MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section and
Mong Kok East to Hung Hom Section

Monthly EM&A Report No. 30

[Period from 1 to 28 February 2015]

(March 2015)

Verified by: Fredrick Leong

Position: Independent Environmental Checker

Date: 12 Mar. 2015

MTR Corporation Limited

Shatin to Central Link –
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Mong Kok East to Hung Hom Section

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[Period from 1 to 28 February 2015]

(March 2015)

Certified by: Richard Kwan

Position: Environmental Team Leader

Date: 13 March 2015

AECOM

MTR Corporation Limited

Consultancy Agreements
No. C11033 & C11033B

Shatin to Central Link - Tai Wai to Hung Hom Section and Mong Kok East to Hung Hom Section

Monthly EM&A Report No. 30

[Period from 1 to 28 February 2015]

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1 INTRODUCTION

1.1 Background

1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).

1.1.2 Shatin to Central Link – Tai Wai to Hung Hom Section [SCL (TAW-HUH)] and Shatin to Central Link – Mong Kok East to Hung Hom Section [SCL (MKK-HUH) (hereafter referred to as "the Project") are parts of the SCL. Shatin to Central Link – Stabling Sidings at Hung Hom Freight Yard [SCL (HHS)] is a proposed stabling sidings option for SCL (TAW – HUH) at the former freight yard in Hung Hom.

1.1.3 The Environmental Impact Assessment (EIA) Reports for SCL (TAW-HUH) (Register No.: AEIAR-167/2012), SCL (MKK-HUH) (Register No.: AEIAR-165/2012) and SCL (HHS) (Register No.: AEIAR-164/2012) were approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Reports, two Environmental Permits (EPs) were granted on 22 March 2012, one covers SCL (TAW-HUH) and SCL (HHS) (EP No: EP-438/2012) and the other covers SCL (MKK-HUH) and SCL (HHS) (EP No.: EP-437/2012), for their construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-438/2012 and the latest Environmental Permit (EP No: EP-438/2012/H) was issued by Director of Environmental Protection (DEP) on 10 September 2014.

1.2 Project Programme

1.2.1 Ten civil construction works contracts of the Project have been awarded since July 2012. The construction of the Project commenced in September 2012 and is expected to complete in 2018. **Table 1.1** summarises the information of the awarded Works Contracts.

Table 1.1 Summary of Awarded Works Contracts

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1101	Ma On Shan Line Modification Works(1)	December 2012	Sun Fook Kong Joint Venture (SFKJV)	ANewR Consulting Ltd. (ANewR)
1102	Hin Keng Station and Approach Structures	October 2013	Penta-Ocean Construction Co. Ltd.	Cinotech Consultants Ltd. (Cinotech)
1103	Hin Keng to Diamond Hill Tunnels	February 2013	Vinci Construction Grands Projets	Ove Arup & Partners Hong Kong Ltd.
1106	Diamond Hill Station	March 2013	Sembawang – Leader Joint Venture	Cinotech Consultants Ltd. (Cinotech)
1107	Diamond Hill to Kai Tak Tunnels	May 2013	Chun Wo - SELI Joint Venture	Cinotech Consultants Ltd. (Cinotech)
1108	Kai Tak Station and Associated Tunnels	June 2013	Kaden -Chun Wo Joint Venture	Environmental Pioneers & Solutions Ltd.
1108A	Kai Tak Barging Point Facilities	September 2012	Concentric – Hong Kong River Joint Venture (CCL-HKR JV)	Cinotech Consultants Ltd. (Cinotech)

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1109	Stations and Tunnels of Kowloon City Section	September 2012	Samsung-Hsin Chong JV (SSHCJV)	ERM-Hong Kong Limited (ERM)
1111	Hung Hom North Approach Tunnels	January 2013	Gammon-Kaden SCL1111 JV	AECOM Asia Co. Ltd.
1112	Hung Hom Station and Stabling Sidings	June 2013	Leighton Contractors (Asia) Limited	SMEC Asia Ltd., HK

Note:
(1) Only the EM&A works for works areas at Tai Wai Mei Tin Road and the offsite temporary storage areas are included in this Report.

1.3 Purpose of the Report

1.3.1 The Environmental Monitoring and Audit (EM&A) programme for the Project commenced in September 2012. This is the thirtieth EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor's ETs during the period from 1 to 28 February 2015.

2 ENVIRONMENTAL MONITORING AND AUDIT

2.1.1 The construction of SCL has been divided into different civil construction works contracts which are covered by EP No. EP-437/2012 and/or EP-438/2012/H. As per the EP Conditions, EM&A Reports for the works contracts as shown in the table below have been prepared by the respective Contractor's ETs.

Works Contract	Contract Title	Works Covered in Environmental Permit No.
1101	Ma On Shan Modification Works	EP-438/2012/H
1102	Hin Keng Station and Approach Structures	EP-438/2012/H
1103	Hin Keng to Diamond Hill Tunnels	EP-438/2012/H
1106	Diamond Hill Station	EP-438/2012/H
1107	Diamond Hill to Kai Tak Tunnels	EP-438/2012/H
1108	Kai Tak Station and Associated Tunnels	EP-438/2012/H
1108A	Kai Tak Barging Point Facilities	EP-438/2012/H
1109	Stations and Tunnels of Kowloon City Section	EP-438/2012/H
1111	Hung Hom North Approach Tunnels	EP-437/2012 & EP-438/2012/H
1112	Hung Hom Station and Stabling Sidings	EP-437/2012 & EP-438/2012/H

2.1.2 The EM&A Reports for Works Contracts 1108A, 1109, 1101, 1111, 1103, 1106, 1107, 1112, 1108 and 1102 prepared by the respective Contractor's ETs are provided in **Appendices A** to **J,** respectively. The EM&A Reports provide details of the project information, EM&A requirements, impact monitoring and audit results for the corresponding Contracts.

2.1.3 A summary of the major construction activities undertaken by the respective Contractors of various Works Contracts during the reporting period are presented in **Table 2.1**.

Table 2.1 Summary of Major Construction Activities in the Reporting Period

Works Contract	Site	Construction Activities
1101 (1)	Tai Wai Mei Tin Road	• N/A
1102	Hin Keng Station and Approach Structures	• Slope Improvement Works; • Bored Piling; • Pipe Pile Wall; • Piling Works of Viaduct; • Superstructure Construction; and • Modification of Retaining Wall and Installation of Noise Barrier.
1103	Diamond Hill Area	• Tunnel Boring Machine (TBM) tunneling and machinery site assembly.
	Hin Keng Area	• Pipe Piling, grouting and tunnel blasting.
	Fung Tak Area	• Shaft Excavation and ELS and sheet piling for retaining wall.
	Ma Chai Hang Area	• Shaft Excavation and ELS.
1106	Diamond Hill Station Area	• Excavation and ELS works; • Interchange Adit - Excavation and ELS works; • West Unpaid Adit - Excavation and ELS works; • Entrance A1 – Erection of temporary working platform; excavation &ELS works; and, • Structural works – Headwall construction; base slab & blinding works.
1107	Tunnel section next to Kai Tak Station	• Removal of old foundation works; • Tunnels construction at Cut and Cover tunnels; • Site preparation works; and, • TBM excavation.
1108	Kai Tak Station	• Open Cut Tunnel: shotcreting to excavated slope down to formation level, excavation and boulder breaking, wall and roof waterproofing • Cut and Cover Tunnel: wall formwork erection, excavation for package 4.5 tunnel • Station structure: wall concreting, backfilling on both seaside and landside, excavation for entrance B tunnel • Launching Shaft: HPP • Receiving Shaft: shoring installation
1108A	Kai Tak Barging Point Facilities	• Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts. • Temporary stockpiling of received spoil in the Barging Point Facilities. • Marine transportation of received spoil to receptor sites for beneficial reuse.
1109	Ma Tau Wai (MTW) Works Area	• TKW/MTW Road Garden – Operation of bentonite plant and Pier 15 underpinning works; and • Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
	To Kwa Wan (TKW) Works Area	• Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation • Olympic Playground –TTMS preparation; • TKW Station – Pump installation, shaft

Works Contract	Site	Construction Activities
		enclosure construction, and TBM and STP site • setup; and • Nam Kok Road – Installation of pipe pile.
1111	Mong Kok Freight Terminal	• Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.
	Hung Hom Area	• Excavation work, site clearance, site formation, slope work, road diversion, excavation lateral support, • Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access, haul road, • Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works, • Erection of hoarding, scaffolding platform, • Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation, • Removal of pipe, dismantling of scaffolding, demolition of stair case, • Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.
1112	Hong Hom (HUH and HHS) Works Area	• Piling for HUH, NAT and SAT • Diaphragm wall construction at HUH • Initial excavation at HUH and HHS • Barging point operation at Hung Hom Freight Pier • Operation of Material Receiving Hopper at Hung Hom Freight Pier • Marine transportation and disposal of spoil to designated dumping ground(s) • Underpinning works at HUH • Reconstruction of Cheong Wan Road Viaduct • Demolition of International Mail Centre and Freight Operations Building

Note:
(1) Construction works were completed.
N/A Not applicable

2.1.4 Impact monitoring for air quality and construction noise were conducted in accordance with the EM&A Manual in the reporting period. Under Works Contracts 1109 and 1111, continuous noise monitoring was conducted according to the Continuous Noise Monitoring Plan (CNMP) in the reporting period. The air quality, construction noise and continuous noise monitoring results for this reporting month are summarised in **Tables 2.2** to **2.4**. Details of the monitoring requirements, locations, equipment, methodology and QA/QC procedures are presented in the EM&A Reports as provided in **Appendices A** to **J**.

2.1.5 Water quality monitoring was not carried out during this reporting period since no dredging activity was conducted in the reporting month.

2.1.6 Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-11 (A) on 2, 3, 4, 5, 7, 9 and 17 February2015 and at MTW-16-1 on 2, 3, 4, 5, 6, 7, 9 and 17 Feb 2015 under Works Contract 1109. Four exceedances of Action and Limit Level of continuous noise monitoring were recorded at NM1 on 10 and 11 Feb 2015 during the

reporting month under Works Contract 1111. The exceedances are still under investigation and will be reported in the next reporting month.

2.1.7 EPD referred two public complaints on 3 Feb 2015 regarding construction noise generated from sites in Diamond Hill after mid-night during late January 2015 under Works Contracts 1103 and 1106. A complaint on soil/muddy water discharged into Kai Tak Nullah from the construction activities of sites in Diamond Hill was received on 3 Feb 2014 under the same contracts. EPD staff inspected on 10, 19 and 23 Jan, and observed a thin layer of muddy sediment at the Kai Tak Nullah adjacent to the sites. The investigation reports were submitted to EPD.

2.1.8 EPD referred two public complaints on 2 Feb 2015 regarding the issues of sand and mud brought to the road surface by construction vehicles left Gate 1 of the construction sites on 7 Jan and 20 Jan under Works Contract 1108. Investigation had been carried out as per EM&A programme. The investigation report was submitted to EPD.

2.1.9 EPD referred one public complaint on 7 Feb 2015 regarding construction dust from the construction site at MTR Hung Hom Building, 8-8 Cheong Wan Road, Tsim Sha Tsui, under Works Contract 1112. Investigation had been carried out as per EM&A programme. The investigation report was submitted to EPD.

2.1.10 No notification of summons, and successful prosecutions were received in the reporting period. Log for environmental complaints, notification of summons and successful prosecutions are provided in **Table 2.5**.

2.1.11 Regular site inspections were conducted by the respective Contractor's ETs on a weekly basis to check the implementation of environmental pollution control and mitigation measures for the Project. No non-conformance was identified in the reporting period.

Table 2.2 Summary of 24-Hour TSP Monitoring Results in the Reporting Period

Monitoring Station ID	Location	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Exceedance due to the Project Construction (Yes/No)
Works Contract 1101 [5]					
Works Contract 1102 and 1103					
DMS-1	C.U.H.K.A.A. Thomas Cheung School	19.9 – 126.1	148.7	260	No
Works Contract 1103					
DMS-2	Price Memorial Catholic Primary School	35.5 – 131.5	167.4	260	No
Works Contracts 1103 and 1106					
DMS-3	Hong Kong S.K.H Nursing Home [1]	30.4 – 126.9	159.1	260	No
Works Contract 1106 and 1107					
DMS-4	Block 1, Rhythm Garden	41.8 – 152.8	160.4	260	No
Works Contract 1108 [5]					
Works Contract 1108A [5]					
Works Contract 1109					
DMS-6	Katherine Building [2]	63 – 77	156.8	260	No
DMS-7	Parc 22 [3]	64 – 80	166.7	260	No
DMS-8	SKH Good Shepherd Primary School	61 – 84	152.2	260	No
DMS-9	No. 12 Pau Chung Street [4][9]	65 – 88	160.9	260	No
DMS-10	Chat Ma Mansion	63 – 78	170.4	260	No
Works Contract 1111					
AM1[6]	No. 234 – 238 Chatham Road North [7]	50.1 – 117.3	183.9	260	No
Works Contract 1112					
AM2	Site Boundary of Finger Pier Adjacent To Harbourfront Horizon [8]	29.1 – 113.7	182	260	No

Note:
(1) Alternative monitoring location to Shek On House
(2) Alternative monitoring location to Prosperity House
(3) Alternative monitoring location to Skytower Tower 2
(4) Alternative monitoring location to Lucky Building
(5) No TSP monitoring is required under this contract
(6) AM1 named as HUH-1-3 in SCL(TAW-HUH) and SCL(HHS) EIA Reports.
(7) Alternative monitoring location to Wing Fung Building
(8) Alternative monitoring location to Harbourfront Horizon
(9) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road (alternative location of Lucky Building) has been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring was resumed on 12 June 2014.

Table 2.3 Summary of Construction Noise Monitoring Results in the Reporting Period

Monitoring Station ID	Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected [7]		
Works Contract 1101 [6]						
Works Contract 1102 and 1103						
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School	56.8 – 58.7	57.0	< baseline – 53.8	70 (65 during examination period)	No
Works Contract 1103						
NMS-CA-2	Price Memorial Catholic Primary School	66.2 – 69.2	66.0	< baseline – 66.4	70 (65 during examination period)	No
Works Contracts 1103 and 1106						
NMS-CA-3	Hong Kong S.K.H Nursing Home [1]	67.8 – 71.2	73.0	< baseline	70	No
Works Contract 1106 and 1107						
NMS-CA-4	Block 1, Rhythm Garden (north-eastern façade)	70.4 – 73.5	71.0	< baseline – 69.9	75	No
NMS-CA-5	Block 1, Rhythm Garden (northern façade)[2]	68.7 – 72.9	74.0	< baseline	70 (65 during examination period)	No
Works Contract 1108 [6]						
Works Contract 1108A [6]						
Works Contract 1109						
NMS-CA-6	No. 16-23 Nam Kok Road [3]	62.7 – 63.9	76.1	< baseline	75	No
NMS-CA-7	Skytower Tower 2	63.6 – 67.2	70.0	< baseline	75	No
NMS-CA-8	SKH Good Shepherd Primary School	73.4 – 79.1	75.4	< baseline – 76.7	70 (65 during examination period) (79 during the period of conducting the continuous noise monitoring) [8]	No
NMS-CA-9	Kong Yiu Mansion [4]	71.1 – 73.9	69.2	66.6 – 72.1	75	No
NMS-CA-10	Chat Ma Mansion	75.1 – 78.0	76.6	< baseline – 72.4	75	No
Works Contract 1111						
NM1	Carmel Secondary School (South Block)	68.2 – 70.1	68.0	54.7 – 65.9	70 (65 during examination period) (68 during the period of conducting the continuous noise monitoring) [9]	No

Monitoring Station ID	Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected (7)		
NM2	No. 234 – 238 Chatham Road North (5)	69.7 – 73.4	79.0	< baseline	75 (77) (10)	No
Works Contract 1112 (6)						

Note:
(1) Alternative monitoring location to Shek On House.
(2) Alternative monitoring location to Canossa Primary School (San Po Kong).
(3) Alternative monitoring location to Prosperity House.
(4) Alternative monitoring location to Lucky Building.
(5) Alternative monitoring location to Wing Fung Building.
(6) No construction noise monitoring is required under this contract.
(7) The measured noise levels are corrected against the corresponding baseline noise levels.
(8) The Limit Level of 79 dB(A) was updated on 22 Aug 2013 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) which were approved by EPD.
(9) The Limit of 68 dB(A) was updated on 20 Jan 2014 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) which were approved by EPD.
(10) Daytime noise Limit Level of 77 dB(A) applies during the continuous noise monitoring period.

Table 2.4 Summary of Continuous Noise Monitoring Results in the Reporting Period

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Action/Limit Level [3] dB(A)	Exceedance due to the Project Construction (Yes/No)
			Measured	Baseline	Corrected [2]		
Works Contract 1101 [1]							
Works Contract 1102 [1]							
Works Contract 1103							
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	TAW-6-7 (C.U.H.K.A.A. Thomas Cheung School)	(4)	(4)	(4)	66 [7]	(4)
Works Contract 1103 & 1106							
DIH-9-1[1]	Shek On Building	N/A	N/A	N/A	N/A	N/A	N/A
DIH-13-1[1]	Canossa Primary School	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1106 & 1107							
DIH-14-1[1]	Rhythm Garden Block 2	N/A	N/A	N/A	N/A	N/A	N/A
DIH-14-5[1]	Rhythm Garden Block 1	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1103, 1106 & 1107							
DIH-14-4[1]	Canossa Primary School (San Po Kong)	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1108 [1]							
Works Contract 1108A [1]							
Works Contract 1109							
TKW-1-1[1]	Parc 22	N/A	N/A	N/A	N/A	N/A	N/A
TKW-2-2[1]	Skytower Tower 2	N/A	N/A	N/A	N/A	N/A	N/A
TKW-3-2	Prosperity House	TKW-3-2(B) (Hing Fu Building)	(4)	(4)	(4)	80	(4)
MTW-12-3	Lucky Mansion	MTW-12-3(A) (SKH Good Shepherd Primary School)	(4)	(4)	(4)	80	(4)
MTW-12-4	352-354 Ma Tau Wai Rd (East Façade)	MTW-12-4(A) (Kong Yiu Mansion)	66.0 – 78.3	69.2	< baseline – 77.8	80	No
MTW-12-4-1	352-354 Ma Tau Wai Rd (North Facade)	MTW-12-4-1(A) (59 Maidstone Road)	62.2 – 81.0	75.4	< baseline – 79.6	82	No
MTW-12-10	Lucky Building	MTW-12-10	(4)	(4)	(4)	84	No

NSR ID	NSR Description	Continuous Noise Monitoring Location	Noise Level ($L_{Aeq,30mins}$, dB(A))			Action/Limit Level [3] dB(A)	Exceedance due to the Project Construction (Yes/No)
			Measured	Baseline	Corrected [2]		
	(South Facade)	(Lucky Building (South Façade))					
MTW-12-10-1	Lucky Building (East Facade)	MTW-12-10-1 (Lucky Building (East Façade))	70.5 – 78.0	69.2	64.7 – 77.3	80	No
MTW-12-11	Jing Ming Building	MTW-12-11(A) (SKH Good Shepherd Primary School)	71.4 – 87.0	75.4	< baseline – 86.7	81	Yes
MTW-16-1	SKH Good Shepherd Primary School	MTW-16-1 (SKH Good Shepherd Primary School)	71.4 – 87.2	75.4	< baseline – 86.7	79	Yes
MTW-18-2 [8]	No. 2 Kowloon City Road	N/A	N/A	N/A	N/A	N/A	N/A
HOM-2-1--A [1]	Faerie Court (East Façade)	N/A	N/A	N/A	N/A	N/A	N/A
Works Contract 1111							
OM4a	Carmel Secondary School (South Block)	NM1 (Carmel Secondary School (South Block))	66.4 – 72.7	68	< baseline – 70.9	68 [7]	(9)
HH2[6]	Wing Fung Building	NM2 (No. 234-238 Chatham Road North[5])	(4)	(4)	(4)	77	(4)
Works Contract 1112 [1]							

Note:
(1) No continuous noise monitoring is required under this contract.
(2) Measured noise level (above the baseline noise level) was corrected against the corresponding baseline level.
(3) Reference to the predicted maximum noise level as contained in the corresponding CNMMP.
(4) According to the CNMMP and CNMP, continuous noise monitoring is not required during this reporting month.
(5) Alternative monitoring location to Wing Fung Building.
(6) HH2 named as HUH-1-3 in SCL (TAW-HUH) and SCL(HHS) EIA Reports.
(7) Action/Limit level will only be applicable during the examination period.
(8) The building at MTW-18-2 has been demolished. During the period of residual noise impact exceeding criteria predicted in the corresponding CNMMP, there will be no NSR occupied at this location. It is therefore not necessary carry out continuous noise monitoring at this location.
(9) Investigations for some exceedances are being conducted and detail investigation results will be provided in next reporting month.
N/A Not applicable

Table 2.5 Log for Environmental Complaints, Notification of Summons and Successful Prosecutions for the Reporting Month

Works Contract	Environmental Complaints	Notification of Summons	Successful Prosecutions
1101	0	0	0
1102	0	0	0
1103	3 (1)	0	0
1106		0	0
1107	0	0	0
1108	2	0	0
1108A	0	0	0
1109	0	0	0
1111	0	0	0
1112	1	0	0

Note:
(1) The complaint cases under Works Contracts 1103 and 1106 referred to the same complaints as referred by the EPD.

3 IMPLEMENTATION STATUS ON THE ENVIRONMENTAL PROTECTION REQUIREMENTS

3.1.1 The respective Contractors have implemented all mitigation measures and requirements as stated in the EIA Reports, EM&A Manuals and EP (EP-438/2012/H and EP-437/2012). The status of required submissions under the EPs as of the reporting period are summarised in **Tables 3.1** and **3.2**.

Table 3.1 Summary of Status of Required Submissions for EP-438/2012/H

EP Condition (EP-438/2012/H)	Submission	Submission date
Condition 1.12	Notification of Commencement Date of Construction of the Project	1 Aug 2012
Condition 2.3	Notification of Information of Community Liaison Groups	13 Jul 2012 (1st submission) 31 Aug 2012 (2nd submission) 30 Nov 2012 (3rd submission)
Condition 2.7	Management Organisation of Main Construction Companies	27 Jul 2012 (1st submission) 21 Aug 2012 (2nd submission) 19 Dec 2012 (3rd submission) 22 Jan 2013 (4th submission) 30 Apr 2013 (5th submission) 21 May 2013 (6th submission)
Condition 2.8	Construction Programme and EP Submission Schedule	27 Jul 2012
Condition 2.9	Construction Noise Mitigation Measures Plan (CNMMP)	1 Aug 2012 (1st submission) 28 Sep 2012 (2nd submission) 30 Nov 2012 (3rd submission) 11 Jan 2013 (4th submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5th submission) 26 Apr 2013 (6th submission) 11 Jun 2013 (7th submission) 12 July 2013 (Approved) 26 July 2013 (8th submission) 22 Aug 2013 (Approved) 23 Aug 2013 (9th submission) 13 Sept 2013 (Approved) 20 Jan 2014 (10th submission) 26 Feb 2014 (Approved)
Condition 2.10	Continuous Noise Monitoring Plan (CNMP)	1 Aug 2012 (1st submission) 28 Sep 2012 (2nd submission) 30 Nov 2012 (3rd submission) 11 Jan 2013 (4th submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5th submission) 26 Apr 2013 (6th submission) 11 Jun 2013 (7th submission) 12 July 2013 (Approved) 26 July 2013 (8th submission) 22 Aug 2013 (Approved) 23 Aug 2013 (9th submission) 13 Sept 2013 (Approved) 20 Jan 2014 (10th submission) 26 Feb 2014 (Approved) 7 Oct 2014 (11th submission) 23 Oct 2014 (Approved)
Condition 2.11	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1st submission) 12 Sep 2012 (2nd submission) 10 Oct 2012 (Approved)
Condition 2.12	Sediment Management Plan	6 Jul 2012 (1st submission) 12 Sep 2012 (2nd submission) 5 Oct 2012 (3rd submission) 10 Oct 2012 (Approved)

EP Condition (EP-438/2012/H)	Submission	Submission date
		4 Mar 2013 (4th submission) 9 May 2013 (5th submission) 24 July 2013 (6th submission) 26 July 2013 (Approved)
Condition 2.13	Visual, Landscape, Tree Planting & Tree Protection Plan	6 Jul 2012 (1st submission) 30 Aug 2012 (2nd submission) 3 Oct 2012 (3rd submission) 13 Nov 2013 (Approved for Contracts 1101, 1106 and 1109) 14 Nov 2012 (4th submission) 8 Feb 2013 (5th submission) 18 Mar 2013 (6th submission) 18 June 2013 (7th submission) 12 July 2013 (Approved)
Condition 2.14	Transplantation Proposal for Plant Species of Conservation Importance	22 Aug 2012 (1st submission) 5 Oct 2012 (2nd submission) 26 Nov 2012 (3rd submission) 4 Dec 2012 (Approved)
Condition 2.15	Conservation Plan	31 Jan 2013 (1st submission) 18 Mar 2013 (2nd submission) 24 Apr 2013 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s)) for Works Contract 1109	10 Aug 2012 (1st submission) 3 Sep 2012 (2nd submission) 21 Sep 2012 (Approved) 11 Oct 2013 (3rd submission) 1 Nov 2013 (Approved)
Condition 2.16	Archaeological Action Plan(s) (AAP(s)) for Works Contract 1106	29 Jan 2013 (1st submission) 19 Mar 2013 (2nd submission) 8 Apr 2013 (Approved)
Condition 2.23	Supplementary Contamination Assessment Report for New Territories South Animal Centre	28 Sep 2012 25 Oct 2012 (Approved)
Condition 3.3	Baseline Monitoring Report (Works Contract 1109 - Stations and Tunnels of Kowloon City Section)	27 Jul 2012
Condition 3.3	Baseline Monitoring Report (Works Contract 1108A – Kai Tak Barging Point Facilities)	31 Jul 2012
Condition 3.3	Baseline Monitoring Report (Works Contracts 1103, 1106 and 1111 – Hin Keng to Diamond Hill Tunnels, Diamond Hill Station, and Hung Hom North Approach Tunnels)	19 Oct 2012
Condition 3.4	Monthly EM&A Reports No. 1 - 28 Monthly EM&A Report No. 29	Reported in previous Monthly EM&A Reports 13 Feb 2015

Table 3.2 Summary of Status of Required Submissions for EP-437/2012

EP Condition (EP-437/2012)	Submission	Submission date
Condition 1.11	Notification of Commencement Date of Construction of the Project	30 Nov 2012
Condition 2.3	Notification of Information of Community Liaison Groups	30 Nov 2012
Condition 2.5	Management Organisation of Main Construction Companies	19 Dec 2012 (1st submission) 30 Apr 2013 (2nd submission)
Condition 2.6	Construction Programme and EP Submission Schedule	19 Dec 2012
Condition 2.7	Construction Noise Mitigation Measures Plan (CNMMP)	30 Nov 2012 (1st submission) 8 Feb 2013 (Approved for Contract 1111) 26 Apr 2013 (2nd submission) 11 Jun 2013 (3rd submission) 27 Aug 2013 (Approved) 20 Jan 2014 (4th submission)
Condition 2.8	Continuous Noise Monitoring Plan (CNMP)	30 Nov 2012 (1st submission) 11 Jan 2013 (2nd submission) 8 Feb 2013 (Approved for Contract 1111) 20 Jan 2014 (3rd submission)
Condition 2.9	Construction and Demolition Materials Management Plan (C&DMMP)	6 Jul 2012 (1st submission) 12 Sep 2012 (2nd submission) 15 Oct 2012 (Approved)
Condition 2.10	Sediment Management Plan	6 Jul 2012 (1st submission) 12 Sep 2012 (2nd submission) 5 Oct 2012 (3rd submission) 15 Oct 2012 (Approved)
Condition 2.11	Visual, Landscape, Tree Planting & Tree Protection Plan (VLTTP)	14 Nov 2012 (1st submission) 8 Feb 2013 (2nd submission) 4 Feb 2015 (3rd submission)
Condition 3.3	Baseline Monitoring Report (Works Contracts 1103, 1106 and 1111 – Hin Keng to Diamond Hill Tunnels, Diamond Hill Station, and Hung Hom North Approach Tunnels)	19 Oct 2012
Condition 3.4	Monthly EM&A Reports No. 5 - 28 Monthly EM&A Report No. 29	Reported in previous Monthly EM&A Reports 13 Feb 2015

Appendix A

30th EM&A Report for Works Contract 1108A – Kai Tak Barging Point Facilities

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No.30

[Period from 1 to 28 February 2015]

Works Contract 1108A – Kai Tak Barging Point Facilities

(March 2015)

Certified by: Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 10th March 2015

Concentric – Hong Kong River Joint Venture

Shatin to Central Link – Contract 1108A Kai Tak Barging Point Facilities

Monthly Environmental Monitoring and Audit Report for February 2015

(Version 2.0)

Certified By _____

(Contractor's 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 30th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for MTR Contract no. 1108A "Shatin to Central Link - Kai Tak Barging Point Facilities". This report documents the findings of EM&A Works conducted in February 2015.

Summary of Site Activities undertaken during Reporting Month

2. The major site activities undertaken in the reporting month included:

- Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts.
- Temporary stockpiling of received spoil in the Barging Point Facilities.
- Marine transportation of received spoil to receptor sites for beneficial reuse.

Environmental Monitoring and Audit Progress

3. A summary of the monitoring activities in this reporting period is listed below:

- Water Quality Monitoring at each monitoring station…….....Nil
- Environmental Site Inspection…….……...…4 times

Water Quality

4. No water quality monitoring was carried out as no dredging activity was conducted during the reporting month.

Waste Management

5. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. No inert C&D materials and non-inert C&D materials were generated during the reporting period. Non-inert C&D materials are made up of general refuse, steel materials and paper/cardboard packaging materials.

Environmental Site Inspection

6. A monthly joint environmental site inspection was carried out by the representatives of the Contractor, the IEC and the ET. Details of the audit findings and implementation status are presented in Section 6.

Ecology/Landscape and Visual

7. Details of the audit findings and implementation status on Ecology/Landscape and Visual are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summons and Prosecution

8. Summary of the events and action taken and key information in the reporting month is tabulated in **Table I** and **Table II** respectively.

Table I Summary Table for Events Recorded in the Reporting Month

Parameter	No. of Exceedance		Action Taken
	Action Level	Limit Level	
Water Quality Monitoring	N/A	N/A	N/A

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	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Notifications of any summons & prosecutions	0	---	N/A	N/A	---

Future Key Issues

9. Major site activities for the coming reporting month will include:

- Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts.
- Temporary stockpiling of received spoil in the Barging Point Facilities.
- Marine transportation of received spoil to receptor sites for beneficial reuse.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Concentric – Hong Kong River JV as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link Works Contract 1108A – Kai Tak Barging Point Facilities (hereafter referred to the Project).

Purpose of the report

1.2 This is the 30th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 February to 28 February 2015.

Structure of the report

1.3 The structure of the report is as follows:

Section 1: **Introduction -** details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Protection Requirements -** summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance -** summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

2.2 The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts. In addition to the temporary work site in the vicinity of the tunnel and station structures, there are some off-site temporary works sites/areas to facilitate the construction process. This Works Contract 1108A is one of the off-site temporary works sites covers the construction and operation of barging facilities.

General Site Description

2.3 The site layout plan is presented in **Figure 1**.

Construction Programme and Activities

2.4 A summary of the major site activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix H**.

- Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts.
- Temporary stockpiling of received spoil in the Barging Point Facilities.
- Marine transportation of received spoil to receptor sites for beneficial reuse.

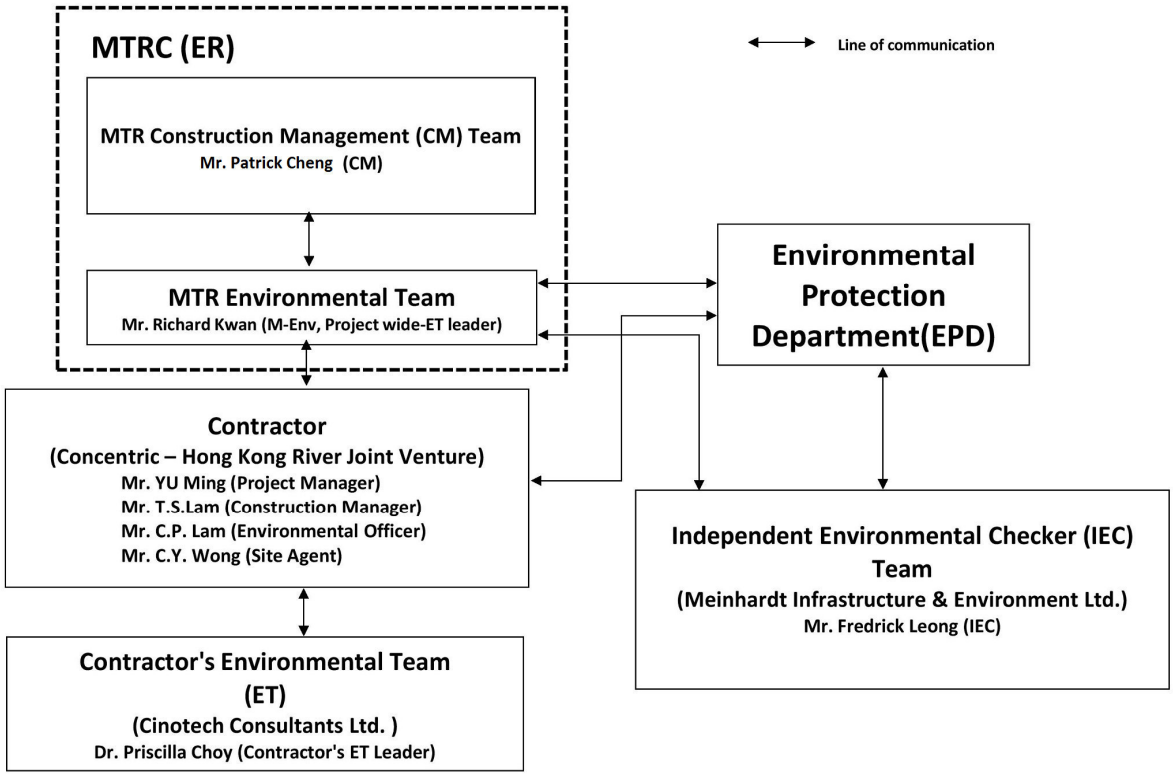
Project Organisation

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

- Engineer or Engineer's Representative (ER) – MTR Corporation (MTRC)
- Contractor's Environmental Team (ET) – Cinotech Consultants Ltd. (Cinotech)
- Independent Environmental Checker (IEC) – Meinhardt Infrastructure & Environment Ltd. (Meinhardt)
- Contractor – Concentric – Hong Kong River Joint Venture (CCL-HKR JV)

2.6 The responsibilities of respective parties are detailed in Section 3 of the SCL (TAW-HUH) EM&A Manual.

2.7 The project organisation chart is shown as follows:



2.8 The key contacts of the Project are shown in **Table 2.1**.

Table 2.1 Key Contacts of the Project

Party	Role	Name	Position	Phone No.	Fax No.
MTRC	ER	Mr. Patrick CHENG	Construction Manager	3507 6889	2334 0323
	Environmental Team	Mr. Richard KWAN	SCL Project Environmental Team Leader	2688 1283	2993 7577
Cinotech	Contractor's Environmental Team	Dr. Priscilla CHOY	Contractor's ET Leader	2151 2089	3107 1388
		Ms. Ivy TAM	Project Coordinator and Audit Team Leader	2151 2090	
Meinhardt	Independent Environmental Checker	Mr. Fredrick LEONG	Independent Environmental Checker	2858 0738	2540 1580
CCL-HKR JV	Contractor	Mr. T.S. LAM	Construction Manager	9655 5486	2398 8301
		Mr. C.P. LAM	Environmental Officer	9212 9417	
		Mr. C.Y. WONG	Site Agent	9199 3188	

Status of Environmental Licences, Notification and Permits

2.9 The Environmental Permit (EP-438/2012) of SCL (Tai Wai to Hung Hom Section) was first issued on 22 March 2012 and it was updated throughout the Project. The latest Environmental Permit (EP No. EP-438/2012/H) was granted on 10th September 2014.

2.10 The disposal of Type 1 (dedicated site) / Type 2 excavated sediment was completed on 13th December 2014 for which EPD has been notified accordingly. All dumping operations of marine sediment under the Contract have thus been completed.

2.11 The summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.2**.

Table 2.2 Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012	22/3/2012	11/07/2012	Superseded by EP-438/2012/A
EP-438/2012/A	12/07/2012	25/10/2012	Superseded by EP-438/2012/B
EP-438/2012/B	26/10/2012	29/04/2013	Superseded by EP-438/2012/C
EP-438/2012/C	30/04/2013	12/09/2013	Superseded by EP-438/2012/D
EP-438/2012/D	13/09/2013	03/04/2014	Superseded by EP-438/2012/E
EP-438/2012/E	04/04/2014	14/07/2014	Superseded by EP-438/2012/F
EP-438/2012/F	15/07/2014	13/08/2014	Superseded by EP-438/2012/G
EP-438/2012/G	14/08/2014	09/09/2014	Superseded by EP-438/2012/H
EP-438/2012/H	10/09/2014	N/A	Valid
Construction Noise Permit (CNP)			
GW-RE0754-12	24/09/2012	23/03/2013	Expired
GW-RE0272-13	26/03/2013	23/09/2013	Expired
GW-RE0969-13	24/09/2013	23/03/2014	Expired
GW-RE0321-14	29/03/2014	28/09/2014	Expired
GW-RE1017-14	29/09/2014	28/03/2015	Valid
Marine Dumping Permits			
EP/MD/13-074	26/10/2012	25/11/2012	Expired
EP/MD/13-075	10/10/2012	09/11/2012	Expired
EP/MD/14-077	27/11/2013	26/05/2014	Expired
EP/MD/14-083	16/12/2013	15/01/2014	Expired
EP/MD/14-117	24/02/2014	23/03/2014	Expired
EP/MD/14-158	25/03/2014	24/04/2014	Expired
EP/MD/14-168	10/04/2014	30/04/2014	Expired

Permit / License No.	Valid Period		Status
	From	To	
EP/MD/15-003	25/04/2014	24/05/2014	Expired
EP/MD/15-021	27/05/2014	26/11/2014	Expired
EP/MD/15-073	14/08/2014	13/09/2014	Expired
EP/MD/15-118	13/10/2014	12/11/2014	Expired
EP/MD/15-144	19/11/2014	18/12/2014	Expired
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
EPD reference no. 348913	22/08/2012	N/A	Receipt acknowledged by EPD
Billing Account for Construction Waste Disposal			
A/C# 7015860	29/08/2012	N/A	Valid
Registration of Chemical Waste Producer			
WPN5213-286-C3752-01	17/09/2012	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00014328-2012	07/11/2012	30/11/2017	Valid

Summary of EM&A Requirements

2.12 The EM&A programme under 1108A require construction phase water quality monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

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

2.14 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely water quality as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Water Quality Monitoring

Monitoring Location

3.1 In accordance with the EM&A Manual, marine water quality monitoring should be carried out while dredging activities are conducting. The water quality monitoring stations and control stations of Project are shown in **Figure 2**. The co-ordinates of the proposed monitoring stations (construction phase – dredging activities) are listed in **Table 3.1**. As shown in **Figure 2**, the proposed locations are classified as Impact Station and Control Station according to their functions.

Table 3.1 Water Quality Monitoring Stations

Station	Description	East	North	Parameters to be measured
IS-1(1)	Impact Station for Dredging Activities	838499	819333	DO, Turbidity, SS
CS-1	Control Station for IS-1	838170	818903	DO, Turbidity, SS
CS-2	Control Station for IS-1	838912	818997	DO, Turbidity, SS

Note: (1) As per Baseline Monitoring Report under consultancy agreement No. NEX/2213, there was a slight adjustment for the monitoring station IS-1 due to the site constraint as the original monitoring location (Easting: 838450, Northing: 819399) has been occupied by barges/dredgers of other projects.

Monitoring Parameters, Frequency and Programme

3.2 Water quality monitoring was conducted in accordance with the requirements stipulated in the approved SCL (TAW-HUH) EM&A Manual. **Table 3.2** summarized the monitoring frequency and water quality parameters for the impact monitoring.

Table 3.2 Water Quality Impact Monitoring Programme

	Impact Monitoring
Monitoring Period	During dredging period
Monitoring Frequency	3 Days in a Week, at mid-flood and mid-ebb tides
Monitoring Locations	IS-1, CS-1, CS-2
Monitoring Parameters	DO, temperature, turbidity, pH, salinity and SS
Intervals between 2 Sets of Monitoring	Not less than 36 hours
Tide Range	Individual flood and ebb tides not less than 0.5m

Monitoring Equipment and Methodology

Dissolved Oxygen and Temperature Measuring Equipment

3.3 The instrument should be portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring:

- DO level in the range of 0 - 20 mg/ L and 0 - 200% saturation; and
- Temperature of 0 - 45 degree Celsius.

3.4 The equipment should have a membrane electrode with automatic temperature compensation complete with a cable.

3.5 Should salinity compensation not be built-in to the DO equipment, in-situ salinity should be measured to calibrate the DO equipment prior to each DO measurement.

Turbidity Measurement Instrument

3.6 The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU (for example, Hach model 2100P or an approved similar instrument).

Water Sampler

3.7 A water sampler is required for SS monitoring. It should comprise a PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (for example, Kahlsico Water Sampler or an approved similar instrument).

Water Depth Detector

3.8 A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat, if the same vessel is to be used throughout the monitoring programme.

Salinity Measuring Equipment

3.9 A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

pH Measuring Equipment

3.10 A portable pH meter capable of measuring a range between 0.0 and 14.0 shall be provided to measure pH under the specified conditions (e.g., Orion Model 250A or an approved similar instrument).

Sample Containers and Storage

3.11 Water samples for SS determinations should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and shipment to the testing laboratory. The samples shall be delivered to the laboratory within 24 hours of collection and be analysed as soon as possible after collection.

Position Equipment

3.12 A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message ‘screen pop-up’ facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Calibration of In-Situ Instruments

3.13 The pH meter, DO meter and turbidimeter shall be checked and calibrated before use. DO meter and turbidimeter shall be certified by a laboratory accredited under HOKLAS

or any other international accreditation scheme, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

Back-up Equipment and Vessels

3.14 Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, malfunction, etc.

3.15 The water quality monitoring will involve three monitoring stations and measurements should be conducted within the prescribed tidal conditions in order to ensure the measurement/samples are representative. A multi-probe monitoring equipment set integrated with water sampler(s) is highly recommended to improve the monitoring efficiency. Depending on the actually operation, more than one field survey vessels might be required simultaneously to ensure the monitoring are conducted within the acceptable monitoring period. The ET shall also consider the use of unattended automatic sampling/monitoring devices at fixed stations where monitoring are required throughout the construction period. The use of such unattended automatic devices, however, shall be subject to the approval of the ER, IEC and EPD.

Laboratory Measurement / Analysis

3.16 At least 3 replicate samples from each independent sampling event are required for the suspended solids measurement which shall be carried in a HOKLAS or international accredited laboratory. Sufficient water samples shall be collected at the monitoring stations for carrying out the laboratory measurement and analysis. The laboratory determination work shall start within 24 hours after collection of the water samples. The analysis for SS is summarized in **Table 3.3**.

Table 3.3 Laboratory analysis for SS

Parameters	Analytical Method	Reporting Limit
Suspended Solid (SS)	APHA 2540-D	0.1 mg/L

Action and Limit Levels

3.17 The action and limit levels for water quality monitoring are presented in **Appendix A**.

Event and Action Plan

3.18 Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan in **Appendix D** shall be carried out.

Cultural Heritage

3.19 According to the location of the Project and EIA report, there are no terrestrial archaeological resources and built heritage resources in vicinity of the Project. Archaeological monitoring works and the implementation of mitigation measures during the construction and operation phases of the Project is, therefore, not required.

3.20 However, the Contractor shall allow a 25m separation distance between the proposed dredging area and the Kowloon Rock as specified in the approved SCL(TAW-HUH) EIA Report.

Landscape and Visual

3.21 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is summarised in **Table 6.1** of Section 6.

Ecology

3.22 In accordance with the EM&A Manual, weekly site audits should be conducted by the ET during construction phase of the Project to check the recommended mitigation measures should be properly implemented.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix E**. Status of required submissions under the Environmental Permit (EP) during the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Status of submissions under EP	1	Monthly EM&A Report (January 2014)	Submitted to EPD on 13th February 2015 (EP Condition 3.4)	N/A	---

5 MONITORING RESULTS

Water Quality

5.1 No water quality monitoring was carried out at the monitoring stations during this reporting period as the dredging activity was completed on 11 November 2012.

5.2 Action and Limit Levels for water quality monitoring were established in the baseline water quality monitoring conducted by MTR between 16 June 2012 and 14 July 2012 under consultancy agreement no. NEX/2213. Action and Limit Levels for water quality is summarised in **Appendix A**.

Waste Management

5.3 Waste potentially generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and dredging materials. Non-inert C&D materials are made up of general refuse, steel and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.1**. No paper/cardboard packaging, plastics and steel material were generated during the reporting period.

5.4 Detail of waste management data is presented in **Appendix F**.

Table 5.1 Quantities of Waste Generated from the Project

Reporting Month	Quantity						
	C&D Materials (inert) [(a)]	C&D Materials (non-inert)[(b)]	Dredging Quantity (in bulk volume)	Chemical Waste	Recycled materials		
					Paper/ cardboard	Plastics	Metals
February 2015	0 m^3	0 m^3	0 m^3	0 kg	0 kg	0 kg	0 kg

Notes:
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

Landscape and Visual

5.5 No observations and recommendations were made during the audit sessions.

Ecology

5.6 No observations and recommendations were made during the audit sessions.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

6.1 Site audits were carried out by ET on 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 C**.

6.2 Site audits were conducted on 3, 12, 17 and 24 February 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 12 February 2015. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the EMIS is provided in **Appendix E**.

6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	20 January 2015 27 January 2015	Reminder: Clear the mud accumulated near the site entrance and weighbridge of floating jetty no.3. Reminder: Clear the mud accumulated near the site entrance.	This item was observed improved/rectified by Contractor during the site inspection on 3 February 2015.
	27 January 2015	Observation: Small amount of muddy water was observed flowing into the public channel near the wheel washing facility adjacent to the site office. Contractor was reminded to provide sufficient mitigation measure to control the site runoff.	This item was observed improved/rectified by Contractor during the site inspection on 3 February 2015.
	27 January 2015 3 February 2015	Reminder: Properly remove the stagnant water in drip trays near the chemical waste storage area. Reminder: Properly remove the stagnant water in drip tray near the chemical waste storage area.	This item was observed improved/rectified by Contractor during the site inspection on 12 February 2015.
	27 January 2015 3 February 2015	Reminder: Cracks were observed on U-channel near stockpile area adjacent to the former floating jetty no.4. Contractor was reminded to repair it.	This item was observed improved/rectified by Contractor during the site inspection on 12 February 2015.

Parameters	Date	Observations and Recommendations	Follow-up
	12 February 2015	Observation: Muddy water was observed flowing into the public channel near the wheel washing facility adjacent to the site office. Contractor was reminded to provide sufficient mitigation measures to control the sites runoff.	This item was observed improved/rectified by Contractor during the site inspection on 17 February 2015.
	24 February 2015	Reminder: Soil was observed accumulated on the platform under the Conveyor Belt no.1 and 2. Contractor was reminded to clear it.	Follow up action will be reported in the next reporting month.
Noise	N/A	N/A	N/A
Ecology/ Landscape and Visual	N/A	N/A	N/A
Air Quality	27 January 2015	Reminder: Stockpile of wet soil was observed near the conveyor belt no.1. Contractor was reminded to cover the wet soil to suppress dust generation when it becomes dry.	This item was observed improved/rectified by Contractor during the site inspection on 3 February 2015.
	13 January 2015 20 January 2015 27 January 2015 3 February 2015	Observation: Openings were observed at the enclosure of conveyor belt no.2 while the belt was in operation. Contractor was reminded to repair it. Observation: Openings were observed at the enclosure of conveyor belt no.1 (not in operation) and conveyor belt no.2 (in operation). Contractor was reminded to repair it. Observation: Opening were observed at the enclosure of conveyor belt no.1 (in operation) and conveyor belt no.2 (not in operation). Contractor was reminded to repair it. Reminder: Openings were observed at the enclosure of conveyor belt no.1 and 2 while not in operation. Contractor was reminded to maintain the enclosure in good condition after maintenance check.	This item was observed improved/rectified by Contractor during the site inspection on 12 February 2015.

Parameters	Date	Observations and Recommendations	Follow-up
	12 February 2015	Reminder: Water sprinkler for the stockpile area should be improved to improve the spraying efficiency.	This item was observed improved/rectified by Contractor during the site inspection on 17 February 2015.
Waste / Chemical Management	27 January 2015	Reminder: Dried oil stain was observed on hard paved ground under the excavator near the conveyor belt no.1. Contractor was reminded to remove it as chemical waste.	This item was observed improved/rectified by Contractor during the site inspection on 3 February 2015.
	3 February 2015	Reminder: Properly remove the general refuse near the floating jetty no.3.	This item was observed improved/rectified by Contractor during the site inspection on 12 February 2015.
	12 February 2015 17 February 2015 24 February 2015	Reminder: Drip tray near the chemical waste storage area should be replaced with the one with larger capacity. Reminder: Drip tray near the chemical waste storage area should be replaced with the one with sufficient capacity.	Follow up action will be reported in the next reporting month.
	17 February 2015	Reminder: Dried oil stain was observed under the excavator near the Conveyor belt no.2. Contractor was reminded to remove it as chemical waste.	This item was observed improved/rectified by Contractor during the site inspection on 24 February 2015.
Permits / Licenses	N/A	N/A	N/A

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

7.1 No impact monitoring was conducted in the reporting month. The summary of exceedance is provided in **Appendix B**.

Summary of Environmental Non-Compliance

7.2 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

7.3 No environmental related complaint, prosecution or notification of summons was received in the reporting month. The Complaint Log is presented in **Appendix G**.

Summary of Environmental Summon and Successful Prosecution

7.4 There was no environmental complaint, prosecution or notification of summons received since the Project commencement.

8 FUTURE KEY ISSUES

Key Issues in the Coming Month

8.1 Key issues to be considered in the coming month include:

- Potential dust and noise impacts arising from unloading and temporary stockpiling of C&D material during full operation of the Barging Point Facilities.
- Potential water pollution problem due to the discharge of site runoff during rainfall events.
- Potential environmental impacts arising from unloading and handling of C&D material to the barge, including splashing of spoils into surrounding seawater at the discharge points.
- Potential dust emission and deposition of materials on haul road during delivery of C&D material by Designated and Interfacing Contracts to the Barging Point Facilities.

Site Activities for the Next Month

8.2 A tentative construction programme is provided in **Appendix H**. The major site activities in the coming month will include:

- Daily operation and maintenance of the Barging Point Facilities to receive excavated spoil delivered by Designated and Interfacing Contracts.
- Temporary stockpiling of received spoil in the Barging Point Facilities.
- Marine transportation of received spoil to receptor sites for beneficial reuse.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 February 2015 to 28 February 2015 in accordance with EM&A Manual and the requirement under EP-438/2012/H.

9.2 No impact monitoring was conducted in the reporting month.

9.3 There was no environmental complaint, prosecution or notification of summons received.

9.4 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- Mitigation measure should be provided for the conveyor belt to prevent spoil falling from the conveyor belt to the underneath.
- Drainage system should be properly maintained.
- Stagnant water should be cleared to avoid accumulation on site.
- Sand bags should be maintained and used whenever necessary to prevent muddy surface runoff flowing to the public channel.

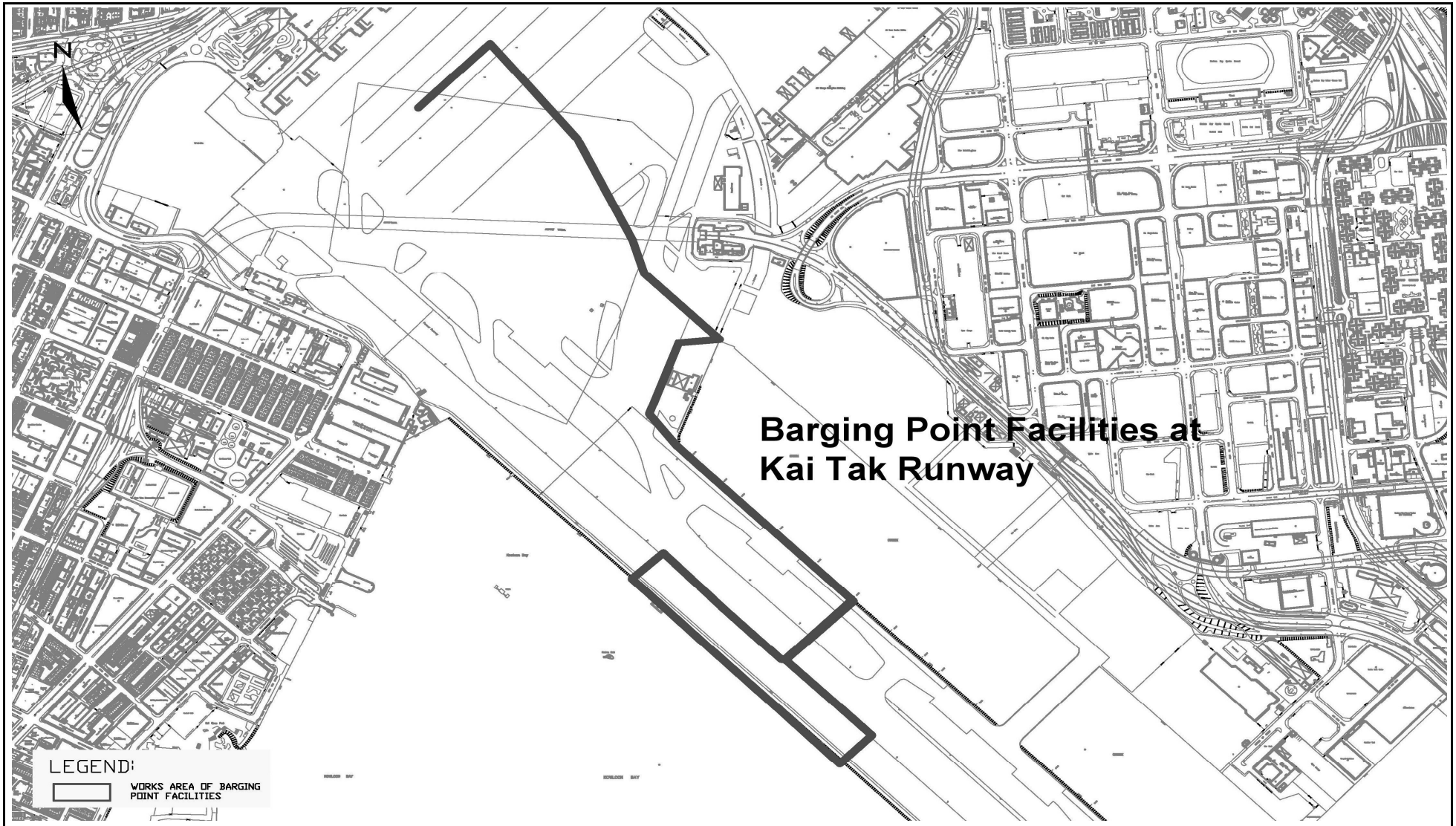
Air Quality

- The enclosure of conveyor belts should be properly maintained.
- Stockpile of dusty material should be properly covered for dust suppression.
- Water spray should be provided to the stockpiles regularly for dust suppression.

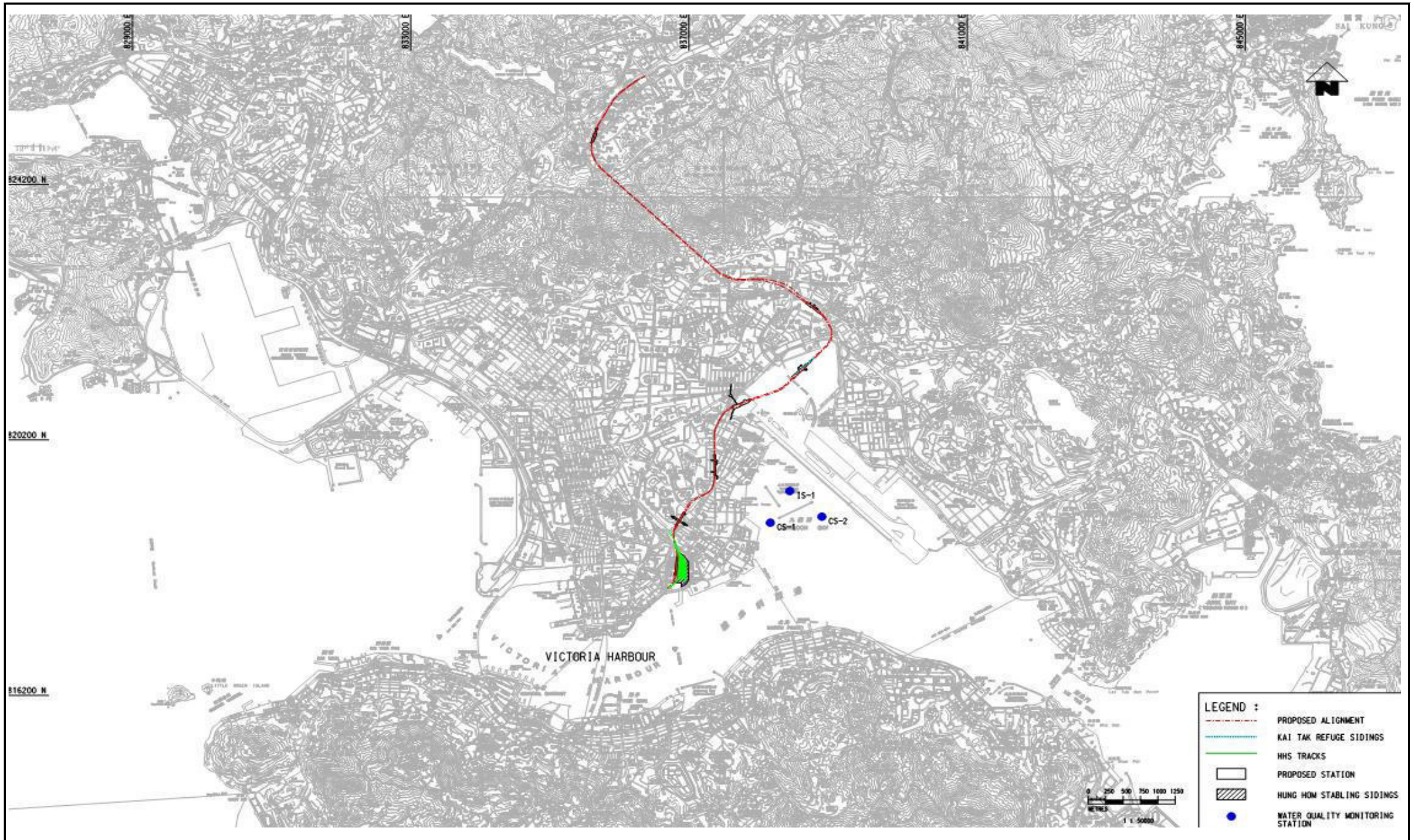
Waste/Chemical Management

- Oil should be removed as chemical waste, and plants and equipment should be maintained to prevent oil leakage.
- Drip tray with sufficient capacity should be provided for oil containers.
- Properly remove the general refuse within the site area regularly to prevent accumulation.

FIGURES



Title: SCL Contract 1108A The Shatin to Central Link - Kai Tak Barging Point Facilities Site Layout Plan	Scale: N.T.S	Project No.: MA12028	CINOTECH
	Date: Apr-14	Figure: 1	



Title	SCL Contract 1108A The Shatin to Central Link - Kai Tak Barging Point Facilities Location of Water Monitoring Station and Control Stations	Scale: N.T.S Date: Oct-12	Proposa No.: MA12028 Figure: 2

CINOTECH

APPENDIX A
ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

Action and Limit Levels for Water Quality

Parameter	Action	Limit
DO in mg/L	Surface & Middle: 4.6 (5 percentile of baseline data) Bottom: 3.9 (5 percentile of baseline data)	Surface & Middle: 4 Bottom: 2
SS in mg/L	6.1 (95 percentile of baseline data) or 120% of upstream control station's SS at the same tide of the same day	6.3 (99 percentile of baseline data) or 130% of upstream control station's SS at the same tide of the same day
Turbidity in NTU	4.8 (95 percentile of baseline data) or 120% of upstream control station's Turbidity at the same tide of the same day	5.0 (99 percentile of baseline data) or 130% of upstream control station's Turbidity at the same tide of the same day

APPENDIX B
SUMMARY OF EXCEEDANCE

APPENIDX B – SUMMARY OF EXCEEDANCE

Reporting Month: February 2015

a) Exceedance Report for Water Quality Monitoring (NIL)

APPENDIX C
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150203
Date	3 February 2015 (Tuesday)
Time	15:30 – 16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
150203-R02	• Properly remove the stagnant water in drip tray near the chemical waste storage area.	B 12
150203-R03	• Cracks were observed on the U-channel near stockpile area adjacent to the former floating jetty no.4. Contractor was reminded to repair it.	B 7
	Part C - Ecology/Others	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Air Quality	
150203-R01	• Openings were observed at the enclosure of conveyor belt no.1 and 2 while not in operation. Contractor was reminded to maintain the enclosure in good condition after maintenance check.	D 12
	Part E – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part F – Waste/Chemical Management	
150203-R04	• Properly remove the general refuse near the floating jetty no.3.	F 1iii
	Part G - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection	
	Others	
	• Follow-up on previous audit section (Ref. No.:150127). Follow-up action is required for item 150127-O01, 150127-R03 and 150127-R06 which were remarked as 150203-R01, 150203-R02 and 150203-R03.	

	Name	Signature	Date
Recorded by	KC Chung	Chung	3 February 2015
Checked by	Dr. Priscilla Choy		3 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150212
Date	12 February 2015 (Thursday)
Time	14:30 – 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150212-O01	***Part B - Water Quality*** • Muddy water was observed flowing into the public channel near the wheel washing facility adjacent to the site office. Contractor was reminded to provide sufficient mitigation measures to control the site runoff. ***Part C - Ecology/Others*** • No environmental deficiency was identified during the site inspection.	B 20
150212-R03	***Part D – Air Quality*** • Water sprinkler for the stockpile area should be improved to improve the spraying efficiency. ***Part E – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection.	D 7
150212-R02	***Part F – Waste/Chemical Management*** • Drip tray near the chemical waste storage area should be replaced with the one with larger capacity. ***Part G - Permit / Licenses*** • No environmental deficiency was identified during the site inspection ***Others*** • Follow-up on previous audit section (Ref. No.:150203), all environmental deficiencies were improved / rectified by the Contractor.	F 9

	Name	Signature	Date
Recorded by	KC Chung	Chung	12 February 2015
Checked by	Dr. Priscilla Choy		12 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150217
Date	17 February 2015 (Tuesday)
Time	15:30 – 16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality • No environmental deficiency was identified during the site inspection. ***Part C - Ecology/Others*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part E – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management***	
150217-R01	• Drip tray near the chemical waste storage area should be replaced with the one with sufficient capacity.	F 9
150217-R02	• Dried oil stain was observed under the excavator near the Conveyor belt no.2. Contractor was reminded to remove it as chemical waste.	F8
	Part G - Permit / Licenses • No environmental deficiency was identified during the site inspection ***Others*** • Follow-up on previous audit section (Ref. No.:150212), follow-up action is required for item 150212-R02 which was remarked as 150217-R01.	

	Name	Signature	Date
Recorded by	KC Chung		17 February 2015
Checked by	Dr. Priscilla Choy		17 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150224
Date	24 February 2015 (Tuesday)
Time	15:45 – 16:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150224-R02	***Part B - Water Quality*** • Soil was observed accumulated on the platforms under the Conveyor Belts no.1 & 2. Contractor was reminded to clear it. ***Part C - Ecology/Others*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part E – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection.	B 25
150224-R01	***Part F – Waste/Chemical Management*** • Drip trays near the chemical waste storage area should be replaced with the one with sufficient capacity. ***Part G - Permit / Licenses*** • No environmental deficiency was identified during the site inspection ***Others*** • Follow-up on previous audit section (Ref. No.:150217), follow-up action is required for item 150217-R01 which was remarked as 150224-R01.	F 9

	Name	Signature	Date
Recorded by	Harris Wong		24 February 2015
Checked by	Dr. Priscilla Choy		24 February 2015

APPENDIX D
EVENT AND ACTION PLANS

Event and Action Plan for Water Quality

Event	ET	IEC	ER	Contractor
Action level being exceeded by one sampling day	1. Inform IEC, contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; and 3. Discuss remedial measures with IEC and Contractor and ER	1. Discuss with ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the implemented mitigation measures; and 2. Make agreement on the remedial measures to be implemented. 3. Supervise the implementation of agreed remedial measures	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with ER, ET and IEC and propose remedial measures to IEC and ER; and 7. Implement the agreed mitigation measures.
Action level being exceeded by more than one consecutive sampling days	1. Repeat in-situ measurement on next day of exceedance to confirm findings; 2. Inform IEC, contractor and ER; 3. Check monitoring data, all plant, equipment and Contractor's working methods; 4. Discuss remedial measures with IEC, contractor and ER 5. Ensure remedial measures are implemented	1. Discuss with ET Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the proposed mitigation measures; 2. Make agreement on the remedial measures to be implemented; and 3. Discuss with ET IEC and Contractor on the effectiveness of the implemented remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed mitigation measures.
Limit level being	1. Repeat measurement on next day	1. Discuss with ET , Contractor and	1. Discuss with IEC, ET and	1. Identify source(s) of impact;

Event	ET	IEC	ER	Contractor
exceeded by one sampling day	of exceedance to confirm findings; 2. Inform IEC, contractor and ER; 3. Rectify unacceptable practice; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Consider changes of working methods 6. Discuss mitigation measures with IEC, ER and Contractor; and 7. Ensure the agreed remedial measures are implemented;	ER on possible remedial actions; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Contractor on the implemented remedial measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; and 4. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER within 3 working days of notification; and 6. Implement the agreed remedial measures.
Limit level being exceeded by more than one consecutive sampling days	1. Inform IEC, contractor, ER and EPD 2. Check monitoring data, all plant, equipment and Contractor's working methods; 3. Discuss mitigation measures with IEC, ER and Contractor; and 4. Ensure mitigation measures are implemented; and 5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.	1. Discuss with ET, ER and Contractor on possible remedial actions; 2. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the implemented mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; 4. Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; 6. Implement the agreed mitigation measures. 7. As directed by the ER, to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.

Event and Action Plan for Landscape and Visual during Construction Stage

Event	ET	IEC	ER	Contractor
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposedremedial measures.	1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedialmeasures to be implemented 3. Supervise implementation of remedial measures.	1. Identify Source and investigate the non-conformity implement remedial measures 2. Amend working methods agreed with the ER as appropriate 3. Rectify damage and undertake any necessary replacement. 4. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer/Engineer's Representative

APPENDIX E
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Ecology (Pre-Construction Phase)								
S5.7	E3	<u>Tree felling and vegetation removal</u> Precautionary checks of the vegetation for the presence of nesting bird species of conservation interest should be carried out before vegetation clearance by an ecologist.	Minimize ecological impacts to breeding bird species of conservation interest	Contractor	Works sites Kai Tak Barging Point	Prior to site clearance	• AFCD's requirements	^
Ecology (Construction Phase)								
S5.7	E5	<u>Good Site Practices</u> Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented: • Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream;	Minimise ecological impacts	Contractor	All construction sites	During Construction	• ProPECC PN 1/94	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value. • No on-site burning of waste; • Waste and refuse in appropriate receptacles.						^ ^ ^ ^
S5.7	E6	<u>Sediment Removal</u> • Use closed grab in dredging works. • Install silt curtain during the dredging.	• Reduce indirect impacts of suspended solids on sessile benthic and intertidal fauna • Minimize marine water quality impacts	Contractor	Dredging Area	During Dredging	•TM-Water	N/A(2) N/A(2)
Landscape & Visual (Construction Phase)								
S6.9.3	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	N/A(2)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u> • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system.						^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.						^
S6.12	LV2	<u>Decorative Hoarding</u> • Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <u>Management of facilities on work sites</u> • To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and construction stage	• EIAO – TM •ETWB TCW 2/2004 • ETWB TCW 3/2006	^ N/A(1)
Air Quality (Construction Phase)								
/	A1	<u>Emission from Vehicles and Plants</u> • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD).	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO • To control the air quality to meet HKAQO and TM-EIA criteria	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
/	A2	Open burning shall be prohibited.	Reduce air pollution emission from work site.	Contractor	All construction sites	Construction stage	• APCO • To control the air quality to meet HKAQO and TM-EIA criteria	^
Construction Dust Impact								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	*
S7.6.5	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m^2 to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.6.5	D3	• Proper watering of exposed spoil should be undertaken throughout the construction phase; • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^ * ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting						^ ^ ^ N/A(2) N/A(2)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						N/A(2) N/A(2) N/A(2) N/A(2) N/A(2)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.6.5	D4	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points	Control construction dust	Contractor	Kai Tak Barging Point	Construction stage	• Air Pollution Control (Construction Dust) Regulation	^ * ^ ^
S7.6.5	D5	• For the unloading of spoil from trucks at barging point, installation of 3-sided screen with top tipping hall and operating water spraying and flexible dust curtains at the discharge point for dust suppression	Minimize dust impact at the nearby sensitive receivers	Contractor	Barging Points	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria •EP Condition 2.18 (c)	^
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Construction Noise (Airborne)								
S8.3.6	N1	Implement the following good site practices: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^ ^ ^ N/A(2) ^ N/A(2)
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	N/A(1)
S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	N/A(1)
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	•TM-EIA	N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> • At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m^3/s a sedimentation basin of $30m^3$ would be required and for a flow rate of 0.5 m^3/s the basin would be 150 m^3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement						^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m^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						* ^ N/A(1) *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		system and storm runoff being directed into foul sewers • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, 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, especially for areas located near steep slopes • 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 sited wheel washing facilities should be provided at every construction site exit where practicable. 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. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors						^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited 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 water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices.						^ ^ N/A(2) *
S10.7.1	W3	<u>Sewage Effluent</u> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-water	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S10.7.1	W4	<u>Groundwater from Contaminated Area:</u> • No direct discharge of groundwater from contaminated areas should be adopted. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in this EIA report for compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water) and the existence of prohibited substance should be confirmed. The review results should be submitted to EPD for examination If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, the contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground. • If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found.	Construction stage	• Water Pollution Control Ordinance • TM-water • TM-EIAO	N/A(1) N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers • If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.						N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S10.7.1	W5	<u>Dredging Works</u> The following good practice shall apply for the dredging works: • Install efficient silt curtains at the point of seawall dredging to control the dispersion of SS; • Implement water quality monitoring to ensure effective control of water pollution and recommend additional mitigation measures required; • The decent speed of grabs should be controlled to minimize the seabed impact and to reduce the volume of over-dredging; and • All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	To minimize sediment suspension during dredging	Contractor	Kai Tak Barging Point during dredging works	Dredging period	• Water Pollution Control Ordinance • TM-EIAO	N/A(2) N/A(2) N/A(2) N/A(2)
S10.7.1	W6	<u>Operation of Barging Facilities</u> The following good practice shall apply for the barging facilities operations: • All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; • Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or	To minimize water quality impact from operation of barging facility	Contractor	All barging facilities	Construction stage	• Water Pollution Control Ordinance • TM-EIA	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		transportation; • All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water; and • Mitigation measures as outlined in W1 should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate.						^ ^ ^
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S10.7.1	W8	Implement a marine water quality monitoring programme	Monitor marine water quality prior to and during dredging period	Contractor	At identified monitoring location	Prior to and during dredging period	• Water Pollution Control Ordinance • TM-water • EIA-TM	^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	<u>On-site sorting of C&D material</u> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	• DEVB TC(W) No. 6/2010	N/A(2)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.						
S11.5.1	WM2	<u>Construction and Demolition Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	N/A(2) N/A(2) N/A(2) N/A(2) ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation						^
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimize the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No.19/2005	^ N/A(2)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	^ * ^ ^
S11.5.1	WM6	<u>Land-based and Marine-based Sediment</u> • All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited	To control pollution due to marine sediment	Contractor	Within Project Site Area	Construction Stage	• ETWB TCW No. 34/2002	N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		in the locations other than designated location; • All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the approved locations; • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. • The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers; • The Contractors shall comply with the conditions in the dumping licence. • All bottom dumping vessels (Hopper barges) shall be fitted with						N/A(1) N/A(1) N/A(1) N/A(1) N/A(1) N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		tight fittings seals to their bottom openings to prevent leakage of material; • The material shall be placed into the disposal pit by bottom dumping; • Contaminated marine mud shall be transported by spit barge of not less than 750m^3 capacity and capable of rapid opening and discharge at the disposal site; • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. • For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfilling the requirements for fully confined mud disposal.						N/A(1) N/A(1) N/A(1) N/A(1)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S11.5.1	WM7	<u>Chemical Waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All Construction Sites	Construction Stage	• Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	* ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						^

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

• Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

N/A(1) Not Applicable N/A(2) Not Applicable at this stage

APPENDIX F
WASTE GENERATION IN THE REPORTING MONTH

Concentric – Hong Kong River Joint Venture

MTR SCL Contract 1108A
Kai Tak Barging Point Facilities

Monthly Summary Waste Flow Table for 2015 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
January	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.010**
February	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Mar	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-
Sub-total	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.010**
July	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-
Sept	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-
G.Total	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.010**

APPENDIX G
COMPLAINT LOG

Appendix G - Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
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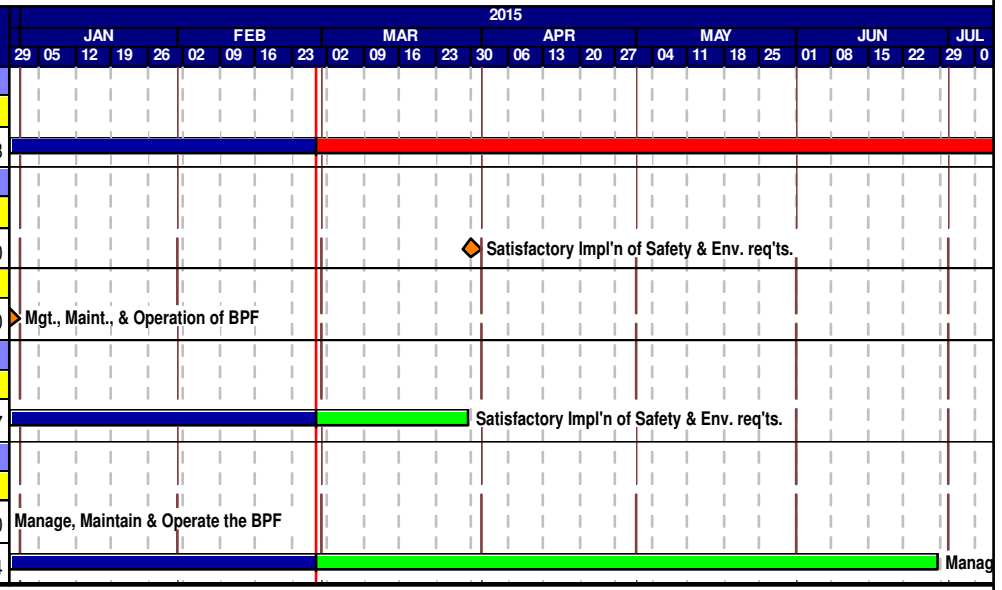
APPENDIX H
TENTATIVE CONSTRUCTION PROGRAMME

MTR SCL 1108A
KAI TAK BARGING POINT FACILITIES

3 Month Rolling Programme
(incl. Addition of Floating Jetty)

Act ID	Description	Orig Dur	Early Start	Early Finish	%
COMMENCEMENT & COMPLETION					
Time for Completion					
1108ADC04C	Completion of The Whole of the Works	1477	13AUG12 A	28AUG16	63
MILESTONES SCHEDULE					
Milestones for Cost Centre A					
1108AMSA70	Satisfactory Impl'n of Safety & Env. req'ts.	0		29MAR15	0
Milestones for Cost Centre B					
1108AMSB60	Mgt., Maint., & Operation of BPF	0		29DEC14 A	100
Cost Centre A					
Preliminaries					
1108AA7010	Satisfactory Impl'n of Safety & Env. req'ts.	963	13AUG12 A	29MAR15	97
Cost Centre B					
Kai Tak BPF - Mgt., Maintenance & Operation					
1108AB6010	Manage, Maintain & Operate the BPF	182	30JUN14 A	29DEC14 A	100
1108AB7010	Manage, Maintain & Operate the BPF	182	30DEC14 A	28JUN15	34



Start date	10AUG12
Finish date	28AUG16
Data date	28FEB15
Run date	02MAR15
Page number	1A

MTR SCL 1108A

KAI TAK BARGING POINT FACILITIES

Concentric - Hong Kong River Joint Venture

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Appendix B

30th EM&A Report for Works Contract 1109 –
Stations and Tunnels of Kowloon City Section

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No. 30

[Period from 1 to 28 February 2015]

Works Contract 1109 - Stations and Tunnels of Kowloon City Section

(10 March 2015)

Certified by: Winnie Ko

Position: Environmental Team Leader

Date: 10 March 2015

Samsung-Hsin Chong JV

Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section: Works Contract 1109 – Stations and Tunnels of Kowloon City Section

Monthly EM&A Report No.30

February 2015

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Monthly EM&A Report No.30

February 2015

Reference 0171181

For and on behalf of ERM-Hong Kong, Limited	
Approved by:	Frank Wan
Signed:	
Position:	Partner
Date:	10 March 2015

CONTENTS

LIST OF ANNEXES

EXECUTIVE SUMMARY

The construction works of **MTR Shatin to Central Link Works Contract 1109 – Stations and Tunnels of Kowloon City Section** commenced on 1 September 2012. This is the thirtieth monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 February 2015 to 28 February 2015 in accordance with the EM&A Manual.

Summary of the Construction Works undertaken during the Reporting Month

The major construction works undertaken during the reporting month include:

Construction Activities undertaken
Works in Ma Tau Wai (MTW)
• TKW/MTW Road Garden – Operation of bentonite plant and Pier 15 underpinning works; and • Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
Works in To Kwa Wan (TKW)
• Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation • Olympic Playground –TTMS preparation; • TKW Station – Pump installation, shaft enclosure construction, and TBM and STP site setup; and • Nam Kok Road – Installation of pipe pile.

Regular Construction Noise and Construction Dust Monitoring

A summary of the monitoring activities in this reporting period is listed below:

- Regular construction noise monitoring during normal working hours
  - *NMS-CA-6* 4 *times*
  - *NMS-CA-7* *4 times*
  - *NMS-CA-8* *4 times*
  - *NMS-CA-9* *4 times*
  - *NMS-CA-10* *4 times*
- Construction dust (24-hour TSP) monitoring
  - *DMS-6* *5 times*
  - *DMS-7* *5 times*
  - *DMS-8* *5 times*
  - *DMS-9* *5 times*
  - *DMS-10* *5 times*

Continuous Noise Monitoring

Continuous noise monitoring is required at MTW-12-4(A), MTW-12-10-1, MTW-12-4-1 (A), MTW-12-11(A) and MTW-16-1 during this reporting month, according to the schedule presented in the latest approved CNMP.

Cultural Heritage

A License to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been obtained from Antiquities and Monuments Office (AMO) on 29 October 2012. The archaeological survey-cum-excavation and additional investigation at the Sacred Hill (North) commenced on 1 November 2012 and was conducted in accordance with the License and the approved Archaeological Action Plan (AAP). An updated AAP was submitted to AMO for renewal of the 1 year archaeological license. The license was renewed and granted by AMO on 24 October 2013. The updated AAP was submitted to EPD for approval on 11 October 2013 and it was approved on 1 November 2013. The fieldworks of the archaeological survey-cum-excavation and additional investigation were completed on 27 December 2013. The Interim Archaeological Report was provided to AMO in April 2014.

Vibration monitoring was conducted at Hong Kong Aviation Club during the reporting period, no non-compliance was recorded.

Waste Management

Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 46,884 m^3 of inert C&D materials were generated from the Project, which were sent to 1108A Kai Tai Barging Facilities during the reporting month. 3102 kg of plastics was generated and sent to recyclers for recycling during the reporting period. About 106 m^3 of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. No metal waste was generated during this reporting month. 90 kg of paper/cardboard packaging was generated and sent to recyclers for recycling during the reporting period. 0kg of chemical waste was generated during this reporting month.

Landscape and Visual

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 9 and 23 February 2015. No audit findings were observed during the reporting month. The implementation status is presented in *Section 5*.

Environmental Site Inspection

Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 2, 9, 16 and 23 February 2015. The representative of the IEC joined the site inspection on 9 February 2015. Details of the audit findings and implementation status are presented in *Section 6*.

Environmental Exceedance/Non-conformance/Compliant/Summons and Prosecution

No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.

Following up on the exceedances of the Action and Limit Levels of the continuous noise monitoring recorded on 30 and 31 January 2015; 2, 3, 4, 5, 6, 7, 9 and 17 February 2015 investigation of the exceedances have been completed and the investigation reports are presented in *Annex L*.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-11 (A) on 2, 3, 4, 5, 7, 9 and 17 February 2015 and at MTW-16-1 on 2, 3, 4, 5, 6, 7, 9 and 17 February 2015.

No complaint was reported during the reporting month.

No summon or prosecution was received in this reporting period.

Future Key Issues

The major construction works to be undertaken in the next reporting month include:

Construction Activities to be undertaken
Work in Ma Tau Wai (MTW)
● TKW/MTW Road Garden – Operation of bentonite plant and pier 15 underpinning works; and ● Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
Work in To Kwa Wan (TKW)
● Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation; ● Olympic Playground – TTMS preparation; ● TKW Station – Pump installation, shaft enclosure construction and TBM & STP site setup; and ● Nam Kok Road – Installation of pipe pile.

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by Samsung-Hsin Chong JV (SSHCJV) as the Environmental Team (Contractor's ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during the construction phase of the **MTR Shatin to Central Link (SCL) Works Contract 1109 – Stations and Tunnels of Kowloon City Section** (the Project).

1.1 PURPOSE OF THE REPORT

This is the thirtieth EM&A report which summarises the monitoring results and audit findings during the reporting period from 1 February to 28 February 2015.

1.2 STRUCTURE OF THE REPORT

Section 1 : **Introduction**
It details the purpose and structure of the report.

Section 2 : **Project Information**
It summarises the background and scope of the project, site description, project organisation and contact details, construction programme, construction works undertaken and status of the Environmental Permits/Licenses during the reporting period.

Section 3 : **Environmental Monitoring Requirement**
It summarises the monitoring parameters, programmes, methodologies, frequency, locations, Action and Limit Levels, Event /Action Plans.

Section 4 : **Implementation Status of the Environmental Protection Requirements**
It summarises the implementation of environmental protection measures during the reporting period.

Section 5 : **Monitoring Results**
It summarises the monitoring results obtained in the reporting period.

Section 6 : **Environmental Site Inspection**
It summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7 : **Environmental Non-conformance**
It summarises any monitoring exceedance, environmental complaints and summons within the reporting period.

Section 8 : **Future Key Issues**
It summarises the forecast of environmental impact and monitoring schedule for the next three months.

Section 9 : **Conclusions**

2 PROJECT INFORMATION

2.1 BACKGROUND

The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an extension of the Ma On Shan Line and is approximately 11 km long. It links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the *Environmental Impact Assessment Ordinance* (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts and this Works Contract 1109 covers the construction of stations in To Kwa Wan (TKW) and Ma Tau Wai (MTW), and the tunnels between the TKW station and Ho Man Tin station (HOM).

2.2 GENERAL SITE DESCRIPTION

For the Works Contract 1109, the alignment runs from TKW station below Ma Tau Chung Road/Ma Tau Wai Road towards the west, reaching the MTW station. After leaving MTW station, the alignment passes Ko Shan Road and joins the HOM station at the intersection of Fat Kwong Street and Shun Yung Street. The underground sections of the alignment between TKW and HOM stations will be constructed by bored tunneling. Both the TKW and MTW stations will be constructed by cut-and-cover method.

The alignment and works area for the Works Contract 1109 are shown in ***Annex A***.

2.3 CONSTRUCTION PROGRAMME AND ACTIVITIES

A summary of the major construction activities undertaken in this reporting period is shown in ***Table 2.1***. The construction programme is presented in ***Annex B***.

Table 2.1 Summary of the Construction Activities Undertaken during the Reporting Month

Construction Activities undertaken
Works in Ma Tau Wai (MTW)
• TKW/MTW Road Garden – Operation of bentonite plant and Pier 15 underpinning works; and • Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and roof slab construction.
Works in To Kwa Wan (TKW)
• Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation; • Olympic Playground –TTMS preparation; • TKW Station – Pump installation, shaft enclosure construction, open cut excavation, and TBM and STP site setup; and • Nam Kok Road – Installation of pipe pile.

2.4 PROJECT ORGANISATION

The project organisational chart and contact details are shown in ***Annex C***.

2.5 STATUS OF ENVIRONMENTAL LICENCES, NOTIFICATION AND PERMITS

A summary of the valid permits, licences, and/or notifications on environmental protection for this Project is presented in ***Table 2.2***.

Table 2.2 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-438/2012/H	Throughout the Contract	Permit granted on 10 September 2014
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	348516	13 August 2012 – 30 April 2017	-
Notification of Construction Works under Air Pollution Control (Construction Dust) Regulation (Form NB)	351125	16 October 2012 – 30 April 2017	-
Wastewater Discharge Licence			
Site at TKW	*WT00019555-2014*	*30-September-2017*	-
Site at MTW	*WT00019556-2014*	*30-September-2017*	-
Chemical Waste Producer Registration			
Site at TKW	*5213-286-S3682-01*	*Throughout the Contract*	-
Site at MTW	*5213-242-S3682-02*	*Throughout the Contract*	-
Construction Noise Permit			
- *PME on Tam Kung Road*	*GW-RE1075-14*	*30 September 2014 - 25 March 2015*	*Cancelled*
- *PME in Pier 15 works area and EEP*	*GW-RE1076-14*	*30 September 2014 - 24 March 2015*	-
- *PME at Kai Tak New Land 2*	*GW-RE0827-14*	*25 July 2014 - 23 January 2015*	*Expired*
- *PME in TKW/MTW Garden*	*GW-RE0914-14*	*21 August 2014 – 31 January 2015*	*Expired*
- *PME on Kowloon City Road*	*GW-RE1131-14*	*6 October 2014 – 5 April 2015*	-
- *PME at Kai Tak New Land*	*GW-RE1218-14*	*28 October 2014 – 12 April 2015*	-
- *PME at SUW Playground and Olympic Avenue*	*GW-RE1340-14*	*26 November 2014 - 20 May 2015*	-
- *PME at TKW Chi Kiang Street and Ma Tau Wai Road*	*GW-RE1478-14*	*4 January 2015 - 11 January 2015*	*Expired*
- *PME at SUW works area*	*GW-RE0025-15*	*13 January 2015 to 8 July 2015*	-

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
- *PME at SUW works area*	*GW-RE1339-14*	*27 November 2014 - 26 May 2015*	-
- *PME at MTW Road North Bound & E3-E6 works areas*	*GW-RE1332-14*	*27 November 2014 - 19 May 2015*	*Cancelled*
- *PME at TKW Garden*	*GW-RE0124-15*	*10 February 2015 to 1 August 2015*	-
- *PME at Kai Tak New Land 2*	*GW-RE0127-15*	*10 February 2015 to 23 July 2015*	-
- *PME at Tam Kung Road*	*GW-RE0142-15*	*14 February 2015 to 8 August 2015*	-
- *PME at MTW Road north bound & E3-E6*	*GW-RE0151-15*	*16 February 2015 to 12 August 2015*	-
Billing Account for Disposal of Construction Waste	7015758	Throughout the Contract	-

3 ENVIRONMENTAL MONITORING REQUIREMENT

3.1 REGULAR CONSTRUCTION NOISE MONITORING

3.1.1 Monitoring Location

In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was either rejected or unavailable; alternative locations were proposed and agreed by the ER (Engineer's Representative), IEC (Independent Environmental Checker) and EPD (Environmental Protection Department). The construction noise monitoring locations are listed in ***Table 3.1*** and shown in ***Annex D***. The noise sensitive receivers (NSRs) related to this Works Contract are also shown in ***Annex D***.

