14:00	Sunny	112.3
28-Jul-16	15:00	Sunny	115.4
		Average	75.1
		Maximum	120.7
		Minimum	53.8

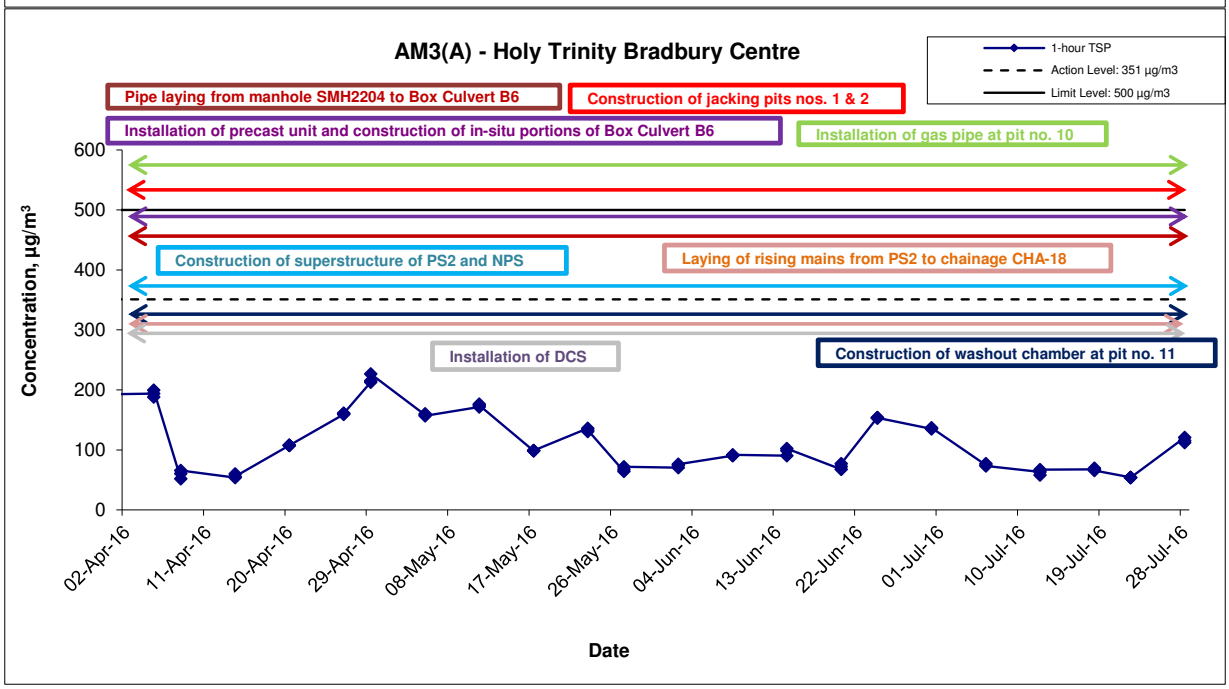
Appendix E - 1-hour TSP Monitoring Results

Location AM4(A) - EMSD Workshops			
Date	Time	Weather	Particulate Concentration (µg/m3)
6-Jul-16	9:00	Cloudy	89.5
6-Jul-16	10:00	Cloudy	91.6
6-Jul-16	11:00	Cloudy	92.6
12-Jul-16	13:00	Cloudy	70.2
12-Jul-16	14:00	Cloudy	60.0
12-Jul-16	15:00	Cloudy	59.0
18-Jul-16	13:00	Sunny	79.2
18-Jul-16	14:00	Sunny	73.0
18-Jul-16	15:00	Sunny	70.6
22-Jul-16	13:00	Sunny	48.2
22-Jul-16	14:00	Sunny	48.8
22-Jul-16	15:00	Sunny	48.9
28-Jul-16	13:00	Sunny	116.1
28-Jul-16	14:00	Sunny	119.6
28-Jul-16	15:00	Sunny	121.6
		Average	79.3
		Maximum	121.6
		Minimum	48.2

Location AM5(A) - Po Leung Kuk Ngan Po Ling College			
Date	Time	Weather	Particulate Concentration (µg/m3)
6-Jul-16	8:00	Cloudy	82.2
6-Jul-16	9:00	Cloudy	80.9
6-Jul-16	10:00	Cloudy	86.7
12-Jul-16	14:00	Cloudy	58.6
12-Jul-16	15:00	Cloudy	58.8
12-Jul-16	16:00	Cloudy	57.8
18-Jul-16	14:00	Sunny	58.0
18-Jul-16	15:00	Sunny	55.9
18-Jul-16	16:00	Sunny	56.3
22-Jul-16	14:00	Sunny	48.2
22-Jul-16	15:00	Sunny	48.8
22-Jul-16	16:00	Sunny	50.0
28-Jul-16	13:00	Sunny	108.9
28-Jul-16	14:00	Sunny	111.4
28-Jul-16	15:00	Sunny	109.7
		Average	71.5
		Maximum	111.4
		Minimum	48.2

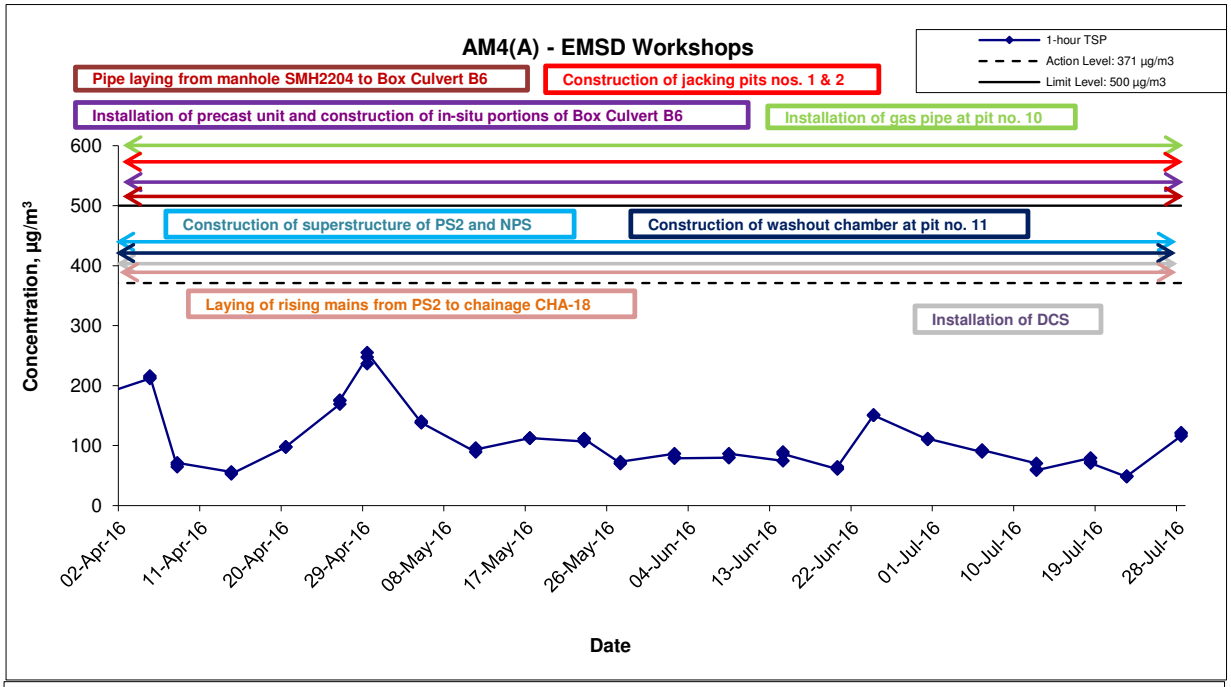
1-hr TSP Concentration Levels

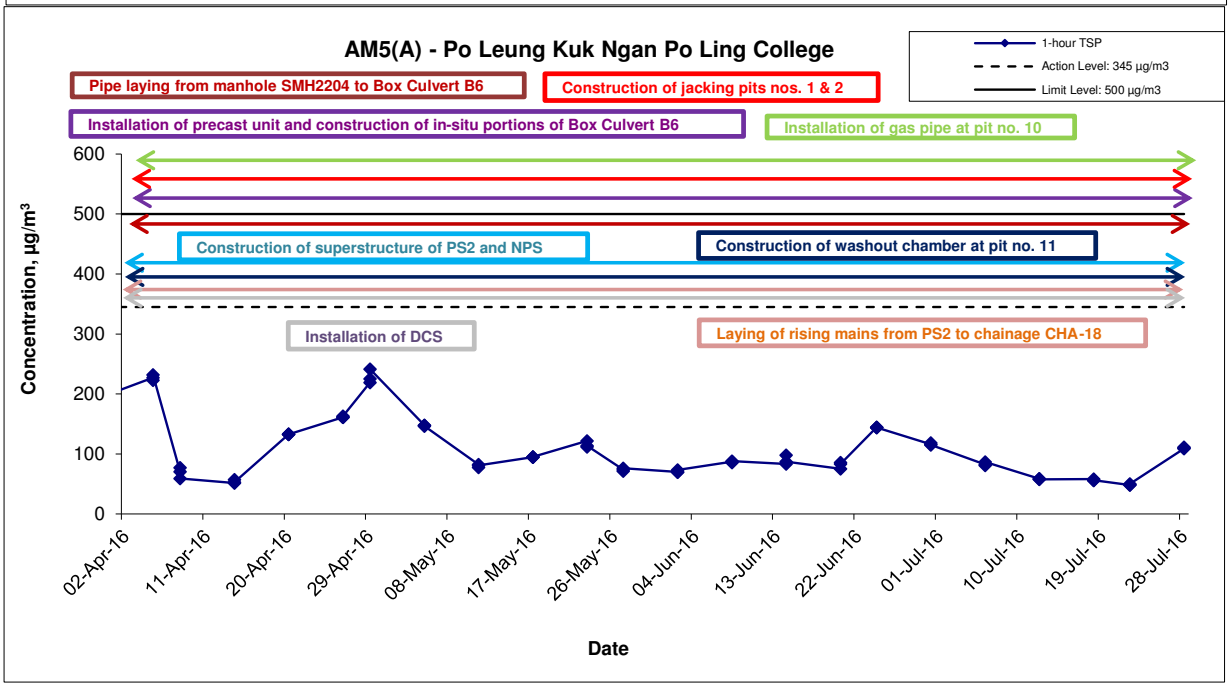




Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Jul 16	Project No.: MA13056 Appendix: E	CINOTECH

1-hr TSP Concentration Levels





Title: Graphical Presentation of 1-hour TSP Monitoring Results	Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area	Scale: N.T.S Date: Jul 16	Project No.: MA13056 Appendix: E

CINOTECH

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

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			
5-Jul-16	Sunny	300.9	758.1	3.4259	3.4858	0.0599	16699.0	16723.0	24.0	1.21	1.21	1.21	1747.8	34.3
11-Jul-16	Cloudy	300.9	754.8	3.3336	3.3885	0.0549	16723.0	16747.0	24.0	1.21	1.21	1.21	1743.6	31.5
15-Jul-16	Sunny	296.1	761.6	3.3143	3.4007	0.0864	16747.0	16771.0	24.0	1.23	1.22	1.23	1764.0	49.0
21-Jul-16	Sunny	302.8	761.7	3.3441	3.3859	0.0418	16771.0	16795.0	24.0	1.21	1.21	1.21	1745.8	23.9
27-Jul-16	Sunny	301.7	760.2	3.2817	3.3472	0.0655	16795.0	16819.0	24.0	1.21	1.21	1.21	1743.8	37.6
													Min	23.9
													Max	49.0
													Average	35.2

Location AM3(A) - Holy Trinity Bradbury Centre

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			
5-Jul-16	Sunny	299.8	757.3	3.4051	3.4553	0.0502	9302.8	9326.8	24.0	1.21	1.21	1.21	1744.6	28.8
11-Jul-16	Cloudy	301.4	753.6	3.3167	3.3641	0.0474	9326.8	9350.8	24.0	1.21	1.21	1.21	1736.5	27.3
15-Jul-16	Sunny	296.8	762.7	3.3374	3.4068	0.0694	9350.8	9374.8	24.0	1.22	1.22	1.22	1758.4	39.5
21-Jul-16	Sunny	301.7	761.3	3.3416	3.3635	0.0219	9374.8	9398.8	24.0	1.21	1.21	1.21	1743.8	12.6
27-Jul-16	Sunny	302.3	759.3	3.2787	3.3337	0.0550	9398.8	9422.8	24.0	1.21	1.21	1.21	1748.4	31.5
													Min	12.6
													Max	39.5
													Average	27.9