Table 3.1 Regular Construction Noise Monitoring Location

Proposed Regular Construction Noise Monitoring Location	Description	Type of Measurement
NMS–CA-6 (a)	No.16-23 Nam Kok Road	Façade
NMS–CA-7	Skytower Tower 2	Façade
NMS–CA-8	SKH Good Shepherd Primary School	Façade
NMS–CA-9 (b)	Kong Yiu Mansion	Façade
NMS–CA-10	Chat Ma Mansion	Façade

Notes:

(a) Access to the monitoring location at Prosperity House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. Furthermore, the alternative location, No. 420 Prince Edward Road West, used in the baseline monitoring was also not available as access permission was rejected by the owner of the building. An alternative location (No.16-23 Nam Kok Road) was proposed and approved by the ER and agreed by the IEC and EPD.

(b) As the Incorporated Owners Association of the monitoring location at Lucky Building (originally proposed in the approved EM&A Manual) did not reply to our request for access to their premise, an alternative location, Kong Yiu Mansion, was proposed and approved by the ER and agreed by the IEC and EPD.

3.1.2 Monitoring Parameter and Frequency

Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period is shown in ***Annex E***.

The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). $L_{Aeq\ (30min)}$ was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays. The measured noise levels were logged every 5 minutes throughout the monitoring period.

3.1.3 Monitoring Equipment and Methodology

Construction noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap 400).

The sound level meters and calibrator used for the noise measurement, as listed in ***Table 3.2***, compile with the IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in ***Annex F***.

Table 3.2 Noise Monitoring Equipment

Monitoring Stations	Monitoring Equipment (Sound Level Meter and Calibrator)
NMS–CA-6	Calibrator: NC 73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00131628)
NMS–CA-7, NMS–CA-9 and NMS–CA-10	Calibrator: NC 73 (Serial No. 10997142) Sound Level Meter: NL 18 (Serial No. 00360030)
NMS–CA-8	Calibrator: NC-73 (Serial No. 10997142) Sound Level Meter: NL-31 (Serial No. 00320533)

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency.

Measurements were accepted when the calibration level from before and after the noise measurement agreed to be within 1.0 dB(A).

3.1.4 Action and Limit Levels

The Action and Limit Levels are presented in ***Table 3.3*** and the Event / Action Plan (EAP) for noise monitoring is presented in ***Annex G.***

Table 3.3 Action and Limit Levels for Noise Monitoring

Time Period	Regular Noise Monitoring Location	Action Level	Limit Level
0700 - 1900 hours on normal weekdays	NMS– CA-6	When one documented valid complaint is received	75 dB(A)
	NMS– CA-7	When one documented valid complaint is received	75 dB(A)
	NMS– CA-8	When one documented valid complaint is received	70 dB(A) 65 dB(A) during examination periods 79 dB(A) [(b)] during the period of conducting the continuous noise monitoring
	NMS– CA-9	When one documented valid complaint is received	75 dB(A)
	NMS– CA-10	When one documented valid complaint is received	75 dB(A)

Notes:

(a) If works are to be carried out during restricted hours (ie, outside 0700 – 1900 from Monday to Saturday), the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

(b) The Limit Level of 79 dB(A) was updated on 22 August 2013 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP), which were approved by EPD.

3.2 CONTINUOUS NOISE MONITORING

3.2.1 Monitoring Locations

With reference to the Continuous Noise Monitoring Plan (CNMP) and EP Condition 2.10, continuous noise monitoring should be conducted during the construction of the SCL (TAW-HUH) under Works Contract 1109 at eight noise sensitive receivers (NSRs), where the predicted residual air-borne construction noise impacts exceed the relevant noise criteria. The proposed continuous noise monitoring locations are presented in ***Table 3.4*** and shown in ***Annex D***.

Table 3.4 Proposed Continuous Noise Monitoring Locations

Continuous Noise Monitoring Location[(a)]	Description
TKW-3-2(B)	Hing Fu Building
MTW-12-3 (A)	SKH Good Shepherd Primary School
MTW-12-4 (A)	Kong Yiu Mansion
MTW-12-4-1(A)	59 Maidstone Road
MTW-12-10	Lucky Building (South Façade)
MTW-12-10-1	Lucky Building (East Façade)
MTW-12-11 (A)	SKH Good Shepherd Primary School
MTW-16-1	SKH Good Shepherd Primary School

Note:

(a) Subject to the latest Continuous Noise Monitoring Plan approved in October 2014.

3.2.2 Monitoring Parameter and Frequency

Continuous monitoring of $L_{Aeq(30min)}$ noise levels are required to be carried out at the eight proposed continuous noise monitoring locations identified in ***Table 3.4*** during the normal construction working hours (0700 – 1900 Monday to Saturday) in the period that presented in the CNMP. The recommended measurement period for the continuous noise monitoring programme in the CNMP are presented in ***Table 3.6***. If works are to be carried out during restricted hours (ie, outside 0700 – 1900 from Monday to Saturday), the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

3.2.3 Monitoring Equipment and Methodology

In accordance to the Technical Memorandum (TM) issued under the *Noise Control Ordinance* (NCO), sound level meters in compliance with the *International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1)* specifications will be used for carrying out the noise monitoring. The sound level meter and calibrator used for continuous noise measurement are listed in ***Table 3.5***.

Table 3.5 Continuous Noise Monitoring Equipment

Monitoring Station	Monitoring Equipment (Sound Level Meter and Calibrator)
TKW-3-2 (B)	Calibrator: NC-73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00131628)
MTW-12-3(A), MTW-12-11 (A) and MTW-16-1,	Calibrator: NC-73 (Serial No. 10997142) Sound Level Meter: NL-31 (Serial No. 00320533)
MTW-12-4(A)	Calibrator: NC-73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00643040)
MTW-12-4-1 (A)	Calibrator: NC-73 (Serial No. 10786708) Sound Level Meter: NL-52 (Serial No. 00643039)
MTW-12-10-1	Calibrator: NC- (Serial No. 10786708) Sound Level Meter: NL- (Serial No. 00983400)

Immediately prior to the noise measurement, the accuracy of the sound level meter will be checked using an acoustic calibrator, which generated a known sound pressure level at a known frequency. The accuracy of the sound level meter will also be checked on an annual-basis. Measurements will be accepted as valid only if the calibration level before and after the noise measurement agrees to be within 1.0 dB(A). Noise measurements will be made in accordance with standard acoustical principles and practices in relation to weather conditions.

3.2.4 Action and Limit Levels

The Action/Limit Levels for the continuous noise monitoring programme recommended in the latest CNMP are presented in ***Table 3.6.***

Table 3.6 Action/Limit Levels for Continuous Noise Monitoring [(a)]

Proposed Continuous Noise Monitoring Stations	Description	Action / Limit Level [(a)]	Measurement Period [(a)]
TKW-3-2(B)	Hing Fu Building	80	September 2014 – December 2014[(b)]
MTW-12-3 (A)	SKH Good Shepherd Primary School	80	August 2014 – January 2015[(b)], March 2015 – June 2015
MTW-12-4 (A)	Kong Yiu Mansion	80	August 2014 – June 2015[(b)]
MTW-12-4-1(A)	59 Maidstone Road	82	October 2014, December 2014 – June 2015
MTW-12-10	Lucky Building (South Façade)	84	March 2015 – April 2015, September 2015 – January 2016
MTW-12-10-1	Lucky Building (East Façade)	80	December 2014 – May 2015, September 2015 – January 2016
MTW-12-11 (A)	SKH Good Shepherd Primary School	81	September 2014 – June 2015 [(b)]
MTW-16-1	SKH Good Shepherd Primary School	78	December 2012 – January 2013; April 2013 – 21 August 2013,
		79 [(c)]	22 August 2013 – December 2013, August 2014 – March 2016

Notes:

(a) The A/L Levels and Measurement Periods will be subject to the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP).

(b) The latest CNMP was approved by EPD in October 2014. Continuous noise monitoring at TKW-3-2 (B), MTW-12-3 (A), MTW-12-4 (A) and MTW-12-11 (A) commenced in October 2014.

(c) The A/L Level of 79 dB(A) was updated on 22 August 2013 as per the latest Construction Noise Mitigation Measures Plan (CNMMP) and Continuous Noise Monitoring Plan (CNMP) which were approved by EPD.

The Event/Action Plan (EAP) of the latest CNMP for continuous noise monitoring is presented in ***Annex G***.

3.3 CONSTRUCTION DUST MONITORING

3.3.1 Monitoring Location

The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in ***Table 3.7*** and shown in ***Annex D***. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.7 Construction Dust Monitoring Location

Proposed Construction Dust Monitoring Location	Description
DMS-6 (a)	Katherine Building
DMS-7	Parc 22
DMS-8	SKH Good Shepherd Primary School
DMS-9 (b)	No. 12 Pau Chung Street
DMS-10	Chat Ma Mansion

Notes:

(a) Access to the monitoring location at Prosperity House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. Furthermore, the alternative location at No. 420 Prince Edward Road West, which was used in the baseline monitoring, was also not available as access permission was not granted by the owner of the building. An alternative location, Katherine Building, was proposed and had been approved by the ER and agreed by the IEC and EPD.

(b) As the Incorporated Owners Association of the originally proposed monitoring location at Lucky Building did not reply to our request for access to their premise, an alternative location, No. 26 Kowloon City Road, was proposed and had been approved by the ER and agreed by the IEC and EPD. However, 24-hour averaged dust monitoring had been suspended at DMS-9 No. 26 Kowloon City Road since March 2014 due to denied access by the occupant of the premise. No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring at No. 12 Pau Chung Street commenced on 12 June 2014.

3.3.2 Monitoring Parameter and Frequency

The construction dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in ***Table 3.8***. The TSP monitoring was conducted as per the schedule presented in ***Annex E***.

Table 3.8 Construction Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Dust Monitoring	Throughout the construction period of the Project	24-hour TSP	Once per 6 days

3.3.3 Monitoring Equipment

24-hour averaged TSP monitoring was performed at designated monitoring stations using High Volume Samplers (HVS) with the appropriate sampling inlets installed. The performance specification of HVS complied with the standard method "*Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*" as stipulated in *US EPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B)*. ***Table 3.9*** summarises the equipment that was deployed for the 24-hour averaged monitoring.

Table 3.9 Construction Dust Monitoring Equipment

Monitoring Location	Monitoring Equipment (HVS and Calibrator)
DMS-6	TE-5170 (Serial No. 0107), CM-AIR-43 (Orifice ID 2454)
DMS-7	TE-5170 (Serial No. 3574), CM-AIR-43 (Orifice ID 2454)
DMS-8	TE-5170 (Serial No. 3572), CM-AIR-43 (Orifice ID 2454)
DMS-9 (a)	TE-5170 (Serial No. 0814), CM-AIR-43 (Orifice ID 2454)
DMS-10	TE-5170 (Serial No. 3573), CM-AIR-43 (Orifice ID 2454)

Note:

(a) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road had been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring at No. 12 Pau Chung Street commenced on 12 June 2014.

3.3.4 Monitoring Methodology

All HVSs were free-standing with no obstruction.

The following criteria were considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind needed to be provided at the monitoring stations;
- a minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues was nearby;
- airflow around the sampler was unrestricted; and
- permission could be obtained to set up the samplers and gain access to the monitoring stations.

Preparation of Filter Papers

- glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected;
- all filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25°C and not varied by more than ± 3°C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implemented comprehensive quality assurance and quality control programmes on the filters.

Field Monitoring

- the power supply was checked to ensure that the HVSs were working properly;

- the filter holder and area surrounding the filter were cleaned;
- the filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- the filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- the swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- the shelter lid was closed and secured with an aluminium strip;
- the HVS was warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flow rate record sheet was inserted into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 - 1.37 m^3min^{-1} , which was within the range specified in the EM&A Manual (i.e. 0.6 – 1.7 m^3min^{-1});
- the programmable timer was set for a sampling period of 24 hours ± 1 hour, and the starting time, weather condition and filter number were recorded;
- the initial elapsed time was recorded;
- at the end of sampling, the sampled filter was removed carefully and folded in half so that only surfaces with collected particulate matter were in contact;
- the filter paper was placed in a clean plastic envelope and sealed;
- all monitoring information was recorded on a standard data sheet; and
- the filters were sent to SGS Hong Kong Ltd for analysis.

Maintenance and Calibration

- the HVSs and their accessories were maintained in a good working condition. For example, motor brushes were replaced routinely and electrical wiring was checked to ensure a continuous power supply; and
- the flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator. Initial calibrations of the dust monitoring equipment were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using CM-AIR-43 Calibration Kit. HVSs are calibrated every six-month. The calibration records for the HVSs are given in ***Annex F***.

Wind Data Monitoring

- Average wind data (wind speed and direction) at the Kai Tak meteorological station during the monitoring period were obtained from the Hong Kong Observatory (HKO) and presented in ***Annex J***.

3.3.5 Action and Limit Levels

The Action and Limit levels have been established and are presented in ***Table 3.10***.

Table 3.10 Action and Limit Levels for Dust Monitoring

Parameters	Dust Monitoring Station	Action Level (μg m^{-3}) [a]	Limit Level (μg m^{-3}) [a]
24-hour TSP	DMS-6	156.8	260
	DMS-7	166.7	260
	DMS-8	152.2	260
	DMS-9 [c]	160.9	260
	DMS-10	170.4	260
1-hour TSP [b]	DMS-6	288.8	500
	DMS-7	289.7	500
	DMS-8	300.0	500
	DMS-9 [c]	303.0	500
	DMS-10	294.7	500

Notes:

(a) Reference to the Baseline Monitoring Report submitted in July 2012.

(b) Action and Limit Levels for 1-hour TSP will only be used when 1-hour TSP is required to be monitored when a valid complaint is received.

(c) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road had been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring at No. 12 Pau Chung Street commenced on 12 June 2014.

The Event/Action Plan (EAP) for dust monitoring is presented in ***Annex G***.

3.4 CULTURAL HERITAGE

A License to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance was obtained from the Antiquities and Monuments Office (AMO) on 29 October 2012. The archaeological survey-cum-excavation and additional investigation at the Sacred Hill (North) commenced on 1 November 2012 and was conducted in accordance with the Licence and the approved Archaeological Action Plan (AAP). An updated AAP was submitted to AMO for renewal of the 1 year archaeological license. The license was renewed and granted by AMO on 24 October 2013. The updated AAP was submitted to EPD for approval on 11 October 2013 and it was approved on 1 November 2013. The fieldworks of the archaeological survey-cum-excavation and additional investigation were completed on 27 December 2013. The Interim Archaeological Report was provided to AMO in April 2014.

In accordance with the EM&A Manual, appropriate vibration monitoring on the identified built heritage will be agreed with the Building Department (BD)/Geotechnical Engineering Office (GEO) under the requirement of Buildings Ordinance and/or Blasting Permit as appropriate. Vibration levels will be controlled to appropriate levels. Vibration monitoring will be carried out by the Contractor. The structures requiring vibration monitoring during the relevant tunneling work for this Works Contract include S.K.H. Holy Trinity Church and Old Fast East Flying Training School.

3.5 LANDSCAPE AND VISUAL MITIGATION MEASURES

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is given in ***Annex H***.

4 IMPLEMENTATION STATUS OF THE ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented all the environmental mitigation measures and requirements as stated in the EIA Report, Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures for this Works Contract during the reporting period is summarised in ***Annex H***. The status of the required submissions under the EP for this Works Contract during this reporting month is presented in ***Table 4.1***.

Table 4.1 Status of Required Submission under Works Contract 1109

EP Condition	Submission	Submission Date
Condition 3.4	Twenty-ninth Monthly EM&A Report	13 February 2015

5 MONITORING RESULTS

5.1 REGULAR CONSTRUCTION NOISE MONITORING

A total of 20 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period. The noise level recorded at all five monitoring locations during the whole reporting period are below baseline level or below limit level after baseline-level correction.

The monitoring results together with their graphical presentations are presented in ***Annex I-1.***

5.2 CONTINUOUS NOISE MONITORING

Continuous noise monitoring is required at MTW-12-4(A), MTW-12-4-1(A), MTW-12-10-1, MTW-12-11(A) and MTW-16-1 during the reporting month, according to the schedule presented in latest approved CNMP.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-11 (A) on 2, 3, 4, 5, 7, 9 and 17 February 2015 and at MTW-16-1 on 2, 3, 4, 5, 6, 7, 9 and 17 February 2015.

Investigation of exceedances on 30 and 31 January 2015; 2, 3, 4, 5, 6, 7, 9 and 17 February 2015 had been completed and the investigation reports are presented in *Annex L*.

The monitoring results are presented in ***Annex I-2***.

5.3 CONSTRUCTION DUST MONITORING

A total of 25 sets of 24-hr TSP monitorings were carried out at the designated monitoring stations during normal weekdays of the reporting period. The monitoring results together with their graphical presentations are presented in ***Annex J*** and a summary of the dust monitoring results in this reporting month is given in ***Table 5.1***.

Table 5.1 Summary of the Dust Monitoring Results in this Reporting Month

Monitoring Station	24-hour TSP Monitoring Results measured, μgm^{-3} (a)		Action Level, μgm^{-3}	Limit Level, μgm^{-3}
	Average	Range		
DMS-6	72	63 – 77	156.8	260
DMS-7	74	64 - 80	166.7	260
DMS-8	74	61 – 84	152.2	260

Monitoring Station	24-hour TSP Monitoring Results measured, μgm^{-3} [a]		Action Level, μgm^{-3}	Limit Level, μgm^{-3}
	Average	Range		
DMS-9 [a]	76	65 - 88	160.9	260
DMS-10	72	63 - 78	170.4	260

Note:

(a) 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road has been suspended since March 2014 due to denied access by the occupant of the premise. However, No. 12 Pau Chung Street, as an alternative monitoring location, was approved by EPD. 24-hour averged dust monitoring commenced on 12 June 2014.

No exceedance of the Action and Limit Levels of the 24-hr TSP was recorded during the reporting period.

5.4 CULTURAL HERITAGE

A License to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance was obtained from Antiquities and Monuments Office (AMO) on 29 October 2012. The archaeological survey-cum-excavation and additional investigation at the Sacred Hill (North) commenced on 1 November 2012 and was conducted in accordance with the License and the approved Archaeological Action Plan (AAP). An updated AAP was submitted to AMO for renewal of the 1 year archaeological license. The license was renewed and granted by AMO on 24 October 2013. The updated AAP was submitted to EPD for approval on 11 October 2013 and it was approved on 1 November 2013. The fieldworks of the archaeological survey-cum-excavation and additional investigation were completed on 27 December 2013. The Interim Archaeological Report was provided to AMO in April 2014.

Vibration monitoring was conducted at Hong Kong Aviation Club during the reporting period, no non-compliance was recorded.

5.5 WASTE MANAGEMENT

The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in ***Table 5.2***. Details of waste management data are presented in ***Annex K.***

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity			
	Inert C&D Materials [a]	Chemical Waste [c]	Non-inert C&D Materials	
			General	Recycled materials

Reporting	Quantity					
	(b)		Refuse/Vegetative Waste	Paper/card board	Plastics	Metals
February 2015	46,884 m^3	0 kg	106 m^3	90 kg	3102 kg	0 kg

Notes:

(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil.

(b) About 46,884 m^3 of inert C&D materials were generated from the Project, and sent to 1108A Kai Tai Barging Facilities during the reporting month.

(c) Chemical waste includes waste oil. It is assumed density of waste oil to be 0.8 kg/L.

5.6 LANDSCAPE AND VISUAL MITIGATION MEASURES

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 9 and 23 February 2015. Most of the mitigation measures given in ***Annex H*** have been implemented. Required Actions that were found are listed below:

9 February 2015

- No observation was reported during the site inspection.

23 February 2015

- No observation was reported during the site inspection.

Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 2, 9, 16 and 23 February 2015. The representative of the IEC joined the site inspection on 9 February 2015. No non-compliance was recorded during the site inspections.

Findings and recommendations for the site inspection in this reporting month are summarised as follows:

2 February 2015

- There was no major observation during the site inspection.

9 February 2015

- There was no major observation during the site inspection.

16 February 2015

- The Contractor was reminded to erect noise blanket for the power pack in MTW/TKW Road Garden.
- The Contractor was reminded to provide sufficient drip trays for the chemical conttainers in launching shaft and Olympic Garden.

23 February 2015

- There was no major observation during the site inspection.

All follow-up actions requested by Contractor's ET and IEC during the site inspections were undertaken as reported by the Contractor. The abovementioned environmental issues had been addressed and mitigated during the reporting period.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 SUMMARY OF MONITORING EXCEEDANCE

No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded during the reporting month.

Following up on the exceedances of the Action and Limit Levels of the continuous noise monitoring recorded on 30 and 31 January 2015; 2, 3, 4, 5, 6, 7, 9 and 17 February 2015 investigation of the exceedances have been completed and the investigation reports are presented in *Annex L.*

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-11 (A) on 2, 3, 4, 5, 7, 9 and 17 February 2015 and at MTW-16-1 on 2, 3, 4, 5, 6, 7, 9 and 17 February 2015.

7.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance event was recorded during the reporting month.

7.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was reported during the reporting month. The cumulative environmental complaint log is shown in ***Annex M***.

Investigation had been completed for complaint from the previous reporting month reported on 30 January 2015 and the investigation detail is presented in Annex L.

7.4 SUMMARY OF ENVIRONMENTAL SUMMON AND SUCCESSFUL PROSECUTION

No summon was received during the reporting month. The cumulative summon/prosecution log is shown in ***Annex M.***

8 FUTURE KEY ISSUES

8.1 KEY ISSUES FOR THE COMING MONTH

Works to be undertaken in the next reporting month are summarised in ***Table 8.1***.

Table 8.1 Construction Works to be undertaken in the Next Reporting Month

Construction Activities to be undertaken
Work in Ma Tau Wai (MTW)
● TKW/MTW Road Garden – Operation of bentonite plant and pier 15 underpinning works; and ● Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction,trial pits for location of utilities and roof slab construction.
Work in To Kwa Wan (TKW)
● Olympic Garden – Underpinning works, installation of pipe pile and TTMS preparation; ● Olympic Playground – TTMS preparation; ● TKW Station – Pump installation, shaft enclosure construction and TBM & STP site setup; and ● Nam Kok Road – Installation of pipe pile.

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

Three additional storage areas will be provided in Kai Tak area (one is close to HK aviation club; one is close to Dakota Drive and one is close to Kai Ching Estate). The additional storage areas will be used as non-dusty material storage areas only, so the potential environmental impacts arising from the storage areas are considered to be insignificant. Nevertheless, the activities in the storage area will be monitored by the existing EM&A programme.

8.2 MONITORING SCHEDULE FOR THE NEXT MONTH

The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring in the next reporting period is presented in ***Annex E***. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

8.3 CONSTRUCTION PROGRAMME FOR THE NEXT MONTH

The construction programme for the Project for the next reporting month is presented in ***Annex B.***

9 CONCLUSIONS

This 30th monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 February 2015 to 28 February 2015 in accordance with the EM&A Manual and the requirement under EP-438/2012/H.

No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting period.

Following up on the exceedances of the Action and Limit Levels of the continuous noise monitoring recorded on on 30 and 31 January 2015; 2, 3, 4, 5, 6, 7, 9 and 17 February 2015 investigation of the exceedances have been completed and the investigation reports are presented in *Annex L*.

Exceedances of the Action and Limit Levels of the continuous noise monitoring were recorded at MTW-12-11 (A) on 2, 3, 4, 5, 7, 9 and 17 February 2015 and at MTW-16-1 on 2, 3, 4, 5, 6, 7, 9 and 17 February 2015.

No complaint was reported during the reporting month.

No summon or prosecution was received during the reporting period.

The Contractor has implemented possible and feasible mitigation measures to mitigate the potential environmental impacts during construction. The Contractor's ET will continue to keep track of the EM&A programme to ensure compliance of environmental requirements and the effectiveness and efficiency of the mitigation measures implemented. If necessary, the Contractor will provide more mitigation measures to further alleviate the impacts.

Annex A

The Alignment and Works Area for Works Contract

TKW

MTW

N

Meters

0 100 200

Key

Proposed Alignment

Works Area

Proposed Station

Annex A

Alignment, Stations and Works Area of SCL Works Contract 1109

Name: 0171181_Works_Area_Annex.mxd
Date: 12/08/2014

Environmental Resources Management

ERM

Annex B

Construction Programme for the Reporting Month and the Coming Month (1)

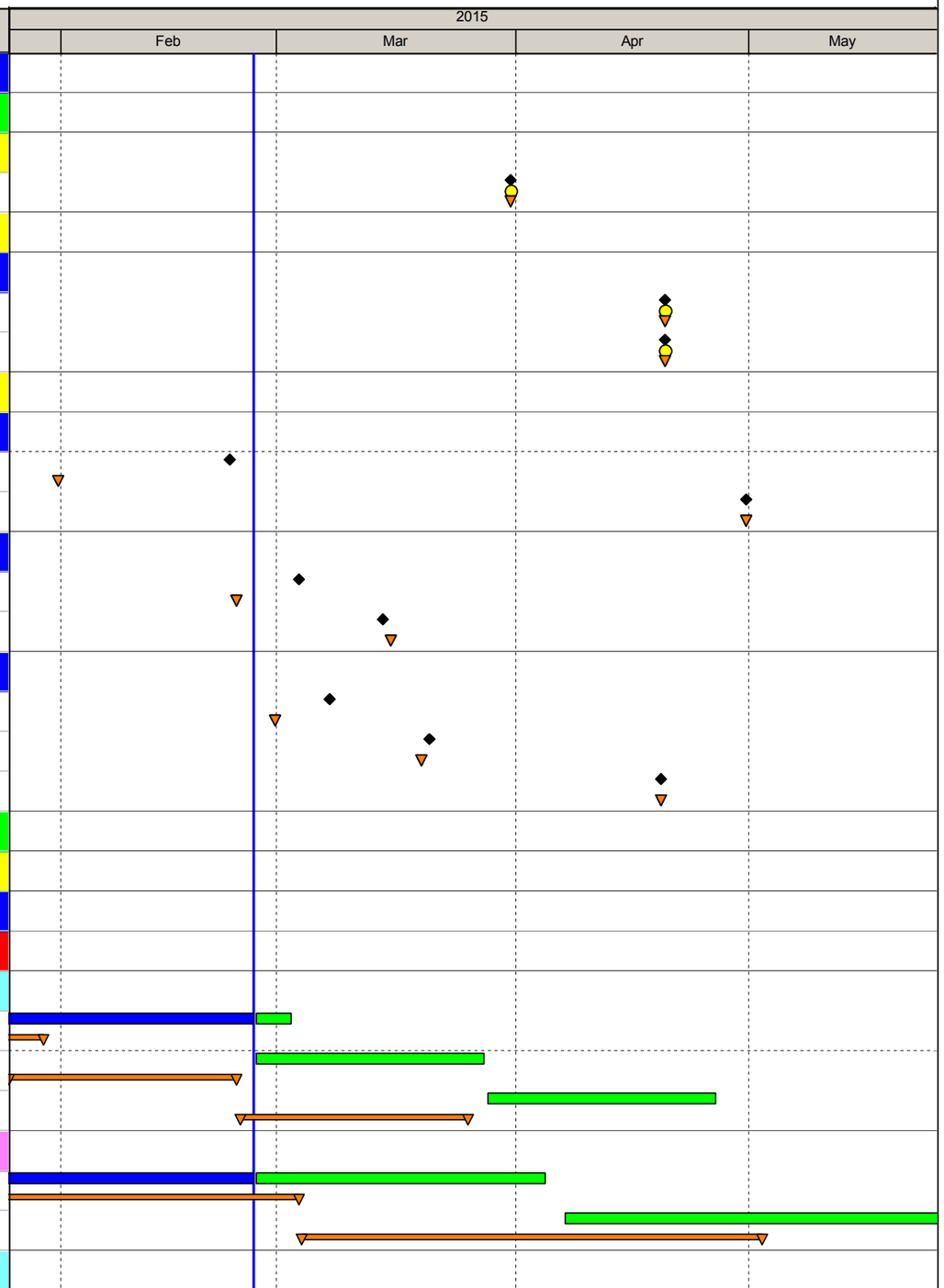
(1) Sung Wong Toi and To Kwa Wan Stations in the programme mean To Kwa Wan and Ma Tau Wai Stations in the Monthly EM&A Report respectively.

Data Date: 25-Feb-15

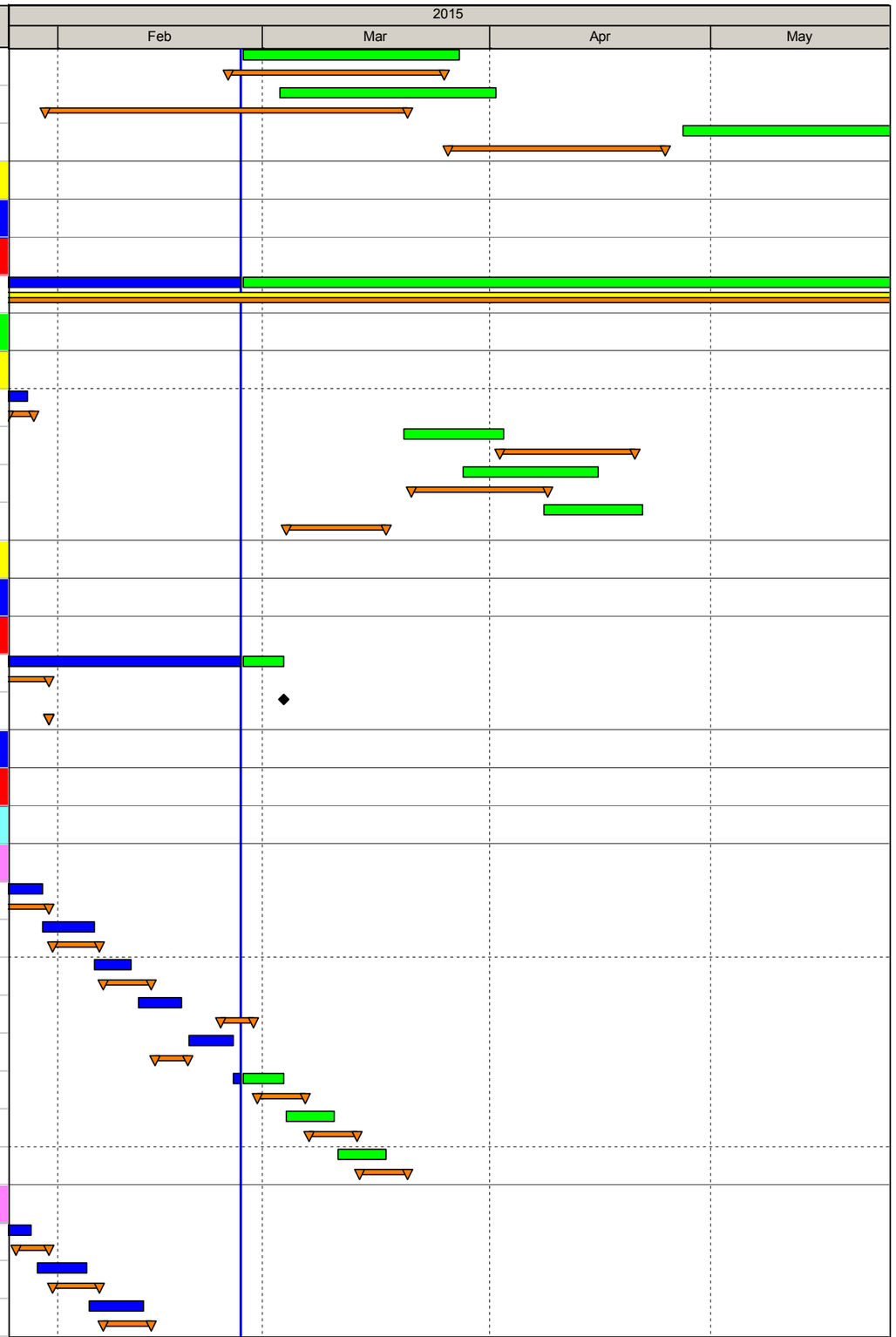
SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - FEBRUARY 2015

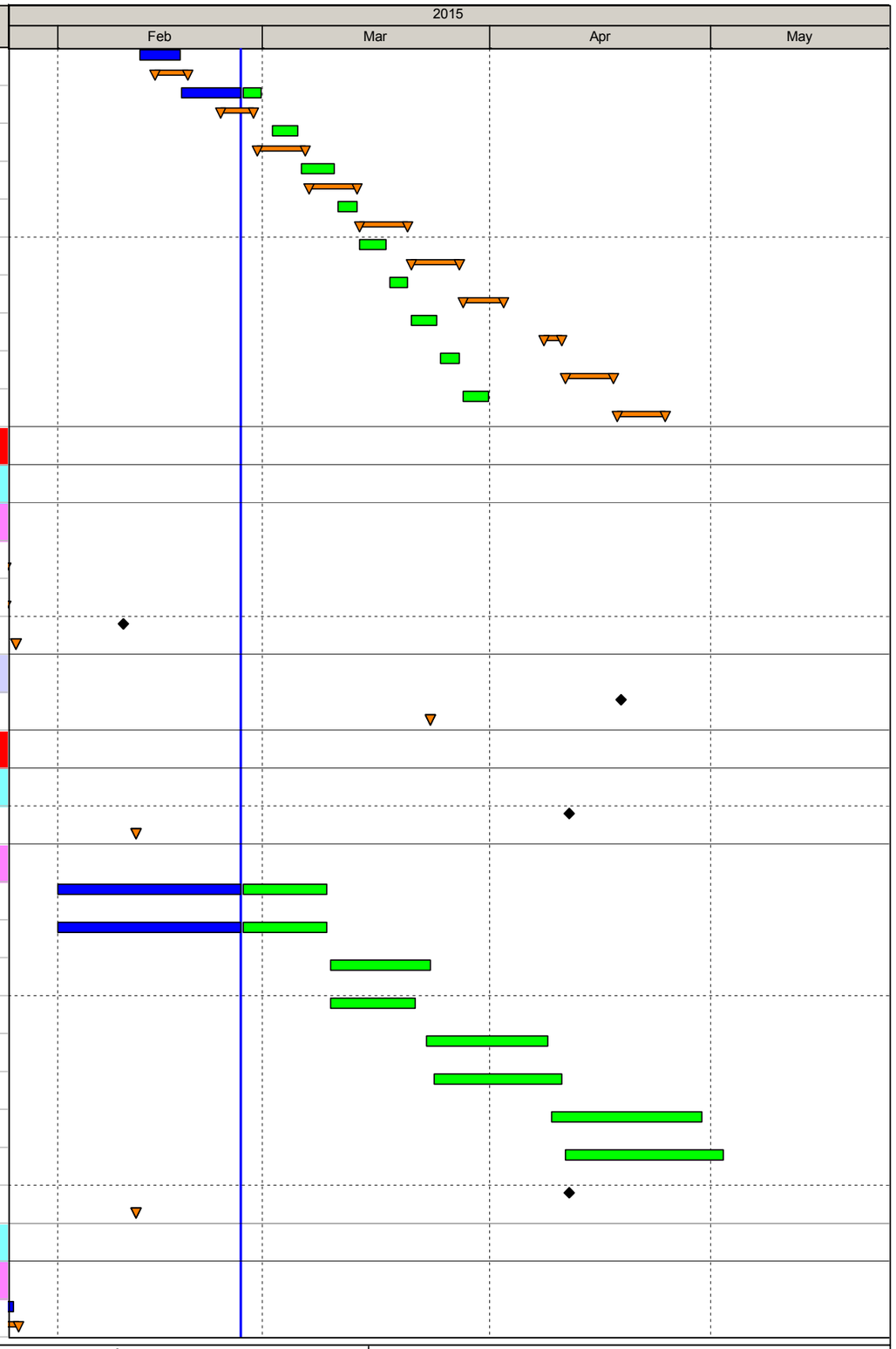
Activity ID	Activity Name	Physical % Complete	Start	Finish
1109 - SUW & TKW Stations and Tunnels FEBRUARY 2015 (UWP R5)			04-Dec-13 A	15-Feb-16
PROJECT DATES			23-Feb-15 A	30-Apr-15
Schedule of Option Dates			31-Mar-15	31-Mar-15
01109.AD1070	Latest excercise date for Options (P57.3) 31 March 2015	0%	31-Mar-15*	
Works Areas			20-Apr-15	20-Apr-15
Access Dates			20-Apr-15	20-Apr-15
01109.ACW3a	Access date to Works Area 1109.W3a (Wk16/15;20Apr15)	0%	20-Apr-15*	
01109.ACW6a	Access date to Works Area 1109.W6a (Wk16/15;20Apr15)	0%	20-Apr-15*	
Specified Milestone Dates			23-Feb-15 A	30-Apr-15
CC-B Milestones			23-Feb-15 A	30-Apr-15
01109.MSB09i	B9(i)-TBM launch shaft complete & ready for TBM setup(31 Jan 15)	100%		23-Feb-15 A
01109.MSB09iia	B9(ii)a (Rev)-20% by volume of open cut excavation at SUW complete.(Revised IPS dated 31 Jan 15)	0%		30-Apr-15*
CC-C Milestones			03-Mar-15	14-Mar-15
01109.MSC09a	C9a-30% by plan area of roof slab between gridlines 1 to 28 complete.(31May15)	0%		03-Mar-15
01109.MSC09ii	C9(ii)-All works complete to facilitate driving through of Down Track TBM at station box.(31Mar15)	0%		14-Mar-15
CC-D Milestones			07-Mar-15	19-Apr-15
01109.MSD08a	D8(a)-Earthwork support system at TKA complete & pumping test results accepted by the Engineer.(Revised IPS 28 Feb 15)	0%		07-Mar-15*
01109.MSD010aiv	D10a(iv)-Removal of existing bored piles at EKW Pier 15 complete.(Revised IPS 15 Nov 15)	0%		20-Mar-15
01109.MSD07	D7-Assembly, testing & commissioning of the first TBM complete & ready for tunnel driving(Revised IPS 19 Apr 15)	0%		19-Apr-15*
CC-A - PRELIMINARIES AND GENERAL REQUIREMENTS			04-Dec-13 A	15-Feb-16
Design and Approvals			04-Dec-13 A	05-Jun-15
Temporary Traffic Arrangements			04-Dec-13 A	05-Jun-15
SUW Station, Entrances and Adits			04-Dec-13 A	05-Jun-15
TTMS Design & Approval			04-Dec-13 A	05-Jun-15
01109.PDA1320	SUW - TTM for Kln City Interchange - Design & Approval by SLG	95%	26-Apr-14 A	02-Mar-15
01109.PDA1360	SUW - Nam Kok Rd - TTM Stage 2 Phase 1 - Design & Approval by SLG	0%	26-Feb-15	27-Mar-15*
01109.PDA1390	SUW - Nam Kok Rd - TTM Stage 2 Phase 2 - Design & Approval by SLG	0%	28-Mar-15	26-Apr-15
Special Design & Approval Period to allow construction works			04-Dec-13 A	05-Jun-15
01109.PDA1340A	SUW - Sung Wong Toi & Pak Tai St - TTM Stage 1 - Design & Approval by SLG	90%	04-Dec-13 A	04-Apr-15
01109.PDA1380A	SUW - Sung Wong Toi & Pak Tai St - TTM Stage 2 - Design & Approval by SLG	0%	07-Apr-15	05-Jun-15
TTMS Gazette Notice			26-Feb-15	26-May-15



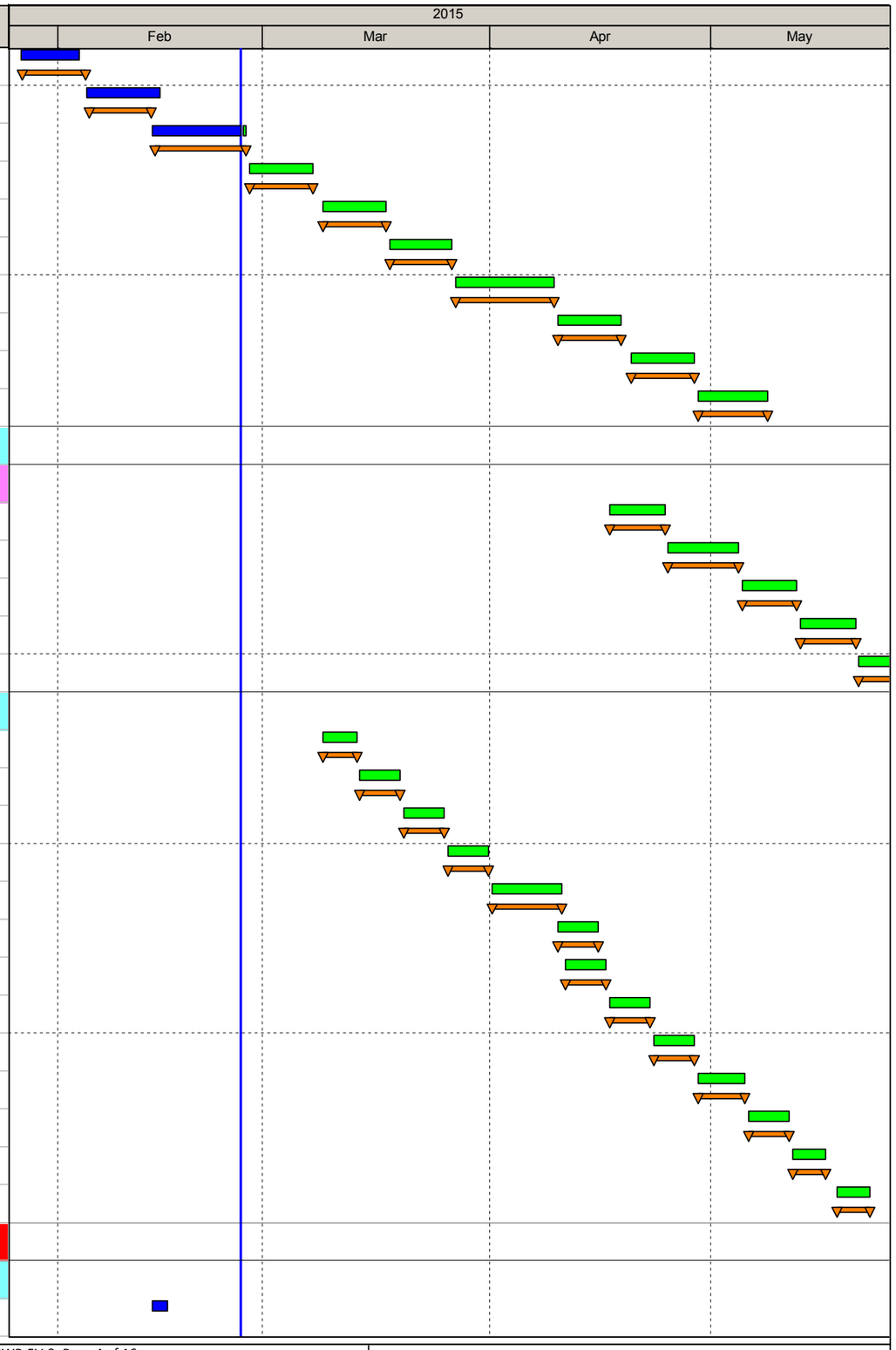
Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDA1470	SUW - Nam Kok Rd - TTM Stage 2 Phase 1 - Gazette Notice	0%	26-Feb-15	27-Mar-15
01109.PDA1450	SUW - TTM for Kln City Interchange - Gazette Notice	0%	03-Mar-15	01-Apr-15
01109.PDA1480	SUW - Nam Kok Rd - TTM Stage 2 Phase 2 - Gazette Notice	0%	27-Apr-15	26-May-15
Procurement			25-Jan-14 A	15-Feb-16
Concrete Construction Materials			25-Jan-14 A	15-Feb-16
Precast supplies			25-Jan-14 A	15-Feb-16
01109.PDA4020	Precast concrete segment manufacture (2nd and subsequent batches)	49%	25-Jan-14 A	15-Feb-16
CC-B - SUW STATION, ENTRANCES AND ADITS			21-Mar-14 A	03-Nov-15
Implementation of TTA at SUW			24-Jan-15 A	21-Apr-15
01109.PDB1651-1A	SUW - TTMS Implementation (Kowloon City Interchange), 28 Jan 2015	100%	24-Jan-15 A	28-Jan-15 A
01109.PDB1571	SUW - Nam Kok Rd - Implement TTM Stage 2 (Phase 1)	0%	20-Mar-15	02-Apr-15
01109.PDB1651	SUW - Implement TTM for Kln City Interchange	0%	28-Mar-15	15-Apr-15
01109.PDB1601	SUW - Sung Wong Toi & Pak Tai St - Implement TTM Stage 1	0%	08-Apr-15	21-Apr-15
SUW Station Construction Works			15-Sep-14 A	29-May-15
Site Preparation			15-Sep-14 A	03-Mar-15
Archaeological Survey			15-Sep-14 A	03-Mar-15
01109.PDB14459A	AMO Approval Period on AWB Open Cut (El 67)	95%	15-Sep-14 A	03-Mar-15
01109.PDB14458A	MTR Instruction (Assume Date on AWB Areas (El 67) Release for Construction)	0%		03-Mar-15
Station - Excavation and Foundation			08-Jan-15 A	29-May-15
Pre-bored H- Piling for Permanent Works			22-Jan-15 A	31-Mar-15
Additional Prebored H Piles and Pipe Piles			22-Jan-15 A	31-Mar-15
Additional Pipe Piles			24-Jan-15 A	17-Mar-15
01109.PDB4161-07A	Additional Pipe Piles (El 111), 6 nos on week 30 Jan 15	100%	24-Jan-15 A	30-Jan-15 A
01109.PDB4161-08A	Additional Pipe Piles (El 111), 6 nos on week 6 Feb 15	100%	30-Jan-15 A	06-Feb-15 A
01109.PDB4161-09A	Additional Pipe Piles (El 111), 6 nos on week 13 Feb 15	100%	06-Feb-15 A	11-Feb-15 A
01109.PDB4161-11A	Additional Pipe Piles (El 111), 3 nos on week 27 Feb 15	100%	12-Feb-15 A	18-Feb-15 A
01109.PDB4161-10A	Additional Pipe Piles (El 111), 3 nos on week 20 Feb 15	100%	19-Feb-15 A	25-Feb-15 A
01109.PDB4161-12A	Additional Pipe Piles (El 111), 6 nos on week 6 Mar 15	5%	25-Feb-15 A	03-Mar-15
01109.PDB4161-13A	Additional Pipe Piles (El 111), 6 nos on week 13 Mar 15	0%	04-Mar-15	10-Mar-15
01109.PDB4161-14A	Additional Pipe Piles (El 111), 6 nos on week 20 Mar 15	0%	11-Mar-15	17-Mar-15
Additional Prebored H Piles			22-Jan-15 A	31-Mar-15
01109.PDB20061-03A	Additional Prebored H Piles (El 111 & El ??), 5 nos on week 30 Jan 15	100%	22-Jan-15 A	28-Jan-15 A
01109.PDB20061-04A	Additional Prebored H Piles (El 111 & El ??), 5 nos on week 6 Feb 15	100%	29-Jan-15 A	05-Feb-15 A
01109.PDB20061-05A	Additional Prebored H Piles (El 111 & El ??), 4 nos on week 13 Feb 15	100%	05-Feb-15 A	12-Feb-15 A



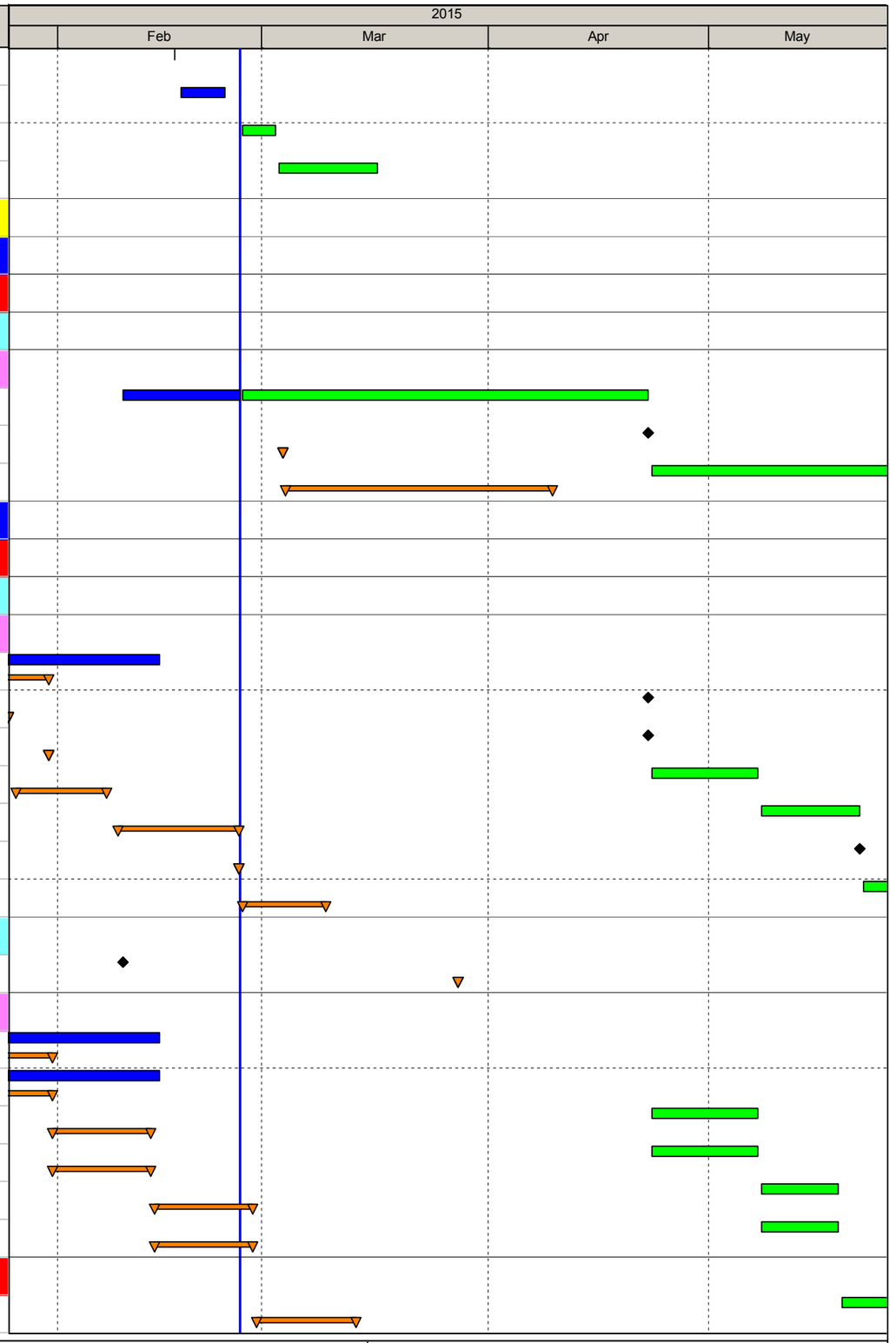
Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDB20061-06A	Additional Prebored H Piles (EI 111 & EI ??), 3 nos on week 20 Feb 15	100%	12-Feb-15 A	17-Feb-15 A
01109.PDB20061-07A	Additional Prebored H Piles (EI 111 & EI ??), 2 nos on week 27 Feb 15	80%	18-Feb-15 A	28-Feb-15
01109.PDB20061-08A	Additional Prebored H Piles (EI 111 & EI ??), 5 nos on week 6 Mar 15	0%	02-Mar-15	05-Mar-15
01109.PDB20061-09A	Additional Prebored H Piles (EI 111 & EI ??), 5 nos on week 13 Mar 15	0%	06-Mar-15	10-Mar-15
01109.PDB20061-10A	Additional Prebored H Piles (EI 111 & EI ??), 4 nos on week 20 Mar 15	0%	11-Mar-15	13-Mar-15
01109.PDB20061-11A	Additional Prebored H Piles (EI 111 & EI ??), 5 nos on week 27 Mar 15	0%	14-Mar-15	17-Mar-15
01109.PDB20061-12A	Additional Prebored H Piles (EI 111 & EI ??), 5 nos on week 3 Apr 15	0%	18-Mar-15	20-Mar-15
01109.PDB20061-13A	Additional Prebored H Piles (EI 111 & EI ??), 4 nos on week 10 Apr 15	0%	21-Mar-15	24-Mar-15
01109.PDB20061-14A	Additional Prebored H Piles (EI 111 & EI ??), 5 nos on week 17 Apr 15	0%	25-Mar-15	27-Mar-15
01109.PDB20061-15A	Additional Prebored H Piles (EI 111 & EI ??), 2 nos on week 24 Apr 15	0%	28-Mar-15	31-Mar-15
TBM Launch Shaft Works			08-Jan-15 A	18-Apr-15
Excavation TBM Shaft Area			08-Jan-15 A	18-Apr-15
Excavation and lateral Support - TBM Shaft			08-Jan-15 A	18-Apr-15
01109.PDB19506B	Removal of S4 & S5 Struts Between GL1-4.5	100%	08-Jan-15 A	25-Jan-15 A
01109.PDB19507B	Removal of S4 & S5 Struts Between GL4.5-7.5	100%	19-Jan-15 A	25-Jan-15 A
01109.PDB3090	EI 117 Suspension of Adit C - HOLD Confirmation of Removal of T1 Well	100%	10-Feb-15 A	
Resequence			18-Apr-15	18-Apr-15
01109.PDB3200A	All TBM Shaft works complete and ready for TBM (Assume before Pile Testing)	0%		18-Apr-15
Earthworks			17-Jan-15 A	29-May-15
Curtain Grout Works			01-Feb-15 A	02-May-15
01109.PDB3480	Grout Curtain complete	0%		11-Apr-15
North of SUW			01-Feb-15 A	02-May-15
01109.PDB3230-3A	Grout Curtain Part 3, GL 10 to 12/A	60%	01-Feb-15 A	09-Mar-15
01109.PDB3230-4A	Grout Curtain Part 3, GL 12 to 14/A	60%	01-Feb-15 A	09-Mar-15
01109.PDB3230-2A	Grout Curtain Part 3, GL 8 to 10/A	0%	10-Mar-15	23-Mar-15
01109.PDB3230-5A	Grout Curtain Part 3, GL 10 to 12/A-A1	0%	10-Mar-15	21-Mar-15
01109.PDB3230-6A	Grout Curtain Part 3, GL 12 to 14/A1-A2	0%	23-Mar-15	08-Apr-15
01109.PDB3230-1A	Grout Curtain Part 3, GL 7.5 to 8/A	0%	24-Mar-15	10-Apr-15
01109.PDB3220-2A	Grout Curtain; Part 2 - GL 6.5-7.5 A to A2 (for Adit B1)	0%	09-Apr-15	29-Apr-15
01109.PDB3220-1A	Grout Curtain; Part 2 - GL 4-5 A to A2 (for Adit B1)	0%	11-Apr-15	02-May-15
01109.PDB19360B	Grout Curtain completed on North of Station	0%		11-Apr-15
Stage 2 Excavation +1.0 to -6.0mPD & form 1.5m berm			17-Jan-15 A	08-May-15
Stage 2 Excavation, Zone 1			17-Jan-15 A	08-May-15
01109.PDB4580	Stg 2 - Excavation; Part 4- GL 20 to 21	100%	17-Jan-15 A	26-Jan-15 A



Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDB4620	Stg 2 - Excavation; Part 4- GL 21 to 22	100%	27-Jan-15 A	04-Feb-15 A
01109.PDB4650	Stg 2 - Excavation; Part 4- GL 22 to 23	100%	05-Feb-15 A	15-Feb-15 A
01109.PDB4680	Stg 2 - Excavation; Part 4- GL 23 to 24	90%	14-Feb-15 A	26-Feb-15
01109.PDB4710	Stg 2 - Excavation; Part 4- areas beyond GL 24	0%	27-Feb-15	07-Mar-15
01109.PDB4600	Stg 2 - Excavation; Part 3- GL 12 to 13	0%	09-Mar-15	17-Mar-15
01109.PDB4640	Stg 2 - Excavation; Part 3- GL 13 to 14	0%	18-Mar-15	26-Mar-15
01109.PDB4670	Stg 2 - Excavation; Part 3- GL 14 to 15	0%	27-Mar-15	09-Apr-15
01109.PDB4700	Stg 2 - Excavation; Part 3- GL 15 to 16	0%	10-Apr-15	18-Apr-15
01109.PDB4720	Stg 2 - Excavation; Part 3- GL 16 to 17	0%	20-Apr-15	28-Apr-15
01109.PDB4730	Stg 2 - Excavation; Part 3- GL 17 to 18	0%	29-Apr-15	08-May-15
Stage 3 Excavation +-6.0 to -13.5mPD			17-Apr-15	29-May-15
Stage 3 Excavation, Zone 1			17-Apr-15	29-May-15
01109.PDB5050	Stg 3 - Excavation; Part 4- GL 19 to 20	0%	17-Apr-15	24-Apr-15
01109.PDB5060	Stg 3 - Excavation; Part 4- GL 20 to 21	0%	25-Apr-15	04-May-15
01109.PDB5130	Stg 3 - Excavation; Part 4- GL 21 to 22	0%	05-May-15	12-May-15
01109.PDB5170	Stg 3 - Excavation; Part 4- GL 22 to 23	0%	13-May-15	20-May-15
01109.PDB5210	Stg 3 - Excavation; Part 4- GL 23 to 24	0%	21-May-15	29-May-15
Install dewatering wells & monitoring sns / take readings 2			09-Mar-15	22-May-15
01109.PDB4800	Wells, instruments,readings 2; Part 4- GL 19 to 20	0%	09-Mar-15	13-Mar-15
01109.PDB4850	Wells, instruments,readings 2; Part 4- GL 20 to 21	0%	14-Mar-15	19-Mar-15
01109.PDB4890	Wells, instruments,readings 2; Part 4- GL 21 to 22	0%	20-Mar-15	25-Mar-15
01109.PDB4930	Wells, instruments,readings 2; Part 4- GL 22 to 23	0%	26-Mar-15	31-Mar-15
01109.PDB4960	Wells, instruments,readings 2; Part 4- GL 23 to 24	0%	01-Apr-15	10-Apr-15
01109.PDB4770	Wells, instruments,readings 2; Part 3- GL 10 to 11	0%	10-Apr-15	15-Apr-15
01109.PDB4990	Wells, instruments,readings 2; Part 4- areas beyond GL 24	0%	11-Apr-15	16-Apr-15
01109.PDB4870	Wells, instruments,readings 2; Part 3- GL 12 to 13	0%	17-Apr-15	22-Apr-15
01109.PDB4920	Wells, instruments,readings 2; Part 3- GL 13 to 14	0%	23-Apr-15	28-Apr-15
01109.PDB4950	Wells, instruments,readings 2; Part 3- GL 14 to 15	0%	29-Apr-15	05-May-15
01109.PDB4980	Wells, instruments,readings 2; Part 3- GL 15 to 16	0%	06-May-15	11-May-15
01109.PDB5010	Wells, instruments,readings 2; Part 3- GL 16 to 17	0%	12-May-15	16-May-15
01109.PDB5020	Wells, instruments,readings 2; Part 3- GL 17 to 18	0%	18-May-15	22-May-15
Pile Load Tests			14-Feb-15 A	16-Mar-15
Part 3			14-Feb-15 A	16-Mar-15
01109.PDB2500-1A	W29HP03 platform fabrication, Site formation from +1 to -7.5mPD. with compaction	100%	14-Feb-15 A	16-Feb-15 A



Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDB2500-2A	W29HP03 platform fabrication, Blinding layer casting	100%	17-Feb-15 A	17-Feb-15 A
01109.PDB2500-3A	W29HP03 platform fabrication, Setting out, Mobilization of plant and equipment	100%	18-Feb-15 A	24-Feb-15 A
01109.PDB2500-4A	W29HP03 platform fabrication, Setting out, Setup the loading test	0%	26-Feb-15	02-Mar-15
01109.PDB2500-5A	Pile Load Tests, W29HP03	0%	03-Mar-15	16-Mar-15
Entrance C and Associated Adits			21-Mar-14 A	03-Jun-15
Entrance C - Part 2 - GL C3 to C7			10-Feb-15 A	27-May-15
Entrance C - Part 2- GL 3 to GL 7; Segment 1			10-Feb-15 A	27-May-15
Entrance C- Part 2- Seg 1; ELS Works			10-Feb-15 A	27-May-15
Entrance C - Part 2- Seg 1; Sheet Piling & Toe Grouting Works			10-Feb-15 A	27-May-15
01109EI117A	EI 117 Suspension of Construction Works for Adit C, SUW	20%	10-Feb-15 A	22-Apr-15
01109.PDB19350	TTMS for completion of UU diversion	0%		22-Apr-15
01109.PDB10730	Sheet Piling & Toe grouting Works; GL C5 to C7; Segment 1; East Side	0%	23-Apr-15	27-May-15
Entrance C - Part 1 - GL C7 to C14			21-Mar-14 A	03-Jun-15
Entrance C- Part 1- ELS Works			21-Mar-14 A	03-Jun-15
Entrance C - Part 1- Piling & Toe Grouting Works			18-Nov-14 A	03-Jun-15
GL12 to GL 14			18-Nov-14 A	03-Jun-15
01109.PDB14452A	AMO Approval Period - EI 71 - 2	100%	18-Nov-14 A	15-Feb-15 A
01109.PDB14450B	MTR to advise pile for testing	0%		22-Apr-15
01109.PDB14451B	MTR Instruction (Assume Date on AWB Areas (EI 67) Release for Construction)	0%		22-Apr-15
01109.PDB14411A	Pre Bored H pile testing - Stage 1	0%	23-Apr-15	07-May-15
01109.PDB14412A	Pre Bored H pile testing - Stage 2	0%	08-May-15	21-May-15
01109.PDB10410A	All Piling Works for Ent C & Adits complete	0%		21-May-15
01109.PDB14420A	Pump Test	0%	22-May-15	03-Jun-15
Entrance C - Part 1-Excavation Works			21-Mar-14 A	18-May-15
01109.PDB20050-1A	EI 117 Suspension of Adit C - HOLD Removal and Excavate T1 to -5.9mPD	100%		10-Feb-15 A
GL 7 to GL 12			21-Mar-14 A	18-May-15
01109.PDB19680A	Excavation & Lateral Support Works; GL C7 to C9 - 1	100%	21-Mar-14 A	15-Feb-15 A
01109.PDB19710A	Excavation & Lateral Support Works; GL C9 to C12 - 1	100%	02-Apr-14 A	15-Feb-15 A
01109.PDB19690A	Excavation & Lateral Support Works; GL C7 to C9 - 2	0%	23-Apr-15	07-May-15
01109.PDB19720A	Excavation & Lateral Support Works; GL C9 to C12 - 2	0%	23-Apr-15	07-May-15
01109.PDB19700A	Excavation & Lateral Support Works; GL C7 to C9 - 3	0%	08-May-15	18-May-15
01109.PDB19730A	Excavation & Lateral Support Works; GL C9 to C12 - 3	0%	08-May-15	18-May-15
Entrance C - Part 1- Concrete Structure Works			19-May-15	02-Jun-15
01109.PDB19740A	Concrete Structure GL C12 to C11 - 1	0%	19-May-15	02-Jun-15



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MTR Corporation Limited

Shatin to Central Link Contract 1109

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Printed:06-Mar-15

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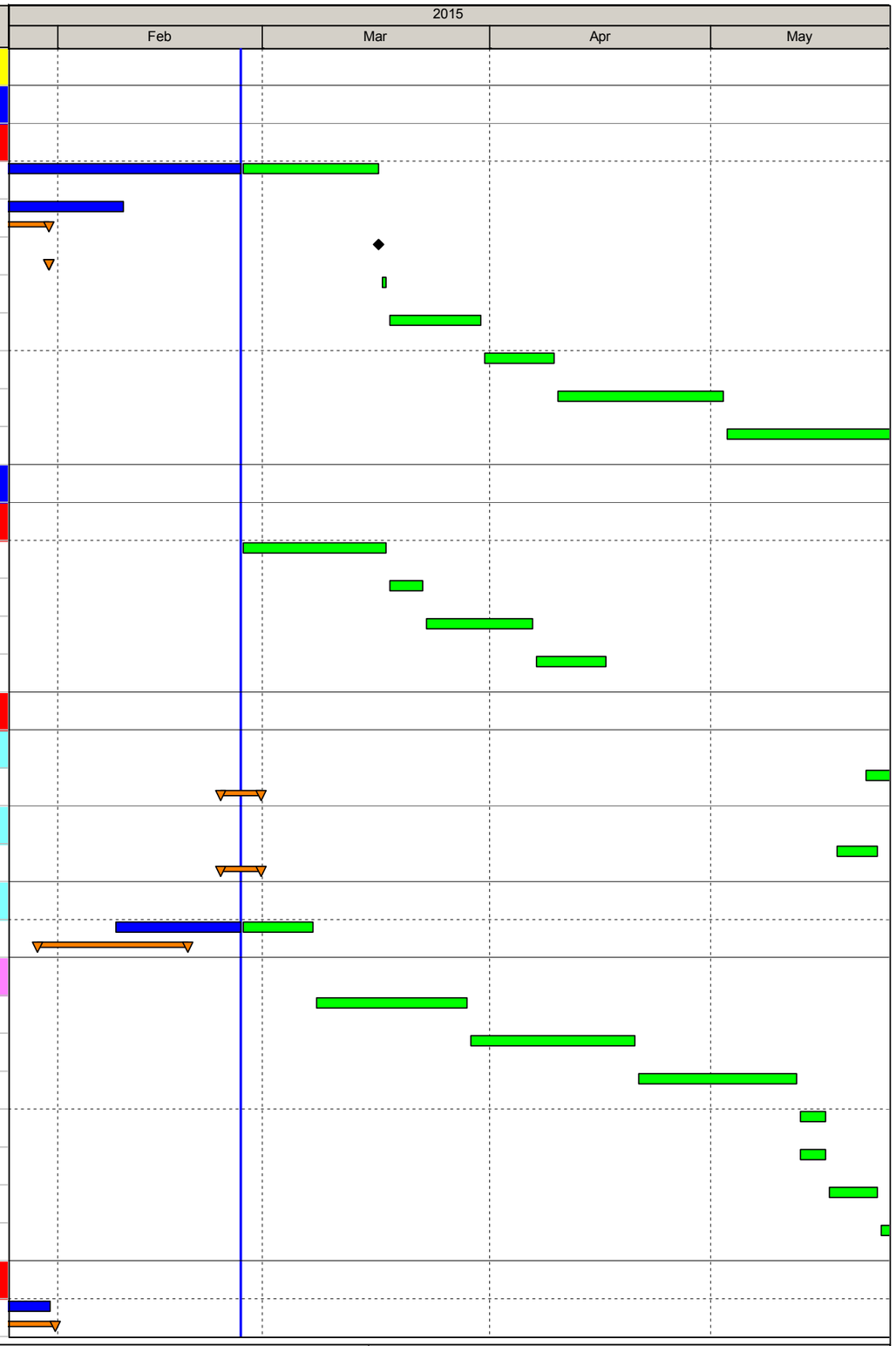
Activity ID	Activity Name	Physical % Complete	Start	Finish
Entrance B and Associated Adits			13-Apr-14 A	03-Nov-15
Entrance B - Olympic Avenue and SUW playground Works (GL B5 to B11)			13-Apr-14 A	27-May-15
Stage 1			13-Apr-14 A	27-May-15
01109.PDB14455-1A	Works Suspensin as the site Access due to Archaeological Issues at GL B1 to B4	80%	13-Apr-14 A	16-Mar-15
01109.PDB14455A	AMO Approval Period - EI 71	100%	30-Sep-14 A	10-Feb-15 A
01109.PDB14451C	MTR Instruction (Assume Date on AWB Areas (EI 67) Release for Construction)	0%		16-Mar-15
01109.PDB14455-2A	Re-location of site entrance	0%	17-Mar-15	17-Mar-15
01109.PDB14455-31A	Ground Breaking and UU Exposure	0%	18-Mar-15	30-Mar-15
01109.PDB14455-32A	Preparation Works for King Post, Pipe Piling and Grouting	0%	31-Mar-15	09-Apr-15
01109.PDB14455-33A	Construction of King Post (6 nos 406 pipe pile)	0%	10-Apr-15	02-May-15
01109.PDB14455-34A	Construction of Dia. 508 pipe piles (5 Nos)	0%	03-May-15	27-May-15
Entrance B - Kowloon City Interchange (GL B11 to B22))			19-Jan-15 A	18-Jun-15
Entrance B - Preparation Works			26-Feb-15	16-Apr-15
01109.PDB12560-1A	Traffic Decking above Adit B B2(GL19-20) - Supporting frame installation	0%	26-Feb-15	17-Mar-15
01109.PDB12560-1A10	Traffic Decking above Adit B B2(GL19-20) - Abutment Construction	0%	18-Mar-15	22-Mar-15
01109.PDB12560-1A20	Traffic Decking above Adit B B2(GL19-20) - Decking Installation	0%	23-Mar-15	06-Apr-15
01109.PDB12560-1A30	Traffic Decking above Adit B B2(GL19-20) - Temporary Road & Drainage for TTMS implementation	0%	07-Apr-15	16-Apr-15
Entrance B - Underpinning of KNEC Piers			09-Feb-15 A	30-May-15
Pier P75			22-May-15	29-May-15
01109.PDB13090	Dismantle temporary steel frame	0%	22-May-15	29-May-15
Pier P76			18-May-15	23-May-15
01109.PDB13250	Dismantle temporary steel frame	0%	18-May-15	23-May-15
Pier P46			09-Feb-15 A	30-May-15
01109.PDB12650-1A	DN300 FW main diversion	60%	09-Feb-15 A	07-Mar-15
Pier P46-Summary			08-Mar-15	30-May-15
01109.PDB12770-1A	Socket H Piling (2nos)	0%	08-Mar-15	28-Mar-15
01109.PDB12710A	Construciton of Pile Cap	0%	29-Mar-15	20-Apr-15
01109.PDB12720A	Installation of Temporary Supporting Frame	0%	21-Apr-15	12-May-15
01109.PDB12730A	Jack system installation	0%	13-May-15	16-May-15
01109.PDB12730-1A	Load Transfer Pier 46	0%	13-May-15	16-May-15
01109.PDB12740A	Demolition of Existing Pier 46 Pile Cap	0%	17-May-15	23-May-15
01109.PDB12740-1A	Construction of New Pier 46 Pile Cap	0%	24-May-15	30-May-15
Entrance B - Pipe Piling & Toe Grouting Works			19-Jan-15 A	18-Jun-15
01109.PDB19940A	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 5	100%	19-Jan-15 A	31-Jan-15 A



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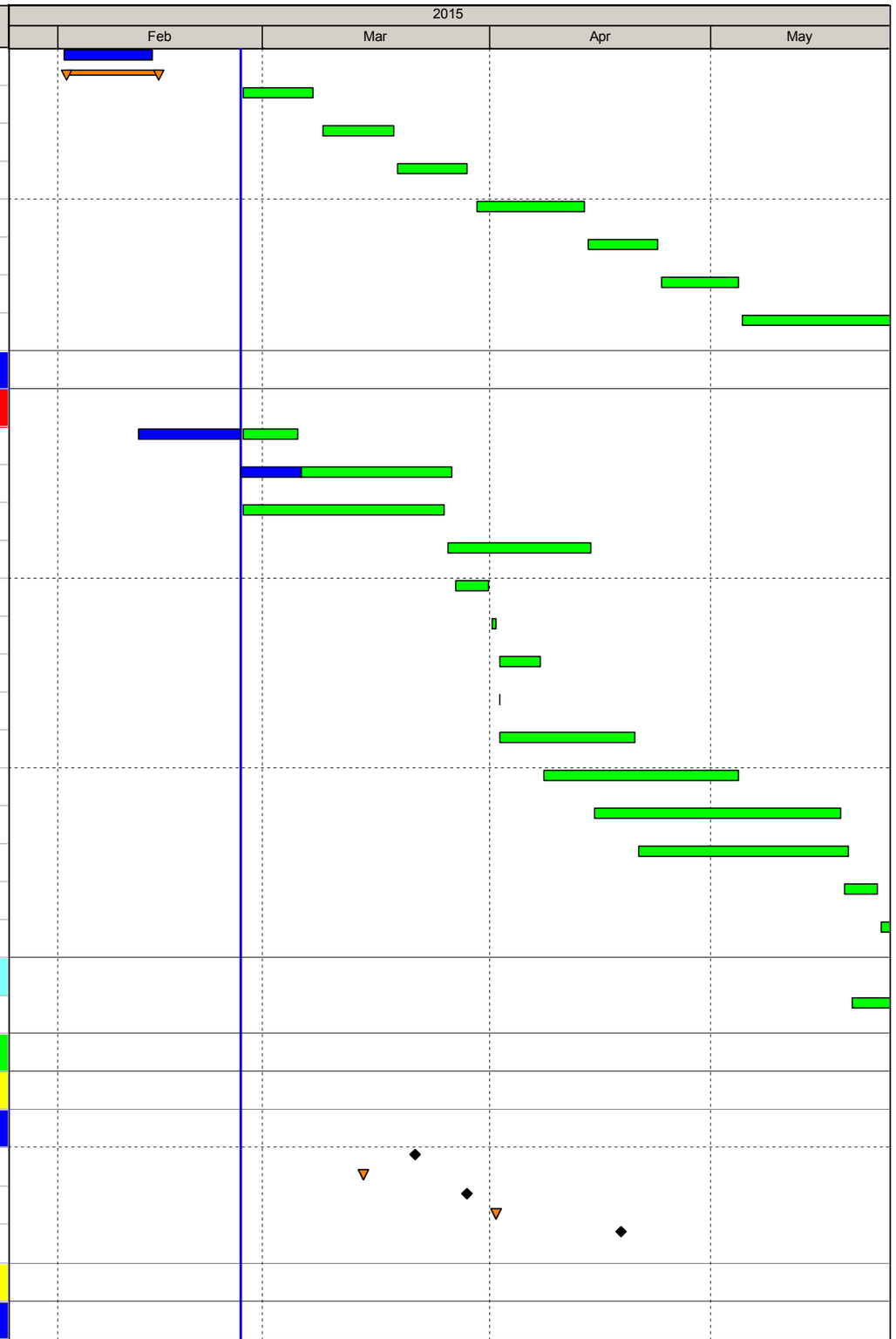
Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDB19950	Pipe piling & Grout Curtain Works; GL B11 to B17 (336 pipe piles- 3 teams) - 6	100%	02-Feb-15 A	14-Feb-15 A
01109.PDB12610-11A	Pipe piling & Grout Curtain Works at PB2-431 to 483, part 1 of 6 (9 nos)	0%	26-Feb-15	07-Mar-15
01109.PDB12610-12A	Pipe piling & Grout Curtain Works at PB2-431 to 483, part 2 of 6 (9 nos)	0%	09-Mar-15	18-Mar-15
01109.PDB12610-13A	Pipe piling & Grout Curtain Works at PB2-431 to 483, part 3 of 6 (9 nos)	0%	19-Mar-15	28-Mar-15
01109.PDB12610-14A	Pipe piling & Grout Curtain Works at PB2-431 to 483, part 4 of 6 (9 nos)	0%	30-Mar-15	13-Apr-15
01109.PDB12610-15A	Pipe piling & Grout Curtain Works at PB2-431 to 483, part 5 of 6 (9 nos)	0%	14-Apr-15	23-Apr-15
01109.PDB12610-16A	Pipe piling & Grout Curtain Works at PB2-431 to 483, part 6 of 6 (8 nos)	0%	24-Apr-15	04-May-15
01109.PDB12610-2A	Pipe piling & Grout Curtain Works at PB2-205 to 242 (38 nos.) at Zone 5	0%	05-May-15	18-Jun-15
Enrtance B - Nam Kok Road Works - (GL B22 to B30)			12-Feb-15 A	03-Nov-15
Entrance B - Nam Kok Road Works (Portion 3)			12-Feb-15 A	03-Nov-15
01109.PDBNKR120-1A	Nam Kok Road - Zone B1 & B2 (GL 26.5-28) - Installation of PW, OW and Inclinometer	60%	12-Feb-15 A	05-Mar-15
01109.PDBNKR120-2A	Nam Kok Road - Zone B1 & B2 (GL 26.5-28) - Installation of traffic deck	2%	25-Feb-15 A	26-Mar-15
01109.PDBNKR110-1A	Nam Kok Road - Zone A2 (GL 23-25) - Grout curtain	0%	26-Feb-15	25-Mar-15
01109.PDBNKR110-2A	Nam Kok Road - Zone A2 (GL 23-25) - PW, OW and I & M installation	0%	26-Mar-15	14-Apr-15
01109.PDBNKR120-3A	Nam Kok Road - Zone B1 & B2 (GL 26.5-28) - Preparation of Stage 2 implementation	0%	27-Mar-15	31-Mar-15
01109.PDBNKR120-4A	Nam Kok Road - Zone B1 & B2 (GL 26.5-28) - Stage 2 - Phase 1 TTMS Implementation	0%	01-Apr-15	01-Apr-15
01109.PDBNKR130-1A	B23 - B28 (Nam Kok Road) - Ground breaking	0%	02-Apr-15	07-Apr-15
01109.PDBNKR130-3A	B21 - B23 (Nam Kok Road) - TTMS Implementation of Olympic Garden	0%	02-Apr-15	02-Apr-15
01109.PDBNKR130-4A	B21 - B23 (Nam Kok Road) - UU exposure and liaison with uu stakeholders	0%	02-Apr-15	20-Apr-15
01109.PDBNKR130-2A	B23 - B28 (Nam Kok Road) - UU identification & slewing	0%	08-Apr-15	04-May-15
01109.PDBNKR110-3A	Nam Kok Road - Zone A2 (GL 23-25) - Installation of traffic deck	0%	15-Apr-15	18-May-15
01109.PDBNKR130-5A	B21 - B23 (Nam Kok Road) - UU diversion, slewing and suspension	0%	21-Apr-15	19-May-15
01109.PDBNKR110-4A	Nam Kok Road - Zone A2 (GL 23-25) - UU's support	0%	19-May-15	23-May-15
01109.PDBNKR110-5A	Nam Kok Road - Zone A2 (GL 23-25) - Preparation works for TTMS stage 2 - phase 2	0%	24-May-15	30-May-15
Nam Kok Road - Pump Test and Dewatering			20-May-15	03-Nov-15
01109.PDBNKR100-1A	Remaining Piling, Grouting and Pumping Testing at B21 - B23 (Nam Kok Road)	0%	20-May-15	03-Nov-15
CC-C - TKW STATION, ENTRANCES AND ADITS			17-Dec-14 A	09-Jun-15
Implementation of TTA at TKW			21-Mar-15	18-Apr-15
Revised TTMS Schemes			21-Mar-15	18-Apr-15
01109.PDC29358A	Stage 2 - Phase ?? - Hybrid TTMS (Partial work area at W6 & E6)	0%		21-Mar-15
01109.PDC2814A	Stage 2 - Phase ?? - Hybrid TTMS (Work Area At E1, W2, W3 & E6)	0%		28-Mar-15
01109.PDC2814x	Stage 2 - Phase ?? - Wks Area in East	0%		18-Apr-15
TKW Station			17-Dec-14 A	09-Jun-15
Diaphragm Wall Stage 2 Phase 1 TTMS (W1-W3 + Ent D)			12-Jan-15 A	13-Apr-15



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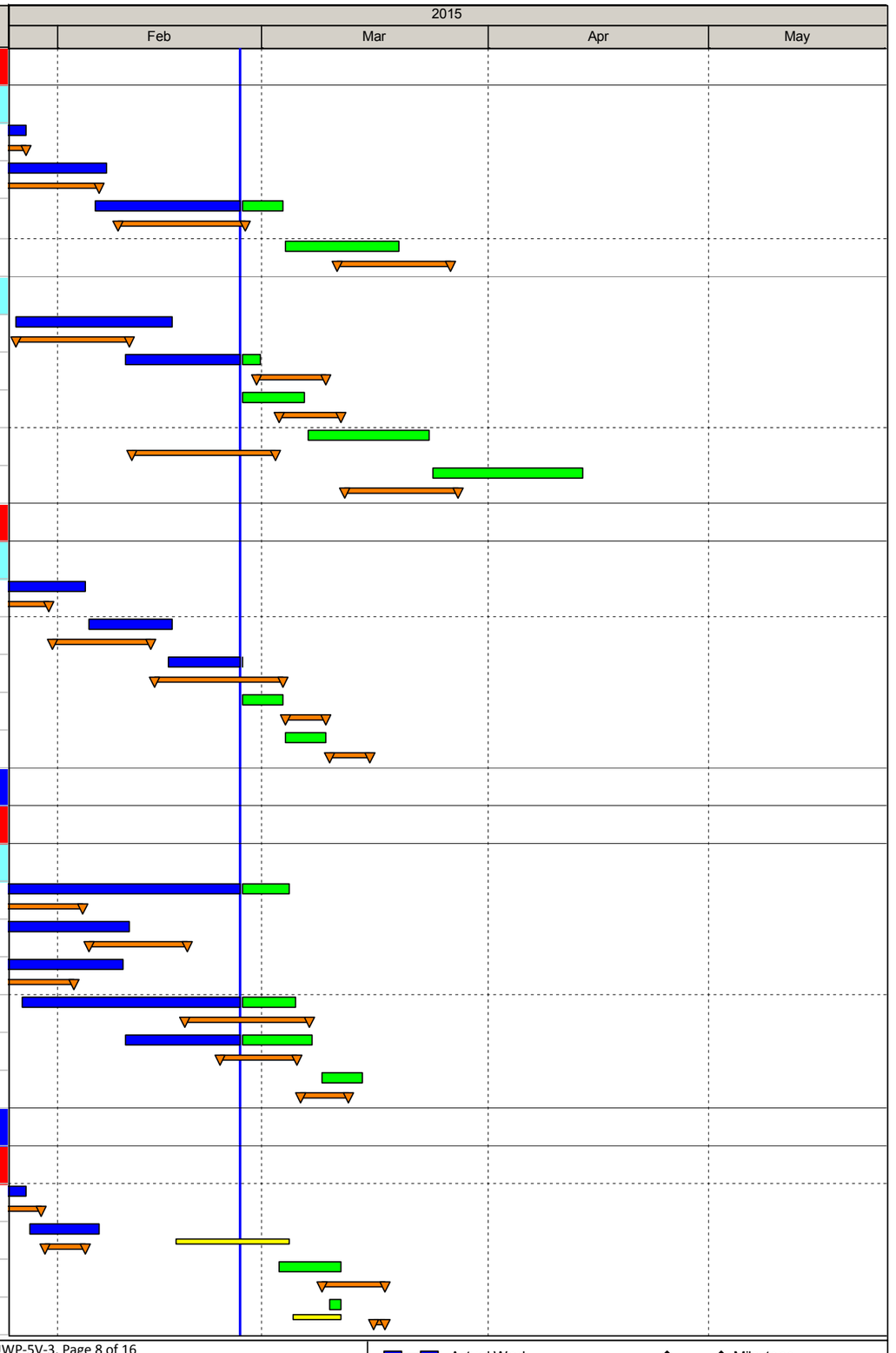
Ent D			12-Jan-15 A	13-Apr-15
Area E1 (Ent D) - BC Cutter No 1			12-Jan-15 A	19-Mar-15
01109.PDC26680	Stg 3 Ent D - Dwall works - P145	100%	12-Jan-15 A	27-Jan-15 A
01109.PDC26610	Stg 3 Ent D - Dwall works - P147	100%	22-Jan-15 A	07-Feb-15 A
01109.PDC26660	E1 (Ent D) - Dwall works - P144	60%	06-Feb-15 A	03-Mar-15
01109.PDC26700	Stg 3 Ent D - Dwall works - P146	0%	04-Mar-15	19-Mar-15
Area E1 (Ent D) - BC Cutter No 4			26-Jan-15 A	13-Apr-15
01109.PDC26620	Stg 3 Ent D - Dwall works - P151	100%	26-Jan-15 A	16-Feb-15 A
01109.PDC26610A	Stg 3 Ent D - Dwall works - P147A	50%	10-Feb-15 A	28-Feb-15
01109.PDC26650	Stg 3 Ent D - Dwall works - P150	0%	26-Feb-15	06-Mar-15
01109.PDC26690	Stg 3 Ent D - Dwall works - P148	0%	07-Mar-15	23-Mar-15
01109.PDC26670	Stg 3 Ent D - Dwall works - P149	0%	24-Mar-15	13-Apr-15
Area W1			17-Jan-15 A	09-Mar-15
Area W1 - Post Concrete Works			17-Jan-15 A	09-Mar-15
01109.PDC26995A	W1 - Grouting to TBM/D/Wall interface zone (Part 4)	100%	17-Jan-15 A	04-Feb-15 A
01109.PDC26996A	W1 - Grouting to TBM/D/Wall interface zone (Part 5)	100%	05-Feb-15 A	16-Feb-15 A
01109.PDC26997A	W1 - Grouting to TBM/D/Wall interface zone (Part 6)	76%	16-Feb-15 A	26-Feb-15
01109.PDC26998A	W1 - Grouting to TBM/D/Wall interface zone (Part 7)	0%	26-Feb-15	03-Mar-15
01109.PDC26999A	W1 - TGE Verification Core and testing	0%	04-Mar-15	09-Mar-15
Diaphragm Wall STAGE 2 Phase 2 (West Side + Ent D) TTMS			06-Jan-15 A	14-Mar-15
Area W6			06-Jan-15 A	14-Mar-15
Area W6 - Post Concrete Works			06-Jan-15 A	14-Mar-15
01109.PDC23280	W6 - Toe Grouting (P63-P67)	80%	06-Jan-15 A	04-Mar-15
01109.PDC27045A	W6 - Grouting to TBM-D/Wall interface zone (46 nos) part 3	100%	12-Jan-15 A	10-Feb-15 A
01109.PDC23290	W6 - Toe Grouting (P68-P74)	100%	13-Jan-15 A	10-Feb-15 A
01109.PDC23270A	W6 - DWall Shear Pin Installation (P68-P74)	44%	27-Jan-15 A	05-Mar-15
01109.PDC27040	W6 - Grouting to TBM-D/Wall interface zone (44 nos) part 4	61%	10-Feb-15 A	07-Mar-15
01109.PDC27046A	W6 - TEG Verification core and testing	0%	09-Mar-15	14-Mar-15
Top Slab, Utility, & Backfill WEST side during STAGE 2B TTMS			17-Dec-14 A	18-Apr-15
Area W1-1 - GL 1 to GL2.5			19-Jan-15 A	11-Mar-15
01109.PDC11571A	W1-1 (W1) - Install 1st Retaining Wall & Backfill	100%	19-Jan-15 A	27-Jan-15 A
01109.PDC10930	W1-1 (W1) - Remove Lateral Support, Install 2nd RTW & Backfill	100%	28-Jan-15 A	06-Feb-15 A
01109.PDC11591A	W1-1 (W1) - Remove Sheet Pile	0%	03-Mar-15	11-Mar-15
01109.PDC10940	W1-1 (W1) - Pavement for next TTM	0%	10-Mar-15	11-Mar-15