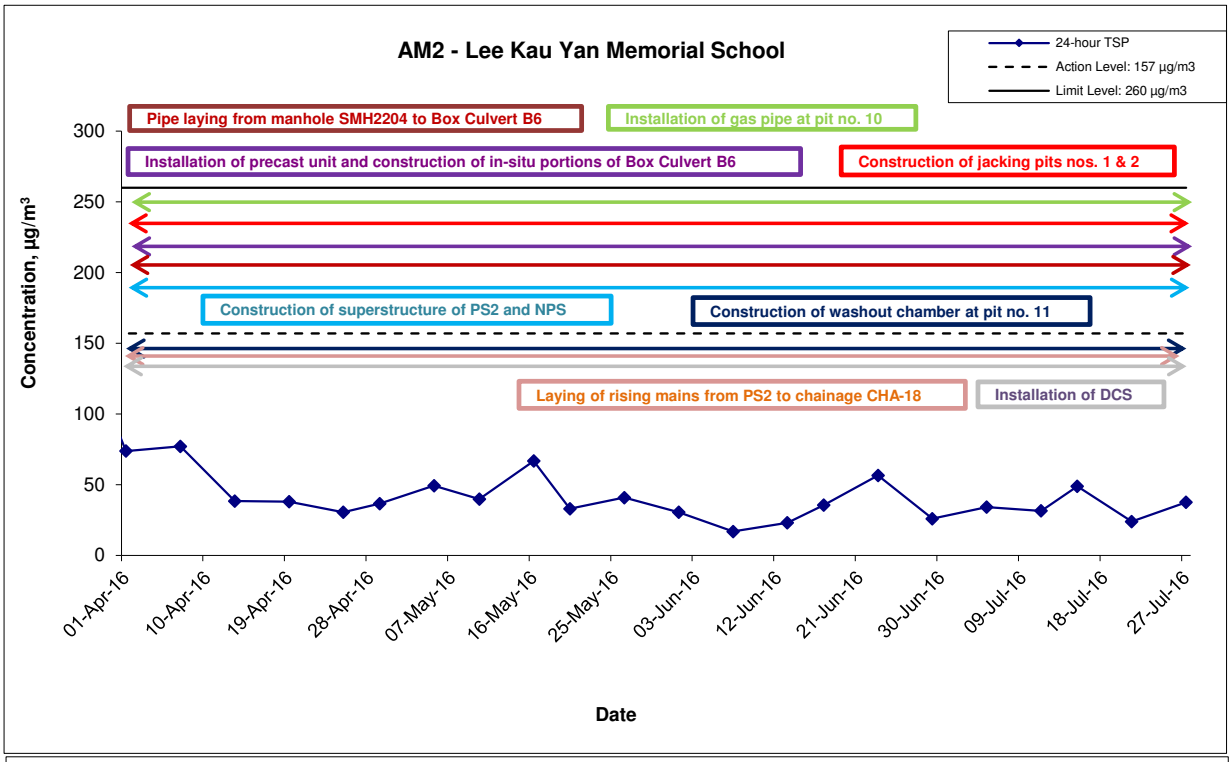
Location AM4(A) - EMSD Workshops

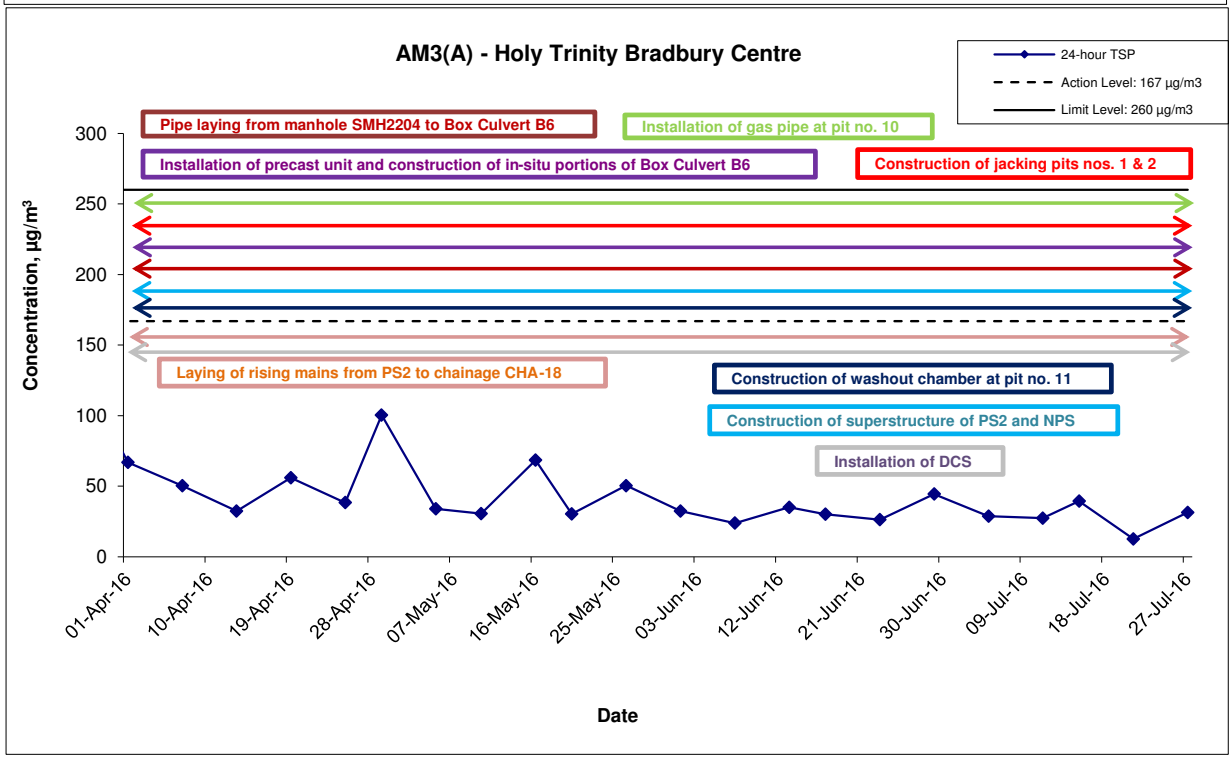
Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
				Initial	Final		Initial	Final		Initial	Final			
5-Jul-16	Sunny	301.1	758.3	3.4033	3.4368	0.0335	528.0	552.0	24.0	1.21	1.21	1.21	1747.7	19.2
11-Jul-16	Cloudy	301.8	753.9	3.3327	3.3720	0.0393	552.0	576.0	24.0	1.21	1.21	1.21	1740.6	22.6
15-Jul-16	Sunny	295.9	762.6	3.2949	3.3321	0.0372	576.0	600.0	24.0	1.23	1.23	1.23	1767.9	21.0
21-Jul-16	Sunny	302.1	760.6	3.3515	3.3875	0.0360	600.0	624.0	24.0	1.21	1.21	1.21	1747.4	20.6
27-Jul-16	Sunny	302.9	759.2	3.2950	3.3323	0.0373	624.0	648.0	24.0	1.21	1.21	1.21	1749.0	21.3
													Min	19.2
													Max	22.6
													Average	20.9

Location AM5(A) - Po Leung Kuk Ngan Po Ling College

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	Feb 16		Initial	Final			
5-Jul-16	Sunny	299.2	758.5	3.4403	3.4838	0.0435	1875.0	1899.0	24.0	1.22	1.22	1.22	1750.0	24.9
11-Jul-16	Cloudy	300.7	754.3	3.3323	3.3667	0.0344	1899.0	1923.0	24.0	1.21	1.21	1.21	1741.0	19.8
15-Jul-16	Sunny	295.4	762.2	3.3129	3.3563	0.0434	1923.0	1947.0	24.0	1.23	1.23	1.23	1765.2	24.6
21-Jul-16	Sunny	302.7	760.4	3.3530	3.3799	0.0269	1947.0	1971.0	24.0	1.21	1.21	1.21	1742.2	15.4
27-Jul-16	Sunny	302.2	759.5	3.2858	3.3127	0.0269	1971.0	1995.0	24.0	1.22	1.22	1.22	1758.4	15.3
													Min	15.3
													Max	24.9
													Average	20.0

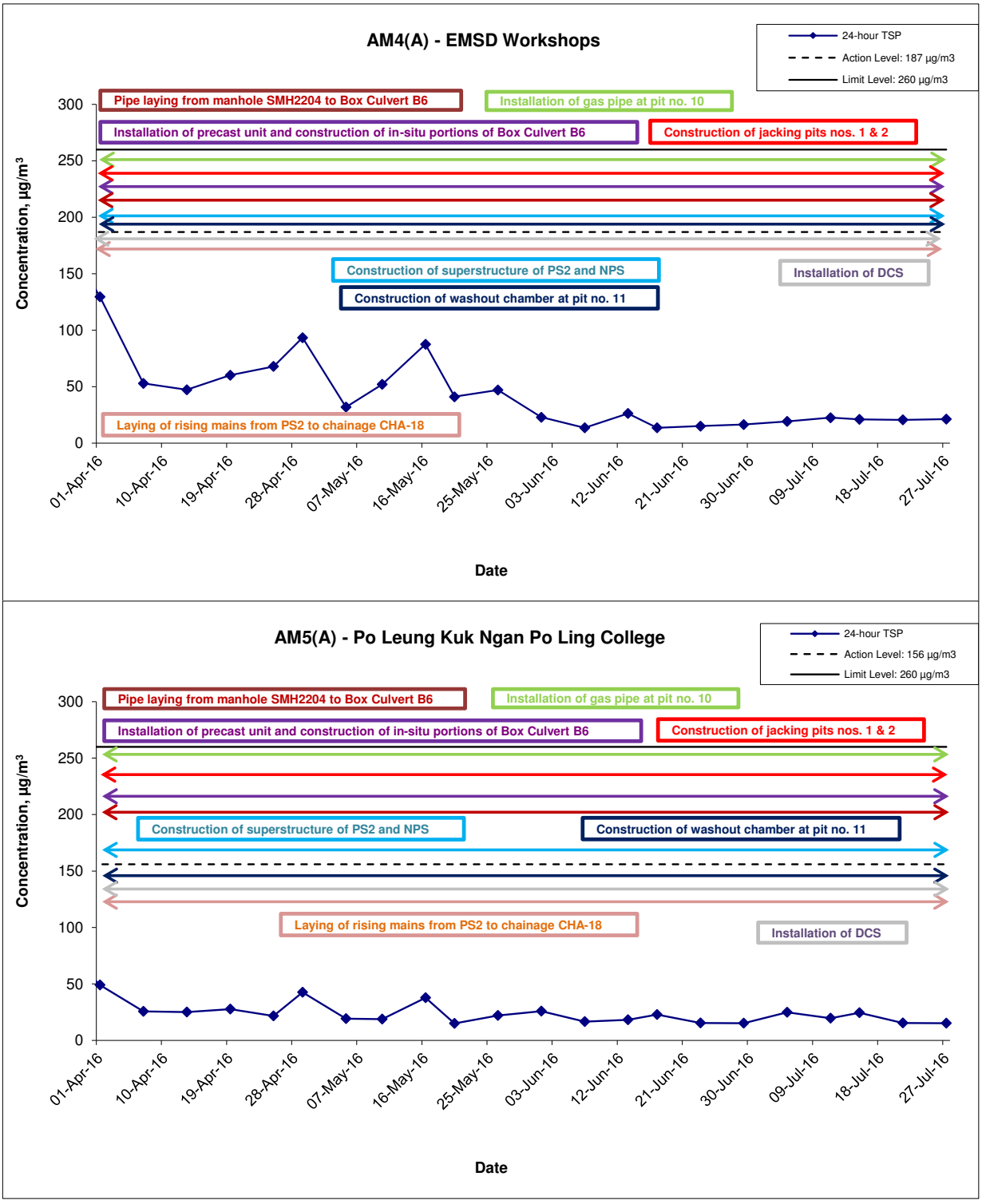
24-hr TSP Concentration Levels





Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Jul 16	Project No.: MA13056 Appendix: F	CINOTECH

24-hr TSP Concentration Levels



Title	Scale	Project
Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of 24-hour TSP Monitoring Results	N.T.S	No. MA13056
	Date Jul 16	Appendix F

CINOTECH

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

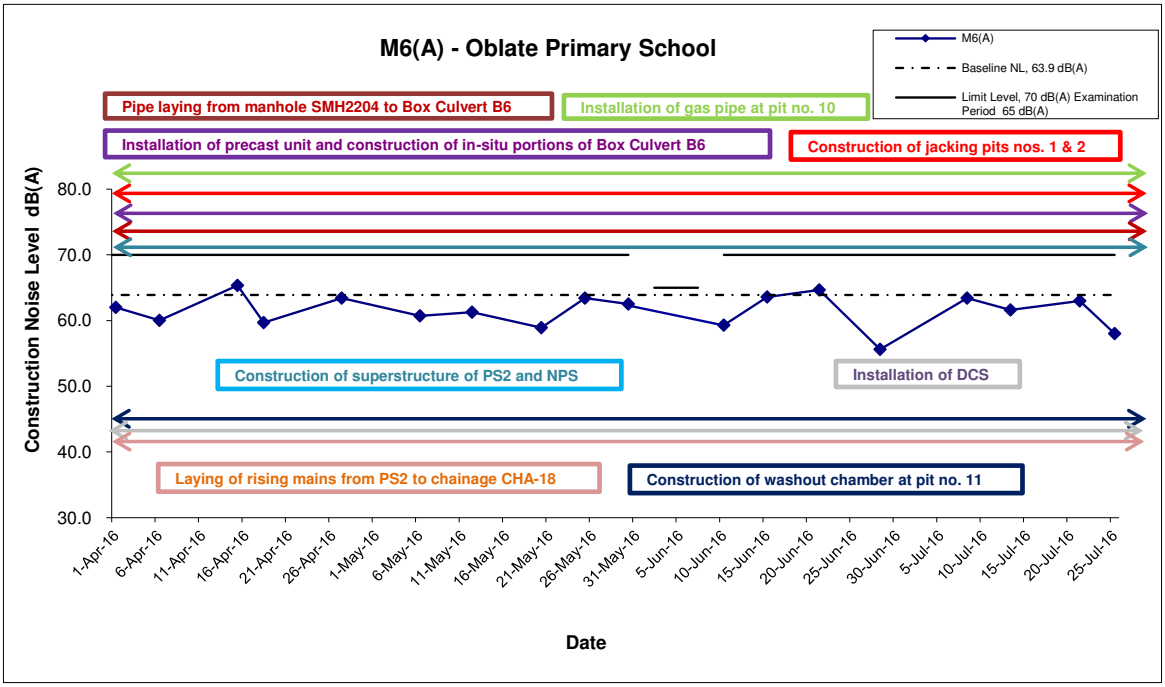
Location M6(A) - Oblate Primary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-Jul-16	10:30	Sunny	63.4	65.9	58.7	63.9	63.4 Measured ≦ Baseline
13-Jul-16	10:45	Cloudy	61.6	63.3	59.9		61.6 Measured ≦ Baseline
21-Jul-16	10:20	Sunny	63.0	64.0	61.2		63.0 Measured ≦ Baseline
25-Jul-16	10:30	Sunny	64.9	65.8	63.9		58.0