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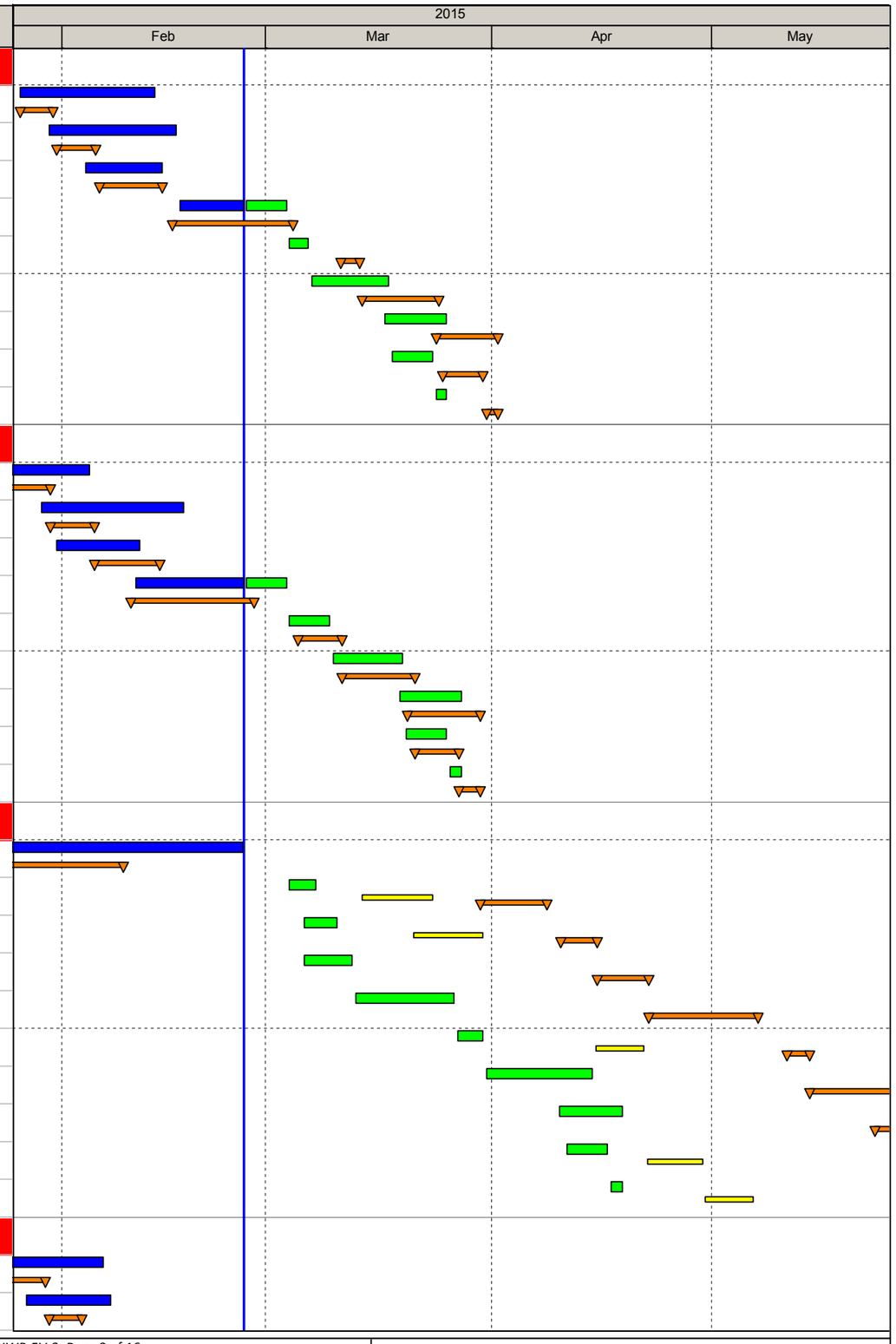
Area W1-2a - GL 2.5 to GL5			26-Jan-15 A	25-Mar-15
01109.PDC11530	W1-2a - Earthwork; Excavation for LS (1.5m)	100%	26-Jan-15 A	13-Feb-15 A
01109.PDC11540	W1-2a - Steelwork; Installation of struts and walers (ELS works)	100%	30-Jan-15 A	16-Feb-15 A
01109.PDC11545A	W1-2a - Earthwork; Main Excavation	100%	04-Feb-15 A	14-Feb-15 A
01109.PDC11551A	W1-2a - Structure; Roof slab (Part 1)	58%	17-Feb-15 A	03-Mar-15
01109.PDC11560	W1-2a - Structure; Waterproofing of roof Slab	0%	04-Mar-15	06-Mar-15
01109.PDC11570A	W1-2a - Install 1st Retaining Wall & Backfill	0%	07-Mar-15	17-Mar-15
01109.PDC11590A	W1-2a - Remove Sheet Pile	0%	17-Mar-15	25-Mar-15
01109.PDC11580A	W1-2a - Remove Lateral Support, Install 2nd RTW & Backfill	0%	18-Mar-15	23-Mar-15
01109.PDC11590	W1-2a - Pavement for next TTM	0%	24-Mar-15	25-Mar-15
Area W1-3a - GL 5 to GL8.5			16-Jan-15 A	27-Mar-15
01109.PDC12070	W1-3a - Earthwork; Excavation for LS (1.5m)	100%	16-Jan-15 A	04-Feb-15 A
01109.PDC12080	W1-3a - Steelwork; Installation of struts and walers (ELS works)	100%	29-Jan-15 A	17-Feb-15 A
01109.PDC12080A	W1-3a - Earthwork; Main Excavation	100%	31-Jan-15 A	11-Feb-15 A
01109.PDC12091A	W1-3a - Structure; Roof slab (Part 1)	58%	11-Feb-15 A	03-Mar-15
01109.PDC12100	W1-3a - Structure; Waterproofing of roof Slab	0%	04-Mar-15	09-Mar-15
01109.PDC11572A	W1-3a - Install 1st Retaining Wall & Backfill	0%	10-Mar-15	19-Mar-15
01109.PDC11592A	W1-3a - Remove Sheet Pile	0%	19-Mar-15	27-Mar-15
01109.PDC12120	W1-3a - Remove Lateral Support, Install 2nd RTW & Backfill	0%	20-Mar-15	25-Mar-15
01109.PDC12130	W1-3a - Pavement for next TTM	0%	26-Mar-15	27-Mar-15
Area W2-1a - GL 8.5 to GL 12.5			17-Dec-14 A	18-Apr-15
01109.PDC29075	W2-1a - Steelwork; Installation of sheet piles (38 m)	100%	17-Dec-14 A	25-Feb-15 A
01109.PDC12890	W2-1a - Earthwork; Excavation for LS (1.5m)	0%	04-Mar-15	07-Mar-15
01109.PDC12900	W2-1a - Steelwork; Installation of struts and walers (ELS works)	0%	06-Mar-15	10-Mar-15
01109.PDC14321A	W2-1a - Earthwork; Main Excavation	0%	06-Mar-15	12-Mar-15
01109.PDC12910A	W2-1a - Structure; Roof slab (Part 1)	0%	13-Mar-15	26-Mar-15
01109.PDC12920	W2-1a - Structure; Waterproofing of roof Slab	0%	27-Mar-15	30-Mar-15
01109.PDC11570A10	W2-1a - Install 1st Retaining Wall & Backfill	0%	31-Mar-15	14-Apr-15
01109.PDC11593A	W2-1a - Remove Sheet Pile	0%	10-Apr-15	18-Apr-15
01109.PDC12940	W2-1a -Remove Lateral Support, Install 2nd RTW & Backfill	0%	11-Apr-15	16-Apr-15
01109.PDC12950	W2-1a - Pavement for next TTM	0%	17-Apr-15	18-Apr-15
Area W2-2a - GL 12.5 to 15.5			17-Jan-15 A	17-Mar-15
01109.PDC13600	W2-2a - Earthwork; Excavation for LS (1.5m)	100%	17-Jan-15 A	06-Feb-15 A
01109.PDC13610	W2-2a - Steelwork; Installation of struts and walers (ELS works)	100%	27-Jan-15 A	07-Feb-15 A



SAMSUNG-HSIN CHONG JOINT VENTURE

MTR Corporation Limited

Shatin to Central Link Contract 1109

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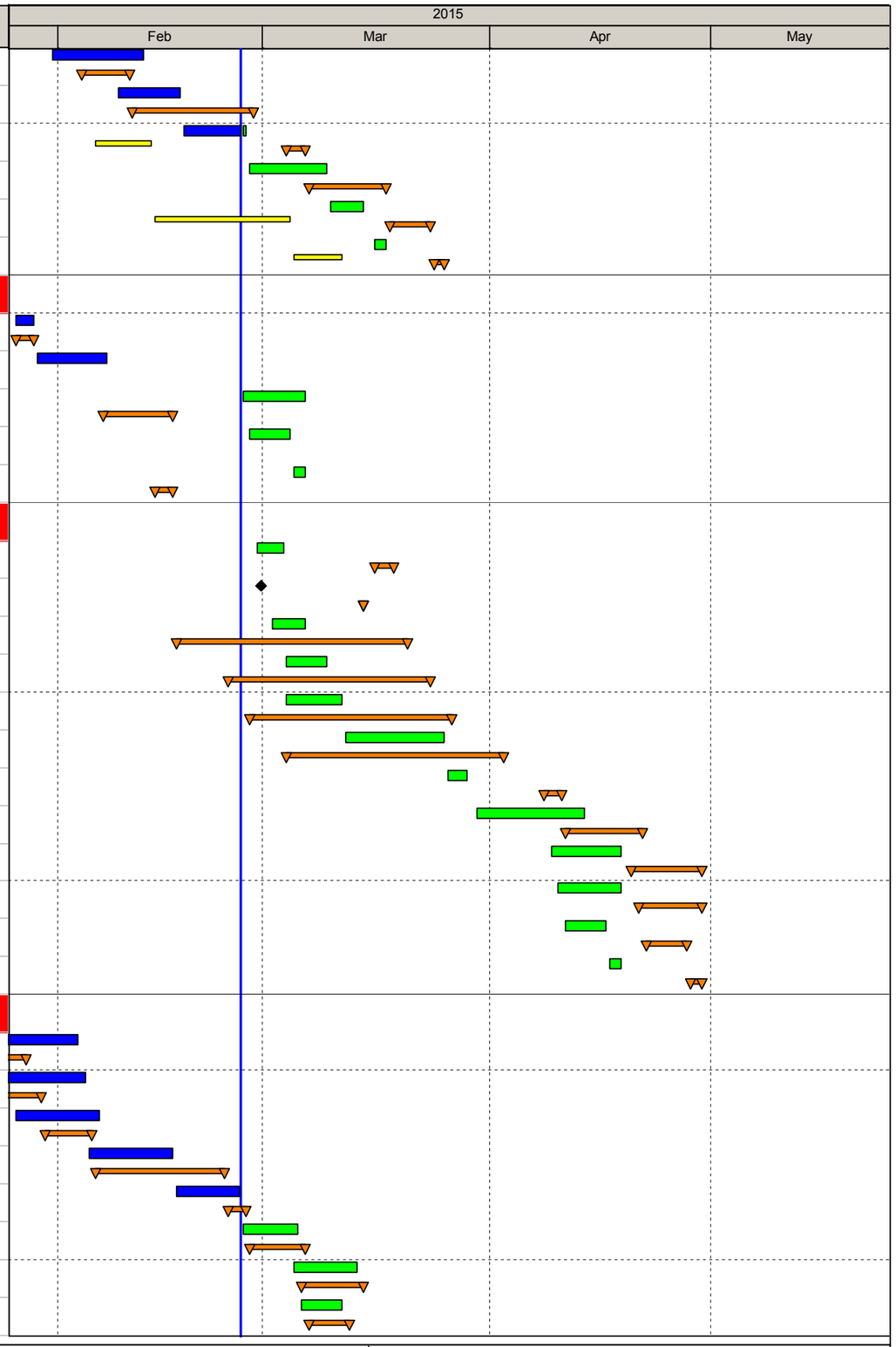
01109.PDC14320A10	W2-2a - Earthwork; Main Excavation	100%	31-Jan-15 A	12-Feb-15 A
01109.PDC13620A	W2-2a - Structure; Roof slab (Part 1)	100%	09-Feb-15 A	17-Feb-15 A
01109.PDC13630	W2-2a - Structure; Waterproofing of roof Slab	67%	18-Feb-15 A	26-Feb-15
01109.PDC14360A10	W2-2a - Install 1st Retaining Wall & Backfill	0%	27-Feb-15	09-Mar-15
01109.PDC13650	W2-2a - Remove Lateral Support, Install 2nd RTW & Backfill	0%	10-Mar-15	14-Mar-15
01109.PDC13660	W2-2a - Pavement for next TTM	0%	16-Mar-15	17-Mar-15
Area W3-2 - GL 15.5 to 18.5			26-Jan-15 A	06-Mar-15
01109.PDC15560	W3-2 (W8) - Structure Waterproofing of roof Slab	100%	26-Jan-15 A	28-Jan-15 A
01109.PDC15570A	W3-2 (W8) - Remove Lateral Support and install Retaining Wall	100%	29-Jan-15 A	07-Feb-15 A
01109.PDC11595A	W3-2 (W8) - Remove Sheet Pile	0%	26-Feb-15	06-Mar-15
01109.PDC15580A	W3-2 (W8) - Backfill	0%	27-Feb-15	04-Mar-15
01109.PDC15590	W3-2 (W8) - Pavement for next TTM	0%	05-Mar-15	06-Mar-15
Area W3-3 - GL 18.5 to GL 21			28-Feb-15	18-Apr-15
01109.PDC29125A	W3-3 (W9) - Steelwork; Installation of sheet piles (LSR)	0%	28-Feb-15	03-Mar-15
01109.PDC29276A	W3-3 (W9) - Implement LSR TTMS	0%		28-Feb-15
01109.PDC16180	W3-3 (W9) - Earthwork; Excavation for LS (1.5m)	0%	02-Mar-15	06-Mar-15
01109.PDC16190	W3-3 (W9) - Steelwork; Installation of struts and walers (ELS works)	0%	04-Mar-15	09-Mar-15
01109.PDC16180A	W3-3 (W9) - Earthwork; Main Excavation	0%	04-Mar-15	11-Mar-15
01109.PDC16200	W3-3 (W9) - Structure; Roof slab	0%	12-Mar-15	25-Mar-15
01109.PDC26830	W3-3 (W9) - Structure; Waterproofing of roof slab	0%	26-Mar-15	28-Mar-15
01109.PDC16220A	W3-3 (W9) - Install 1st Retaining Wall & Backfill	0%	30-Mar-15	13-Apr-15
01109.PDC16230A	Bus Stop Shifting	0%	09-Apr-15	18-Apr-15
01109.PDC11595A10	W3-2 (W8) - Remove Sheet Pile	0%	10-Apr-15	18-Apr-15
01109.PDC16220	W3-3 (W9) - Earthwork; Backfill, remove LS	0%	11-Apr-15	16-Apr-15
01109.PDC16230	W3-3 (W9) - Pavement for next TTM	0%	17-Apr-15	18-Apr-15
Area W6-1 & W6-2A - GL 21 to GL 23.5			19-Jan-15 A	13-Mar-15
01109.PDC29441A	W6-1 & W6-2A - Earthwork; Excavation for LS (1.5m)	100%	19-Jan-15 A	03-Feb-15 A
01109.PDC29442A	W6-1 & W6-2A - Steelwork; Installation of struts and walers (ELS works)	100%	24-Jan-15 A	04-Feb-15 A
01109.PDC29443A	W6-1 & W6-2A - Earthwork; Main Excavation	100%	26-Jan-15 A	06-Feb-15 A
01109.PDC29444A	W6-1 & W6-2A - Structure; Roof slab	100%	05-Feb-15 A	16-Feb-15 A
01109.PDC29445A	W6-1 & W6-2A - Structure; Waterproofing of roof Slab	100%	17-Feb-15 A	25-Feb-15 A
01109.PDC29446A	W6-1 & W6-2A - Install 1st Retaining Wall & Backfill	0%	26-Feb-15	05-Mar-15
01109.PDC29449A	W6-1 & W6-2A - Remove Sheet Pile	0%	05-Mar-15	13-Mar-15
01109.PDC29447A	W6-1 & W6-2A - Remove Lateral Support, Install 2nd RTW & Backfill	0%	06-Mar-15	11-Mar-15



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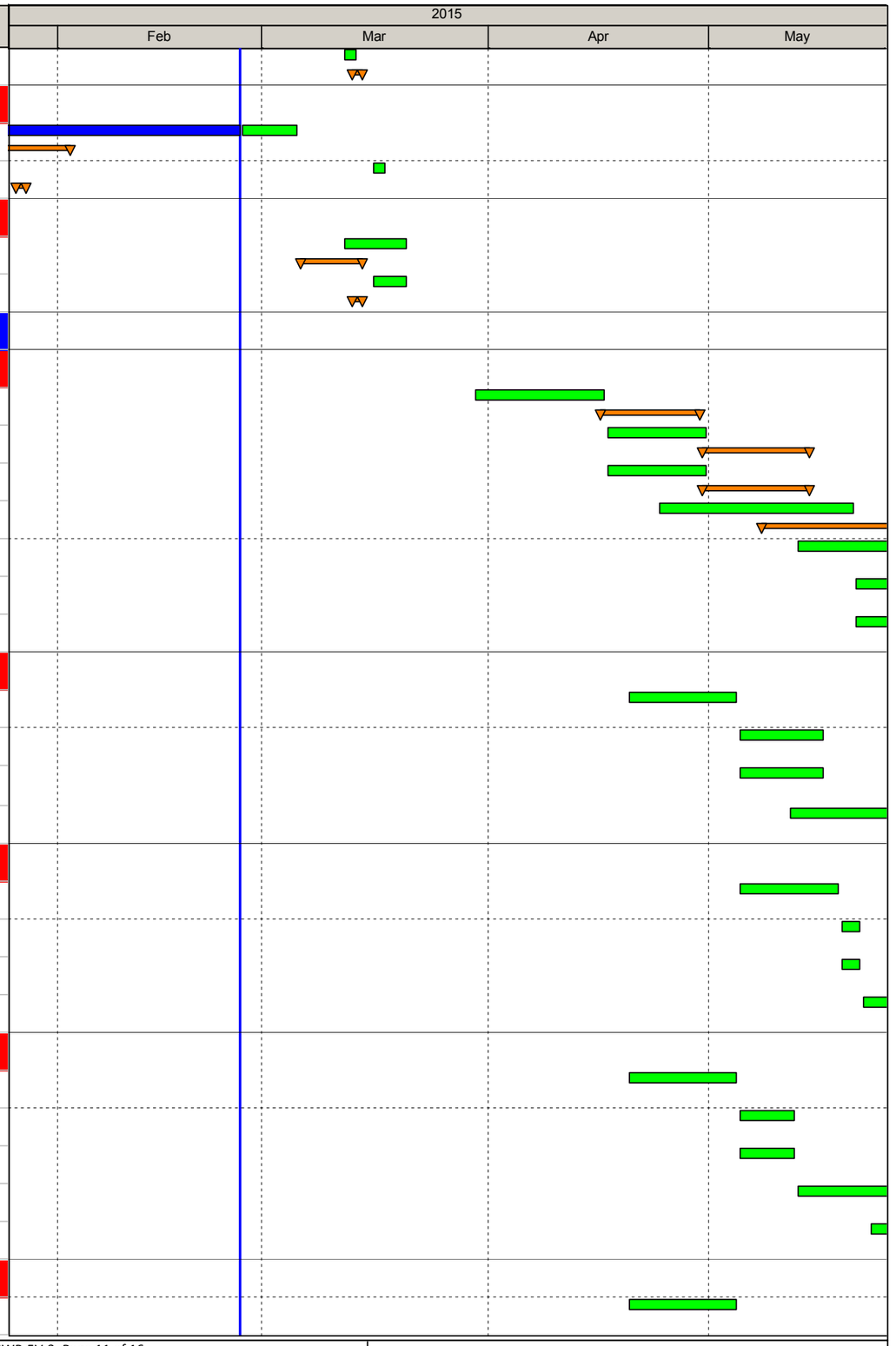
01109.PDC29448A	W6-1 & W6-2A - Pavement for next TTM	0%	12-Mar-15	13-Mar-15
Area W6-2B - GL 23.5 to GL 26.5			23-Jan-15 A	17-Mar-15
01109.PDC29306A	W6-2B (W11) - Remove Sheet Pile	10%	23-Jan-15 A	05-Mar-15
01109.PDC29315A	W6-2B (W11) - Pavement for next TTM	0%	16-Mar-15	17-Mar-15
Area W6-3 - GL 26.5 to GL 28			12-Mar-15	20-Mar-15
01109.PDC18000A	W6-3 (W12) - Remove Sheet Pile	0%	12-Mar-15	20-Mar-15
01109.PDC18000	W6-3 (W12) - Pavement for next TTM	0%	16-Mar-15	20-Mar-15
Top Slab, Utility, & Backfill EAST side during STAGE 2C TTMS			23-Mar-15	09-Jun-15
Area E1 (MTW Rd) - Span 1,2 - GL 1 to GL 5			30-Mar-15	09-Jun-15
01109.PDC3330	E1 - Pumping Test	0%	30-Mar-15	16-Apr-15
01109.PDC19180	E1 - Earthwork; Excavation for roof slab concrete	0%	17-Apr-15	30-Apr-15
01109.PDC19190	E1 - Steelwork; Installation of struts and walers (ELS works)	0%	17-Apr-15	30-Apr-15
01109.PDC19200	E1 - Structure; Roof slab r-c works	0%	24-Apr-15	20-May-15
01109.PDC19210	E1 - Structure; Waterproofing of roof slab	0%	13-May-15	27-May-15
01109.PDC19230	E1 - Earthwork; Backfill for road reinstatement (with removal of strut & walers)	0%	21-May-15	09-Jun-15
01109.PDC19220	E1 - Utility Installation (incl. FW + SW water mains above roof slab)	0%	21-May-15	09-Jun-15
Area E2 - Span 4,5 - GL 7 to GL 11			20-Apr-15	05-Jun-15
01109.PDC5230	E2 - Pumping Test	0%	20-Apr-15	04-May-15
01109.PDC5120	E2 - Earthwork; Excavation for roof slab concrete	0%	05-May-15	16-May-15
01109.PDC5130	E2 - Steelwork; Installation of struts and walers (ELS works)	0%	05-May-15	16-May-15
01109.PDC5140	E2 - Structure; Roof slab r-c works	0%	12-May-15	05-Jun-15
Area E4 - Span 3 - GL 5 to GL 7			05-May-15	02-Jun-15
01109.PDC9000	E4 - Pumping Test	0%	05-May-15	18-May-15
01109.PDC8320	E4 - Steelwork; Installation of struts and walers (ELS works)	0%	19-May-15	21-May-15
01109.PDC8310	E4 - Earthwork; Excavation for roof slab concrete	0%	19-May-15	21-May-15
01109.PDC8330	E4 - Structure; Roof slab r-c works	0%	22-May-15	02-Jun-15
Area E5 - Span 6 - GL 11 to GL 13			20-Apr-15	01-Jun-15
01109.PDC9010	E5 - Pumping Test	0%	20-Apr-15	04-May-15
01109.PDC8870	E5 - Earthwork; Excavation for roof slab concrete	0%	05-May-15	12-May-15
01109.PDC8880	E5 - Steelwork; Installation of struts and walers (ELS works)	0%	05-May-15	12-May-15
01109.PDC8890	E5 - Structure; Roof slab r-c works	0%	13-May-15	28-May-15
01109.PDC8900	E5 - Structure Waterproof of roof	0%	23-May-15	01-Jun-15
Area E3-1 - Span 7 - GL 13 to GL15			20-Apr-15	01-Jun-15
01109.PDC6050	E3-1 - Pumping Test	0%	20-Apr-15	04-May-15



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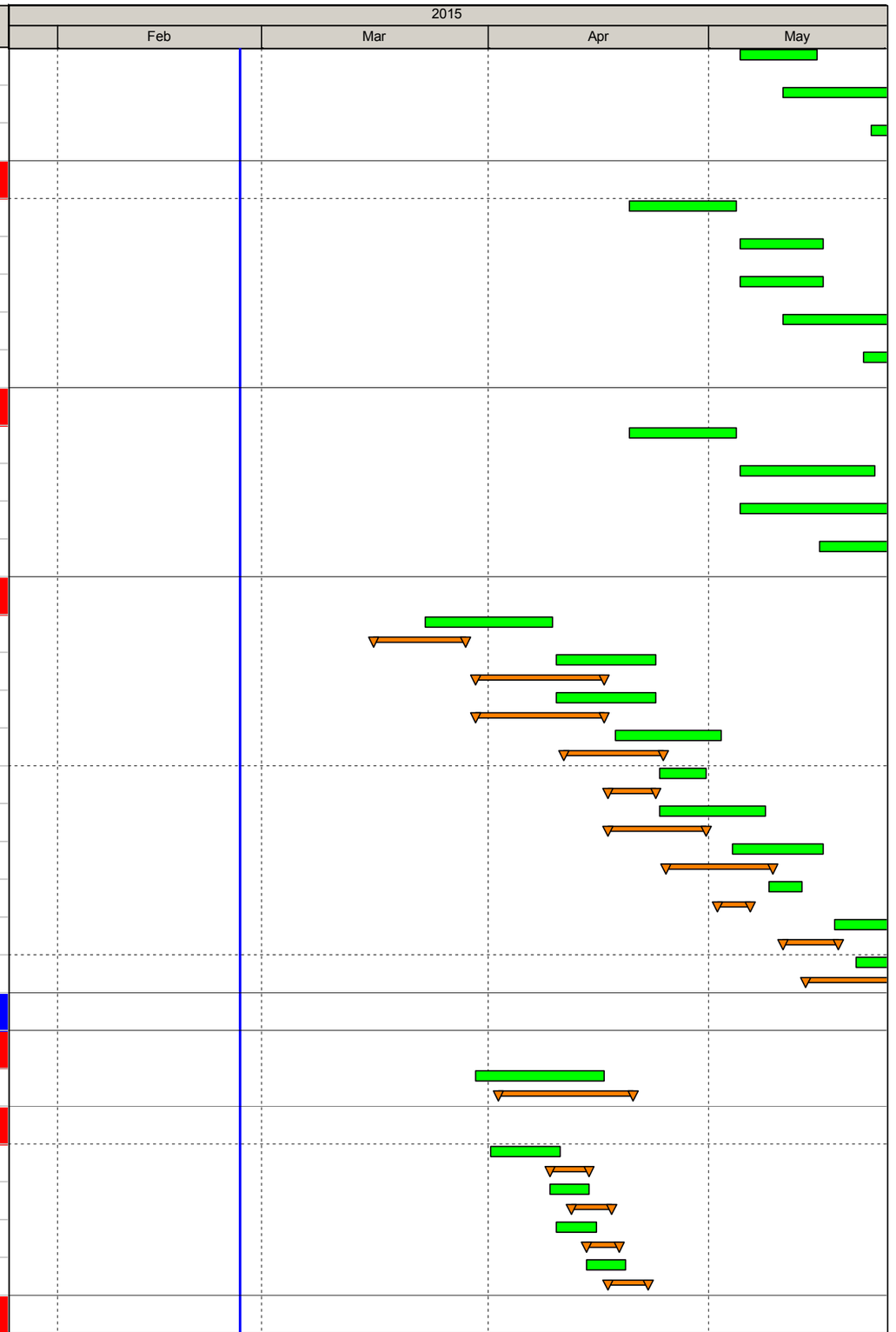
01109.PDC5950	E3-1 - Earthwork; Excavation for roof slab concrete	0%	05-May-15	15-May-15
01109.PDC5960	E3-1 - Structure; Roof slab r-c works	0%	11-May-15	01-Jun-15
01109.PDC5970	E3-1 - Structure Waterproofing of roof slab	0%	23-May-15	29-May-15
Area E3-2 - Span 8 - GL 15 to GL 17			20-Apr-15	05-Jun-15
01109.PDC6790	E3-2 - Pumping Test	0%	20-Apr-15	04-May-15
01109.PDC6680	E3-2 - Steelwork; Installation of struts and walers (ELS works)	0%	05-May-15	16-May-15
01109.PDC6690	E3-2 - Earthwork; Excavation for roof slab concrete	0%	05-May-15	16-May-15
01109.PDC6700	E3-2 - Structure; Roof slab r-c works	0%	11-May-15	29-May-15
01109.PDC6710	E3-2 - Structure; Waterproofing of roof slab	0%	22-May-15	05-Jun-15
Area E3-3 - Span 9,10,11 - GL 17 to GL 22			20-Apr-15	04-Jun-15
01109.PDC8410	E3-3 - Pumping Test	0%	20-Apr-15	04-May-15
01109.PDC8120	E3-3 - Steelwork; Installation of struts and walers (ELS works)	0%	05-May-15	23-May-15
01109.PDC8110	E3-3 - Earthwork; Excavation for roof slab concrete	0%	05-May-15	26-May-15
01109.PDC8140	E3-3 - Structure; Roof slab r-c works	0%	16-May-15	04-Jun-15
Area E6 - Span 11,12,13 - GL 22 to GL 28-1			23-Mar-15	02-Jun-15
01109.PDC10170	E6 - Pumping Test	0%	23-Mar-15	09-Apr-15
01109.PDC10020A	E6 - Earthwork; Excavation for roof slab concrete (Part 1)	0%	10-Apr-15	23-Apr-15
01109.PDC10031A	E6 - Steelwork; Installation of struts and walers (ELS works) (Part 1)	0%	10-Apr-15	23-Apr-15
01109.PDC10061A	E6 - Structure; Roof slab r-c works (Part 1)	0%	18-Apr-15	02-May-15
01109.PDC10021A	E6 - Earthwork; Excavation for roof slab concrete (Part 2)	0%	24-Apr-15	30-Apr-15
01109.PDC10032A	E6 - Steelwork; Installation of struts and walers (ELS works) (Part 2)	0%	24-Apr-15	08-May-15
01109.PDC10062A	E6 - Structure; Roof slab r-c works (Part 2)	0%	04-May-15	16-May-15
01109.PDC10033A	E6 - Steelwork; Installation of struts and walers (ELS works) (Part 3)	0%	09-May-15	13-May-15
01109.PDC10063A	E6 - Structure; Roof slab r-c works (Part 3)	0%	18-May-15	26-May-15
01109.PDC10070	E6 - Structure; Waterproofing of roof Slab	0%	21-May-15	02-Jun-15
Entrance D Diaphragm Wall during EAST side Top Slab			20-Mar-15	02-Jun-15
Entrance D - Advance Works			30-Mar-15	16-Apr-15
01109.PDC18040	Stg 2 Ent D - Trial Pits	0%	30-Mar-15	16-Apr-15
Entrance D - Founding Level Predrill			01-Apr-15	19-Apr-15
01109.PDC18060	Stg 2 Ent D - Founding Level Predrill - P:1,5,2,4,3 1PR (or remaining)	0%	01-Apr-15	10-Apr-15
01109.PDC18160	Stg 2 Ent D - P: 1,5,2,4,3 - GI Report & Confirmation of Founding Levels	0%	09-Apr-15	14-Apr-15
01109.PDC18080	Stg 2 Ent D - Founding Level Predrill - P:156,153,154,155 1PR (or remaining)	0%	10-Apr-15	15-Apr-15
01109.PDC18140	Stg 2 Ent D - P: 156,153,154,155 - GI Report & Confirmation of Founding Levels	0%	14-Apr-15	19-Apr-15
BC Cutter 1			20-Mar-15	01-Jun-15



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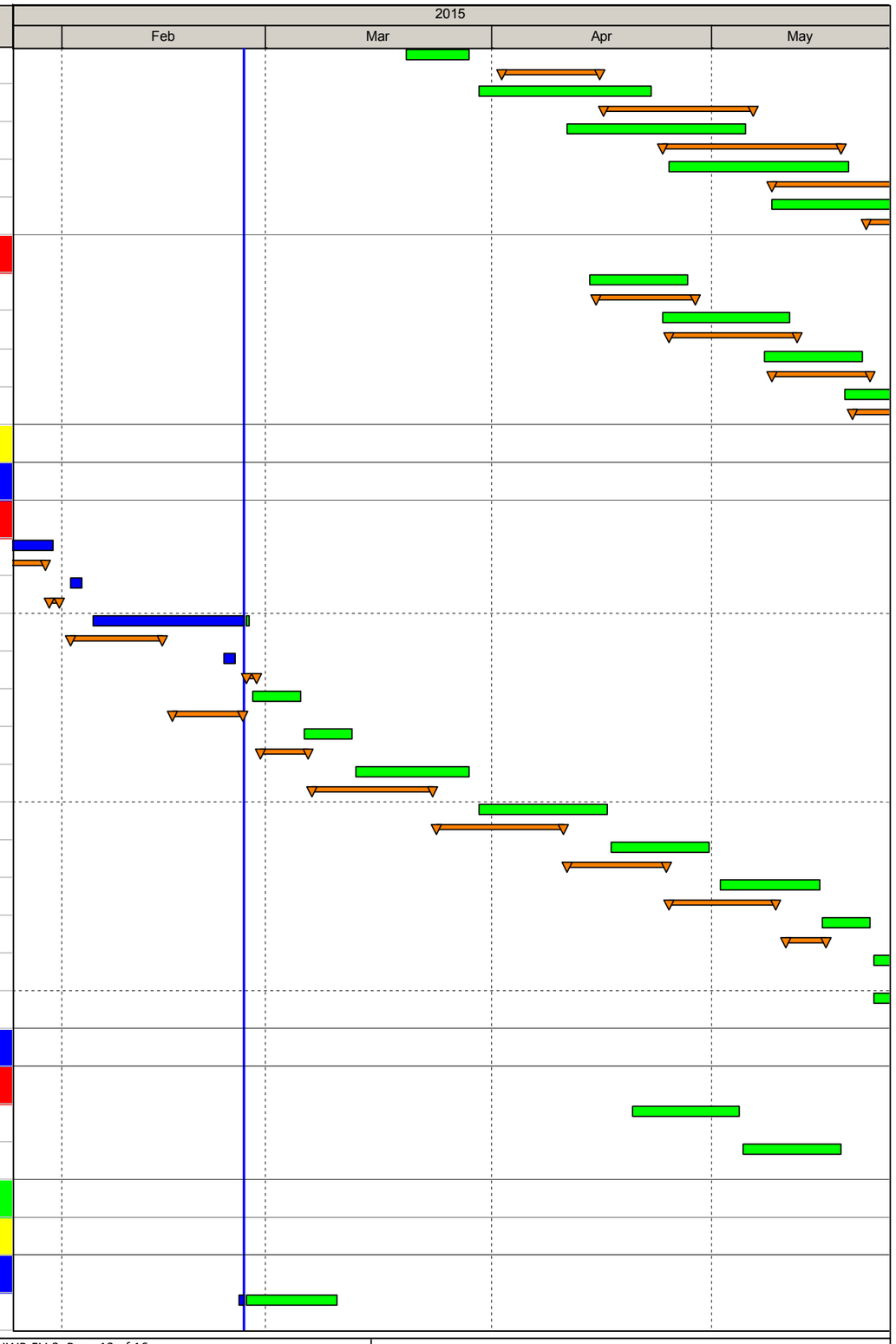
01109.PDC23930A	Modify BC Cutter 1 to a low head room cutter	0%	20-Mar-15	28-Mar-15
01109.PDC23410	E1 (Ent D) - Dwall works P134 (under TKW Flyover)	0%	30-Mar-15	22-Apr-15
01109.PDC23930	E1 (Ent D) - Dwall works P9 (under TKW Flyover)	0%	11-Apr-15	05-May-15
01109.PDC23890	E1 (Ent D) - Dwall works P135 (under TKW Flyover)	0%	25-Apr-15	19-May-15
01109.PDC23430	E1 (Ent D) - Dwall works P11 (under TKW Flyover)	0%	09-May-15	01-Jun-15
BC Cutter 4			14-Apr-15	02-Jun-15
01109.PDC26770	Stg 3 Ent D - Dwall works - P4	0%	14-Apr-15	27-Apr-15
01109.PDC26730	Stg 3 Ent D - Dwall works - P156	0%	24-Apr-15	11-May-15
01109.PDC26790	Stg 3 Ent D - Dwall works - P3	0%	08-May-15	21-May-15
01109.PDC26780	Stg 3 Ent D - Dwall works - P155	0%	19-May-15	02-Jun-15
Entrance A & Vent Shaft A			21-Jan-15 A	27-May-15
Vent Shaft A			21-Jan-15 A	27-May-15
Foundation			21-Jan-15 A	27-May-15
01109.PDC27323A	VSA Stage 1 - Diversion of sewer drainage	100%	21-Jan-15 A	30-Jan-15 A
01109.PDC27324A	VSA Stage 1 - Trial trench (P57 to P64)	100%	02-Feb-15 A	03-Feb-15 A
01109.PDC27335A	VSA Stage 1 - Pipe Pile (P57 to P65) 6 nos.	90%	05-Feb-15 A	26-Feb-15
01109.PDC27326A	VSA Stage 2 - Demolish TKW market shelter	100%	23-Feb-15 A	24-Feb-15 A
01109.PDC27336A	VSA Stage 1 - Pipe Pile (P57 to P65) 3 nos.	0%	27-Feb-15	05-Mar-15
01109.PDC27327A	VSA Stage 2 - Trial trench (P16 to P56)	0%	06-Mar-15	12-Mar-15
01109.PDC27334A	VSA Stage 2 - Diversion of CLP Cable (EI-114)	0%	13-Mar-15	28-Mar-15
01109.PDC27337A	VSA Stage 2 - Pipe Pile (P36 to P56) 6 nos	0%	30-Mar-15	16-Apr-15
01109.PDC27338A	VSA Stage 2 - Pipe Pile (P36 to P56) 6 nos	0%	17-Apr-15	30-Apr-15
01109.PDC27339A	VSA Stage 2 - Pipe Pile (P36 to P56) 6 nos	0%	02-May-15	15-May-15
01109.PDC27341A	VSA Stage 2 - Pipe Pile (P36 to P56) 3 nos	0%	16-May-15	22-May-15
01109.PDC27330A	VSA Stage 3 - Trial trench (P1 to P15)	0%	23-May-15	27-May-15
01109.PDC27331A	VSA Stage 3 - Trial trench (P70 to P81)	0%	23-May-15	27-May-15
Entrance A			20-Apr-15	18-May-15
Foundation			20-Apr-15	18-May-15
01109.PDC27360	Ent A - Curtain Grouting	0%	20-Apr-15	04-May-15
01109.PDC22600	Ent A - Pumping test	0%	05-May-15	18-May-15
CC-D - BORED TUNNELS FROM SUW STATION TO HOM STATION			16-Jan-15 A	03-Jul-15
Specialised Construction Machinery Site Assembly and Related Establishment			25-Feb-15 A	03-Jul-15
Specialised Construction Machinery Site Assembly and Related Establishment			25-Feb-15 A	03-Jul-15
01109.PDD1110-1A	Down Track, TBM Shield Lowering	5%	25-Feb-15 A	10-Mar-15



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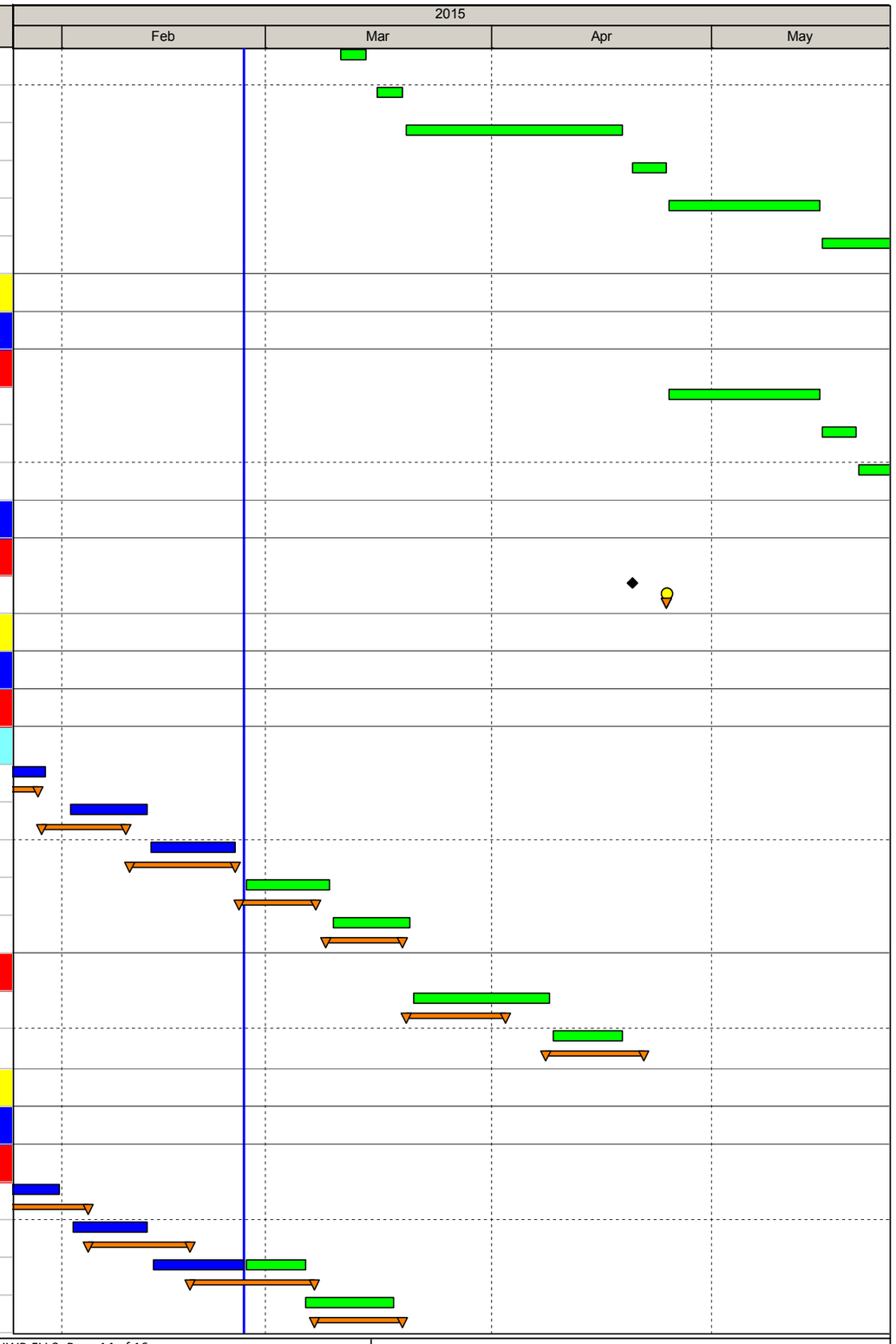
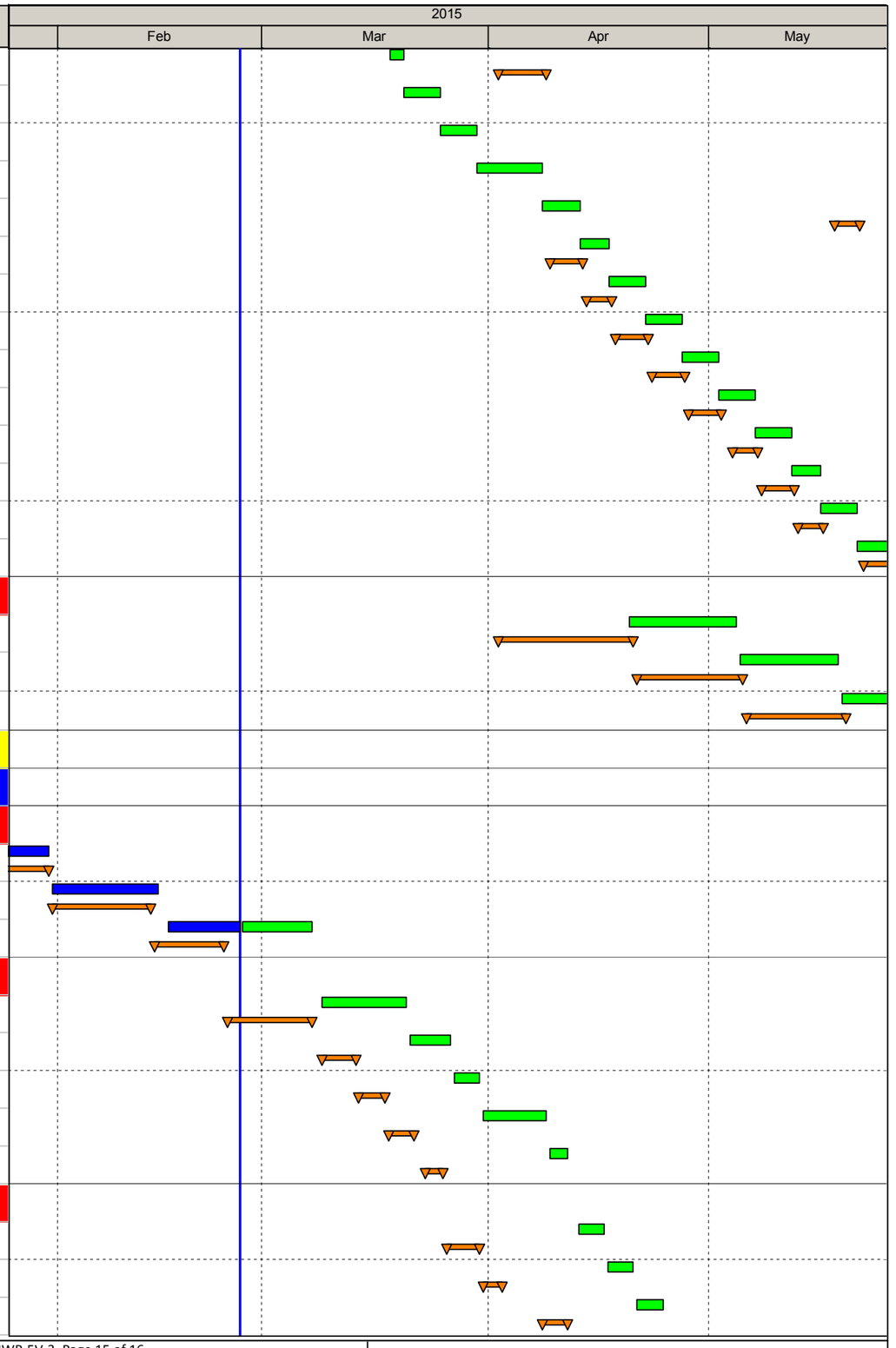
01109.PDD1110-2A	Down Track, TBM Thrust Frame installation	0%	11-Mar-15	14-Mar-15
01109.PDD1110-3A	Down Track, TBM Gantry Installation	0%	16-Mar-15	19-Mar-15
01109.PDD1110-4A	Down Track, TBM Connections and Commissioning	0%	20-Mar-15	18-Apr-15
01109.PDD1290A	Down Track, TBM Entry Ring in SUW Launch Shaft (EI??)	0%	20-Apr-15	24-Apr-15
01109.PDD1150A	Down Track, Ch D99+583 to +683 - Initial Drive 100m @3m/shift (Assume before Pile Testing)	0%	25-Apr-15	15-May-15
01109.PDD1150-1A	Down Track, TBM Platt Resetting	0%	16-May-15	03-Jul-15
Bored Tunnel Down Track (D99+583 to D101+514)			20-Apr-15	30-May-15
Tunnel from SUW to TKW (D99+583 to D100+432)			25-Apr-15	30-May-15
TBM			25-Apr-15	30-May-15
01109.PDD1150	Ch D99+583 to +683 - Initial Drive 100m @3m/shift	0%	25-Apr-15	15-May-15
01109.PDD1160	Ch D99+683 - Shaft Rearrangement (Install full TBM backup)	0%	16-May-15	20-May-15
01109.PDD1170	Ch D99+683 to +761 - Learning Curve 78m @4.8m/shift	0%	21-May-15	30-May-15
Tunnel from TKW to HOM (D100+755 to D101+514)			20-Apr-15	20-Apr-15
TBM			20-Apr-15	20-Apr-15
01109.PDD1530	EKW Pier 15 Underpinning works complete	0%		20-Apr-15
Underpining of EKW Pier 15 and Foundation Removal			16-Jan-15 A	18-Apr-15
TTA Stage 1: Phase 3			16-Jan-15 A	18-Apr-15
Bored Pile Removal			16-Jan-15 A	20-Mar-15
Group 1 (Machine 1)			16-Jan-15 A	20-Mar-15
01109.PDD2772A	Existing Bored Pile B19 - 1.5m dia - Remove bored pile in way of tunnel (Part 2)	100%	16-Jan-15 A	29-Jan-15 A
01109.PDD2710A	Existing Bored Pile B10 - 1.0m dia - Remove bored pile in way of tunnel (Part 1)	100%	02-Feb-15 A	12-Feb-15 A
01109.PDD2715A	Existing Bored Pile B10 - 1.0m dia - Remove bored pile in way of tunnel (Part 2)	100%	13-Feb-15 A	24-Feb-15 A
01109.PDD2730A	Existing Bored Pile B09 - 1.0m dia - Remove bored pile in way of tunnel (Part 1)	0%	26-Feb-15	09-Mar-15
01109.PDD2735A	Existing Bored Pile B09 - 1.0m dia - Remove bored pile in way of tunnel (Part 2)	0%	10-Mar-15	20-Mar-15
Backfill, Gnd Treatment, Remove wall, Reinstatement			21-Mar-15	18-Apr-15
01109.PDD2791A	EKW Pier 15 - Backfill & remove cofferdam wall (Part 1)	0%	21-Mar-15	08-Apr-15
01109.PDD2792A	EKW Pier 15 - Backfill & remove cofferdam wall (Part 2)	0%	09-Apr-15	18-Apr-15
Chatham Road North			22-Jan-15 A	02-Jun-15
EEP (EI No.52)			22-Jan-15 A	02-Jun-15
EI 52 - Preparation Works			22-Jan-15 A	27-May-15
01109.PDDEI52007A	EI 52 - Ground Treatment bet. shaft and running tunnels (Part 3)	100%	22-Jan-15 A	31-Jan-15 A
01109.PDDEI52008A	EI 52 - Ground Treatment bet. shaft and running tunnels (Part 4)	100%	02-Feb-15 A	12-Feb-15 A
01109.PDDEI52009A	EI 52 - Ground Treatment bet. shaft and running tunnels (Part 5)	39%	13-Feb-15 A	06-Mar-15
01109.PDDEI52005A50	EI 52 - Ground Treatment bet. shaft and running tunnels (Part 6)	0%	06-Mar-15	18-Mar-15



Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDDEI52161A	EI 52 - Pipe Piling Works P46 (h pile & grout)	0%	18-Mar-15	20-Mar-15
01109.PDDEI52280A	EI 52 - Pipe Piling Works P6	0%	20-Mar-15	25-Mar-15
01109.PDDEI52370A	EI 52 - Pipe PIling Works P45	0%	25-Mar-15	30-Mar-15
01109.PDDEI52180A	EI 52 - Pipe Piling Works P5	0%	30-Mar-15	08-Apr-15
01109.PDDEI52040A	EI 52 - Pipe Piling Works P44	0%	08-Apr-15	13-Apr-15
01109.PDDEI52110A	EI 52 - Pipe Piling Works P32	0%	13-Apr-15	17-Apr-15
01109.PDDEI52120A	EI 52 - Pipe Piling Works P30	0%	17-Apr-15	22-Apr-15
01109.PDDEI52121A	EI 52 - Pipe Piling Works P31	0%	22-Apr-15	27-Apr-15
01109.PDDEI52100A	EI 52 - Pipe Piling Works P34	0%	27-Apr-15	02-May-15
01109.PDDEI52102A	EI 52 - Pipe Piling Works P35	0%	02-May-15	07-May-15
01109.PDDEI52080A	EI 52 - Pipe Piling Works P38	0%	07-May-15	12-May-15
01109.PDDEI52090A	EI 52 - Pipe Piling Works P36	0%	12-May-15	16-May-15
01109.PDDEI52093A	EI 52 - Pipe Piling Works P37	0%	16-May-15	21-May-15
01109.PDDEI52060A	EI 52 - Pipe Piling Works P42	0%	21-May-15	27-May-15
EI 52 - Cut & Cover Tunnel to Ent D			20-Apr-15	02-Jun-15
01109.PDDEI52031A	EI 52 - Sheet piling, grout curtain, pump test and decking installation (Part 1)	0%	20-Apr-15	04-May-15
01109.PDDEI52032A	EI 52 - Sheet piling, grout curtain, pump test and decking installation (Part 2)	0%	05-May-15	18-May-15
01109.PDDEI52033A	EI 52 - Sheet piling, grout curtain, pump test and decking installation (Part 3)	0%	19-May-15	02-Jun-15
To Kwa Wan Ancillary Building			17-Jan-15 A	05-Jun-15
Excavation and Foundation			17-Jan-15 A	05-Jun-15
Stage 1			17-Jan-15 A	07-Mar-15
01109.PDD3081A	Drilling and installation of wells and piezometers (remedial works) (part 1)	100%	17-Jan-15 A	30-Jan-15 A
01109.PDD3082A	Drilling and installation of wells and piezometers (remedial works) (part 2)	100%	31-Jan-15 A	14-Feb-15 A
01109.PDD3083A	Pump test (remedial works)	40%	16-Feb-15 A	07-Mar-15
Stage 2			09-Mar-15	11-Apr-15
01109.PDD4362A	Mobilization and Set up	0%	09-Mar-15	20-Mar-15
01109.PDD3100	Excavate to +3.75mPD	0%	21-Mar-15	26-Mar-15
01109.PDD3110	Install 1st layer Ring Beam at +4.5mPD	0%	27-Mar-15	30-Mar-15
01109.PDD3120	Excavate to +0.25mPD (modified)	0%	31-Mar-15	08-Apr-15
01109.PDD3130	Install 2nd layer Ring Beam at +1mPD (modified)	0%	09-Apr-15	11-Apr-15
Stage 3			13-Apr-15	28-Apr-15
01109.PDD3150	Excavate to -3.25mPD (modified)	0%	13-Apr-15	16-Apr-15
01109.PDD3160	Install 3rd layer Ring Beam at -2.5mPD (modified)	0%	17-Apr-15	20-Apr-15
01109.PDD3150A	Excavate to -6.75mPD (modified)	0%	21-Apr-15	24-Apr-15



SAMSUNG

SAMSUNG-HSIN CHONG JOINT VENTURE

MTR Corporation Limited

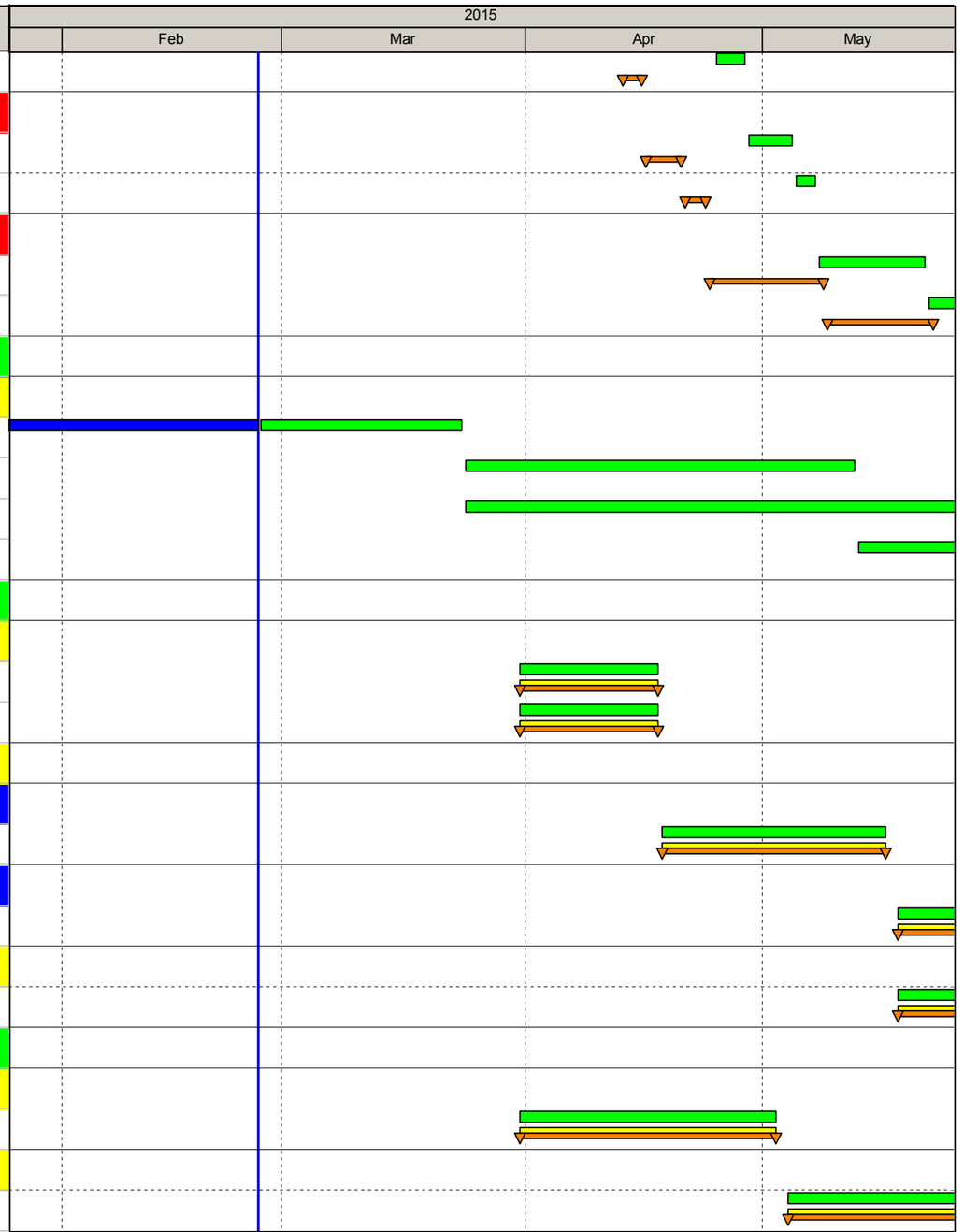
Shatin to Central Link Contract 1109

THREE MONTH ROLLING PROGRAMME - FEB 15 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Mar-15

Actual Work
Remaining Work
Master Programme Rev.1
Last Month Update (Jan 2015)
Milestone
MP Rev.1 Milestone
Jan 2015 Milestone

Activity ID	Activity Name	Physical % Complete	Start	Finish
01109.PDD3180	Install 4th layer Ring Beam at -6mPD (modified)	0%	25-Apr-15	28-Apr-15
Stage 4			29-Apr-15	07-May-15
01109.PDD3170	Excavate to -10.25mD (modified)	0%	29-Apr-15	04-May-15
01109.PDD3180A	Install 5th layer Ring Beam at -9.5mPD (modified)	0%	05-May-15	07-May-15
Stage 5			08-May-15	05-Jun-15
01109.PDD3191A	Excavate shaft rock to -11.5mPD	0%	08-May-15	21-May-15
01109.PDD3192A	Excavate shaft rock to -12.8mPD	0%	22-May-15	05-Jun-15
CC-E - REPROVISIONING, REMEDIAL AND IMPROVEMENT WORKS (RRIW)			09-Jan-15 A	07-Jun-15
General C& S Works			09-Jan-15 A	07-Jun-15
01109.PDE1050-1A	ELS design for KS33 & KS34	70%	09-Jan-15 A	23-Mar-15
01109.PDE1050-2A	Sheet piling for KS33	0%	24-Mar-15	12-May-15
01109.PDE1051-2A	Pipe piling for KS34	0%	24-Mar-15	01-Jun-15
01109.PDE1050-3A	Toe grouting for KS33	0%	13-May-15	07-Jun-15
CC-G - OPTION 1 - CEDD WORKS - EXISTING CULVERT WORKS CONNECTION			31-Mar-15	15-Jun-15
CC-G Submissions ,Approvals & Procurement			31-Mar-15	17-Apr-15
01109.PDG1000	Prepare & submit Drawing submission schedules for option 1	0%	31-Mar-15	17-Apr-15
01109.PDG1010	Prepare & submit Material Control schedules	0%	31-Mar-15	17-Apr-15
G2 - Works for Roads L9 and L16			18-Apr-15	15-Jun-15
Part 1 - Preliminaries			18-Apr-15	16-May-15
01109.PDG1020	Opt 1 - Site hoarding, fencing and survey	0%	18-Apr-15	16-May-15
Part 2 - Earthworks			18-May-15	15-Jun-15
01109.PDG1030	Opt 1 - General excavation	0%	18-May-15	15-Jun-15
G3 - Permanent Diversion of DSD Box Culvert to connect to Exist Twin Box Culvert			18-May-15	15-Jun-15
01109.PDG1230	Opt 1 - Box Culvert B1 - Earthworks - General excavation	0%	18-May-15	15-Jun-15
CC-H - OPTION 2 - CEDD ENTRUSTED WORKS + NEW CULVERT WORKS CONNECTI			31-Mar-15	01-Jun-15
Bill No. 1 - Opt 2a - Preliminaries			31-Mar-15	02-May-15
01109.PDH1000	Opt 2 - Site hoarding, fencing and survey	0%	31-Mar-15	02-May-15
Bill No. 2 - Opt 2a - Earthworks			04-May-15	01-Jun-15
01109.PDH1010	Opt 2 - General excavation	0%	04-May-15	01-Jun-15



SAMSUNG

SAMSUNG-HSIN CHONG JOINT VENTURE

MTR Corporation Limited

Shatin to Central Link Contract 1109

THREE MONTH ROLLING PROGRAMME - FEB 15 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

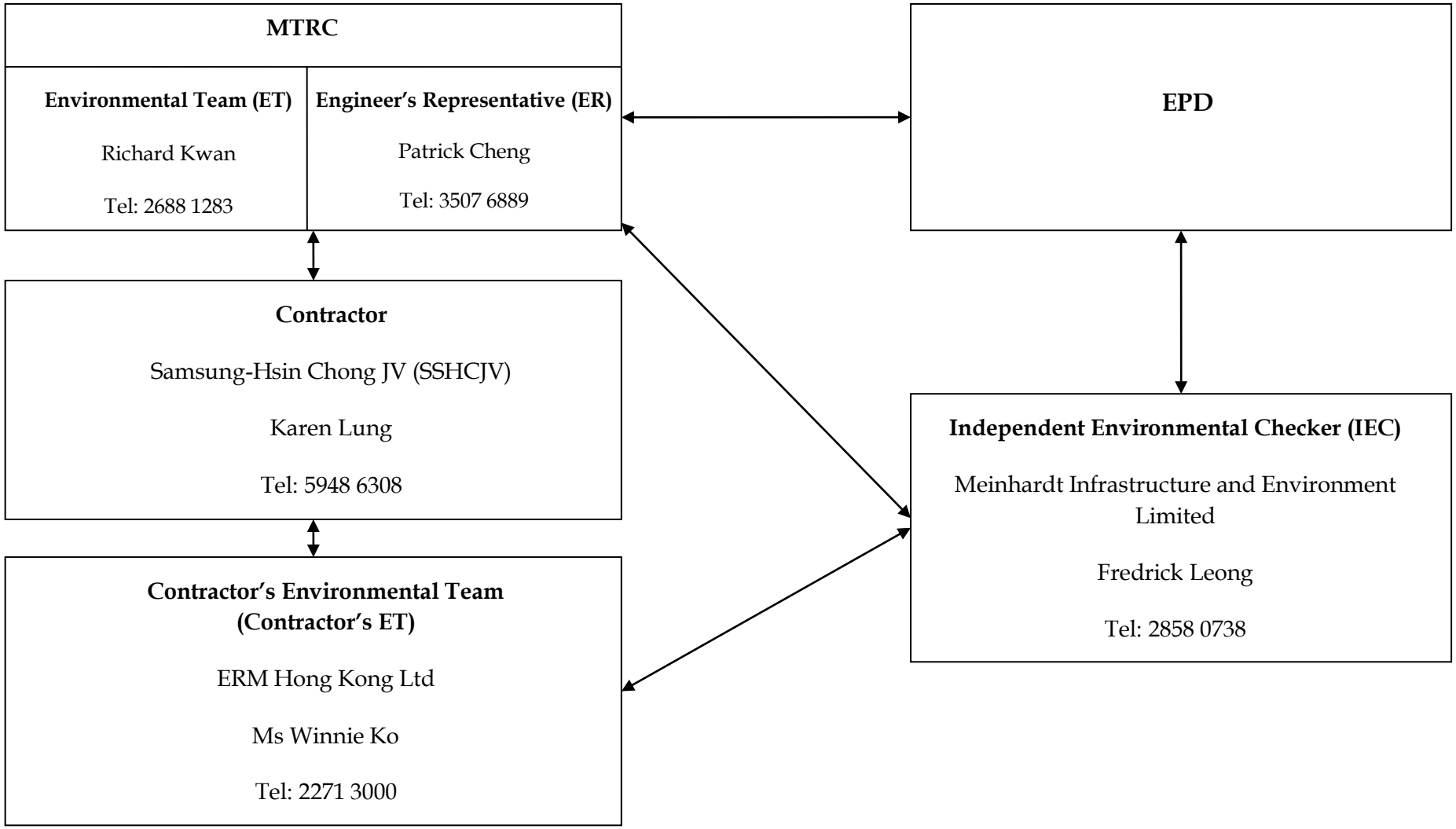
Printed:06-Mar-15

Actual Work
Remaining Work
Master Programme Rev.1
Last Month Update (Jan 2015)
Milestone
MP Rev.1 Milestone
Jan 2015 Milestone

Annex C

Project Organization Chart and Contact Detail

Annex C ***Project Organization of SCL Works Contract 1109***



Annex D

Locations of Noise and Dust Monitoring Stations

NMS-CA-6

TKW

NMS-CA-7

NMS-CA-8

MTW

NMS-CA-9

NMS-CA-10

N

Meters

0 100 200

Key

- Noise Monitoring Station
- Proposed Alignment
- Works Area
- Proposed Station

Annex D1

Location of Regular Construction Noise Monitoring Stations

File: T:\GIS\CONTRACT\0171181\Mxd\0171181_Airborne_Noise_Monitoring_Stations_Annex.mxd
Date: 12/08/2014

Environmental Resources Management

ERM

DMS-6

TKW

DMS-7

DMS-8

DMS-9

MTW

DMS-10

N

Meters

0 100 200

Key

- Dust Monitoring Stations
- Proposed Alignment
- Works Area
- Proposed Station

Annex D2

Location of Dust Monitoring Stations

File: T:\GIS\CONTRACT\0171181\Mxd\0171181_Dust_Monitoring_Station_Annex.mxd
Date: 12/08/2014

Environmental Resources Management

ERM

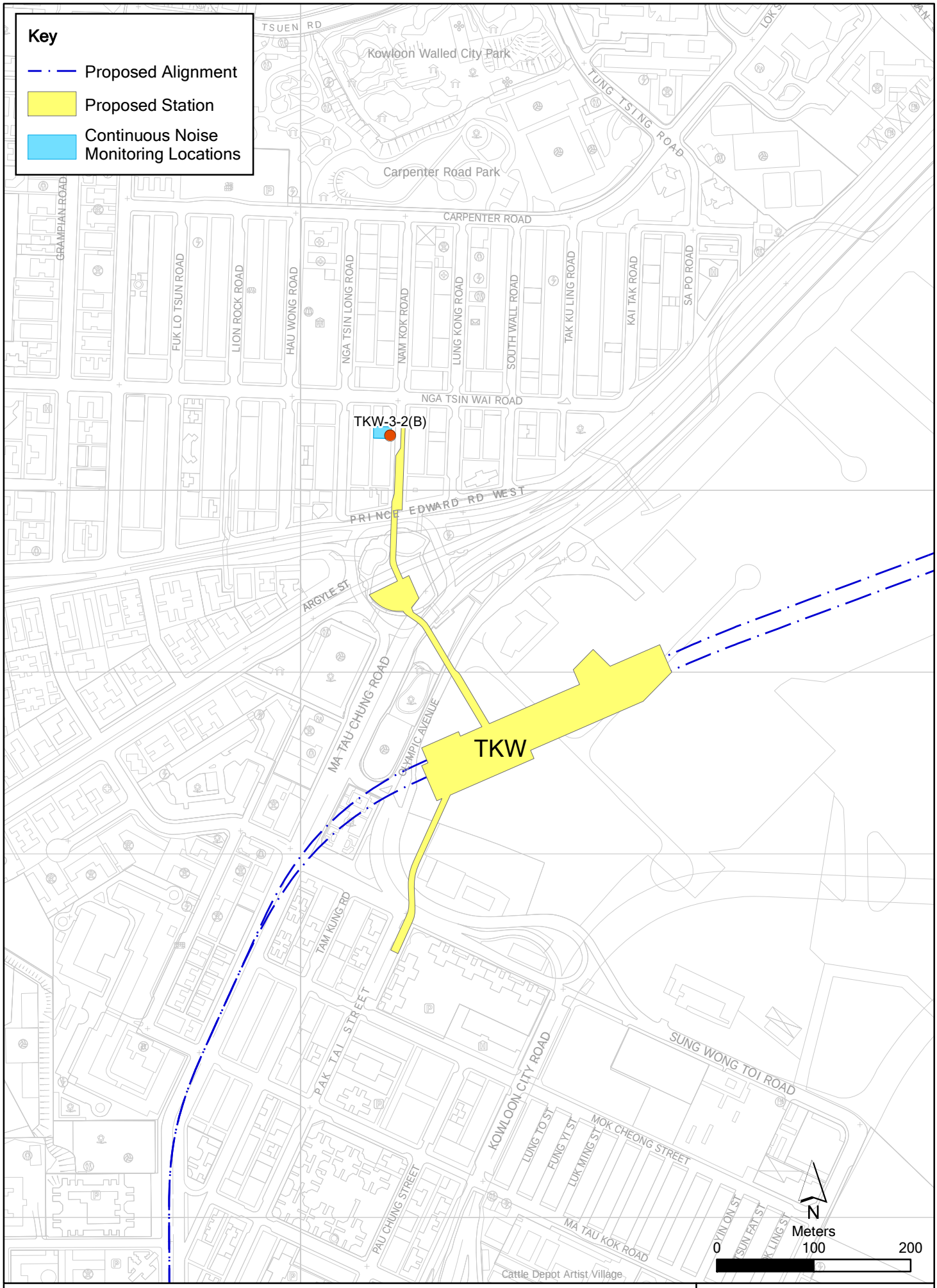


Figure 2.2a

Continuous Noise Monitoring Locations

File: T:\GIS\CONTRACT\0171181\Mxd\0171181_Continuous_Noise_Monitoring_Locations_TKW.mxd
Date: 5/11/2014

Environmental Resources Management

ERM

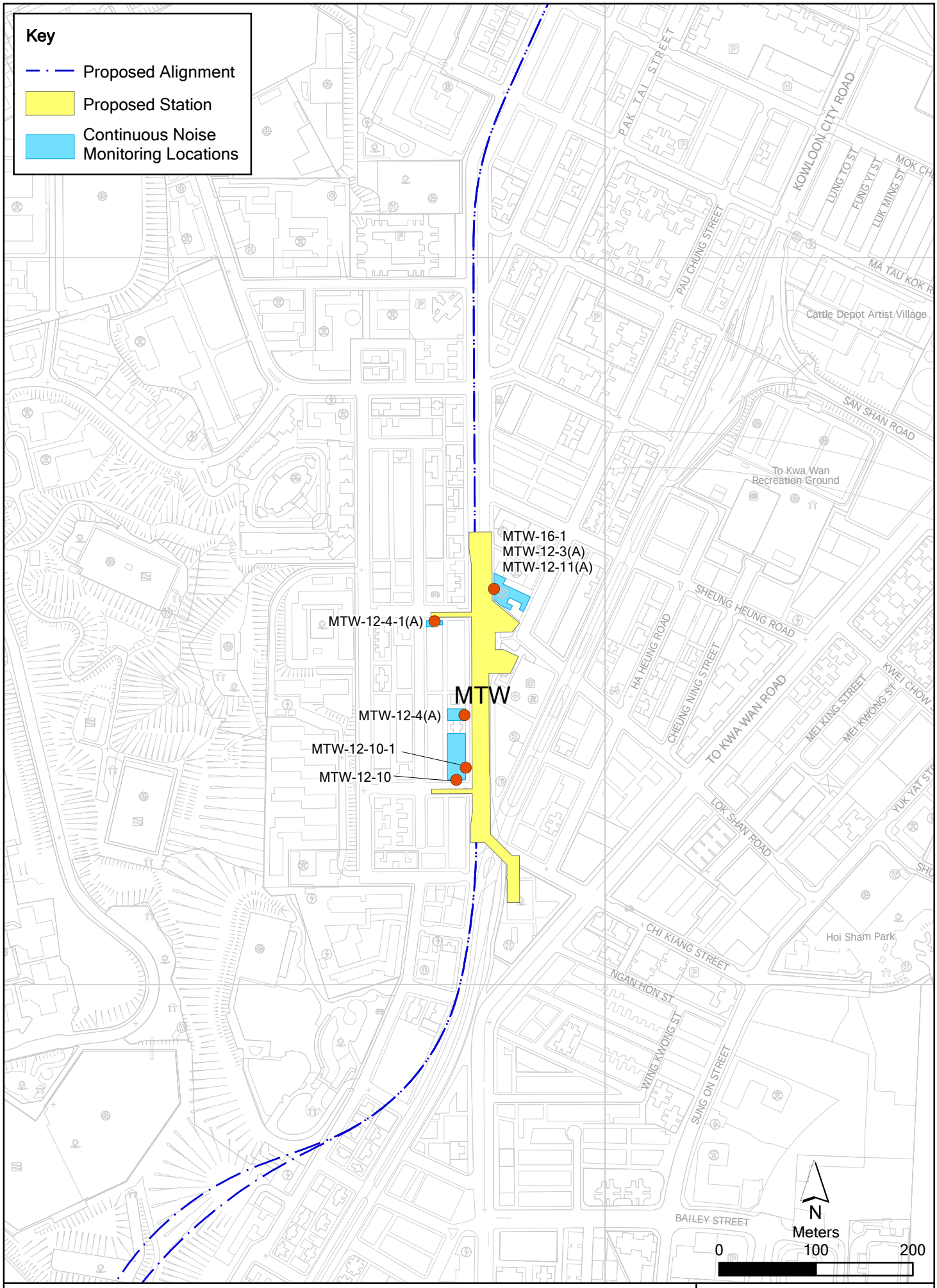


Figure 2.2b

Continuous Noise Monitoring Locations

File: T:\GIS\CONTRACT\0171181\Mxd\0171181_Continuous_Noise_Monitoring_Locations_MTW_v2.mxd
Date: 5/11/2014

Environmental Resources Management

ERM

Annex E

Monitoring Schedule of the Reporting Period and the Next Month

Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Noise Monitoring Schedule

Noise Monitoring Stations:
NMS-CA-6, NMS-CA-7, NMS-CA-8, NMS-CA-9 and NMS-CA-10
Monitoring Month : February 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb
		Noise Monitoring				
08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb
	Noise Monitoring					
15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb
			Noise Monitoring	Public Holiday	Public Holiday	Public Holiday
22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb
		Noise Monitoring				

Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Noise Monitoring Schedule

Noise Monitoring Stations:
NMS-CA-6, NMS-CA-7, NMS-CA-8, NMS-CA-9 and NMS-CA-10
Monitoring Month : March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Mar	02-Mar	03-Mar	04-Mar	05-Mar	06-Mar	07-Mar
	Noise Monitoring					
08-Mar	09-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
					Noise Monitoring	
15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
				Noise Monitoring		
22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
			Noise Monitoring			
29-Mar	30-Mar	31-Mar				
		Noise Monitoring				

Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Dust Monitoring Schedule

24-hr TSP Monitoring Stations:
DMS-6, DMS-7, DMS-8, DMS-9 and DMS-10
Monitoring Month: February 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb
		24-hr TSP Monitoring				
08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb
	24-hr TSP Monitoring					24-hr TSP Monitoring
15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb
			24-hr TSP Monitoring	Public Holiday	Public Holiday	Public Holiday
22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb
		24-hr TSP Monitoring				

Shatin to Central Link
Works Contract 1109
Stations and Tunnels of Kowloon City Section
Regular Dust Monitoring Schedule

24-hr TSP Monitoring Stations:
DMS-6, DMS-7, DMS-8, DMS-9 and DMS-10
Monitoring Month: March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Mar	02-Mar	03-Mar	04-Mar	05-Mar	06-Mar	07-Mar
	24-hr TSP Monitoring					24-hr TSP Monitoring
08-Mar	09-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
					24-hr TSP Monitoring	
15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
				24-hr TSP Monitoring		
22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
			24-hr TSP Monitoring			
29-Mar	30-Mar	31-Mar				
		24-hr TSP Monitoring				

Annex F

Calibration Reports

Annex F Calibration Reports

Dust Monitoring Equipment

Monitoring Station ID	Location	Monitoring Equipment		Last Calibration Date	Next Calibration Date
24-hr TSP		**HVS**	**Calibrator**		
DMS-6	Katherine Building	TE-5170 (S/N 0107)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-7	Parc 22	TE-5170 (S/N 3574)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-8	SHK Good Shepherd Primary School	TE-5170 (S/N 3572)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-9	No. 12 Pau Chung Street	TE-5170 (S/N 0814)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015
DMS-10	Chat Ma Mansion	TE-5170 (S/N 3573)	CM-AIR-43 (Orifice I.D. 2454)	5 September 2014	5 March 2015

Noise Monitoring Equipment

Monitoring Station ID	Monitoring Equipment	Model & Serial No.	Last Calibration Date	Next Calibration Date
NMS-CA-7, NMS-CA-9 and NMS-CA-10	Calibrator	Rion NC-73 (S/N 10997142)	28 June 2014	28 June 2015
	Sound Level Meter	Rion NL-18 (S/N 00360030)	19 July 2014	19 July 2015
NMS-CA-8, MTW-16-1, MTW-12-3 (A) and MTW-12-11 (A)	Calibrator	Rion NC-73 (S/N 10997142)	28 June 2014	28 June 2015
	Sound Level Meter	Rion NL-31 (S/N 00320533)	28 June 2014	28 June 2015
NMS-CA-6, TKW-3-2(B)	Calibrator	Rion NC-73 (S/N 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL-52 (S/N 00131628)	5 July 2014	5 July 2015
MTW-12-4(A)	Calibrator	Rion NC-73 (S/N 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL-52 (S/N 00643040)	9 July 2014	9 July 2015
MTW-12-4-1 (A)	Calibrator	Rion NC-73 (S/N. 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL-52 (S/N 00643039)	9 July 2014	9 July 2015
MTW-12-10-1	Calibrator	Rion NC-73 (S/N. 10786708)	15 July 2014	15 July 2015
	Sound Level Meter	Rion NL- (S/N 00983400)	6 August 2014	6 August 2015

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	DMS-6 (Katherine Building)
Calibrated by	:	K.T.Ho
Date	:	05/09/2014

Sampler

Model	:	TE-5170
Serial Number	:	S/N 0107

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1007
Ta(K)	:	305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.6	3.498	1.686	54	53.22
2	13 holes	9.6	3.054	1.471	46	45.33
3	10 holes	7.4	2.681	1.292	40	39.42
4	7 holes	4.4	2.067	0.996	30	29.57
5	5 holes	2.8	1.649	0.795	22	21.68

Sampler Calibration Relationship (Linear Regression)

Slope(m):34.916 Intercept(b): -5.732 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	DMS-7 (Parc 22)
Calibrated by	:	K.T.Ho
Date	:	05/09/2014

Sampler

Model	:	TE-5170
Serial Number	:	S/N 3574

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1007
Ta(K)	:	305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.2	3.442	1.659	63	62.09
2	13 holes	9.6	3.054	1.471	56	55.19
3	10 holes	7.2	2.644	1.274	50	49.28
4	7 holes	4.6	2.114	1.019	42	41.39
5	5 holes	2.8	1.649	0.795	35	34.49

Sampler Calibration Relationship (Linear Regression)

Slope(m):31.592 Intercept(b):9.200 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	DMS-8 (SHK Good Shepherd Primary School)
Calibrated by	:	K.T.Ho
Date	:	05/09/2014

Sampler

Model	:	TE-5170
Serial Number	:	S/N 3572

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1007
Ta(K)	:	305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.2	3.442	1.659	63	62.09
2	13 holes	9.8	3.085	1.487	56	55.19
3	10 holes	7.8	2.752	1.326	50	49.28
4	7 holes	4.8	2.159	1.041	39	38.44
5	5 holes	3.0	1.707	0.823	30	29.57

Sampler Calibration Relationship (Linear Regression)

Slope(m): 38.625 Intercept(b): -2.027 Correlation Coefficient(r): 0.9999

Checked by: Magnum Fan Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	DMS-9(No. 12 Pau Chung Street)
Calibrated by	:	K.T.Ho
Date	:	05/09/2014

Sampler

Model	:	TE-5170
Serial Number	:	S/N 0814

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1007
Ta(K)	:	305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.6	3.498	1.686	68	67.02
2	13 holes	9.8	3.085	1.487	58	57.16
3	10 holes	7.6	2.717	1.309	50	49.28
4	7 holes	4.6	2.114	1.019	38	37.45
5	5 holes	2.8	1.649	0.795	28	27.59

Sampler Calibration Relationship (Linear Regression)

Slope(m): 43.703 Intercept(b): -7.324 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan Date: 08/09/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	DMS-10 (Chat Ma Mansion)
Calibrated by	:	K.T.Ho
Date	:	05/09/2014

Sampler

Model	:	TE-5170
Serial Number	:	S/N 3573

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	24 Mar 2014
Slope (m)	:	2.07593
Intercept (b)	:	-0.00102
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1007
Ta(K)	:	305

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.6	3.357	1.617	60	59.13
2	13 holes	9.4	3.022	1.456	54	53.22
3	10 holes	7.4	2.681	1.292	48	47.31
4	7 holes	4.8	2.159	1.041	40	39.42
5	5 holes	2.5	1.558	0.751	30	29.57

Sampler Calibration Relationship (Linear Regression)

Slope(m): 33.854 Intercept(b): -4.041 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 08/09/14

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2014 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2454 Pa (mm) - 758.19

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	1.4740	3.2	2.00
2	NA	NA	1.00	1.0340	6.4	4.00
3	NA	NA	1.00	0.9240	7.9	5.00
4	NA	NA	1.00	0.8820	8.8	5.50
5	NA	NA	1.00	0.7270	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0103	0.6854	1.4245
1.0061	0.9730	2.0146
1.0040	1.0866	2.2524
1.0028	1.1370	2.3623
0.9976	1.3722	2.8491

Qstd slope (m) = 2.07593
intercept (b) = -0.00102
coefficient (r) = 0.99996

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

Va	(x axis) Qa	(y axis)
0.9958	0.6755	0.8791
0.9916	0.9590	1.2433
0.9895	1.0709	1.3900
0.9884	1.1206	1.4579
0.9832	1.3524	1.7583

Qa slope (m) = 1.29991
intercept (b) = -0.00063
coefficient (r) = 0.99996

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}

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C143980
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1497) Date of Receipt / 收件日期 : 23 June 2014

Description / 儀器名稱	:	Sound Level Calibrator
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NC-73
Serial No. / 編號	:	10997142
Supplied By / 委託者	:	Envirotech Services Co. Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 June 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 2 July 2014

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C143980
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.7	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.987	1 kHz ± 2 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C144281
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1719) Date of Receipt / 收件日期 : 11 July 2014

Description / 儀器名稱	:	Precision Integrating Sound Level Meter
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-18
Serial No. / 編號	:	00360030
Supplied By / 委託者	:	Envirotech Services Co. Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 July 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 23 July 2014

Certificate of Calibration
校正證書

Certificate No. : C144281
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	94.1	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
60 - 120	LA	A	Fast	94.00	1	94.2 (Ref.)
				104.00		104.2
				114.00		114.2

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 110	LA	A	Fast	94.00	1	94.1	Ref.
			Slow			94.1	± 0.1

Certificate of Calibration
校正證書

Certificate No. : C144281
證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
50 -110	LA	A	Fast	106.00	Continuous	106.0	Ref.
	LAmx				200 ms	105.1	-1.0 ± 1.0
	LA		Slow		Continuous	106.0	Ref.
	LAmx				500 ms	102.5	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LA	A	Fast	94.00	31.5 Hz	54.4	-39.4 ± 1.5
					63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 110	LC	C	Fast	94.00	31.5 Hz	90.9	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	94.0	-0.2 ± 1.0
					250 Hz	94.1	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.3	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C144281
證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
50 - 110	LAeq	A	10 sec.	4	1	1/10	110	100	99.9	± 0.5
						$1/10^2$		90	89.9	± 0.5
			60 sec.			$1/10^3$		80	79.5	± 1.0
			5 min.			$1/10^4$		70	69.8	± 1.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307435

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C143981
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1497) Date of Receipt / 收件日期 : 23 June 2014

Description / 儀器名稱 : Sound Level Meter
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00320533
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 June 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 2 July 2014

Certificate of Calibration
校正證書

Certificate No. : C143981
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.7	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.7	Ref.
			Slow			93.6	± 0.1

Certificate of Calibration
校正證書

Certificate No. : C143981
證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
20 -110	L_A	A	Fast	106.00	Continuous	106.0	Ref.
	$L_A$max				200 ms	105.0	-1.0 ± 1.0
	L_A		Slow		Continuous	106.0	Ref.
	$L_A$max				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	31.5 Hz	54.2	-39.4 ± 1.5
					63 Hz	67.5	-26.2 ± 1.5
					125 Hz	77.5	-16.1 ± 1.0
					250 Hz	85.0	-8.6 ± 1.0
					500 Hz	90.4	-3.2 ± 1.0
					1 kHz	93.7	Ref.
					2 kHz	94.9	+1.2 ± 1.0
					4 kHz	94.8	+1.0 ± 1.0
					8 kHz	92.6	-1.1 (+1.5; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	31.5 Hz	90.5	-3.0 ± 1.5
					63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.0
					250 Hz	93.6	0.0 ± 1.0
					500 Hz	93.7	0.0 ± 1.0
					1 kHz	93.7	Ref.
					2 kHz	93.6	-0.2 ± 1.0
					4 kHz	93.0	-0.8 ± 1.0
					8 kHz	90.7	-3.0 (+1.5; -3.0)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C143981
證書編號

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
20 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	90.0	± 0.5
			60 sec.			$1/10^3$		80	80.0	± 1.0
			5 min.			$1/10^4$		70	70.0	± 1.0

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 320128

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

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

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C144068
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1633) Date of Receipt / 收件日期 : 27 June 2014

Description / 儀器名稱	:	Sound Level Meter
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-52
Serial No. / 編號	:	00131628
Supplied By / 委託者	:	Envirotech Services Co. Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 5 July 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 7 July 2014

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C144068
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.4	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	93.4 (Ref.)
				104.00		103.4
				114.00		113.4

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	93.4	Ref.
			Slow			93.4	± 0.3

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C144068
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.1	-26.2 ± 1.5
					125 Hz	77.2	-16.1 ± 1.5
					250 Hz	84.7	-8.6 ± 1.4
					500 Hz	90.1	-3.2 ± 1.4
					1 kHz	93.4	Ref.
					2 kHz	94.6	+1.2 ± 1.6
					4 kHz	94.4	+1.0 ± 1.6
					8 kHz	92.3	-1.1 (+2.1 ; -3.1)
					12.5 kHz	88.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	92.5	-0.8 ± 1.5
					125 Hz	93.2	-0.2 ± 1.5
					250 Hz	93.4	0.0 ± 1.4
					500 Hz	93.4	0.0 ± 1.4
					1 kHz	93.3	Ref.
					2 kHz	93.2	-0.2 ± 1.6
					4 kHz	92.6	-0.8 ± 1.6
					8 kHz	90.4	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.0	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 04664

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB :	63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

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

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Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

TEST REPORT
for
PRECISION
SOUND LEVEL METER
(NX-42EX installed)

Model : NL－52

Serial No. : 00643039

Microphone No. : 06819

Preamplifier No. : 43067

Condition : Temperature 26 ℃

Humidity 59 %RH

Date : July, 09, 2014

Signature : Y. kitajima

RION CO., LTD.

1. Frequency weightings (Fig. 1) Pass

Frequency weighting A

Frequency weighting C

Frequency weighting Z

2. Level linearity error (dB)

Reference signal level (Ref.) : 94.0 dB (at 1 kHz, 8 kHz), 74.0 dB (at 31.5 Hz)

Frequency weighting : A

Frequency \ Indicated value	Difference with Reference signal level (dB)						
	25.0	74.0	94.0	98.0	114.0	136.0	138.0
31.5 Hz	−0.1	Ref.	—	−0.1	—	—	—
1 kHz	−0.1	—	Ref.	—	0.0	—	−0.1
8 kHz	0.1	—	Ref.	—	—	0.0	—
Tolerance limit	±0.3	—	—	±0.3	±0.2	±0.3	±0.3

3. Toneburst response (Time weighted sound level)

Input signal level : 127 dB

Toneburst : Frequency : 4 kHz, duration : 0.25 ms

Frequency weighting : A, Time-weighting : F

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
100.0	99.9	−0.1	±1.0

4. Time weighting I (impulse)

Input signal level : 120 dB

Toneburst : Frequency : 4 kHz, duration : 5 ms, period : 500 ms

Frequency weighting : A

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
111.2	110.3	−0.9	±2.0

*When the optional Extended Function Program NX-42EX is installed, time weighting I(impulse) can be selected in only sub-channel.