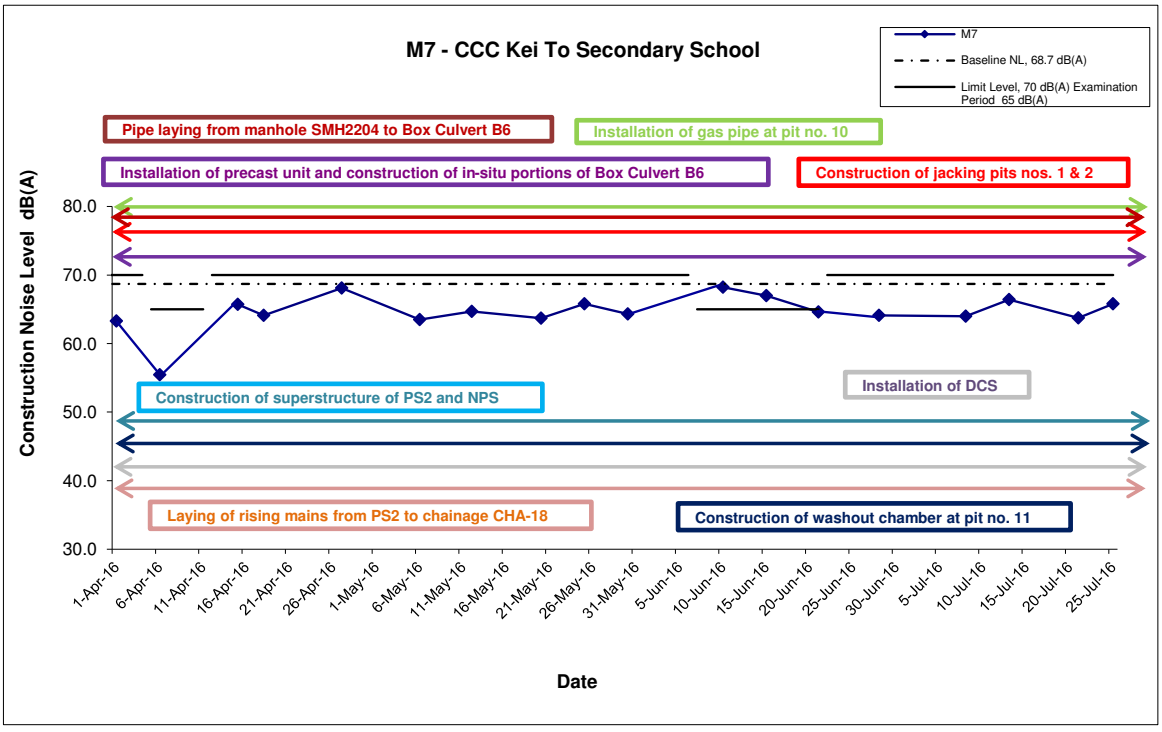
Location M7 - CCC Kei To Secondary School							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}
8-Jul-16	11:30	Sunny	64.0	65.4	60.5	68.7	64.0 Measured ≦ Baseline
13-Jul-16	11:30	Cloudy	66.4	69.0	62.1		66.4 Measured ≦ Baseline
21-Jul-16	11:00	Sunny	69.9	73.2	65.2		63.7
25-Jul-16	11:30	Sunny	65.8	68.2	61.0		65.8 Measured ≦ Baseline

Location M8 - Po Leung Kuk Ngan Po Ling College							
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}
6-Jul-16	8:00	Cloudy	64.4	66.6	60.5	61.9	60.8
12-Jul-16	16:30	Cloudy	62.3	63.7	60.0		51.7
18-Jul-16	16:00	Sunny	63.6	64.7	60.3		58.7
28-Jul-16	13:10	Sunny	64.4	67.6	60.6		60.8

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}
5-Jul-16	13:00	Sunny	60.3	61.1	58.1	59.9	49.7
11-Jul-16	13:00	Cloudy	60.1	61.5	58.5		46.6
21-Jul-16	13:00	Sunny	59.8	61.6	57.8		59.8 Measured ≦ Baseline
27-Jul-16	13:00	Sunny	58.5	60.4	56.3		58.5 Measured ≦ Baseline

Noise Levels

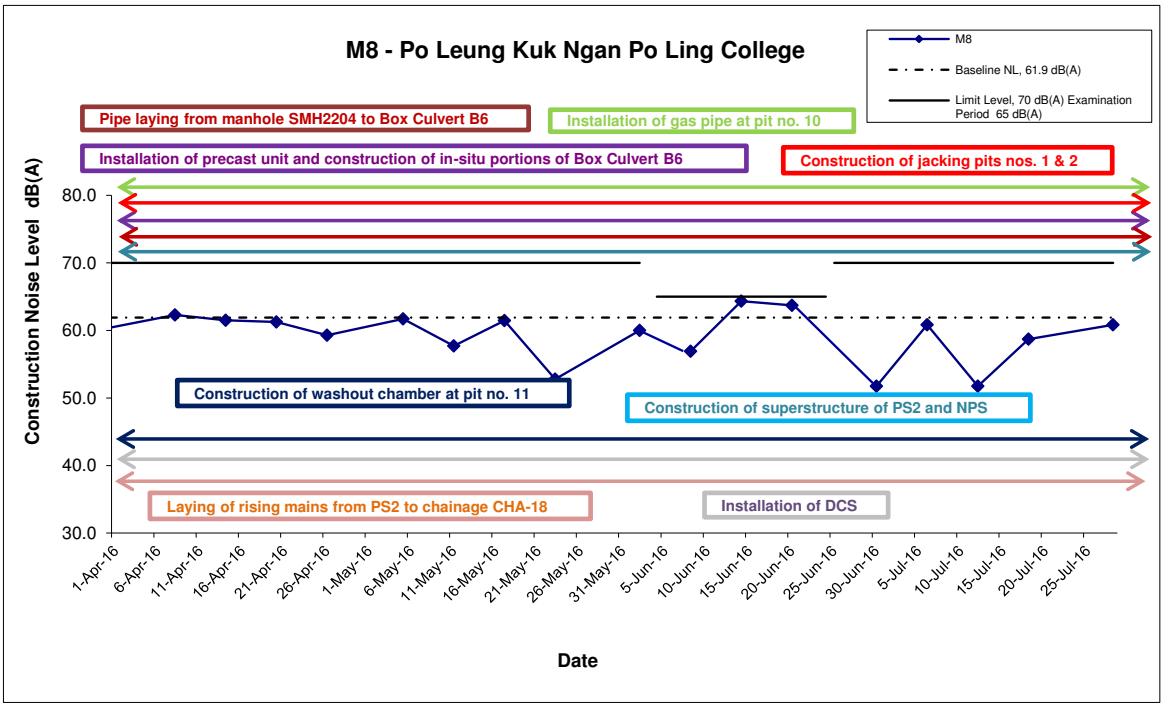


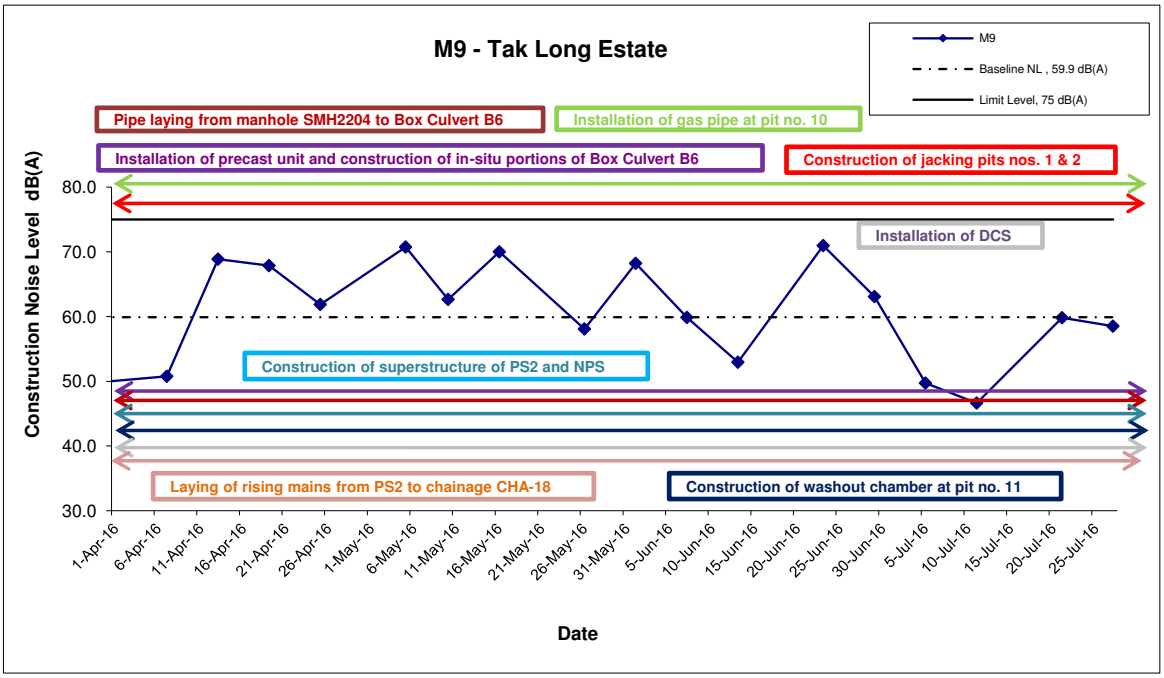


Remarks: The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Jul 16	Project No.: MA13056 Appendix: G	CINOTECH

Noise Levels





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

Title: Contract No. KL/2012/03 Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Jul 16	Project No.: MA13056 Appendix: G	CINOTECH

APPENDIX H
SUMMARY OF EXCEEDANCE

Contract No. KL/2012/03
Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

Appendix H – Summary of Exceedance

Exceedance Report for Contract No. KL/2012/03

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

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

(C) Exceedance Report for Landscape and Visual
(NIL in the reporting month)

APPENDIX I
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160708
Date	8 July 2016
Time	10:00 – 12:00

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.: 160630), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		11 July 2016
Checked by	Dr. Priscilla Choy		11 July 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160715
Date	15 July 2016
Time	10:00 – 12:00

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.: 160708), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		18 July 2016
Checked by	Dr. Priscilla Choy		18 July 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160720
Date	20 July 2016
Time	14:00 – 17:30

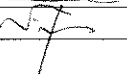
Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	B. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• 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.: 160715), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		22 July 2016
Checked by	Dr. Priscilla Choy		22 July 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160729
Date	29 July 2016
Time	10:00 – 12:00

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.: 160720), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		3 August 2016
Checked by	Dr. Priscilla Choy		3 August 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160708
Date	8 July 2016
Time	10:00 – 12:00

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	
160708-O01	• Oil container should be provided with drip tray at NPS.	E 9
	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.: 160630), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		11 July 2016
Checked by	Dr. Priscilla Choy		11 July 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160715
Date	15 July 2016
Time	10:00 – 12:00

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.: 160708), all environmental deficiencies were observed rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Carrie Leung		18 July 2016
Checked by	Dr. Priscilla Choy		18 July 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160720
Date	20 July 2016
Time	14:00 – 17:30

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	
	• 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.: 160715), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		22 July 2016
Checked by	Dr. Priscilla Choy		22 July 2016

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	160729
Date	29 July 2016
Time	10:00 – 12:00

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.: 160720), no major environmental deficiencies were observed during the site inspection.	

	Name	Signature	Date
Recorded by	Carrie Leung		3 August 2016
Checked by	Dr. Priscilla Choy		3 August 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.	^

Construction Noise	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump	^
	Good Site Practice: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	^
	• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	N/A(1)
	• Mobile plant, if any, should be sited as far away from NSRs as possible.	^
	• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.	^
	• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	^
	• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	^
	Scheduling of Construction Works during School Examination Period	^
	(i) Provision of low noise surfacing in a section of Road L2; and	N/A
	(ii) Provision of structural fins	N/A
	(i) Avoid the sensitive façade of class room facing Road L2 and L4; and	N/A
	(ii) Provision of low noise surfacing in a section of Road L2 & L4	N/A
	(i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 1I1; and	N/A
	(ii) Setback of building about 5m from site boundary.	N/A
	Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.	N/A
	(i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and	N/A
	(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.	N/A

	(i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or (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. (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 N/A 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. <u>Land-based Construction</u> *Construction Runoff* Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: • use of sediment traps • adequate maintenance of drainage systems to prevent flooding and overflow	N/A N/A N/A N/A ^ ^ ^

	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	^
	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	^
	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	^
	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m^3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	^
	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	^
	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	^
	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	^

	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	*
	Drainage It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	^
	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	^
	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	^
	Sewage Effluent Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	^
	Stormwater Discharges Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	N/A

	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	^

	Construction and Demolition Material Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles should be located away from waterfront or storm drains as far as possible • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric • Skip hoist for material transport should be totally enclosed by impervious sheeting • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system. Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*	^ ^ ^ ^ ^ ^ ^ ^ ^

	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem	^
Landscape and Visual	CM1 All existing trees should be carefully protected during construction. CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work. CM3 Control of night-time lighting. CM4 Erection of decorative screen hoarding.	^ N/A ^ ^

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/2012/03

Kai Tak Development –Stage 4 Infrastructure at Former North Apron Area

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

Reporting Month: July 2016

Warnings / Summons and Successful Prosecutions received in the reporting month

Log Ref.	Received Date	Details of Warning / Summons and Successful Prosecutions	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A

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

Complaint Log

EPD Complaint Ref No.	Date of Complaint	Complaint Details	Investigation / Mitigation Action	Status
15-14258	10/6/2015	Complainant said dust emission from the construction work affecting him/her. The stockpiles was not covered properly such that dust emission was observed. Some muddy water was found in To Kwa Wan Typhoon Shelter.	Complaint cases referred to the Contractor. Investigation conducted by the Contract ET. The investigation results showed that no major construction activities were conducted at the time of complaint on the day - 10th June 2015. Since no marine works or land-based construction activities near the To Kwa Wan Typhoon Shelter were conducted, muddy effluent discharged to the To Kwa Wan Typhoon Shelter is not anticipated. The regular impact air monitoring results in the first three weeks of June 2015 were in full compliance with the Action and Limit levels. No major environmental deficiencies were observed related to the air quality and water quality, and the deficiencies as mentioned in the complaint were not recorded during the site inspections.	Closed

APPENDIX M
WASTE GENERATED QUANTITY

APPENDIX IV

Monthly Summary Waste Flow Table

(PS Clause 1.86)

Name of Department: CEDD

Contract No. : KL/2012/03

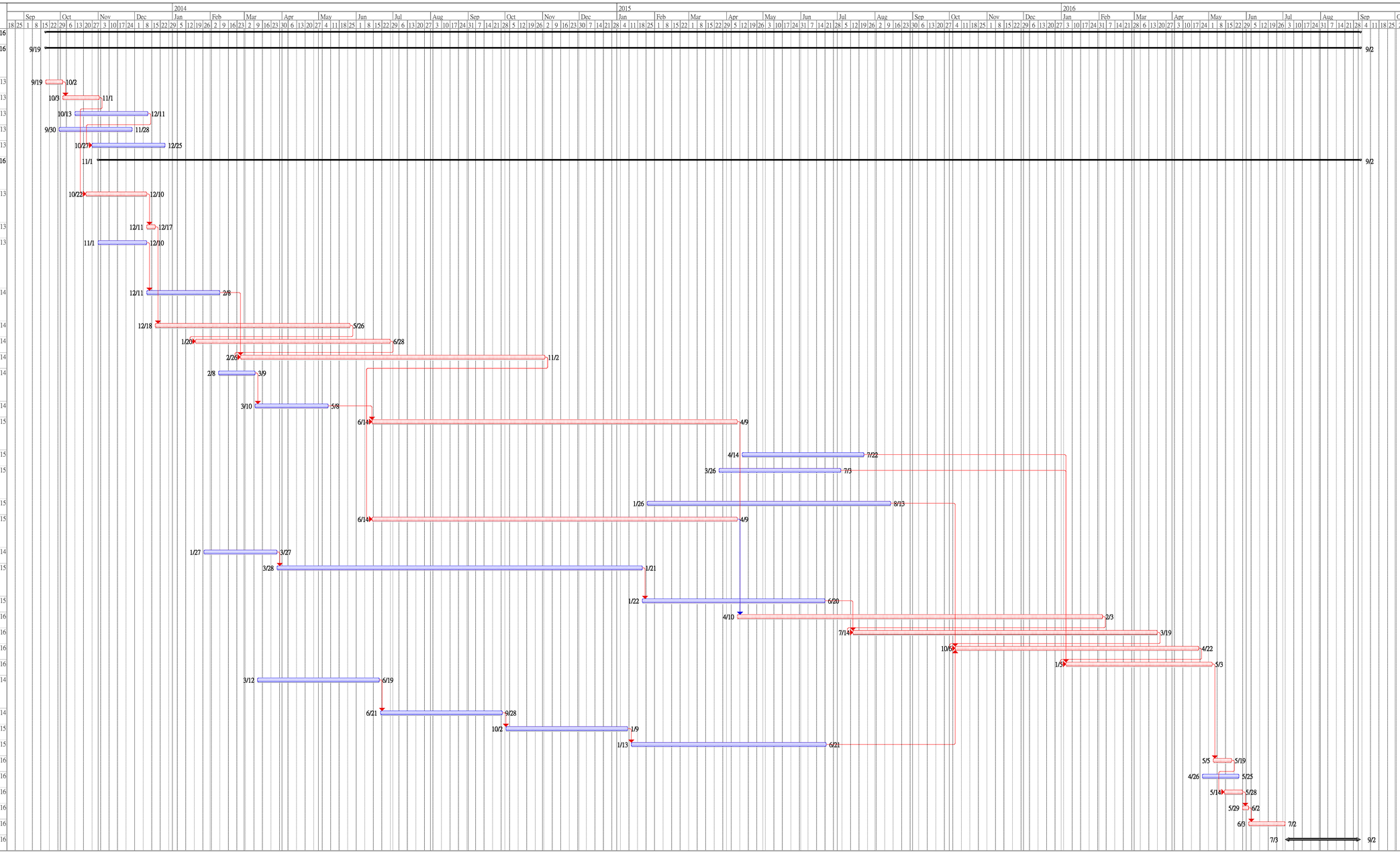
Monthly Summary Waste Flow Table for July 2016 (year) (in tons)

Month	Total Disposal Loads	Total Quantity Generated	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
			Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(No.s)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)	(in tons)
2013 (Oct - Dec) Sub-Total	108	463.69	0	0	0	0	0	0	0	0	0	463.69
2014 (Jan – Dec) Sub-Total	24	16925.7	0	0	16798.93	83.66	1804.27	0	0	0	0	43.11
Jan-15	3	38301.47	0	0	38291.91	0	2064	0	0	0	0	9.56
Feb-15	2	7.8	0	0	0	0	1776	0	0	0	0	7.8
Mar-15	7	21.46	0	0	0	0	2450	0	0	0	0	21.46
Apr-15	26	2041.48	0	0	0	2230.43	2610	0	0	0	0	10.46
May-15	7	647.2	0	0	0	640.58	1550	0	0	0	0	6.62
Jun-15	60	516.9	0	0	0	501.45	0	0	0	0	0	15.45
Jul-15	9	27.74	0	0	0	0	510	0	0	0	0	27.74
Aug-15	12	45.39	0	0	0	0	2410	0	0	0	0	45.39
Sep-15	51	398.77	0	0	0	359.78	1120	0	0	0	0	38.99
Oct-15	54	367.55	0	0	0	323.83	240	0	0	0	0	43.72
Nov-15	24	119.28	0	0	0	81.64	1920	0	0	0	0	37.64
Dec-15	29	39364.93	0	0	0	39319.5	3270	0	0	0	0	45.43
Jan-16	22	119.94	0	0	0	81.77	2930	0	0	0	0	38.15
Feb-16	13	63.37	0	0	0	38.04	1090	0	0	0	0	25.33
Mar-16	1664	28328.67	0	0	0	28298	0	0	0	0	0	30.67
Apr-16	10	34.02	0	0	0	0	0	0	0	0	0	34.02
May-16	26	174.63	0	0	0	130.44	0	0	0	0	0	44.19
Jun-16	59	397.69	0	0	0	319.98	0	0	0	0	0	77.71
Jul-16	**1049**	**16056.81**	**0**	**0**	**0**	**15973.72**	**0**	**0**	**0**	**0**	**0**	**83.09**
Total	3259	144424.49	0	0	55090.84	88382.82	25744.27	0	0	0	0	1150.22

APPENDIX N
CONSTRUCTION PROGRAMME

Master Programme

ID	Task Name	Duration	Start	Finish
1	**Commence KL/2012/03 construction**	**1080 days**	**Thu 9/19/13**	**Fri 9/2/16**
2	**Section 1: Works within Portion 1 and 3**	**1080 days**	**Thu 9/19/13**	**Fri 9/2/16**
3	Site possession and preparation works	14 days	Thu 9/19/13	Wed 10/2/13
4	Setting out site boundary and site clearance	30 days	Thu 10/3/13	Fri 11/1/13
5	Initial joint survey	60 days	Sun 10/13/13	Wed 12/11/13
6	Obtain underground utilities plans	60 days	Mon 9/30/13	Thu 11/28/13
7	Erect hoarding, chain link fence and vehicular gate	60 days	Sun 10/27/13	Wed 12/25/13
8	**Works for Road L6**	**1037 days**	**Fri 11/1/13**	**Fri 9/2/16**
9	Submission / approval of construction materials, method statements and temporary work design for box culverts B5	50 days	Tue 10/22/13	Tue 12/10/13
10	Plant mobilization	7 days	Wed 12/11/13	Tue 12/17/13
11	Submission / approval of construction materials and delivery of materials and method statements for stormdrain and sewerage drain	40 days	Fri 11/1/13	Tue 12/10/13
12	Install 2x750mm dia sewerage drain from FMH10_345 to FMH10_350 under box culvert B5	60 days	Wed 12/11/13	Sat 2/8/14
13	Temporary works for box culverts B5	160 days	Wed 12/18/13	Mon 5/26/14
14	Excavation to the formation level for box culverts B5	160 days	Mon 1/20/14	Sat 6/28/14
15	Construct drainage box culverts B5 (total length: 231m)	250 days	Wed 2/26/14	Sun 11/2/14
16	Submission / approval of construction materials and method statements for watermains	30 days	Sat 2/8/14	Sun 3/9/14
17	Delivery of FWM and SWM pipes and fittings and valves	60 days	Mon 3/10/14	Thu 5/8/14
18	Install 250mm, 300mm 450mm dia.FWM CHD0-CHD394 and 200mm SWM CHC0-CHC394	300 days	Sat 6/14/14	Thu 4/9/15
19	Pressure test, swabbing, sterilization and connection	100 days	Tue 4/14/15	Wed 7/22/15
20	Construct valve, air-valve and wash-out chambers and fire hyrdants for watermain	100 days	Thu 3/26/15	Fri 7/3/15
21	Install irrigation system	200 days	Mon 1/26/15	Thu 8/13/15
22	Install different dia. of stormwater drain, sewerage drain and manhole	300 days	Sat 6/14/14	Thu 4/9/15
23	Liaison meeting with UU	60 days	Mon 1/27/14	Thu 3/27/14
24	Installation of utility by the utility undertakers along proposed footpath	300 days	Fri 3/28/14	Wed 1/21/15
25	Construct u-channel and drainpit at footpath	150 days	Thu 1/22/15	Sat 6/20/15
26	Construct road gully and gully pipe	300 days	Fri 4/10/15	Wed 2/3/16
27	Construct road kerb	250 days	Tue 7/14/15	Sat 3/19/16
28	Construct footpath, planting area and concrete run-in	200 days	Tue 10/6/15	Fri 4/22/16
29	Construct flexible carriageway	120 days	Tue 1/5/16	Tue 5/3/16
30	Constrict stormwater drain and manhole at pedestrian street	100 days	Wed 3/12/14	Thu 6/19/14
31	Construct u-channel and drainpit at pedestrian street	100 days	Sat 6/21/14	Sun 9/28/14
32	Install irrigation system at pedestrian street	100 days	Thu 10/2/14	Fri 1/9/15
33	Construct pedestrian street	160 days	Tue 1/13/15	Sun 6/21/15
34	Road marking	15 days	Thu 5/5/16	Thu 5/19/16
35	Plants delivery for landscaping works	30 days	Tue 4/26/16	Wed 5/25/16
36	Preparatory works for landscaping works	15 days	Sat 5/14/16	Sat 5/28/16
37	Hydroseeding	5 days	Sun 5/29/16	Thu 6/2/16
38	Tree and shurb planting	30 days	Fri 6/3/16	Sat 7/2/16
39	Terminal float	62 days	Sun 7/3/16	Fri 9/2/16