5. Peak sound level (dB)

Frequency weighting : C

Frequency (Hz)	Number of cycles in test signal	(dB)				
		Input signal level	Design goal	Indicated value	Difference	Tolerance limit
			L_C	L_{Cpeak}		
31.5	1 cycle	137.0	136.5	137.3	0.8	±2.0
500	Positive half cycle	137.0	139.4	139.2	−0.2	±1.0
	Negative half cycle	137.0	139.4	139.2	−0.2	±1.0

6. Response to repeated to toneburst

Input signal level : 130.0 dB + 8 dB

Frequency weighting : A, Time-weighting : S

Toneburst : Frequency : 2 kHz, duration : 5 ms, period : 25 ms

(dB)				
Peak-to-rms ratio	Design goal	Indicated value	Difference	Tolerance limit
3.16	131.0	130.9	−0.1	±0.5

7. Inherent noise level (dB)

(dB)		
Frequency weighting	Indicated value	Tolerance limit
A	11.9	17 or less
C	16.3	25 or less
Z	22.3	30 or less

8. Instrumental error

84.0 dB ± 0.7 dB 0.1 dB

Applicable standards

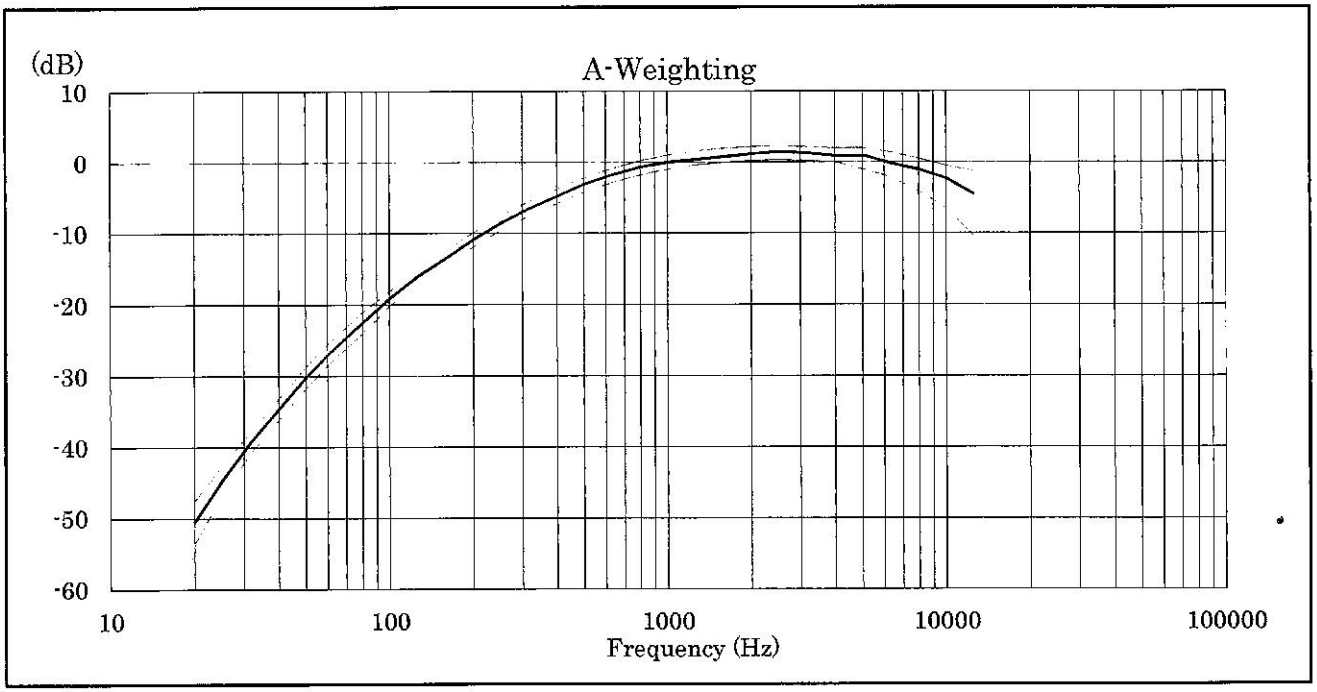
JIS C 1509-1 : 2005 Class 1
IEC 61672-1 : 2002 Class 1
ANSI S1.4-1983 Type 1
ANSI S1.43-1997 Type 1
CE marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC)
WEEE Directive (2002/96/EC)
Chinese RoHS

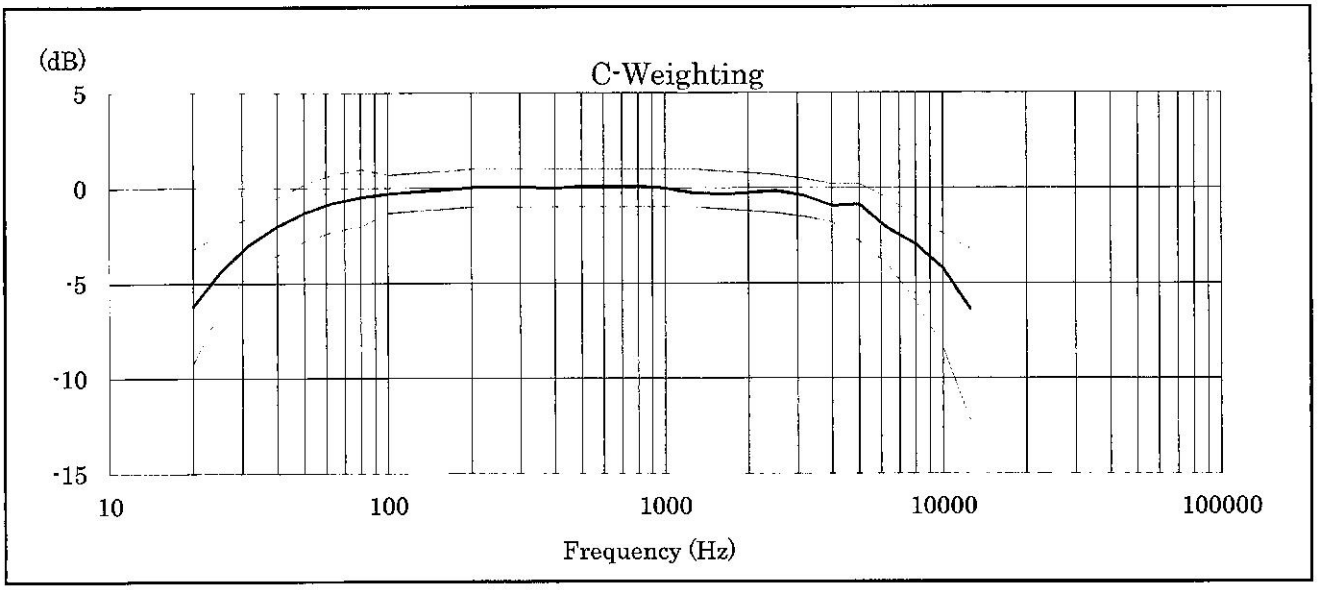
RION

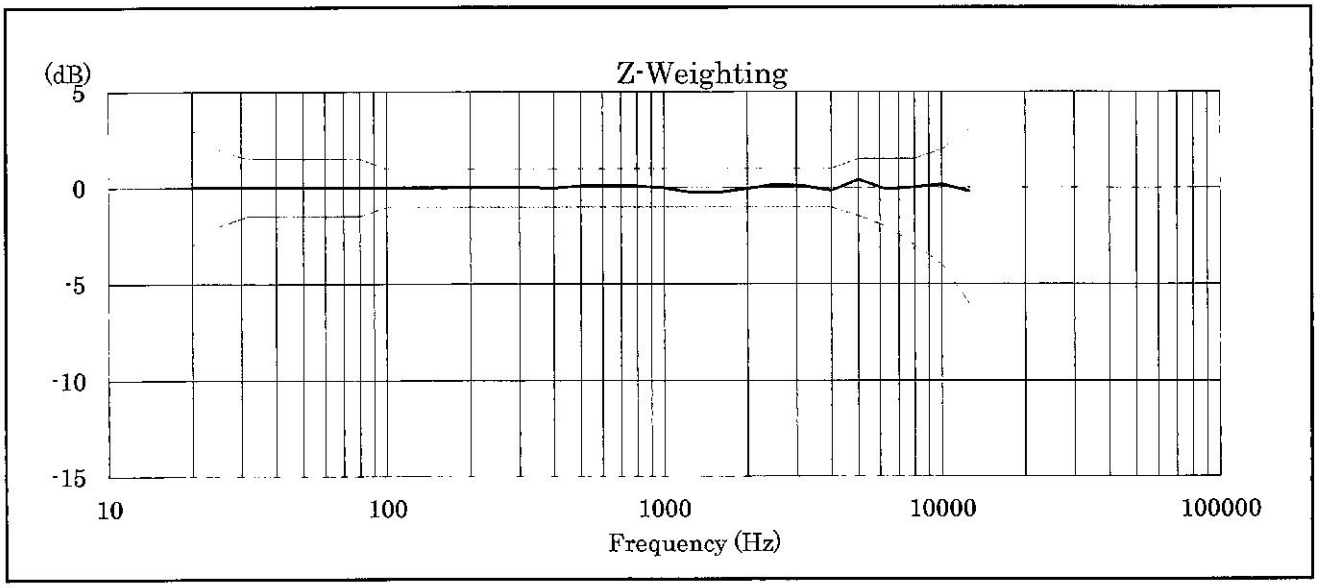
NL-52 (Fig. 1)

No. 00643039

Relative free field frequency response







TEST REPORT
for
PRECISION
SOUND LEVEL METER
(NX-42EX installed)

Model : NL－52

Serial No. : 00643040

Microphone No. : 06820

Preamplifier No. : 43068

Condition : Temperature 26 ℃

Humidity 59 %RH

Date : July, 09, 2014

Signature : Y. kitajima

RION CO., LTD.

1. Frequency weightings (Fig. 1) Pass

Frequency weighting A

Frequency weighting C

Frequency weighting Z

2. Level linearity error (dB)

Reference signal level (Ref.) : 94.0 dB (at 1 kHz, 8 kHz), 74.0 dB (at 31.5 Hz)

Frequency weighting : A

Frequency \ Indicated value	Difference with Reference signal level (dB)						
	25.0	74.0	94.0	98.0	114.0	136.0	138.0
31.5 Hz	−0.2	Ref.	—	−0.1	—	—	—
1 kHz	0.2	—	Ref.	—	0.0	—	0.0
8 kHz	0.1	—	Ref.	—	—	0.0	—
Tolerance limit	±0.3	—	—	±0.3	±0.2	±0.3	±0.3

3. Toneburst response (Time weighted sound level)

Input signal level : 127 dB

Toneburst : Frequency : 4 kHz, duration : 0.25 ms

Frequency weighting : A, Time-weighting : F

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
100.0	99.9	−0.1	±1.0

4. Time weighting I (impulse)

Input signal level : 120 dB

Toneburst : Frequency : 4 kHz, duration : 5 ms, period : 500 ms

Frequency weighting : A

(dB)			
Design goal	Indicated value	Difference	Tolerance limit
111.2	110.2	−1.0	±2.0

*When the optional Extended Function Program NX-42EX is installed, time weighting I(impulse) can be selected in only sub-channel.

5. Peak sound level (dB)

Frequency weighting : C

Frequency (Hz)	Number of cycles in test signal	(dB)				
		Input signal level	Design goal	Indicated value	Difference	Tolerance limit
			L_C	Lcpeak		
31.5	1 cycle	137.0	136.5	137.3	0.8	±2.0
500	Positive half cycle	137.0	139.4	139.2	−0.2	±1.0
	Negative half cycle	137.0	139.4	139.2	−0.2	±1.0

6. Response to repeated to toneburst

Input signal level : 130.0 dB + 8 dB

Frequency weighting : A, Time-weighting : S

Toneburst : Frequency : 2 kHz, duration : 5 ms, period : 25 ms

(dB)				
Peak-to-rms ratio	Design goal	Indicated value	Difference	Tolerance limit
3.16	131.0	131.0	0.0	±0.5

7. Inherent noise level (dB)

(dB)		
Frequency weighting	Indicated value	Tolerance limit
A	11.6	17 or less
C	16.1	25 or less
Z	21.8	30 or less

8. Instrumental error

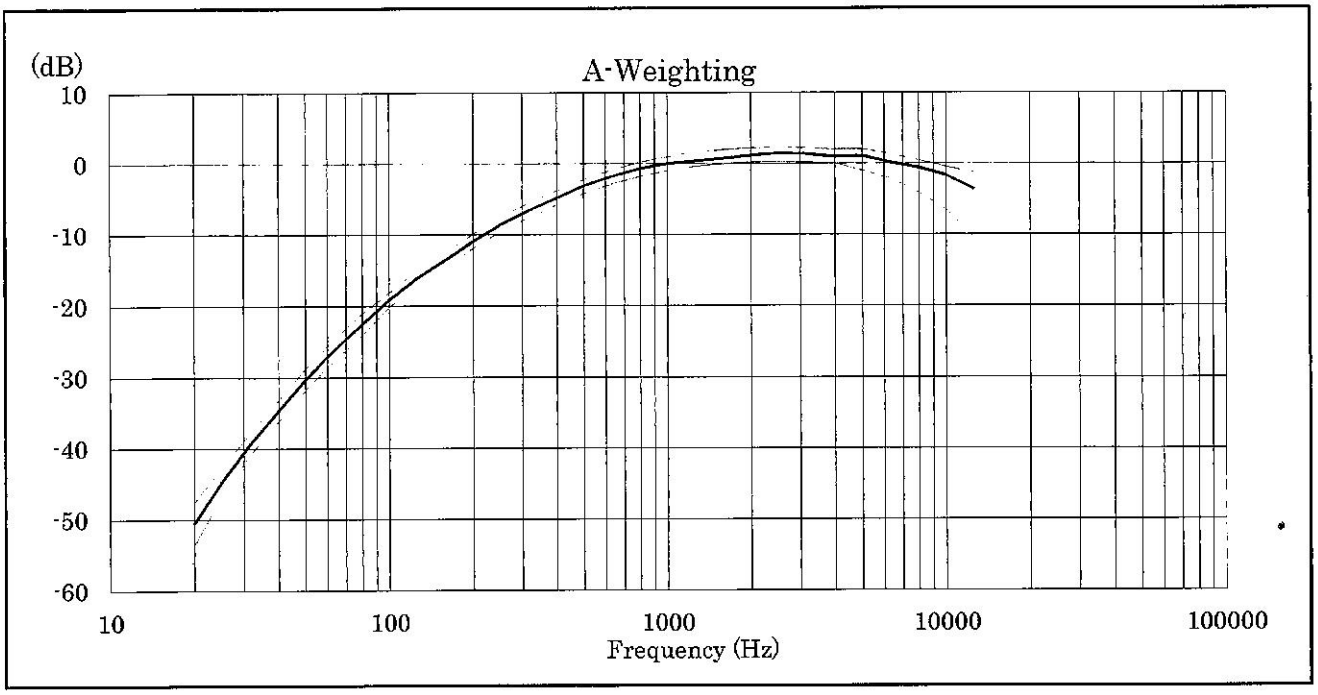
84.0 dB ± 0.7 dB　　0.1 dB

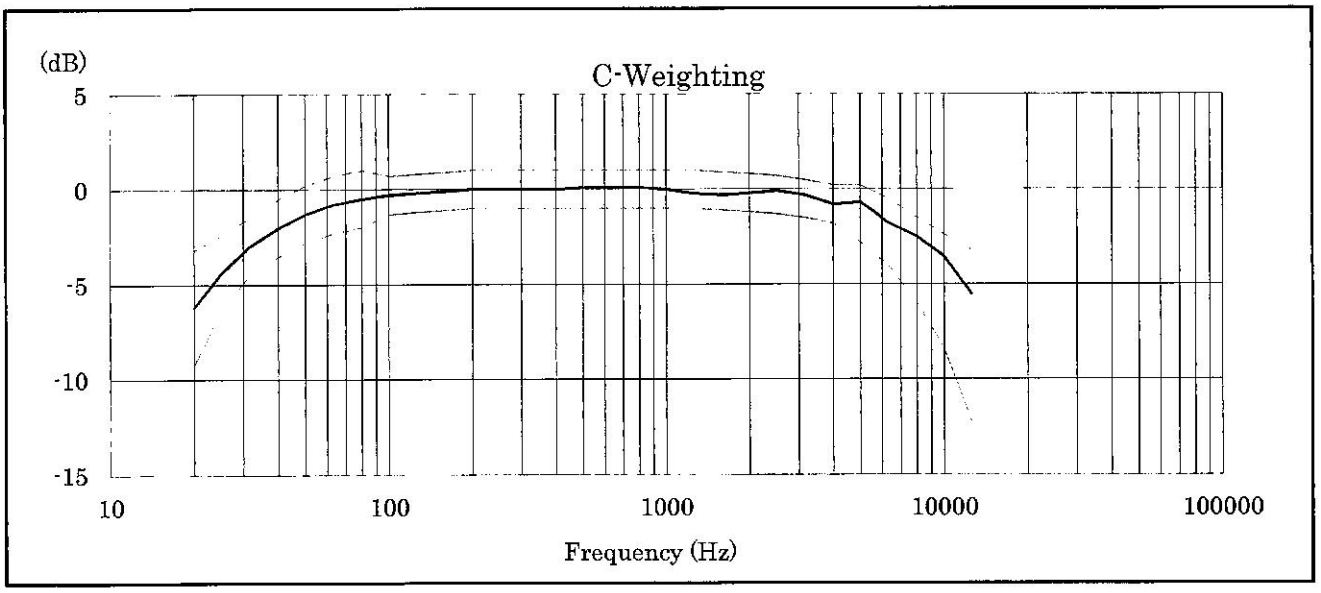
Applicable standards

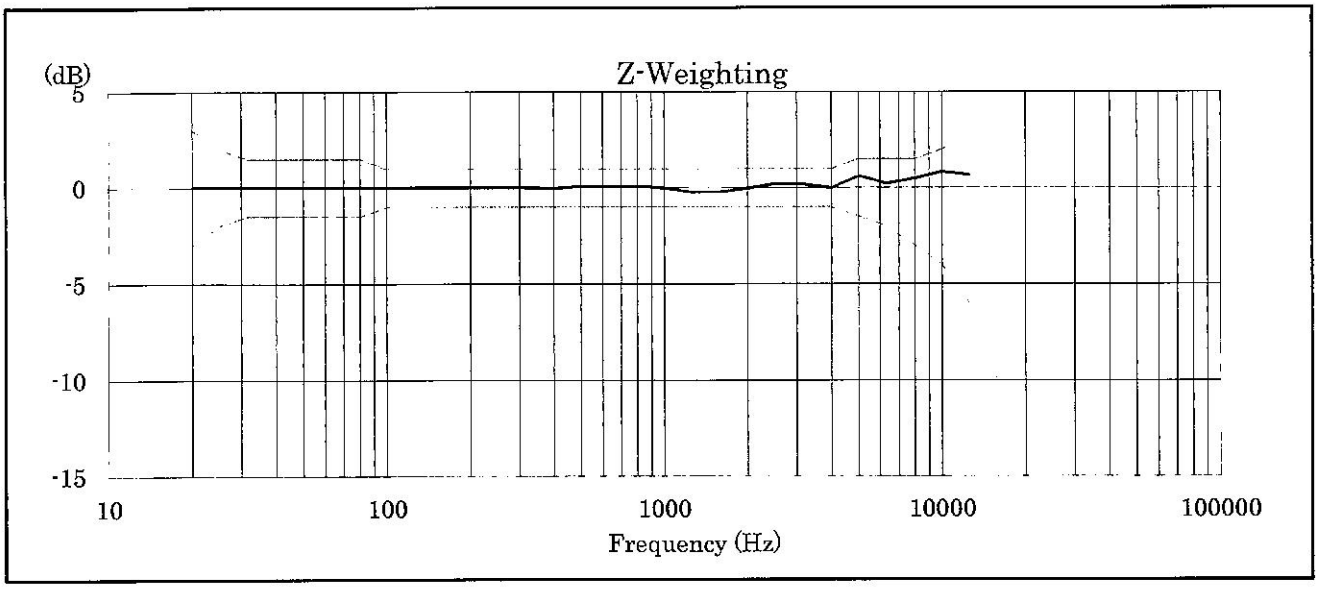
JIS C 1509-1 : 2005 Class 1
IEC 61672-1 : 2002 Class 1
ANSI S1.4-1983 Type 1
ANSI S1.43-1997 Type 1
CE marking (EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC)
WEEE Directive (2002/96/EC)
Chinese RoHS

RION

Relative free field frequency response







輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C144214
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1719) Date of Receipt / 收件日期 : 9 July 2014

Description / 儀器名稱 : Sound Level Calibrator
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10786708
Supplied By / 委託者 : Envirotech Services Co.
Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 July 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : H C Chan, Engineer

Certified By 核證 : K K Wong, Engineer

Date of Issue 簽發日期 : 16 July 2014

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C144214
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.990	1 kHz ± 2 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

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

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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C144808
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-1960) Date of Receipt / 收件日期 : 30 July 2014

Description / 儀器名稱	:	Sound Level Meter
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-31
Serial No. / 編號	:	00983400
Supplied By / 委託者	:	Envirotech Services Co. Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 6 August 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification. (after adjustment)
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 7 August 2014

Certificate of Calibration
校正證書

Certificate No. : C144808
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	* 92.0	± 1.1

* Out of IEC 61672 Class Spec.

6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

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c/o 香港新界屯門興安里 一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C144808
證書編號

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			93.9	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.2	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.1	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.4	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.3	-6.2 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C144808
證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 307154

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	63 Hz - 125 Hz	:	± 0.35 dB
	250 Hz - 500 Hz	:	± 0.30 dB
	1 kHz	:	± 0.20 dB
	2 kHz - 4 kHz	:	± 0.35 dB
	8 kHz	:	± 0.45 dB
	12.5 kHz	:	± 0.70 dB
104 dB	1 kHz	:	± 0.10 dB (Ref. 94 dB)
114 dB	1 kHz	:	± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

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

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Annex G

Summary of Event/ Action Plans

Annex G1 Event and Action Plan for Regular Construction Noise Monitoring

EVENT	Action			
	Contractor's Environmental Team (Contractor's ET)	**Independent Environmental Checker (IEC)**	**Engineer Representative (ER)**	**The Contractor**
Exceeding Action Level	1. Notify the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Increase the monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of complaint in writing ; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise the implementation of remedial measures.	1. Investigate the complaint and propose remedial measures; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification; 4. Implement noise mitigation proposals.
Exceeding Limit Level	1. Notify the IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase the monitoring frequency; 4. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform the IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess the effectiveness of the Contractor's remedial measures and keep the IEC, ER and EPD informed of the results	1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify reason(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem is still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Annex G2 Event and Action Plan for Continuous Noise Monitoring

Event	Action			
	Works Contract 1109 ET	**IEC**	**ER**	**Contractor**
Exceeding Action/Limit Level	1. Identify source 2. Repeat measurement. If two consecutive measurements exceed Action/Limit Level, the exceedance is then confirmed 3. If exceedance is confirmed, notify IEC, ER and Contractor 4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented 5. Discuss jointly with the IEC, ER and Contractor and formulate remedial measures 6. Assess effectiveness of Contractor's remedial actions and keep IEC and ER informed of the results	1. Check monitoring data submitted by the Works Contract 1109 ET 2. Check the Contractor's working method 3. Discuss with the ER, Works Contract 1109 ET and Contractor on the potential remedial measures 4. Review and advise the Works Contract 1109 ET and ER on the effectiveness of the remedial measures proposed by the Contractor	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor and IEC 3. In consultation with the Works Contract 1109 ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Ensure the proper implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Identify source with Works Contract 1109 ET 2. If exceedance is confirmed, investigate the cause of exceedance and take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET of notification 4. Implement the agreed proposals 5. Liaise with ER to optimize the effectiveness of the agreed mitigation 6. Revise and resubmit proposals if problem still not under control 7. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Annex G3 Event and Action Plan for Construction Dust Monitoring

Event	Action			
	Contractor's Environmental Team (Contractor's ET)	**Independent Environmental Checker (IEC)**	**Engineer Representative (ER)**	**The Contractor**
Action Level				
Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase the monitoring frequency	1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notifications of exceedance in writing;	1. Identify reason(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods and agree them with the ER as appropriate.
Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase the monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, the monitoring frequency will resume normal.	1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise the Implementation of remedial measures.	1. Identify reasons and investigate the causes of exceedance; 2. Submit proposals of remedial measures to the ER with a copy to the ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend the proposal as appropriate.

Event	Action			
	Contractor's Environmental Team (Contractor's ET)	**Independent Environmental Checker (IEC)**	**Engineer Representative (ER)**	**The Contractor**
Limit Level				
Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase the monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise the implementation of remedial measures.	1. Identify reason(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals of remedial measures to ER with a copy to the ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Notify the IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase the monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep the IEC, EPD and ER informed of the results; 7. If exceedance stops, the monitoring frequency will return to normal.	1. Check the monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify reason(s) and investigate the causes of exceedance; 2. Take immediate actions to avoid further exceedance; 3. Submit proposals of remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Annex G4 Event and Action Plan for Landscape and Visual Impacts during the Construction Phase

Event	Action			
	Contractor's Environmental Team (Contractor's ET)	**Independent Environmental Checker (IEC)**	**Engineer Representative (ER)**	**The Contractor**
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER. 2. Discuss remedial actions with the IEC, ER and Contractor. 3. Monitor remedial actions until rectification has been completed.	1. Check the inspection report. 2. Check the Contractor's working method. 3. Discuss with the ET, ER and Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of proposed remedial measures.	1. Confirm receipt of notifications of nonconformity in writing. 2. Review and agree on the remedial measures proposed by the Contractor. 3. Supervise the implementation of remedial measures.	1. Identify reasons and investigate the non-conformity. 2. Implement remedial measures 3. Amend working methods and agree them with the ER as appropriate. 4. Rectify the damage and undertake any necessary replacement.
Repeated Nonconformity	1. Identify Reasons. 2. Inform the Contractor, IEC and ER. 3. Increase the inspection frequency. 4. Discuss remedial actions with the IEC, ER and Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If non-conformity stops, the inspection frequency return to normal (ie,. Once every two weeks)	1. Check the inspection report. 2. Check the Contractor's working method. 3. Discuss with the ET and Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of proposed remedial measures.	1. Notify the Contractor. 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented. 3. Supervise the implementation of remedial measures.	1. Identify Reasons and investigate the non-conformity. 2. Implement remedial measures. 3. Amend working methods and agree them with the ER as appropriate. 4. Rectify the damage and undertake any necessary replacement. 5. Stop relevant works as determined by the ER until the non-conformity is abated.

Annex H

Summary of Implementation Status of Environmental Mitigation

Annex H Environmental Mitigation Implementation Status – SCL Works Contract 1109 (Stations and Tunnels of Kowloon City Section)

Note:

* Reference has been made to the approved SCL (TAW-HUH) EM&A Manual.
√ Compliance of Mitigation Measures
<> Compliance of Mitigation but need improvement
x Non-compliance of Mitigation Measures
▲ Non-compliance of Mitigation Measures but rectified by Samsung-Hsin Chong JV
Δ Deficiency of Mitigation Measures but rectified by Samsung-Hsin Chong JV
N/A Not Applicable in Reporting Period

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
Cultural Heritage Impact							
S4.9	CH3	Submit an Archaeological Action Plan Conduct survey-cum-excavation and additional boreholes/trenches investigation at the Sacred Hill (North) Study Area prior to construction.	Salvage cultural remains at the Sacred Hill (North) Study Area	Contractor	Sacred Hill (North) Area	Prior to the Construction Phase of TKW and associated tunnels	√
Ecology (Construction Phase)							
S5.7	E5	Good Site Practices Impact on any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal.	Minimise ecological impacts	Contractor	All construction sites	Construction Stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		The following good site practices should also be implemented: • Erection of temporary geotextile silt or sediment fences/oil traps around earth-moving works to trap sediments and prevent them from entering watercourses; • Avoidance of soil storage against trees or close to water bodies; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. tunnel on hill at top of slope stabilisation works; • No on-site burning of waste; • Store waste and refuse in appropriate receptacles.					
Landscape & Visual (Construction Phase)							
S6.9.3	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing	Minimize visual & landscape impact	Contractor	Within Project Site	Construction Stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing . The contractor should closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u> • All retained trees including trees in contractor's works sites should be recorded and photographed at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifies the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		trees in Contractor's works sites.					
S6.12	LV2	<u>Decorative Hoarding</u> • Erection of decorative screen in visual and landscape sensitive areas during the construction stage to screen off undesirable views of the construction site . Hoarding should be designed to be compatible with the existing urban context. <u>Management of facilities on work sites</u> • To provide proper management of the on-site facilities, control the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent Visual Sensitive Receivers (VSRs). <u>Tree Transplanting</u> • Trees of high to medium survival rates that would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including the final locations for the transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.	Minimize visual & landscape impact	Contractor	Within Project Site	Construction Stage	√
Construction Dust							
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
S7.6.5	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul roads in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 l/m^2 to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	√
S7.6.5	D3	• Proper watering of exposed spoil should be undertaken throughout the construction phase; • Any excavated or stockpile of dusty material should be covered entirely by an impervious sheeting or sprayed with water to maintain an entirely wet surface and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile has been removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty materials should not be extended beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by an impervious	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road which leads only to construction site and is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operations take place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain an entirely wet surface • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building upward, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by an impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by an impervious sheeting or placed in an area sheltered on the top and 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system;				

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	√
EP Condition 2.18(a)	D7	Watering once every working hour for active works areas, exposed areas and paved haul roads shall be provided in Kowloon area to keep these active works areas, exposed areas and paved haul roads wet.	Minimize construction dust impact	Contractor	All construction sites	Construction stage	√
EP Condition 2.19	D8	All diesel fuelled construction plant, including marine vessels if possible, used by the contractors within the works areas of the Project shall be powered by ultra low sulphur diesel fuel.	Minimize aerial emissions of sulphur dioxide from construction plant	Contractor	All construction sites	Construction stage	√
Construction Noise (Airborne)							
S8.3.6	N1	Implement the following good site practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work	Control construction airborne noise	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, should be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the period of construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	√
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	<>
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	√
S8.3.6	N5	Sequencing operation of construction plants	Operate sequentially within	Contractor	Contractor All	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		where practicable.	the same work site to reduce the construction airborne noise		construction sites where practicable		
S8.3.6	N6	Implement noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	√
Water Quality							
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoffs and Site Drainage</u> • At the start of the site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to	To minimise water quality impact from construction site runoffs and general construction activities	Contractor	All construction sites where practicable	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m^3/s, a sedimentation basin of $30m^3$ would be required and for a flow rate of 0.5 m^3/s the basin would be 150 m^3. The detailed design of the sand/silt traps shall be undertaken by the Contractor prior to the commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, and definitely, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		coarse stone ballast. An additional advantage from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operations at all times and particularly following rainstorms. Deposited silts and grits should be removed regularly and disposed of by spreading them evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, trenches should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m^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					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		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 should be taken at any time of year when rainstorms are likely. Actions to be taken when a rainstorm is imminent or forecasted, 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 runoffs during storm events, especially for areas located near steep slopes. • All vehicles and plant should be cleaned before leaving a construction site to ensure that no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. 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					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited in 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 nearby water sensitive receivers. • All the earth works should be conducted sequentially to limit the amount of construction runoffs generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices					
S10.7.1	W2	<u>Tunnelling Works</u> • Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge. • The wastewater with a high concentration	To minimize construction water quality impact from tunnelling works	Contractor	All tunnelling portion	Construction stage	N/A

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		of suspended solids should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove oil, lubricants and grease from the wastewater. • Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. The slurry should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities have been completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.					
S10.7.1	W3	<u>Sewage Effluent</u> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for their appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	√
S10.7.1	W4	<u>Groundwater from Contaminated Area in case contamination is found:</u> • No direct discharge of groundwater from	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found.	Construction stage	N/A

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		contaminated areas is allowed. Prior to the excavation works within potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in the EIA report for compliance and the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water). The existence of prohibited substance should be confirmed. The review results should be submitted to EPD for examination if the review results indicate that the groundwater to be generated from the excavation works would be contaminated. The contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground. • If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. total petroleum hydrocarbon (TPH)) to undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM Water and should be discharged into the foul sewers.					

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		• If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells. It is necessary to submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than the pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the Water Pollution Control Ordinance (WPCO) through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.					
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended:	To minimize water quality impact from accidental	Contractor	All construction sites where practicable	Construction stage	<>

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	spillage				
Waste Management (Construction Waste)							
S11.4.1.1	WM1	<u>On-site sorting of C&D (Construction and Demolition) material</u> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored in the designated stockpile areas avoiding delivering them to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from	Separation of unsuitable rock from ending up at Concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		being ended up at concrete batching plants and turned into concrete for structural use. Details regarding control measures at source sites and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated. The traceability of delivery will be ensured via the implementation of Trip Ticket System and enforcement by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.					
S11.5.1	WM2	<u>Construction and Demolition (C&D) Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;	Good site practice to minimize waste generation and recycle C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		• Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; • Implement an enhanced Waste management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and minimize waste generation during the course of construction. • Disposal of the C&D materials to any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get his approval before implementation					
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used. Metal hoarding should be used to enhance the possibility of recycling. The purchase of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site.	Good site practice to minimize waste generation and recycle C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.					
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme	Minimize the production of general refuse and minimise odour, pest and litter impacts	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		should be considered by the Contractor.					
S11.5.1	WM7	<u>Chemical Waste</u> • Chemical waste as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, that is produced should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed. They should have a capacity of less than 450 litres unless the specification has been approved by the EPD. A label in English and Chinese should be displayed in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides. It should also have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest. It should have adequate ventilation and be covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	√

EIA Ref.	EM&A Log Ref*	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the implementation of measures	When to implement the measures?	Implementation Status
		• Disposal of chemical waste should be via a licensed waste collector; to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre (which also offers a chemical waste collection service and can supply the necessary storage containers); or to a reuser of the waste, under the approval from the EPD.					

Annex I - 1

Regular Noise Monitoring Results

Annex I-1 Regular Noise Monitoring Results

Station NMS-CA-6 No. 16-23 Nam Kok Road

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L_{Aeq}(30 min)	Baseline (dB(A)), L_{Aeq}(30 min)	Corrected LAeq(dBA) [(a)]	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Feb-15	10:55	11:25	Sunny	63.5	76.1	-(b)	-	Traffic noise	17	0.5	NL-52 00131628	NC-73 10786708
09-Feb-15	11:00	11:30	Sunny	63.9	76.1	-(b)	-	Traffic noise	16	0.5	NL-52 00131628	NC-73 10786708
18-Feb-15	10:55	11:25	Cloudy	62.9	76.1	-(b)	-	Traffic noise	19	0.8	NL-52 00131628	NC-73 10786708
24-Feb-15	10:40	11:10	Cloudy	62.7	76.1	-(b)	-	Traffic noise	18	0.5	NL-52 00131628	NC-73 10786708

Station NMS-CA-7 Skytower Tower 2

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L_{Aeq}(30 min)	Baseline (dB(A)), L_{Aeq}(30 min)	Corrected LAeq(dBA) [(a)]	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Feb-15	9:55	10:25	Sunny	66.9	70.0	-(b)	-	Traffic noise	17	0.5	NL-18 00360030	NC-73 10997142
09-Feb-15	10:00	10:30	Sunny	67.2	70.0	-(b)	-	Traffic noise	16	0.5	NL-18 00360030	NC-73 10997142
18-Feb-15	9:55	10:25	Cloudy	65.7	70.0	-(b)	-	Traffic noise	19	0.8	NL-18 00360030	NC-73 10997142
24-Feb-15	9:50	10:20	Cloudy	63.6	70.0	-(b)	-	Traffic noise	18	0.5	NL-18 00360030	NC-73 10997142

Station NMS-CA-8 SKH Good Shepherd Primary School

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L_{Aeq}(30 min)	Baseline (dB(A)), L_{Aeq}(30 min)	Corrected LAeq(dBA) [(a)]	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Feb-15	14:24	14:54	Sunny	79.1	75.4	76.7	-	Traffic noise	17	0.5	NL-31 00320533	NC-73 10997142
09-Feb-15	16:53	17:23	Sunny	78.2	75.4	75.0	-	Traffic noise	16	0.5	NL-31 00320533	NC-73 10997142
18-Feb-15	14:40	15:10	Cloudy	73.4	75.4	-(b)	-	Traffic noise	19	0.5	NL-31 00320533	NC-73 10997142
24-Feb-15	14:14	14:44	Cloudy	74.5	75.4	-(b)	-	Traffic noise	18	0.5	NL-31 00320533	NC-73 10997142

Station NMS-CA-9 Kong Yiu Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L_{Aeq}(30 min)	Baseline (dB(A)), L_{Aeq}(30 min)	Corrected LAeq(dBA) [(a)]	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Feb-15	8:00	8:30	Fine	73.3	69.2	71.2	Backhoe	Traffic noise	17	0.5	NL-18 00360030	NC-73 10997142
09-Feb-15	8:00	8:30	Sunny	73.9	69.2	72.1	Backhoe	Traffic noise	16	0.5	NL-18 00360030	NC-73 10997142
18-Feb-15	8:00	8:30	Cloudy	71.4	69.2	67.4	-	Traffic noise	19	0.8	NL-18 00360030	NC-73 10997142
24-Feb-15	8:00	8:30	Cloudy	71.1	69.2	66.6	-	Traffic noise	18	0.5	NL-18 00360030	NC-73 10997142

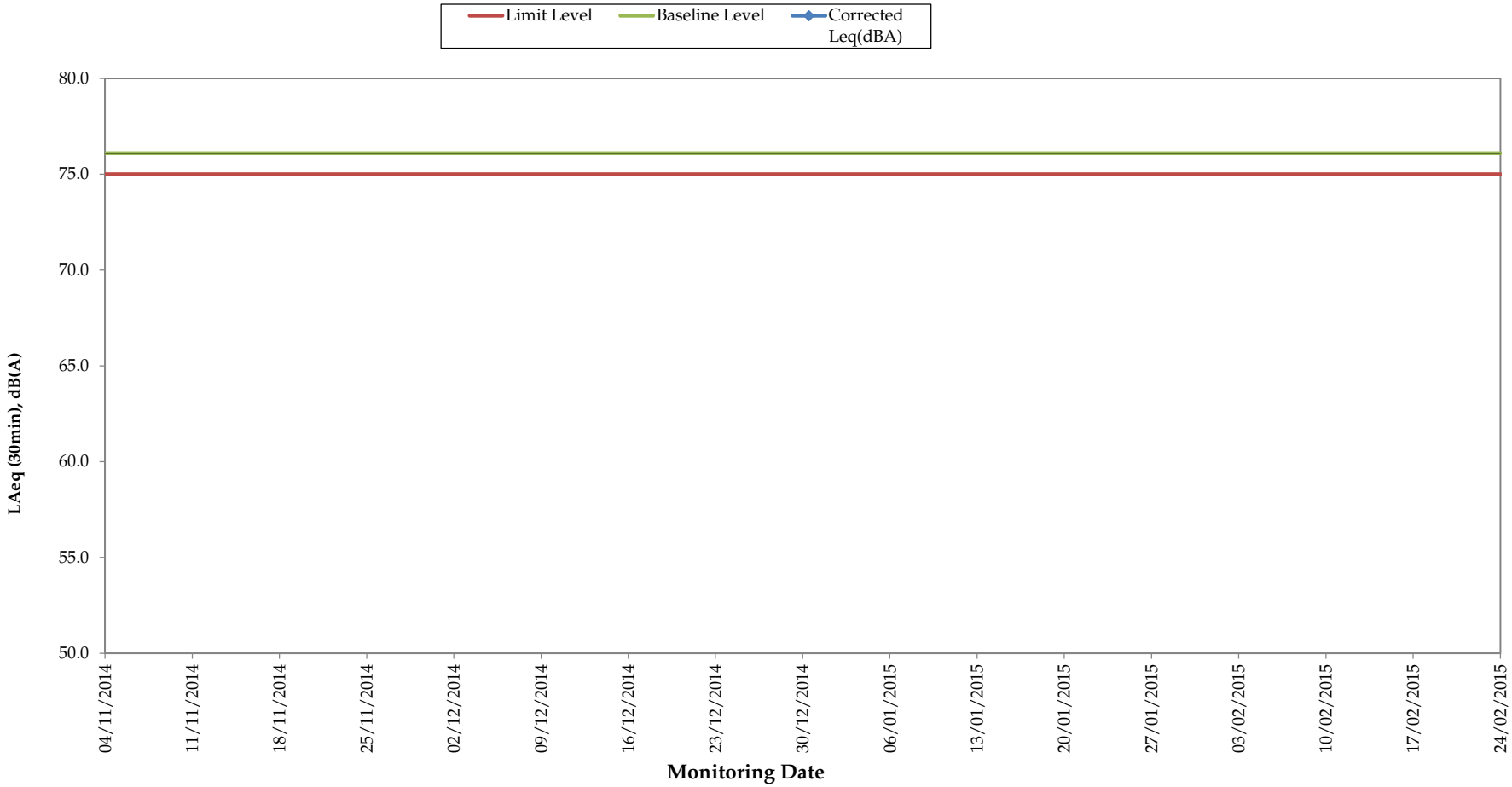
Station NMS-CA-10 Chat Ma Mansion

Date	Start Time	End Time	Weather	Measured Noise level (dB(A)), L_{Aeq}(30 min)[(c)]	Baseline (dB(A)), L_{Aeq}(30 min)	Corrected LAeq(dBA) [(a)]	Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Temp. (°C)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
03-Feb-15	8:40	9:10	Fine	78.0	76.6	72.4	Breaker	Traffic noise	17	0.5	NL-18 00360030	NC-73 10997142
09-Feb-15	8:40	9:10	Sunny	76.6	76.6	51.4	Backhoe	Traffic noise	16	0.5	NL-18 00360030	NC-73 10997142
18-Feb-15	8:40	9:10	Cloudy	75.7	76.6	-(b)	Backhoe	Traffic noise	19	0.8	NL-18 00360030	NC-73 10997142
24-Feb-15	8:40	9:10	Cloudy	75.1	76.6	-(b)	-	Traffic noise	18	0.5	NL-18 00360030	NC-73 10997142

Remarks:

(a) The Measured LAeq is corrected against the corresponding Baseline Level.
(b) No correction was made as the measured noise levels were equal to or below the baseline noise levels.
(c) The noise monitoring result carried out at NMS-CA-10 on 5, 16, 22 and 28 January 2015 is higher than the daytime construction noise criterion. However, those results are not considered as exceedances as they are below the limit level after deducting the baseline noise level.

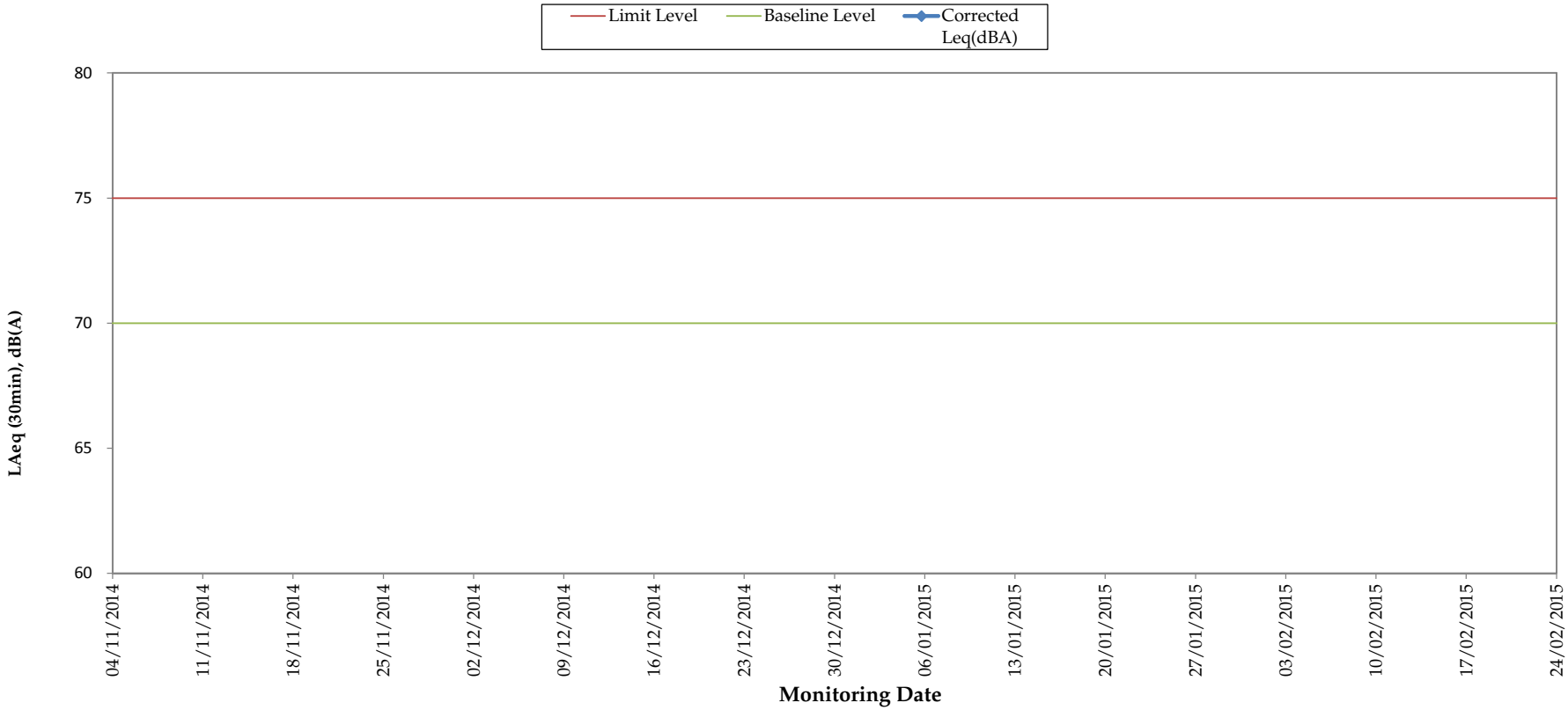
Regular Noise Monitoring Results at NMS-CA-6 (No. 16-23 Nam Kok Road) (LAeq, 30min) for the Past 4 Months



Remarks:

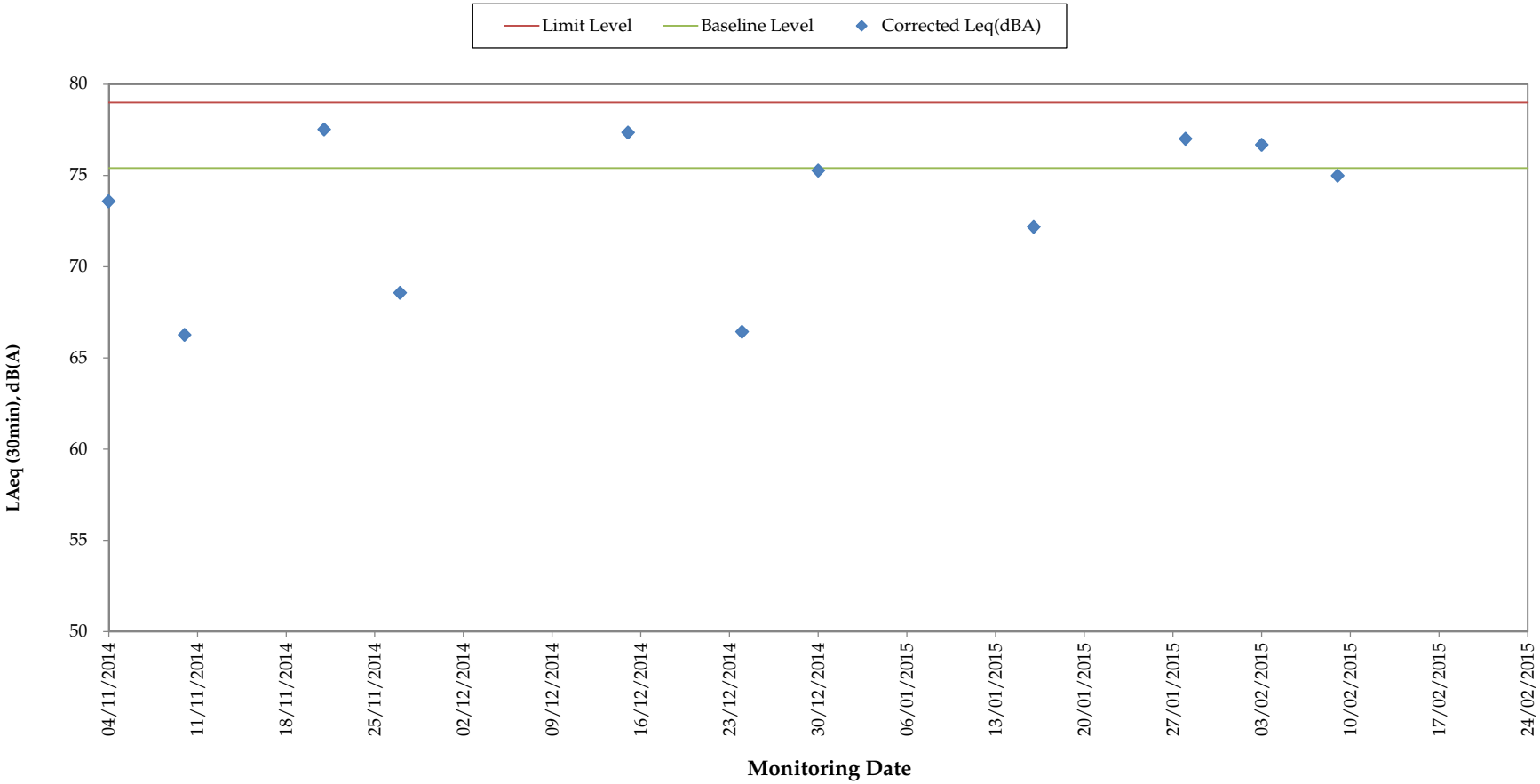
- For those corrected noise levels that are not shown in this graph, the measured noise level s are below baseline level.

Regular Noise Monitoring Results at NMS-CA-7 (Skytower Tower 2) (LAeq, 30min) for the Past 4 Months



Remarks:
- For those corrected noise levels that are not shown in this graph, the measured noise level s are below baseline level.

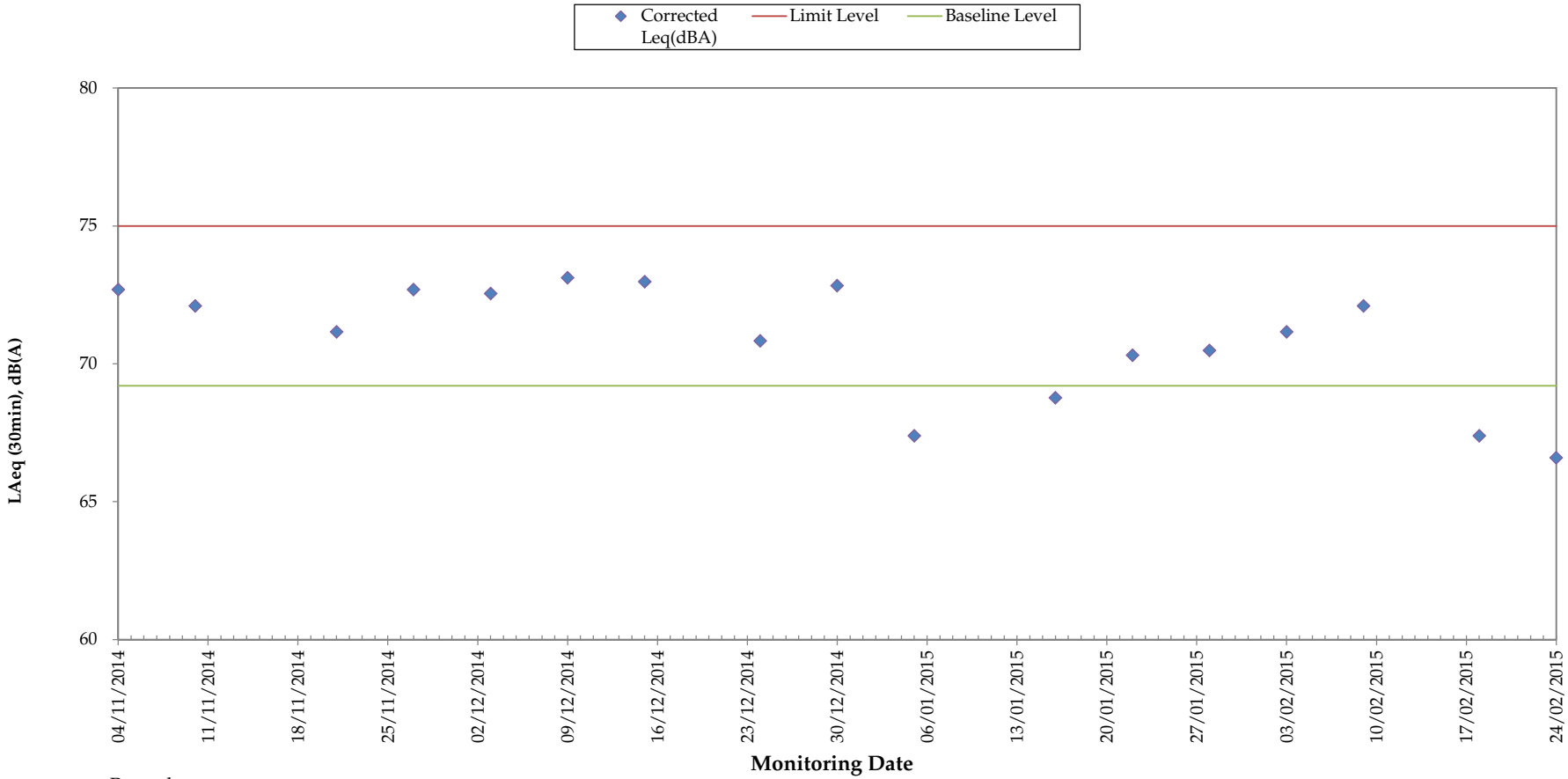
Regular Noise Monitoring Results at NMS-CA- 8 (SKH Good Shepherd Primary School) (LAeq, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise level s are below baseline level.
- The limit level was updated from 78dB(A) to 79 dB(A) on 22 Aug 2013 as per the latest CNMP and CNMMP.

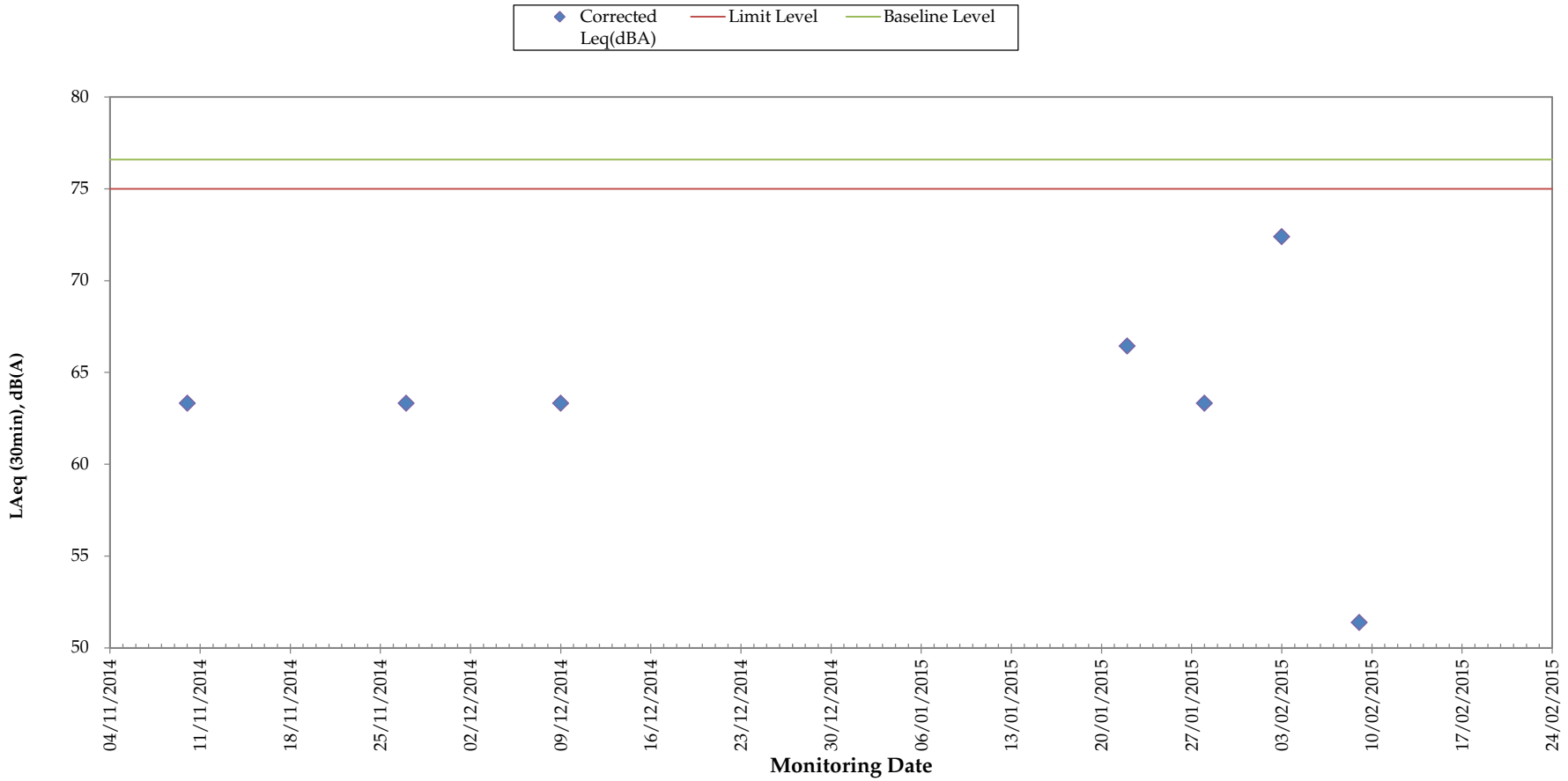
Regular Noise Monitoring Results at NMS-CA-9 (Kong Yiu Mansion) (LAeq, 30min)) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise level s are below baseline level.

Regular Noise Monitoring Results at NMS-CA-10 (Chat Ma Mansion) (LAeq, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise level s are below baseline level.

Annex I - 2

Continuous Noise Monitoring Results

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	6	46	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	7	16	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	7	46	73.3	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	8	16	72.7	69.2	70.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	8	46	72.3	69.2	69.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	9	16	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	9	46	71.5	69.2	67.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	10	16	70.8	69.2	65.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	10	46	70.2	69.2	63.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	11	16	70.2	69.2	63.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	11	46	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	12	16	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	12	46	69.9	69.2	61.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	13	30	71.0	69.2	66.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	14	0	71.7	69.2	68.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	14	30	70.4	69.2	64.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	15	0	70.6	69.2	65.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	15	30	70.9	69.2	66.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	16	0	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	16	30	70.1	69.2	62.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	17	0	70.2	69.2	63.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	17	30	71.6	69.2	67.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	18	0	70.4	69.2	64.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	2	18	30	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	7	0	69.4	69.2	56.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	7	30	70.1	69.2	62.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	8	0	70.8	69.2	65.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	8	30	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	9	0	72.2	69.2	69.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	9	30	70.9	69.2	66	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	10	0	72.9	69.2	70.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	10	30	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	11	0	74.0	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	11	30	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	12	0	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	12	30	69.9	69.2	61.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	13	0	72.5	69.2	69.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	13	30	73.1	69.2	70.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	14	0	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	14	30	70.3	69.2	63.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	15	0	70.4	69.2	64.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	15	30	70.3	69.2	64	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	16	0	70.8	69.2	65.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	16	30	69.7	69.2	60.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	17	0	70.3	69.2	63.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	17	30	71.7	69.2	68.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	18	0	69.9	69.2	61.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	3	18	30	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	7	0	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	7	30	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	8	0	71.6	69.2	67.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	8	30	71.0	69.2	66.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	9	0	71.1	69.2	66.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	9	30	70.9	69.2	66.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	10	0	70.6	69.2	64.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	10	30	71.7	69.2	68.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	11	0	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	11	30	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	12	0	67.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	12	30	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	13	0	71.5	69.2	67.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	13	30	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	14	0	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	14	30	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	15	0	72.0	69.2	68.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	15	30	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	16	0	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	16	30	74.5	69.2	73	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	17	0	75.4	69.2	74.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	17	30	73.3	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	18	0	69.9	69.2	61.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	4	18	30	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	7	0	67.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	7	30	70.3	69.2	63.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	8	0	74.5	69.2	73	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	8	30	73.1	69.2	70.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	9	0	70.5	69.2	64.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	9	30	70.3	69.2	63.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	10	0	74.1	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	10	30	72.6	69.2	70	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	11	0	72.0	69.2	68.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	11	30	70.1	69.2	62.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	12	20	68.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	12	50	69.2	69.2	46.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	13	20	72.4	69.2	69.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	13	50	76.8	69.2	76	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	14	20	72.9	69.2	70.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	14	50	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	15	20	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	15	50	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	16	20	73.1	69.2	70.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	16	50	73.2	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	17	20	72.5	69.2	69.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	17	50	70.6	69.2	65.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	18	20	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	5	18	50	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	6	6	50	67.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	6	7	20	70.1	69.2	62.8	80	N

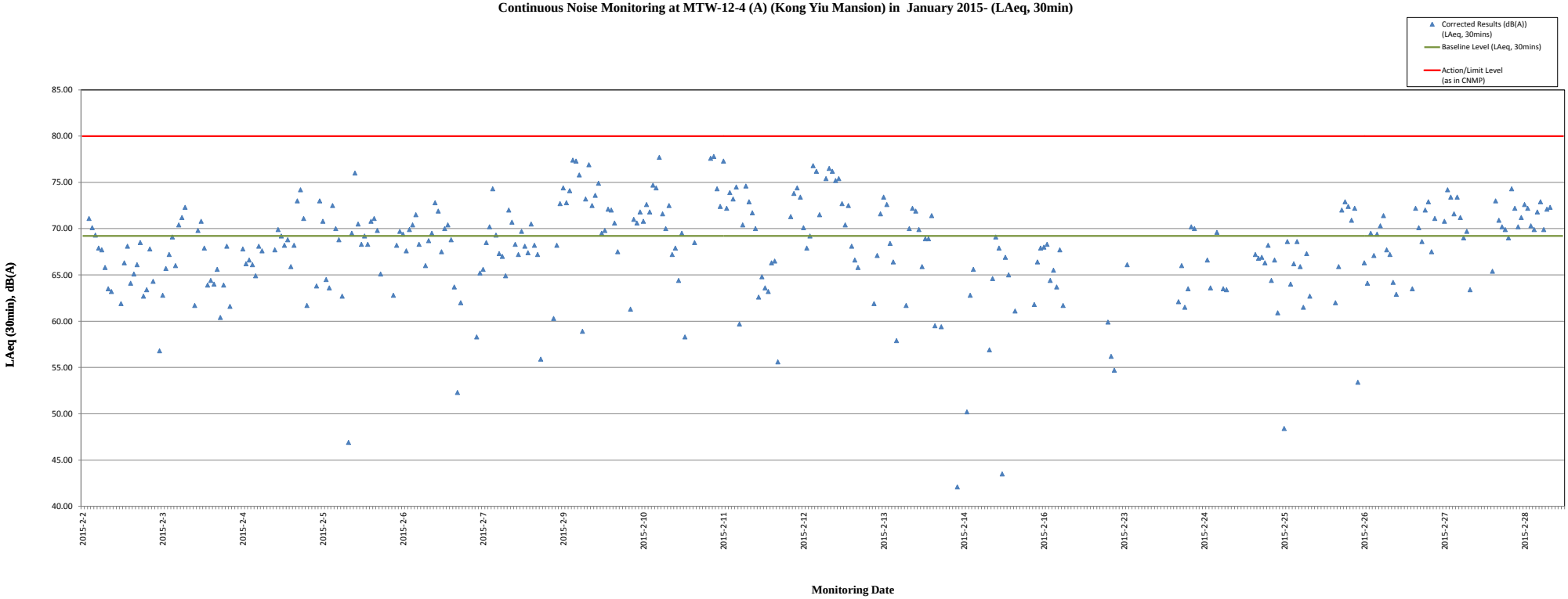
Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	7	50	71.8	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	8	20	72.5	69.2	69.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	8	50	72.3	69.2	69.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	9	20	71.5	69.2	67.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	9	50	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	10	20	72.9	69.2	70.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	10	50	73.5	69.2	71.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	11	20	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	11	50	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	12	20	70.9	69.2	66	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	12	50	72.0	69.2	68.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	13	20	72.4	69.2	69.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	13	50	74.4	69.2	72.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	14	20	73.7	69.2	71.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	14	50	71.4	69.2	67.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	15	20	72.6	69.2	70	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	15	50	72.8	69.2	70.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	16	20	72.0	69.2	68.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	16	50	70.3	69.2	63.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	17	20	69.3	69.2	52.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	17	50	70.0	69.2	62	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	18	20	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 6	18	50	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	6	50	66.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	7	20	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	7	50	69.5	69.2	58.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	8	20	70.7	69.2	65.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	8	50	70.8	69.2	65.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	9	20	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	9	50	72.7	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	10	20	75.4	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	10	50	72.3	69.2	69.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	11	20	71.4	69.2	67.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	11	50	71.3	69.2	67	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	12	20	70.6	69.2	64.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	12	50	73.8	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	13	20	73.0	69.2	70.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	13	50	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	14	20	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	14	50	72.5	69.2	69.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	15	20	71.7	69.2	68.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	15	50	71.4	69.2	67.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	16	20	72.9	69.2	70.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	16	50	71.8	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	17	20	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	17	50	69.4	69.2	55.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	18	20	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 7	18	50	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	6	50	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	7	20	69.7	69.2	60.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	7	50	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	8	20	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	8	50	75.5	69.2	74.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	9	20	74.4	69.2	72.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	9	50	75.3	69.2	74.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	10	20	78.0	69.2	77.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	10	50	77.9	69.2	77.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	11	20	76.7	69.2	75.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	11	50	69.6	69.2	58.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	12	42	74.7	69.2	73.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	13	12	77.6	69.2	76.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	13	42	74.2	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	14	12	74.9	69.2	73.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	14	42	75.9	69.2	74.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	15	12	72.4	69.2	69.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	15	42	72.5	69.2	69.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	16	12	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	16	42	73.8	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	17	12	72.9	69.2	70.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	17	42	71.5	69.2	67.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	18	12	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 9	18	42	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	6	42	67.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	7	12	69.9	69.2	61.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	7	42	73.2	69.2	71	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	8	12	73.0	69.2	70.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	8	42	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	9	12	73.1	69.2	70.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	9	42	74.2	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	10	12	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	10	42	75.8	69.2	74.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	11	12	75.5	69.2	74.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	11	42	78.3	69.2	77.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	12	12	73.6	69.2	71.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	12	42	72.7	69.2	70	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	13	12	74.2	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	13	42	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	14	12	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	14	42	70.4	69.2	64.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	15	12	72.3	69.2	69.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	15	42	69.5	69.2	58.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	16	12	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	16	42	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	17	12	71.9	69.2	68.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	17	42	68.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	18	12	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 10	18	42	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	6	42	67.0	69.2	<Baseline Level	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	7	12	78.1	69.2	77.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	7	42	78.3	69.2	77.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	8	12	75.4	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	8	42	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	9	12	77.9	69.2	77.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	9	42	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	10	12	75.2	69.2	73.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	10	42	74.6	69.2	73.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	11	12	75.6	69.2	74.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	11	42	69.7	69.2	59.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	12	12	72.9	69.2	70.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	12	42	75.7	69.2	74.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	13	12	74.4	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	13	42	73.6	69.2	71.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	14	12	72.6	69.2	70	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	14	42	70.1	69.2	62.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	15	12	70.5	69.2	64.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	15	42	70.3	69.2	63.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	16	12	70.2	69.2	63.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	16	42	71.0	69.2	66.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	17	12	71.1	69.2	66.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	17	42	69.4	69.2	55.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	18	12	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 11	18	42	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	6	42	66.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	7	12	73.4	69.2	71.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	7	42	75.1	69.2	73.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	8	12	75.5	69.2	74.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	8	42	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	9	12	72.7	69.2	70.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	9	42	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	10	12	72.2	69.2	69.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	10	42	77.5	69.2	76.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	11	12	77.0	69.2	76.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	11	42	73.5	69.2	71.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	12	12	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	12	53	76.3	69.2	75.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	13	23	77.2	69.2	76.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	13	53	77.0	69.2	76.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	14	23	76.1	69.2	75.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	14	53	76.4	69.2	75.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	15	23	74.3	69.2	72.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	15	53	72.9	69.2	70.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	16	23	74.1	69.2	72.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	16	53	71.7	69.2	68.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	17	23	71.1	69.2	66.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	17	53	70.8	69.2	65.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	18	23	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 12	18	53	67.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	6	53	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	7	23	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	7	53	69.9	69.2	61.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	8	23	71.3	69.2	67.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	8	53	73.5	69.2	71.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	9	23	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	9	53	74.3	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	10	23	71.8	69.2	68.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	10	53	71.0	69.2	66.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	11	23	69.5	69.2	57.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	11	53	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	12	23	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	12	53	69.9	69.2	61.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	13	23	72.6	69.2	70	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	13	53	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	14	23	73.8	69.2	71.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	14	53	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	15	23	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	15	53	72.1	69.2	68.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	16	23	72.1	69.2	68.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	16	53	73.4	69.2	71.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	17	23	69.6	69.2	59.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	17	53	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	18	23	69.6	69.2	59.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 13	18	53	67.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	6	53	66.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	7	23	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	7	53	68.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	8	23	69.2	69.2	42.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	8	53	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	9	23	69.2	69.2	37.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	9	53	69.3	69.2	50.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	10	23	70.1	69.2	62.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	10	53	70.8	69.2	65.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	11	23	68.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	11	53	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	12	23	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	12	53	69.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	13	23	69.4	69.2	56.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	13	53	70.5	69.2	64.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	14	23	72.2	69.2	69.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	14	53	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	15	23	69.2	69.2	43.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	15	53	71.2	69.2	66.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	16	23	70.6	69.2	65	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	16	53	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	17	23	69.8	69.2	61.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	17	53	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 14	18	23	67.2	69.2	<Baseline Level	80	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2015	2	14	18	53	67.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	6	53	67.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	7	23	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	7	53	69.9	69.2	61.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	8	23	71.0	69.2	66.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	8	53	71.6	69.2	67.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	9	23	71.6	69.2	68	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	9	53	71.8	69.2	68.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	10	23	70.4	69.2	64.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	10	53	70.7	69.2	65.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	11	23	70.3	69.2	63.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	11	53	71.5	69.2	67.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	16	12	23	69.9	69.2	61.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	15	45	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	16	15	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	16	45	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	17	15	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	17	45	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	18	15	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	18	18	45	67.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	6	45	66.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	7	15	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	7	45	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	8	15	69.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	8	45	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	9	15	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	9	45	69.7	69.2	59.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	10	31	69.4	69.2	56.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	11	1	69.3	69.2	54.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	11	31	68.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	12	1	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	12	31	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	13	1	70.9	69.2	66.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	13	31	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	14	1	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	14	31	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	15	1	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	15	31	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	16	1	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	16	31	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	17	1	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	17	31	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	18	1	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	23	18	31	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	6	31	66.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	7	1	67.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	7	31	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	8	1	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	8	31	70.0	69.2	62.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	9	1	70.9	69.2	66	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	9	31	69.9	69.2	61.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	10	1	70.2	69.2	63.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	10	31	72.7	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	11	1	72.6	69.2	70	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	11	31	68.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	12	1	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	12	31	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	13	1	71.1	69.2	66.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	13	31	70.3	69.2	63.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	14	1	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	14	31	72.4	69.2	69.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	15	1	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	15	31	70.2	69.2	63.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	16	1	70.2	69.2	63.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	16	31	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	17	1	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	17	31	68.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	18	1	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	24	18	31	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	6	31	66.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	7	1	67.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	7	31	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	8	1	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	8	31	71.2	69.2	66.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	9	1	71.2	69.2	66.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	9	31	71.0	69.2	66.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	10	1	71.7	69.2	68.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	10	31	70.4	69.2	64.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	11	1	71.1	69.2	66.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	11	31	69.8	69.2	60.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	12	1	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	12	31	69.2	69.2	48.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	13	1	71.9	69.2	68.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	13	31	70.3	69.2	64	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	14	1	71.0	69.2	66.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	14	31	71.9	69.2	68.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	15	1	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	15	31	69.9	69.2	61.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	16	1	71.3	69.2	67.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	16	31	70.1	69.2	62.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	17	1	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	17	31	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	18	1	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	25	18	31	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	26	6	31	66.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	26	7	1	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	26	7	31	68.3	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015	2	26	8	1	70.0	69.2	62	80	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	8	31	70.9	69.2	65.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	9	1	73.8	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	9	31	74.5	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	10	1	74.1	69.2	72.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	10	31	73.2	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	11	1	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	11	31	69.3	69.2	53.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	12	17	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	12	47	71.0	69.2	66.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	13	17	70.4	69.2	64.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	13	47	72.4	69.2	69.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	14	17	71.3	69.2	67.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	14	47	72.3	69.2	69.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	15	17	72.8	69.2	70.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	15	47	73.4	69.2	71.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	16	17	71.5	69.2	67.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	16	47	71.3	69.2	67.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	17	17	70.4	69.2	64.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	17	47	70.1	69.2	62.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	18	17	68.6	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 26	18	47	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	6	47	66.4	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	7	17	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	7	47	70.2	69.2	63.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	8	17	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	8	47	72.7	69.2	70.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	9	17	71.9	69.2	68.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	9	47	73.9	69.2	72	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	10	17	74.4	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	10	47	71.5	69.2	67.5	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	11	17	73.3	69.2	71.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	11	47	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	12	17	68.2	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	12	47	73.1	69.2	70.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	13	17	75.4	69.2	74.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	13	47	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	14	17	73.6	69.2	71.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	14	47	74.8	69.2	73.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	15	17	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	15	47	72.1	69.2	69	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	16	17	72.5	69.2	69.7	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	16	47	70.2	69.2	63.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	17	17	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	17	47	68.0	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	18	17	67.9	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 27	18	47	67.8	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	6	47	66.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	7	17	67.5	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	7	47	70.7	69.2	65.4	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	8	17	74.5	69.2	73	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	8	47	73.2	69.2	70.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	9	17	72.7	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	9	47	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	10	17	72.1	69.2	69	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	10	47	75.5	69.2	74.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	11	17	74.0	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	11	47	72.7	69.2	70.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	12	17	73.3	69.2	71.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	12	47	74.2	69.2	72.6	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	13	17	73.9	69.2	72.2	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	13	47	72.8	69.2	70.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	14	17	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	14	47	73.7	69.2	71.8	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	15	17	74.5	69.2	72.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	15	47	72.6	69.2	69.9	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	16	17	73.9	69.2	72.1	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	16	47	74.0	69.2	72.3	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	17	17	68.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	17	47	68.1	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	18	17	67.7	69.2	<Baseline Level	80	N
MTW-12-4(A)	Kong Yiu Mansion	2015 2 28	18	47	67.6	69.2	<Baseline Level	80	N

Continuous Noise Monitoring at MTW-12-4 (A) (Kong Yiu Mansion) in January 2015- (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown the in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	6	55	63.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	7	25	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	7	55	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	8	25	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	8	55	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	9	25	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	9	55	69.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	10	25	70.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	10	55	71.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	11	25	68.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	11	55	66.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	12	25	70.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	13	18	73.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	13	48	73.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	14	18	70.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	14	48	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	15	18	70.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	15	48	68.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	16	18	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	16	48	67.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	17	18	70.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	17	48	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	18	18	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 2	18	48	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	6	48	63.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	7	18	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	7	48	70.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	8	18	70.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	8	48	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	9	18	72.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	9	48	72.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	10	18	74.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	10	48	74.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	11	18	70.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	11	48	65.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	12	18	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	12	48	70.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	13	18	69.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	13	48	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	14	18	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	14	48	70.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	15	18	70.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	15	48	71.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	16	18	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	16	48	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	17	18	68.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	17	48	66.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	18	18	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 3	18	48	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	6	48	64.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	7	18	67.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	7	48	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	8	18	68.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	8	48	70.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	9	18	72.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	9	48	71.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	10	18	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	10	48	72.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	11	18	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	11	48	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	12	18	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	12	48	68.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	13	18	74.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	13	48	72.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	14	18	73.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	14	48	74.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	15	18	72.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	15	48	71.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	16	18	72.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	16	48	66.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	17	18	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	17	48	66.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	18	18	71.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 4	18	48	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	6	48	63.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	7	18	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	7	48	71.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	8	18	70.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	8	48	70.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	9	18	71.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	9	48	71.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	10	18	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	10	48	71.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	11	18	71.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	11	48	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	12	32	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	13	2	68.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	13	32	69.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	14	2	68.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	14	32	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	15	2	68.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	15	32	68.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	16	2	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	16	32	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	17	2	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	17	32	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	18	2	65.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 5	18	32	64.2	75.4	<Baseline Level	82	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	6	32	62.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	7	2	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	7	32	65.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	8	2	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	8	32	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	9	2	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	9	32	68.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	10	2	68.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	10	32	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	11	2	69.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	11	32	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	12	2	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	12	32	70.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	13	2	69.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	13	32	68.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	14	2	68.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	14	32	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	15	2	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	15	32	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	16	2	68.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	16	32	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	17	2	66.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	17	32	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	18	2	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 6	18	32	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	6	32	62.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	7	2	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	7	32	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	8	2	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	8	32	69.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	9	2	69.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	9	32	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	10	2	73.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	10	32	72.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	11	2	71.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	11	32	68.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	12	2	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	12	32	70.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	13	2	70.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	13	32	68.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	14	2	68.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	14	32	69.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	15	2	70.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	15	32	68.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	16	2	69.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	16	32	68.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	17	2	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	17	32	68.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	18	2	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 7	18	32	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	6	32	62.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	7	2	63.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	7	32	67.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	8	2	70.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	8	32	71.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	9	2	71.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	9	32	70.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	10	2	71.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	10	32	71.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	11	2	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	11	32	67.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	12	30	69.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	13	0	73.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	13	30	74.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	14	0	74.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	14	30	74.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	15	0	71.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	15	30	74.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	16	0	74.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	16	30	71.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	17	0	72.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	17	30	74.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	18	0	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 9	18	30	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	7	0	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	7	30	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	8	0	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	8	30	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	9	0	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	9	30	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	10	0	68.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	10	30	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	11	0	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	11	30	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	12	0	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	12	30	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	13	0	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	13	30	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	14	0	67.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	14	30	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	15	0	67.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	15	30	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	16	0	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	16	30	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	17	0	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	17	30	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	18	0	69.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 10	18	30	67.3	75.4	<Baseline Level	82	N

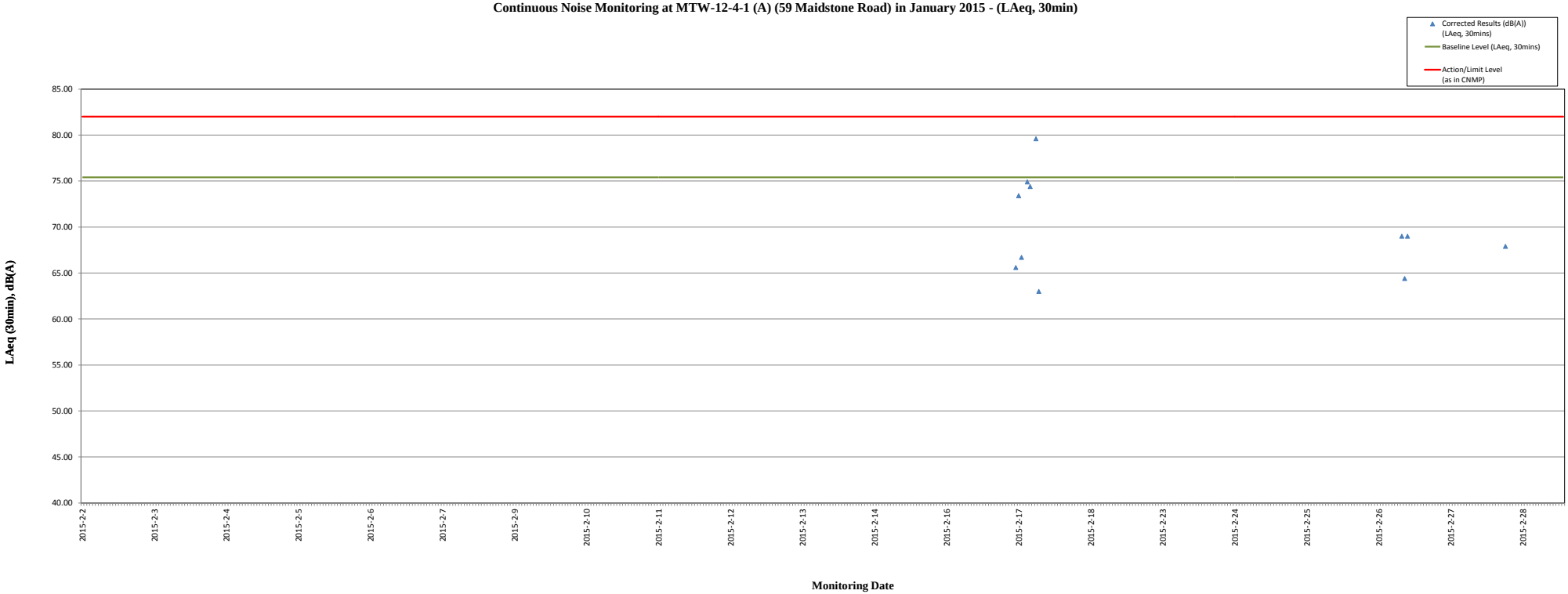
Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	7	0	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	7	30	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	8	0	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	8	30	69.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	9	0	71.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	9	30	71.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	10	0	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	10	30	66.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	11	0	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	11	30	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	12	0	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	12	30	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	13	0	66.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	13	30	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	14	0	67.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	14	30	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	15	0	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	15	30	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	16	0	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	16	30	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	17	0	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	17	30	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	18	0	65.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 11	18	30	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	7	0	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	7	30	65.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	8	0	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	8	30	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	9	0	66.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	9	30	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	10	0	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	10	30	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	11	0	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	11	30	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	12	0	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	12	44	65.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	13	14	67.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	13	44	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	14	14	67.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	14	44	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	15	14	66.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	15	44	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	16	14	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	16	44	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	17	14	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	17	44	65.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	18	14	63.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 12	18	44	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	6	44	63.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	7	14	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	7	44	65.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	8	14	65.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	8	44	65.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	9	14	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	9	44	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	10	14	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	10	44	66.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	11	14	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	11	44	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	12	14	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	12	44	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	13	14	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	13	44	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	14	14	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	14	44	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	15	14	64.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	15	44	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	16	14	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	16	44	65.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	17	14	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	17	44	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	18	14	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 13	18	44	63.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	6	44	63.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	7	14	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	7	44	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	8	14	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	8	44	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	9	14	65.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	9	44	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	10	14	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	10	44	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	11	14	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	11	44	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	12	14	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	12	44	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	13	14	65.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	13	44	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	14	14	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	14	44	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	15	14	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	15	44	65.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	16	14	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	16	44	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	17	14	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	17	44	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	18	14	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 14	18	44	63.6	75.4	<Baseline Level	82	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	6	44	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	7	14	65.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	7	44	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	8	14	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	8	44	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	9	14	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	9	44	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	10	14	68.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	10	44	68.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	11	14	68.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	11	44	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	12	14	67.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	13	3	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	13	33	68.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	14	3	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	14	33	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	15	3	68.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	15	33	71.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	16	3	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	16	33	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	17	3	65.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	17	33	65.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	18	3	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 16	18	33	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	6	33	63.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	7	3	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	7	33	67.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	8	3	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	8	33	66.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	9	3	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	9	33	75.8	75.4	65.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	10	3	77.5	75.4	73.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	10	33	75.9	75.4	66.7	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	11	3	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	11	33	78.2	75.4	74.9	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	12	3	77.9	75.4	74.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	12	33	67.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	13	3	81.0	75.4	79.6	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	13	33	75.6	75.4	63	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	14	3	67.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	14	33	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	15	3	67.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	15	33	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	16	3	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	16	33	64.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	17	3	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	17	33	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	18	3	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 17	18	33	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	6	33	63.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	7	3	63.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	7	33	64.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	8	3	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	8	33	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	9	3	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	9	33	64.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	10	3	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	10	33	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	11	3	67.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	11	33	65.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	12	3	64.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	12	33	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	13	3	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	13	33	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	14	3	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	14	33	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	15	37	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	16	7	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	16	37	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	17	7	63.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	17	37	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	18	7	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 18	18	37	63.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	6	37	63.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	7	7	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	7	37	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	8	7	65.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	8	37	65.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	9	7	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	10	8	70.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	10	38	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	11	8	68.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	11	38	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	12	8	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	12	38	67.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	13	8	70.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	13	38	66.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	14	8	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	14	38	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	15	8	65.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	15	38	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	16	8	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	16	38	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	17	8	64.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	17	38	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	18	8	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 23	18	38	63.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	6	38	62.9	75.4	<Baseline Level	82	N

Location ID	Name	Date	Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	7	8	63.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	7	38	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	8	8	65.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	8	38	70.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	9	8	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	9	38	69.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	10	8	70.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	10	38	72.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	11	8	71.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	11	38	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	12	8	64.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	12	38	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	13	8	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	13	38	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	14	8	70.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	14	38	70.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	15	8	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	15	38	71.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	16	8	70.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	16	38	68.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	17	8	69.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	17	38	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	18	8	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 24	18	38	65.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	6	38	63.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	7	8	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	7	38	65.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	8	8	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	8	38	71.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	9	8	72.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	9	38	72.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	10	8	71.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	10	38	70.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	11	8	66.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	11	38	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	12	8	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	12	38	66.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	13	8	70.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	13	38	69.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	14	8	69.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	14	38	69.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	15	8	69.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	15	38	70.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	16	8	69.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	16	38	72.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	17	8	71.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	17	38	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	18	8	67.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 25	18	38	63.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	6	38	63.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	7	8	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	7	38	66.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	8	8	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	8	38	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	9	8	67.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	9	38	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	10	8	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	10	38	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	11	8	68.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	12	6	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	12	36	65.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	13	6	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	13	36	66.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	14	6	71.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	14	36	70.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	15	6	74.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	15	36	76.3	75.4	69	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	16	6	75.7	75.4	64.4	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	16	36	76.3	75.4	69	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	17	6	66.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	17	36	67.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	18	6	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 26	18	36	64.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	6	36	62.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	7	6	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	7	36	65.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	8	6	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	8	36	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	9	6	67.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	9	36	70.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	10	6	69.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	10	36	69.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	11	6	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	11	36	64.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	12	6	64.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	12	36	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	13	6	68.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	13	36	67.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	14	6	68.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	14	36	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	15	6	67.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	15	36	66.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	16	6	67.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	16	36	66.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	17	6	64.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	17	36	64.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	18	6	65.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015 2 27	18	36	64.4	75.4	<Baseline Level	82	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	6	36	62.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	7	6	64.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	7	36	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	8	6	67.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	8	36	76.1	75.4	67.9	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	9	6	72.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	9	36	69.9	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	10	6	66.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	10	36	73.2	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	11	6	74.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	11	36	72.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	12	6	70.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	12	36	72.7	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	13	6	75.0	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	13	36	69.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	14	6	66.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	14	36	68.4	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	15	6	67.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	15	36	74.1	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	16	6	71.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	16	36	74.8	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	17	6	70.5	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	17	36	65.6	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	18	6	64.3	75.4	<Baseline Level	82	N
MTW-12-4-1(A)	59 Maidstone Road	2015	2	28	18	36	63.8	75.4	<Baseline Level	82	N

Continuous Noise Monitoring at MTW-12-4-1 (A) (59 Maidstone Road) in January 2015 - (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown the in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	6	57	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	7	27	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	7	57	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	8	27	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	8	57	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	9	27	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	9	57	74.7	69.2	73.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	10	27	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	10	57	74.2	69.2	72.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	11	27	73.1	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	11	57	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	12	27	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	12	57	73.8	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	13	46	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	14	16	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	14	46	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	15	16	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	15	46	74.3	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	16	16	73.7	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	16	46	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	17	16	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	17	46	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	18	16	72.3	69.2	69.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	2	18	46	71.6	69.2	67.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	6	46	71.3	69.2	67.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	7	16	72.9	69.2	70.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	7	46	73.9	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	8	16	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	8	46	73.8	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	9	16	73.7	69.2	71.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	9	46	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	10	16	75.3	69.2	74.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	10	46	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	11	16	73.5	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	11	46	72.2	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	12	16	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	12	46	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	13	16	74.5	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	13	46	73.9	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	14	16	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	14	46	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	15	16	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	15	46	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	16	16	72.8	69.2	70.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	16	46	72.2	69.2	69.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	17	16	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	17	46	73.8	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	18	16	72.0	69.2	68.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	3	18	46	71.3	69.2	67.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	6	46	71.1	69.2	66.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	7	16	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	7	46	73.2	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	8	16	74.7	69.2	73.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	8	46	74.7	69.2	73.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	9	16	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	9	46	73.9	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	10	16	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	10	46	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	11	16	73.5	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	11	46	71.9	69.2	68.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	12	16	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	12	46	74.4	69.2	72.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	13	16	76.1	69.2	75.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	13	46	75.8	69.2	74.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	14	16	74.7	69.2	73.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	14	46	74.6	69.2	73.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	15	16	75.4	69.2	74.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	15	46	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	16	16	73.2	69.2	71	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	16	46	74.5	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	17	16	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	17	46	74.6	69.2	73.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	18	16	72.0	69.2	68.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	4	18	46	71.6	69.2	67.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	6	46	71.0	69.2	66.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	7	16	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	7	46	73.7	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	8	16	73.8	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	8	46	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	9	16	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	9	46	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	10	16	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	10	46	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	11	16	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	12	12	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	12	42	72.5	69.2	69.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	13	12	74.6	69.2	73.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	13	42	75.5	69.2	74.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	14	12	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	14	42	74.2	69.2	72.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	15	12	76.6	69.2	75.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	15	42	77.1	69.2	76.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	16	12	76.4	69.2	75.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	16	42	73.5	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	17	12	73.7	69.2	71.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	17	42	72.6	69.2	69.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	18	12	71.4	69.2	67.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	5	18	42	71.5	69.2	67.6	80	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	6	42	71.1	69.2	66.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	7	12	75.1	69.2	73.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	7	42	75.0	69.2	73.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	8	12	76.0	69.2	75	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	8	42	75.7	69.2	74.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	9	12	75.3	69.2	74.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	9	42	77.5	69.2	76.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	10	12	76.7	69.2	75.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	10	42	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	11	12	76.5	69.2	75.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	11	42	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	12	12	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	12	42	75.9	69.2	74.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	13	12	77.6	69.2	77	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	13	42	77.5	69.2	76.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	14	12	77.4	69.2	76.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	14	42	74.7	69.2	73.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	15	12	73.1	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	15	42	73.9	69.2	72.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	16	12	73.9	69.2	72.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	16	42	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	17	12	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	17	42	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	18	12	71.9	69.2	68.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	6	18	42	71.6	69.2	68	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	6	42	70.7	69.2	65.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	7	12	72.3	69.2	69.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	7	42	73.5	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	8	12	74.1	69.2	72.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	8	42	76.2	69.2	75.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	9	12	76.8	69.2	75.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	9	42	76.5	69.2	75.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	10	12	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	10	42	75.4	69.2	74.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	11	12	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	11	42	73.2	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	12	12	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	12	42	75.0	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	13	12	74.1	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	13	42	73.1	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	14	12	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	14	42	73.2	69.2	71	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	15	12	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	15	42	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	16	12	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	16	42	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	17	12	72.2	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	17	42	72.0	69.2	68.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	18	12	71.4	69.2	67.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	7	18	42	70.9	69.2	65.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	6	42	71.2	69.2	67	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	7	12	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	7	42	74.1	69.2	72.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	8	12	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	8	42	75.5	69.2	74.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	9	12	75.0	69.2	73.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	9	42	75.2	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	10	12	75.3	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	10	42	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	11	12	75.2	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	11	42	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	12	12	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	12	59	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	13	29	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	13	59	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	14	29	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	14	59	74.1	69.2	72.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	15	29	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	15	59	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	16	29	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	16	59	72.7	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	17	29	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	17	59	72.0	69.2	68.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	18	29	71.8	69.2	68.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	9	18	59	71.2	69.2	67	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	6	59	72.3	69.2	69.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	7	29	74.6	69.2	73.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	7	59	76.3	69.2	75.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	8	29	75.2	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	8	59	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	9	29	76.4	69.2	75.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	9	59	77.0	69.2	76.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	10	29	75.5	69.2	74.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	10	59	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	11	29	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	11	59	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	12	29	72.2	69.2	69.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	12	59	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	13	29	74.5	69.2	73	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	13	59	73.1	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	14	29	73.2	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	14	59	75.6	69.2	74.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	15	29	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	15	59	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	16	29	73.2	69.2	71	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	16	59	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	17	29	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	17	59	72.4	69.2	69.5	80	N

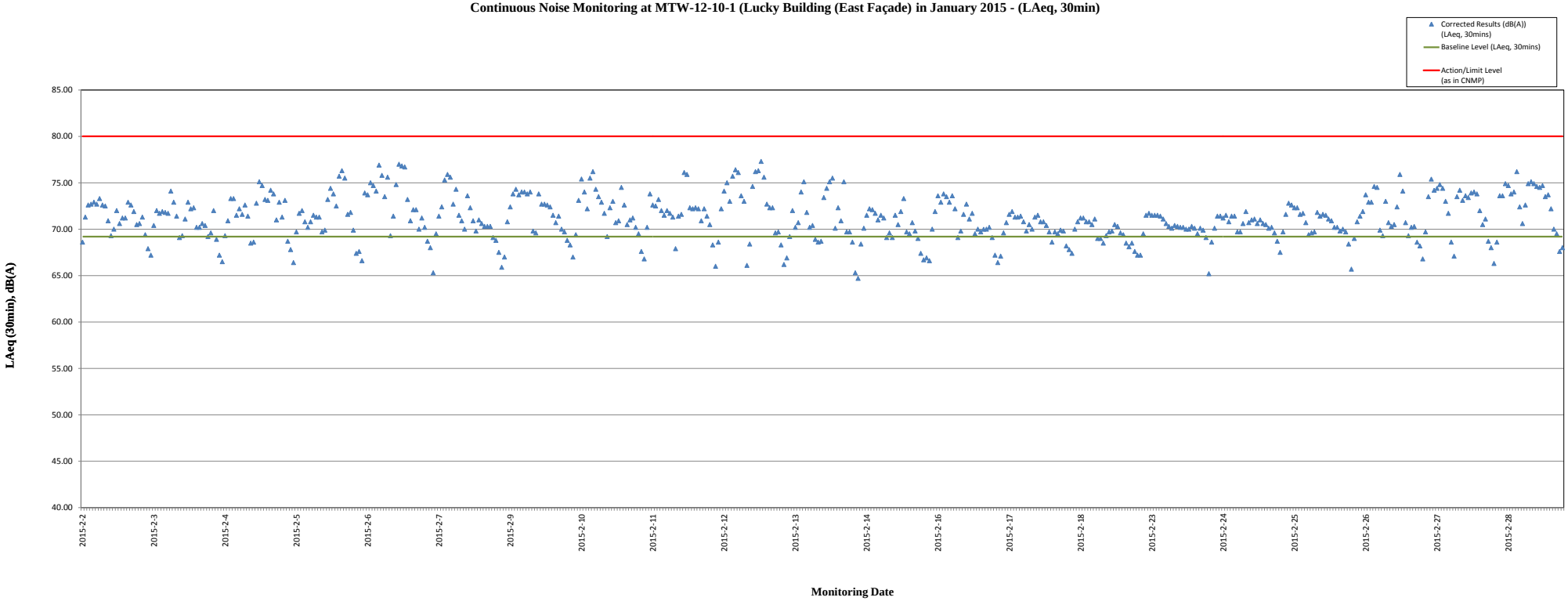
Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	18	29	71.5	69.2	67.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	10	18	59	71.2	69.2	66.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	6	59	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	7	29	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	7	59	74.3	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	8	29	74.2	69.2	72.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	8	59	74.6	69.2	73.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	9	29	73.9	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	9	59	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	10	29	73.9	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	10	59	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	11	29	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	11	59	71.6	69.2	67.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	12	29	73.5	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	12	59	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	13	29	76.9	69.2	76.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	13	59	76.8	69.2	75.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	14	29	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	14	59	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	15	29	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	15	59	73.9	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	16	29	73.1	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	16	59	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	17	29	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	17	59	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	18	29	71.8	69.2	68.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	11	18	59	70.9	69.2	66	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	6	59	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	7	29	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	7	59	75.3	69.2	74.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	8	29	76.0	69.2	75	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	8	59	74.5	69.2	73	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	9	29	76.6	69.2	75.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	9	59	77.2	69.2	76.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	10	29	76.9	69.2	76.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	10	59	75.0	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	11	29	74.5	69.2	73	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	11	59	70.9	69.2	66.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	12	29	71.8	69.2	68.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	13	11	75.7	69.2	74.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	13	41	77.0	69.2	76.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	14	11	77.1	69.2	76.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	14	41	78.0	69.2	77.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	15	11	76.5	69.2	75.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	15	41	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	16	11	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	16	41	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	17	11	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	17	41	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	18	11	71.8	69.2	68.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	12	18	41	71.0	69.2	66.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	6	41	71.2	69.2	66.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	7	11	72.2	69.2	69.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	7	41	73.9	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	8	11	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	8	41	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	9	11	75.3	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	9	41	76.1	69.2	75.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	10	11	73.7	69.2	71.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	10	41	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	11	11	72.9	69.2	70.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	11	41	72.1	69.2	68.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	12	11	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	12	41	71.9	69.2	68.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	13	11	74.8	69.2	73.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	13	41	75.5	69.2	74.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	14	11	76.1	69.2	75.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	14	41	76.4	69.2	75.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	15	11	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	15	41	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	16	11	73.1	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	16	41	76.1	69.2	75.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	17	11	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	17	41	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	18	11	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	13	18	41	70.7	69.2	65.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	6	41	70.5	69.2	64.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	7	11	71.8	69.2	68.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	7	41	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	8	11	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	8	41	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	9	11	73.9	69.2	72.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	9	41	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	10	11	73.2	69.2	71	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	10	41	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	11	11	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	11	41	72.2	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	12	11	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	12	41	72.2	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	13	11	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	13	41	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	14	11	73.8	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	14	41	74.7	69.2	73.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	15	11	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	15	41	72.4	69.2	69.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	16	11	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	16	41	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	17	11	72.1	69.2	69	80	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	17	41	71.4	69.2	67.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	18	11	71.1	69.2	66.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	14	18	41	71.2	69.2	66.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	6	41	71.1	69.2	66.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	7	11	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	7	41	73.7	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	8	11	75.0	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	8	41	74.5	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	9	11	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	9	41	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	10	11	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	10	41	75.0	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	11	11	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	11	41	72.1	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	12	11	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	12	41	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	13	27	74.3	69.2	72.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	13	57	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	14	27	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	14	57	72.4	69.2	69.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	15	27	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	15	57	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	16	27	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	16	57	72.7	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	17	27	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	17	57	72.2	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	18	27	71.3	69.2	67.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	16	18	57	71.0	69.2	66.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	6	57	71.3	69.2	67.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	7	27	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	7	57	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	8	27	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	8	57	73.8	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	9	27	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	9	57	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	10	27	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	10	57	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	11	27	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	11	57	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	12	27	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	12	57	73.4	69.2	71.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	13	27	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	13	57	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	14	27	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	14	57	72.9	69.2	70.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	15	27	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	15	57	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	16	27	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	16	57	72.4	69.2	69.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	17	27	72.6	69.2	69.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	17	57	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	18	27	71.7	69.2	68.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	17	18	57	71.6	69.2	67.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	6	57	71.4	69.2	67.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	7	27	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	7	57	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	8	27	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	8	57	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	9	27	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	9	57	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	10	27	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	10	57	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	11	27	72.1	69.2	69	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	11	57	72.1	69.2	69	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	12	27	71.9	69.2	68.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	12	57	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	13	27	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	13	57	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	14	27	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	14	57	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	15	57	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	16	27	72.3	69.2	69.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	16	57	71.9	69.2	68.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	17	27	71.7	69.2	68.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	17	57	71.9	69.2	68.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	18	27	71.5	69.2	67.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	18	18	57	71.3	69.2	67.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	6	57	71.3	69.2	67.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	7	27	72.4	69.2	69.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	7	57	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	8	27	73.7	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	8	57	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	9	27	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	9	57	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	10	43	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	11	13	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	11	43	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	12	13	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	12	43	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	13	13	72.9	69.2	70.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	13	43	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	14	13	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	14	43	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	15	13	72.7	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	15	43	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	16	13	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	16	43	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	17	13	72.4	69.2	69.5	80	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	17	43	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	18	13	72.6	69.2	69.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	23	18	43	72.1	69.2	69.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	6	43	70.7	69.2	65.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	7	13	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	7	43	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	8	13	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	8	43	73.5	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	9	13	73.3	69.2	71.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	9	43	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	10	13	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	10	43	73.5	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	11	13	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	11	43	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	12	13	72.4	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	12	43	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	13	13	73.8	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	13	43	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	14	13	73.2	69.2	71	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	14	43	73.2	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	15	13	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	15	43	73.2	69.2	71	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	16	13	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	16	43	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	17	13	72.7	69.2	70.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	17	43	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	18	13	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	24	18	43	72.0	69.2	68.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	6	43	71.4	69.2	67.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	7	13	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	7	43	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	8	13	74.4	69.2	72.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	8	43	74.2	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	9	13	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	9	43	74.0	69.2	72.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	10	13	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	10	43	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	11	13	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	11	43	72.3	69.2	69.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	12	13	72.4	69.2	69.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	12	43	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	13	13	73.7	69.2	71.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	13	43	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	14	13	73.6	69.2	71.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	14	43	73.5	69.2	71.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	15	13	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	15	43	73.1	69.2	70.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	16	13	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	16	43	72.7	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	17	13	72.5	69.2	69.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	17	43	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	18	13	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	25	18	43	71.8	69.2	68.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	6	43	70.8	69.2	65.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	7	13	72.1	69.2	69	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	7	43	73.1	69.2	70.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	8	13	73.4	69.2	71.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	8	43	73.7	69.2	71.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	9	13	75.0	69.2	73.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	9	43	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	10	13	74.4	69.2	72.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	10	43	75.7	69.2	74.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	11	13	75.6	69.2	74.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	11	43	72.6	69.2	69.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	12	28	72.3	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	12	58	74.5	69.2	73	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	13	28	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	13	58	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	14	28	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	14	58	74.1	69.2	72.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	15	28	76.8	69.2	75.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	15	58	75.3	69.2	74.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	16	28	73.0	69.2	70.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	16	58	72.2	69.2	69.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	17	28	72.8	69.2	70.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	17	58	72.8	69.2	70.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	18	28	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	26	18	58	71.7	69.2	68.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	6	58	71.2	69.2	66.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	7	28	72.5	69.2	69.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	7	58	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	8	28	76.3	69.2	75.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	8	58	75.4	69.2	74.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	9	28	75.6	69.2	74.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	9	58	75.8	69.2	74.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	10	28	75.5	69.2	74.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	10	58	74.5	69.2	73	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	11	28	73.6	69.2	71.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	11	58	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	12	28	71.3	69.2	67.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	12	58	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	13	28	75.4	69.2	74.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	13	58	74.6	69.2	73.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	14	28	74.9	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	14	58	74.8	69.2	73.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	15	28	75.1	69.2	73.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	15	58	75.3	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	16	28	75.1	69.2	73.8	80	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	16	58	73.8	69.2	72	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	17	28	72.9	69.2	70.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	17	58	73.3	69.2	71.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	18	28	72.0	69.2	68.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	27	18	58	71.7	69.2	68	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	6	58	71.0	69.2	66.3	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	7	28	71.9	69.2	68.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	7	58	75.0	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	8	28	75.0	69.2	73.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	8	58	75.9	69.2	74.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	9	28	75.8	69.2	74.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	9	58	75.1	69.2	73.8	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	10	28	75.3	69.2	74	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	10	58	77.0	69.2	76.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	11	28	74.1	69.2	72.4	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	11	58	73.0	69.2	70.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	12	28	74.3	69.2	72.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	12	58	76.0	69.2	74.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	13	28	76.1	69.2	75.1	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	13	58	76.0	69.2	74.9	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	14	28	75.7	69.2	74.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	14	58	75.6	69.2	74.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	15	28	75.8	69.2	74.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	15	58	74.9	69.2	73.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	16	28	75.0	69.2	73.7	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	16	58	74.0	69.2	72.2	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	17	28	72.6	69.2	70	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	17	58	72.3	69.2	69.5	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	18	28	71.5	69.2	67.6	80	N
MTW-12-10-1	Lucky Building (East Façade)	2015	2	28	18	58	71.6	69.2	68	80	N

Continuous Noise Monitoring at MTW-12-10-1 (Lucky Building (East Façade) in January 2015 - (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown the in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	6	31	71.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	7	1	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	7	31	80.1	75.4	78.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	8	1	83.0	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	8	31	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	9	1	82.4	75.4	81.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	9	31	81.0	75.4	79.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	10	1	82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	10	31	83.3	75.4	82.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	11	1	83.6	75.4	82.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	11	31	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	12	1	79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	12	54	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	13	24	83.2	75.4	82.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	13	54	83.8	75.4	83.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	14	24	78.9	75.4	76.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	14	54	79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	15	24	80.5	75.4	78.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	15	54	77.3	75.4	72.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	16	24	77.5	75.4	73.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	16	54	76.6	75.4	70.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	17	24	79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	17	54	79.2	75.4	76.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	18	24	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	2	18	54	72.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	6	54	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	7	24	78.8	75.4	76.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	7	54	81.2	75.4	79.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	8	24	81.4	75.4	80.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	8	54	83.3	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	9	24	82.1	75.4	81.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	9	54	83.3	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	10	24	83.0	75.4	82.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	10	54	83.9	75.4	83.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	11	24	79.4	75.4	77.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	11	54	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	12	24	80.6	75.4	79	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	12	54	82.3	75.4	81.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	13	24	76.3	75.4	68.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	13	54	76.1	75.4	67.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	14	24	79.1	75.4	76.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	14	54	78.8	75.4	76.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	15	24	81.8	75.4	80.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	15	54	80.2	75.4	78.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	16	24	76.2	75.4	68.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	16	54	76.1	75.4	67.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	17	24	76.9	75.4	71.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	17	54	75.7	75.4	64.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	18	24	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	3	18	54	72.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	6	54	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	7	24	78.1	75.4	74.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	7	54	77.3	75.4	72.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	8	24	81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	8	54	83.4	75.4	82.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	9	24	84.2	75.4	83.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	9	54	82.0	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	10	24	85.2	75.4	84.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	10	54	83.3	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	11	24	79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	11	54	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	12	24	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	12	54	83.4	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	13	24	86.7	75.4	86.3	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	13	54	84.2	75.4	83.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	14	24	86.2	75.4	85.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	14	54	87.0	75.4	86.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	15	24	83.4	75.4	82.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	15	54	83.6	75.4	82.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	16	24	85.9	75.4	85.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	16	54	77.4	75.4	72.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	17	24	75.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	17	54	82.7	75.4	81.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	18	24	81.6	75.4	80.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	4	18	54	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	6	54	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	7	24	83.6	75.4	82.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	7	54	84.8	75.4	84.3	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	8	24	82.4	75.4	81.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	8	54	83.8	75.4	83.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	9	24	84.3	75.4	83.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	9	54	86.2	75.4	85.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	10	24	85.7	75.4	85.3	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	10	54	80.7	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	11	24	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	11	54	80.2	75.4	78.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	12	37	77.9	75.4	74.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	13	7	80.4	75.4	78.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	13	37	77.9	75.4	74.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	14	7	78.5	75.4	75.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	14	37	78.1	75.4	74.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	15	7	76.0	75.4	67.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	15	37	76.4	75.4	69.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	16	7	76.1	75.4	68	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	16	37	76.8	75.4	71.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	17	7	77.2	75.4	72.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	17	37	75.6	75.4	62.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	18	7	74.5	75.4	<Baseline Level	81	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	5	18	37	72.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	6	37	71.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	7	7	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	7	37	78.1	75.4	74.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	8	7	82.1	75.4	81.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	8	37	79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	9	7	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	9	37	81.1	75.4	79.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	10	7	79.9	75.4	78	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	10	37	81.6	75.4	80.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	11	7	82.1	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	11	37	76.4	75.4	69.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	12	7	79.3	75.4	77	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	12	37	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	13	7	80.7	75.4	79.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	13	37	80.6	75.4	79.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	14	7	77.1	75.4	72.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	14	37	75.5	75.4	58.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	15	7	75.9	75.4	66.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	15	37	75.8	75.4	65.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	16	7	75.8	75.4	65.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	16	37	75.9	75.4	66	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	17	7	76.2	75.4	68.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	17	37	75.9	75.4	66.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	18	7	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	6	18	37	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	6	37	71.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	7	7	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	7	37	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	8	7	79.8	75.4	77.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	8	37	81.4	75.4	80.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	9	7	82.4	75.4	81.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	9	37	85.2	75.4	84.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	10	7	83.4	75.4	82.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	10	37	83.6	75.4	82.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	11	7	81.3	75.4	79.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	11	37	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	12	7	80.9	75.4	79.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	12	37	82.3	75.4	81.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	13	7	81.7	75.4	80.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	13	37	77.0	75.4	71.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	14	7	82.0	75.4	81	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	14	37	78.0	75.4	74.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	15	7	82.4	75.4	81.5	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	15	37	79.2	75.4	76.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	16	7	77.0	75.4	71.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	16	37	76.1	75.4	67.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	17	7	75.4	75.4	55.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	17	37	75.8	75.4	65.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	18	7	75.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	7	18	37	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	6	37	71.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	7	7	76.6	75.4	70.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	7	37	84.4	75.4	83.8	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	8	7	86.2	75.4	85.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	8	37	86.4	75.4	86.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	9	7	85.2	75.4	84.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	9	37	84.9	75.4	84.3	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	10	7	83.7	75.4	83	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	10	37	86.1	75.4	85.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	11	7	85.8	75.4	85.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	11	53	83.2	75.4	82.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	12	23	84.8	75.4	84.2	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	12	53	84.3	75.4	83.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	13	23	82.9	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	13	53	83.4	75.4	82.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	14	23	84.3	75.4	83.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	14	53	82.9	75.4	82.1	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	15	23	85.1	75.4	84.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	15	53	84.0	75.4	83.4	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	16	23	78.8	75.4	76.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	16	53	78.2	75.4	75	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	17	23	78.7	75.4	75.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	17	53	75.9	75.4	66.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	18	23	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	9	18	53	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	6	53	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	7	23	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	7	53	76.5	75.4	70	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	8	23	76.8	75.4	71.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	8	53	77.7	75.4	73.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	9	23	78.5	75.4	75.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	9	53	77.1	75.4	72.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	10	23	78.1	75.4	74.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	10	53	79.0	75.4	76.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	11	23	77.4	75.4	73	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	11	53	75.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	12	23	76.4	75.4	69.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	12	53	77.7	75.4	73.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	13	23	77.9	75.4	74.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	13	53	77.0	75.4	71.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	14	23	77.3	75.4	72.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	14	53	78.5	75.4	75.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	15	23	77.9	75.4	74.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	15	53	77.5	75.4	73.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	16	23	77.1	75.4	72.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	16	53	76.1	75.4	67.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	17	23	75.8	75.4	64.9	81	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	17	53	75.8	75.4	65.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	18	23	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	10	18	53	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	6	53	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	7	23	75.7	75.4	64.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	7	53	76.3	75.4	69	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	8	23	76.4	75.4	69.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	8	53	76.6	75.4	70.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	9	23	76.9	75.4	71.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	9	53	77.2	75.4	72.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	10	23	76.2	75.4	68.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	10	53	76.8	75.4	71.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	11	23	76.2	75.4	68.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	11	53	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	12	23	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	12	53	75.8	75.4	65.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	13	23	76.6	75.4	70.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	13	53	76.2	75.4	68.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	14	23	76.7	75.4	70.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	14	53	76.9	75.4	71.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	15	23	75.8	75.4	64.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	15	53	76.8	75.4	71	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	16	23	76.2	75.4	68.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	16	53	75.9	75.4	66.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	17	23	76.2	75.4	68.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	17	53	76.3	75.4	69	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	18	23	76.3	75.4	69.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	11	18	53	75.9	75.4	66.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	6	53	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	7	23	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	7	53	76.2	75.4	68.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	8	23	76.4	75.4	69.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	8	53	75.8	75.4	64.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	9	23	75.5	75.4	60.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	9	53	76.4	75.4	69.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	10	23	76.2	75.4	68.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	10	53	75.5	75.4	60.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	11	23	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	12	22	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	12	52	75.8	75.4	65.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	13	22	76.2	75.4	68.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	13	52	76.0	75.4	67.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	14	22	75.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	14	52	76.0	75.4	67.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	15	22	75.4	75.4	54.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	15	52	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	16	22	75.9	75.4	66	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	16	52	75.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	17	22	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	17	52	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	18	22	72.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	12	18	52	72.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	6	52	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	7	22	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	7	52	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	8	22	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	8	52	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	9	22	76.2	75.4	68.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	9	52	76.9	75.4	71.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	10	22	76.7	75.4	70.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	10	52	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	11	22	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	11	52	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	12	22	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	12	52	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	13	22	76.0	75.4	66.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	13	52	76.0	75.4	66.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	14	22	75.4	75.4	36.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	14	52	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	15	22	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	15	52	74.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	16	22	74.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	16	52	75.5	75.4	59.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	17	22	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	17	52	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	18	22	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	13	18	52	72.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	6	52	72.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	7	22	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	7	52	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	8	22	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	8	52	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	9	22	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	9	52	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	10	22	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	10	52	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	11	22	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	11	52	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	12	22	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	12	52	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	13	22	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	13	52	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	14	22	76.8	75.4	71.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	14	52	75.4	75.4	53.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	15	22	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	15	52	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	16	22	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	16	52	74.0	75.4	<Baseline Level	81	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	17	22	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	17	52	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	18	22	72.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	14	18	52	72.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	6	52	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	7	22	76.0	75.4	66.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	7	52	75.9	75.4	66	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	8	22	77.4	75.4	73.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	8	52	76.0	75.4	67.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	9	22	78.3	75.4	75.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	9	52	76.7	75.4	70.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	10	22	78.0	75.4	74.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	10	52	78.5	75.4	75.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	11	22	78.1	75.4	74.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	11	52	77.8	75.4	74	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	12	40	78.5	75.4	75.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	13	10	79.6	75.4	77.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	13	40	79.0	75.4	76.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	14	10	79.2	75.4	76.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	14	40	78.9	75.4	76.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	15	10	78.3	75.4	75.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	15	40	78.3	75.4	75.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	16	10	78.6	75.4	75.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	16	40	78.0	75.4	74.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	17	10	76.6	75.4	70.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	17	40	76.0	75.4	66.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	18	10	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	16	18	40	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	6	40	72.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	7	10	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	7	40	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	8	10	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	8	40	77.0	75.4	71.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	9	10	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	9	40	82.8	75.4	81.9	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	10	10	83.4	75.4	82.6	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	10	40	79.9	75.4	78.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	11	10	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	11	40	84.6	75.4	84	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	12	10	79.6	75.4	77.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	12	40	80.8	75.4	79.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	13	10	84.3	75.4	83.7	81	Y
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	13	40	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	14	10	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	14	40	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	15	10	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	15	40	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	16	10	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	16	40	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	17	10	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	17	40	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	18	10	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	17	18	40	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	6	40	72.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	7	10	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	7	40	73.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	8	10	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	8	40	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	9	10	73.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	9	40	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	10	10	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	10	40	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	11	10	74.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	11	40	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	12	10	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	12	40	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	13	10	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	13	40	74.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	14	10	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	14	40	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	15	10	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	15	40	73.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	16	10	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	16	40	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	17	10	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	17	40	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	18	10	73.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	18	18	40	72.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	6	40	72.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	7	10	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	7	40	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	8	10	74.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	8	40	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	9	44	76.0	75.4	67	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	10	14	76.1	75.4	67.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	10	44	76.9	75.4	71.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	11	14	76.1	75.4	67.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	11	44	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	12	14	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	12	44	76.5	75.4	70.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	13	14	75.8	75.4	64.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	13	44	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	14	14	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	14	44	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	15	14	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	15	44	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	16	14	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	16	44	73.8	75.4	<Baseline Level	81	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	17	14	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	17	44	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	18	14	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	23	18	44	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	6	44	72.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	7	14	73.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	7	44	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	8	14	75.5	75.4	59.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	8	44	77.0	75.4	71.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	9	14	76.7	75.4	71	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	9	44	76.0	75.4	67.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	10	14	76.9	75.4	71.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	10	44	77.0	75.4	71.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	11	14	76.0	75.4	66.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	11	44	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	12	14	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	12	44	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	13	14	76.3	75.4	69.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	13	44	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	14	14	77.6	75.4	73.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	14	44	75.7	75.4	63.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	15	14	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	15	44	77.5	75.4	73.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	16	14	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	16	44	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	17	14	74.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	17	44	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	18	14	74.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	24	18	44	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	6	44	72.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	7	14	73.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	7	44	75.6	75.4	63.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	8	14	76.1	75.4	68	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	8	44	77.1	75.4	72.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	9	14	78.9	75.4	76.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	9	44	79.1	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	10	14	76.6	75.4	70.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	10	44	77.2	75.4	72.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	11	14	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	11	44	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	12	14	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	12	44	75.7	75.4	64.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	13	14	75.6	75.4	61.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	13	44	75.6	75.4	62.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	14	14	76.6	75.4	70.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	14	44	76.6	75.4	70.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	15	14	75.6	75.4	62.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	15	44	76.3	75.4	68.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	16	14	76.0	75.4	67.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	16	44	75.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	17	14	74.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	17	44	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	18	14	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	25	18	44	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	6	44	72.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	7	14	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	7	44	74.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	8	14	74.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	8	44	75.6	75.4	61.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	9	14	75.8	75.4	65.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	9	44	75.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	10	14	75.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	10	44	75.9	75.4	66.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	11	14	75.9	75.4	65.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	11	58	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	12	28	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	12	58	74.7	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	13	28	75.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	13	58	77.6	75.4	73.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	14	28	76.1	75.4	67.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	14	58	78.0	75.4	74.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	15	28	80.4	75.4	78.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	15	58	79.1	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	16	28	80.5	75.4	78.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	16	58	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	17	28	74.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	17	58	74.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	18	28	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	26	18	58	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	6	58	73.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	7	28	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	7	58	76.4	75.4	69.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	8	28	76.2	75.4	68.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	8	58	77.1	75.4	72.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	9	28	77.7	75.4	73.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	9	58	77.9	75.4	74.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	10	28	77.6	75.4	73.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	10	58	76.2	75.4	68.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	11	28	74.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	11	58	73.6	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	12	28	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	12	58	77.4	75.4	72.9	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	13	28	78.1	75.4	74.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	13	58	78.7	75.4	76	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	14	28	76.9	75.4	71.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	14	58	76.7	75.4	70.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	15	28	75.9	75.4	66.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	15	58	76.6	75.4	70.5	81	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	16	28	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	16	58	74.4	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	17	28	73.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	17	58	73.3	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	18	28	73.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	27	18	58	72.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	6	58	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	7	28	73.8	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	7	58	75.1	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	8	28	75.7	75.4	64.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	8	58	77.5	75.4	73.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	9	28	79.3	75.4	77.1	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	9	58	75.4	75.4	56	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	10	28	80.3	75.4	78.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	10	58	81.7	75.4	80.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	11	28	80.9	75.4	79.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	11	58	78.2	75.4	75	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	12	28	78.4	75.4	75.5	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	12	58	82.2	75.4	81.2	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	13	28	79.7	75.4	77.7	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	13	58	75.2	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	14	28	75.0	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	14	58	79.0	75.4	76.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	15	28	78.5	75.4	75.6	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	15	58	76.8	75.4	71.4	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	16	28	78.6	75.4	75.8	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	16	58	77.5	75.4	73.3	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	17	28	76.1	75.4	68	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	17	58	73.5	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	18	28	72.9	75.4	<Baseline Level	81	N
MTW-12-11(A)	SKH Good Shepherd Primary School	2015	2	28	18	58	72.6	75.4	<Baseline Level	81	N

Continuous Noise Monitoring at MTW-12-11 (SKH Good Shepherd Primary School) in January 2015- (LAeq, 30min)

Remarks:
- For those corrected noise levels that are not shown the in this graph, the measured noise levels are below baseline level.

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	6	31	71.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	7	1	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	7	31	80.1	75.4	78.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	8	1	83.0	75.4	82.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	8	31	83.2	75.4	82.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	9	1	82.4	75.4	81.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	9	31	81.0	75.4	79.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	10	1	82.7	75.4	81.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	10	31	83.3	75.4	82.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	11	1	83.6	75.4	82.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	11	31	74.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	12	1	79.6	75.4	77.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	12	54	83.2	75.4	82.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	13	24	83.2	75.4	82.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	13	54	83.8	75.4	83.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	14	24	78.9	75.4	76.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	14	54	79.6	75.4	77.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	15	24	80.5	75.4	78.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	15	54	77.3	75.4	72.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	16	24	77.5	75.4	73.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	16	54	76.6	75.4	70.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	17	24	79.9	75.4	78	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	17	54	79.2	75.4	76.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	18	24	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	2	18	54	72.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	6	54	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	7	24	78.8	75.4	76.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	7	54	81.2	75.4	79.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	8	24	81.4	75.4	80.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	8	54	83.3	75.4	82.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	9	24	82.1	75.4	81.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	9	54	83.3	75.4	82.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	10	24	83.0	75.4	82.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	10	54	83.9	75.4	83.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	11	24	79.4	75.4	77.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	11	54	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	12	24	80.6	75.4	79	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	12	54	82.3	75.4	81.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	13	24	76.3	75.4	68.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	13	54	76.1	75.4	67.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	14	24	79.1	75.4	76.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	14	54	78.8	75.4	76.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	15	24	81.8	75.4	80.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	15	54	80.2	75.4	78.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	16	24	76.2	75.4	68.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	16	54	76.1	75.4	67.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	17	24	76.9	75.4	71.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	17	54	75.7	75.4	64.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	18	24	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	3	18	54	72.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	6	54	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	7	24	78.1	75.4	74.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	7	54	77.3	75.4	72.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	8	24	81.6	75.4	80.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	8	54	83.4	75.4	82.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	9	24	84.2	75.4	83.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	9	54	82.0	75.4	81	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	10	24	85.2	75.4	84.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	10	54	83.3	75.4	82.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	11	24	79.6	75.4	77.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	11	54	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	12	24	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	12	54	83.4	75.4	82.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	13	24	86.7	75.4	86.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	13	54	84.2	75.4	83.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	14	24	86.2	75.4	85.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	14	54	87.0	75.4	86.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	15	24	83.4	75.4	82.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	15	54	83.6	75.4	82.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	16	24	85.9	75.4	85.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	16	54	77.4	75.4	72.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	17	24	75.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	17	54	82.7	75.4	81.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	18	24	81.6	75.4	80.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	4	18	54	73.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	6	54	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	7	24	83.6	75.4	82.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	7	54	84.8	75.4	84.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	8	24	82.4	75.4	81.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	8	54	83.8	75.4	83.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	9	24	84.3	75.4	83.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	9	54	86.2	75.4	85.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	10	24	85.7	75.4	85.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	10	54	80.7	75.4	79.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	11	24	82.2	75.4	81.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	11	54	80.2	75.4	78.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	12	37	77.9	75.4	74.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	13	7	80.4	75.4	78.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	13	37	77.9	75.4	74.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	14	7	78.5	75.4	75.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	14	37	78.1	75.4	74.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	15	7	76.0	75.4	67.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	15	37	76.4	75.4	69.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	16	7	76.1	75.4	68	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	16	37	76.8	75.4	71.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	17	7	77.2	75.4	72.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	17	37	75.6	75.4	62.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	18	7	74.5	75.4	<Baseline Level	79	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2015	2	5	18	37	72.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	6	37	71.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	7	7	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	7	37	78.1	75.4	74.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	8	7	82.1	75.4	81.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	8	37	79.9	75.4	78	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	9	7	79.6	75.4	77.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	9	37	81.1	75.4	79.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	10	7	79.9	75.4	78	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	10	37	81.6	75.4	80.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	11	7	82.1	75.4	81	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	11	37	76.4	75.4	69.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	12	7	79.3	75.4	77	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	12	37	83.2	75.4	82.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	13	7	80.7	75.4	79.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	13	37	80.6	75.4	79.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	14	7	77.1	75.4	72.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	14	37	75.5	75.4	58.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	15	7	75.9	75.4	66.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	15	37	75.8	75.4	65.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	16	7	75.8	75.4	65.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	16	37	75.9	75.4	66	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	17	7	76.2	75.4	68.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	17	37	75.9	75.4	66.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	18	7	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	6	18	37	73.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	6	37	71.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	7	7	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	7	37	74.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	8	7	79.8	75.4	77.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	8	37	81.4	75.4	80.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	9	7	82.4	75.4	81.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	9	37	85.2	75.4	84.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	10	7	83.4	75.4	82.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	10	37	83.6	75.4	82.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	11	7	81.3	75.4	79.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	11	37	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	12	7	80.9	75.4	79.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	12	37	82.3	75.4	81.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	13	7	81.7	75.4	80.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	13	37	77.0	75.4	71.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	14	7	82.0	75.4	81	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	14	37	78.0	75.4	74.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	15	7	82.4	75.4	81.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	15	37	79.2	75.4	76.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	16	7	77.0	75.4	71.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	16	37	76.1	75.4	67.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	17	7	75.4	75.4	55.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	17	37	75.8	75.4	65.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	18	7	75.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	7	18	37	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	6	37	71.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	7	7	76.6	75.4	70.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	7	37	84.4	75.4	83.8	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	8	7	86.2	75.4	85.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	8	37	86.4	75.4	86.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	9	7	85.2	75.4	84.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	9	37	84.9	75.4	84.3	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	10	7	83.7	75.4	83	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	10	37	86.1	75.4	85.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	11	7	85.8	75.4	85.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	11	53	83.2	75.4	82.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	12	23	84.8	75.4	84.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	12	53	84.3	75.4	83.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	13	23	82.9	75.4	82.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	13	53	83.4	75.4	82.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	14	23	84.3	75.4	83.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	14	53	82.9	75.4	82.1	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	15	23	85.1	75.4	84.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	15	53	84.0	75.4	83.4	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	16	23	78.8	75.4	76.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	16	53	78.2	75.4	75	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	17	23	78.7	75.4	75.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	17	53	75.9	75.4	66.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	18	23	73.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	9	18	53	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	6	53	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	7	23	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	7	53	76.5	75.4	70	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	8	23	76.8	75.4	71.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	8	53	77.7	75.4	73.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	9	23	78.5	75.4	75.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	9	53	77.1	75.4	72.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	10	23	78.1	75.4	74.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	10	53	79.0	75.4	76.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	11	23	77.4	75.4	73	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	11	53	75.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	12	23	76.4	75.4	69.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	12	53	77.7	75.4	73.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	13	23	77.9	75.4	74.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	13	53	77.0	75.4	71.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	14	23	77.3	75.4	72.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	14	53	78.5	75.4	75.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	15	23	77.9	75.4	74.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	15	53	77.5	75.4	73.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	16	23	77.1	75.4	72.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	16	53	76.1	75.4	67.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	17	23	75.8	75.4	64.9	79	N

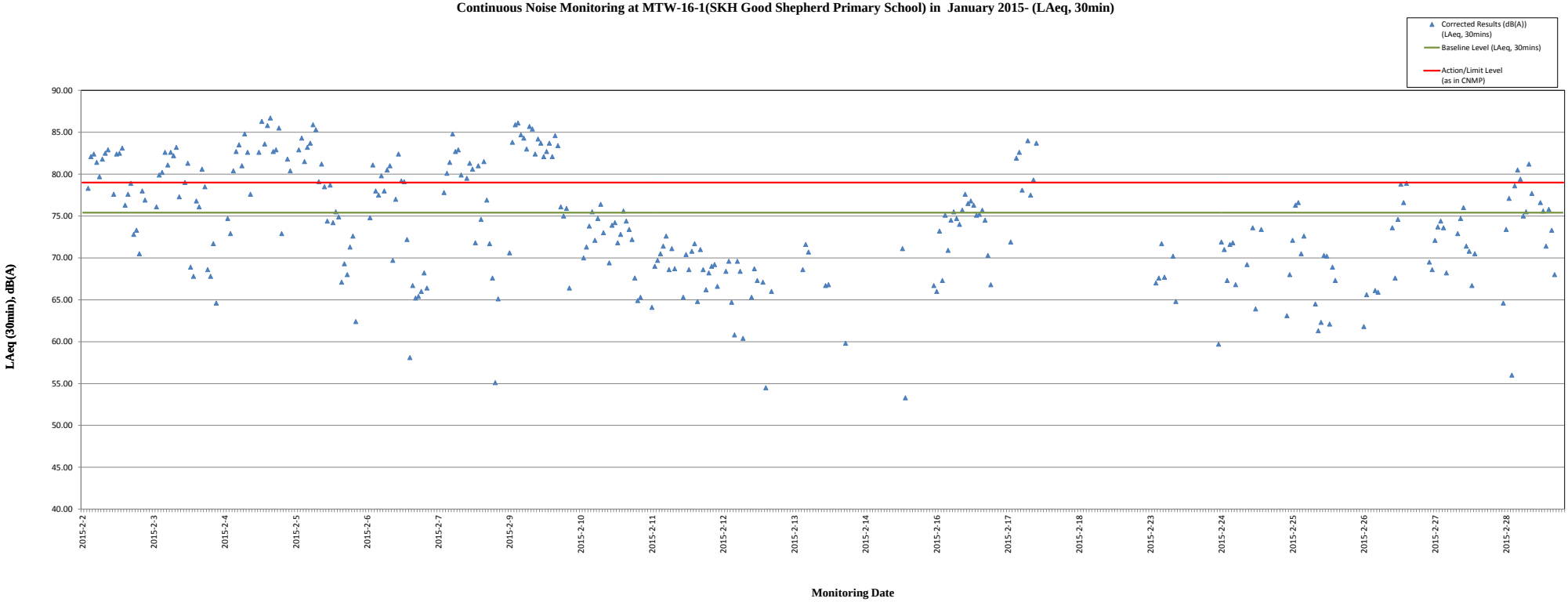
Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	17	53	75.8	75.4	65.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	18	23	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	10	18	53	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	6	53	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	7	23	75.7	75.4	64.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	7	53	76.3	75.4	69	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	8	23	76.4	75.4	69.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	8	53	76.6	75.4	70.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	9	23	76.9	75.4	71.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	9	53	77.2	75.4	72.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	10	23	76.2	75.4	68.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	10	53	76.8	75.4	71.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	11	23	76.2	75.4	68.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	11	53	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	12	23	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	12	53	75.8	75.4	65.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	13	23	76.6	75.4	70.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	13	53	76.2	75.4	68.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	14	23	76.7	75.4	70.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	14	53	76.9	75.4	71.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	15	23	75.8	75.4	64.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	15	53	76.8	75.4	71	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	16	23	76.2	75.4	68.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	16	53	75.9	75.4	66.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	17	23	76.2	75.4	68.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	17	53	76.3	75.4	69	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	18	23	76.3	75.4	69.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	11	18	53	75.9	75.4	66.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	6	53	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	7	23	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	7	53	76.2	75.4	68.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	8	23	76.4	75.4	69.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	8	53	75.8	75.4	64.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	9	23	75.5	75.4	60.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	9	53	76.4	75.4	69.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	10	23	76.2	75.4	68.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	10	53	75.5	75.4	60.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	11	23	74.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	12	22	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	12	52	75.8	75.4	65.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	13	22	76.2	75.4	68.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	13	52	76.0	75.4	67.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	14	22	75.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	14	52	76.0	75.4	67.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	15	22	75.4	75.4	54.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	15	52	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	16	22	75.9	75.4	66	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	16	52	75.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	17	22	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	17	52	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	18	22	72.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	12	18	52	72.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	6	52	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	7	22	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	7	52	74.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	8	22	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	8	52	74.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	9	22	76.2	75.4	68.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	9	52	76.9	75.4	71.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	10	22	76.7	75.4	70.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	10	52	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	11	22	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	11	52	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	12	22	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	12	52	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	13	22	76.0	75.4	66.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	13	52	76.0	75.4	66.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	14	22	75.4	75.4	36.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	14	52	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	15	22	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	15	52	74.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	16	22	74.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	16	52	75.5	75.4	59.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	17	22	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	17	52	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	18	22	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	13	18	52	72.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	6	52	72.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	7	22	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	7	52	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	8	22	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	8	52	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	9	22	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	9	52	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	10	22	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	10	52	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	11	22	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	11	52	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	12	22	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	12	52	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	13	22	74.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	13	52	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	14	22	76.8	75.4	71.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	14	52	75.4	75.4	53.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	15	22	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	15	52	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	16	22	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	16	52	74.0	75.4	<Baseline Level	79	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	17	22	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	17	52	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	18	22	72.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	14	18	52	72.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	6	52	74.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	7	22	76.0	75.4	66.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	7	52	75.9	75.4	66	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	8	22	77.4	75.4	73.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	8	52	76.0	75.4	67.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	9	22	78.3	75.4	75.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	9	52	76.7	75.4	70.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	10	22	78.0	75.4	74.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	10	52	78.5	75.4	75.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	11	22	78.1	75.4	74.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	11	52	77.8	75.4	74	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	12	40	78.5	75.4	75.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	13	10	79.6	75.4	77.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	13	40	79.0	75.4	76.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	14	10	79.2	75.4	76.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	14	40	78.9	75.4	76.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	15	10	78.3	75.4	75.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	15	40	78.3	75.4	75.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	16	10	78.6	75.4	75.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	16	40	78.0	75.4	74.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	17	10	76.6	75.4	70.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	17	40	76.0	75.4	66.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	18	10	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	16	18	40	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	6	40	72.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	7	10	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	7	40	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	8	10	74.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	8	40	77.0	75.4	71.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	9	10	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	9	40	82.8	75.4	81.9	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	10	10	83.4	75.4	82.6	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	10	40	79.9	75.4	78.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	11	10	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	11	40	84.6	75.4	84	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	12	10	79.6	75.4	77.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	12	40	80.8	75.4	79.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	13	10	84.3	75.4	83.7	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	13	40	74.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	14	10	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	14	40	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	15	10	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	15	40	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	16	10	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	16	40	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	17	10	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	17	40	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	18	10	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	17	18	40	73.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	6	40	72.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	7	10	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	7	40	73.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	8	10	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	8	40	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	9	10	73.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	9	40	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	10	10	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	10	40	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	11	10	74.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	11	40	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	12	10	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	12	40	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	13	10	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	13	40	74.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	14	10	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	14	40	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	15	10	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	15	40	73.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	16	10	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	16	40	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	17	10	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	17	40	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	18	10	73.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	18	18	40	72.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	6	40	72.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	7	10	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	7	40	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	8	10	74.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	8	40	74.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	9	44	76.0	75.4	67	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	10	14	76.1	75.4	67.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	10	44	76.9	75.4	71.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	11	14	76.1	75.4	67.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	11	44	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	12	14	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	12	44	76.5	75.4	70.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	13	14	75.8	75.4	64.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	13	44	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	14	14	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	14	44	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	15	14	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	15	44	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	16	14	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	16	44	73.8	75.4	<Baseline Level	79	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	17	14	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	17	44	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	18	14	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	23	18	44	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	6	44	72.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	7	14	73.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	7	44	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	8	14	75.5	75.4	59.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	8	44	77.0	75.4	71.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	9	14	76.7	75.4	71	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	9	44	76.0	75.4	67.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	10	14	76.9	75.4	71.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	10	44	77.0	75.4	71.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	11	14	76.0	75.4	66.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	11	44	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	12	14	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	12	44	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	13	14	76.3	75.4	69.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	13	44	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	14	14	77.6	75.4	73.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	14	44	75.7	75.4	63.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	15	14	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	15	44	77.5	75.4	73.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	16	14	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	16	44	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	17	14	74.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	17	44	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	18	14	74.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	24	18	44	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	6	44	72.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	7	14	73.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	7	44	75.6	75.4	63.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	8	14	76.1	75.4	68	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	8	44	77.1	75.4	72.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	9	14	78.9	75.4	76.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	9	44	79.1	75.4	76.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	10	14	76.6	75.4	70.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	10	44	77.2	75.4	72.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	11	14	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	11	44	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	12	14	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	12	44	75.7	75.4	64.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	13	14	75.6	75.4	61.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	13	44	75.6	75.4	62.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	14	14	76.6	75.4	70.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	14	44	76.6	75.4	70.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	15	14	75.6	75.4	62.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	15	44	76.3	75.4	68.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	16	14	76.0	75.4	67.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	16	44	75.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	17	14	74.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	17	44	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	18	14	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	25	18	44	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	6	44	72.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	7	14	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	7	44	74.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	8	14	74.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	8	44	75.6	75.4	61.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	9	14	75.8	75.4	65.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	9	44	75.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	10	14	75.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	10	44	75.9	75.4	66.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	11	14	75.9	75.4	65.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	11	58	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	12	28	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	12	58	74.7	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	13	28	75.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	13	58	77.6	75.4	73.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	14	28	76.1	75.4	67.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	14	58	78.0	75.4	74.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	15	28	80.4	75.4	78.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	15	58	79.1	75.4	76.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	16	28	80.5	75.4	78.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	16	58	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	17	28	74.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	17	58	74.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	18	28	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	26	18	58	73.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	6	58	73.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	7	28	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	7	58	76.4	75.4	69.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	8	28	76.2	75.4	68.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	8	58	77.1	75.4	72.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	9	28	77.7	75.4	73.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	9	58	77.9	75.4	74.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	10	28	77.6	75.4	73.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	10	58	76.2	75.4	68.2	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	11	28	74.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	11	58	73.6	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	12	28	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	12	58	77.4	75.4	72.9	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	13	28	78.1	75.4	74.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	13	58	78.7	75.4	76	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	14	28	76.9	75.4	71.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	14	58	76.7	75.4	70.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	15	28	75.9	75.4	66.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	15	58	76.6	75.4	70.5	79	N

Location ID	Name	Date			Hour (HH)	Minutes(MM)	Measured LAeq,30mins	Baseline Level (LAeq, 30mins)	Corrected Results (dB(A)) (LAeq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	16	28	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	16	58	74.4	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	17	28	73.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	17	58	73.3	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	18	28	73.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	27	18	58	72.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	6	58	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	7	28	73.8	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	7	58	75.1	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	8	28	75.7	75.4	64.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	8	58	77.5	75.4	73.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	9	28	79.3	75.4	77.1	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	9	58	75.4	75.4	56	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	10	28	80.3	75.4	78.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	10	58	81.7	75.4	80.5	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	11	28	80.9	75.4	79.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	11	58	78.2	75.4	75	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	12	28	78.4	75.4	75.5	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	12	58	82.2	75.4	81.2	79	Y
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	13	28	79.7	75.4	77.7	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	13	58	75.2	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	14	28	75.0	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	14	58	79.0	75.4	76.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	15	28	78.5	75.4	75.6	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	15	58	76.8	75.4	71.4	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	16	28	78.6	75.4	75.8	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	16	58	77.5	75.4	73.3	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	17	28	76.1	75.4	68	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	17	58	73.5	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	18	28	72.9	75.4	<Baseline Level	79	N
MTW-16-1	SKH Good Shepherd Primary School	2015	2	28	18	58	72.6	75.4	<Baseline Level	79	N

Continuous Noise Monitoring at MTW-16-1(SKH Good Shepherd Primary School) in January 2015- (LAeq, 30min)



Remarks:
- For those corrected noise levels that are not shown the in this graph, the measured noise levels are below baseline level.

Annex J

Construction Dust Monitoring Results and Wind Data Monitoring Results

Annex J **Construction Dust Monitoring Results**

Station DMS-6 Katherine Building

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(μg/m^3)	(μg/m^3)	(μg/m^3)		ID	ID
03-Feb-15	10:40	04-Feb-15	10:40	Sunny	2.8446	2.9771	13784.30	13808.30	24.00	1.25	1.25	1.25	74	156.8	260	-	0107	5154
09-Feb-15	10:45	10-Feb-15	10:45	Sunny	2.8848	2.9985	13808.30	13832.30	24.00	1.25	1.25	1.25	63	156.8	260	-	0107	5304
14-Feb-15	8:40	15-Feb-15	8:40	Sunny	2.9058	3.0411	13832.30	13856.30	24.00	1.25	1.25	1.25	75	156.8	260	-	0107	5323
18-Feb-15	10:40	19-Feb-15	10:40	Cloudy	2.8726	3.0112	13856.30	13880.30	24.00	1.25	1.25	1.25	77	156.8	260	-	0107	5428
24-Feb-15	10:30	25-Feb-15	10:30	Cloudy	2.8669	2.9910	13880.30	13904.30	24.00	1.25	1.25	1.25	69	156.8	260	-	0107	5433
												Minimum	63					
												Average	72					
												Maximum	77					

Station DMS-7 Parc 22

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(μg/m^3)	(μg/m^3)	(μg/m^3)		ID	ID
03-Feb-15	9:45	04-Feb-15	9:45	Sunny	2.8646	2.9911	3968.17	3992.17	24.00	1.20	1.20	1.20	73	166.7	260	-	3574	5153
09-Feb-15	9:45	10-Feb-15	9:45	Sunny	2.8518	2.9628	3992.17	4016.17	24.00	1.20	1.20	1.20	64	166.7	260	-	3574	5303
14-Feb-15	8:37	15-Feb-15	8:37	Sunny	2.8975	3.0229	4016.17	4040.17	24.00	1.20	1.20	1.20	73	166.7	260	-	3574	5322
18-Feb-15	9:45	19-Feb-15	9:45	Cloudy	2.8740	3.0094	4040.17	4064.17	24.00	1.20	1.20	1.20	78	166.7	260	-	3574	5427
24-Feb-15	9:40	25-Feb-15	9:40	Cloudy	2.8326	2.9715	4064.17	4088.17	24.00	1.20	1.20	1.20	80	166.7	260	-	3574	5432
												Minimum	64					
												Average	74					
												Maximum	80					

Station DMS-8 SKH Good Shepherd Primary School

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)		ID	ID
03-Feb-15	9:30	04-Feb-15	9:30	Sunny	2.8529	2.9960	3917.11	3941.11	24.00	1.24	1.24	1.24	80	152.2	260	-	3572	5152
09-Feb-15	9:30	10-Feb-15	9:30	Sunny	2.8874	2.9960	3941.11	3965.11	24.00	1.24	1.24	1.24	61	152.2	260	-	3572	5302
14-Feb-15	8:22	15-Feb-15	8:22	Sunny	2.8901	3.0400	3965.11	3989.11	24.00	1.24	1.24	1.24	84	152.2	260	-	3572	5321
18-Feb-15	9:30	19-Feb-15	9:30	Cloudy	2.8609	3.0021	3989.11	4013.11	24.00	1.24	1.24	1.24	79	152.2	260	-	3572	5426
24-Feb-15	9:08	25-Feb-15	9:08	Cloudy	2.8698	2.9911	4013.11	4037.11	24.00	1.24	1.24	1.24	68	152.2	260	-	3572	5471
												Minimum	61					
												Average	74					
												Maximum	84					

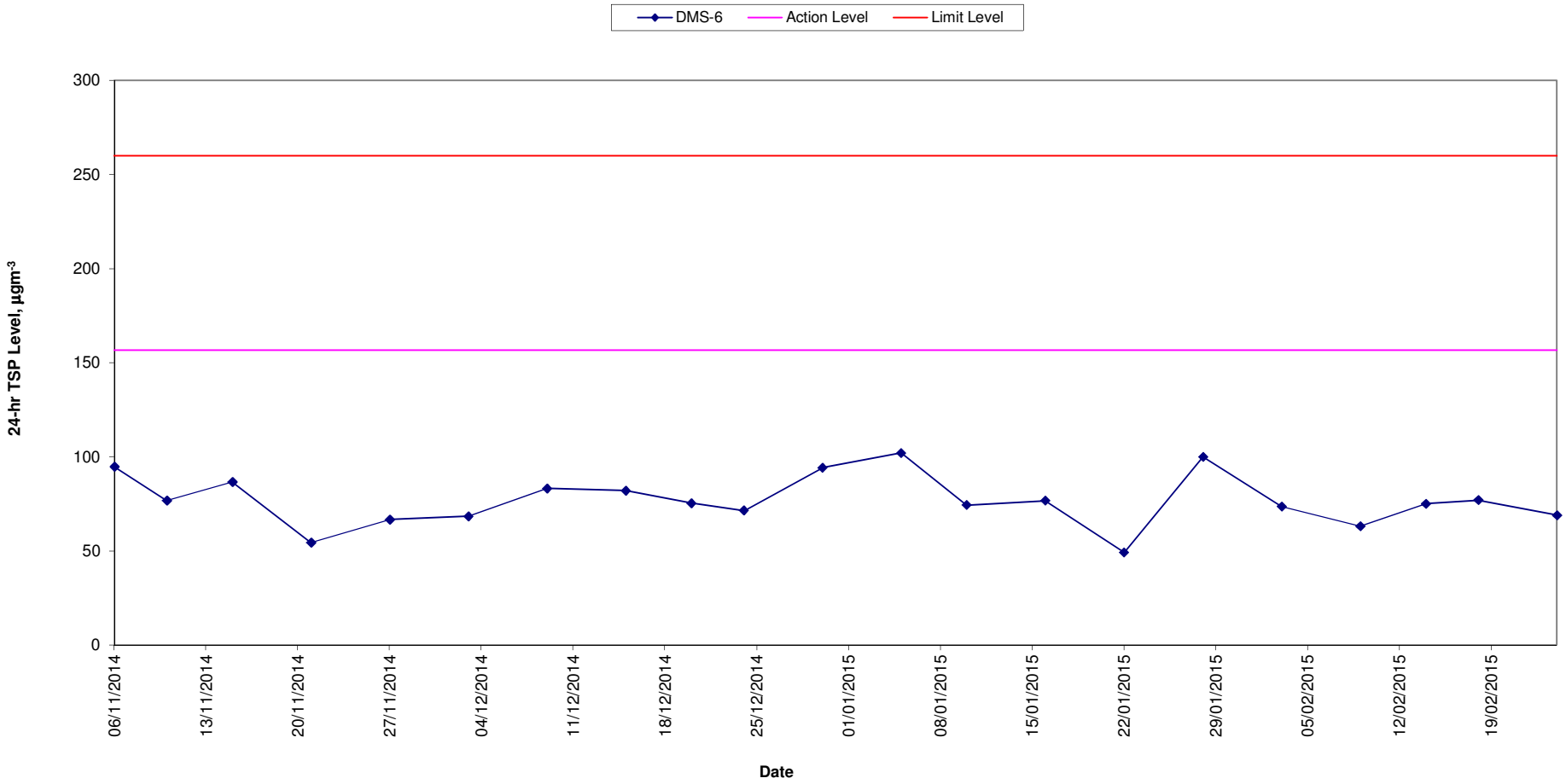
Station DMS-9 No. 12 Pau Chung Street

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)		ID	ID
03-Feb-15	9:20	04-Feb-15	9:20	Sunny	2.8633	3.0025	14217.40	14241.40	24.00	1.23	1.23	1.23	79	160.9	260	-	0814	5151
09-Feb-15	9:20	10-Feb-15	9:20	Sunny	2.8940	3.0091	14241.40	14265.40	24.00	1.23	1.23	1.23	65	160.9	260	-	0814	5301
14-Feb-15	8:12	15-Feb-15	8:12	Sunny	2.8967	3.0521	14265.40	14289.40	24.00	1.23	1.23	1.23	88	160.9	260	-	0814	5320
18-Feb-15	9:20	19-Feb-15	9:20	Cloudy	2.9064	3.0491	14289.40	14313.40	24.00	1.23	1.23	1.23	81	160.9	260	-	0814	5348
24-Feb-15	9:20	25-Feb-15	9:20	Cloudy	2.8766	2.9980	14313.40	14337.40	24.00	1.23	1.23	1.23	69	160.9	260	-	0814	5430
												Minimum	65					
												Average	76					
												Maximum	88					

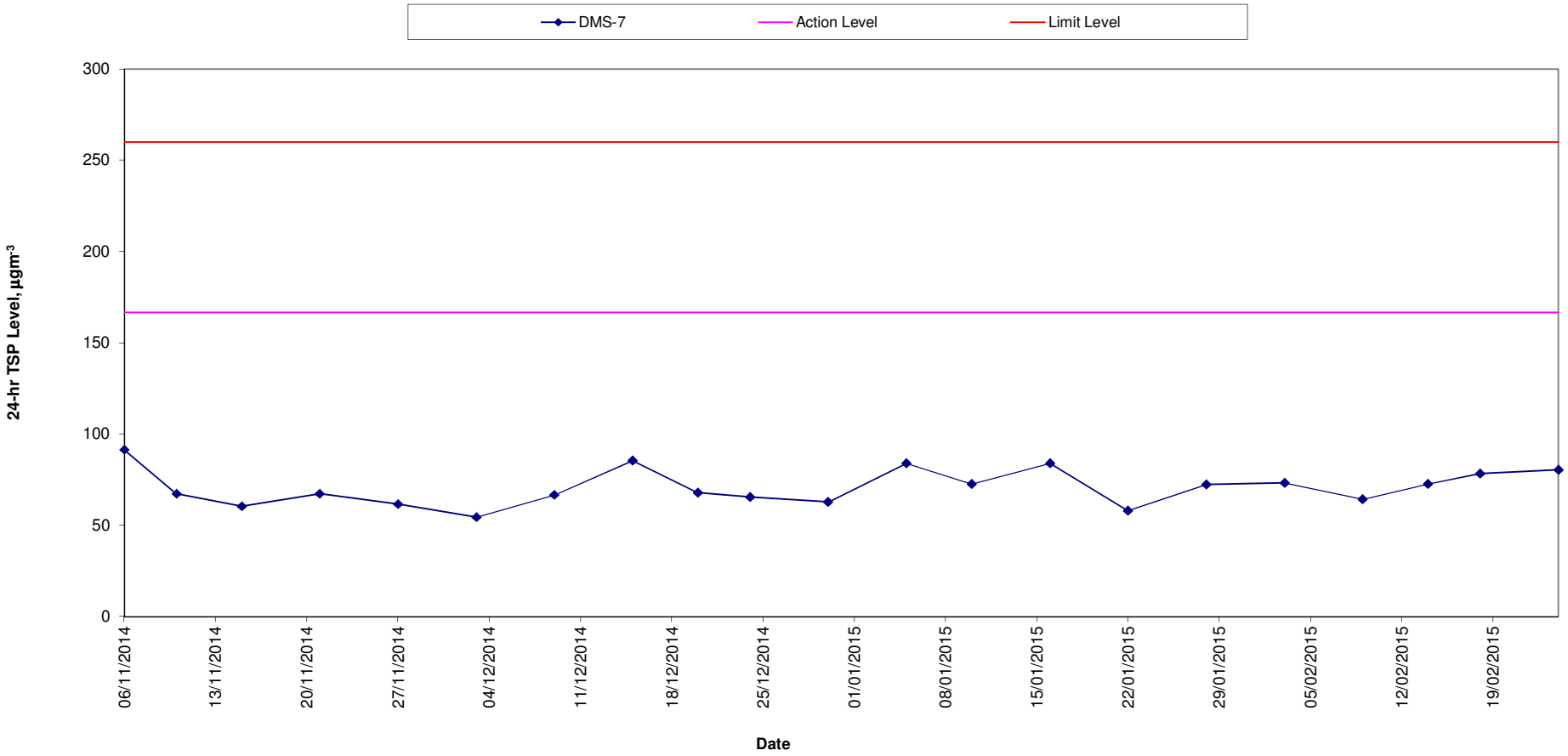
Station DMS-10 Chat Ma Mansion

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)		ID	ID
03-Feb-15	8:43	04-Feb-15	8:43	Sunny	2.8673	2.9922	4549.20	4573.20	24.00	1.23	1.23	1.23	71	170.4	260	-	3573	5150
09-Feb-15	8:43	10-Feb-15	8:43	Sunny	2.8583	2.9706	4573.20	4597.20	24.00	1.23	1.23	1.23	63	170.4	260	-	3573	5172
14-Feb-15	8:00	15-Feb-15	8:00	Sunny	2.8910	3.0222	4597.20	4621.20	24.00	1.23	1.23	1.23	74	170.4	260	-	3573	5319
18-Feb-15	8:43	19-Feb-15	8:43	Cloudy	2.8837	3.0227	4621.20	4645.20	24.00	1.23	1.23	1.23	78	170.4	260	-	3573	5747
24-Feb-15	8:45	25-Feb-15	8:45	Cloudy	2.8752	3.0011	4645.20	4669.20	24.00	1.23	1.23	1.23	71	170.4	260	-	3573	5429
												Minimum	63					
												Average	72					
												Maximum	78					

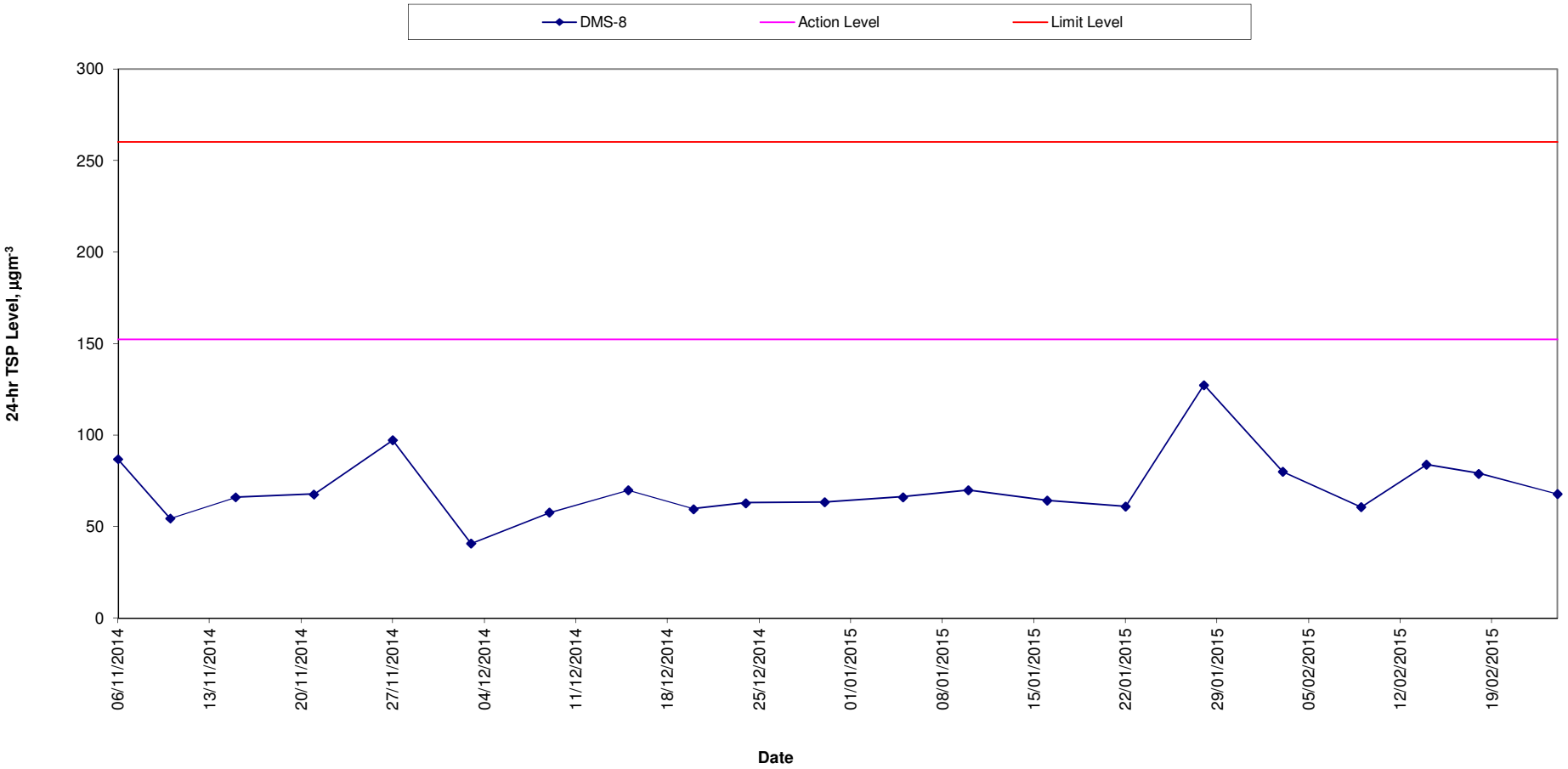
Construction Dust Monitoring Results for the Past 4 Months
DMS-6 (Katherine Building)



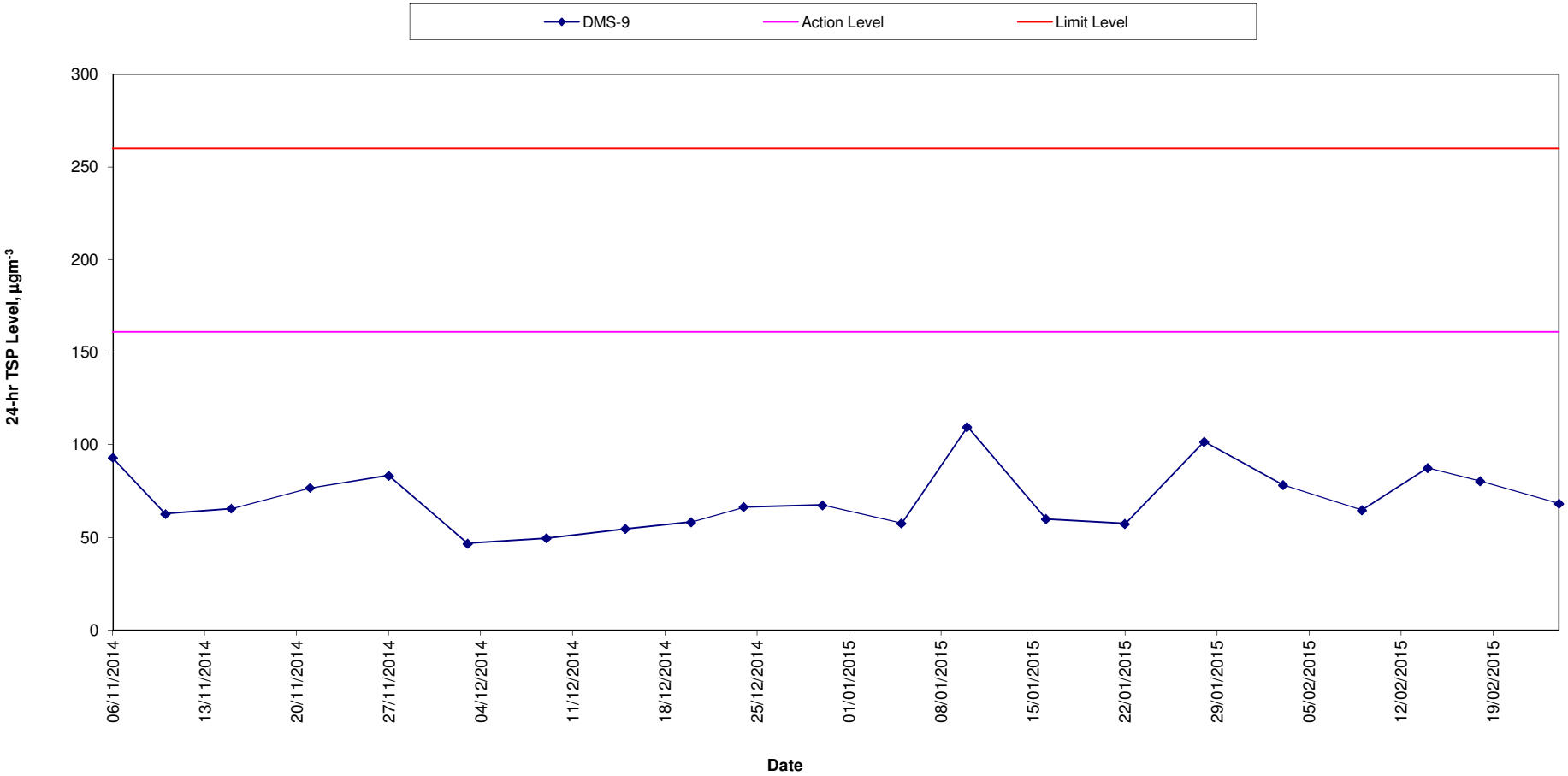
Construction Dust Monitoring Results for the Past 4 Months
DMS- 7 (Parc 22)



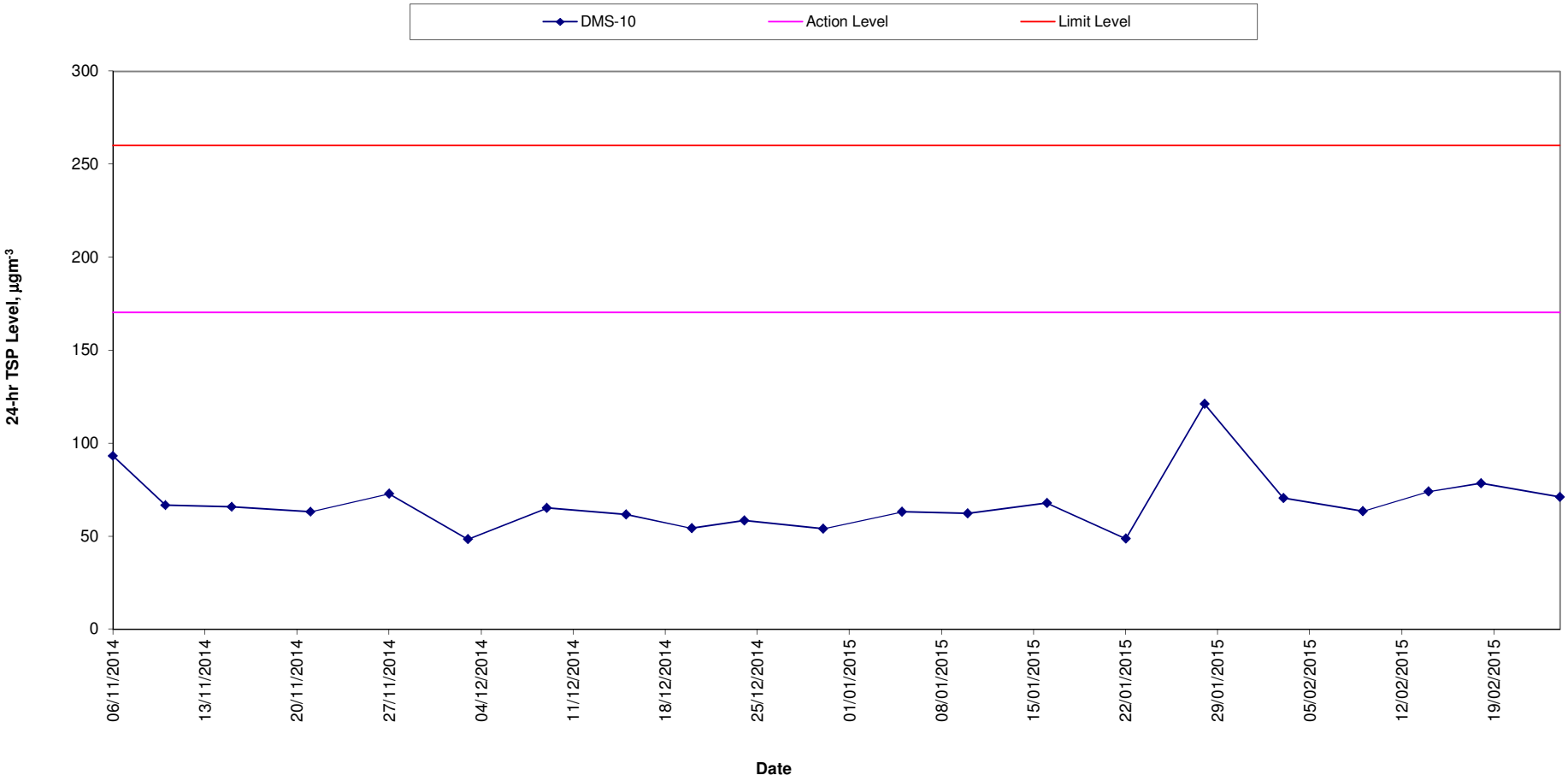
Construction Dust Monitoring Results for the Past 4 Months
DMS-8 (SKH Good Shepherd Primary School)



Construction Dust Monitoring Results for the Past 4 Months
DMS-9 (No.12 Pau Chung Street)



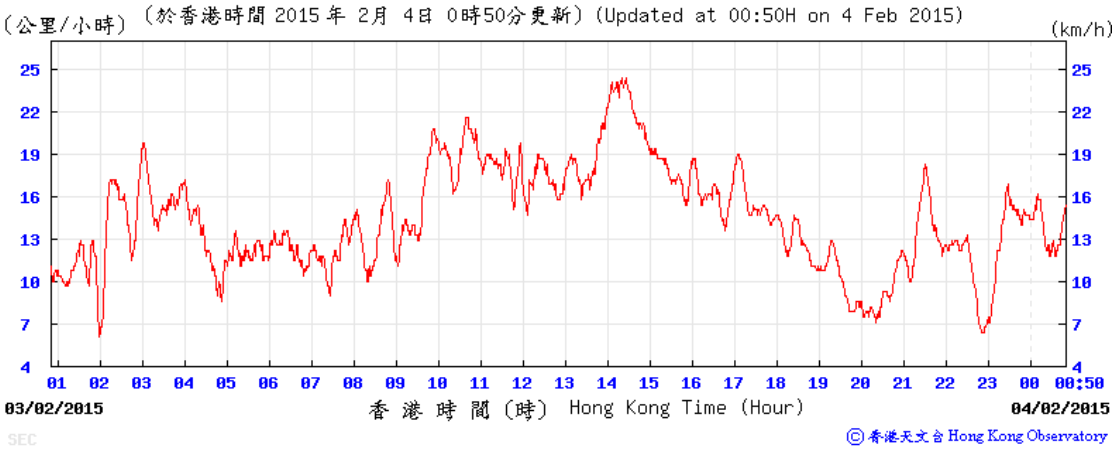
Construction Dust Monitoring Results for the Past 4 Months
DMS-10 (Chat Ma Mansion)



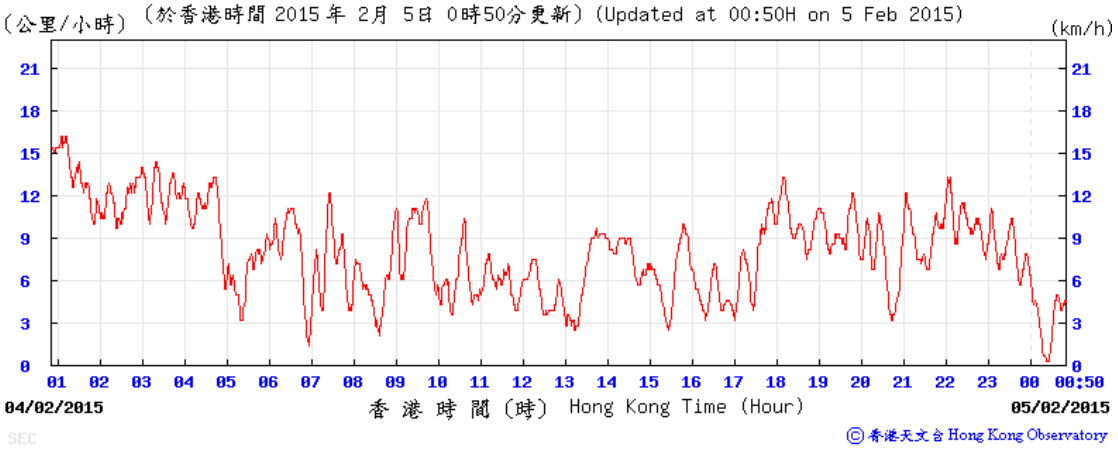
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

3-4 February 2015

Wind Speed:

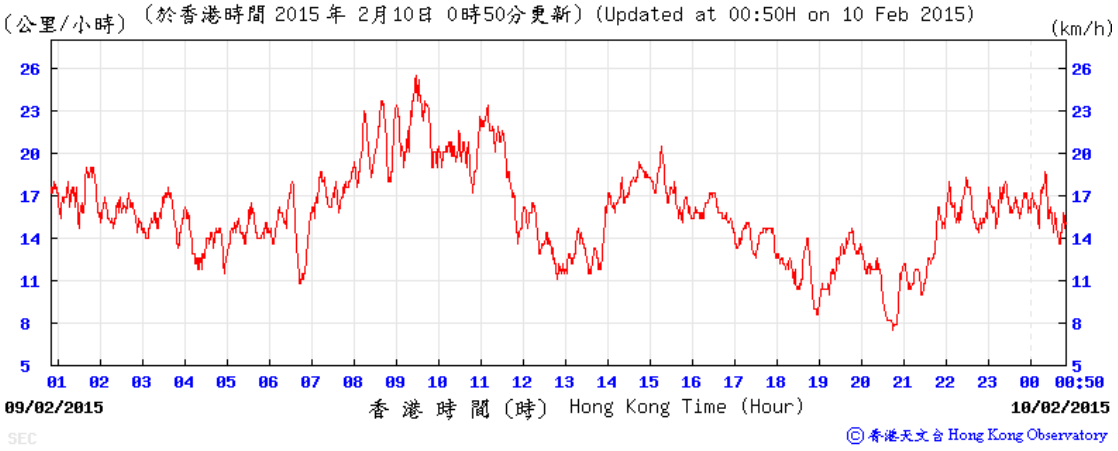


Wind Speed:

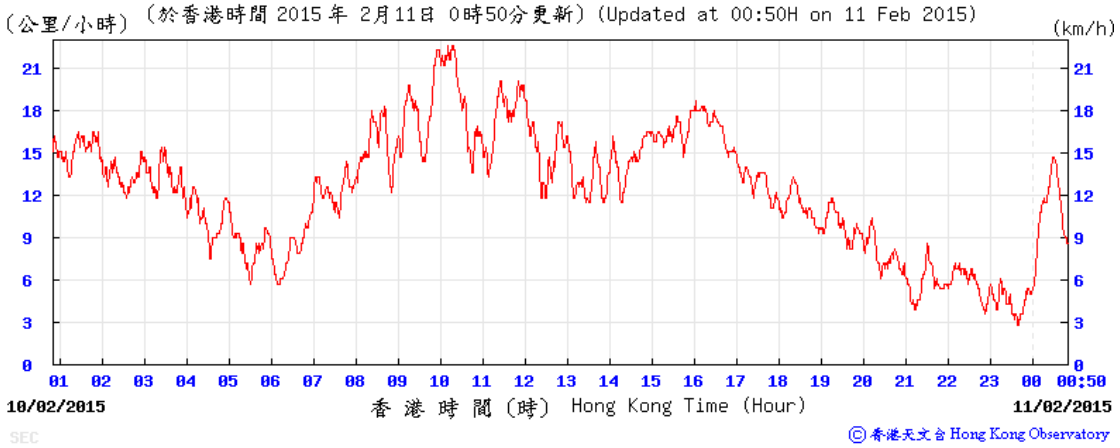


9-10 February 2015

Wind Speed:

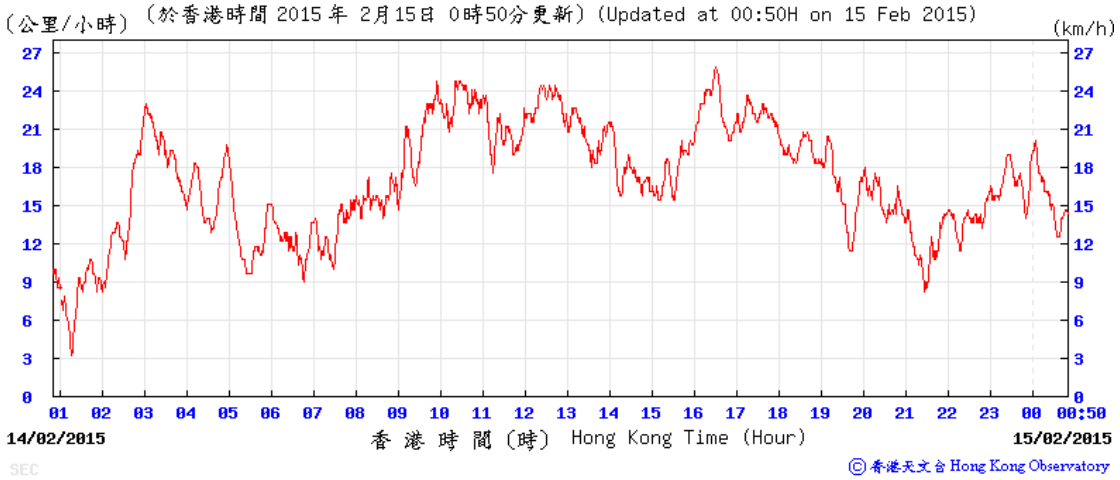


Wind Speed:

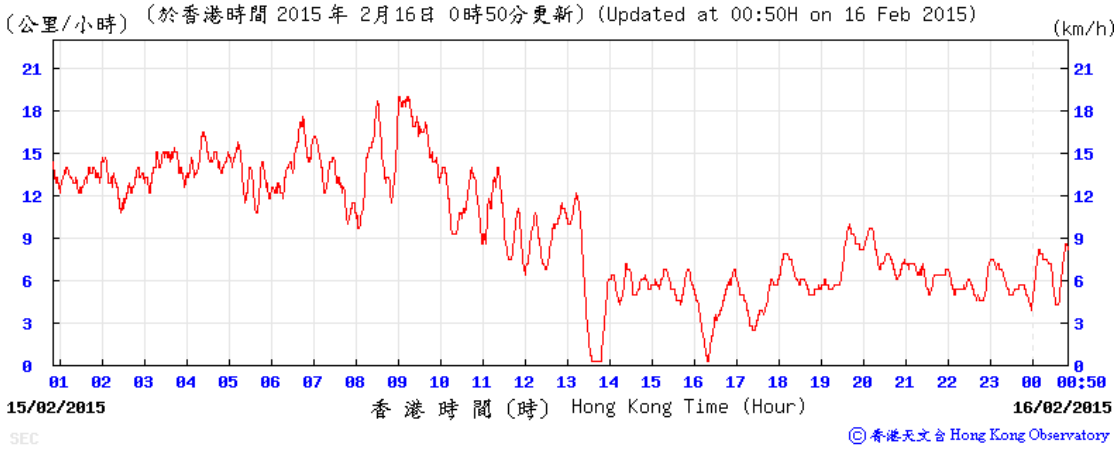


14-15 February 2015

Wind Speed:

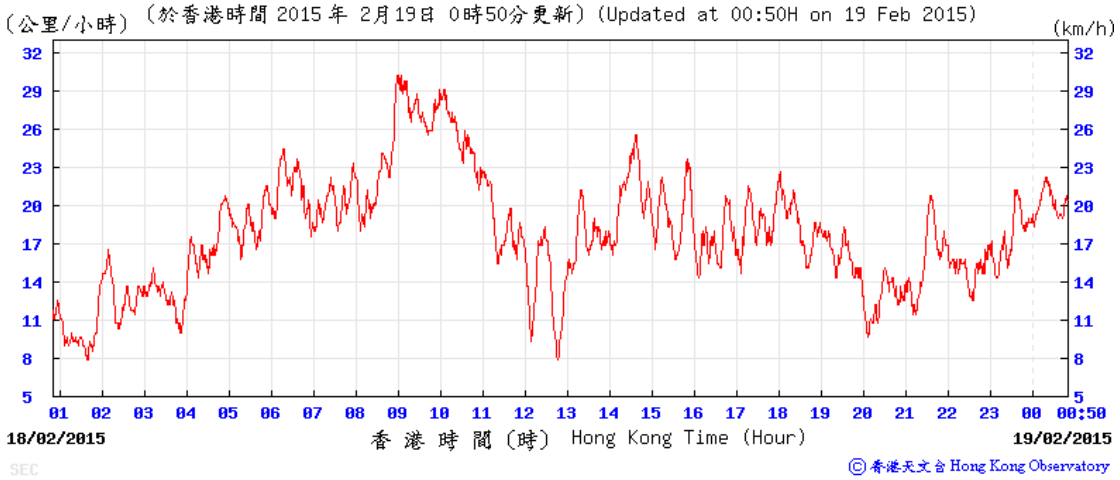


Wind Speed:

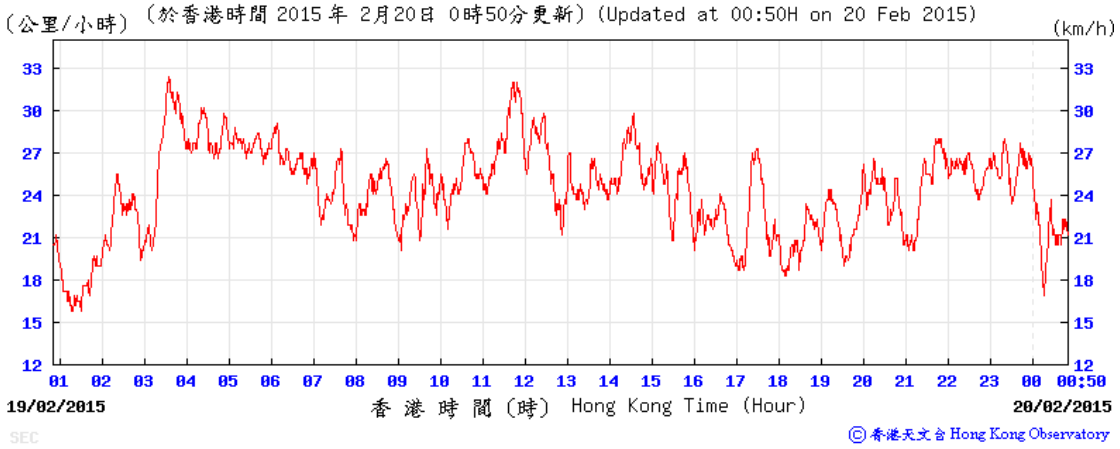


18-19 February 2015

Wind Speed:

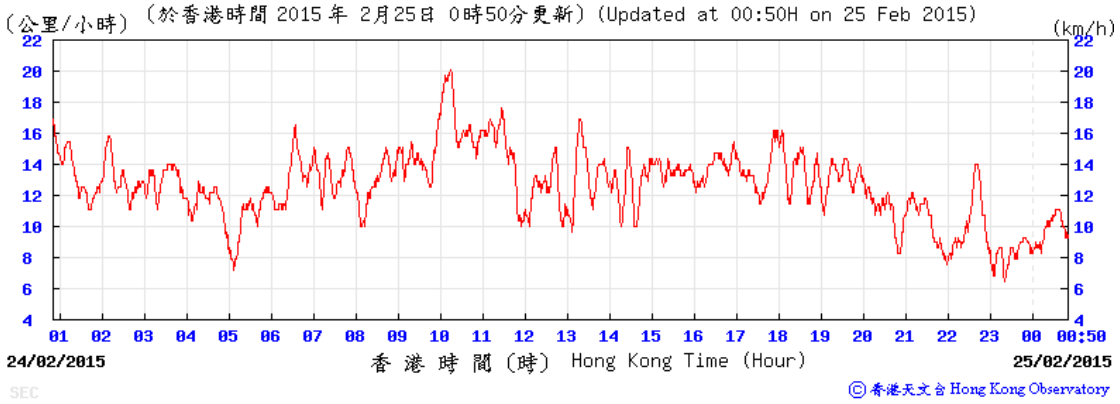


Wind Speed:

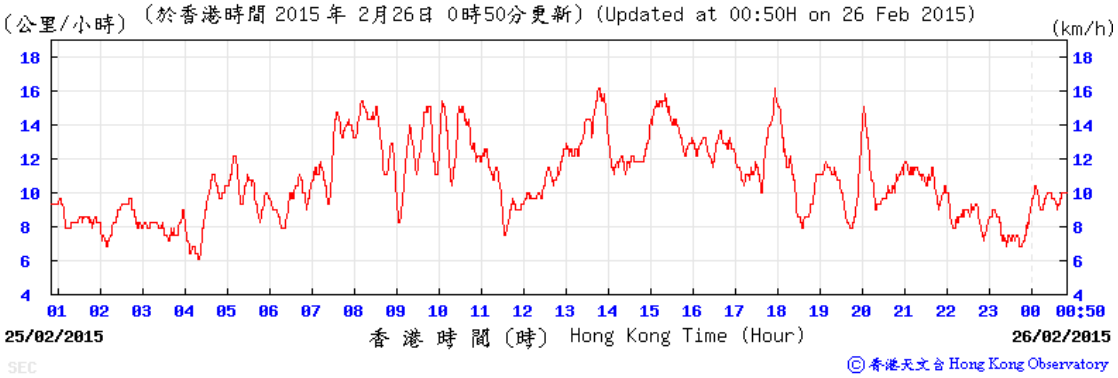


24-25 February 2015

Wind Speed:



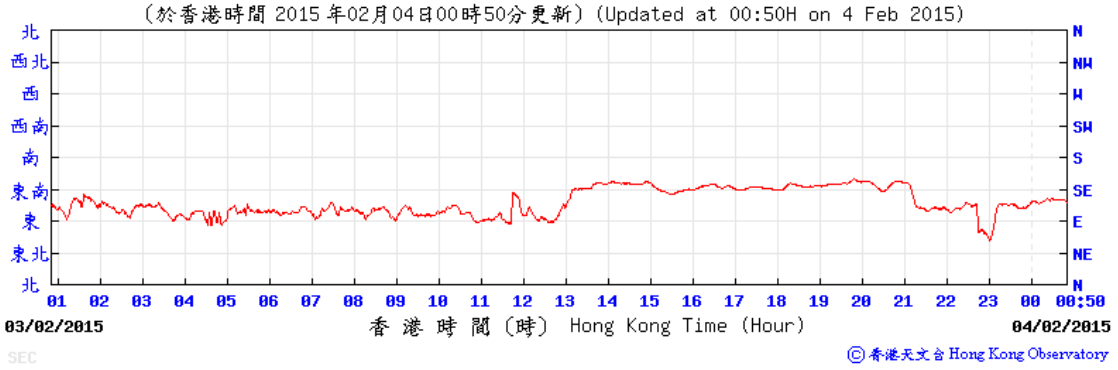
Wind Speed:



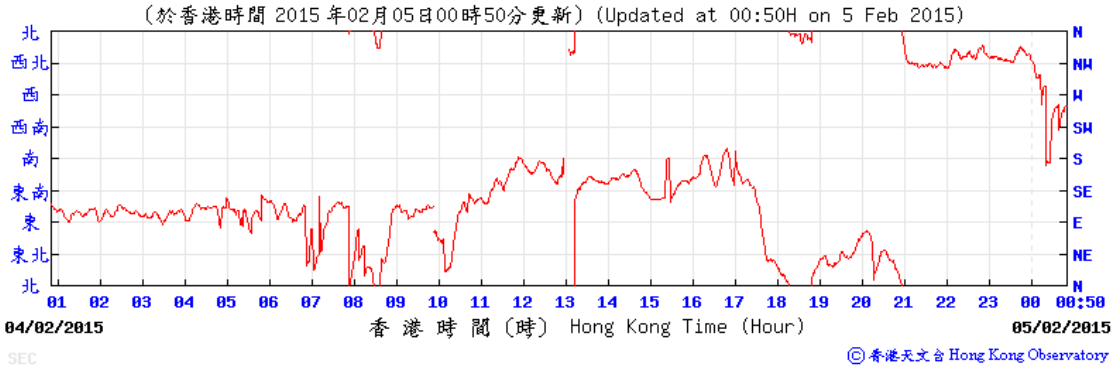
Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

3-4 February 2015

Wind Direction:

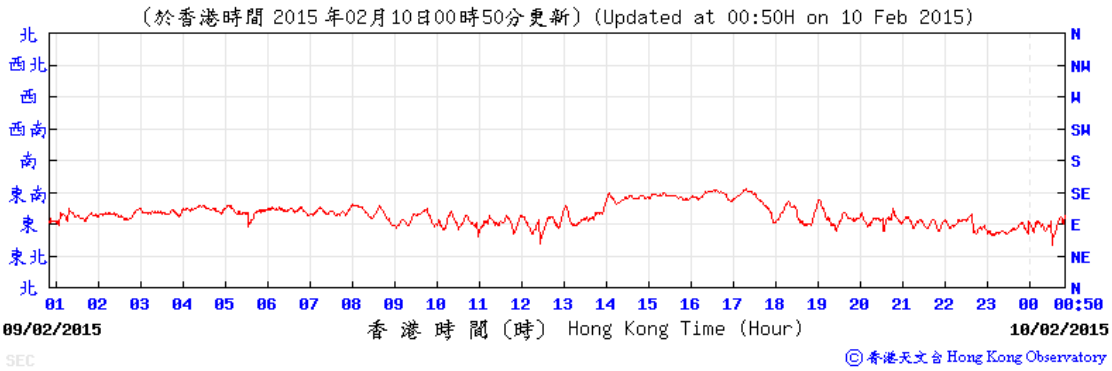


Wind Direction:

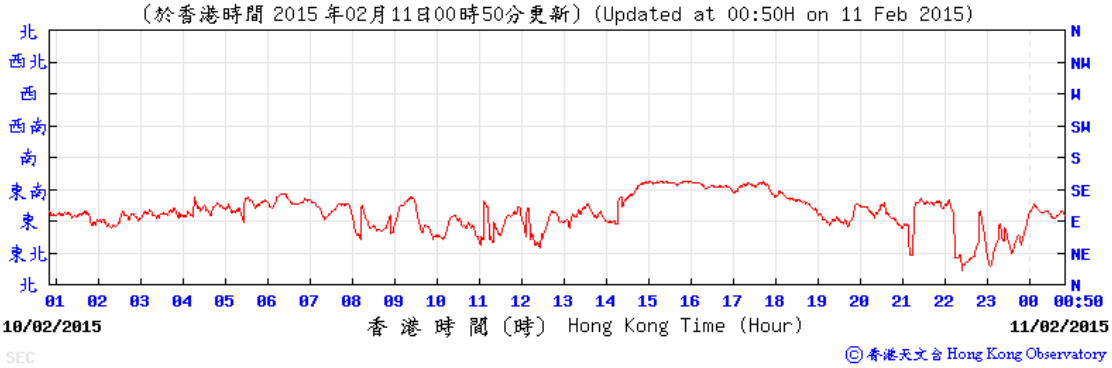


9-10 February 2015

Wind Direction:

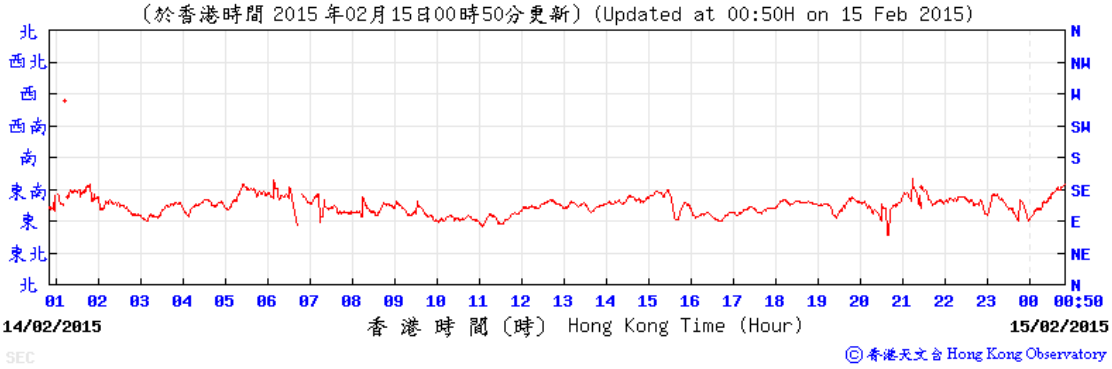


Wind Direction:

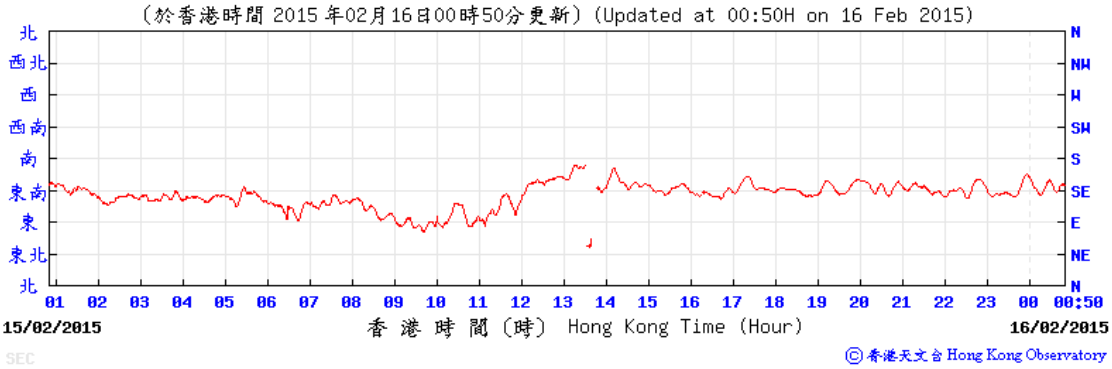


14-15 February 2015

Wind Direction:

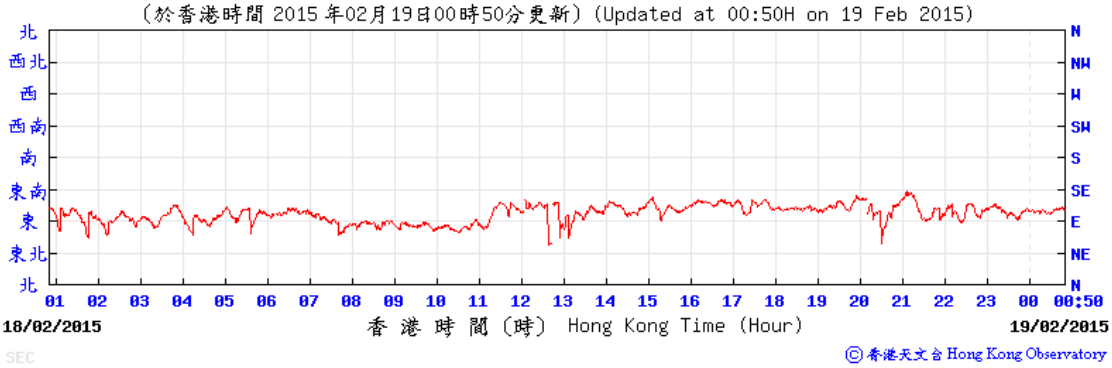


Wind Direction:

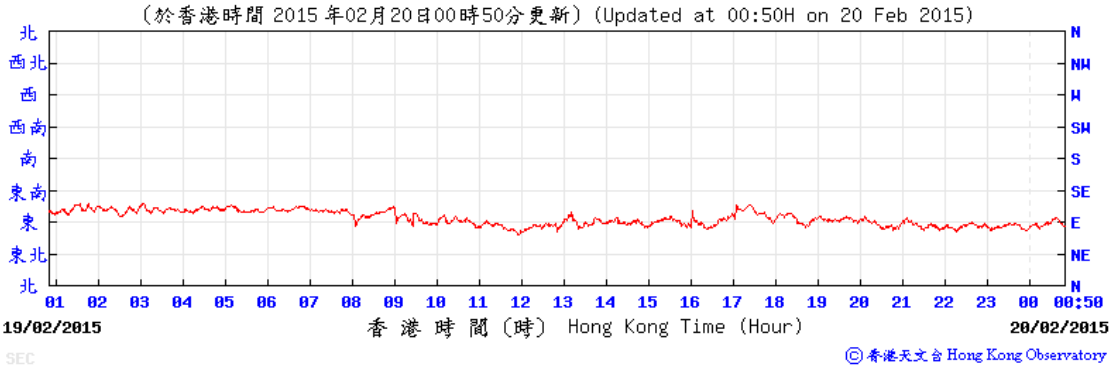


18-19 February 2015

Wind Direction:

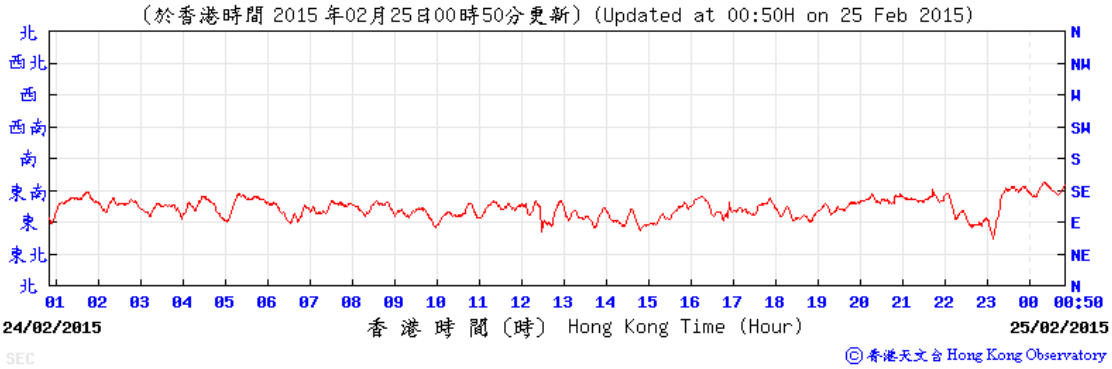


Wind Direction:

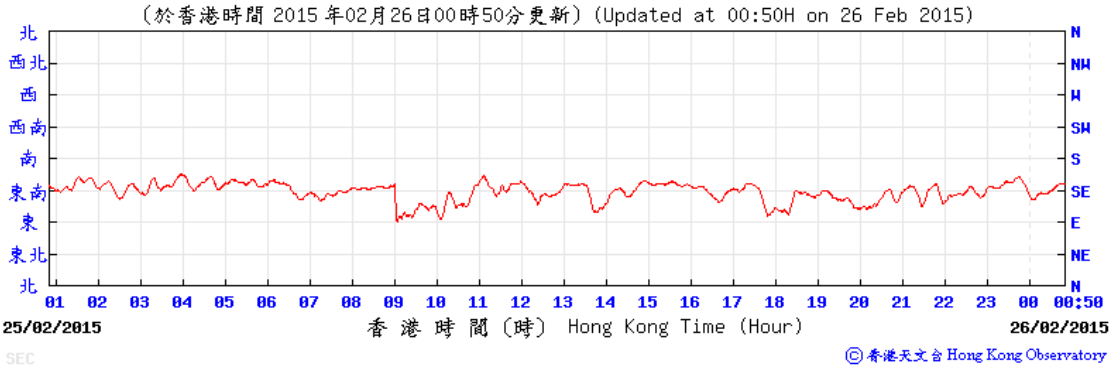


24-25 February 2015

Wind Direction:



Wind Direction:



Annex L

Investigation Reports

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	30 January 2015
Time	13:01-13:31; 13:31-14:01; 14:01-14:31 and 14:31-15:01
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, LAeq (30mins)
Action / Limit Levels	Limit level 80 dB(A)
Measured Level (With baseline level adjustment)	81.5 dB(A) (13:01-13:31); 85.4 dB(A) (13:31-14:01); 84 dB(A) (14:01-14:31) and 81.4 dB(A) (14:31-15:01)
Possible reason	Based on the site record on 30 January 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, roof-slab construction & excavation and shear pin installation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 30 January 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	N/A

Prepared by: Pako Yu, 1109 ET Consultant
Date 9 February 2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	30 January 2015
Time	13:01-13:31; 13:31-14:01 and 14:01-14:31
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, LAeq (30mins)
Action / Limit Levels	Limit level 81 dB(A)
Measured Level (With baseline level adjustment)	81.5 dB(A) (13:01-13:31); 85.4 dB(A) (13:31-14:01) and 84 dB(A) (14:01-14:31)
Possible reason	Based on the site record on 30 January 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, roof-slab construction & excavation and shear pin installation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 30 January 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	N/A

Prepared by: Pako Yu, 1109 ET Consultant
Date 9 February 2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	30 January 2015
Time	13:01-13:31; 13:31-14:01 and 14:01-14:31; 14:31-15:01; 15:31-16:01 and 16:01-16:31
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, LAeq (30mins)
Action / Limit Levels	Limit level 79 dB(A)
Measured Level (With baseline level adjustment)	81.5 dB(A) (13:01-13:31); 85.4 dB(A) (13:31-14:01); 84 dB(A) (14:01-14:31); 81.4 dB(A) (14:31-15:01); 80.8 dB(A)(15:31-16:01) and 80 dB(A) (16:01-16:31)
Possible reason	Based on the site record on 30 January 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, roof-slab construction & excavation and shear pin installation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 30 January 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	N/A

Prepared by: Pako Yu, 1109 ET Consultant
Date 9 February 2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	31 January 2015
Time	08:31-09:01; 09:01-09:31
Monitoring Location	MTW-12-3 (A) SKH Good Shepherd Primary School
Parameter	Noise, LAeq (30mins)
Action / Limit Levels	Limit level 80 dB(A)
Measured Level (With baseline level adjustment)	84.9 dB(A) (08:31-09:01) and 82.6 dB(A) (09:01-09:31);
Possible reason	Based on the site record on 31 January 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, roof-slab construction & excavation and shear pin installation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 31 January 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	N/A

Prepared by: Pako Yu, 1109 ET Consultant
Date 9 February 2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	31 January 2015
Time	08:31-09:01; 09:01-09:31
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, LAeq (30mins)
Action / Limit Levels	Limit level 81 dB(A)
Measured Level (With baseline level adjustment)	84.9 dB(A) (08:31-09:01) and 82.6 dB(A) (09:01-09:31);
Possible reason	Based on the site record on 31 January 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, roof-slab construction & excavation and shear pin installation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 31 January 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	N/A

Prepared by: Pako Yu, 1109 ET Consultant
Date 9 February 2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	31 January 2015
Time	08:01-08:31; 08:31-09:01; 09:01-09:31; 09:31-10:01; 10:01-10:31; 10:31-11:01; 11:01-11:31; 13:01-13:31; 13:31-14:01 and 14:01-14:31
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, LAeq (30mins)
Action / Limit Levels	Limit level 79 dB(A)
Measured Level (With baseline level adjustment)	79.6 dB(A) (08:01-08:31); 84.9 dB(A) (08:31-09:01); 82.6 dB(A) (09:01-09:31); 80.1 dB(A) (09:31-10:01); 81 dB(A)(10:01-10:31); 80.4 dB(A) (10:31-11:01); 82.4 dB(A) (11:01-11:31); 80 dB(A) (13:01-13:31); 79.6 dB(A) (13:31-14:01) and 80.1 dB(A) (14:01-14:31)
Possible reason	Based on the site record on 31 January 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, roof-slab construction & excavation and shear pin installation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 31 January 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work.

	2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigation the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	N/A

Prepared by: Pako Yu, 1109 ET Consultant
Date 9 February 2015

Investigation Report of Environmental Quality Limit Exceedance

Date	2 February 2015
Time	08:01-08:31; 08:31-09:01; 10:01-10:31; 10:31-11:01; 11:01-11:31; 12:54-13:24; 13:24-13:54; and 13:54-14:24.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	82.1 dB(A) (08:01-08:31); 82.4 dB(A) (08:31-09:01); 81.8 dB(A) (10:01-10:31); 82.5 dB(A) (10:31-11:01); 82.9 dB(A) (11:01-11:31); 82.4 dB(A) (12:54-13:24); 82.5 dB(A) (13:24-13:54); 83.1 dB(A) (13:54-14:24).
Possible reason	Based on the site record on 2 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 2 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections

	twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 10-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	2 February 2015
Time	08:01-08:31; 08:31-09:01; 09:01-09:31; 09:31-10:01; 10:01-10:31; 10:31-11:01; 11:01-11:31; 12:54-13:24; 13:24-13:54; and 13:54-14:24.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	82.1 dB(A) (08:01-08:31); 82.4 dB(A) (08:31-09:01); 81.4 dB(A) (09:01-09:31); 79.7 dB(A) (09:31-10:01); 81.8 dB(A) (10:01-10:31); 82.5 dB(A) (10:31-11:01); 82.9 dB(A) (11:01-11:31); 82.4 dB(A) (12:54-13:24); 82.5 dB(A) (13:24-13:54); 83.1 dB(A) (13:54-14:24).
Possible reason	Based on the site record on 2 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 2 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work.

	2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 10-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	3 February 2015
Time	09:54-10:24; 10:24-10:54; and 10:54-11:24.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	82.6 dB(A) (09:54-10:24); 82.2 dB(A) (10:24-10:54); 83.2 dB(A) (10:54-11:24).
Possible reason	Based on the site record on 3 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 3 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	3 February 2015
Time	07:54-08:24; 08:24-08:54; 08:54-09:24; 09:24-09:54; 09:54-10:24; 10:24-10:54; and 10:54-11:24.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	79.9 dB(A) (07:54-08:24); 80.2 dB(A) (08:24-08:54); 82.6 dB(A) (08:54-09:24); 81.1 dB(A) (09:24-09:54); 82.6 dB(A) (09:54-10:24); 82.2 dB(A) (10:24-10:54); 83.2 dB(A) (10:54-11:24).
Possible reason	Based on the site record on 3 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 3 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to

	collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	4 February 2015
Time	08:54-09:24; 09:24-09:54; 10:24-10:54; 10:54-11:24; 12:54-13:24; 13:24-13:54; 13:54-14:24; 14:24-14:54; 14:54-15:24; 15:24-15:54; 15:54-16:24; and 16:24-16:54.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	82.7 dB(A) (08:54-09:24); 83.5 dB(A) (09:24-09:54); 84.8 dB(A) (10:24-10:54); 82.6 dB(A) (10:54-11:24); 82.6 dB(A) (12:54-13:24); 86.3 dB(A) (13:24-13:54); 83.6 dB(A) (13:54-14:24); 85.8 dB(A) (14:24-14:54); 86.7 dB(A) (14:54-15:24); 82.7 dB(A) (15:24-15:54); 82.9 dB(A) (15:54-16:24); 85.5 dB(A) (16:24-16:54).
Possible reason	Based on the site record on 4 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; pre-drilling, tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 4 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out

	noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	4 February 2015
Time	08:24-08:54; 08:54-09:24; 09:24-09:54; 09:54-10:24; 10:24-10:54; 10:54-11:24; 12:54-13:24; 13:24-13:54; 13:54-14:24; 14:24-14:54; 14:54-15:24; 15:24-15:54; 15:54-16:24; 16:24-16:54; 17:54-18:24; and 18:24-18:54.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	80.4 dB(A) (08:24-08:54); 82.7 dB(A) (08:54-09:24); 83.5 dB(A) (09:24-09:54); 81 dB(A) (09:54-10:24); 84.8 dB(A) (10:24-10:54); 82.6 dB(A) (10:54-11:24); 82.6 dB(A) (12:54-13:24); 86.3 dB(A) (13:24-13:54); 83.6 dB(A) (13:54-14:24); 85.8 dB(A) (14:24-14:54); 86.7 dB(A) (14:54-15:24); 82.7 dB(A) (15:24-15:54); 82.9 dB(A) (15:54-16:24); 85.5 dB(A) (16:24-16:54); 81.8 dB(A) (17:54-18:24); 80.4 dB(A) (18:24-18:54).
Possible reason	Based on the site record on 4 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; pre-drilling, tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 4 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.

Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	5 February 2015
Time	07:24-07:54; 07:54-08:24; 08:24-08:54; 08:54-09:24; 09:24-09:54; 09:54-10:24; and 10:24-10:54.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	82.9 dB(A) (07:24-07:54); 84.3 dB(A) (07:54-08:24); 81.5 dB(A) (08:24-08:54); 83.2 dB(A) (08:54-09:24); 83.7 dB(A) (09:24-09:54); 85.9 dB(A) (09:54-10:24); 85.3 dB(A) (10:24-10:54).
Possible reason	Based on the site record on 5 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 5 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to

	collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	5 February 2015
Time	07:24-07:54; 07:54-08:24; 08:24-08:54; 08:54-09:24; 09:24-09:54; 09:54-10:24; and 10:24-10:54.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	82.9 dB(A) (07:24-07:54); 84.3 dB(A) (07:54-08:24); 81.5 dB(A) (08:24-08:54); 83.2 dB(A) (08:54-09:24); 83.7 dB(A) (09:24-09:54); 85.9 dB(A) (09:54-10:24); 85.3 dB(A) (10:24-10:54).
Possible reason	Based on the site record on 5 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 5 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to

	collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	6 February 2015
Time	10:37-11:07; and 11:07-11:37.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	80.5 dB(A) (10:37-11:07); 81 dB(A) (11:07-11:37).
Possible reason	Based on the site record on 6 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 4 drill rigs. The above-mentioned construction works were continuously operating on 6 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	7 February 2015
Time	09:37-10:07; 10:07-10:37; and 10:37-11:07.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	84.8 dB(A) (09:37-10:07); 82.7 dB(A) (10:07-10:37); 82.9 dB(A) (10:37-11:07).
Possible reason	Based on the site record on 7 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 3 drill rigs. The above-mentioned construction works were continuously operating on 7 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	7 February 2015
Time	08:37-09:07; 09:07-09:37; 09:37-10:07; 10:07-10:37; 10:37-11:07; 11:07-11:37; 12:07-12:37; 12:37-13:07; and 13:07-13:37.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	80.1 dB(A) (08:37-09:07); 81.4 dB(A) (09:07-09:37); 84.8 dB(A) (09:37-10:07); 82.7 dB(A) (10:07-10:37); 82.9 dB(A) (10:37-11:07); 79.9 dB(A) (11:07-11:37); 79.5 dB(A) (12:07-12:37); 81.3 dB(A) (12:37-13:07); 80.6 dB(A) (13:07-13:37).
Possible reason	Based on the site record on 7 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 3 drill rigs. The above-mentioned construction works were continuously operating on 7 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work.

	2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 11-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	9 February 2015
Time	07:37-08:07; 08:07-08:37; 08:37-09:07; 09:07-09:37; 09:37-10:07; 10:07-10:37; 10:37-11:07; 11:07-11:37; 11:53-12:23; 12:23-12:53; 12:53-13:23; 13:23-13:53; 13:53-14:23; 14:23-14:53; 14:53-15:23; 15:23-15:53; and 15:53-16:23.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.8 dB(A) (07:37-08:07); 85.9 dB(A) (08:07-08:37); 86.1 dB(A) (08:37-09:07); 84.7 dB(A) (09:07-09:37); 84.3 dB(A) (09:37-10:07); 83 dB(A) (10:07-10:37); 85.7 dB(A) (10:37-11:07); 85.4 dB(A) (11:07-11:37); 82.4 dB(A) (11:53-12:23); 84.2 dB(A) (12:23-12:53); 83.7 dB(A) (12:53-13:23); 82.1 dB(A) (13:23-13:53); 82.7 dB(A) (13:53-14:23); 83.7 dB(A) (14:23-14:53); 82.1 dB(A) (14:53-15:23); 84.6 dB(A) (15:23-15:53); 83.4 dB(A) (15:53-16:23).
Possible reason	Based on the site record on 9 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, concrete casting for temporary footpath decking, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 2 drill rigs. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work.

	2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 16-February-2015

Investigation Report of Environmental Quality Limit Exceedance

Date	9 February 2015
Time	07:37-08:07; 08:07-08:37; 08:37-09:07; 09:07-09:37; 09:37-10:07; 10:07-10:37; 10:37-11:07; 11:07-11:37; 11:53-12:23; 12:23-12:53; 12:53-13:23; 13:23-13:53; 13:53-14:23; 14:23-14:53; 14:53-15:23; 15:23-15:53; and 15:53-16:23.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	83.8 dB(A) (07:37-08:07); 85.9 dB(A) (08:07-08:37); 86.1 dB(A) (08:37-09:07); 84.7 dB(A) (09:07-09:37); 84.3 dB(A) (09:37-10:07); 83 dB(A) (10:07-10:37); 85.7 dB(A) (10:37-11:07); 85.4 dB(A) (11:07-11:37); 82.4 dB(A) (11:53-12:23); 84.2 dB(A) (12:23-12:53); 83.7 dB(A) (12:53-13:23); 82.1 dB(A) (13:23-13:53); 82.7 dB(A) (13:53-14:23); 83.7 dB(A) (14:23-14:53); 82.1 dB(A) (14:53-15:23); 84.6 dB(A) (15:23-15:53); 83.4 dB(A) (15:53-16:23).
Possible reason	Based on the site record on 9 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, concrete casting for temporary footpath decking, roof-slab construction and excavation in W6 works area; sewage diversion and pipe piling in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 6 backhoes, 1 crawler crane, and 2 drill rigs. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work.

	2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed. 3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 16-February-2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	17 February 2015
Time	09:40-10:10; and 10:10-10:40.
Monitoring Location	MTW-12-11 (A) SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 81 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.9 dB(A) (09:40-10:10); 82.6 dB(A) (10:10-10:40).
Possible reason	Based on the site record on 17 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; shaft construction in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 2 backhoes, 1 piling rig, and 2 drill rigs. The above-mentioned construction works were continuously operating on 17 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 27-February-2015

Samsung – Hsin Chong Joint Venture
SCL 1109 – Shatin to Central Link – Stations and Tunnels of Kowloon City Section

Investigation Report of Environmental Quality Limit Exceedance

Date	17 February 2015
Time	09:40-10:10; and 10:10-10:40.
Monitoring Location	MTW-16-1 SKH Good Shepherd Primary School
Parameter	Noise, $L_{Aeq\ (30mins)}$
Action / Limit Levels	Limit level 79 dB(A) (according to the latest Continuous Noise Monitoring Plan (CNMP))
Measured Level (With baseline level adjustment)	81.9 dB(A) (09:40-10:10); 82.6 dB(A) (10:10-10:40).
Possible reason	Based on the site record on 17 February 2015, the potential noise sources from the Project works included roof-slab construction in W3 works area; tunnel eye grouting, shear pin installation, roof-slab construction and excavation in W6 works area; shaft construction in E3 works area; as well as roof-slab construction along MTW Road. The construction equipment used during the exceedance period included 2 backhoes, 1 piling rig, and 2 drill rigs. The above-mentioned construction works were continuously operating on 17 February 2015 (before and after the exceedance period). However, the noise levels were all below the Action/Limit Levels before and after the exceedance period. Having considered the above, construction works of 1109 may have contributed to the exceedances recorded.
Action Taken / Action to be Taken	1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barriers would be erected on site when carrying out noisy work. 2. The Contractor has conducted site inspections twice a day since the issue of this NOE, to collect details regarding the site activities in vicinity to the concerned works area and to check if any further mitigation measure is needed.

	3. The Contractor will continue to provide sufficient and necessary mitigation measures to mitigate the noise to avoid any exceedance of the Action/Limit Level. 4. Briefing on environmental issues before works has been provided to frontline workers and keeps reminding the workers to implement noise mitigation measures. The Contractor will strictly implement relevant and appropriate noise mitigation measures to minimise the noise generation as far as possible and avoid exceedance of the Action/ Limit Level or causing noise disturbance where practicable.
Remarks	

Prepared by: Winnie Ko, 1109 ET Leader
Date 27-February-2015

Details of Findings

Project	SCL 1109
Date	20 January 2015
Time	--
EPD Reference No	15-01611
Description of the Complaint	A complaint was referred by EPD regarding noise generated from construction work (including restricted hour) affecting his/her health in Kiang Su Street.
Action/Limit Levels	Since a documented complaint was received, the Action Level of Noise was triggered.
Possible reason	Traffic noise and /or construction noise from the construction works in vicinity of Kiang Su Street.
Actions taken/ to be taken	The following actions have been taken: 1. Noise fabrics as barrier had been erected on the site hoarding. Movable noise barrier will be erected when noisy works are carried out. 2. The Contractor has arranged noise measurement ($L_{Aeq, 30min}$) at Kiang Su Street to closely monitor the actual impact on the 4 – 5 February 2015. No exceedance was recorded. 3. The results from the weekly impact noise monitoring conducted at Kong Yiu Mansion have also been reviewed and no exceedance to the limit level was recorded. 4. The result from the continuous noise monitoring conducted at Lucky Building has also been reviewed and no exceedance to the limit level was recorded. 5. For weekly inspections, as well as a joint inspection with the IEC were conducted. There was no adverse comment or observation recorded from the inspection team.
Remarks	--

Annex K – Waste Flow Table

Monthly Summary Waste Flow Table for the year 2012-2014

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					Imported Fill
	Total Quantity Generated	Hard Rocks and Large Broken Concrete (See Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill (See Note 5)	Inert C&D Materials Delivered to 1108A Kai Tai Barging Facilities (See Note 6)	Metals	Paper/ cardboard packaging	Plastics (See Note 2)	Chemical Waste (See Note 10)	Others, e.g. general refuse (See Note 5)	
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in'000kg)	(in '000m³)	(in '000m³)
Sep 2012	0.004	0.000	0.000	0.000	0.004	-	0.000	0.000	5.300	0.000	0.144	0.000
Oct 2012	0.000	0.000	0.000	0.000	0.000	-	12.800	0.242	0.013	0.000	0.514	0.000
Nov 2012	0.624	0.000	0.605	0.000	0.019	-	0.000	0.154	0.002	0.000	0.172	6.804
Dec 2012	16.844	0.000	0.000	0.000	0.005	16.839	0.000	0.000	0.000	0.000	0.057	0.000
Sub-total	17.472	0.000	0.605	0.000	0.028	16.839	12.800	0.396	5.315	0.000	0.887	6.804
Jan 2013	19.828	0.000	0.000	0.000	0.006	19.822	0.000	0.036 (See Note 7)	0.416	0.000	0.081 (See Note 8)	0.000
Feb 2013	8.372	0.000	0.000	0.000	0.005	8.366	0.000	0.036	0.443	0.000	0.021	0.000
Mar 2013	14.673	0.000	0.000	0.000	0.000	14.673	0.000	0.036	0.463	0.000	0.064 (See Note 9)	0.000
Apr 2013	13.557	0.000	0.000	0.000	0.025	13.533	0.000	0.036	0.148	0.000	0.086	0.000
May 2013	9.969	0.000	0.000	0.000	0.000	9.969	0.000	0.000	0.481	0.000	0.065	0.000
Jun 2013	5.538	0.000	0.000	0.000	0.000	5.538	0.000	0.045	0.784	0.32 (See Note 11)	0.065	0.000
Jul 2013	6.116	0.000	0.000	0.000	0.000	6.116	0.000	0.063	0.868	0.400	0.058	0.000
Aug 2013	11.537	0.000	0.000	0.000	0.000	11.537	0.000	0.068	0.464	0.000	0.071	0.000
Sep 2013	4.641	0.000	0.000	0.000	0.000	4.641	0.000	0.027	0.522	0.000	0.110	0.000
Oct 2013	9.708	0.000	0.000	0.000	0.000	9.708	0.000	0.036	0.348	0.000	0.086	0.000
Nov 2013	7.199	0.000	0.000	0.000	0.000	7.199	0.000	0.068	0.506	0.000	0.678	0.000
Dec 2013	6.973	0.000	0.000	0.000	0.000	6.973	0.000	0.090	0.383	0.000	1.344	0.000
Sub-total	118.111	0.000	0.000	0.000	0.036	118.075	0.000	0.541	5.826	0.720	2.729	0.000
Jan 2014	11.870	0.000	0.000	0.000	0.000	11.870	0.000	0.121	0.270	0.400	0.100	0.000
Feb 2014	15.316	0.000	0.000	0.000	0.000	15.316	0.000	0.067	0.396	0.000	0.095	0.000
Mar 2014	18.734	0.000	0.000	0.000	0.000	18.734	0.000	0.067	0.320	0.200	0.107	0.000
Apr 2014	23.539	0.000	0.000	0.000	0.000	23.539	0.000	0.000	0.344	0.415	0.064	0.000
May 2014	11.327	0.000	0.000	0.000	0.000	11.327	0.000	0.000	0.371	0.000	0.130	0.000
Jun 2014	10.440	0.000	0.000	0.000	0.000	10.440	0.000	0.090	0.332	0.000	0.164	0.000
Jul 2014	2.103	0.000	0.000	0.000	0.000	2.103	0.000	0.099	0.544	0.200	0.131	0.000
Aug 2014	1.446	0.000	0.000	0.000	0.000	1.446	0.000	0.189	0.584	0.000	0.129	0.000
Sep 2014	1.980	0.000	0.000	0.000	0.000	1.980	0.000	0.225	0.284	0.000	0.099	0.000
Oct 2014	16.902	0.000	0.000	0.000	0.000	16.902	0.000	0.050	0.492	1.120	0.109	0.000
Nov 2014	27.687	0.000	0.000	0.000	0.000	27.687	0.000	0.140	0.352	0.000	0.083	0.000
Dec 2014	44.771	0.000	0.000	0.000	0.000	44.771	0.000	0.090	0.284	0.400	0.103	0.000
Sub-total	186.115	0.000	0.000	0.000	0.000	186.115	0.000	1.048	4.573	2.335	1.314	0.000
Jan 2015	64.165	0.000	0.000	0.266	0.000	63.899	0.000	0.077	0.328	0.180	0.150	0.000
Feb 2015	46.884	0.000	0.000	2.599	0.000	44.285	0.000	0.090	3.102	0.000	0.106	0.000
Sub-total	111.049	0.000	0.000	2.865	0.000	108.184	0.000	0.167	3.430	0.180	0.256	0.000
Total	432.748	0.000	0.605	2.865	0.064	429.213	12.800	2.152	19.144	3.235	5.186	6.804

Notes:

-1 The performance targets are given below:
- All excavated materials to be sorted for recovering the inert portion of C&D materials, e.g. hard rocks, soil and broken concrete, for reuse on the Site or disposal to designated outlets;
- All metallic waste to be recovered for collection by recycling contractors;
- All cardboard and paper packaging (for plant, equipment and materials) to be recovered, properly stockpiled in dry and covered condition to prevent cross contamination;
- All chemical wastes to be collected and properly disposed of by specialist contractors; and
- All demolition debris to be stored to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other fitting / materials that have established recycling outlets.

-2 Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

-3 Broken concrete for recycling into aggregates.

-4 The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

-5 Density Assumption: 1.6(kg/l) for Public Fill and 0.9(kg/l) for General Refuse

-6 Inert C&D Material was delivered to contract 1108A from 10-Dec-2012.

-7 The quantity of paper/ cardboard packaging generated in January 2013 was updated by the Contractor in March 2013.

-8 The quantity of general refuse generated in January 2013 was updated by the Contractor in March 2013.

-9 The quantity of general refuse generated in March 2013 was updated by the Contractor in April 2013.

-10 Chemical waste includes waste oil. It is assumed density of waste oil to be 0.8 kg/L.

-11 The quantity of chemical waste generated in June 2013 was updated by the Contractor in August 2013.

Annex M

Environmental Complaint, Environmental Summon and Prosecution

Annex M Environmental Complaint, Environmental Summon and Prosecution Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
September 2012	0	0
October 2012	0	0
November 2012	0	0
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
June 2013	0	0
July 2013	0	0
August 2013	0	0
September 2013	0	0
October 2013	0	0
November 2013	0	0
December 2013	0	0

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
January 2014	0	0
February 2014	0	0
March 2014	0	0
April 2014	0	0
May 2014	0	0
June 2014	0	0
July 2014	0	0
August 2014	0	0
September 2014	1	0
October 2014	0	0
November 2014	0	0
December 2014	0	0
January 2015	3	0
February 2015	0	0
Overall Total	4	0

Appendix C

27th EM&A Report for Works Contract 1101 –
Ma On Shan Line Modification Works

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

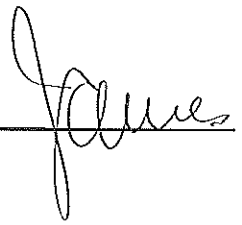
Monthly EM&A Report

[Period from 1 to 28 February 2015]

Works Contract 1101

Ma On Shan Modification Works

(March 2015)

Certified by: James Choi 

Position: Environmental Team Leader

Date: 13 March 2015

ANewR Consulting Limited

ANEWR

SCL Contract No. 1101

Ma On Shan Line Modification Works

Monthly EM&A Report (SCL) (February 2015)

for

Sun Fook Kong Joint Venture

Prepared By		Checked By		Approved for Issue
F So		A Lee		J Choi
Version	0		**Date**	3 March 2015

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EXECUTIVE SUMMARY

Sun Fook Kong Joint Venture (SFKJV) was awarded the Shatin to Central Link (SCL) Contract No. 1101 Ma On Shan Line (MOL) Modification Works (this Project). ANewR Consulting Limited (ANewR) was commissioned by SFKJV as the Environmental Team (ET) for undertaking the Environmental Monitoring and Audit (EM&A) works during the construction period. The works areas under this Project covered by Environmental Permit (EP-438/2012/H) for the SCL Tai Wai to Hung Hom Section (TAW-HUH) included works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

Construction Activities

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

Air Quality and Noise Monitoring

According to the EM&A Manual of SCL (TAW-HUH), there is no designated monitoring stations for work sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard.

Environmental Auditing

Weekly site inspections were carried out by ET to ensure proper implementation of environmental mitigation measures and compliance with environmental legislation. During the reporting month, a total of 4 site inspections were conducted and the joint site inspection with IEC was conducted on 12 February 2015. All observations, which were recorded in inspection checklist and together with the ET's recommendations, were passed to the Contractor and ER for necessary corrective action.

Waste Disposal

3.25 m^3 of general refuse was disposed of to NENT Landfill in the reporting month. No inert C&D materials were disposed in the reporting month. No chemical waste was disposed in the reporting month.

Complaint Log

No environmental complaint was received during the reporting month.

Notification of Summon and Successful Prosecution

No Notification of Summons or successful prosecution was received during the reporting month.

Future Key Issues

No construction activity is scheduled in the upcoming months.

Reporting Changes

No reporting change was observed during the reporting month.

1. INTRODUCTION

1.1 Background

The Shatin to Central Link - Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an extension of the Ma On Shan Line (MOL) and is approximately 11 km long. It links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts and this Works Contract 1101 covers the works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard of which EM&A programme according to the EM&A Manual of SCL (TAW-HUH) should be implemented.

ANewR Consulting Limited (ANewR) was commissioned by Sun Fook Kong Joint Venture (SFKJV), the main contractor as the Environmental Team (ET) during the construction phase of SCL(TAW-HUH) for Contract No. 1101.

1.2 Description of the Construction Works

The major works of Contract No. 1101 includes construction of noise cover over the viaduct at Tai Wai Mei Tin Road. The works was completed in September 2013.

The works areas including works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard are shown in ***Appendix A*** and the updated construction programme of the construction works is shown in ***Appendix B***.

1.3 Purpose of this Report

This is the 27th monthly EM&A report summarising audit findings of the EM&A program carried out according to EM&A Manual for SCL (TAW-HUH) by ET during the reporting month in February 2015.

As there is no designated air quality, noise and water quality monitoring stations for works sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard, this report mainly summarises the waste management details, site inspections findings, environmental complaint records and investigations, and any notification of summons, prosecutions and corrective actions in the reporting month. This monthly EM&A Report is organised as follows:

- Section 1 Introduction
- Section 2 Project Information
- Section 3 Waste Management
- Section 4 Site Inspection
- Section 5 Environmental Complaint
- Section 6 Summary of Notification of Summons, Successful Prosecutions and Corrective Actions
- Section 7 Future Key Issues

2. PROJECT INFORMATION

2.1 Project Organization and Management Structure

The organization chart, contact detail and lines of communication with respect to the environmental management are shown in ***Appendix C***.

2.2 Construction Activities

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

Offsite works areas at To Shek Storage Yard and Shek Mun Storage Yard were only used for storage of construction materials and no construction activities were carried out.

2.3 Status of License, Permit and Submissions under Environmental Protection Requirements

A summary of relevant permits and licences related to environmental protection for the Construction Works and submission under EP-438/2012/H for contract no. 1101 is given in *Table 1* and *Table 2* in ***Appendix D***.

3. WASTE MANAGEMENT

The status of waste management in the reporting month is summarized in the following table. Details of the quantities of waste materials generated during the reporting month are shown in the waste flow table given in ***Appendix E***.

Table 3.1 Waste Generated in the Reporting Month

Waste Type	Quantity this month	Cumulative-to-Date
Inert C&D materials disposed	0	149.50 m^3
Inert C&D materials recycled	0	0
Non-inert C&D materials disposed	0	0
Non-inert C&D materials recycled	0	68.00 m^3
General waste disposed of to NENT Landfill	3.25 m^3	302.50 m^3
Chemical waste disposed of to CWTC or collected by licenced collector	0	1400.00 kg

4. SITE INSPECTION

Weekly site inspections were carried out at the sites on 4, 12, 17 and 25 February 2015. The joint site inspection with IEC was carried out on 12 February 2015. All observations together with the appropriate recommended mitigation measures where necessary were recorded in the site inspection checklists that were passed to the Contractor. Major environmental deficiencies observed during the site inspection and recommendations made by the ET are given in ***Table 4.1***.

Table 4.1 Summary of Major Environmental Deficiencies in the Reporting Month

Category	Date	ET's Observations and Recommendations	Follow-up Action
Waste Management	17 February 2015	At To Shek Storage Yard – The contractor was reminded to cover waste storage area with tarpaulin sheet. (Reminder was raised on 17.02.2015)	At To Shek Storage Yard – Waste storage area was covered with tarpaulin sheet on 25.02.2015. Reminder raised on 17.02.2015 closed.
	28 January 2015	At Shek Mun Storage Yard – Construction wastes mixing with construction materials was observed on the ground. The contractor was advised to provide designated area for storage of construction waste and perform on-site sorting. (Remark was raised on 28.01.2015)	At Shek Mun Storage Yard – Construction wastes were removed and designated storage area was provided on-site on 04.02.2015. Last observation raised on 28.01.2015 closed.
Water Quality	28 January 2015	At Shek Mun Storage Yard – Inefficiency of wheel washing facility was observed. The contractor was advised to replace the muddy water with clean water in wheel washing facilities and maintain it regularly. (Remark was raised on 28.01.2015)	At Shek Mun Storage Yard – Muddy water was replaced with clean water in wheel washing facility on 04.02.2015. Last observation raised on 28.01.2015 closed.
Air Quality	28 January 2015	At Shek Mun Storage Yard – The contractor was reminded to provide a proper hoarding with tarpaulin sheeting for dust and noise suppression to nearby sensitive receiver.	At Sek Mun Storage Yard – A proper hoarding with tarpaulin sheeting was provided on-site on 04.2.2015

		(Reminder was raised on 28.01.2015)	Reminder raised on 28.01.2015 closed.

During site inspections in the reporting month, no non-conformance of implementation of environmental mitigation measures was identified. All relevant environmental mitigation measures for construction stages as stated in the EM&A Manual of SCL (TAW-HUH) was carried out properly in the reporting month. The mitigation measures implementation schedule is shown in ***Appendix F***.

5. ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting month.

A log of environmental complaints is shown in ***Appendix G***. Cumulative statistic of environmental complaints is shown in ***Table 5.1***.

Table 5.1 Cumulative Statistic of Environmental Complaint

Compliant Received in the Reporting Month	Cumulative Number of Compliant
0	0

6. SUMMARY OF NOTIFICATION OF SUMMONS, SUCCESSFUL PROSECUTIONS AND CORRECTIVE ACTIONS

Neither Notification of Summon nor successful prosecution was received by the Contractor during the reporting month.

7. FUTURE KEY ISSUES

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

8. CONCLUSION

Construction works were completed at Tai Wai Mei Tin Road in September 2013.

According to the EM&A Manual of SCL (TAW-HUH), there is no designated monitoring stations for work sites at Tai Wai Mei Tin Road, To Shek Storage Yard and Shek Mun Storage Yard.

No environmental complaint was recorded in the reporting month.

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

4 numbers of environmental site inspections were carried out in February 2015.

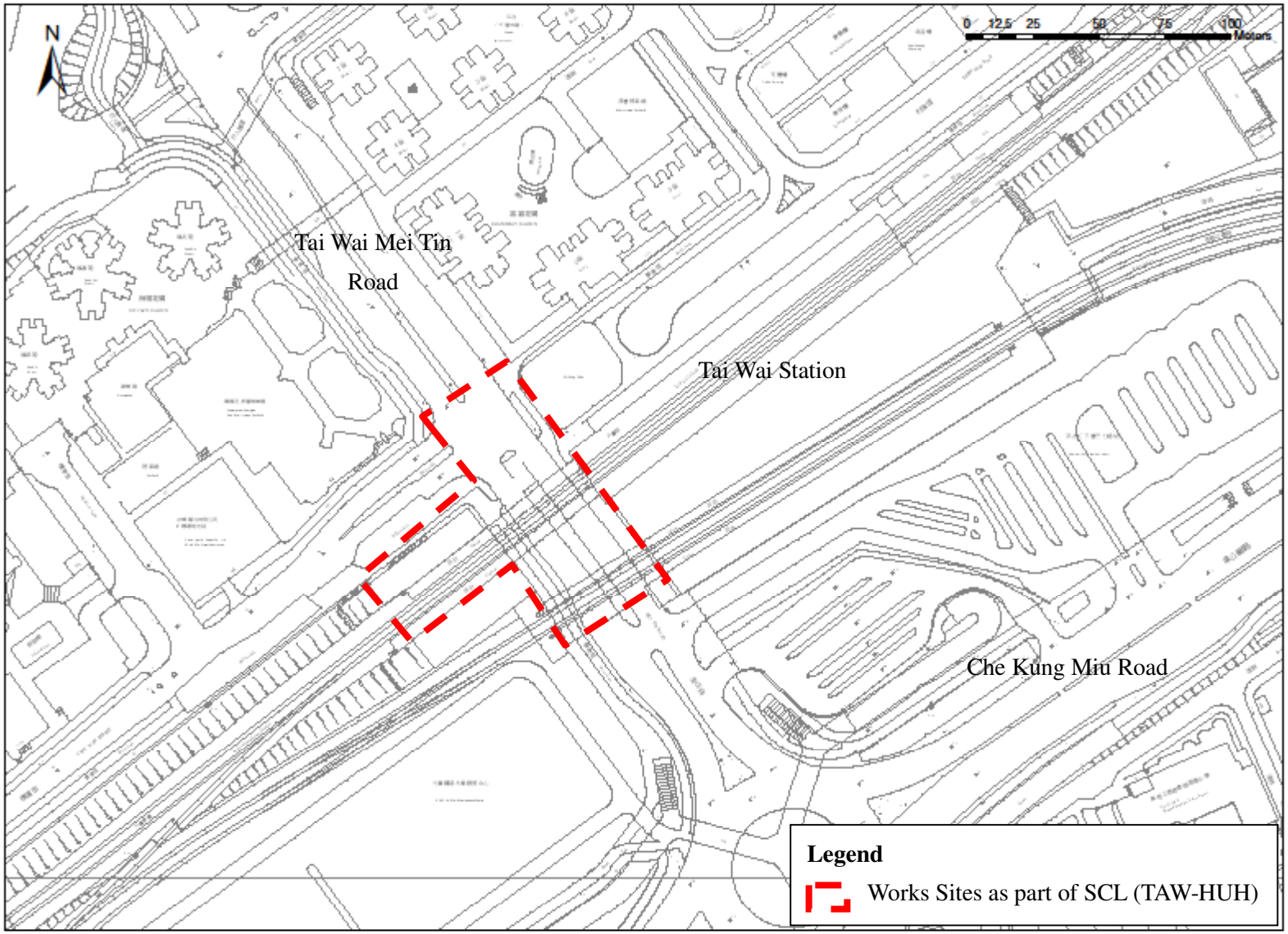
Recommendations for follow-up actions were given to the Contractor for the deficiencies identified during the site audit as following:

Waste Management

- Implement effective measures to enhance waste management.

APPENDIX A

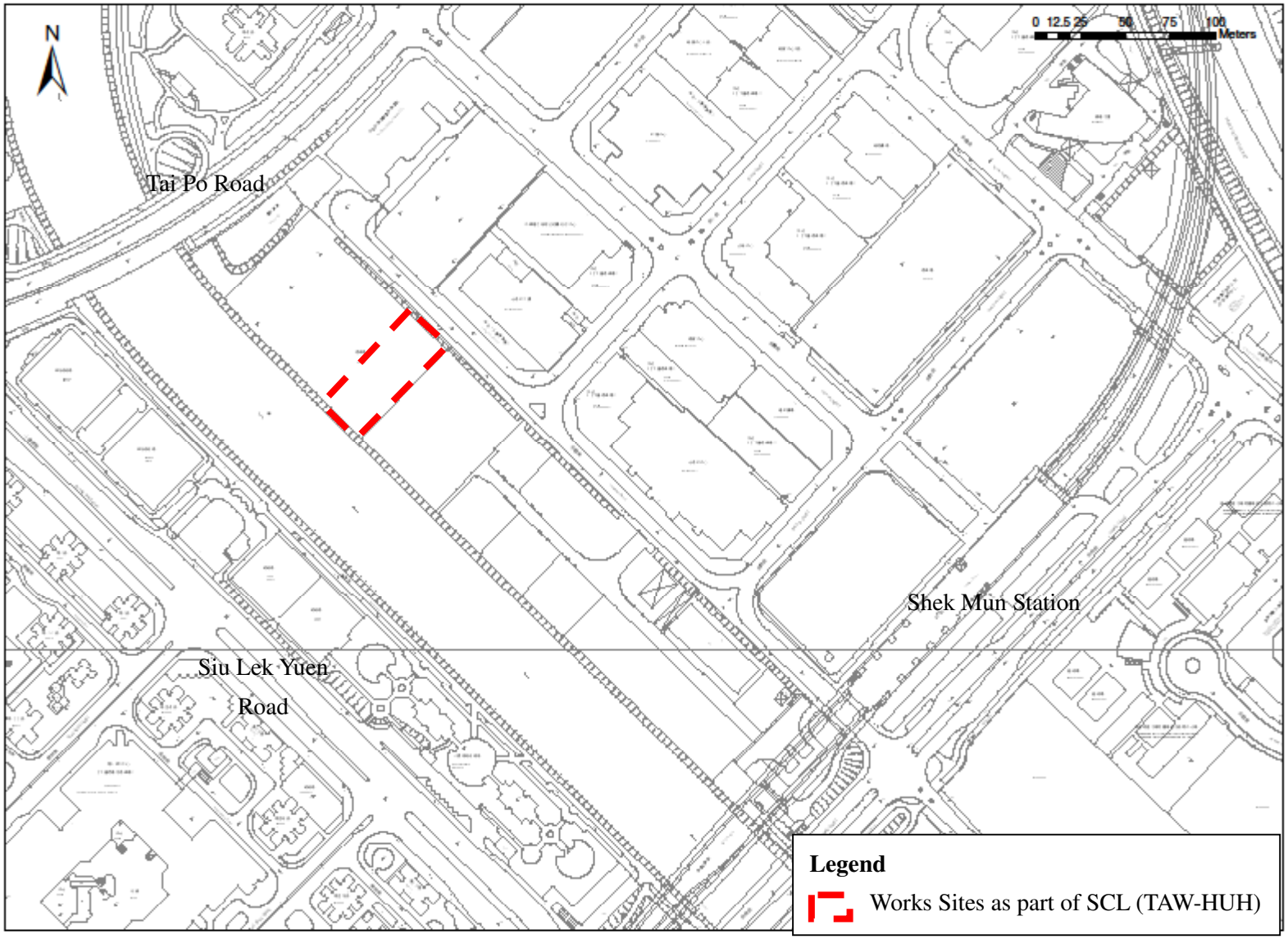
LOCATION PLAN OF WORKS AREA AND STORAGE YARD



ANEWR

Location Plan of Works Area and Storage Yard
Tai Wai Mei Tin Road

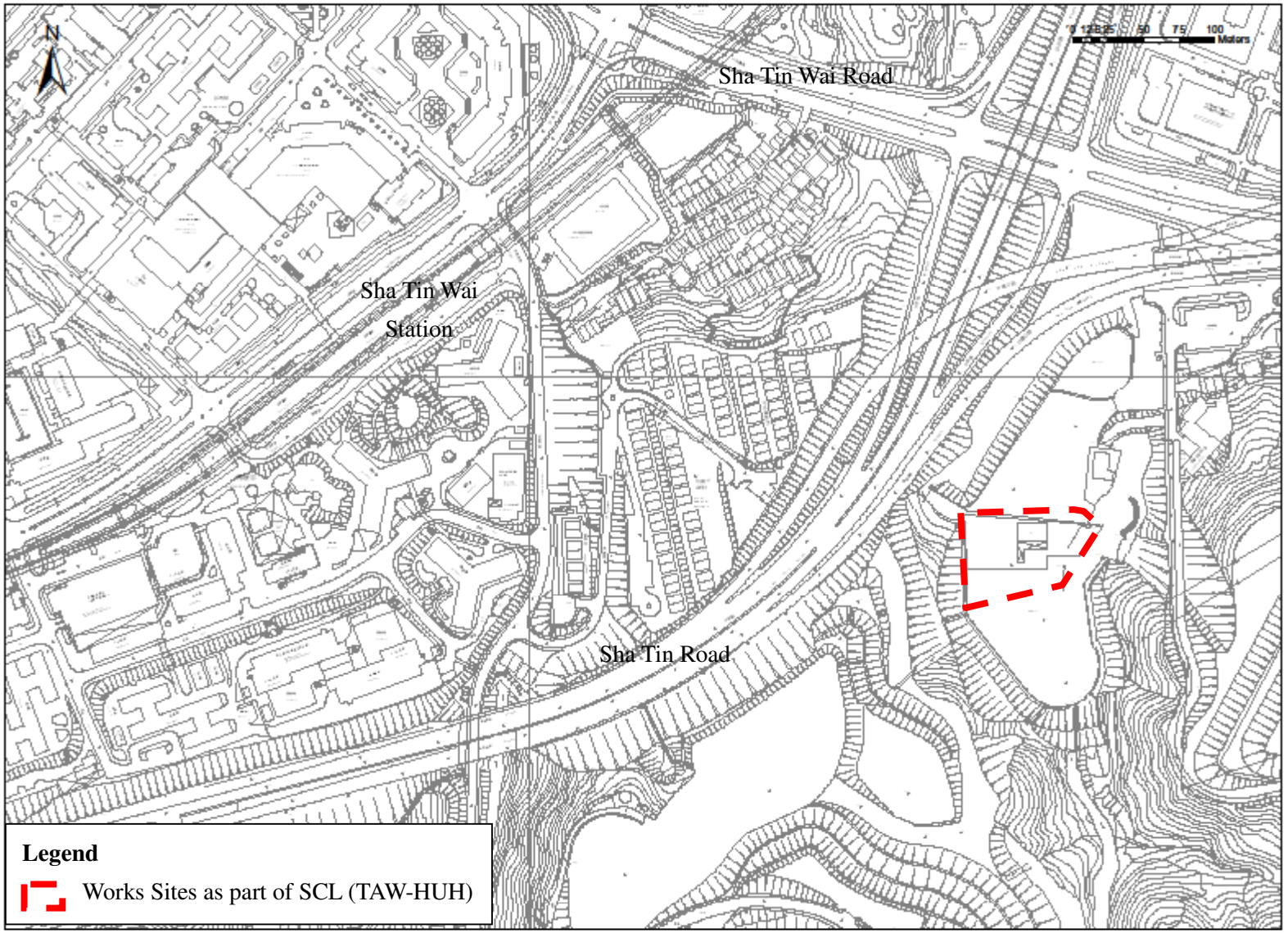
SCALE	N.T.S.	DATE	4 June 2013
CHECK	LYMA	DRAWN	YSWE
Ref. SCL Contract No.1101		FIGURE NO. App A (Sheet 1 of 3)	REV 1



ANEWR

Location Plan of Works Area and Storage Yard
Shek Mun Storage Yard

SCALE	N.T.S.	DATE	4 June 2013
CHECK	LYMA	DRAWN	YSWE
Ref. SCL Contract No.1101		FIGURE NO. App A (Sheet 2 of 3)	REV 1



ANEWR

Location Plan of Works Area and Storage Yard
To Shek Storage Yard

SCALE	N.T.S.	DATE	4 June 2013
CHECK	LYMA	DRAWN	YSWE
Ref. SCL Contract No.1101		FIGURE NO. App A (Sheet 3 of 3)	REV 1

APPENDIX B

UPDATED CONSTRUCTION PROGRAMME

Construction Programme (SCL)

Work site	Activities	2012				2013											2014												2015												2016						
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Tai Wai Mei Tin Road	Noise Barrier Installation Work			I	I	I	I	I	I	I	I	I	I	I																																		

Note:
1. Abbreviation:
I Engineering Possession (2:00 to 4:00)

2 No construction activity had been carried out at To Shek Storage Yard and Shek Mun Storage Yard.

APPENDIX C

ORGANISATION CHART OF ENVIRONMENTAL MANAGEMENT

Appendix C Organisation Chart of Environmental Management

Project Organization Chart

APPENDIX D

STATUS OF LICENSE, PERMIT AND SUBMISSIONS UNDER ENVIRONMENTAL PROTECTION REQUIREMENTS

Appendix D Status of License, Permits and Submission under Environmental Protection Requirements

Table 1 Environmental Management Related Licenses and Permits

Subject	Reference No.	Application Date	Issued Date	Effective Date	Expired Date
Environmental Permit					
Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section	EP-438/2012/H	26 August 2014	10 September 2014	10 September 2014	N/A
Construction Noise Permit					
Tai Wai Station (At Tai Wai Mei Tin Road)	GW-RN0609-14	22 September 2014	10 October 2014	20 October 2014	19 April 2015
To Shek Storage Yard	GW-RN0508-14	7 August 2014	25 August 2014	27 August 2014	26 February 2015
To Shek Storage Yard	GW-RN0007-15	30 December 2014	16 January 2015	27 February 2015	26 August 2015
Chemical Waste Producer					
Tai Wai Station (At Tai Wai Mei Tin Road)	5213-757-S3683-02	6 September 2012	8 October 2012	8 October 2012	N/A
To Shek Storage Yard	5213-759-S3683-08	10 January 2013	14 February 2013	14 February 2013	N/A
Wastewater Discharge Licence					
Tai Wai Station (At Tai Wai Mei Tin Road)	WT00014550-2012	5 November 2012	19 November 2012	19 November 2012	30 November 2017
To Shek Storage Yard	WT00014628-2012	12 November 2012	12 December 2012	12 December 2012	31 December 2017

Note: Only include those valid or under application; “N/A” for non-applicable item(s).

Table 2 Summary of Submission Status under EP-438/2012/H

EP Condition	Submission	Date of Submission
Condition 3.4	Monthly EM&A Report (January 2015)	13 February 2015

APPENDIX E

WASTE FLOW TABLE

Waste Flow Table for 2012 (year) (in cu. meter) for SCL

Month		Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Other C&D Wastes Generated Monthly		
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January								
February								
March								
April								
May								
June								
July								
August								
September	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
November	**13.00**	0.00	0.00	0.00	13.00	0.00	26.00	0.00
December	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-total for 2012	**13.00**	**0.00**	**0.00**	**0.00**	**13.00**	**0.00**	**26.00**	**0.00**
Cumulative Total	**13.00**	**0.00**	**0.00**	**0.00**	**13.00**	**0.00**	**26.00**	**0.00**

Remark: - Waste Generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard.

- 1 full loaded dumping truck is assumed equivalent to 6.5 m^3 by volume from Archsd D/OL03/09.002

- Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.

Waste Flow Table for 2013 (year) (in cu. meter) for SCL

Month		Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Other C&D Wastes Generated Monthly		
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	**0.00**	0.00	0.00	0.00	0.00	0.00	3.50	0.00
March	**0.00**	0.00	0.00	0.00	0.00	0.00	3.25	0.00
April	**0.00**	0.00	0.00	0.00	0.00	3.00	16.25	0.00
May	**0.00**	0.00	0.00	0.00	0.00	0.00	35.75	0.00
June	**0.00**	0.00	0.00	0.00	0.00	0.00	22.75	0.00
July	**0.00**	0.00	0.00	0.00	0.00	0.00	6.50	0.00
August	**0.00**	0.00	0.00	0.00	0.00	0.00	3.25	0.00
September	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	**0.00**	0.00	0.00	0.00	0.00	0.00	58.50	0.00
November	**19.50**	0.00	0.00	0.00	19.50	0.00	48.75	0.00
December	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-total for 2013	**19.50**	**0.00**	**0.00**	**0.00**	**19.50**	**3.00**	**198.50**	**0.00**
Cumulative Total	**32.50**	**0.00**	**0.00**	**0.00**	**32.50**	**3.00**	**224.50**	**0.00**

Remark: - **Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard from January 2013 – April 2013.**

- **Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard and To Shek Storage Yard only from May 2013 onwards**
- **Tai Shui Hang Storage Yard has been handed back to land owner on 15 April 2013**
- **1 full loaded dumping truck is assumed equivalent to 6.5 m^3 by volume from Archsd D/OL03/09.002**
- **Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.**

Waste Flow Table for 2014 (year) (in cu. meter) for SCL

Month		Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Other C&D Wastes Generated Monthly		
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	120.00
April	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	120.00
May	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	**0.00**	0.00	0.00	0.00	0.00	0.00	6.50	270.00
July	**19.50**	0.00	0.00	0.00	19.50	0.00	19.50	0.00
August	**71.50**	0.00	0.00	0.00	71.50	26.00	6.50	500.00
September	**6.50**	0.00	0.00	0.00	6.50	19.50	0.00	345.00
October	**6.50**	0.00	0.00	0.00	6.50	0.00	29.25	45.00
November	**13.00**	0.00	0.00	0.00	13.00	6.50	0.00	0.00
December	**0.00**	0.00	0.00	0.00	0.00	13.00	0.00	0.00
Sub-total for 2014	**117.00**	**0.00**	**0.00**	**0.00**	**117.00**	**65.00**	**61.75**	**1400.00**
Cumulative Total	**149.50**	**0.00**	**0.00**	**0.00**	**149.50**	**68.00**	**286.25**	**1400.00**

Remark: - **Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard from January 2013 – April 2013.**

- **Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard and To Shek Storage Yard only from May 2013 onwards**
- **Tai Shui Hang Storage Yard has been handed back to land owner on 15 April 2013**
- **1 full loaded dumping truck is assumed equivalent to 6.5 m^3 by volume from Archsd D/OL03/09.002**
- **Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.**

Waste Flow Table for _2015_ (year) (in cu. meter) for SCL

Month		Actual Quantities of Inert C&D Materials Generated Monthly				Actual Quantities of Other C&D Wastes Generated Monthly		
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Recyclable Metals	Non-inert Waste / General Refuse	Chemical Waste (in kg)
January	**0.00**	0.00	0.00	0.00	0.00	0.00	13.00	0.00
February	**0.00**	0.00	0.00	0.00	0.00	0.00	3.25	0.00
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								
Sub-total for 2015	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.25**	**0.00**
Cumulative Total	**149.50**	**0.00**	**0.00**	**0.00**	**149.50**	**68.00**	**302.50**	**1400.00**

Remark: - Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard, To Shek Storage Yard and Tai Shui Hang Storage Yard from January 2013 – April 2013.

- **Waste generated from site at Tai Wai Mei Tin Road, Shek Mun Storage Yard and To Shek Storage Yard only from May 2013 onwards**
- **Tai Shui Hang Storage Yard has been handed back to land owner on 15 April 2013**
- **1 full loaded dumping truck is assumed equivalent to 6.5 m^3 by volume from Archsd D/OL03/09.002**
- **Inert waste is disposed of at Tseung Kwan O Area 137 Public Fill Bank while non-inert waste is disposed of at North East New Territories Landfill.**

APPENDIX F

MITIGATION MEASURES IMPLEMENTATION SCHEDULE FOR CONSTRUCTION STAGE

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
Ecology (Construction Phase)								
S5.7	E5	Good Site Practices Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented: • Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream; • Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. Tei Lung Hau Stream and the adjoining secondary woodland, tunnel on hill at top of slope stabilization works;	Minimise ecological impacts	Contractor	All construction sites	During construction	• ProPECC PN 1/94	^ ^ ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		• No on-site burning of waste; • Waste and refuse in appropriate receptacles.						^ ^
Landscape & Visual (Construction Phase)								
S6.9.3	LV1	The following good site practices and measures for minimization and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u>	Minimize visual & landscape impact	Contractor	Within Project Site	Contraction stage	TM-EIAO	N/A ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		• All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.						^ ^
S6.12	LV2	• <u>Decorative Hoarding</u> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. • <u>Management of facilities on work sites</u> To provide proper management of the facilities on the sites, give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. • <u>Tree Transplanting</u> Trees of high to medium survival rate would be affected	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and construction stage	EIAO-TM ETWB TCW 2/2004 ETWB TCW 3/2006	^ ^ N/A

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.						
Construction Dust Impact								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^
S7.6.5	D2	• Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area and once per 1.5 hour at those in the Tai Wai area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m2 to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
S7.6.5	D3	• Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practices, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^ ^ N/A ^ ^ ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surface where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally						^ ^ N/A N/A N/A N/A

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or by pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					^ ^ N/A ^
Construction Noise (Airborne)								

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
S8.3.6	N1	Implement the following good site practices: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • Plant down to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^ ^ ^ N/A ^ ^
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoarding shall be properly maintained throughout the construction period.	Reduce the construction noise level at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	N/A
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> • At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilities the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediments/silt traps should be incorporated in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1m^3/s a sedimentation basin of 30m^3 would be required and for a flow rate of 0.5m^3/s the basin would be 150m^3. The detailed design of the sand/silt traps shall be undertaken by the constructor prior to the commencement of construction.						^ ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		• All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surface should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via						^ ^ ^ ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than $50m^3$ 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 be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm in imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 or ProPECC PN 1/94. Particular attention should be paid to the control of silt surface runoff during storm events, especially for areas located near steep slopes. • 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 sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt						^ ^ ^ *

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		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. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited 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 water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season						^ ^ ^ ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		(April to September) as far as practicable. • Adopt best management practices.						^
S10.7.1	W3	Sewage Effluent • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-water	^
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the location should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste produce if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical waste should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^ ^ ^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	On-site sorting of C&D material	Separation of	Contractor	All	Construction	• DEVB TC(W)	

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Geological assessment should be carried out by competent persons on site during excavation to identity materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke roke should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Apilte Dyke rock, etc should also be explored.	unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use		construction sites	stage	No.6/2010	^
S11.5.1	WM2	<u>Construction and Demolition Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;	Good site practice to minimize the waste generation and recycle	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions)	N/A

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt "Selective Demolition" technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documents and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction; • In addition, disposal of the C&D materials onto ant sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation.	the C&D materials as far as practicable so as to reduce the amount for final disposal				Ordinance • Waste Disposal Ordinance • ETWB TCW No.19/2005	N/A N/A N/A ^ ^ ^
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or	Good site practice to minimize the waste generation and recycle the C&D materials as	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance	N/A

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	far as practicable so as to reduce the amount for final disposal				• Waste Disposal Ordinance • ETWB TCW No.19/2005	N/A
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	* ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labeled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						N/A ^
S11.5.1	WM7	<u>Chemical Waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^ ^ ^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated; • Disposal of chemical waste should be via a licensed waste collector, be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						^
EM&A Project								
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	MTR Corporation	All construction sites	Construction Stage	• EIAO Guidance Note No.4/2010 • TM-EIAO	^
S14.2-14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all	Perform environmental monitoring & auditing	MTR Corporation/ Contractor	All construction sites	Construction stage	• EIAO Guidance Note No. 4/2010 • TM-EIAO	^

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Status
		the requirements given in the EM&A Manual are fully complied with.						

Remarks:
^ Implement mitigation measure in the reporting month
N/A Not Applicable in the reporting month
x Non-compliance of mitigation measure
* Not satisfactory but rectified by the contractor

APPENDIX G

ENVIRONMENTAL COMPLAINT LOG

Appendix G Environmental Complaint Log

Complaint Log No.	Name of Complainant	Date Complaint Received	Complaint Date	Complaint Location	Details of Complaint	Date Complaint Received by ET	ET's Investigation Date	Investigation/ Mitigation Measures	Validity To Project
Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Appendix D

26th EM&A Report for Works Contract 1111 –
Hung Hom North Approach Tunnel

AECOM

Gammon- Kaden SCL 1111 Joint Venture

Shatin to Central Link -
Tai Wai to Hung Hom Section and
Mong Kok East
to Hung Hom Section

Works Contract 1111 -
Hung Hom North Approach Tunnels

Monthly EM&A Report for
February 2015

[March 2015]

	Name	Signature
Prepared & Checked:	Lemon Lam	
Reviewed, Approved & Certified:	Y T Tang (Contractor's Environmental Team Leader)	

Version: 0	Date: 10 March 2015

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EXECUTIVE SUMMARY

Shatin to Central Link Contract 1111 – Hung Hom North Approach Tunnels (hereafter called "the Project") covers part of the construction of the Shatin to Central Link (SCL) which aimed to convey a total of 17km extension of the existing Ma On Shan Line (MOL) through east Kowloon to West Rail Line and also East Rail Line (EAL) through Hung Hom across the harbour to Admiralty Station (ADM). The Project covers construction activities at Mong Kok Freight Terminal and part of the construction activities located at Hung Hom Area for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS).

The EM&A programme commenced in January 2013.The impact EM&A for the Project includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 28 February 2015. As informed by the Contractor, major activities in the reporting period were:

Hung Hom Area
- Excavation work, site clearance, site formation, slope work, road diversion, excavation lateral support,
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access, haul road,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, scaffolding platform,
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation,
- Removal of pipe, dismantling of scaffolding, demolition of stair case,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level of 24-hour TSP monitoring was recorded at the monitoring location in the reporting month.

Breaches of Action and Limit Levels for Noise

Regular Noise Monitoring

No Action Level exceedance was recorded since no noise related complaint during 0700 to 1900 hours on normal weekdays was received in the reporting month.

No exceedance of Limit Level of noise was recorded in the reporting month.

Continuous Noise Monitoring

During the reporting month, continuous noise monitoring is required at NM1 according to the schedule presented in CNMP.

Four (4) exceedances of Action and Limit Level of continuous noise monitoring were recorded at NM1 on 10 and 11 February 2015 during the reporting month. The exceedances are still under investigation and will be reported in the next reporting month.

Complaint, Notification of Summons and Successful Prosecution

No environmental complaint and no notification of summons and successful prosecution were received in the reporting month.

Future Key Issues

Key issues to be considered in the coming month included:

Hung Hom Area
- Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support,
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access, haul road,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, abutment works, pre-split
- Erection of hoarding, scaffolding platform,
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation
- Removal of pipe, foul water diversion, dismantling of scaffolding,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

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

1 INTRODUCTION

Gammon-Kaden SCL1111 Joint Venture (GKSCLJV) was commissioned by MTR as the Civil Contractor for Works Contract 1111. AECOM Asia Company Limited (AECOM) was appointed by GKSCLJV as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Project.

1.1 Purpose of the Report

1.1.1 This is the eighteenth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 28 February 2015.

1.2 Report Structure

1.2.1 This monthly EM&A Report is orgainised as follows:

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Requirement
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection
- Section 7: Environmental Non-conformance
- Section 8: Future Key Issues
- Section 9: Conclusions and Recommendation

2 PROJECT INFORMATION

2.1 Background

2.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).

2.1.2 The Environmental Impact Assessment (EIA) Reports for SCL – Tai Wai to Hung Hom Section [SCL (TAW-HUH)] (Register No.: AEIAR-167/2012), SCL – Mong Kok East to Hung Hom Section [SCL (MKK-HUH)] (Register No.: AEIAR-165/2012) and SCL - Stabling Sidings at Hung Hom Freight Yard [SCL (HHS)] (Register No.: AEIAR-164/2012) were approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Reports, two Environmental Permits (EPs) were granted on 22 March 2012, one covers SCL (TAW-HUH) and SCL (HHS)(EP No: EP-438/2012) and the other covers SCL (MKK-HUH) and SCL (HHS) (EP No.: EP-437/2012), for their construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-438/2012 and the latest Environmental Permit (EP No: EP-438/2012/H) was issued by Director of Environmental Protection (DEP) on 10 September 2014.

2.1.3 The construction of the SCL is divided into different civil construction works contracts and Works Contract 1111 – Hung Hom North Approach Tunnels (hereafter referred to as "the Project") covers construction activities at Mong Kok Freight Terminal and part of the construction activities located at Hung Hom under the two EPs.

2.2 Site Description

2.2.1 The major construction activities under Works Contract 1111 include:

- SCL (MKK-HUH) – (i) Construction of an realigned and modified railway from Portal 1A near Oi Man Estate to Hung Hom Station; (ii) Construction of Noise Enclosure at Portal 1A; (iii) modification works on the existing Homantin Siding; and (iv) new EVA near Hung Hom Station.
- SCL (TAW–HUH) – Part of the railway tunnel from Ho Man Tin Station to Hung Hom.
- SCL (HHS) – Construction of tracks and noise barrier of Hung Hom Stabling Sidings.

2.2.2 **Figure 1.1** shows the works areas for the Works Contract 1111.

2.3 Construction Programme and Activities

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

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, road diversion, excavation lateral support,
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access, haul road,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, backfilling, abutment works,
- Erection of hoarding, scaffolding platform,
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation
- Removal of pipe, dismantling of scaffolding, demolition of stair case,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

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

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 1.1.**

Table 1.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Construction Manager	Mr. Michael Fu	3127 6201	3124 6422
		SCL Project Environmental Team Leader	Mr. Richard Kwan	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739	2540 1580
GKSCKJV	Contractor	Project Manager	Mr. Alan Yan	9855 0361	3904 9630
		Environmental Manager	Ms. Michelle Tang	3904 9663	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

2.5 Status of Environmental Licences, Notification and Permits

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.1**.

Table 2.1 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
Environmental Permit				
EP-437/2012	22 Mar 2012	-	Valid	-
EP-438/2012/H	10 Sep 2014	-	Valid	-
Construction Noise Permit				
GW-RE1011-14	10 Sep 2014	9 Mar 2015	Valid	For Grouting Station and Desendar at EWL8
GW-RE1002-14	10 Sep 2014	9 Mar 2015	Valid	For General Work at NSL 3-5
GW-RE1093-14	24 Sep 2014	21 Mar 2015	Valid	For General works for steel decking at EWL8
GW-RE1294-14	18 Nov 2014	14 Mar 2015	Valid	For General Work at Oi Sen Path and Ho Man Tin Siding
GW-RE1323-14	1 Dec 2014	28 Feb 2015	Valid	For Cross Track Duct Installation in Ho Man Tin Maintenance Siding
GW-RE1464-14	13 Jan 2015	27 Feb 2015	Valid	For Bar Fencing Erection near Railway Trackside Area at Ho Man Tin Sidings
GW-RE0022-15	16 Jan 2015	28 Feb 2015	Valid	For Loading Test Preparation at Oi Sen Path
GW-RE1489-14	30 Jan 2015	29 Jul 2015	Valid	For General and Reprovisioning Works at Hung Hom Station
GW-RE0083-15	31 Jan 2015	28 Mar 2015	Valid	For TB1 & TB2 Installation at Chatham Rd North
GW-RE0062-15	1 Feb 2015	31 Mar 2015	Valid	For Hoarding Erection at NSL 3-5
GW-RE0064-15	1 Feb 2015	30 Apr 2015	Valid	For 6m Hoarding Erection in NSL 6
GW-RE0066-15	1 Feb 2015	30 Apr 2015	Valid	For 6m Hoarding in NSL 9 and Demolition of Scaffolding Platform at Oi Sen Path
GW-RE0074-15	1 Feb 2015	30 Apr 2015	Valid	For Scaffolding and 2.4m Hoarding Erection at Ho Man Tin and Oi Sen Path
GW-RE0104-15	6 Feb 2015	5 Mar 2015	Valid	For Noise Enclosure and Steel Platform Erection Work at Oi Sen Path
GW-RE0132-15	7 Feb 2015	6 Aug 2015	Valid	For General works for steel decking at EWL8
GW-RE0156-15	24 Feb 2015	23 Aug 2015	Valid	For Pumping Test at NSL6
GW-RE0178-15	28 Feb 2015	16 Apr 2015	Valid	For Bar Fencing Erection near Railway Trackside Area at Ho Man Tin Sidings
Wastewater Discharge License				
WT00015148-2013	20 Feb 2013	28 Feb 2018	Valid	For Winslow Street Works
WT00015644-2013	16 Apr 2013	30 Apr 2018	Valid	For Homantin Sidings Works

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
WT00015606-2013	25 Apr 2013	5 Jan 2015	Invalid (Cancellation letter had been submitted to EPD on 5 Jan 2015)	For Mong Kok Freight Terminal Works
WT00016090-2013	14 Jun 2013	30 Jun 2018	Valid	For Hung Hom Station Works
WT00016108-2013	14 Jun 2013	30 Jun 2018	Valid	For Slip Road Works from Chatham Road North and underneath Princess Margaret Road Link (Discharge Point near Hong Chong Road)
WT00015859-2013	14 May 2013	31 May 2018	Valid	For Works in EWL8 and Oi Sen Path Garden
WT00016447-2013	24 Jul 2013	31 Jul 2018	Valid	For Winslow Street Slope Works Between Chatham Road North and Wai Fung Street
WT00016435-2013	23 Jul 2013	31 Jul 2018	Valid	For Slip Road Works from Chatham Road North and underneath Princess Margaret Road Link (Discharge Point near Oi Sen Path)
WT00018688-2014	14 Apr 2014	30 Apr 2019	Valid	For Hung Hom Freight Terminal Works
WT00019068-2014	25 Jun 2014	30 Jun 2019	Valid	For Oi Sen Path Works
Chemical Waste Producer Registration				
5213-213-G2618-01	22 Mar 2013	-	Valid	For Winslow Street Works
5213-213-G2618-03	08 Apr 2013	-	Valid	For Hung Hom Station Reprovisioning Works
5213-222-G2618-05	25 Apr 2013	5 Jan 2015	Invalid (Cancellation letter had been submitted to EPD on 5 Jan 2015)	For Mong Kok Freight Terminal Works
5213-213-G2618-06	16 Apr 2013	-	Valid	For Homantin Sidings Works
5213-236-G2618-10	14 Jun 2013	-	Valid	For Slip Road Works from Chatham Road North and underneath Princess Margaret Road Link
5213-236-G2618-11	27 May 2013	-	Valid	For Works near Chatham Road North
5213-213-G2618-12	14 Apr 2014	-	Valid	For Hung Hom Freight Terminal Works
5213-236-G2618-14	08 May 2014	-	Valid	For Oi Sen Path Works
Billing Account for Construction Waste Disposal				
7016658	24 Jan 2013	-	Account Active	-
Notification Under Air Pollution Control (Construction Dust) Regulation				
353991	02 Jan 2013	18 Apr 2018	Notified	-
Clinical Waste Producer Premises Code				
PC01/RE/00362644	30 Jan 2014	-	Valid	For Hung Hom Freight Yard Works

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 Construction Dust Monitoring

Monitoring Requirements

3.1.1 In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required. Impact 24-hour TSP monitoring should be carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in **Appendix D**.

Monitoring Equipment

3.1.2 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the EM&A Manual. Brand and model of the equipment is given in **Table 3.1**.

Table 3.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
High Volume Sampler (24-hour TSP)	Andersen Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. GS 2310 (S/N:8259))
Calibration Kit	TISCH Environmental Orifice (Model TE-5025A (Orifice I.D.: 0988))

Monitoring Locations

3.1.3 One monitoring station was set up at the proposed location in accordance with the approved EM&A Manuals for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS) as well as the works areas of the Project. The location of the construction dust monitoring station is summarised in **Table 3.2** and shown in **Figure 2.1.**

Table 3.2 Locations of Construction Dust Monitoring Stations

ID	Location	Monitoring Station
AM1	No. 234 – 238 Chatham Road North	Roof top of the premises facing Chatham Road North

Note:
(1) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location has been approved by IEC and EPD.

Monitoring Methodology

3.1.4 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS as far as practicable:-

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(iv) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
(v) No furnace or incinerator flues nearby.
(vi) Airflow around the sampler was unrestricted.
(vii) Permission was obtained to set up the samplers and access to the monitoring stations.
(viii) A secured supply of electricity was obtained to operate the samplers.

(ix) The sampler was located more than 20 meters from any dripline.
(x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xi) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.
(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminium strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.3 m^3/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.
(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) HVSs were calibrated using TE-5025A Calibration Kit upon installation and thereafter at bi-monthly intervals.
(iii) Calibration certificate of the TE-5025A Calibration Kit and the HVSs are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.1.5 The schedule for environmental monitoring in February 2015 is provided in **Appendix F**.

3.2 Regular Construction Noise Monitoring

Monitoring Requirements

3.2.1 In accordance with the EM&A Manuals, impact noise monitoring should be conducted for at least once a week during the construction phase of the Project. **Table 3.4** summarises the monitoring parameters, frequency and duration of impact noise monitoring. The Action and Limit level of the noise monitoring is provided in **Appendix D**.

Table 3.4 Noise Monitoring Parameters, Frequency and Duration

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

Monitoring Equipment

3.2.2 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.5**.

Table 3.5 Noise Monitoring Equipment for Regular Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	B&K (Model No. 2238 (S/N: 2285692), (S/N: 2800927)) Rion (Model No. NL-31 (S/N: 00320528))
Acoustic Calibrator	Rion (Model No. NC-73 (S/N: 10307223))

Monitoring Locations

3.2.3 Two monitoring stations were set up at the proposed locations in accordance with the approved EM&A Manuals for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS) as well as the works areas of the Project. Locations of the noise monitoring stations are summarised in **Table 3.6** and shown in **Figure 3.1**.

Table 3.6 Locations of Regular Construction Noise Monitoring Stations

ID	Location	Monitoring Station	Type of Measurement
NM1	Carmel Secondary School (South Block)	1m from the exterior of the roof top façade of the premises facing Oi Sen Path	Façade
NM2	No. 234 – 238 Chatham Road North(1)	Free-field on the rooftop of the premise	Free Field

Note:
(1) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location has been approved by IEC and EPD.

Monitoring Methodology

3.2.4 Monitoring Procedure

(a) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at NM2. A correction of +3 dB(A) shall be made to the free field measurements.