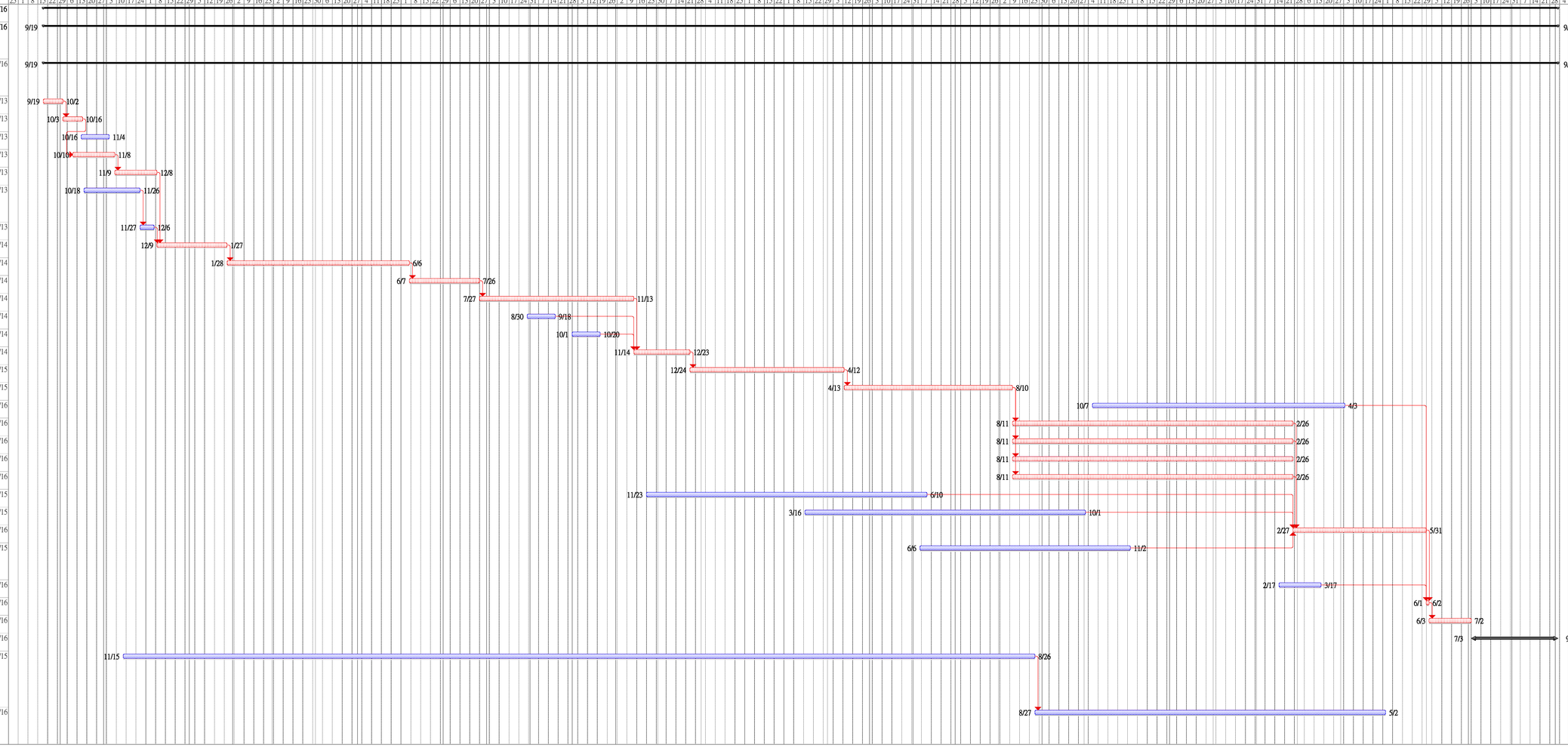


Critical tasks | Non-critical Tasks | Working days

Commencement Date: 19 September 2013
Completion Date: 2 September 2016

Master Programme

ID	Task Name	Duration	Start	Finish
1	Commence KL/2012/03 construction	1080 days	Thu 9/19/13	Fri 9/2/16
2	Section 1: Works within Portion 1 and 3	1080 days	Thu 9/19/13	Fri 9/2/16
3	Construction of Sewerage Pumping Station PS2	1080 days	Thu 9/19/13	Fri 9/2/16
4	Site possession and preparation works	14 days	Thu 9/19/13	Wed 10/2/13
5	Site clearance and setting out pumping station	14 days	Thu 10/3/13	Wed 10/16/13
6	Initial survey	20 days	Wed 10/16/13	Mon 11/4/13
7	Submission of baseline monitoring for EPD approval	30 days	Thu 10/10/13	Fri 11/8/13
8	Approval of baseline monitoring by EPD	30 days	Sat 11/9/13	Sun 12/8/13
9	Submission / approval of method statements and temporary works design	40 days	Fri 10/18/13	Tue 11/26/13
10	Mobilization of plant and delivery of materials	10 days	Wed 11/27/13	Fri 12/6/13
11	Construct sheet piling system	50 days	Mon 12/9/13	Mon 1/27/14
12	Install waling and strut, excavation to the formation level	130 days	Tue 1/28/14	Fri 6/6/14
13	Construct the base slab	50 days	Sat 6/7/14	Sat 7/26/14
14	Construct the basement	110 days	Sun 7/27/14	Thu 11/13/14
15	Install cast-in pipe for intake pipe	20 days	Sat 8/30/14	Thu 9/18/14
16	Install cast-in pipe for overflow pipe and rising main	20 days	Wed 10/1/14	Mon 10/20/14
17	Remove sheet piling and backfilling works	40 days	Fri 11/14/14	Tue 12/23/14
18	Construct upper part wall and column up to beam level	110 days	Wed 12/24/14	Sun 4/12/15
19	Construct the beam and roof	120 days	Mon 4/13/15	Mon 8/10/15
20	Construct green roof system	180 days	Wed 10/7/15	Sun 4/3/16
21	Architectural finishes and erect cladding	200 days	Tue 8/11/15	Fri 2/26/16
22	Erect handrailing, louvre, door, roller shutter etc.	200 days	Tue 8/11/15	Fri 2/26/16
23	Install rising main CHA0-CHA100	200 days	Tue 8/11/15	Fri 2/26/16
24	Construct intake and overflow pipes	200 days	Tue 8/11/15	Fri 2/26/16
25	Construct sewerage, drainage drain and manholes	200 days	Sun 11/23/14	Wed 6/10/15
26	Construct u-channel with cover	200 days	Mon 3/16/15	Thu 10/1/15
27	Construct access road inside PS	95 days	Sat 2/27/16	Tue 5/31/16
28	Erect fence wall, mini bollard light, vehicular and man access	150 days	Sat 6/6/15	Mon 11/2/15
29	Plants delivery for landscaping works	30 days	Wed 2/17/16	Thu 3/17/16
30	Hydroseeding	2 days	Wed 6/1/16	Thu 6/2/16
31	Tree and shurb planting	30 days	Fri 6/3/16	Sat 7/2/16
32	Terminal flout	62 days	Sun 7/3/16	Fri 9/2/16
33	Submission / approval of E&M services materials and delivery (Detailed programme will be submitted separately)	650 days	Fri 11/15/13	Wed 8/26/15
34	E&M building service installation. (Detailed programme will be submitted separately)	250 days	Thu 8/27/15	Mon 5/2/16

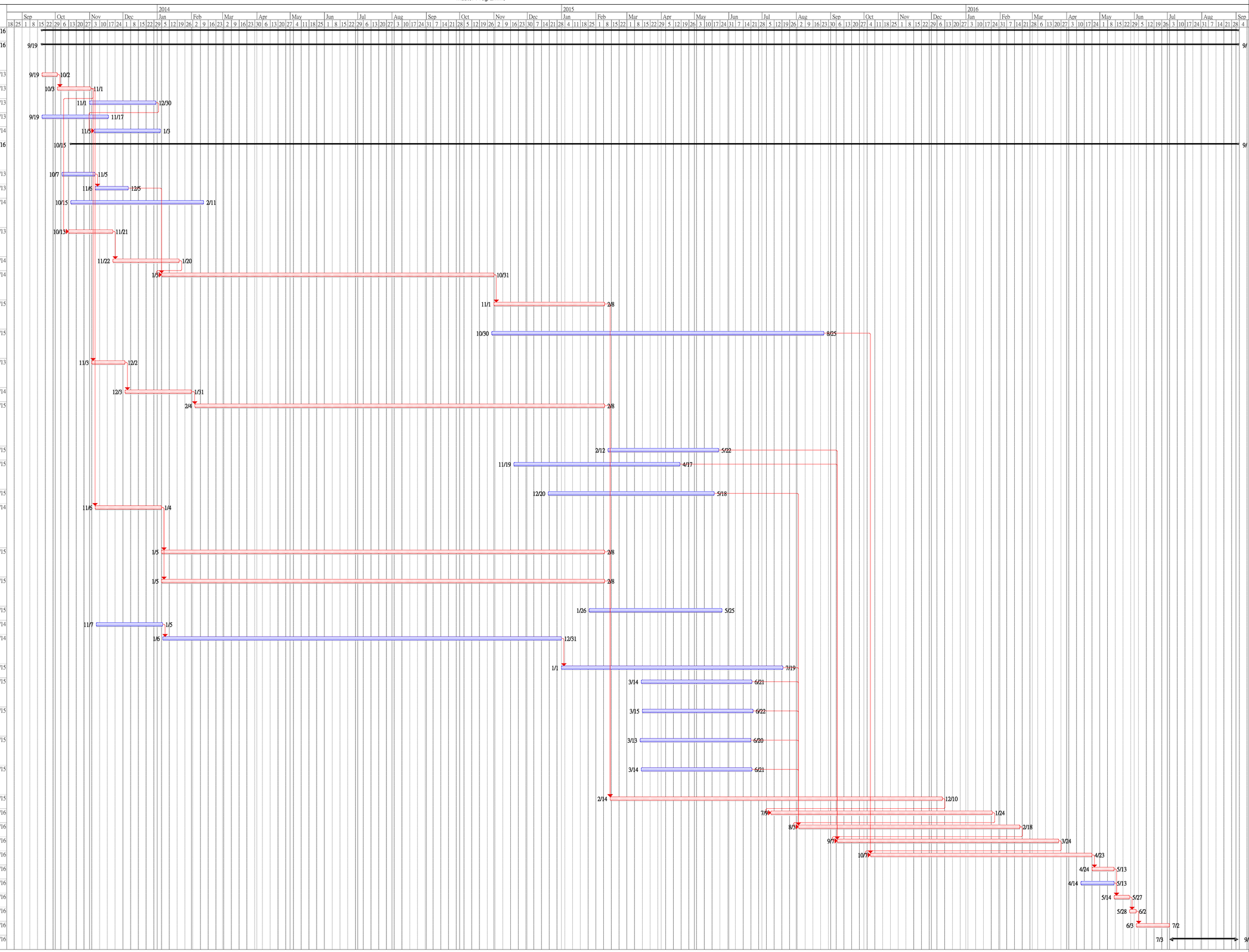


Critical tasks Non-critical tasks Working days

Commencement Date: 19 September 2013
Completion Date: 2 September 2016

Master Programme

ID	Task Name	Duration	Start	Finish
1	**Commence KL/2012/03 construction**	**1080 days**	**Thu 9/19/13**	**Fri 9/2/16**
2	**Section 1: Works within Portion 1 and 3**	**1080 days**	**Thu 9/19/13**	**Fri 9/2/16**
3	Site possession and preparation works	14 days	Thu 9/19/13	Wed 10/2/13
4	Setting out site boundary and site clearance	30 days	Thu 10/3/13	Fri 11/1/13
5	Initial joint survey	60 days	Fri 11/1/13	Mon 12/30/13
6	Obtain underground utilities plans	60 days	Thu 9/19/13	Sun 11/17/13
7	Erect hoarding, chain link fence and vehicular gate	60 days	Tue 11/5/13	Fri 1/3/14
8	**Works for Northbound of Road D2**	**1054 days**	**Tue 10/15/13**	**Fri 9/2/16**
9	Submission of baseline monitoring for EPD approval	30 days	Mon 10/7/13	Tue 11/5/13
10	Approval of baseline monitoring by EPD	30 days	Wed 11/6/13	Thu 12/5/13
11	Submission / approval of condition survey and TDMP for work within existing Kai Tak Tunnel	120 days	Tue 10/15/13	Tue 2/11/14
12	Submission / approval of construction materials and method statements for rising mains	40 days	Sun 10/13/13	Thu 11/21/13
13	Delivery of materials for rising mains	60 days	Fri 11/22/13	Mon 1/20/14
14	Install 2x500mm dia. HDPE rising main CHA100-CHA441	300 days	Sun 1/5/14	Fri 10/31/14
15	Construct 750mm dia. concrete pipes CHA716-CHA745 and 450mm dia. concrete pipes	100 days	Sat 11/1/14	Sun 2/8/15
16	Construct sewerage manhole, discharge chamber, wash-out chamber, air-valve chamber for rising main	300 days	Thu 10/30/14	Tue 8/25/15
17	Submission / approval of construction materials and method statements for watermains	30 days	Sun 11/3/13	Mon 12/2/13
18	Delivery of materials for watermains	60 days	Tue 12/3/13	Fri 1/31/14
19	Install 400mm, 450 & 600 dia. FWM CHC250-CHC921 and 450mm dia. SWM CHB250-CHB920	370 days	Tue 2/4/14	Sun 2/8/15
20	Pressure test, swabbing, sterilization and connection	100 days	Thu 2/12/15	Fri 5/22/15
21	Construct valve, fire hydrant, air-valve and wash-out chambers for watermain	150 days	Wed 11/19/14	Fri 4/17/15
22	Install irrigation system	150 days	Sat 12/20/14	Mon 5/18/15
23	Submission / approval of construction materials and delivery of materials and method statements for stormdrain and sewerage drain	60 days	Wed 11/6/13	Sat 1/4/14
24	Install different dia. of stormwater drain and construct manhole	400 days	Sun 1/5/14	Sun 2/8/15
25	Install different dia. of sewerage drain and construct manhole	400 days	Sun 1/5/14	Sun 2/8/15
26	Reconstruct existing box culvert for addition of DWFI	120 days	Mon 1/26/15	Mon 5/25/15
27	Liaison meeting with UU	60 days	Thu 11/7/13	Sun 1/5/14
28	Installation of utility by the utility undertakers along proposed footpath	360 days	Mon 1/6/14	Wed 12/31/14
29	Construct drainpit and u-channel	200 days	Thu 1/1/15	Sun 7/19/15
30	Install traffic signal at the Junction of Road D2/ Slip Road of KCR	100 days	Sat 3/14/15	Sun 6/21/15
31	Install traffic signal at the Junction of Road D2/ Road D3	100 days	Sun 3/15/15	Mon 6/22/15
32	Install traffic signal at the Junction of Road D2/ Eastern Access Road	100 days	Fri 3/13/15	Sat 6/20/15
33	Install traffic signal at the Junction of Road D2/ Western Access Road	100 days	Sat 3/14/15	Sun 6/21/15
34	Construct road gully and gully pipe	300 days	Sat 2/14/15	Thu 12/10/15
35	Construct road kerb	200 days	Thu 7/9/15	Sun 1/24/16
36	Construct footpath, planting area and concrete run-in	200 days	Mon 8/3/15	Thu 2/18/16
37	Construct central divider	200 days	Mon 9/7/15	Thu 3/24/16
38	Construct flexible carriageway	200 days	Wed 10/7/15	Sat 4/23/16
39	Road marking	20 days	Sun 4/24/16	Fri 5/13/16
40	Plants delivery for landscaping works	30 days	Thu 4/14/16	Fri 5/13/16
41	Preparatory works for landscaping works	14 days	Sat 5/14/16	Fri 5/27/16
42	Hydroseeding	6 days	Sat 5/28/16	Thu 6/2/16
43	Tree and shurb planting	30 days	Fri 6/3/16	Sat 7/2/16
44	Terminal float	62 days	Sun 7/3/16	Fri 9/2/16