(b) Façade measurements were made at NM1.

(c) The battery condition was checked to ensure the correct functioning of the meter.

(d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

(i) frequency weighting: A
(ii) time weighting: Fast
(iii) time measurement: $L_{eq(30\text{-}minutes)}$ during non-restricted hours i.e. 0700 – 1900 on normal weekdays.

(e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94 dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(f) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.2.5 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in **Appendix E**.

Monitoring Schedule for the Reporting Month

3.2.6 The schedule for environmental monitoring in February 2015 is provided in **Appendix F**.

3.3 Continuous noise monitoring

Monitoring Requirements

3.3.1 According to EP conditions under EP-437/2012 (Condition 2.8) and EP-438/2012/H (Condition 2.10), continuous noise monitoring should be conducted at the NSRs as identified by the Construction Noise Mitigation Measures Plan (CNMMP) to have residual air-borne noise impacts. A CNMMP and Continuous Noise Monitoring Plan (CNMP) were submitted to EPD on 20 January 2014.

Monitoring Locations

3.3.2 With reference to the CNMP, continuous noise monitoring should be conducted during period at which the predicted airborne construction noise levels exceed the relevant noise criteria at the respective NSRs. The proposed continuous noise monitoring locations are presented in **Table 3.7** and shown in **Figure 2.1**.

Table 3.7 Summary of Proposed Continuous Noise Monitoring Location

NSR ID	NSR Description	Uses	Proposed Continuous Noise Monitoring Location	Alternative Noise Monitoring Location
OM4a	Carmel Secondary School (South Block)	Educational	NM1	-
HH2	Wing Fung Building	Residential	NM2	No. 234-238 Chatham Road North(1)

Note:
(1) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location is considered as an appropriate alternative noise monitoring station in the CNMP.

Monitoring Equipment

3.3.3 Continuous noise monitoring will be performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator will be deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.8.**

Table 3.8 Noise Monitoring Equipment for Continuous Noise Monitoring

Equipment	Brand and Model
Integrated Sound Level Meter	B&K (Model No. 2238 (S/N: 2800930))
Acoustic Calibrator	Rion (Model No. NC-73 (S/N: 10307223))

Monitoring Parameters, Frequency and Duration

3.3.4 Continuous noise level will be measured in terms of the A-weighted equivalent continuous sound pressure level for 30 minutes ($L_{eq,\ 30\ min}$) for time period between 0700 and 1900 hours on normal working hours (i.e. Mondays to Saturdays) during the construction period that the predicted noise levels exceed the relevant noise criteria at the identified NSRs. The recommended measurement period for the continuous noise monitoring programme in the CNMP is summarised in **Table 3.9**.

Monitoring Methodology

3.3.5 Immediately prior to the noise measurement, the accuracy of the sound level meter will be checked using an acoustic calibrator, which generated a known sound pressure level at a known frequency. The accuracy of the sound level meter will also be checked on an annual-basis. Measurement will be accepted as valid only if the calibration level before and after the noise measurement agrees to within 1.0dB. Noise measurement will be made in accordance with standard acoustical principles and practices in relation to weather conditions.

Event and Action Plan

3.3.6 Summary of the proposed continuous noise monitoring programme are presented in **Table 3.9**. The Event and Action Plan for the continuous noise monitoring programme recommended in the CNMP is presented in **Appendix I**.

Table 3.9 Summary of Proposed Continuous Noise Monitoring Plan

Monitoring Location	NSR Description	Action/Limit Level, dB(A)	Measurement Period
NM1	Carmel Secondary School (South Block)	68(1)	Feb and Jun 2014, Jan and Feb 2015(3)
NM2	No. 234-238 Chatham Road North(2)	77	Sep to Dec of 2014 Jan / Mar to May 2015

Note:
(1) Action/Limit level will only be applicable during the examination period.
(2) Permission of access could not be obtained from Wing Fung Building (originally proposed in the approved EM&A Manuals) and hence the monitoring location was relocated to No. 234-248 Chatham Road North. The alternative monitoring location is considered as an appropriate alternative noise monitoring station in the CNMP.
(3) Based on 2014-2015 Calendar of Carmel Secondary School, the examination periods are scheduled in January and March 2015. The continuous noise monitoring was conducted in January and February 2015.

3.4 Landscape and Visual

3.4.1 As per the EM&A Manuals, the landscape and visual mitigation measures should be implemented and site inspections should be undertaken once every two weeks during the construction period. A summary of the implementation status is presented in **Section 6.**

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EPs and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix C**. Status of required submissions under the EPs during the reporting period is summarised in **Table 4.1**.

Table 4.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.4 (EP-437/2012) & Condition 3.4 (EP-438/2012/H)	Monthly EM&A Report for January 2015	14 February 2015

5 MONITORING RESULTS

5.1 Construction Dust Monitoring

5.1.1 The monitoring results for 24-hour TSP are summarised in **Table 5.1**. Detailed air quality monitoring results and wind monitoring data extracted from the nearest Automatic Weather Station are presented in **Appendix G**.

Table 5.1 Summary of 24-hour TSP Monitoring Results in the Reporting Period

ID	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM1	73.9	50.1 – 117.3	183.9	260

5.1.2 No Action and Limit Level exceedance was recorded for 24-hour TSP monitoring at the monitoring location in the reporting month.

5.1.3 The event and action plan is annexed in **Appendix I**.

5.1.4 Major dust sources during the monitoring included construction dust from the Project site and other nearby construction sites and also nearby traffic emission.

5.2 Regular Construction Noise Monitoring

5.2.1 The monitoring results for noise are summarized in **Table 5.2** and the monitoring data is provided in **Appendix H**.

Table 5.2 Summary of Impact Noise Monitoring Results in the Reporting Period

ID	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
NM 1(2)	54.7 – 65.9	70 (68)(1)
NM 2(2)	<Baseline	75

Note:
(1) Daytime noise Limit Level of 70dB(A) applies to education institutions while 68dB(A) applies during school examination period as continuous noise monitoring was conducted from 2 to 6 and 9 to 13 February 2015.
(2) Baseline correction will be made to the measured L_{eq} when the measured noise level exceeded the corresponding baseline noise level and presented in the table. No correction was made to NM2 as all measured noise levels were below the baseline noise level.

5.2.2 No noise complaint was received in the reporting month during 0700 to 1900 hours on normal weekdays; hence, no Action Level exceedance was recorded.

5.2.3 No Limit Level exceedance of noise was recorded at all monitoring stations in the reporting month.

5.2.4 The event and action plan is annexed in **Appendix I**.

5.2.5 Major noise sources during the monitoring included construction noise from the Project site and other nearby construction sites, nearby traffic noise and noise from school activities and the community.

5.3 Continuous Noise Monitoring

5.3.1 According to the prediction in the CNMP, continuous noise monitoring was conducted at NM1 during the reporting month. The monitoring results are presented in Appendix H.

5.3.2 Four (4) exceedances of Action and Limit Level of continuous noise monitoring were recorded at NM1 on 10 and 11 February 2015 during the reporting month. The exceedances are still under investigation and will be reported in the next reporting month.

5.4 Waste Management

5.4.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

5.4.2 As advised by the Contractor, 4,784m^3 of inert C&D material was generated. 1,848m^3 was disposed as public fills at TKO137. 3,032m^3 of public fills was delivered to Hung Hom Barging Point and handled by other project. While 37,630kg of general refuse was disposed at NENT landfill in the reporting month. 112kg of paper/cardboard packaging material, no metals and plastic was collected by recycling contractor in the reporting month. 1.292 of Type 1 marine dumping was delivered to Hung Hom Barging Point. No chemical waste was collected by licensed contractor in the reporting period. The waste flow table is annexed in **Appendix K.**

5.4.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

5.4.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

5.5 Landscape and Visual

5.5.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted on 5 and 17 February 2015. A summary of the site inspection is provided in **Appendix C**. The observations and recommendations made during the site inspections are presented in **Table 6.1**.

5.5.2 The event and action plan is annexed in **Appendix I**.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the site inspection is provided in **Appendix C**.

6.1.2 In the reporting month, 4 site inspections were carried out on 5, 12, 17 and 26 February 2015. The one held on 12 February 2015 was a joint inspection with the IEC, ER, the Contractor and the ET. No site inspection was conducted by EPD during the reporting month. No non-compliance was recorded during the site inspections. Details of observations recorded during the site inspections are presented in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	5 Feb 2015	• Silt material accumulated inside the channel was observed at NSL6. The Contractor should remove the silt material regularly.	The item was rectified by the Contractor on 11 Feb 2015.
Air Quality	12 Feb 2015	• Mud trail was observed at the entrance of EWL7. The Contractor should clean up the mud trail and implement sufficient wheel washing facility to avoid carrying mud material to public road. • White smokes emitted from the plants were observed at NSL6 and NSL9 and EWL6. The Contractor should keep well maintain of the plants regularly.	The item was rectified by the Contractor on 16 Feb 2015.
	17 Feb 2015	• The shoe washing facility was observed full of muddy water at the entrance of NSL6. The Contractor should clean up the washing facility regularly.	The item was rectified by the Contractor on 25 Feb 2015.
	26 Feb 2015	• Mud trail was observed at the entrance of EWL7. The Contractor should remove the mud trail and wash the vehicle wheels before leave site.	The item was rectified by the Contractor on 4 Mar 2015.
Noise	N/A	N/A	N/A
Waste/ Chemical Management	5 Feb 2015	• General refuses fully accumulated inside the waste skips were observed at NSL3-5. The Contractor should clean up the general refuse regularly to keep site tidy. • Oil stain was observed at EWL7. The Contractor should remove the oil stain and dispose of as chemical waste properly.	The item was rectified by the Contractor on 11 Feb 2015.
	17 Feb 2015	• Oil container was observed placed on ground without provision of drip tray was observed at NSL6. The Contractor should provision of drip tray for storage oil container properly to prevent leakage, if any.	The item was rectified by the Contractor on 25 Feb 2015.
	26 Feb 2015	• Water accumulated inside the drip trays were observed at NSL6 and Oi Sen Path; and chemical containers placed on ground without drip tray was observed at NSL3-5. The Contractor should remove the water and dispose of as chemical wastes; and provision of drip tray for storage oil container properly to prevent leakage, if any. • Oil stain was observed next to the drip tray at NSL6. The Contractor should remove the oil stain and dispose of as chemical waste properly.	The item was rectified by the Contractor on 4 Mar 2015.
Landscape & Visual	N/A	N/A	N/A
Permits/ Licenses	N/A	N/A	N/A

6.1.3 All the follow-up actions requested by Contractor's ET and IEC during the site inspection were undertaken as reported by the Contractor and confirmed into the following weekly site inspection conducted during the reporting period.

6.1.4 The items of which their inspection for follow-up actions were outstanding as recorded in the last reporting month have already been rectified by the Contractor as confirmed by the ET during the reporting period.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

7.1.1 All 24-hour TSP results were below the Action and Limit level at all monitoring locations in the reporting month.

7.1.2 No noise complaint during 0700 to 1900 hours on normal weekdays was received in the reporting month; hence, no Action Level exceedance was recorded.

7.1.3 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

7.1.4 According to the prediction in the CNMP, continuous noise monitoring was conducted at NM1 during the reporting month. Four (4) exceedances of Action and Limit Level of continuous noise monitoring were recorded at NM1 on 10 and 11 February 2015 during the reporting month. The exceedances are still under investigation and will be reported in the next reporting month.

7.2 Summary of Environmental Non-Compliance

7.2.1 No environmental non-compliance was recorded in the reporting month.

7.3 Summary of Environmental Complaints

7.3.1 No environmental related complaint was received in the reporting month. Cumulative statistics on environmental complaints is provided in **Appendix J**.

7.4 Summary of Environmental Summon and Successful Prosecutions

7.4.1 No environmental related prosecution or notification of summons was received in the reporting month. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix J**.

8 FUTURE KEY ISSUES

8.1 Construction Programme for the Project

Construction Programme for the Next Two Month

8.1.1 The major construction works in March 2015 and May 2015 will be:

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, cable detection, road diversion, excavation lateral support,
- Construction of drainage and man hole, reinforced concrete structure, emergency vehicular access, haul road,
- Trial pit, trial trench, pre-drilling, pilling works, pre-grouting, grouting, post-grouting, abutment works, pre-split
- Erection of hoarding, scaffolding platform,
- Tie back installation, lifting of concrete blocks, construction of noise enclosure footing, decking installation
- Removal of pipe, foul water diversion, dismantling of scaffolding,
- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

Mong Kok Freight Terminal

- Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works.

8.2 Key Issues for the Coming Month

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

8.3 Monitoring Schedule for the Next Month

8.3.1 The tentative schedule for environmental monitoring in March 2015 is provided in **Appendix F**.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 24-hour TSP and noise monitoring were carried out in the reporting month.

9.1.2 All 24-hour TSP monitoring results complied with the Action / Limit Level at in the reporting month.

9.1.3 No noise complaint during 0700 to 1900 hours on normal weekdays was received in the reporting month; hence, no Action Level exceedance was recorded.

9.1.4 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

9.1.5 According to the prediction in the CNMP, continuous noise monitoring was conducted at NM1 during the reporting month. Four (4) exceedances of Action and Limit Level of continuous noise monitoring were recorded at NM1 on 10 and 11 February 2015 during the reporting month. The exceedances are still under investigation and will be reported in the next reporting month.

9.1.6 4 nos. of environmental site inspections were carried out in February 2015. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

9.1.7 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

9.2 Recommendations

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

Air Quality Impact

- Implement effective measures to avoid dust impact.
- Well maintain of the plants to avoid smoke emission.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- Implement proper drainage system management.

Chemical/ Waste Management

- Provide proper chemical and chemical waste management.
- Implement proper waste management.

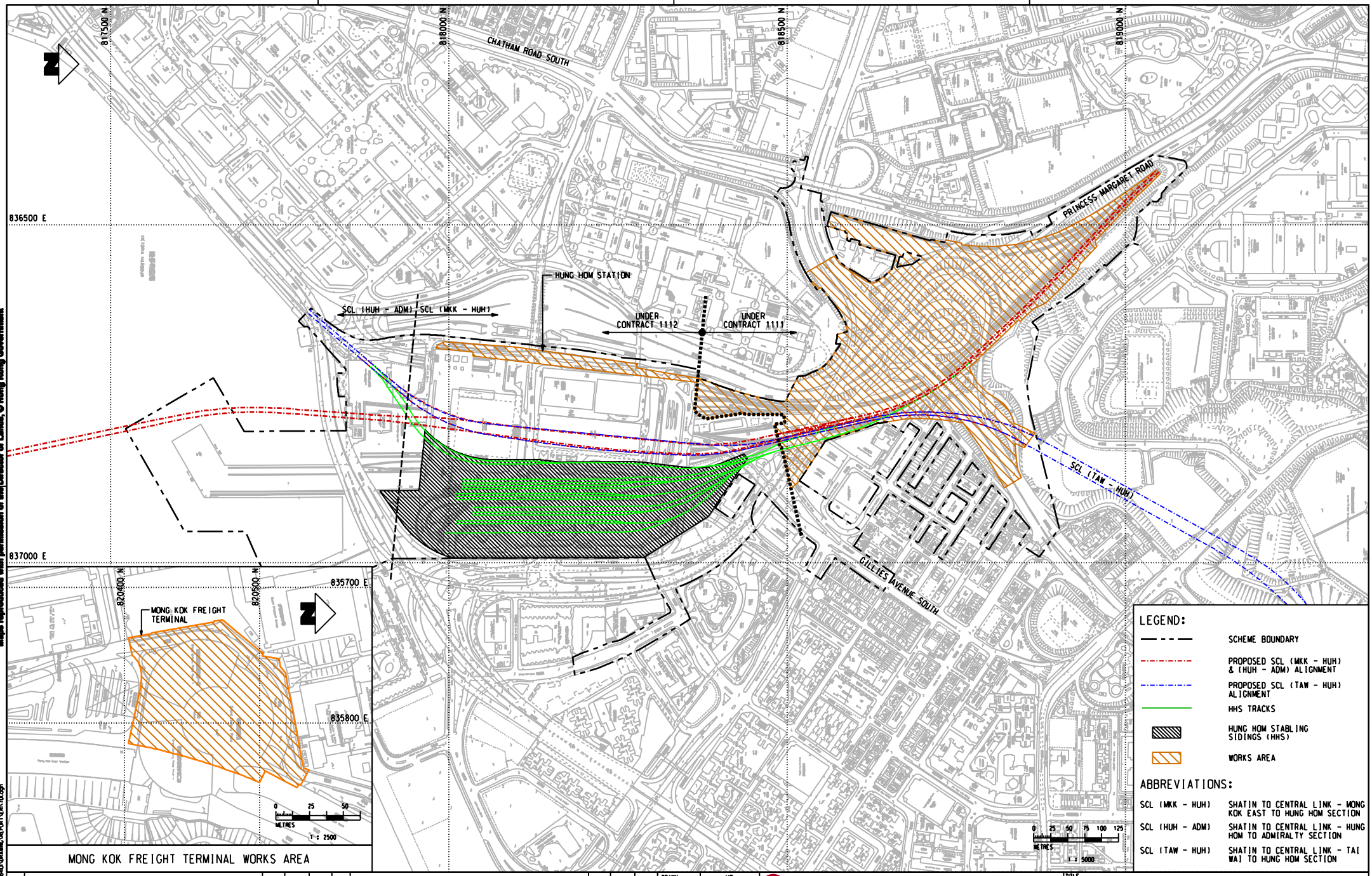
Landscape and Visual Impact

- No specific observation was identified in the reporting month.

Permits/Licenses

- No specific observation was identified in the reporting month.

FIGURES



MONG KOK FREIGHT TERMINAL WORKS AREA

LEGEND:

- SCHEME BOUNDARY
- PROPOSED SCL (MKK - HUH) & (HUH - ADM) ALIGNMENT
- PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- HUNG HOM STABLING SIDINGS (HHS)
- WORKS AREA

ABBREVIATIONS:

SCL (MKK - HUH)	SHATIN TO CENTRAL LINK - MONG KOK EAST TO HUNG HOM SECTION
SCL (HUH - ADM)	SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION
SCL (TAW - HUH)	SHATIN TO CENTRAL LINK - TAI WAI TO HUNG HOM SECTION

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SHATIN TO CENTRAL LINK

CONTRACTOR: Gammon Kaden — Gammon – Kaden SCL 1111 Joint Venture

ORIGINATOR: AECOM

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HUNG HOM NORTH APPROACH TUNNELS
WORKS AREAS OF THE PROJECT

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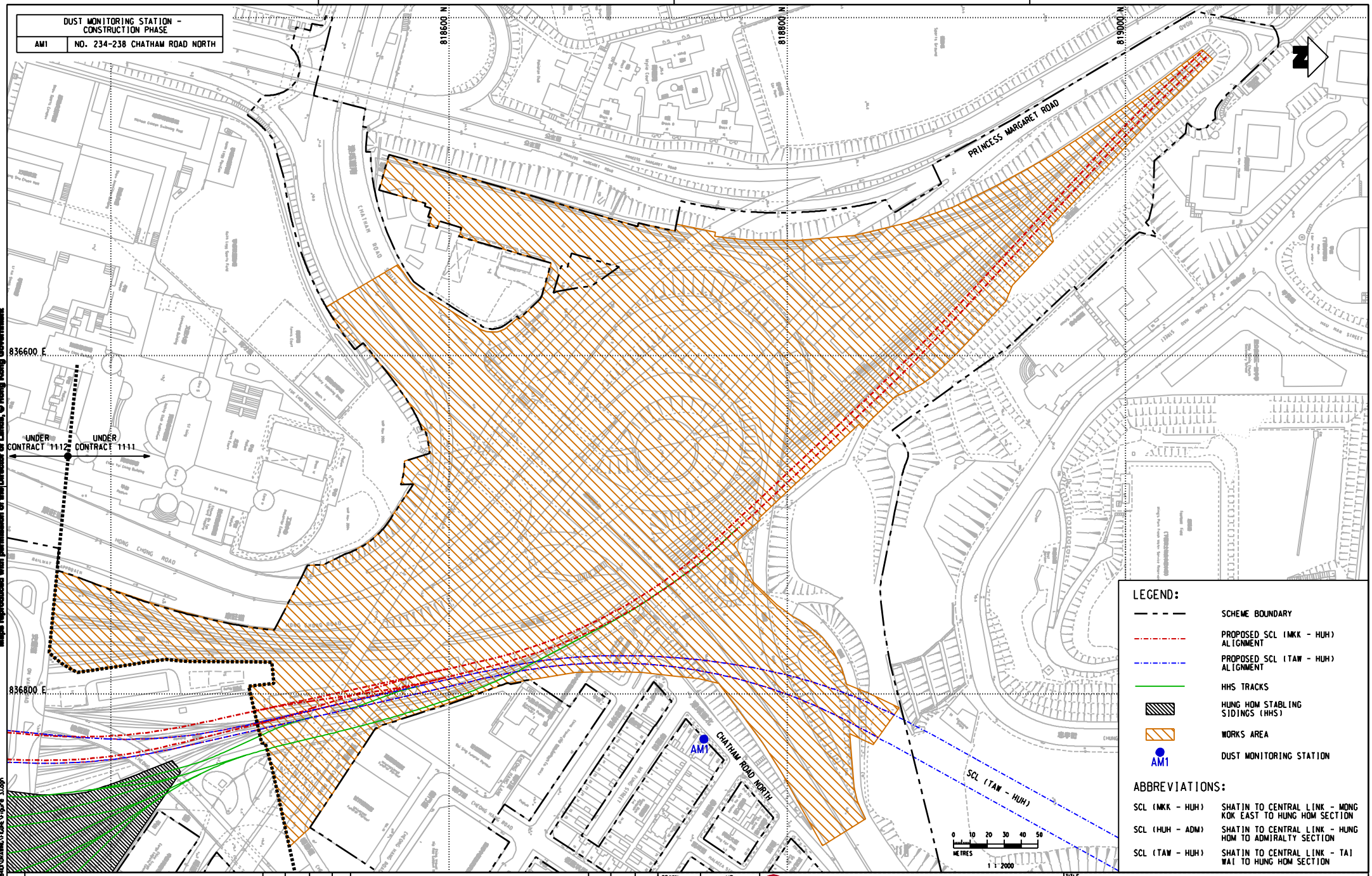

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CONTRACTOR: Gammon Kaden — Gammon – Kaden SCL 1111 Joint Venture

ORIGINATOR: AECOM

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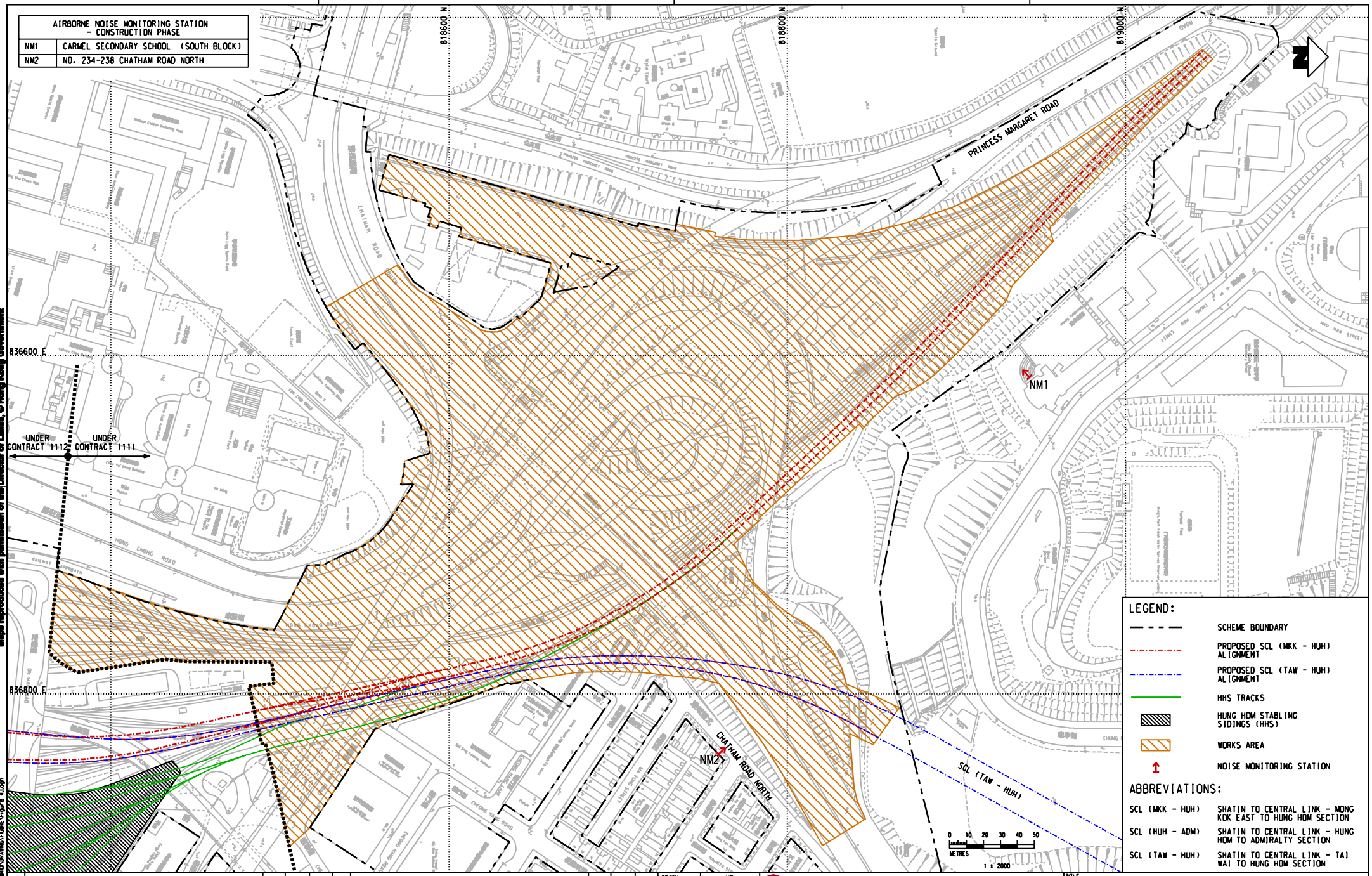
CONTRACT 1111
HUNG HOM NORTH APPROACH TUNNELS
LOCATION OF AIR QUALITY MONITORING STATION

SCALE 1 : 2000 (A3) | FIGURE NO. FIGURE 2.1 | REV. -



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SHATIN TO CENTRAL LINK

CONTRACTOR: Gammon Kaden — Gammon – Kaden SCL 1111 Joint Venture

ORIGINATOR: AECOM

CADD REF. Figure 3.1.dgn

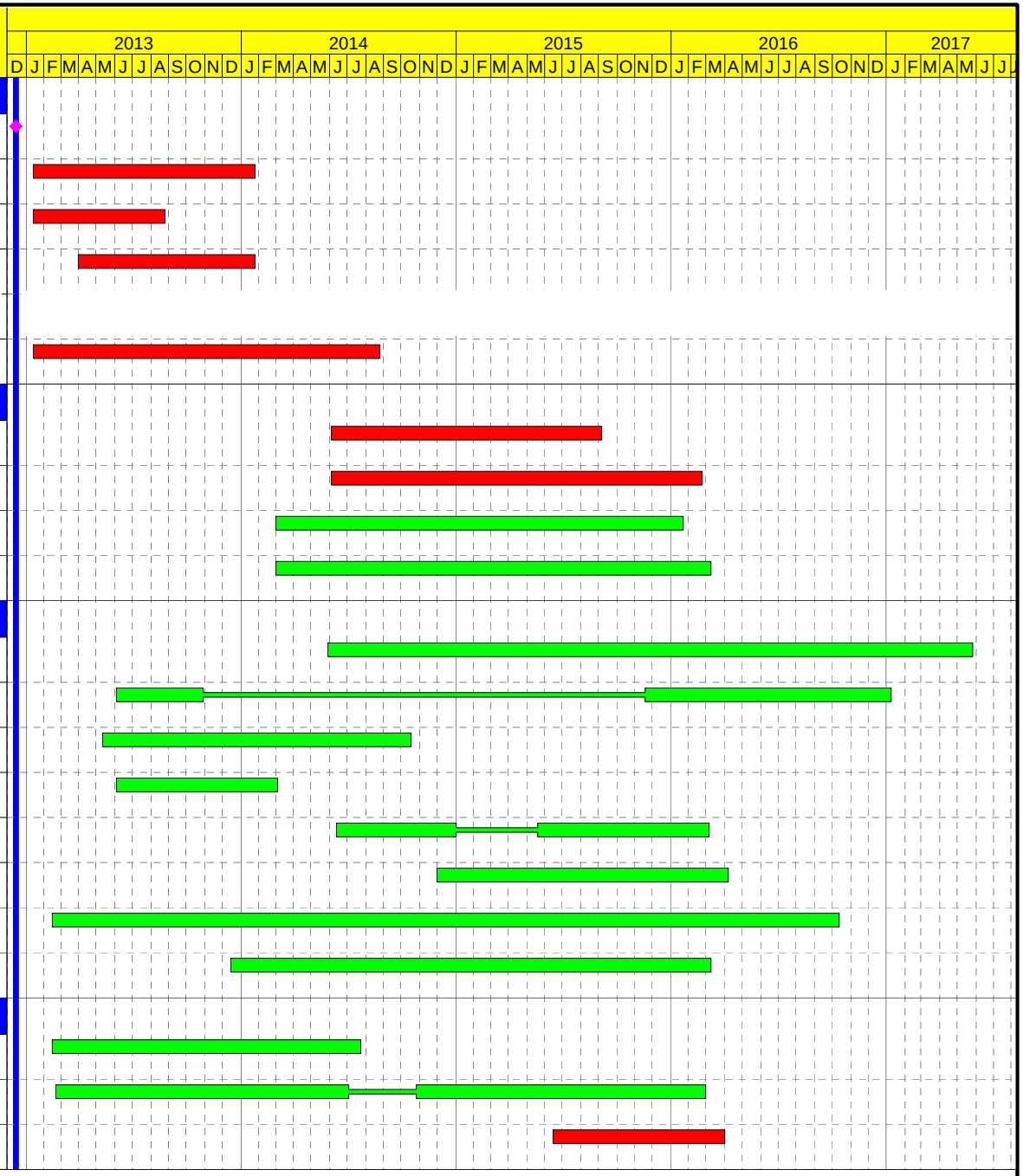
TITLE
CONTRACT 1111
HUNG HOM NORTH APPROACH TUNNELS
LOCATION OF NOISE MONITORING STATION (CONSTRUCTION PHASE)

SCALE 1 : 2000 (A3) | FIGURE NO. FIGURE 3.1 | REV. -

APPENDIX A

Construction Programme

Activity Description	Start	Finish
REPROVISIONING WORKS		
Commencement of Works	17/12/12	
Existing HUH Station Platform Level Works	14/01/13	26/01/14
Mong Kok Freight Terminal Podium Level	14/01/13	25/08/13
Poly U Railway Reserve & New Maintenance Sidings	01/04/13	26/01/14
Inter City Crew Accomodation on HUH EWL Platform	14/01/13	24/08/14
NSL/EWL TUNNEL		
NSL/EWL Area 3 Tunnel (early handover)	03/06/14*	04/09/15
NSL/EWL Area 4 Tunnel	03/06/14*	22/02/16
NSL/EWL Area 5 Tunnel	03/03/14*	20/01/16
NSL/EWL Area 6 Tunnel	03/03/14*	07/03/16
NSL TUNNEL		
NSL Area 7 Tunnel (inc CRN1 & Traffic Diversion)	30/05/14*	26/05/17
NSL Area 8A Tunnel	04/06/13*	07/01/17
TB1	13/05/13*	17/10/14
TB2	04/06/13*	05/03/14
NSL Area 8B Tunnel	13/06/14*	05/03/16
NSL Area 9 Tunnel	01/12/14*	06/04/16
Oi Sen Path Slope Works and Tunnel	14/02/13*	13/10/16
Oi Sen Path Noise Enclosure	14/12/13*	09/03/16
EWL TUNNEL		
EWL Area 6A Tunnel	15/02/13*	22/07/14
EWL Areas 7&8 Tunnel	22/02/13*	27/02/16
EWL Area 9 Tunnel (late possession)	15/06/15*	02/04/16



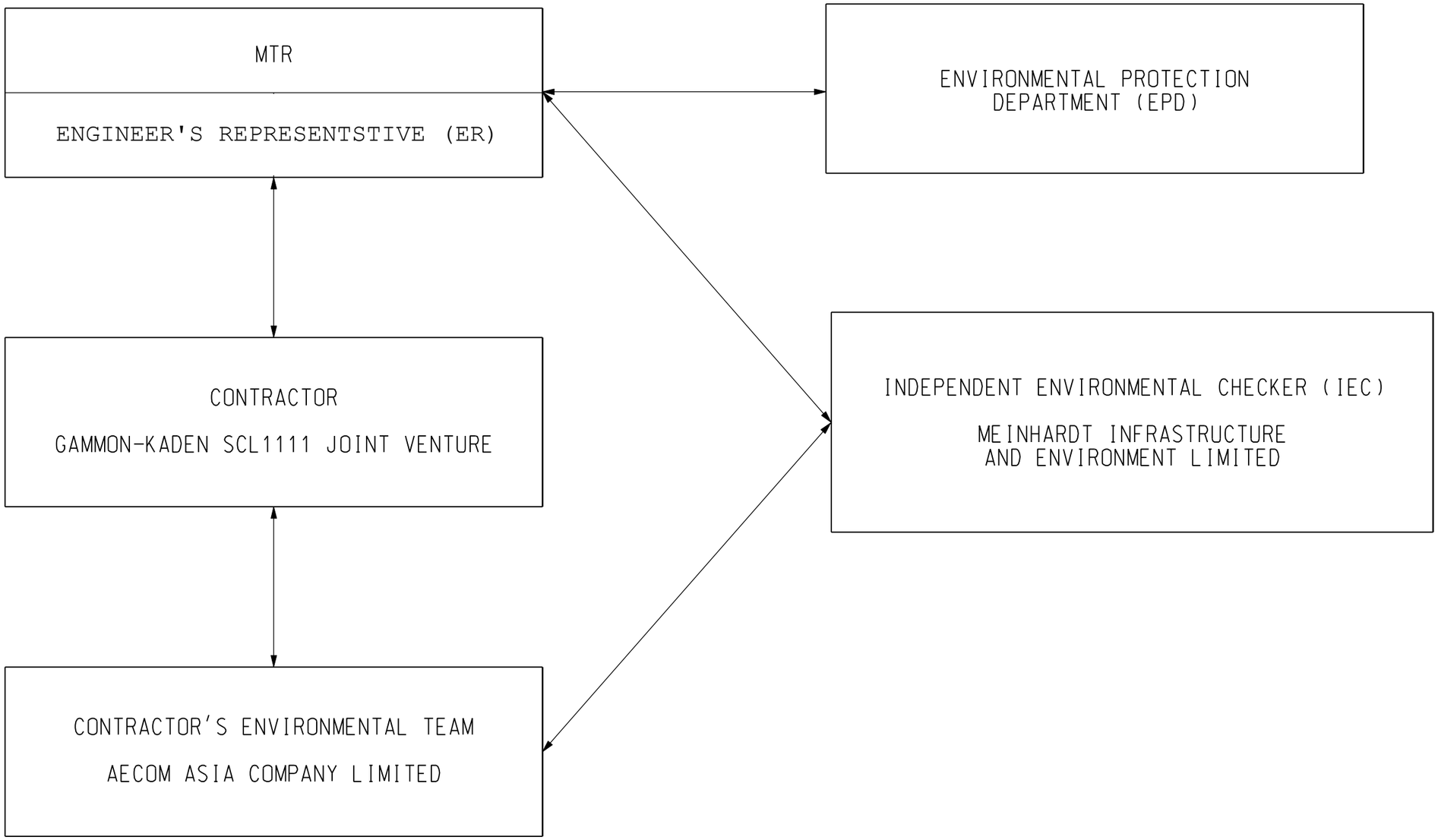
Early Bar
Progress Bar
Critical Activity

SCL 1111
SUMMARY PROGRAMME

Date	Revision	Checked	Approved
19/09/12			

APPENDIX B

Project Organization Structure



PLOT DRV: V:\ustnse1\MTR\PLOTDRIVER\WINDOWS\A3 COLOUR.plt
MODEL NAME: Default PRINTED BY: XANG 2013/1/10 17:02:34
FILENAME: P:\projects\602840\DRAWING\FIGURE\Figure 1.2.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	HD
DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	08/JAN/2013

MTR

SHATIN TO CENTRAL LINK

CONTRACTOR: Gammon Kaden — Gammon – Kaden SCL 1111 Joint Venture

ORIGINATOR: AECOM

CADD REF. Appendix B

TITLE
CONTRACT 1111
HUNG HOM NORTH APPROACH TUNNELS
PROJECT ORGANISATION

SCALE N.T.S.

FIGURE NO. Appendix B

REV. –

APPENDIX C

Implementation Schedule of Environmental Mitigation Measures

Appendix C - Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	Environmental Mitigation Measures		Location	Implementation Status
Landscape and Visual Impact				
S6.9.3 (TAW-HUH) , S6.12 (HHS), S6.12 (TAW-HUH), Table 6.9 (HHS) & Table 4.9 (MKK-HUH)	Minimize visual & landscape impact	Existing topsoil shall be re-used where possible for new planting areas within the Project.	All construction sites	N/A
		Ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone.	All construction sites	N/A
		All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period.	All construction sites	V
		Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas.	All construction sites	V
		Giving control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.	All construction sites	V
		Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable.	All construction sites	N/A
		Compensatory tree & shrub planting shall be provided to compensate for the loss of shrub planting in amenity areas.	All construction sites	N/A
		Control of night-time lighting glare.	All construction sites	N/A
		All hard and soft landscape areas disturbed temporarily during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government Departments.	All construction sites	N/A

Construction Noise Impact				
8.3.6 (TAW-HUH) , S8.5.6 (HHS) & S6 (MKK-HUH)	To control construction airborne noise	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.	All construction sites	V
		Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All construction sites	V
		Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs.	All construction sites	V
		Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works.	All construction sites	V
		Mobile plant should be sited as far away from NSRs as possible and practicable.	All construction sites	V
		Material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	All construction sites	V
		The following quiet PME should be used: • Asphalt Paver (SWL=101dB(A)) • Backhoe (SWL=106dB(A)) • Backhoe with Hydraulic Breaker (SWL=110dB(A)) • Concrete lorry mixer (SWL=96dB(A)) • Concrete mixer truck (SWL=96dB(A)) • Concrete Pump (SWL=106dB(A)) • Concrete Pump Truck (SWL=106dB(A)) • Crane, mobile (SWL=94dB(A)) • Crawler Crane (SWL=102dB(A)) • Drill, hand-held (SWL=98dB(A))	Works areas where required	N/A

Construction Noise Impact				
		• Dump truck (SWL=104dB(A)) • Excavator (SWL=106dB(A)) • Flat Bed Lorry (SWL=102dB(A)) • Generator (SWL=95dB(A)) • Giken Piler and Power-pack (SWL=94dB(A)) • Hydraulic breaker (SWL=110dB(A)) • Hydraulic excavator (SWL=106dB(A)) • Lorry (SWL=102dB(A)) • Lorry with crane/ grab (SWL=94dB(A)) • Mini Piling Rig (SWL=112dB(A)) • Piling Rig (SWL=112dB(A)) • Poker, vibrator, hand-held (SWL=98dB(A)) • Road Roller (SWL=101dB(A)) • Rock Drill (SWL = 108dB(A) • Roller (SWL = 101dB(A) • Truck (SWL=103dB(A)) • Vibratory Hammer (SWL=118dB(A))		
		Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs.	All construction sites	V
		Install movable noise barriers, acoustic mat or full enclosure, screen the noisy plants	All construction sites	V
		Sequencing operation of construction plants where practicable.	All construction sites	V
		Particularly noisy construction activities will be scheduled to avoid school examination period as far as practicable.	Works areas near the Carmel Secondary School	V

Construction Air Quality Impact				
S7.6.5 (TAW-HUH) , S7.6.6 (HHS), S5.50, 5.51 &5.57 (MKK-HUH)	Minimize dust impact at nearby sensitive receivers	Watering once per hour on exposed worksites and haul road should be conducted to achieve dust removal efficiencies of 91.7%.	All construction sites	V
		Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet.	All construction sites	V
		Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads	All construction sites	V
		A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones.	All construction sites	V
		The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle	All construction sites	N/A
		Vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point.	All construction sites	V
		The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	All construction sites	V
		When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided.	All construction sites	V
		The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials.	All construction sites	@
		Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously.	All construction sites	V

Construction Air Quality Impact				
		Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet.	All construction sites	N/A
		Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building.	All construction sites	V
		Any skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	N/A
		Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.	All construction sites	N/A
/	/	Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	All construction sites	N/A
		Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.	All construction sites	N/A
		Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	All construction sites	N/A
		Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site.	All construction sites	N/A
		Imposition of speed controls for vehicles on site haul roads.	All construction sites	N/A
		Open burning shall be prohibited.	All construction sites	N/A

Construction Air Quality Impact				
/	Emission from Vehicles and Plants	All vehicles shall be shut down in intermittent use.	All construction sites	V
		Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.	All construction sites	@
		All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD).	All construction sites	V

Construction Water Quality Impact				
S10.7.1 (TAW-HUH) , S10.7.1 (HHS) & S8 (MKK-HUH)	To minimize construction water quality impactt	Construction Site Drainage should be implemented to control site run-off and drainage as well as any site effluents generated from the works areas, and to prevent run-off and construction wastes from entering nearby water environment.	Site drainage system	V
		Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins.	Site drainage system	V
		Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities.	All works area	V
		Perimeter channels at site boundaries should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site.	All works area	V
		Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly.	All construction sites	@
		Construction works should be programmed to minimize soil excavation works in rainy seasons.	All construction sites	N/A
		Temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds.	All construction sites	V
		Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms.	All construction sites	N/A

Construction Water Quality Impact				
		Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	All construction sites	V
		Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All construction sites	V
		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All construction sites	V
		Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area.	All construction sites	V
		All vehicles and plant should be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads.	All construction sites	V
		Bentonite slurries used in diaphragm wall construction should be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry should either be dewatered or mixed with inert fill material for disposal to a public filling area.	All construction sites	V
		A cofferdam wall should be built as necessary to limit groundwater inflow to the excavation works areas.	Excavation works areas	N/A

Construction Water Quality Impact				
		Wastewater generated should not be discharged into the stormwater drainage system.	All construction sites	V
		Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers.	All construction sites	N/A
		Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site.	All construction sites	V
		The Contractor should apply for a discharge license under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.	All construction sites where practicable	N/A
		Appropriate measures will be deployed to minimize the intrusion of groundwater into excavation works areas.	All construction sites	N/A
		Measures should be put in place in order to mitigate any drawdown effects to the groundwater table during the operation of the temporary dewatering works.	All construction sites	N/A

Waste Management				
S11.5.1(TAW-HUH), S11.5.1(HHS) & S9 (MKK-HUH)	Good site practice to minimize the generation and impact of the waste.	Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement.	All construction sites	N/A
		Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions.	All construction sites	V
		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.	All construction sites	V
		Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	All construction sites	@
		Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	All construction sites	N/A
		Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution.	All construction sites	V
		Maintain and clean storage areas routinely.	All construction sites	V
		Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away.	All construction sites	V
		Waste should be removed in timely manner.	All construction sites	@
		Waste collectors should only collect wastes prescribed by their permits.	All construction sites	V
		Waste should be disposed of at licensed waste disposal facilities.	All construction sites	V
		Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.	All construction sites	V

Waste Management				
		Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	All construction sites	V
		The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides.	All construction sites	V
		The Contractor should register as a chemical waste producer if chemical wastes would be generated.	All construction sites	V
		Disposal of chemical waste should be via a licensed waste collector.	All construction sites	V
		Stockpiling of contaminated sediments should be avoided as far as possible.	All construction sites	N/A
		All storage of asbestos waste should be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. The storage area should bear warning panels to alert people of the presence of asbestos waste. Collection, transportation and disposal of asbestos waste should follow the trip-ticket system. Licensed asbestos waste collectors should be appointed to collect the asbestos waste and deliver to the designated landfill for disposal.	All construction sites	V

Contaminated Land				
S10.24– 10.34 (MKK-HUH)	To act as a general precautionary measure to screen soils for the presence contamination during construction.	Precautionary measures such as visual inspection are recommended to be undertaken during construction activities that disturb soil.	Within Project Boundary where signs of contamination is identified	N/A
		If soil discolouration or the presence of oil/unnatural odour is noted during visual inspection, sampling and testing should also be undertaken to verify the presence of contamination.		N/A
	To remediate contaminated soil	If land contamination is identified, CAR and RAP detailing the proposed remediation works should be prepared. RR should then be prepared and submitted to EPD to demonstrate that the decontamination work is adequate and has been carried out in accordance with the endorsed CAR and RAP.		N/A

Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX D

Summary of Action and Limit Levels

Appendix D – Summary of Action and Limit Levels

Table 1 Action and Limit Levels for 24-hour TSP

ID	Location	Action Level	Limit Level
AM1	No. 234 – 238 Chatham Road North	183.9 $\mu g/m^3$	260.0 $\mu g/m^3$

Table 2 Action and Limit Levels for Regular Construction Noise (0700 – 1900 hrs of normal weekdays)

ID	Location	Action Level	Limit Level
NM1	Carmel Secondary School (South Block)	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers.	68 / 70 dB(A)(1)
NM2	No. 234 – 238 Chatham Road North		75 dB(A)

Note:
(1) Daytime noise Limit Level of 70dB(A) applies to education institutions while 68dB(A) applies during school examination period as continuous noise monitoring was conducted from 2 to 6 and 9 to 13 February 2015.

Table 3 Action and Limit Levels for Continuous Noise

ID	Location	Action/Limit Level
NM1	Carmel Secondary School (South Block)	68 dB(A)(1)
NM2	No. 234-238 Chatham Road North	77 dB(A)

Note:
(1) Action/Limit level will only be applicable during the examination period.

APPENDIX E

Calibration Certificates of Equipments

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	234 - 238 Chatham Road North; SCL - DMS - 11	Operator:	Shum Kam Yuen
Cal. Date:	29-Dec-14	Next Due Date:	28-Feb-15
Equipment No.:	---	Serial No.	8259

Ambient Condition			
Temperature, Ta (K)	290	Pressure, Pa (mmHg)	763.9

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-May-15				

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.8	2.84	1.44	43.0	43.70
13	6.4	2.57	1.31	36.0	36.59
10	5.2	2.32	1.18	32.0	32.52
7	4.1	2.06	1.05	27.0	27.44
5	2.9	1.73	0.88	20.0	20.33

By Linear Regression of Y on X

Slope , mw = **40.4933** **Intercept, bw =** **-15.3060**

Correlation Coefficient* = **0.9951**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **36.74**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 30/12/14

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	234 - 238 Chatham Road North; SCL - DMS - 11	Operator:	Shum Kam Yuen
Cal. Date:	27-Feb-15	Next Due Date:	27-Apr-15
Equipment No.:	---	Serial No.	8259

Ambient Condition			
Temperature, Ta (K)	293	Pressure, Pa (mmHg)	762.5

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	$mc \times Qstd + bc = [H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-May-15				

Calibration of TSP Sampler

Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	7.6	2.78	1.41	42.0	42.43
13	6.2	2.52	1.28	36.0	36.37
10	5.2	2.30	1.17	31.0	31.31
7	4.0	2.02	1.03	26.0	26.26
5	2.9	1.72	0.88	20.0	20.20

By Linear Regression of Y on X

Slope , mw = 40.9657 **Intercept, bw =** -15.9488

Correlation Coefficient* = 0.9974

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **36.93**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 27/2/15

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 28, 2014 Rootsmeter S/N 0438320 Ta (K) - 296
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3790	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8260	8.8	5.50
5	NA	NA	1.00	0.6830	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917	0.7191	1.4113		0.9957	0.7221	0.8874
0.9875	1.0159	1.9959		0.9915	1.0201	1.2549
0.9854	1.1339	2.2315		0.9894	1.1385	1.4030
0.9843	1.1916	2.3405		0.9883	1.1965	1.4715
0.9790	1.4333	2.8227		0.9829	1.4392	1.7747
Qstd slope (m) =		1.97518		Qa slope (m) =		1.23683
intercept (b) =		-0.01001		intercept (b) =		-0.00630
coefficient (r) =		0.99998		coefficient (r) =		0.99998
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0305 06-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2285692	,	2250420
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO. LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	05-Mar-2014

Date of test: 07-Mar-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 12-Mar-2014 **Company Chop:**

SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
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HOKLAS 028

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0305 06-01 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertanity (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertanity (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 07-Mar-2014

Checked by: Lam Tze Wai **Date:** 12-Mar-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

綜合試驗有限公司
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CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0702 01-01

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2800927 / N.009.06	,	2791211
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	02-Jul-2014

Date of test: 03-Jul-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 04-Jul-2014 **Company Chop:**

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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CERTIFICATE OF CALIBRATION

(Continuation Page)

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip Date: 03-Jul-2014

Checked by: Lam Tze Wai Date: 04-Jul-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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HKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0702 01-02

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2800930 / N.009.07	,	2250455
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	02-Jul-2014

Date of test: 03-Jul-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 04-Jul-2014 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA0702 01-02 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 03-Jul-2014

Checked by: Lam Tze Wai **Date:** 04-Jul-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	15-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:** 綜合試驗有限公司 SOILS & MATERIALS ENGINEERING COMPANY LTD.

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1106 04-01 **Page** 2 **of** 2

1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range , Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100μs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	N/A	N/A	
	Repeated at frequency of 100 Hz	N/A	N/A	
Time averaging	1 ms burst duty factor $1/10^3$ at 4kHz	Pass	0.3	
	1 ms burst duty factor $1/10^4$ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 07-Nov-2014

Checked by: Lam Tze Wai **Date:** 08-Nov-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	13-May-2015	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
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HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 14CA1106 04-02 **Page:** 2 **of** 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	94.02	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.002 dB**

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz **Actual Frequency = 988.9 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 1.3 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Fung Chi Yip **Date:** 07-Nov-2014

Checked by: Lam Tze Wai **Date:** 08-Nov-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

APPENDIX F

EM&A Monitoring Schedules

Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Impact Monitoring Schedule for February 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb
	Continuous noise monitoring (NM1)					
		24-hour TSP (AM1)	Noise (NM1, NM2)			
8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb
	Continuous noise monitoring (NM1)					
	24-hour TSP (AM1)	Noise (NM1, NM2)				24-hour TSP (AM1)
15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb
		Noise (NM1, NM2)	24-hour TSP (AM1)			
22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb
		24-hour TSP (AM1)	Noise (NM1, NM2)			24-hour TSP (AM1)

Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Tentative Impact Monitoring Schedule for March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar
	Continuous noise monitoring (NM2)					
		Noise (NM1, NM2)			24-hour TSP (AM1)	
8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
	Continuous noise monitoring (NM2)					
				24-hour TSP (AM1)	Noise (NM1, NM2)	
15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
	Continuous noise monitoring (NM2)					
			24-hour TSP (AM1)	Noise (NM1, NM2)		
22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
	Continuous noise monitoring (NM2)					
		24-hour TSP (AM1)	Noise (NM1, NM2)			
29-Mar	30-Mar	31-Mar				
	Continuous noise monitoring (NM2)					
	24-hour TSP (AM1)	Noise (NM1, NM2)				

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

APPENDIX G

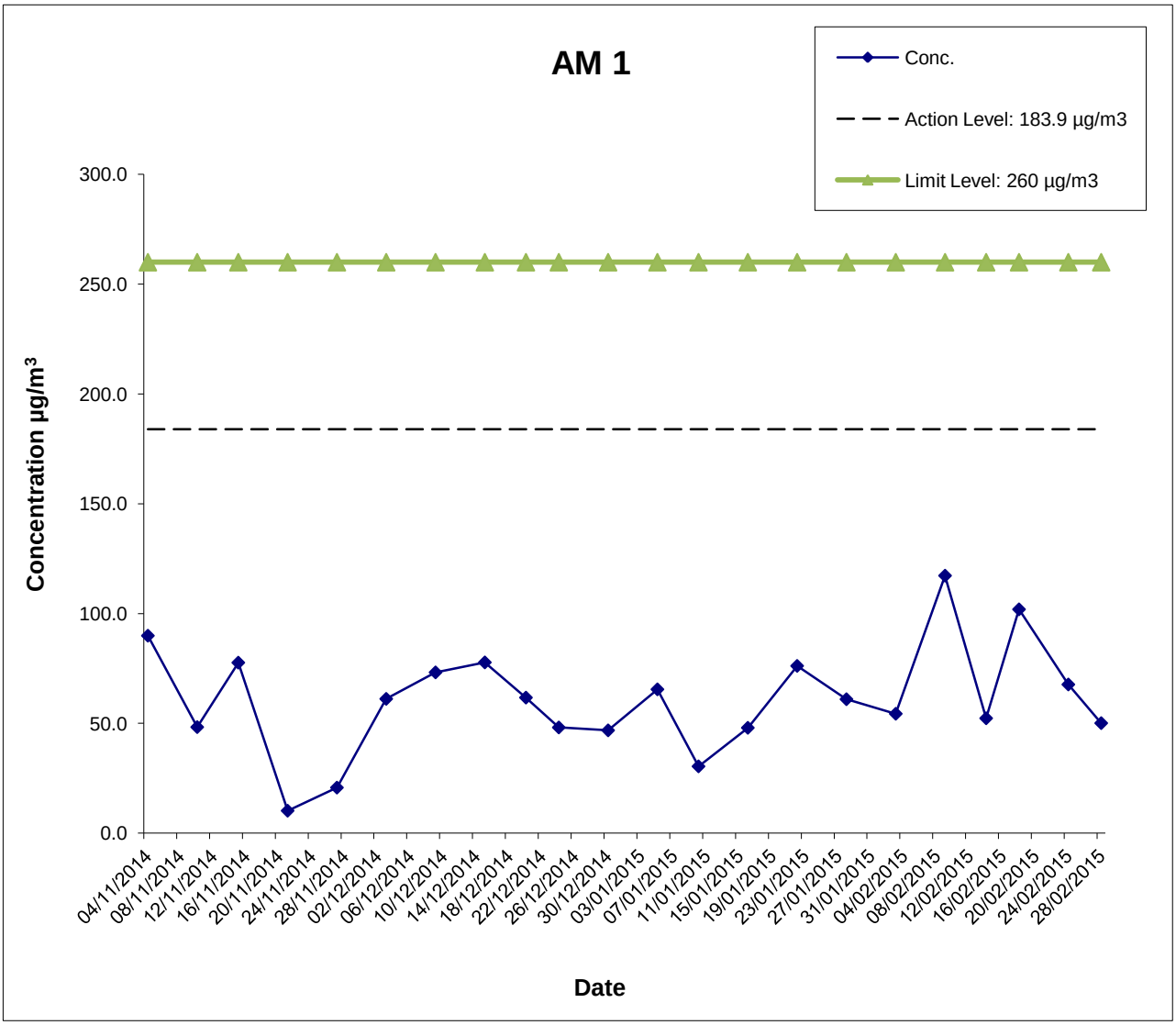
Air Quality Monitoring Results and their Graphical Presentations

Appendix G
Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AM1 (No. 234 – 238 Chatham Road North)

Start		End		Weather	Air	Atmospheric	Flow Rate (m^3/min.)		Av. flow	Total vol.	Filter Weight (g)		Particulate	Elapse Time		Sampling	Conc.
Date	Time	Date	Time	Condition	Temp. (^oC)	Pressure (hPa)	Initial	Final	(m^3/min)	(m^3)	Initial	Final	weight(g)	Initial	Final	Time(hrs.)	($\mu g/m^3$)
3-Feb-15	0:00	4-Feb-15	0:00	Sunny	17.1	1024.6	1.31	1.31	1.31	1890.7	2.7819	2.8847	0.1028	9908.04	9932.04	24.00	54.4
9-Feb-15	0:00	10-Feb-15	0:00	Sunny	14.9	1025.2	1.31	1.31	1.31	1890.7	2.7120	2.9337	0.2217	9932.04	9956.04	24.00	117.3
14-Feb-15	0:00	15-Feb-15	0:00	Cloudy	18.5	1016.9	1.31	1.31	1.31	1890.7	2.7596	2.8585	0.0989	9956.04	9980.04	24.00	52.3
18-Feb-15	0:00	19-Feb-15	0:00	Cloudy	18.1	1019.1	1.31	1.31	1.31	1890.7	2.7664	2.9591	0.1927	9980.04	10004.04	24.00	101.9
24-Feb-15	0:00	25-Feb-15	0:00	Cloudy	18.6	1014.8	1.31	1.31	1.31	1890.7	2.7302	2.8582	0.1280	10004.04	10028.04	24.00	67.7
28-Feb-15	0:00	1-Mar-15	0:00	Cloudy	18.3	1017.3.	1.31	1.31	1.31	1890.7	2.7245	2.8193	0.0948	10028.00	10052.00	24.00	50.1
																Average	**73.9**
																Minimum	**50.1**
																Maximum	**117.3**

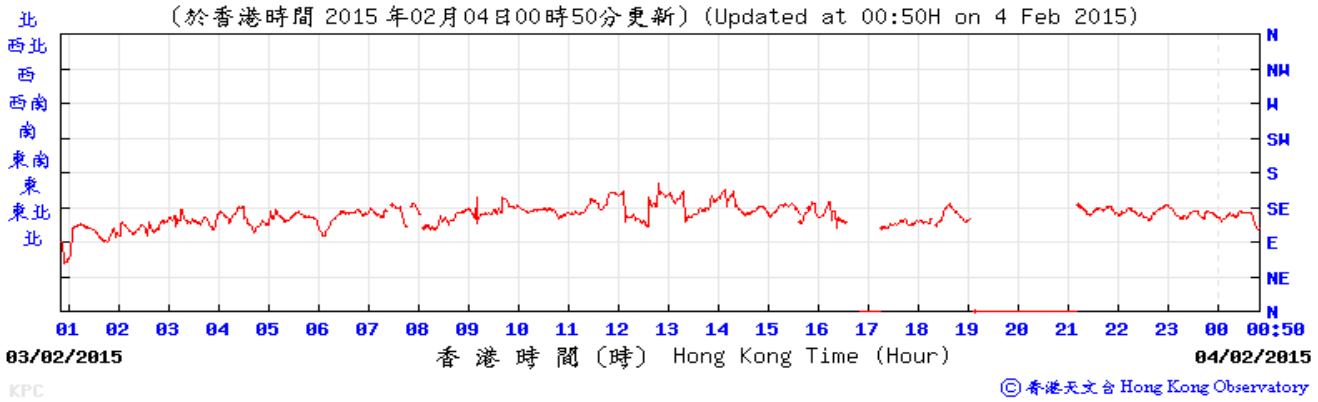
Appendix G Air Quality Monitoring Results

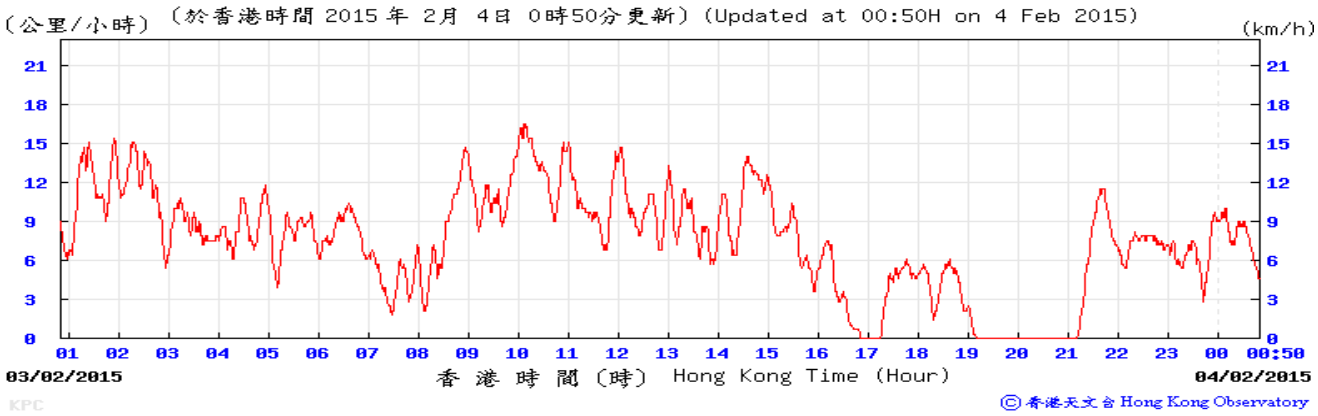


AECOM	Shatin to Central Link Works Contract 1111-Hung Hom North Approach Tunnels	SCALE	N.T.S.	DATE	Mar-15
		CHECK	TYUT	DRAWN	LLMC
	Graphical Presentations of Impact 24-hour TSP Monitoring Results	JOB NO.	60284101	APPENDIX No. G	Rev. -

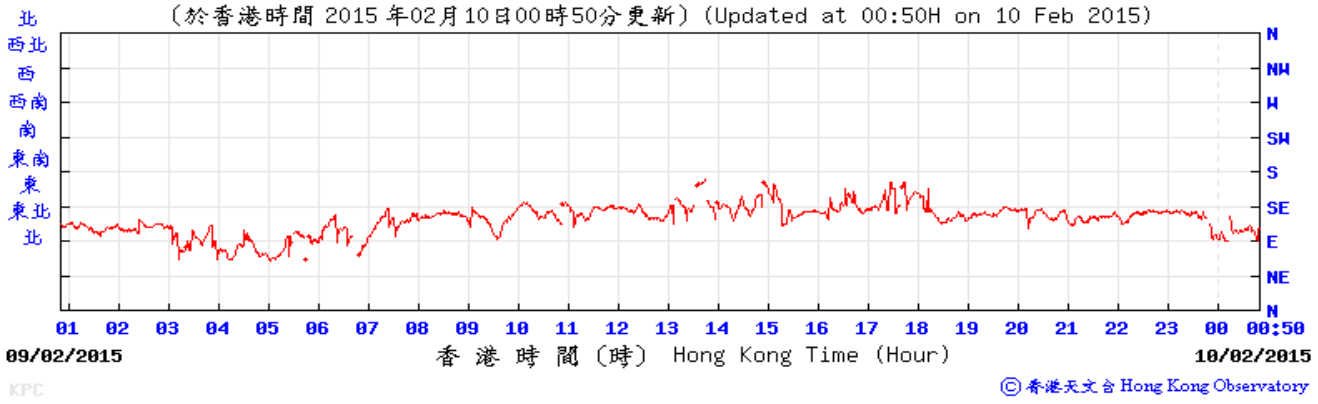
Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, February 2015

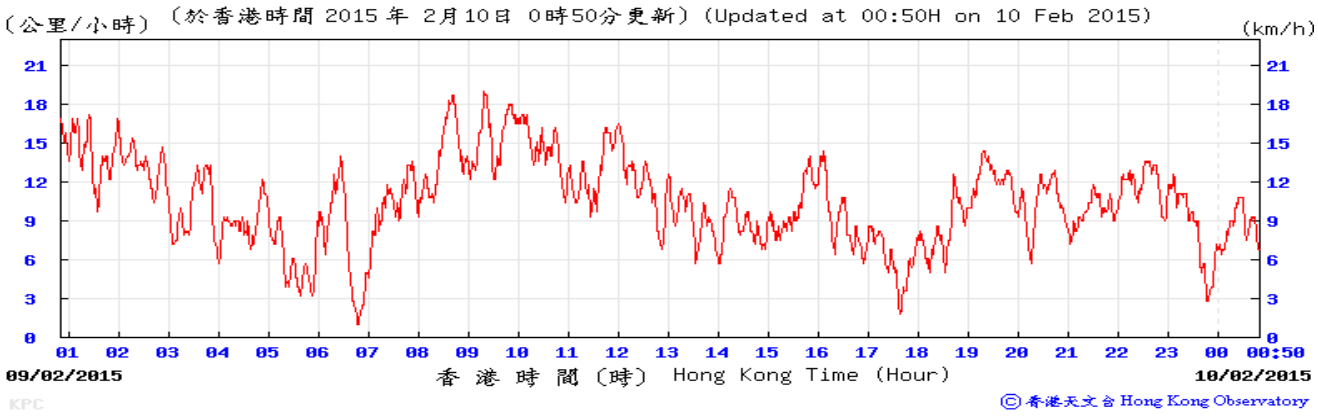
3-Feb-15





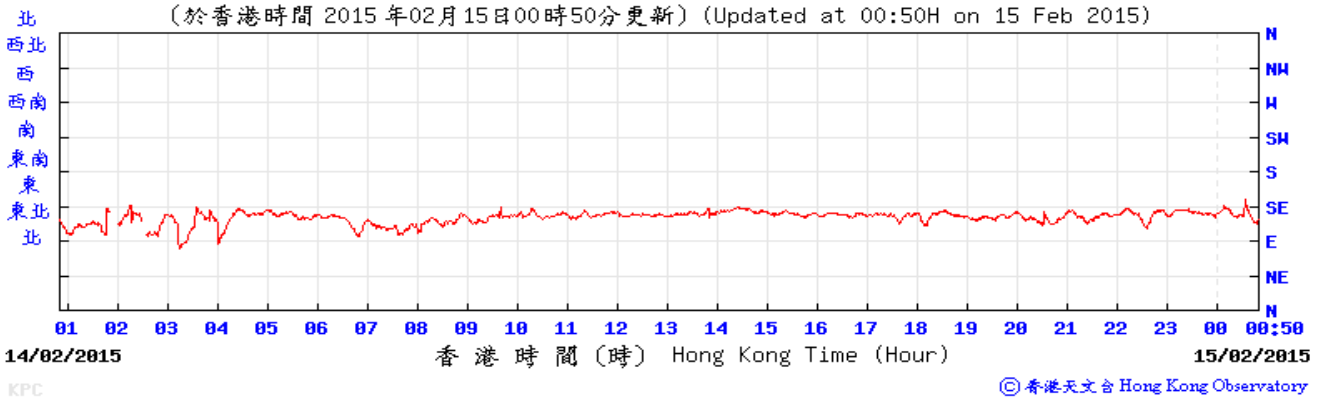
9-Feb-15

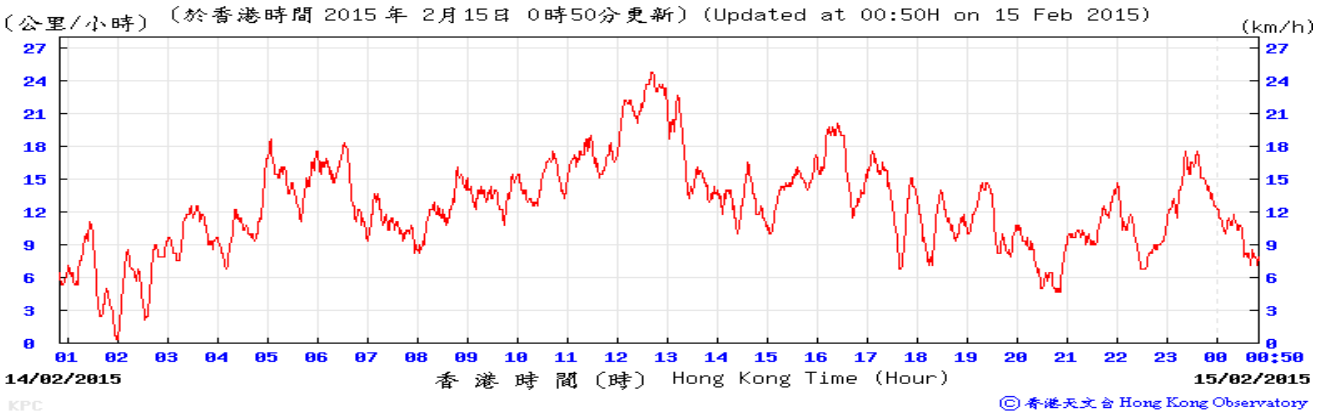




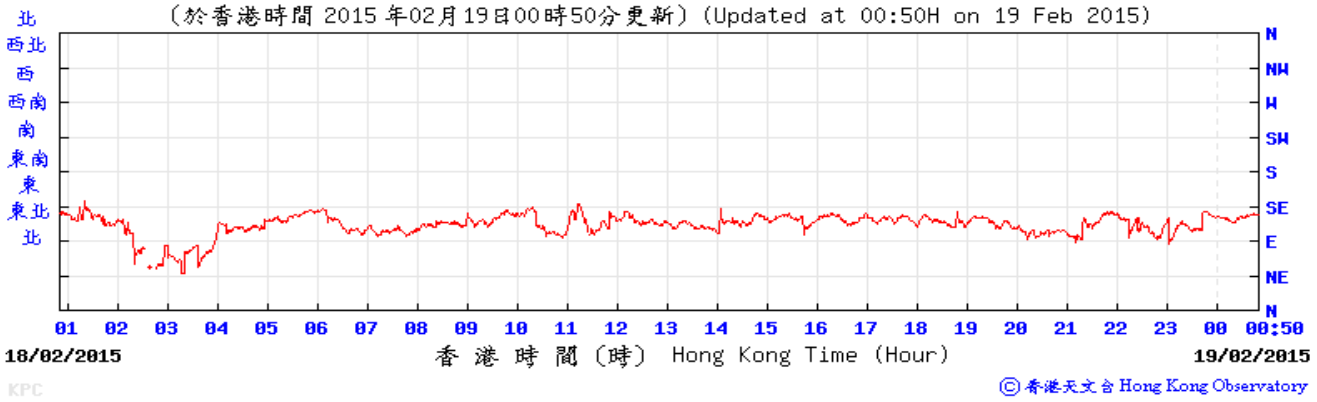
Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, February 2015

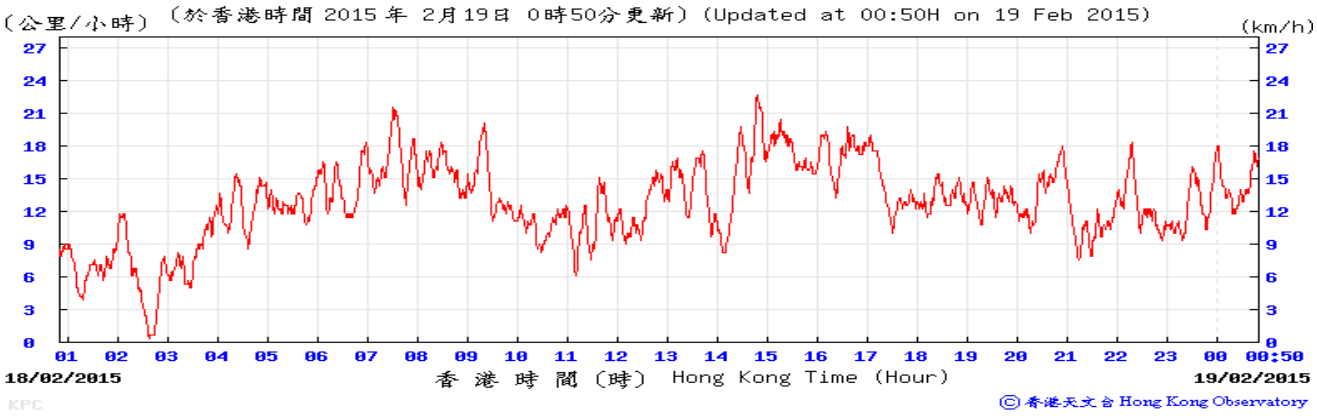
14-Feb-15





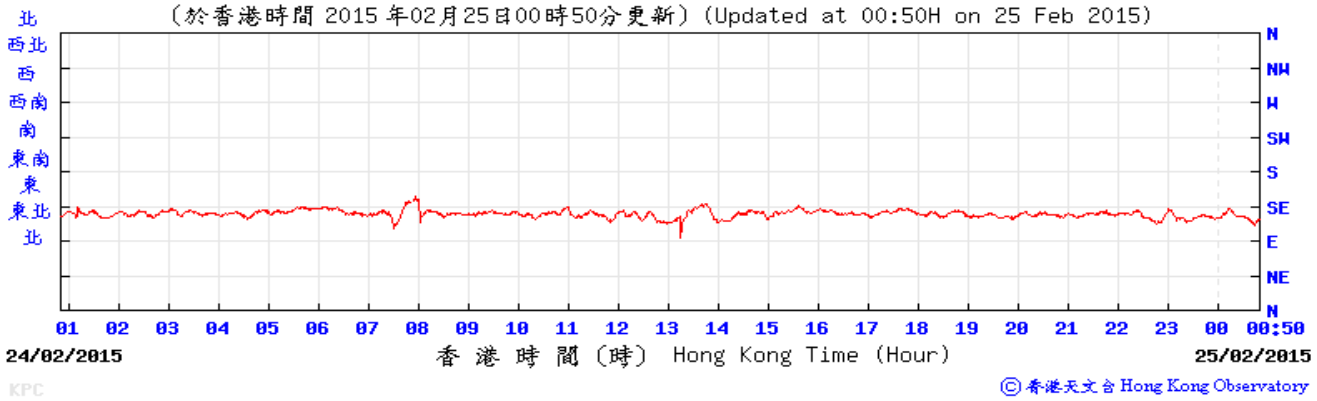
18-Feb-15

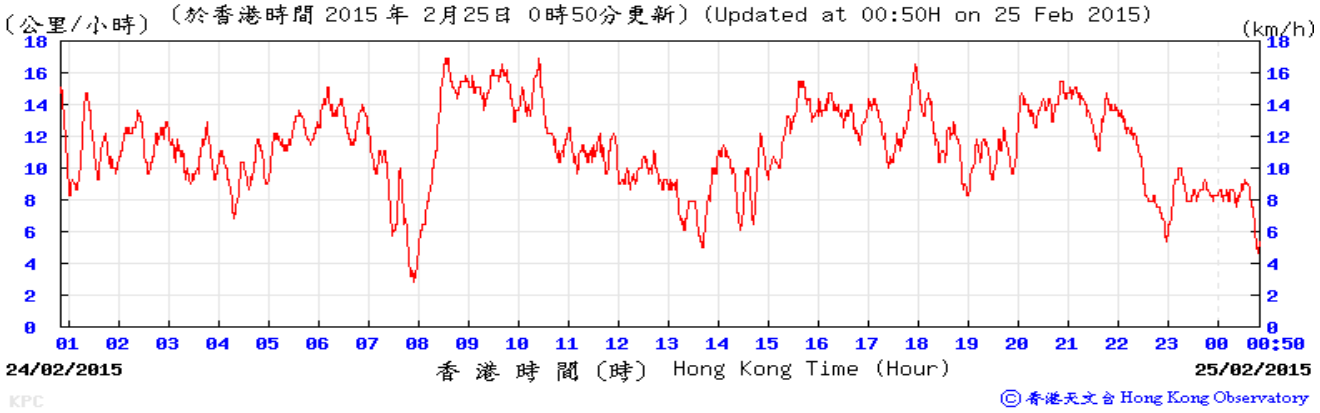




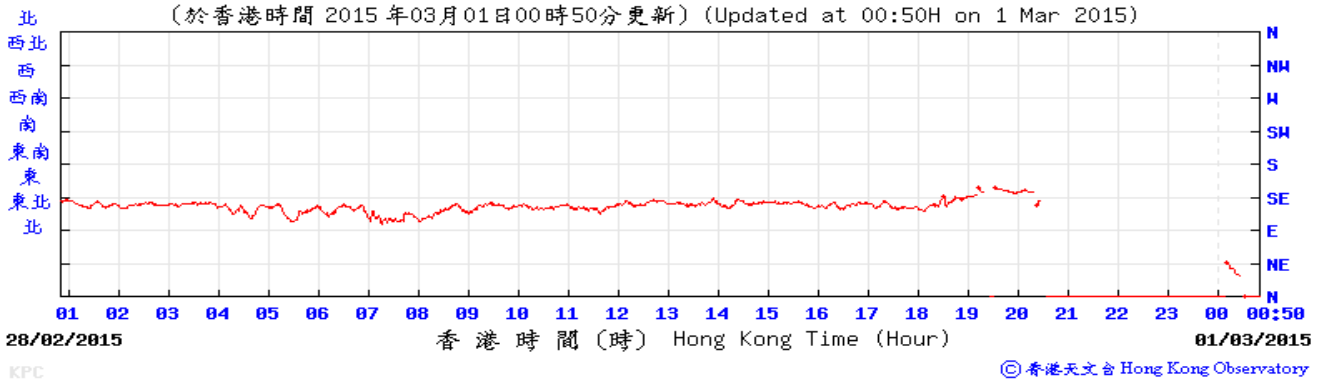
Appendix G – Extract of Meteorological Observations for King's Park Automatic Weather Station, February 2015

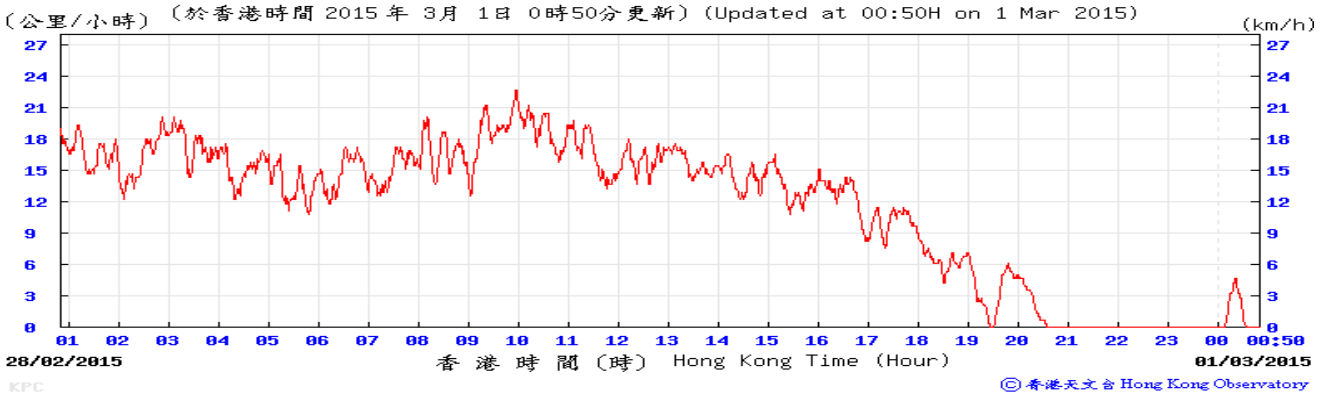
24-Feb-15





28-Feb-15





APPENDIX H

Noise Monitoring Results and their Graphical Presentations

Appendix H Regular Construction Noise Monitoring Results

Daytime Noise Monitoring Results at Station NM 1 (Carmel Secondary School (South Block))

Date	Weather Condition	Noise Level for 30-min, dB(A)+				Baseline Corrected Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level*, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
4-Feb-15	Fine	10:30	66.2	75.2	68.7	60.6	68.0	68	N
10-Feb-15	Fine	10:00	66.8	75.3	69.6	64.5	68.0	68	N
17-Feb-15	Sunny	10:10	69.0	71.9	70.1	65.9	68.0	70	N
25-Feb-15	Cloudy	10:06	64.6	70.1	68.2	54.7	68.0	70	N

Daytime Noise Monitoring Results at Station NM 2 (No. 234 – 238 Chatham Road North)

Date	Weather Condition	Noise Level for 30-min, dB(A)++				Baseline Corrected Level, dB(A)	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
4-Feb-15	Fine	10:58	70.9	75.1	73.4	<Baseline	79.0	75	N
10-Feb-15	Fine	10;35	68.5	73.8	71.2	<Baseline	79.0	75	N
17-Feb-15	Sunny	11:00	70.5	73.0	71.7	<Baseline	79.0	75	N
25-Feb-15	Cloudy	10:57	66.6	71.0	69.7	<Baseline	79.0	75	N

+ - Façade measurement

++ - Free field measurement

* - Limit Level of 70dB(A) applies to education institutes while 68dB(A) applies during school examination period as continuous noise monitoring was conducted from 2 to 6 and 9 to 13 February 2015.

Appendix H Continuous Noise Monitoring Results

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (Leq, 30mins)	Parameter (website reporting)	Results (dB(A)) (Leq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
NM1	Carmel Secondary School (South Block)	2015	2	2	07	0	67.4	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	07	30	67.7	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	08	0	67.5	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	08	30	68.9	68.0	Leq,30mins	61.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	09	0	69.5	68.0	Leq,30mins	64.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	09	30	69.1	68.0	Leq,30mins	62.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	10	0	69.1	68.0	Leq,30mins	62.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	10	30	68.9	68.0	Leq,30mins	61.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	11	0	69.8	68.0	Leq,30mins	65.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	11	30	69.1	68.0	Leq,30mins	62.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	12	0	68.0	68.0	Leq,30mins	=Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	12	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	13	0	69.6	68.0	Leq,30mins	64.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	13	30	70.0	68.0	Leq,30mins	65.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	14	0	70.0	68.0	Leq,30mins	65.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	14	30	69.6	68.0	Leq,30mins	64.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	15	0	69.3	68.0	Leq,30mins	63.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	15	30	69.9	68.0	Leq,30mins	65.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	16	0	70.6	68.0	Leq,30mins	67.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	16	30	70.2	68.0	Leq,30mins	66.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	17	0	70.3	68.0	Leq,30mins	66.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	17	30	70.0	68.0	Leq,30mins	65.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	18	0	69.6	68.0	Leq,30mins	64.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	2	18	30	67.8	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	07	0	66.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	07	30	67.7	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	08	0	68.9	68.0	Leq,30mins	61.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	08	30	70.6	68.0	Leq,30mins	67.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	09	0	71.0	68.0	Leq,30mins	68.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	09	30	70.2	68.0	Leq,30mins	66.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	10	0	70.0	68.0	Leq,30mins	65.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	10	30	70.6	68.0	Leq,30mins	67.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	11	0	70.2	68.0	Leq,30mins	66.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	11	30	69.9	68.0	Leq,30mins	65.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	12	0	68.6	68.0	Leq,30mins	59.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	12	30	68.2	68.0	Leq,30mins	53.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	13	0	70.5	68.0	Leq,30mins	66.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	13	30	70.1	68.0	Leq,30mins	65.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	14	0	69.7	68.0	Leq,30mins	64.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	14	30	69.6	68.0	Leq,30mins	64.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	15	0	69.5	68.0	Leq,30mins	64.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	15	30	69.9	68.0	Leq,30mins	65.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	16	0	71.5	68.0	Leq,30mins	68.8	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	3	16	30	71.2	68.0	Leq,30mins	68.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	17	0	71.0	68.0	Leq,30mins	67.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	17	30	71.7	68.0	Leq,30mins	69.3	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	3	18	0	70.1	68.0	Leq,30mins	65.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	3	18	30	68.4	68.0	Leq,30mins	58.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	07	0	67.5	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	07	30	68.3	68.0	Leq,30mins	57.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	08	0	67.0	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	08	30	68.2	68.0	Leq,30mins	55.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	09	0	68.5	68.0	Leq,30mins	59.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	09	30	69.0	68.0	Leq,30mins	61.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	10	0	68.4	68.0	Leq,30mins	58.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	10	30	68.7	68.0	Leq,30mins	60.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	11	0	69.2	68.0	Leq,30mins	63.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	11	30	68.6	68.0	Leq,30mins	59.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	12	0	68.4	68.0	Leq,30mins	57.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	12	30	68.6	68.0	Leq,30mins	59.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	13	0	71.1	68.0	Leq,30mins	68.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	13	30	70.4	68.0	Leq,30mins	66.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	14	0	70.5	68.0	Leq,30mins	67.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	14	30	69.5	68.0	Leq,30mins	64.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	15	0	69.3	68.0	Leq,30mins	63.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	15	30	69.5	68.0	Leq,30mins	64.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	16	0	70.3	68.0	Leq,30mins	66.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	16	30	69.1	68.0	Leq,30mins	62.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	17	0	69.3	68.0	Leq,30mins	63.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	17	30	69.0	68.0	Leq,30mins	62.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	18	0	68.1	68.0	Leq,30mins	51.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	4	18	30	67.1	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	07	0	66.4	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	07	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	08	0	67.7	68.0	Leq,30mins	<Baseline Level	68	N

Appendix H Continuous Noise Monitoring Results

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (Leq, 30mins)	Parameter (website reporting)	Results (dB(A)) (Leq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
NM1	Carmel Secondary School (South Block)	2015	2	5	08	30	68.8	68.0	Leq,30mins	61.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	09	0	69.0	68.0	Leq,30mins	62.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	09	30	69.0	68.0	Leq,30mins	62.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	10	0	69.1	68.0	Leq,30mins	62.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	10	30	70.3	68.0	Leq,30mins	66.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	11	0	68.9	68.0	Leq,30mins	61.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	11	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	12	0	67.7	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	12	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	13	0	70.1	68.0	Leq,30mins	66.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	13	30	69.5	68.0	Leq,30mins	64.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	14	0	69.2	68.0	Leq,30mins	62.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	14	30	68.9	68.0	Leq,30mins	61.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	15	0	69.1	68.0	Leq,30mins	62.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	15	30	68.0	68.0	Leq,30mins	=Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	16	0	69.6	68.0	Leq,30mins	64.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	16	30	69.4	68.0	Leq,30mins	63.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	17	0	69.5	68.0	Leq,30mins	64.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	17	30	68.9	68.0	Leq,30mins	61.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	18	0	68.7	68.0	Leq,30mins	60.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	5	18	30	67.4	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	07	0	67.3	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	07	30	68.1	68.0	Leq,30mins	51.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	08	0	67.5	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	08	30	68.4	68.0	Leq,30mins	58.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	09	0	68.4	68.0	Leq,30mins	58.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	09	30	68.6	68.0	Leq,30mins	59.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	10	0	69.0	68.0	Leq,30mins	62.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	10	30	68.4	68.0	Leq,30mins	57.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	11	0	68.3	68.0	Leq,30mins	56.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	11	30	68.1	68.0	Leq,30mins	52.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	12	0	67.7	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	12	30	68.0	68.0	Leq,30mins	=Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	13	0	70.3	68.0	Leq,30mins	66.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	13	30	69.5	68.0	Leq,30mins	64.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	14	0	70.2	68.0	Leq,30mins	66.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	14	30	69.4	68.0	Leq,30mins	63.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	15	0	68.7	68.0	Leq,30mins	60.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	15	30	70.4	68.0	Leq,30mins	66.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	16	0	70.3	68.0	Leq,30mins	66.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	16	30	71.2	68.0	Leq,30mins	68.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	17	0	71.5	68.0	Leq,30mins	68.9	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	6	17	30	70.0	68.0	Leq,30mins	65.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	18	0	69.0	68.0	Leq,30mins	62.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	6	18	30	67.8	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	07	0	67.6	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	07	30	68.3	68.0	Leq,30mins	55.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	08	0	68.0	68.0	Leq,30mins	=Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	08	30	70.4	68.0	Leq,30mins	66.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	09	0	70.9	68.0	Leq,30mins	67.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	09	30	70.7	68.0	Leq,30mins	67.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	10	0	70.4	68.0	Leq,30mins	66.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	10	30	71.6	68.0	Leq,30mins	69.1	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	9	11	0	70.2	68.0	Leq,30mins	66.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	11	30	69.7	68.0	Leq,30mins	64.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	12	0	69.4	68.0	Leq,30mins	63.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	12	30	69.5	68.0	Leq,30mins	64.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	13	0	71.6	68.0	Leq,30mins	69.1	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	9	13	30	70.2	68.0	Leq,30mins	66.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	14	0	70.3	68.0	Leq,30mins	66.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	14	30	69.8	68.0	Leq,30mins	65.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	15	0	69.7	68.0	Leq,30mins	64.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	15	30	70.8	68.0	Leq,30mins	67.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	16	0	70.8	68.0	Leq,30mins	67.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	16	30	71.2	68.0	Leq,30mins	68.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	17	0	71.5	68.0	Leq,30mins	68.9	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	9	17	30	70.5	68.0	Leq,30mins	66.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	18	0	69.3	68.0	Leq,30mins	63.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	9	18	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	07	0	67.5	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	07	30	68.2	68.0	Leq,30mins	55.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	08	0	70.2	68.0	Leq,30mins	66.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	08	30	70.3	68.0	Leq,30mins	66.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	09	0	70.7	68.0	Leq,30mins	67.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	09	30	69.7	68.0	Leq,30mins	64.9	68	N

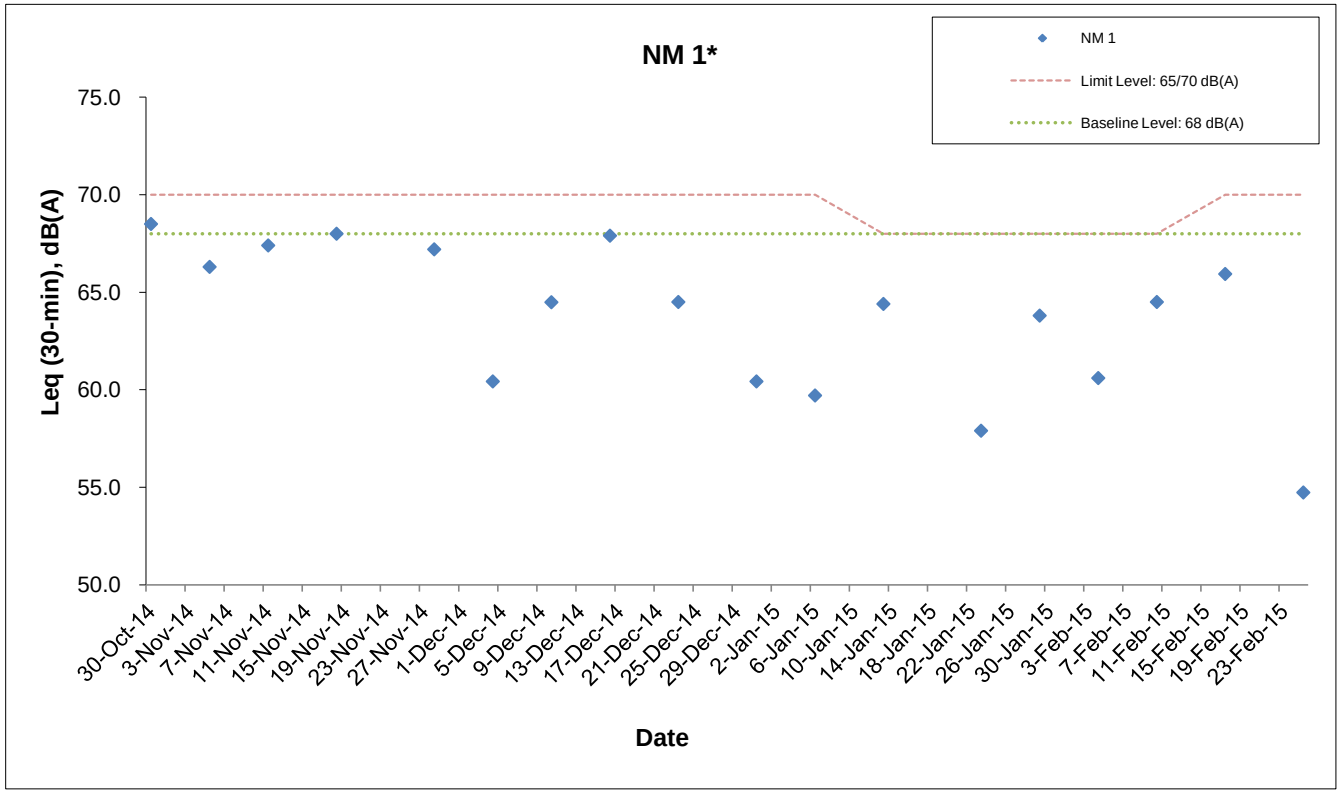
Appendix H Continuous Noise Monitoring Results

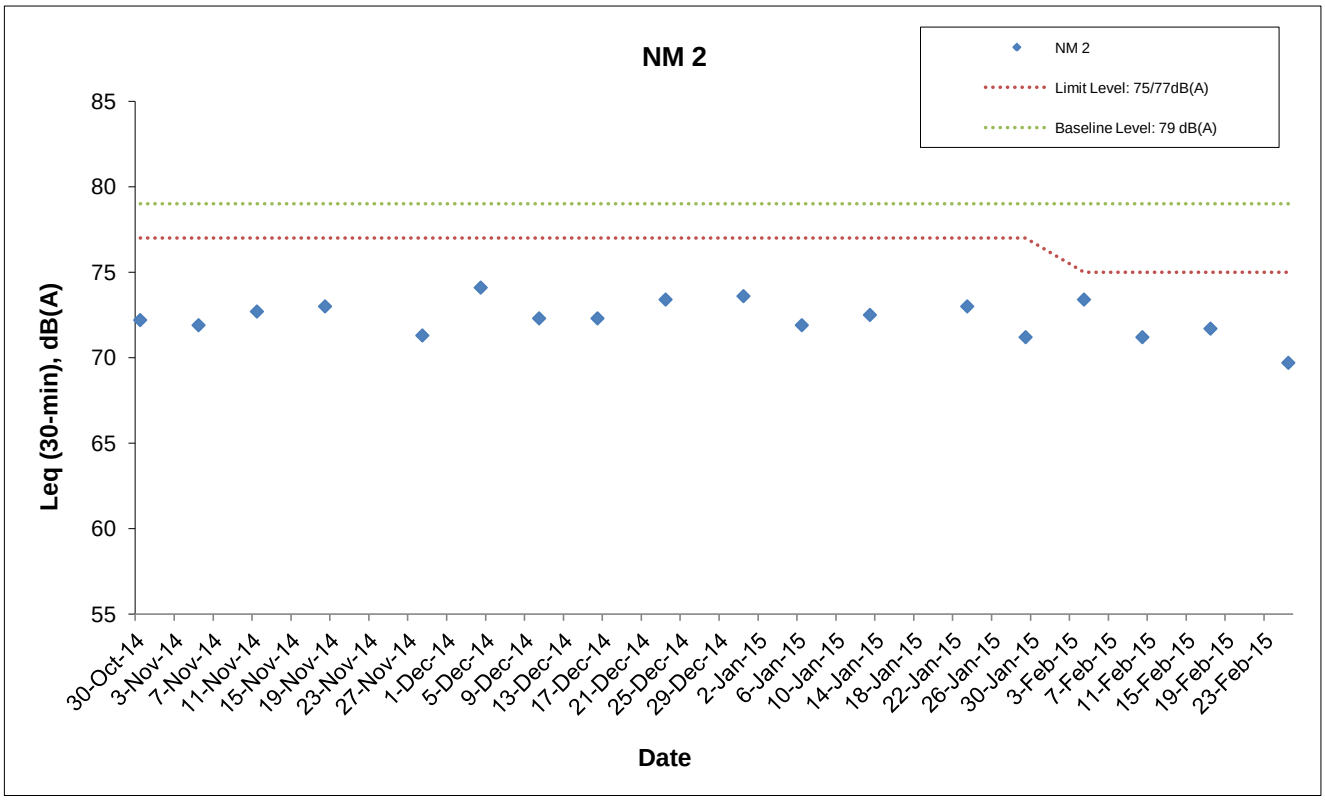
Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (Leq, 30mins)	Parameter (website reporting)	Results (dB(A)) (Leq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
NM1	Carmel Secondary School (South Block)	2015	2	10	10	0	69.6	68.0	Leq,30mins	64.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	10	30	69.7	68.0	Leq,30mins	64.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	11	0	69.5	68.0	Leq,30mins	64.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	11	30	68.5	68.0	Leq,30mins	58.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	12	0	68.3	68.0	Leq,30mins	56.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	12	30	68.9	68.0	Leq,30mins	61.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	13	0	70.9	68.0	Leq,30mins	67.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	13	30	69.9	68.0	Leq,30mins	65.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	14	0	69.5	68.0	Leq,30mins	64.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	14	30	69.2	68.0	Leq,30mins	63.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	15	0	69.4	68.0	Leq,30mins	64.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	15	30	70.9	68.0	Leq,30mins	67.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	16	0	72.1	68.0	Leq,30mins	70.0	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	10	16	30	72.6	68.0	Leq,30mins	70.7	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	10	17	0	71.1	68.0	Leq,30mins	68.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	17	30	71.8	68.0	Leq,30mins	69.4	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	10	18	0	68.9	68.0	Leq,30mins	61.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	10	18	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	07	0	67.5	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	07	30	67.8	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	08	0	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	08	30	72.3	68.0	Leq,30mins	70.2	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	11	09	0	71.9	68.0	Leq,30mins	69.7	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	11	09	30	69.2	68.0	Leq,30mins	63.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	10	0	70.1	68.0	Leq,30mins	65.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	10	30	71.2	68.0	Leq,30mins	68.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	11	0	69.3	68.0	Leq,30mins	63.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	11	30	68.1	68.0	Leq,30mins	53.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	12	0	67.9	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	12	30	68.1	68.0	Leq,30mins	52.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	13	0	71.3	68.0	Leq,30mins	68.5	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	11	13	30	72.4	68.0	Leq,30mins	70.5	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	11	14	0	69.2	68.0	Leq,30mins	62.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	14	30	68.9	68.0	Leq,30mins	61.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	15	0	70.5	68.0	Leq,30mins	67.0	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	15	30	69.9	68.0	Leq,30mins	65.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	16	0	71.4	68.0	Leq,30mins	68.7	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	11	16	30	72.7	68.0	Leq,30mins	70.9	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	11	17	0	71.1	68.0	Leq,30mins	68.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	17	30	69.1	68.0	Leq,30mins	62.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	18	0	68.3	68.0	Leq,30mins	56.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	11	18	30	67.4	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	07	0	67.7	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	07	30	68.2	68.0	Leq,30mins	54.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	08	0	67.8	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	08	30	69.9	68.0	Leq,30mins	65.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	09	0	70.8	68.0	Leq,30mins	67.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	09	30	69.8	68.0	Leq,30mins	65.2	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	10	0	69.6	68.0	Leq,30mins	64.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	10	30	69.6	68.0	Leq,30mins	64.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	11	0	69.8	68.0	Leq,30mins	65.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	11	30	68.0	68.0	Leq,30mins	=Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	12	0	67.7	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	12	30	68.6	68.0	Leq,30mins	59.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	13	0	71.2	68.0	Leq,30mins	68.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	13	30	70.4	68.0	Leq,30mins	66.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	14	0	69.6	68.0	Leq,30mins	64.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	14	30	70.0	68.0	Leq,30mins	65.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	15	0	69.3	68.0	Leq,30mins	63.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	15	30	69.3	68.0	Leq,30mins	63.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	16	0	69.7	68.0	Leq,30mins	64.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	16	30	70.1	68.0	Leq,30mins	65.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	17	0	69.0	68.0	Leq,30mins	62.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	17	30	69.4	68.0	Leq,30mins	63.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	18	0	69.5	68.0	Leq,30mins	64.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	12	18	30	67.4	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	07	0	67.3	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	07	30	67.6	68.0	Leq,30mins	<Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	08	0	68.3	68.0	Leq,30mins	55.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	08	30	69.3	68.0	Leq,30mins	63.3	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	09	0	72.3	68.0	Leq,30mins	70.3	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	13	09	30	70.1	68.0	Leq,30mins	65.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	10	0	70.3	68.0	Leq,30mins	66.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	10	30	70.3	68.0	Leq,30mins	66.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	11	0	69.9	68.0	Leq,30mins	65.3	68	N

Appendix H Continuous Noise Monitoring Results

Location ID	Name	Year (YYYY)	Month (MM)	Date (DD)	Hour (HH)	Minutes (MM)	Measured Leq,30mins	Baseline Level (Leq, 30mins)	Parameter (website reporting)	Results (dB(A)) (Leq, 30mins)	Action/Limit Level (as in CNMP)	Exceedance
NM1	Carmel Secondary School (South Block)	2015	2	13	11	30	68.3	68.0	Leq,30mins	56.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	12	0	68.0	68.0	Leq,30mins	=Baseline Level	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	12	30	68.6	68.0	Leq,30mins	59.7	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	13	0	70.5	68.0	Leq,30mins	66.9	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	13	30	70.4	68.0	Leq,30mins	66.6	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	14	0	69.0	68.0	Leq,30mins	62.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	14	30	69.1	68.0	Leq,30mins	62.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	15	0	69.9	68.0	Leq,30mins	65.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	15	30	69.2	68.0	Leq,30mins	63.1	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	16	0	70.7	68.0	Leq,30mins	67.4	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	16	30	71.3	68.0	Leq,30mins	68.6	68	Y
NM1	Carmel Secondary School (South Block)	2015	2	13	17	0	68.8	68.0	Leq,30mins	60.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	17	30	69.4	68.0	Leq,30mins	63.8	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	18	0	68.9	68.0	Leq,30mins	61.5	68	N
NM1	Carmel Secondary School (South Block)	2015	2	13	18	30	67.9	68.0	Leq,30mins	<Baseline Level	68	N

Appendix H Regular Construction Noise Monitoring Results

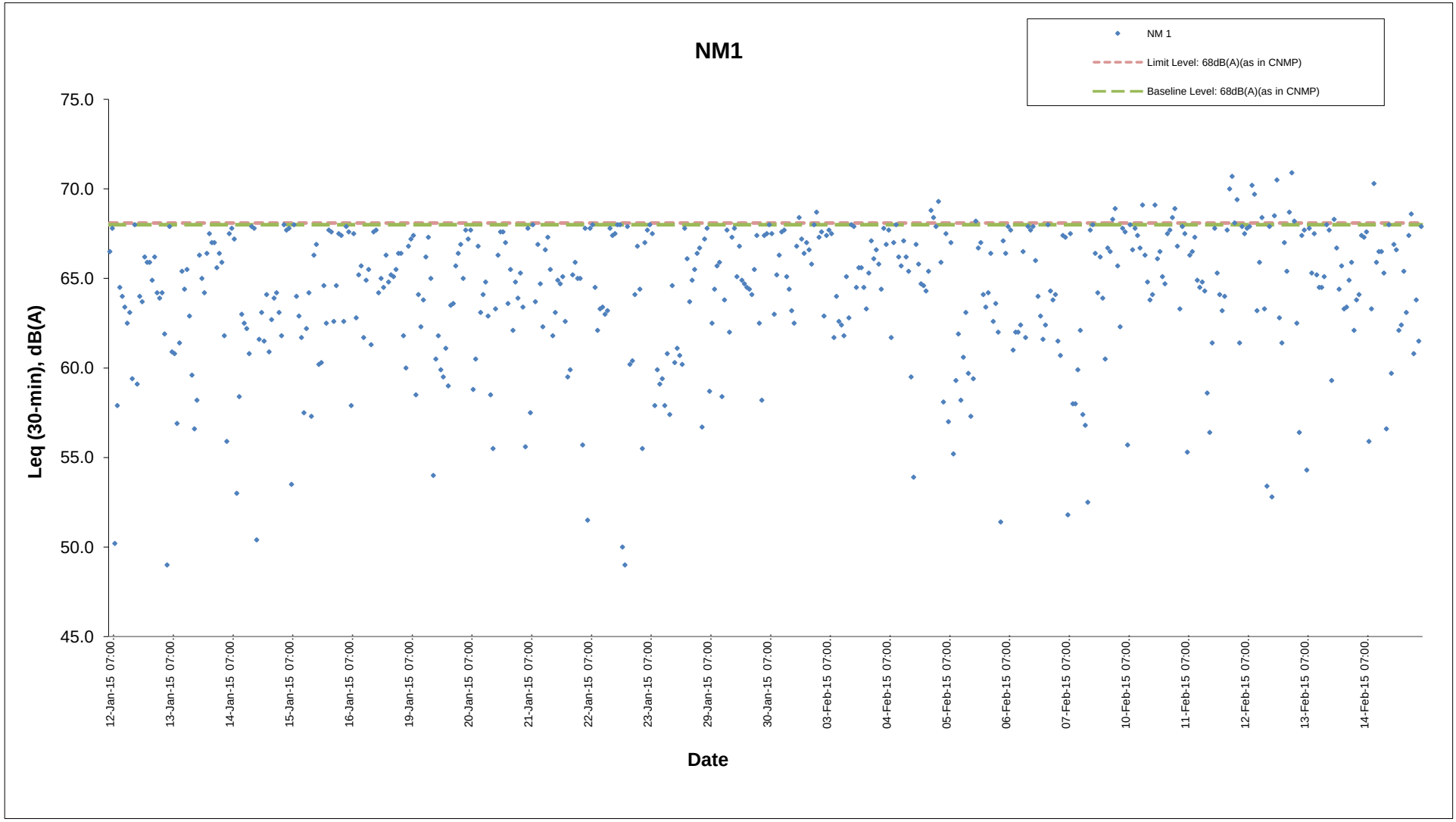




* - The noise monitoring results of the measurements are higher than the daytime construction noise criterion. However, the results are not considered as exceedance if they are either below the baseline level or below the limit level after deducting the baseline noise level.

AECOM	Shatin to Central Link Works Contract 1111-Hung Hom North Approach Tunnels	SCALE	N.T.S.	DATE	Mar-15
		CHECK	TYUT	DRAWN	LLMC
	Graphical Presentations of Noise Monitoring Results	JOB NO.	60284101	APPENDIX	H
				Rev	-

Appendix H Continuous Noise Monitoring Results



AECOM	**Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels**	SCALE	N.T.S.	DATE	Mar-15
		CHECK	TYUT	DRAWN	LLMC
	Graphical Presentations of Continuous Noise Monitoring Results	JOB NO.	60284101	APPENDIX	H
				Rev	-

APPENDIX I

Event Action Plan

Appendix I – Event and Action Plan

Event / Action Plan for Construction Dust

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the Contractor, IEC and ER; 2. Discuss with the Contractor and IEC on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing.	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
2. Exceedance for two or more consecutive samples	1. Inform the Contractor, IEC and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
LIMIT LEVEL				
1. Exceedance for one sample	1. Inform the Contractor, IEC, EPD and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
2. Exceedance for two or more consecutive samples	1. Notify Contractor, IEC, EPD and ER ; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Regular Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
Exceedance of Action Level	1. Notify the Contractor, IEC and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; and 3. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the contractor; and 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of complaint in writing; 2. Review and agree on the remedial measures proposed by the Contractor; and 3. Supervise implementation of remedial measures.	1. Investigate the complaint and propose remedial measures; 2. Report the results of investigation to the IEC, ET and ER; 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification; and 4. Implement noise mitigation proposals.

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
Exceedance of Limit Level	1. Notify the Contractor, IEC, EPD and ER ; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Review the effectiveness of Contractor's remedial measures and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures; and 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of failure in writing; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise the implementation of remedial measures; and 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; and 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Continuous Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action/Limit Level	1. Identify source ; 2. Repeat measurement. If two consecutive measurements exceed Action/Limit Level, the exceedance is then confirmed; 3. If exceedance is confirmed, notify IEC, ER and Contractor; 4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented; 5. Discuss jointly with the IEC, ER and Contractor and formulate remedial measures; and 6. Assess effectiveness of Contractor's remedial actions and keep IEC and ER informed of the results.	1. Check monitoring data submitted by the Works Contract 1111 ET; 2. Check the Contractor's working method; 3. Discuss with the ER, Works Contract 1111 ET and Contractor on the potential remedial measures; and 4. Review and advise the Works Contract 1111 ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing; 2. In consultation with the Works Contract 1111 ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Ensure the proper implementation of remedial measures; and 4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source with the Works Contract 1111 ET; 2. If exceedance is confirmed, investigation the cause of exceedance and take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET of notification; 4. Implement the agreed proposals; 5. Liaise with ER to optimize the effectiveness of the agreed mitigation; 6. Revise and resubmit proposals if problem still not under control; and 7. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Landscape and Visual during Construction Stage

EVENT	ET	IEC	ER	Contractor
ACTION LEVEL				
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2.Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4.Advise the ER on effectiveness of proposed remedial measures.	1. Confirm receipt of notification of non-conformity in writing 2.Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3.Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2.Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4.Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures.	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

APPENDIX J

Cumulative Statistics of Complaints, Notification of Summons and Successful Prosecutions

Appendix J

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
Environmental complaints	-	-	-	0	1
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0

APPENDIX K

Waste Flow Table

Appendix K Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly (Note 1)														Actual Quantities of Non-inert C&D Materials (i.e. C&D Wastes) Generated Monthly					Actual Quantities of Marine Dumping Monthly	
	Generated					Disposed				Reused					Recycled			Disposed		Disposed	
	Fill Material	Artificial Material			Total Quantity Generated	Disposed as Public Fills at TKO137	Disposed as Public Fills at TM38	Disposed as Public Fills at CWPFBP	Total Quantity Disposal	Reused in the Contract	Reused in other Projects		Delivered to HH Barging Point (Note 5)	Total Quantity Reused	Metals	Paper/ cardboard packaging (Note 3)	Plastics	Chemical Waste	General Refuse (Note 2)	Disposed as MD at HH Barging Point	
	Soil and Rock	Broken Concrete	Asphalt	Building Debris							Tolo	WIL 705								Type 1	Type 2
Unit	('000m^3)	('000m^3)	('000m$^{3)}$	('000m$^{3)}$	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000m^3)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000Kg)	('000m^3)	('000m^3)
Jan	6.832	0.008	0.004	0.000	6.843	3.102	0.002	0.000	3.104	0.010	0.010	0.000	3.719	3.739	0.000	0.084	0.000	0.000	50.820	0.000	2.216
Feb	4.683	0.096	0.000	0.005	4.784	1.848	0.000	0.000	1.848	0.000	0.000	0.000	3.032	3.032	0.000	0.112	0.000	0.000	37.630	1.292	0.000
Mar																					
Apr																					
May																					
Jun																					
SUB-TOTAL	11.515	0.104	0.004	0.005	11.628	4.951	0.002	0.000	4.952	0.010	0.010	0.000	6.751	6.771	0.000	0.196	0.000	0.000	88.450	1.292	2.216
Jul																					
Aug																					
Sep																					
Oct																					
Nov																					
Dec																					
2015 TOTAL	11.515	0.104	0.004	0.005	11.628	4.951	0.002	0.000	4.952	0.010	0.010	0.000	6.751	6.771	0.000	0.196	0.000	0.000	88.450	1.292	2.216

Note:

1. Assume the density of fill is 2 ton/m^3.
2. Refuses disposed of at North East New Territories (NENT) Landfill.
3. Assume the weight of recycled papers is 7 kg/bag.
4. Public fills disposed of at Tseung Kwan O Area 137 Fill Bank (TKO137), Tuen Mun Area 38 Fill Bank (TM38) and Chai Wan Public Fill Barging Point (CWPFBP).
5. Public fills was delivered to Hung Hom Barging Point and handled by the Contractor of SCL1112.

Appendix E

25th EM&A Report for Works Contract 1103 – Hin Keng to Diamond Hill

MTR Corporation Limited

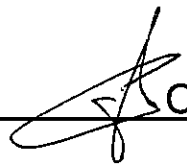
Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No. 25

[Period from 1 to 28 February 2015]

Works Contract 1103 – Hin Keng to Diamond Hill Tunnels

(February 2015)

Certified by:  Coleman Ng

Position: Environmental Team Leader

Date: 12 February 2015

MTR Corporation Limited

SCL1103 Hin Keng to Diamond Hill Tunnels Construction Stage - Environmental Services

Monthly Environmental Monitoring and Audit Report – February 2015

228105-27

March 2015

Job number 228105-27

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Kowloon
Hong Kong
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ARUP

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Executive Summary

This is the twenty-fifth monthly Environmental Monitoring and Audit (EM&A) report prepared by Ove Arup & Partners Hong Kong Limited (Arup), the designated Environmental Team (ET), for the Project "SCL1103 Hin Keng to Diamond Hill Tunnels". Construction works of this works contract commenced on 14 February 2013 and this report presents the results of EM&A works conducted in the month of February 2015 (1 to 28 February 2015).

In the reporting month, the following activities took place for the Project:

- Tunnel Boring Machine (TBM) tunneling and machinery site assembly at Diamond Hill;
- Pipe Piling, grouting and tunnel blasting at Hin Keng;
- Shaft Excavation and ELS and sheet piling for retaining wall at Fung Tak; and
- Shaft Excavation and ELS at Ma Chai Hang.

Air Quality and noise monitoring were performed and the results were checked and reviewed. Site audits were conducted on weekly basis. The implementation of the environmental mitigation measures, Event and Action Plans and environmental complaint handling procedures were checked.

Impact monitoring was carried out at 3 air quality and 3 noise monitoring stations during the reporting month.

Environmental Monitoring Works – Breaches of Action and Limit Levels

Air Quality

All measured 24-hour TSP concentrations in the reporting month were below the Action and Limit Levels.

Noise[1]

There were two Action Level exceedances recorded due to the receipt of a complaint in late January 2015. As the complaint was received from EPD in February 2015, this reporting month, the details of the complaint have been included in this EM&A report.

No exceedance of Limit Level of regular construction noise was recorded during the reporting month.

Landscape and Visual Audit

Landscape and visual site audits in accordance with the requirements stipulated in the EM&A manual were conducted in the reporting month. Based on the site inspections, no substantial change of Landscape Resources, Landscape Character Areas and Visual Sensitive Receivers was noted.

[1] For clarification there was no complaint received in January 2015 and therefore there was no action level exceedance recorded in the Monthly EM&A Report for January.

Waste Disposal

Inert C&D Materials with an actual amount of 34,994m^3 were generated and disposed of at public fill in TKO137FB and Kai Tak Barging Point Facility (Contract 1108A). 153m^3 of general refuse was generated and disposed of at NENT landfill. 138kg of paper / cardboard and 800kg of chemical waste was generated.

Environmental Auditing

A total of 4 environmental site audits were conducted on a weekly basis in the reporting month. The first site inspection was on 4 February 2015 and the final, an IEC joint site audit, was undertaken on 25 February 2015. No non-conformance to the environmental requirements was identified during the reporting period.

Complaint Log

Two complaints in relation to noise issues were made against the Project in the reporting period. One complaint regarding water quality was received during the reporting month.

Notifications of Summons and Successful Prosecutions

No summons or prosecution related to the environmental issues were made against the Project in the reporting period.

Reporting Changes

There were no reporting changes during the reporting month.

Future Key Issues

Waste management is a key environmental issue. The waste management plan should be strictly followed in accordance with the requirements described in the EIA report.

Water Quality impact is also a key environmental issue. The drainage system should be well maintained. All wastewater generated within the site shall be collected and treated prior to discharge.

Construction noise is also a key environmental issue. The implemented construction noise mitigation measures should also be maintained and improved as necessary. Especially in restricted hours, the conditions stipulated in the CNPs should be strictly followed when the construction works were carried out during restricted hours.

Construction dust is also key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin sheet etc., should be maintained and improved as necessary. Adequate water spraying should be provided for the unpaved area to minimize dust disturbance.

1 Environmental Status

1.1 Project Background

The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an extension of the Ma On Shan Line and is approximately 11 km long. It links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts and this Works Contract 1103 covers the construction of the tunnels between Diamond Hill (DIH) and Hin Keng (HIK).

1.2 Construction Programme

An up-to-date rolling construction programme is attached in **Appendix A**.

1.3 Work Undertaken During the Reporting Month

The major construction activities carried out by the Contractor in the reporting month are summarized in **Table 1.1**. Location of the works area is indicated in **Figures 1.1** to **1.6**. The structure of the project organisation in relation to the environmental management is shown in **Figure 1.7**. Contacts of key environmental staff of the Project are shown in **Table 1.2**.

Table 1.1 Construction Activities in the Reporting Month

Locations	Major Works Undertaken
Diamond Hill	Tunnel Boring Machine (TBM) tunneling and machinery site assembly.
Hin Keng	Pipe Piling, grouting and tunnel blasting.
Fung Tak	Shaft Excavation and ELS and sheet piling for retaining wall.
Ma Chai Hang	Shaft Excavation and ELS.

1.4 Project Organization

Contacts of key environmental staff of the Project and are shown in **Table 1.2**.

Table 1.2 Contacts of Key Environmental Staff

Organisation	Name	Telephone
Project Proponent: MTRC		
Engineer's Representative	Thomas Barrett	2163 6181
SCL Project-wide Environmental Team Leader	Richard Kwan	2688 1283
Independent Environmental Checker: Meinhardt Infrastructure & Environment Ltd.		
Independent Environmental Checker	Fredrick Leong	2859 1739
Contractor: VINCI Constructions Grand Projects		
Project Director	Francois Dudouit	3765 5610
IMS Manager	L K Mak	3765 5635
Contractor's Environmental Team: Ove Arup & Partners Hong Kong Ltd.		
Designated Environmental Team Leader for Works Contract 1103	Coleman Ng	2268 3097

1.5 Project Area and Environmental Monitoring locations

The Project area is shown in **Figures 1.1** to **1.6**, while **Table 1.3** and **Figures 1.8** to **1.13** show the names and locations of the monitoring stations.

Table 1.3 Summary of Air Quality and Noise Monitoring Stations

ID	Premise
Air Quality	
DMS-1	C.U.H.K.A.A. Thomas Cheung School
DMS-2	Price Memorial Catholic Primary School
DMS-3(Note 2) / DMS-4(Note 3)	Hong Kong Sheng Kung Hui Nursing Home (Note 1)
Noise	
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School
NMS-CA-2	Price Memorial Catholic Primary School
NMS-CA-3(Note 2) / NMS-CA-4(Note 3)	Hong Kong Sheng Kung Hui Nursing Home

Note:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On House.

Note 2: Station ID as identified in approved EM&A Manual / EIA Report for SCL (TAW - HUH).

Note 3: Station ID as identified in approved EM&A Manual / EIA Report for SCL (HHS).

1.6 Impact Monitoring Schedule

Environmental monitoring and audit was carried out in accordance with the requirements stipulated in the EM&A Manual. Air quality and noise monitoring as well as weekly site audit schedule for the reporting month with respect to the construction programme is shown in **Appendix B**.

1.7 Status of Environmental Licensing and Permitting

All permits/licences for the reporting month are summarised in **Table 1.4**. They are all properly kept by the contactor at their site office.

Table 1.4 Summary of Environmental Licensing Status

Types of Permits / Licenses	Reference No.	Site	Valid from	Valid to
Environmental Permit	EP-438/2012	All	22 Mar 2012	Superseded
	EP-438/2012A	All	12 July 2012	Superseded
	EP-438/2012/B	All	26 Oct 2012	Superseded
	EP-438/2012/C	All	30 Apr 2013	Superseded
	EP-438/2012/D	All	13 Sept 2013	Superseded
	EP-438/2012/E	All	4 April 2014	Superseded
	EP-438/2012/F	All	15 July 2014	Superseded
	EP-438/2012/G	All	14 Aug 2014	Superseded
	EP-438/2012/H	All	10 Sept 2014	Throughout the Contract
Discharge License under WPCO	WT00014697-2012	Diamond Hill	30 Nov 2012	30 Nov 2017
	WT00014650-2012	Hin Keng	10 Dec 2012	31 Dec 2017
	WT00014648-2012	Hin Keng	10 Dec 2012	31 Dec 2017
	WT00015145-2013	Shui Chuen O	21 Feb 2013	28 Feb 2018
	WT00015513-2013	Ma Chai Hang	2 Apr 2013	30 Apr 2018
	WT00015430-2013	Fung Tak	18 Mar 2013	31 Mar 2018
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	351345	All	22 Oct 2012	15 Apr 2018
Construction Noise Permit (CNP)	GW-RE1346-14	Ma Chai Hang	2 Dec 2014	31 May 2015
	GW-RE1349-14	Fung Tak	8 Dec 2014	Superseded
	GW-RE1251-14	Fung Tak	11 Nov 2014	4 Mar 2015
	GW-RE-0118-15	Fung Tak	14 Feb 15	31 March 15
	GW-RE1454-14	Fung Tak	7 Jan 2015	14 Feb 2015
	GW-RN0660-14	Hin Keng	28 Oct 2014	Superseded

Types of Permits / Licenses	Reference No.	Site	Valid from	Valid to
	GW-RN0658-14	Hin Keng	28 Oct 2014	Superseded
	GW-RN0705-14	Hin Keng	26 Nov 2014	25 May 2015
	GW-RN0006-15	Hin Keng	1 Feb 2015	31 July 2015
	GW-RN0008-15	Hin Keng	1 Feb 2015	31 July 2015
	GW-RE0117-15	Diamond Hill	8 Feb 2015	2 Aug 2015
	GW-RE1214-14	Diamond Hill	8 Nov 2014	7 Apr 2015
Chemical Waste Producer Registration	5213-759-V2179-01	Hin Keng	13 Dec 2012	Throughout the Contract
	5213-281-V2180-01	Diamond Hill	12 Dec 2012	Throughout the Contract
	5213-281-V2179-03	Fung Tak	5 Mar 2013	Throughout the Contract
	5213-282-V2180-02	Ma Chai Hang	18 Mar 2013	Throughout the Contract
Billing Account for Disposal of Construction Waste	7016250	All	2 Nov 2012	Throughout the Contract

1.8 Purpose of the Report

The purpose of this monthly EM&A report is to provide the information on monitoring methodology, monitoring results, environmental permit status, site audit findings, recommendations and conclusions during the construction of this works contract for the EM&A conducted during the construction period. This is the twenty-fifth monthly EM&A report summarising the monitoring methodology, locations, periods, frequencies, results and any observation from the air quality, noise, ecology, waste management, landscape and visual monitoring and environmental site audit from 1 to 28 February 2015.

2 Implementation Status

2.1 Implementation Status of Mitigation Measures

During weekly site inspections, the environmental protection, and pollution control/mitigation measures in accordance with the requirements stipulated in the EIA were observed. The key observations and ET's corresponding recommendations while the Contractor's response and follow-up status are described in **Section 7.1**.

2.2 Updated Implementation Schedule

According to the Environmental Permit, the mitigation measures detailed in the permits are required to be implemented. The Implementation Schedule of Mitigation Measures was inspected during the weekly site inspections in reporting month. The details of the findings/observations are described in **Section 7.1**. An updated summary of the Implementation Schedule of Mitigation Measures is presented in **Appendix C**. The status of the required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 2.1**.

Table 2.1 Status of Required Submissions under the EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (January 2015)	13 February 2015

3 Air Quality Monitoring

3.1 Air Quality Monitoring Requirements

Monitoring Parameters

Regular 24-hour TSP levels shall be monitored during the construction stage while 1-hour TSP levels shall be required to monitor in case of complaints received.

Monitoring Frequency

The monitoring frequency is summarised in **Table 3.1**.

Table 3.1 Air quality monitoring parameters and frequency

Parameters	Monitoring Frequency
24-hour TSP	Once every 6 days
1-hour TSP	3 times every 6 days (as required in case of complaints)

Monitoring Locations

In accordance with the EM&A Manual and the subsequent Baseline Monitoring Report, three air quality monitoring locations during construction stage are required. The locations of the three air quality monitoring stations are shown below in **Table 3.2**:

Table 3.2 Air Quality Monitoring Locations

ID	Premise
DMS -1	C.U.H.K.A.A. Thomas Cheung School
DMS -2	Price Memorial Catholic Primary School
DMS-3(Note 2) / DMS-4(Note 3)	Hong Kong Sheng Kung Hui Nursing Home (Note 1)

Note:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On House.

Note 2: Station ID as identified in approved EM&A Manual / EIA Report for SCL (TAW - HUH).

Note 3: Station ID as identified in approved EM&A Manual / EIA Report for SCL (HHS).

Wind Monitoring

Wind monitoring data including wind speed and wind directions shall be collected from Hong Kong Observatory – Kai Tak and Sha Tin Meteorological Stations and shown in **Appendix F**.

Environmental /Quality Performance Limits

The monitoring results will be checked against the Action and Limit levels described in the Baseline Monitoring Report, of which they are excerpted and summarised in **Tables 3.3** and **3.4.**

Table 3.3 Action and Limit Level for Air Quality Monitoring of 24-hour TSP level

Level	Air Monitoring Stations		
	DMS-1	DMS-2	DMS-3 / DMS-4
Action Level, μg/m^3	148.7	167.4	159.1
Limit Level, μg/m^3	260		

Table 3.4 Action and Limit Level for Air Quality Monitoring of 1-hour TSP level

Level	Air Monitoring Stations		
	DMS-1	DMS-2	DMS-3 / DMS-4
Action Level, μg/m^3	283.9	276.2	278.4
Limit Level, μg/m^3	500		

Note:
Note 1: 1-hr TSP monitoring would be required in case of receiving complaints.

3.2 Air Quality Monitoring Methodology

3.2.1 Monitoring Equipment

High Volume Sampler (HVS) was used to monitor the 24-hour TSP. **Table 3.5** shows the equipment used for the air quality monitoring.

Table 3.5 Air Quality Equipment List for Impact Air Quality Monitoring

Equipment	Manufacturer & Model No	Measurement Parameter	Serial No.
High Volume Sampler	TE-5170	24-hour TSP	3761, 3762, 3763
Fibreglass Filter	G810		-
HVS Calibration Kit	TE-5025A		2421

3.2.2 Maintenance and Calibration

High Volume Sampler

The HVSs and their accessories were frequently checked and maintained in accordance with the manufacturer's operation and maintenance manual. The maintenance included checking of supporting screen and gasket, as well as routine replacement of motor carbon brushes for the blower motor. The power cords and power supply were checked each time before sampling to ensure proper operation.

The HVSs were calibrated at 2-month intervals using GMW-2535 calibration kit which is re-calibrated by the manufacturer after one year of use. The calibration spreadsheets of the HVSs and calibration certificate of the calibration kit are provided in **Appendix D**.

3.2.3 Monitoring Procedures

High Volume Sampler

Specifications of the HVS are as follows:

- 0.6 – 1.7 m^3/min (20 – 60SCFM);

- Equipped with a timing/control device with +/- 5 minutes accuracy for 24 hour operation;
- Installed with elapsed time meter with +/- 2 minutes accuracy for 24 hour operation;
- Capable of providing a minimum exposed area of 406 cm^2 (63in^2);
- Flow control accuracy: +/-2.5% deviation over 24-hour sampling period;
- Equipped with a shelter to protect the filter and sampler;
- Incorporated with an electronic mass flow rate controller or other equivalent devices;
- Equipped with a flow recorder for continuous monitoring;
- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easy to change the filter; and
- Capable of operating continuously for 24-hour period.

The HVSs were equipped with an electronic mass flow controller and calibrated against a traceable standard at regular intervals. All equipment, calibration kit and filter papers were clearly labelled.

The relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and other special phenomena observed and work progress of the concerned site were recorded.

A HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd (HOKLAS no.: 066)), in accordance with their standard QA/QC procedures, with constant temperature and humidity control as well as equipped with necessary measuring and conditioning instruments to handle the 24-hour TSP samples was employed for sample analysis, and equipment calibration and maintenance. Filter papers of size 8"x10" were labelled before sampling. They were inspected clean with no pin holes and conditioned in a humidity controlled chamber for over 24-hour and be pre-weighed before use for the sampling.

The 24-hour TSP levels were measured by following the standard High Volume Method for Total Suspended Particulates as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B. TSP was sampled by drawing air through a conditioned, pre-weighted filter paper inside the HVS at a controlled air flow rate. After 24-hour sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag, and then returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg. All the collected samples shall be kept in a good condition for 6 months before disposal.

3.3 Monitoring Results and Observations

3.3.1 Weather Condition

February 2015 was characterised at times by gloomy and rainy conditions associated with low pressure.

Mild and dry weather associated with the north east monsoon conditions were also persistent throughout the month.

3.3.2 Air Quality Monitoring Results

Monitoring of 24-hour TSP was conducted on 4, 10, 16, 18, 24 and 27 February 2015. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix E** and are summarised in **Table 3.6**. The graphical presentations of the monitoring results are provided in **Appendix E**. Wind data obtained from the Hong Kong Observatory – Kai Tak and Sha Tin stations during the reporting period are presented in **Appendix F**.

Table 3.6 Summary of Impact Air Quality Monitoring Results

Monitoring Station	24- hour TSP Monitoring Results (μg/m$^{3)}$		Action Level	Limit Level
	Average	Range		
DMS-1	84.5	106.2	148.7	260
DMS-2	85.5	96.0	167.4	260
DMS-3 / DMS-4	85.0	96.5	159.1	260

All 24-hour TSP measurements during the reporting month were below the Action/Limit Level. No exceedance of action and limit level was found.

The event and action plan is provided in **Appendix I**.

3.3.3 General Observations

Major construction works including Tunnel Boring Machine (TBM) tunneling and machinery site assembly at Diamond Hill; Pipe Piling, grouting and tunnel blasting at Hin Keng; Shaft Excavation and ELS and Sheet piling for retaining wall at Fung Tak and Shaft Excavation and ELS at Ma Chai Hang.

4 Noise Monitoring

4.1 Noise Monitoring Requirements

4.1.1 Impact Monitoring

Monitoring Parameters

Construction noise shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). L_{10} and L_{90} shall also be recorded as supplementary reference information for data auditing.

Monitoring Frequency

Noise measurements shall be conducted on a weekly basis. The monitoring time periods, monitoring parameters and frequency are summarised in **Table 4.1.**

Table 4.1 Construction Noise Monitoring Parameters and Frequency

Time Period (when construction activity is found)	Parameters	Monitoring Frequency
Between 0700-1900 hours on normal weekdays	$L_{eq(30\ min)}$	Once per week

Monitoring Location

In accordance with the EM&A Manual and the subsequent Baseline Monitoring Report, three noise monitoring locations during the construction stage are required, namely:

Table 4.2 Noise Monitoring Locations

ID	Premise
NMS-CA-1	C.U.H.K.A.A. Thomas Cheung School
NMS-CA-2	Price Memorial Catholic Primary School
NMS-CA-3(Note 2) / NMS-CA-4(Note 3)	Hong Kong Sheng Kung Hui Nursing Home (Note 1)

Notes:

Note 1: Hong Kong Sheng Kung Hui Nursing Home was selected as an alternative monitoring location to Shek On house.

Note 2: Station ID as identified in approved EM&A Manual / EIA Report for SCL (TAW - HUH).

Note 3: Station ID as identified in approved EM&A Manual / EIA Report for SCL (HHS).

Environmental /Quality Performance Limits

The monitoring results will be checked against the Action and Limit levels described in the Baseline Monitoring Report, of which they are excerpted and summarised in **Tables 4.3**.

Table 4.3 Action and Limit Levels of construction noise

Location (Note 1)	Time Period (note 3)	Action Level	Limit Level dB(A)
NMS-CA-1 & NMS-CA-2	0700 - 1900 hours on normal weekdays	When one documented complaint is received	70/65 (Note 2)
NMS-CA-3 / NMS-CA-4			70

Notes:

1. The detail of monitoring locations was presented in Table 1.3.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.
3. 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.

4.1.2 Continuous Noise Monitoring

With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, continuous noise monitoring was conducted in April 2013 at C.U.H.K.A.A. Thomas Cheung School only due to the prediction of residual air-borne construction noise impacts exceeding the relevant noise criteria. No continuous noise monitoring is required during the reporting month as per the CNMP.

4.2 Noise Monitoring Methodology

4.2.1 Monitoring Equipment

Noise level was measured by a Sound Level Meter (SLM) in terms of A-weighted equivalent continuous sound pressure level. Leq, L_{10} and L_{90} were recorded as supplementary information for data auditing. **Table 4.4** shows the equipment list of the noise monitoring.

Table 4.4 Noise Equipment List for Impact Noise Monitoring

Equipment	Manufacturer & Model No.	Serial No.	Precision Grade
Integrated SLM	Brüel & Kjær 2238	2320694	IEC 651 Type 1 IEC 804 Type 1
Sound level calibrator	Brüel & Kjær 4231	2713427	IEC 942 Type 1

4.2.2 Maintenance and Calibration

The SLM and calibrator in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications according to the EM&A manual.

SLM complying with the standards of IEC 651 (Fast, Slow, Impulse rms detector tests) and IEC 804 (L_{eq} functions) and acoustical calibrator complying with IEC 942 were adopted for the noise measurement. All equipments are calibrated

externally. The calibration certificates for the noise equipment are given in **Appendix G**.

4.2.3 Monitoring Procedures

- The SLM and battery were checked to ensure that they are in proper condition. The SLM was set on a tripod at 1.2m above ground and at least 1m from the exterior of the building façade;
- Before conducting the measurement, the SLM was calibrated by an acoustical calibrator;
- Measurement parameter was set to A-weighted sound pressure level. The time weighting was set in fast response and the time period of measurement at 30 minutes;
- Wind speed was checked during noise monitoring to ensure the steady wind speed does not exceed 5m/s, or wind with gusts does not exceed 10m/s;
- Any abnormal conditions that generated intrusive noise during the measurement was recorded on the field record sheet;
- After each measurement, the equivalent continuous sound pressure level (L_{eq}), L_{10} and L_{90} were recorded on the field record sheet;
- After conducting the measurement, the SLM was calibrated by an sound level calibrator; and
- The SLM was re-calibrated by the sound level calibrator to confirm that there is no significant drift of reading. Measurements shall be accepted as valid only if the calibration levels before and after the noise measurement agrees to within 1.0 dB.

4.3 Monitoring Results and Observations

4.3.1 Weather Condition

February 2015 was characterised at times by gloomy and rainy conditions associated with low pressure.

Mild and dry weather associated with the north east monsoon conditions were also persistent throughout the month.

4.3.2 Noise Monitoring Results

Impact Monitoring

Monitoring of the construction noise level was conducted on 5, 11, 17, and 23 February 2015. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix H** and are summarised in **Tables 4.5 - 4.7**. The graphical presentations of the monitoring results are provided in **Appendix H**.

Table 4.5 Summary of Impact Noise Monitoring at Location NMS-CA-1

Date	Time	Measured Noise Level, dB(A)	Baseline Noise Level, dB(A)	Construction Noise Level(Note1), dB(A)	Limit Level (Note 2)
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
5 Feb 15	13:50-14:20	58.7	57.0	53.8	70/65
11 Feb15	14:00-14:30	56.8		< Baseline Level	
17 Feb 15	11:15-11:45	57.9		50.6	
23 Feb 15	11:05-11:35	57.4		< Baseline Level	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

Table 4.6 Summary of Impact Noise Monitoring at Location NMS-CA-2

Date	Time	Measured Noise Level, dB(A)	Baseline Noise Level, dB(A)	Construction Noise Level(Note1), dB(A)	Limit Level (Note 2)
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
5 Feb 15	08:40-09:10	68.4	66.0	64.7	70/65
11 Feb15	09:00-09:30	69.2		66.4	
17 Feb 15	08:45-09:15	69.0		66.0	
23 Feb 15	08:45-09:15	66.2		< Baseline Level	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

Table 4.7 Summary of Impact Noise Monitoring at Location NMS-CA-3/NMS-CA-4

Date	Time	Measured Noise Level, dB(A)	Baseline Noise Level, dB(A)	Construction Noise Level(Note1), dB(A)	Limit Level (Note 2)
		Leq (30min)	Leq (30min)	Leq (30min)	dB(A)
5 Feb 15	10:00-10:30	70.6	73.0	< Baseline Level	70/65
11 Feb15	10:30-11:00	71.1		< Baseline Level	
17 Feb 15	09:50-10:20	71.2		< Baseline Level	
23 Feb 15	10:00-10:30	67.8		< Baseline Level	

Notes:

1. Construction Noise Level = Measured Noise Level – Baseline Noise Level.
2. For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

4.3.3 Exceedance of Limit and Action Levels for Construction Noise

An Action Level exceedance was recorded due to the receipt of two noise related complaints at Hin Keng during the reporting month.

No exceedance of Limit Level of regular construction noise was recorded during the reporting month.

The event and action plan is provided in **Appendix I**.

4.3.4 General Observations

The construction site has been under normal operation during the noise monitoring period and no unusual operation was observed.

5 Landscape and Visual Monitoring

5.1 Introduction

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The event and action plan is provided in **Appendix I**.

5.2 Mitigation Measures

Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting month on 11 and 25 February 2015. No adverse impacts were identified with regards to landscape and visual.

6 Waste Disposal

The actual amounts of different types of waste generated by the activities of the Project during the reporting month are shown in **Table 6.1**. The monthly waste summary flow table is provided in **Appendix J.**

Table 6.1 Amount of Waste Generated

Waste Type	Amount	Disposal Locations
Inert C&D Materials	34,994m^3	TKO137FB and Kai Tak Barging Point Facility (1108A)
Chemical Waste	800kg	Disposed of by a licensed collector
Paper / cardboard packaging	138kg	-
Plastic	0kg	
Metal	0kg	
General Refuse	153m^3	NENT Landfill

7 Cultural Heritage

In accordance with the EM&A Manual, appropriate vibration monitoring on the identified built heritage has been agreed with the Building Department (BD)/Geotechnical Engineering Office (GEO) under the requirement of Buildings Ordinance and/or Blasting Permit as appropriate. Vibration monitoring commenced during the reporting month at Wong Tai Sin Temple and was carried out by the contractor, no non-compliance was recorded. Vibration levels shall be controlled to appropriate levels.

8 Environmental Performance

8.1 Environmental Site Inspection

Environmental site inspections were carried out on a weekly basis, with the IEC joint site inspection being carried out on 25 February 2015, to monitor environmental issues on the construction sites to ensure that all mitigation measures were implemented timely and properly. A summary of the site inspections in the reporting month is presented in **Table 8.1**.

Table 8.1 Key Findings of Weekly Environmental Site Audit

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
Noise				
4 February 2015	Fung Tak	The contractor is reminded to enhance the noise mitigation measures for rock breaking works.	Agreed with ET's Advice.	The contractor ensured and checked that all mitigations measures are in place. Closed 11 February 2015.
11 February 2015	Ma Chai Hang	The contractor is reminded to enhance the noise mitigation measures for rock breaking works.	Agreed with ET's Advice.	The contractor ensured and checked that all mitigations measures are in place. Closed 18 February 2015.
Air				
28 January 2015	Fung Tak	The contractor is reminded to ensure that stockpile of dusty material is covered by tarpaulin sheets when not in use.	Agreed with ET's Advice.	The contractor rectified the issue and all dusty stockpiles were covered. Closed 4 February 2015.
11 February 2015	Hin Keng	The contractor is reminded to further enhance water spraying in the shaft.	Agreed with ET's Advice.	The contractor rectified the issues and enhanced water spraying. Closed 18 February 2015.
18 February 2015	Fung Tak	The contractor is reminded to increase the frequency of water spraying during dry conditions.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that water spraying was enhanced. Closed 25

Inspection Date	Works Area	Key Observations and Recommendations	Contractor's Response / Environmental Outcome	Closed Date / Follow up Status
				February 2015.
Waste				
11 February 2015	Diamond Hill	The contractor is reminded to ensure that chemical containers are returned to chemical store after use.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that chemical containers were returned. Closed 18 February 2015.
18 February 2015	Diamond Hill	The contractor is reminded to ensure that chemical containers have the provision of a drip tray.	Agreed with ET's Advice.	The contractor rectified the issue and ensured that chemical containers had the provision of a drip tray. Closed 25 February 2015.
Water				
25 February 2015	Fung Tak	The contractor is reminded to ensure that the pH meter of the WWTP is properly maintained.	Agreed with ET's Advice.	The status will be reported by the ET in the next reporting month.

8.2 Summary of Environmental Complaint

There were two environmental complaints regarding noise issues recorded in the reporting month. The updated statistical summary of complaint is presented in **Table 8.2**. The updated complaint logs for the Project in the reporting month is shown in **Appendix L**.

Table 8.2 Summary of Complaints

Reporting Period	Complaint Statistics		Area of Concern	Status
	Number	Cumulative		
01/02/15–28/02/15	3	6	Diamond Hill	Closed

8.3 Summary of Environmental Non-Compliance

There was no non-compliance identified during the reporting month so review of the non-compliance was not required.

8.4 Summary of Environmental Summon and Successful Prosecution

No summons of prosecutions related to environmental issues were received or made against the project in the reporting month. Please refer to **Appendix L** for a Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions.

9 Future Key Issues

9.1 Key Issues for the Coming Month

Works to be undertaken in the coming reporting month are summarised in **Table 9.1** below.

Table 9.1 Tentative Programme of Construction Works for the Coming Month

Locations	Major Works Undertaken
Diamond Hill	Tunnel Boring Machine (TBM) tunneling and machinery site assembly.
Hin Keng	Pipe Piling, grouting and tunnel blasting.
Fung Tak	Shaft Excavation and ELS and Sheet piling for retaining wall.
Ma Chai Hang	Shaft Excavation and ELS.

9.2 Environmental Monitoring Program for the Coming Month

Environmental monitoring and audit will be carried out in accordance with the requirements stipulated in the EM&A manual. Tentative air and noise monitoring as well as weekly site audit schedule for the coming month with respect to the construction programme is shown in **Appendix K**.

9.3 Construction Program for the Coming Month

The construction programme for the coming month is shown in **Appendix A.**

10 Conclusions and Recommendations

10.1 Conclusions

The construction phase of the project commenced on 14 February 2013. The EM&A programme has since been implemented, including air quality, noise and environmental site audits. Four environmental site audits were conducted in the reporting month.

Two exceedances of the Action Level were recorded due to the receipt of two noise related complaints. No exceedance of the Limit Level for regular construction noise was recorded at the designated monitoring stations during the reporting period.

No exceedance of the Action and Limit Levels of 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting period.

No non-compliance event was recorded during the reporting period.

Three complaints and no summons/prosecution was received during the reporting period.

The Contractor's ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

10.2 Recommendations

Impact monitoring will continue to be carried out in the following month and will follow the requirements stipulated in the EM&A manual. Attention will be paid to the environmental issues identified in the EIA report and weekly site audit. Mitigation measures recommended in EIA report and Implementation Schedule of Mitigation Measure will be fully implemented.

Waste management is a key environmental issue. The waste management plan should be strictly followed in accordance with the requirements described in the EIA report.

Water Quality impact is also a key environmental issue. The drainage system should be well maintained. All wastewater generated within the site shall be collected and treated prior to discharge.

Construction noise is also a key environmental issue. The implemented construction noise mitigation measures should also be maintained and improved as necessary. Especially in restricted hours, the conditions stipulated in the CNPs should be strictly followed when the construction works were carried out during restricted hours.

Construction dust is also key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin sheet etc., should be maintained and improved as necessary. Adequate water spraying should be provided for the unpaved area to minimize dust disturbance.

11 Reference

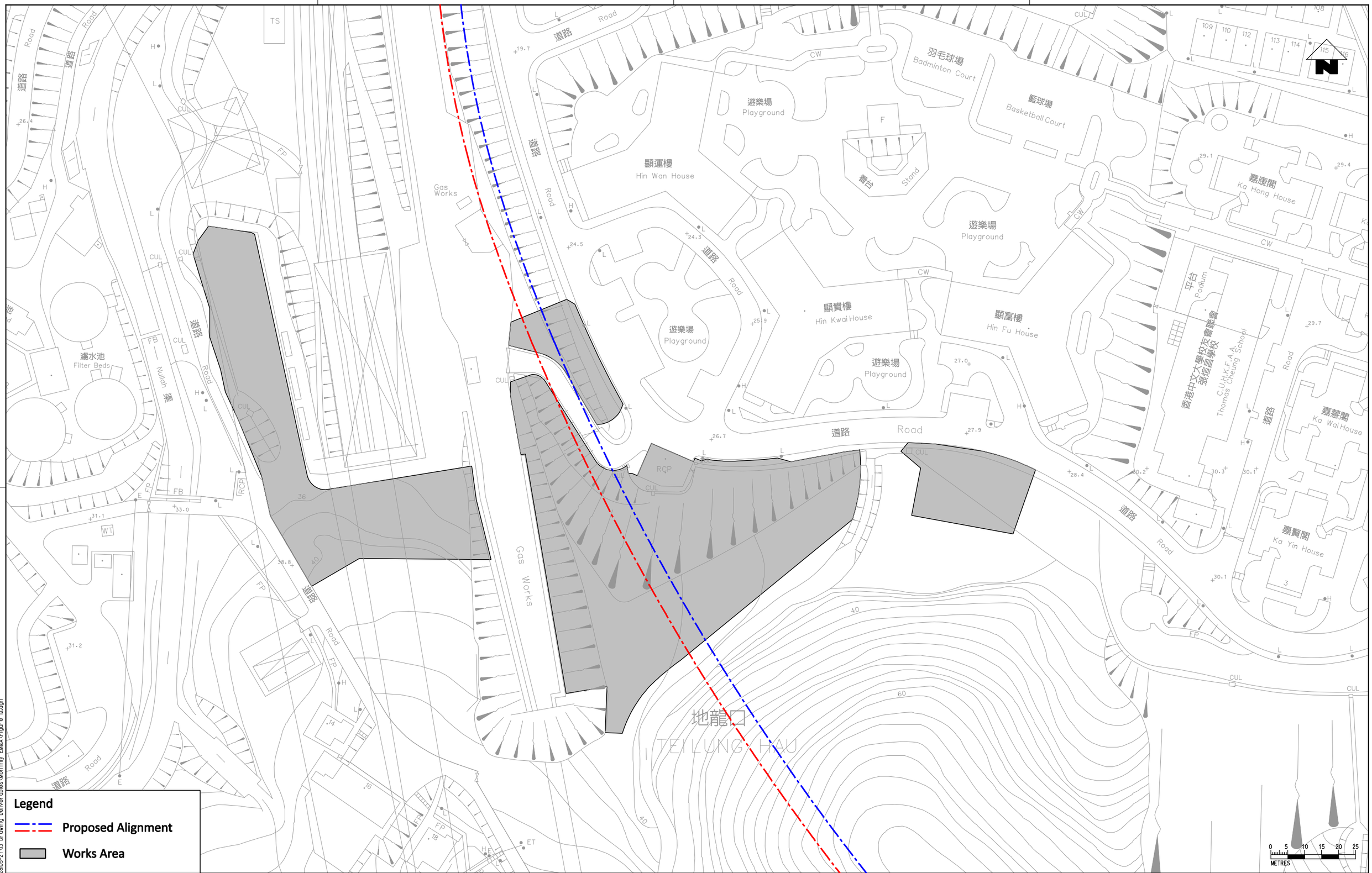
(1) MTR Corporation Limited. SCL – NEX/2206 EIA Study for Tai Wai to Hung Hom Section. Final Environmental Impact Assessment Report. October 2011.

(2) MTR Corporation Limited. SCL – NEX/2206 EIA Study for Tai Wai to Hung Hom Section. Environmental Monitoring and Audit Manual. October 2011.

(3) MTR Corporation Limited. SCL – NEX/2206 EIA Study for Stabling Sidings at Hung Hom Freight Yard. Final Environmental Impact Assessment Report. October 2011.

(4) MTR Corporation Limited. SCL - NEX/2206 EIA Study for Stabling Sidings at Hung Hom Freight Yard. Environmental Monitoring and Audit Manual. October 2011.

Figures



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DATE	12/12

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TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Project Works Areas
- General Site Layout of Hin Keng Works Area
(Sheet 1 of 6)

SCALE	DRAWING NO.	REV.
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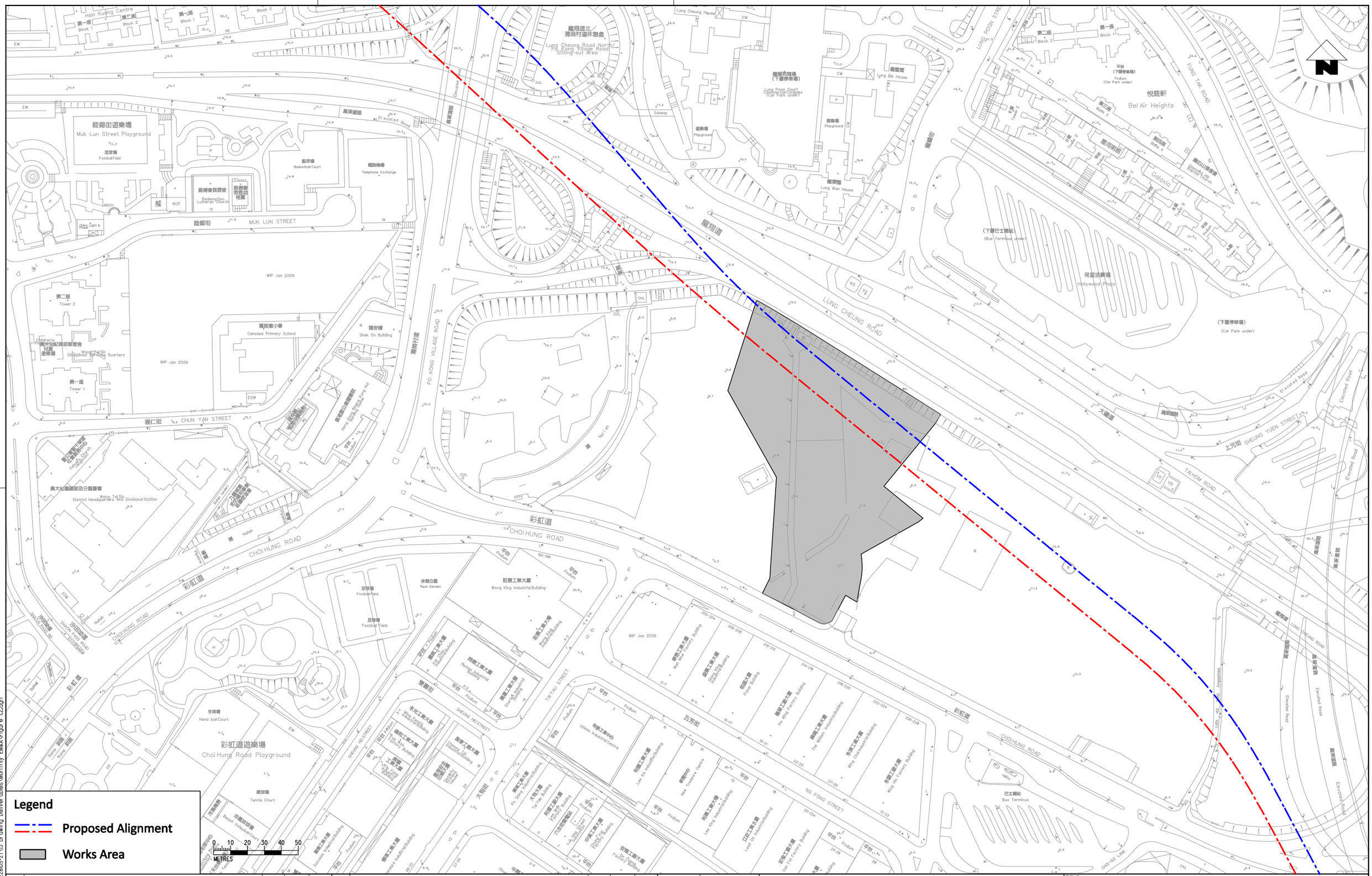

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CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Project Works Areas
- General Site Layout of Diamond Hill Works Area
(Sheet 2 of 6)

SCALE	DRAWING NO.	REV.
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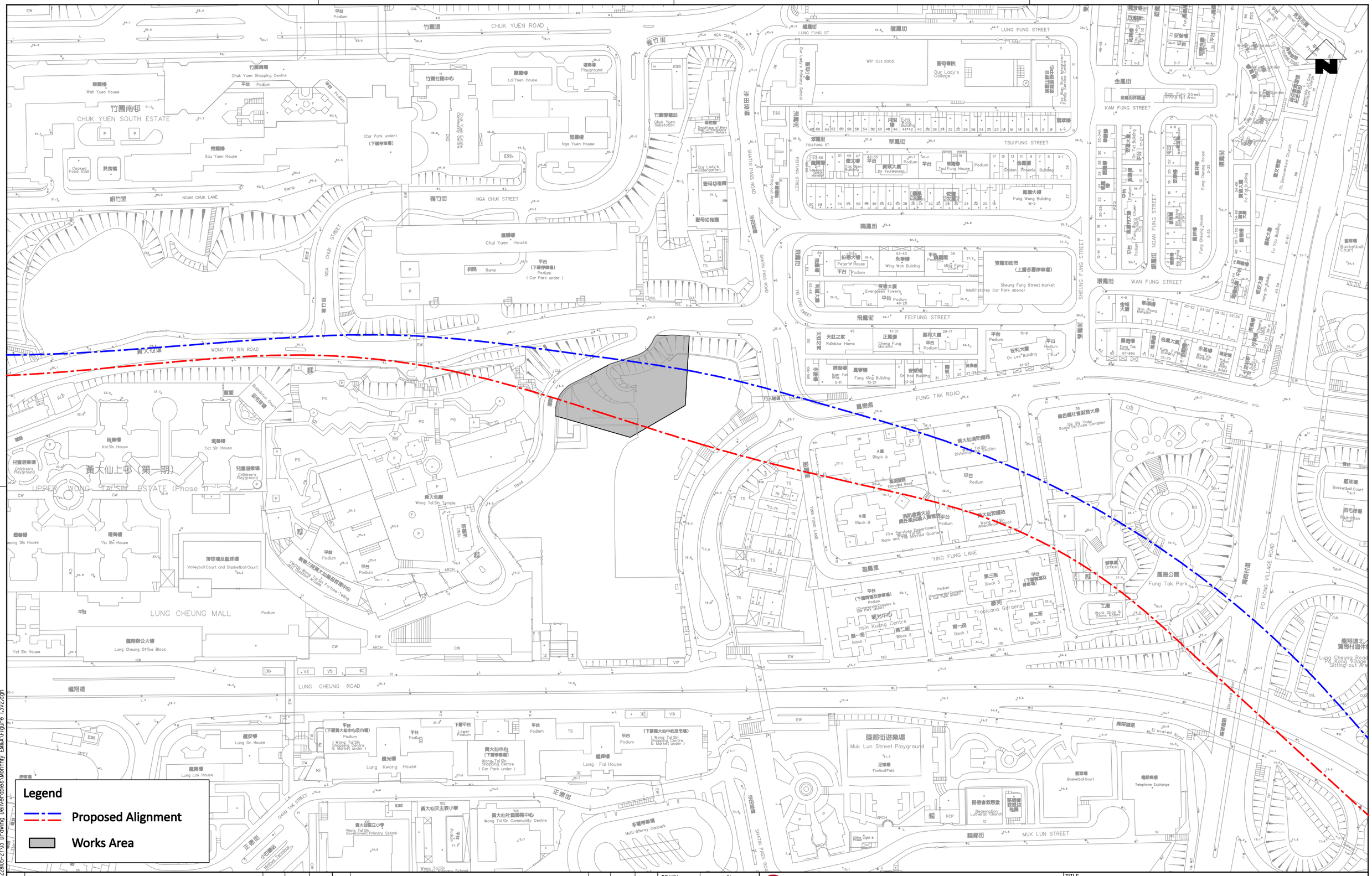

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CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Project Works Areas - Site Layout Plan of Fung Tak EAP/EEP Building (Sheet 3 of 6)

SCALE	DRAWING NO.	REV.
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REV	DESCRIPTION	BY	DATE	APPROVED
A	FIRST ISSUE	GL	12/12	ST

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TITLE
CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Project Works Areas
- Site Layout Plan of Ma Chai Hang Shaft
(Sheet 4 of 6)

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CONTRACT 1103
HIK KENG TO DIAMOND HILL TUNNELS
Locations of Project Works Area
General Site Layout of Shui Chuen O Works Area
(Sheet 5 of 6)

SCALE	DRAWING NO.	REV.
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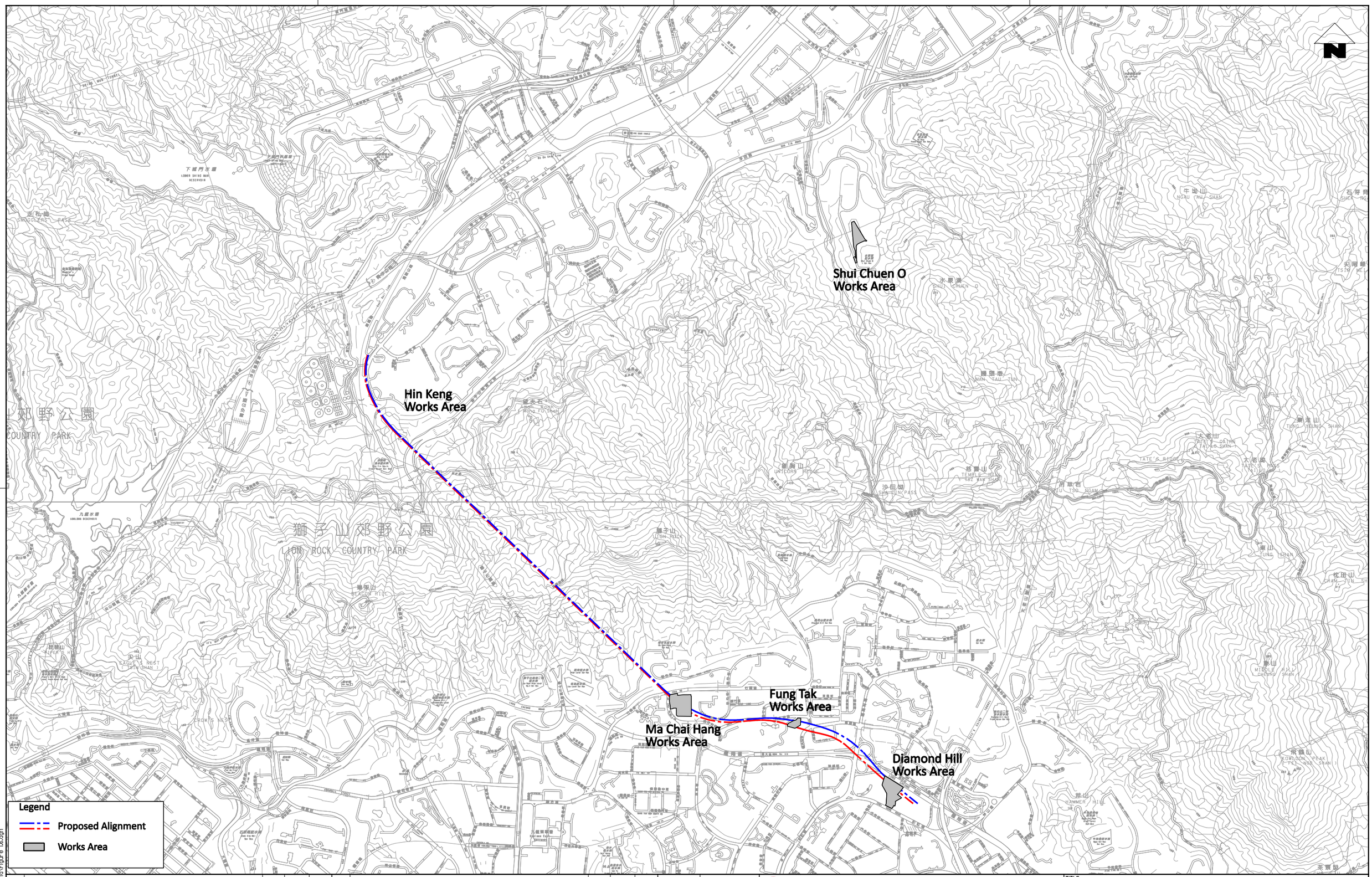

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CONTRACT 1103

HIN KENG TO DIAMOND HILL TUNNELS

Locations of Project Works Areas
- General Alignment of Contract 1103
(Sheet 6 of 6)

SCALE	DRAWING NO.	REV.
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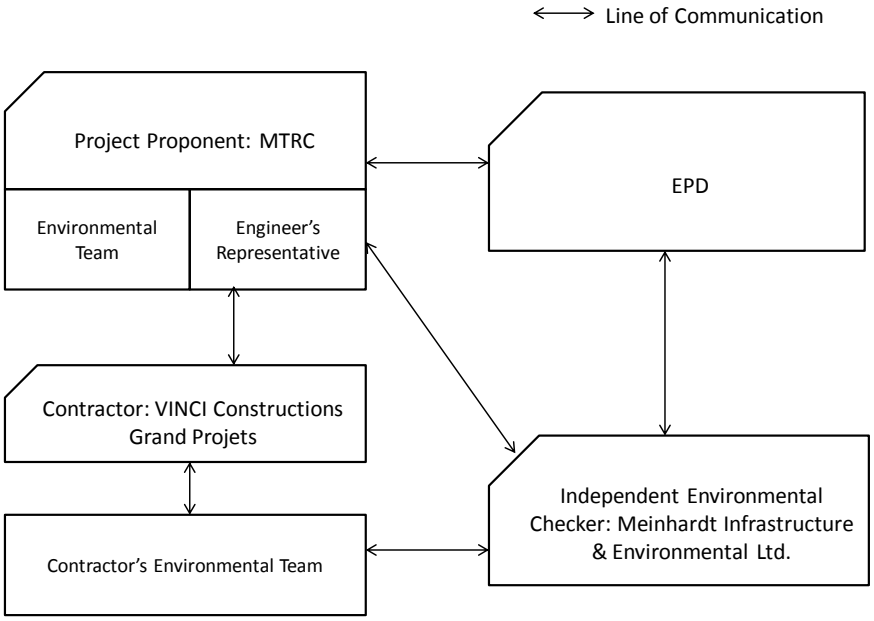
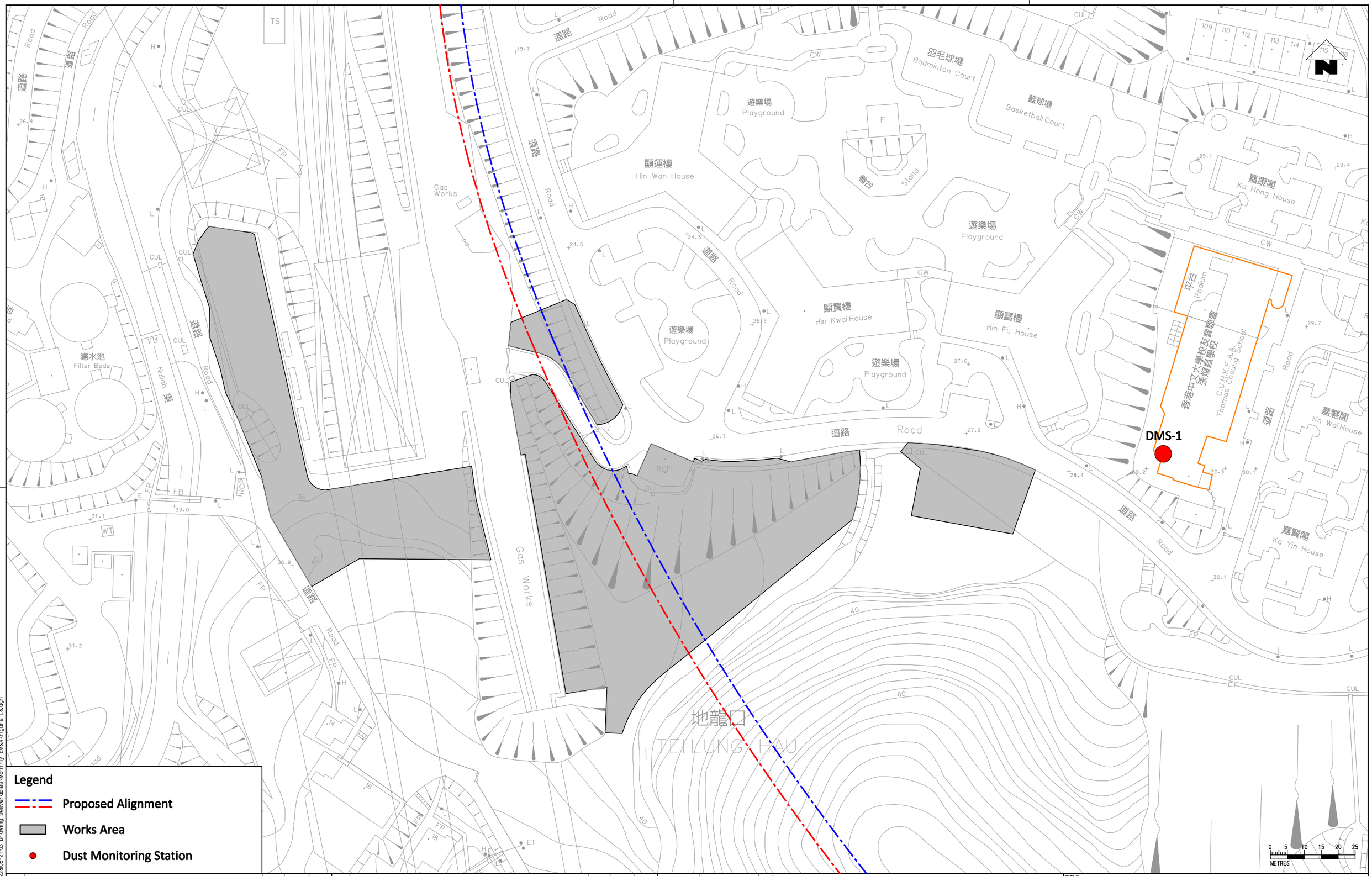
Figure 1.7 - Project Organisation for Environmental Works





Legend

- Proposed Alignment
- Works Area
- Dust Monitoring Station

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DESIGNED	GL
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APPROVED	ST
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TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Proposed Dust Monitoring Stations
(Sheet 1 of 3)

SCALE	DRAWING NO.	REV.
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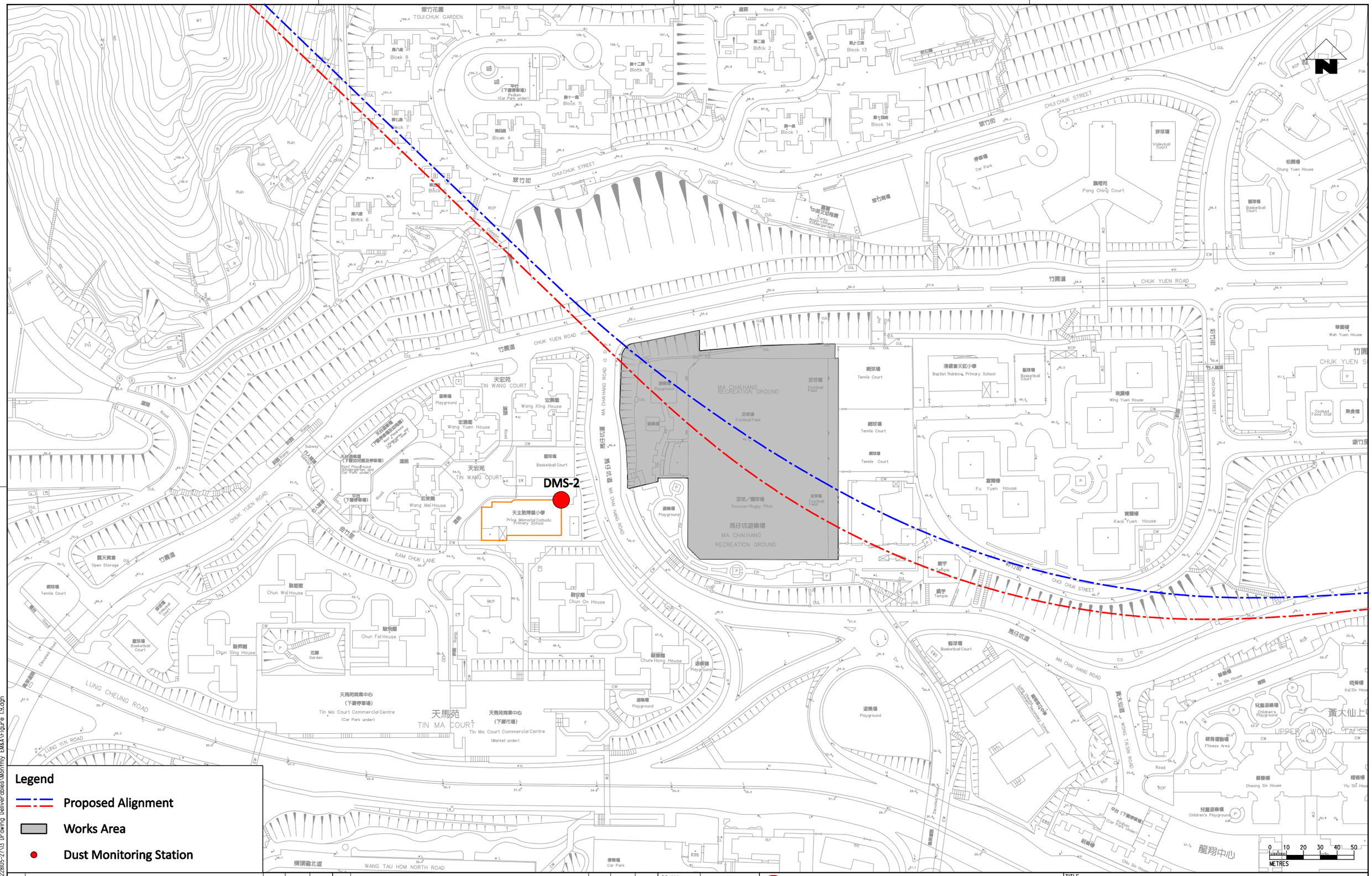

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SHATIN TO CENTRAL LINK

ORIGINATOR

ARUP Ove Arup & Partners Hong Kong Limited

CADD REF.

TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Proposed Dust Monitoring Stations
(Sheet 2 of 3)

SCALE	DRAWING NO.	REV.
1:2000 (A3)	Figure 1.9	A

DMS-3/DMS-4

Legend

- Proposed Alignment
- Works Area
- Dust Monitoring Station

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TITLE
CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Proposed Dust Monitoring Stations
(Sheet 3 of 3)

SCALE 1:2000 (A3)

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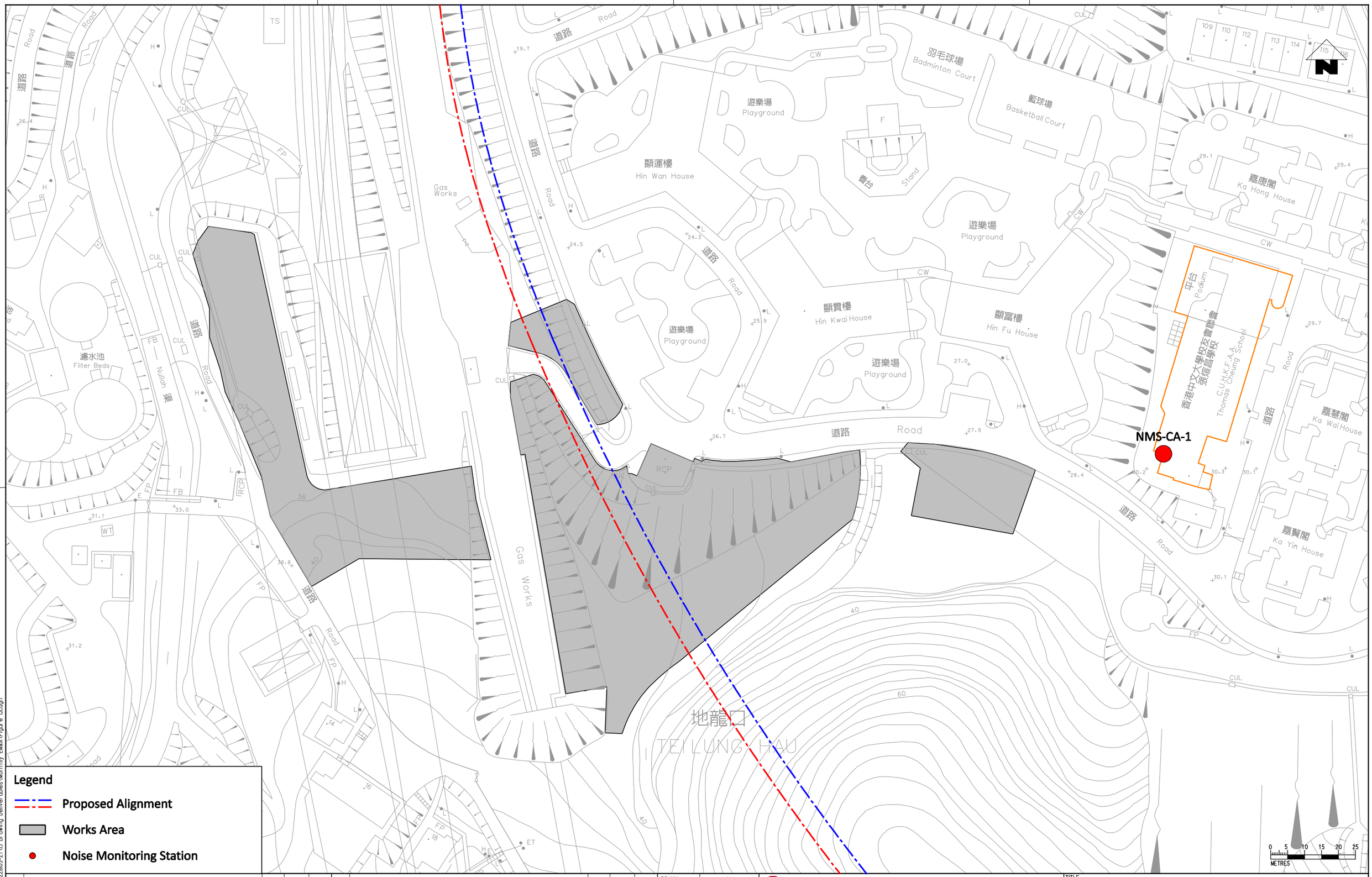
REV. A



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DATE	12/12

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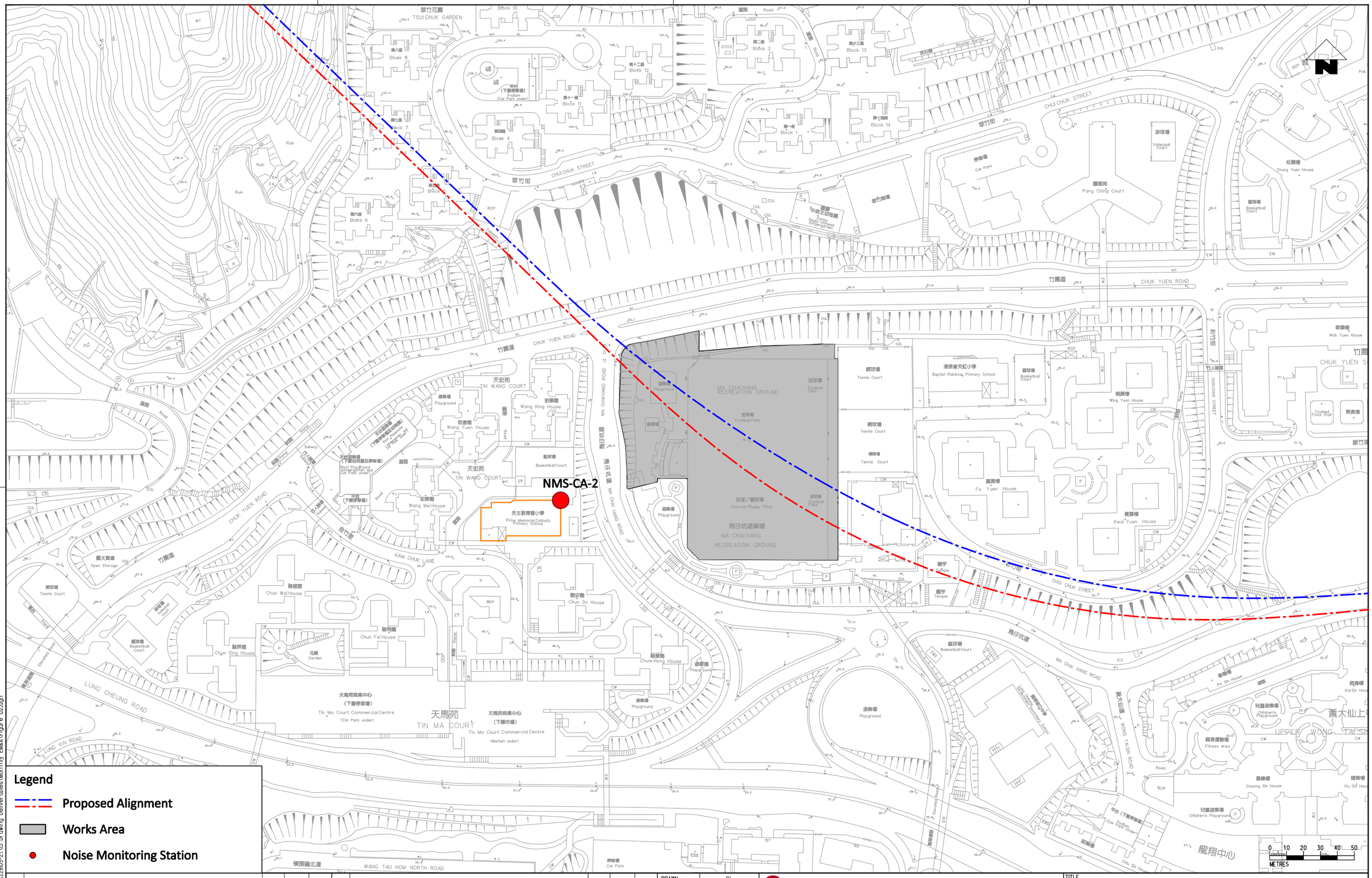
TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Noise Monitoring Stations
(Construction Airborne Noise)
(Sheet 1 of 3)

SCALE	DRAWING NO.	REV.
1:1000 (A3)	Figure 1.11	A



Legend

- Proposed Alignment
- Works Area
- Noise Monitoring Station

REV	DESCRIPTION	BY	DATE	APPROVED
A	FIRST ISSUE	GL	12/12	ST

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APPROVED	ST