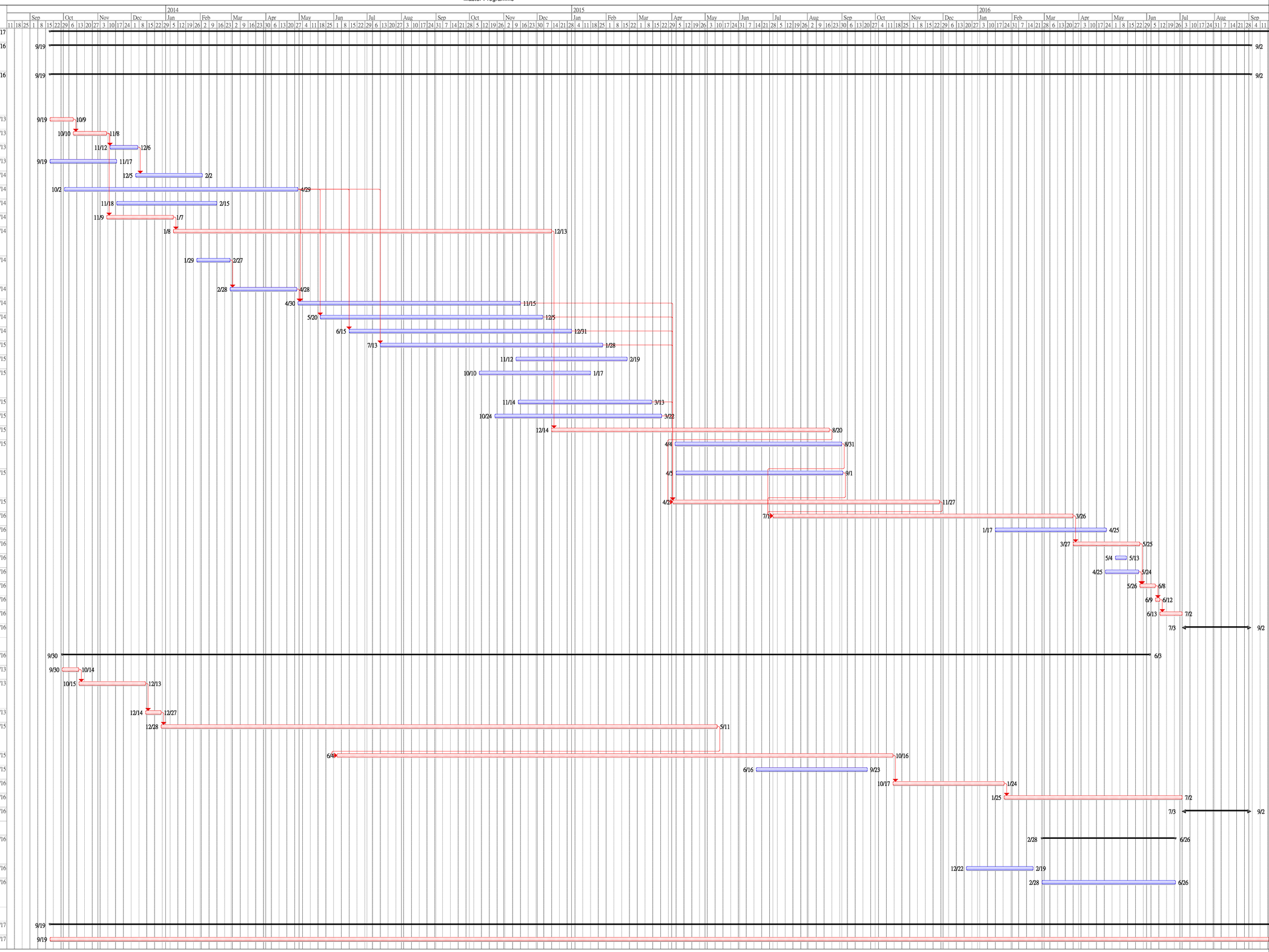


Critical tasks | Non-critical tasks | Working days

Commencement Date: 19 September 2013
Completion Date: 2 September 2016

Master Programme

ID	Task Name	Duration	Start	Finish
1	Commence KL/2012/03 construction	1445 days	Thu 9/19/13	Sat 9/2/17
2	Section 1: Works within Portion 1 and 3	1080 days	Thu 9/19/13	Fri 9/2/16
3	Widening of Existing Footpaths at Sung Wong Toi Road and To Kwa Wan Road	1080 days	Thu 9/19/13	Fri 9/2/16
4	Site possession and preparation works	21 days	Thu 9/19/13	Wed 10/9/13
5	Setting out site boundary and site clearance	30 days	Thu 10/10/13	Fri 11/8/13
6	Initial joint survey	25 days	Tue 11/12/13	Fri 12/6/13
7	Obtain underground utilities plans	60 days	Thu 9/19/13	Sun 11/17/13
8	Erect hoarding, chain link fence and vehicular gate	60 days	Thu 12/5/13	Sun 2/2/14
9	Apply XP for roadworks	210 days	Wed 10/2/13	Tue 4/29/14
10	Approval of TTA drawings	90 days	Mon 11/18/13	Sat 2/15/14
11	Liaison meeting with UU	60 days	Sat 11/9/13	Tue 1/7/14
12	Installation of utility by the utility undertakers along proposed footpath, XP to be applied by UU	340 days	Wed 1/8/14	Sat 12/13/14
13	Submission / approval of construction materials and method statements for watermains	30 days	Wed 1/29/14	Thu 2/27/14
14	Delivery of materials for watermains	60 days	Fri 2/28/14	Mon 4/28/14
15	Install 300mm dia. fresh water main CHA0-CHA283	200 days	Wed 4/30/14	Sat 11/15/14
16	Install 300mm dia. fresh water main CHB0-CHB555	200 days	Tue 5/20/14	Fri 12/5/14
17	Install 450mm dia. salt water main CHA0-CHA555	200 days	Sun 6/15/14	Wed 12/31/14
18	Install 800mm dia. salt water main CHD0-CHD52	200 days	Sun 7/13/14	Wed 1/28/15
19	Pressure test, swabbing, sterilization and connection	100 days	Wed 11/12/14	Thu 2/19/15
20	Construct valve, fire hydrant, air-valve and wash-out chambers for watermain	100 days	Fri 10/10/14	Sat 1/17/15
21	Install irrigation system	120 days	Fri 11/14/14	Fri 3/13/15
22	Construct u-channel, drainpit and stormwater drain	150 days	Fri 10/24/14	Sun 3/22/15
23	Construct road gully and gully pipe	250 days	Sun 12/14/14	Thu 8/20/15
24	Application and install traffic signal at the Junction of Sung Wong Toi Road / To Kwa Wan Road	150 days	Sat 4/4/15	Mon 8/31/15
25	Application and install traffic signal at the Junction along Sung Wong Toi Road	150 days	Sun 4/5/15	Tue 9/1/15
26	Construct road kerb and new footpath	240 days	Thu 4/2/15	Fri 11/27/15
27	Construct carriageway at the existing footpath	270 days	Wed 7/1/15	Sat 3/26/16
28	Erect traffic sign	100 days	Sun 1/17/16	Mon 4/25/16
29	Re-surface existing carriageway	60 days	Sun 3/27/16	Wed 5/25/16
30	Road marking	10 days	Wed 5/4/16	Fri 5/13/16
31	Plants delivery for landscaping works	30 days	Mon 4/25/16	Tue 5/24/16
32	Preparatory works for landscaping works	14 days	Thu 5/26/16	Wed 6/8/16
33	Hydroseeding	4 days	Thu 6/9/16	Sun 6/12/16
34	Tree and shurb planting	20 days	Mon 6/13/16	Sat 7/2/16
35	Terminal float	62 days	Sun 7/3/16	Fri 9/2/16
36				
37	Construction of Box Culverts B6	978 days	Mon 9/30/13	Fri 6/3/16
38	Site possession and preparation works	15 days	Mon 9/30/13	Mon 10/14/13
39	Submission / approval of construction materials and method statements for box culverts B6	60 days	Tue 10/15/13	Fri 12/13/13
40	Plant mobilization	14 days	Sat 12/14/13	Fri 12/27/13
41	Construct temporary works and excavation to the formation level for box culverts B6	500 days	Sat 12/28/13	Mon 5/11/15
42	Construct drainage box culverts B6	500 days	Wed 6/4/14	Fri 10/16/15
43	Precast box culvert preparation works	100 days	Tue 6/16/15	Wed 9/23/15
44	Modification of seawall	100 days	Sat 10/17/15	Sun 1/24/16
45	Soil backfilling works	160 days	Mon 1/25/16	Sat 7/2/16
46	Terminal float	62 days	Sun 7/3/16	Fri 9/2/16
47				
48	Demolition of Kowloon East DWFI pumping station	120 days	Sun 2/28/16	Sun 6/26/16
49	Submission / approval of method statements	60 days	Tue 12/22/15	Fri 2/19/16
50	Demolish Kowloon East DWFI pumping station (To be carried out after completion of NPS)	120 days	Sun 2/28/16	Sun 6/26/16
51				
52	Section 1A	1445 days	Thu 9/19/13	Sat 9/2/17
53	Establishment works for Section 1	1445 days	Thu 9/19/13	Sat 9/2/17

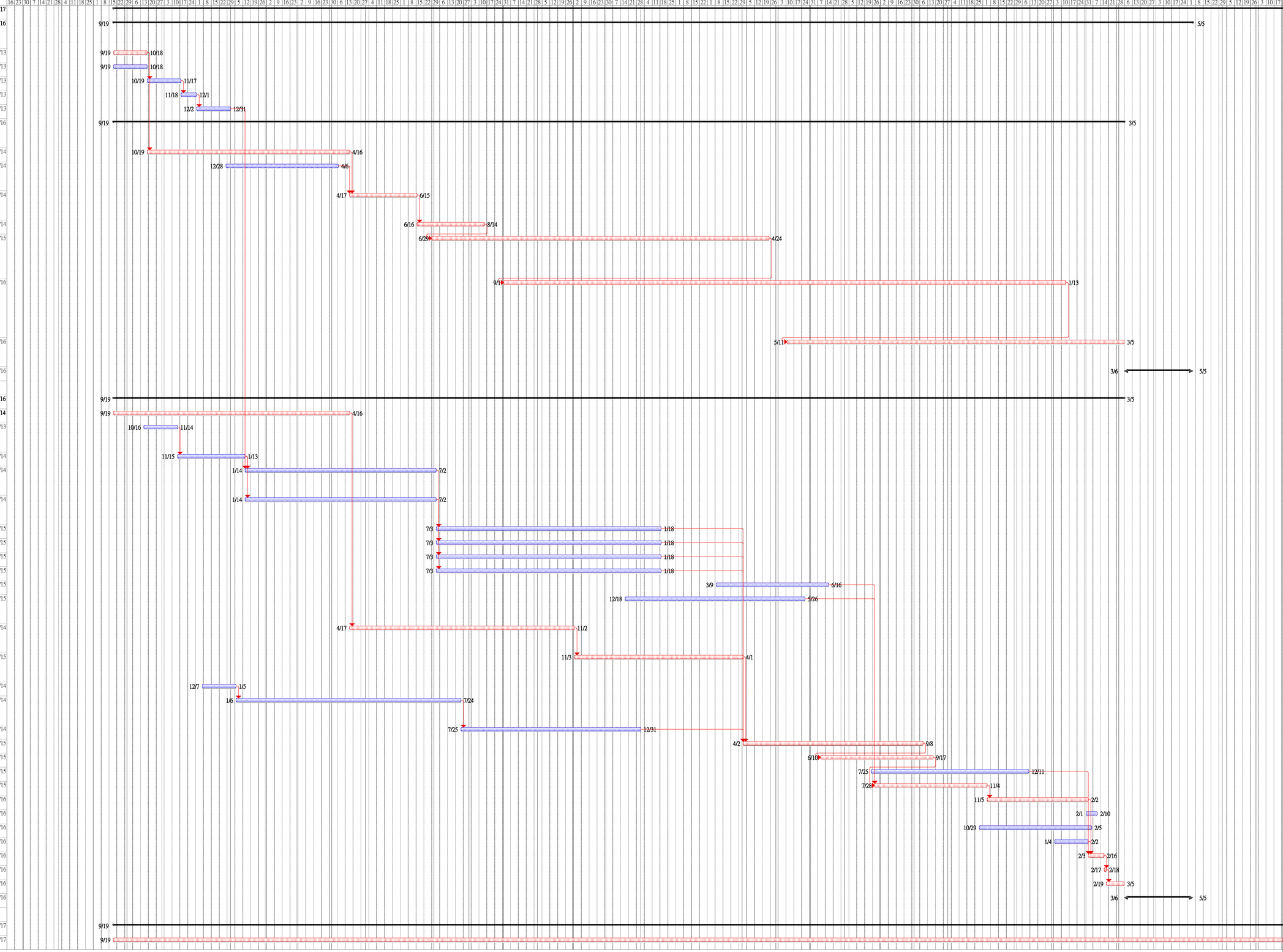


Critical tasks Non-critical tasks Working days

Commencement Date: 19 September 2013
Completion Date: 2 September 2016

Master Programme

ID	Task Name	Duration	Start	Finish
1	Commence KL/2012/03 construction	1325 days	Thu 9/19/13	Fri 5/5/17
2	Section 2: Works within Portion 1 and 4	960 days	Thu 9/19/13	Thu 5/5/16
3	Setting out site boundary	30 days	Thu 9/19/13	Fri 10/18/13
4	Obtain underground utilities plans	30 days	Thu 9/19/13	Fri 10/18/13
5	Site clearance	30 days	Sat 10/19/13	Sun 11/17/13
6	Initial survey	14 days	Mon 11/18/13	Sun 12/1/13
7	Erect hoarding, chain link fence and vehicular gate	30 days	Mon 12/2/13	Tue 12/31/13
8	Installation of rising main along To Kwa Wan Road	899 days	Thu 9/19/13	Sat 3/5/16
9	Application of XP and TTA for approval	180 days	Sat 10/19/13	Wed 4/16/14
10	Submission / approval of method statement, temporary works design and delivery of materials to site	100 days	Sat 12/28/13	Sun 4/6/14
11	Inspection pits for determining the alignment of rising mains	60 days	Thu 4/17/14	Sun 6/15/14
12	Allow for utilities diversion works by the UU	60 days	Mon 6/16/14	Thu 8/14/14
13	Construct jacking pits at different locations (Locations will be subject to TMLG requirements. Detailed programme will be submitted after approval of TTA)	300 days	Sun 6/29/14	Fri 4/24/15
14	Install 2x630mm HDPE rising main CHB0-CHB1050 (Alignment will be subject to TMLG requirements. Detailed programme will be submitted after approval of TTA)	500 days	Mon 9/1/14	Wed 1/13/16
15	Construct sewerage manhole, discharge chamber, wash-out chamber, air-valve chamber for rising main	300 days	Mon 5/11/15	Sat 3/5/16
16	Terminal float	61 days	Sun 3/6/16	Thu 5/5/16
17				
18	Construction of Road L19	899 days	Thu 9/19/13	Sat 3/5/16
19	Application of XP and TTA for approval	210 days	Thu 9/19/13	Wed 4/16/14
20	Submission / approval of construction materials and method statements for rising mains	30 days	Wed 10/16/13	Thu 11/14/13
21	Delivery of materials for rising mains	60 days	Fri 11/15/13	Mon 1/13/14
22	Install 2x630mm HDPE rising main CHB1089-CHB1159	170 days	Tue 1/14/14	Wed 7/2/14
23	Install 2x750mm dia. concrete pipes CHB1159-CHB1300	170 days	Tue 1/14/14	Wed 7/2/14
24	Install 600mm and 750 dia. stormwater drain	200 days	Thu 7/3/14	Sun 1/18/15
25	Install 300mm dia. sewerage drain	200 days	Thu 7/3/14	Sun 1/18/15
26	Install 200mm dia. fresh water main CHE0-CHE402	200 days	Thu 7/3/14	Sun 1/18/15
27	Install NS125 & NS63 salt water main CHE0-CHE100	200 days	Thu 7/3/14	Sun 1/18/15
28	Pressure test, swabbing, sterilization and connection	100 days	Mon 3/9/15	Tue 6/16/15
29	Construct sewerage manhole, discharge chamber, wash-out chamber, air-valve chamber for rising main	160 days	Thu 12/18/14	Tue 5/26/15
30	Install 2x630mm HDPE rising main CHB1050-CHB1089 by trenchless method	200 days	Thu 4/17/14	Sun 11/2/14
31	Install 2x750mm and 2x900mm dia. concrete pipes CHB1300-CHB1398	150 days	Mon 11/3/14	Wed 4/1/15
32	Liaison meeting with UU	30 days	Sat 12/7/13	Sun 1/5/14
33	Installation of utility by the utility undertakers along proposed footpath	200 days	Mon 1/6/14	Thu 7/24/14
34	Utilities diversion works by the UU	160 days	Fri 7/25/14	Wed 12/31/14
35	Construct road gully and gully pipe	160 days	Thu 4/2/15	Tue 9/8/15
36	Construct road kerb	100 days	Wed 6/10/15	Thu 9/17/15
37	Construct footpath, planting area and concrete run-in	140 days	Sat 7/25/15	Fri 12/11/15
38	Construct central refuge	100 days	Tue 7/28/15	Wed 11/4/15
39	Construct flexible carriageway	90 days	Thu 11/5/15	Tue 2/2/16
40	Road marking	10 days	Mon 2/1/16	Wed 2/10/16
41	Relocate existing directional sign	100 days	Thu 10/29/15	Fri 2/5/16
42	Plants delivery for landscaping works	30 days	Mon 1/4/16	Tue 2/2/16
43	Preparatory works for landscaping works	14 days	Wed 2/3/16	Tue 2/16/16
44	Hydroseeding	2 days	Wed 2/17/16	Thu 2/18/16
45	Tree and shurb planting	16 days	Fri 2/19/16	Sat 3/5/16
46	Terminal float	61 days	Sun 3/6/16	Thu 5/5/16
47				
48	Section 2A	1325 days	Thu 9/19/13	Fri 5/5/17
49	Establishment works for Section 2	1325 days	Thu 9/19/13	Fri 5/5/17

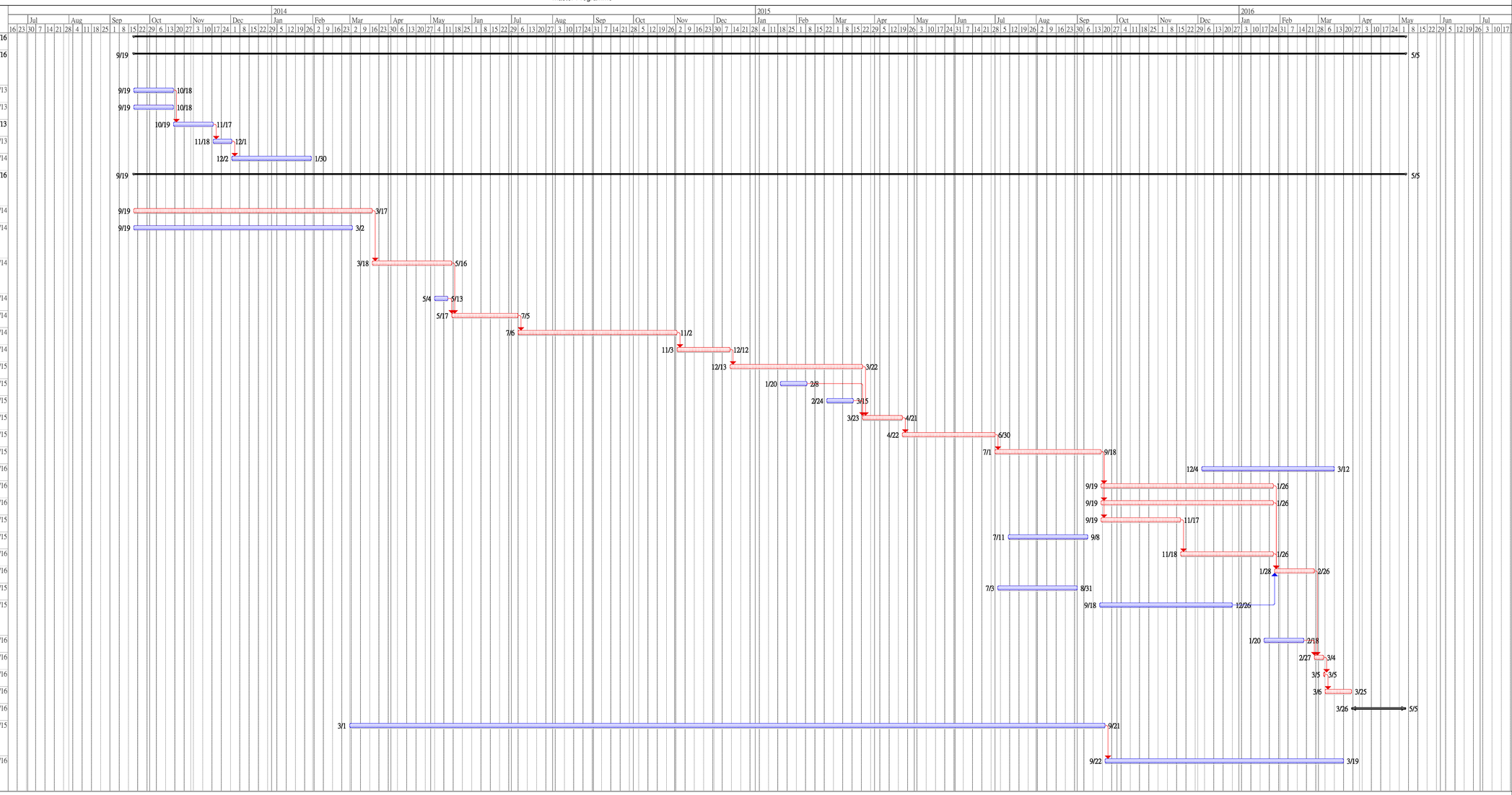


Critical tasks | Non-critical tasks | Working days

Commencement Date: 19 September 2013
Completion Date: 5 May 2016

Master Programme

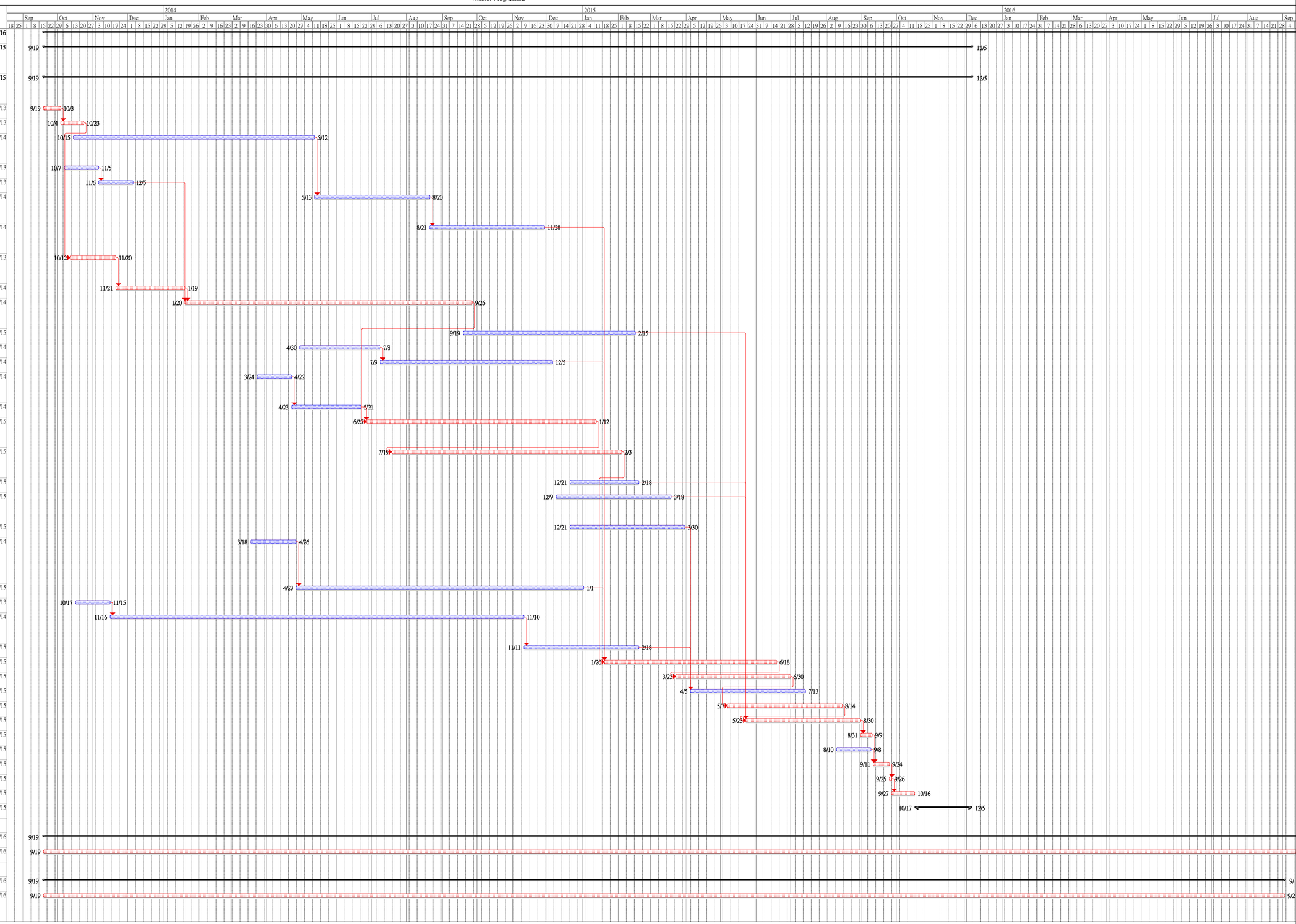
ID	Task Name	Duration	Start	Finish
1	**Commence KL/2012/03 construction**	**960 days**	**Thu 9/19/13**	**Thu 5/5/16**
2	**Section 2: Works within Portion 1 and 4**	**960 days**	**Thu 9/19/13**	**Thu 5/5/16**
3	Setting out site boundary	30 days	Thu 9/19/13	Fri 10/18/13
4	Obtain underground utilities plans	30 days	Thu 9/19/13	Fri 10/18/13
5	Site clearance	**30 days**	**Sat 10/19/13**	**Sun 11/17/13**
6	Initial survey	14 days	Mon 11/18/13	Sun 12/1/13
7	Erect hoarding, chain link fence and vehicular gate	60 days	Mon 12/2/13	Thu 1/30/14
8	**Construction of sewrage pumping station NPS**	**960 days**	**Thu 9/19/13**	**Thu 5/5/16**
9	Site Possession	180 days	Thu 9/19/13	Mon 3/17/14
10	Submission / approval of method statements and temporary work design	165 days	Thu 9/19/13	Sun 3/2/14
11	Demolition work of ex-EMSD Sung Wong Toi vehicle repair and maintenance workshop by others	60 days	Tue 3/18/14	Fri 5/16/14
12	Mobilization	10 days	Sun 5/4/14	Tue 5/13/14
13	Construct sheet piling system	50 days	Sat 5/17/14	Sat 7/5/14
14	Install waling and strut, excavation to the formation level	120 days	Sun 7/6/14	Sun 11/2/14
15	Construct the base slab	40 days	Mon 11/3/14	Fri 12/12/14
16	Construct the basement	100 days	Sat 12/13/14	Sun 3/22/15
17	Install cast-in pipe for intake pipe	20 days	Tue 1/20/15	Sun 2/8/15
18	Install cast-in pipe for overflow pipe and rising main	20 days	Tue 2/24/15	Sun 3/15/15
19	Remove sheet piling and backfilling works	30 days	Mon 3/23/15	Tue 4/21/15
20	Construct upper part wall and column up to roof level	70 days	Wed 4/22/15	Tue 6/30/15
21	Construct the beam and roof	80 days	Wed 7/1/15	Fri 9/18/15
22	Establishment of green roof system	100 days	Fri 12/4/15	Sat 3/12/16
23	Architectural finishes and erect granite tile	130 days	Sat 9/19/15	Tue 1/26/16
24	Erect handrailing, louvre, door, roller shutter etc.	130 days	Sat 9/19/15	Tue 1/26/16
25	Install rising main	60 days	Sat 9/19/15	Tue 11/17/15
26	Construct inlet and overflow pipes	60 days	Sat 7/11/15	Tue 9/8/15
27	Construct sewerage, drainage drain and manhole	70 days	Wed 11/18/15	Tue 1/26/16
28	Construct assess road	30 days	Thu 1/28/16	Fri 2/26/16
29	Construct u-channel with cover	60 days	Fri 7/3/15	Mon 8/31/15
30	Erect fence wall, vehicular and man access and mini bollard light	100 days	Fri 9/18/15	Sat 12/26/15
31	Plants delivery for landscaping works	30 days	Wed 1/20/16	Thu 2/18/16
32	Preparatory works for landscaping works	7 days	Sat 2/27/16	Fri 3/4/16
33	Hydroseeding	1 day	Sat 3/5/16	Sat 3/5/16
34	Tree and shurb planting	20 days	Sun 3/6/16	Fri 3/25/16
35	Terminal float	41 days	Sat 3/26/16	Thu 5/5/16
36	Submission / approval of E&M services materials and delivery (Detailed programme will be submitted separately)	570 days	Sat 3/1/14	Mon 9/21/15
37	E&M building service installation. (Details programme will be submitted separately)	180 days	Tue 9/22/15	Sat 3/19/16



Critical tasks Non-critical tasks Working days

Commencement Date: 19 September 2013
Completion Date: 5 May 2016

ID	Task Name	Duration	Start	Finish
1	Commence KL/2012/03 construction	1173 days	Thu 9/19/13	Sun 12/4/16
2	Section 3: Works within Portion 1	808 days	Thu 9/19/13	Sat 12/5/15
3	Works for Part of Road D2	808 days	Thu 9/19/13	Sat 12/5/15
4	Site possession and preparation works	15 days	Thu 9/19/13	Thu 10/3/13
5	Site clearance and setting out site boundary	20 days	Fri 10/4/13	Wed 10/23/13
6	Apply XP for roadworks at junction of SWTR and TKWR and TTA approval	210 days	Tue 10/15/13	Mon 5/12/14
7	Submission of baseline monitoring for EPD approval	30 days	Mon 10/7/13	Tue 11/5/13
8	Approval of baseline monitoring by EPD	30 days	Wed 11/6/13	Thu 12/5/13
9	Install 400mm dia. fresh water main CHC0-CHC30	100 days	Tue 5/13/14	Wed 8/20/14
10	Install 300 and 450mm dia. salt water main CHB0-CHB30	100 days	Thu 8/21/14	Fri 11/28/14
11	Submission / approval of construction materials and method statements for rising mains	40 days	Sat 10/12/13	Wed 11/20/13
12	Delivery of materials for rising mains	60 days	Thu 11/21/13	Sun 1/19/14
13	Construct 750mm dia. concrete pipes CHA450-CHA630	250 days	Mon 1/20/14	Fri 9/26/14
14	Construct sewerage manhole for rising main	150 days	Fri 9/19/14	Sun 2/15/15
15	Construct jacking pits	70 days	Wed 4/30/14	Tue 7/8/14
16	Install 2x750mm dia. rising main CHA636-CHA716	150 days	Wed 7/9/14	Fri 12/5/14
17	Submission / approval of construction materials and method statements for watermains	30 days	Mon 3/24/14	Tue 4/22/14
18	Delivery of materials for watermains	60 days	Wed 4/23/14	Sat 6/21/14
19	Install 400mm dia. fresh water main CHC30-CHC250	200 days	Fri 6/27/14	Mon 1/12/15
20	Install 300 and 450mm dia. salt water main CHB30-CHB250	200 days	Sat 7/19/14	Tue 2/3/15
21	Pressure test, swabbing, sterilization and connection	60 days	Sun 12/21/14	Wed 2/18/15
22	Construct valve, air-valve and wash-out chambers for watermain	100 days	Tue 12/9/14	Wed 3/18/15
23	Install irrigation system	100 days	Sun 12/21/14	Mon 3/30/15
24	Submission / approval of construction materials and delivery of materials and method statements for stormdrain drain	40 days	Tue 3/18/14	Sat 4/26/14
25	Install stormwater drain and manhole	250 days	Sun 4/27/14	Thu 1/1/15
26	Liaison meeting with UU	30 days	Thu 10/17/13	Fri 11/15/13
27	Installation of utility by the utility undertakers along proposed footpath and CLP tunnel	360 days	Sat 11/16/13	Mon 11/10/14
28	Construct drainpit and u-channel	100 days	Tue 11/11/14	Wed 2/18/15
29	Construct road gully and gully pipe	150 days	Tue 1/20/15	Thu 6/18/15
30	Construct road kerb	100 days	Mon 3/23/15	Tue 6/30/15
31	Construct footpath, planting area and concrete run-in	100 days	Sun 4/5/15	Mon 7/13/15
32	Construct central divider	100 days	Thu 5/7/15	Fri 8/14/15
33	Construct flexible carriageway	100 days	Sat 5/23/15	Sun 8/30/15
34	Road marking	10 days	Mon 8/31/15	Wed 9/9/15
35	Plants delivery for landscaping works	30 days	Mon 8/10/15	Tue 9/8/15
36	Preparatory works for landscaping works	14 days	Fri 9/11/15	Thu 9/24/15
37	Hydroseeding	2 days	Fri 9/25/15	Sat 9/26/15
38	Tree and shurb planting	20 days	Sun 9/27/15	Fri 10/16/15
39	Terminal float	50 days	Sat 10/17/15	Sat 12/5/15
40				
41	Section 3A	1173 days	Thu 9/19/13	Sun 12/4/16
42	Establishment works for Section 3	1173 days	Thu 9/19/13	Sun 12/4/16
43				
44	Section 4	1080 days	Thu 9/19/13	Fri 9/2/16
45	Perservation and preotection of trees within Portions 1 to 4	1080 days	Thu 9/19/13	Fri 9/2/16

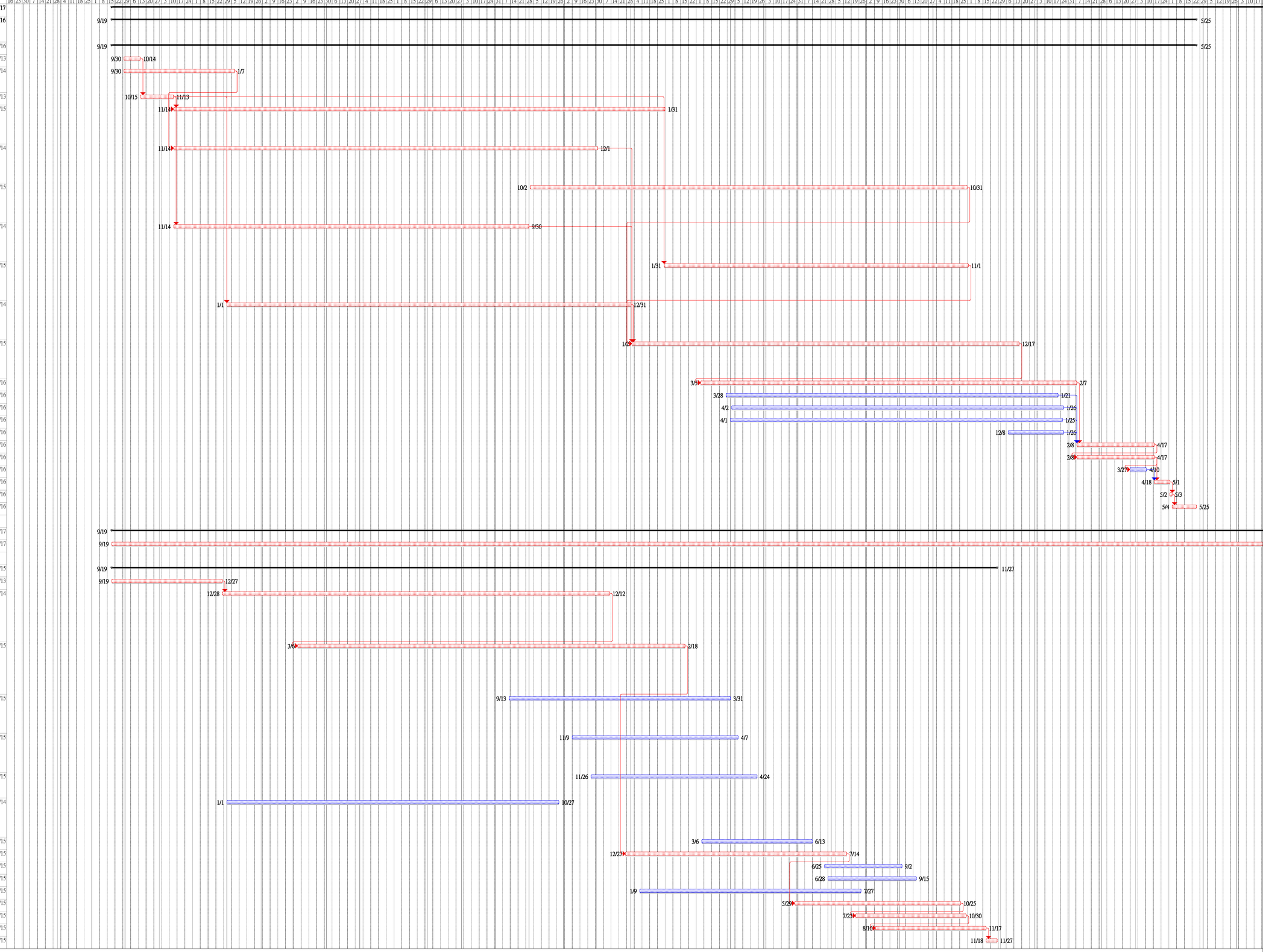


Critical tasks Non-critical tasks Working days

Commencement Date: 19 September 2013
Completion Date: 5 December 2015

Master Programme

ID	Task Name	Duration	Start	Finish
1	Commence KL/2012/03 construction	1345 days	Thu 9/19/13	Thu 5/25/17
2	Section 5: Portion 1 (Subject to Excision)	980 days	Thu 9/19/13	Wed 5/25/16
3	Works for Part of Road D2 (Footpath only)	980 days	Thu 9/19/13	Wed 5/25/16
4	Site possession and preparation works	15 days	Mon 9/30/13	Mon 10/14/13
5	Awaiting for the notifcation of commencement of works by the Engineer	100 days	Mon 9/30/13	Tue 1/7/14
6	Interface works meeting with CLP	30 days	Tue 10/15/13	Wed 11/13/13
7	Construct of CLP tunnel by CLP CH67 to CH250 (Exact duration will be agreed with CLP)	444 days	Thu 11/14/13	Sat 1/31/15
8	Construct of CLP tunnel by CLP CH527 to CH585 (Exact duration will be agreed with CLP)	383 days	Thu 11/14/13	Mon 12/1/14
9	Construct of CLP tunnel by CLP CH385 to CH527(Exact duration will be agreed with CLP)	395 days	Thu 10/2/14	Sat 10/31/15
10	Construct of CLP tunnel by CLP CH250 to CH385 (Exact duration will be agreed with CLP)	321 days	Thu 11/14/13	Tue 9/30/14
11	Construct of CLP tunnel by CLP CH0 to CH67 Exact duration will be agreed with CLP)	275 days	Sat 1/31/15	Sun 11/1/15
12	Construct of CLP tunnel by CLP CH585 to CH724 (Exact duration will be agreed with CLP)	365 days	Wed 1/1/14	Wed 12/31/14
13	Installation of utility by the utility undertakers along proposed footpath (Exact duration will be agreed with UU)	350 days	Fri 1/2/15	Thu 12/17/15
14	Construct drainpit and u-channel	340 days	Thu 3/5/15	Sun 2/7/16
15	Install stormwater drain, sewerage drain and manholes	300 days	Sat 3/28/15	Thu 1/21/16
16	Install FWM and SWM and chambers	300 days	Thu 4/2/15	Tue 1/26/16
17	Install irrigation system	300 days	Wed 4/1/15	Mon 1/25/16
18	Install fire hydrant	50 days	Tue 12/8/15	Tue 1/26/16
19	Install street lighting	70 days	Mon 2/8/16	Sun 4/17/16
20	Construct footpath, planting area and concrete run-in	70 days	Mon 2/8/16	Sun 4/17/16
21	Plants delivery for landscaping works	15 days	Sun 3/27/16	Sun 4/10/16
22	Preparatory works for landscaping works	14 days	Mon 4/18/16	Sun 5/1/16
23	Hydroseeding	2 days	Mon 5/2/16	Tue 5/3/16
24	Tree and shurb planting	22 days	Wed 5/4/16	Wed 5/25/16
25				
26	Section 5A: (Subject to Excision)	1345 days	Thu 9/19/13	Thu 5/25/17
27	Establishment works for Section 5	1345 days	Thu 9/19/13	Thu 5/25/17
28				
29	Section 7A: Portion 1 (Subject to Excision)	800 days	Thu 9/19/13	Fri 11/27/15
30	Awaiting for the notifcation of commencement of works by the I	100 days	Thu 9/19/13	Fri 12/27/13
31	Construct one 500mm dia., two 1000mm dia. District Cooling System (DCS) chilled water pipes and four 1400mm dia. seawater pipes	350 days	Sat 12/28/13	Fri 12/12/14
32	Construct two DCS chilled water pipes tee to the building lots. The diameter of DCS chilled water pipes are 200mm, 500mm and 800mm subject to various locations	350 days	Thu 3/6/14	Wed 2/18/15
33	Construct valve chambers, instrumentation chambers, access manhole, thrust blocks, insulation provision for the DCS chilled water pipes	200 days	Sat 9/13/14	Tue 3/31/15
34	Construct the leakage detection system for DCS chilled water pipes	150 days	Sun 11/9/14	Tue 4/7/15
35	Construct the cable ducts and associated draw pits for the communication system	150 days	Wed 11/26/14	Fri 4/24/15
36	Interfacing works with EMSD 1020EM12A Contractor for connection of the proposed four seawater pipes and three chilled water pipes in Section C to their construction of seawater pipes and chilled water pipes	300 days	Wed 1/1/14	Mon 10/27/14
37	Testing and commissioning of the works	100 days	Fri 3/6/15	Sat 6/13/15
38	Install FWM and SWM and chambers	200 days	Sat 12/27/14	Tue 7/14/15
39	Pressure test, swabbing, sterilization and connection	70 days	Thu 6/25/15	Wed 9/2/15
40	Construct valve, fire hydrant, air-valve and wash-out chambers f	80 days	Sun 6/28/15	Tue 9/15/15
41	Install stormwater drain, sewerage drain and construct manhole	200 days	Fri 1/9/15	Mon 7/27/15
42	Construct road gully and gully pipe	150 days	Fri 5/29/15	Sun 10/25/15
43	Construct road kerb	100 days	Thu 7/23/15	Fri 10/30/15
44	Construct flexible carriageway	100 days	Mon 8/10/15	Tue 11/17/15
45	Road marking	10 days	Wed 11/18/15	Fri 11/27/15



Critical tasks Working days

Commencement Date:
Completion Date: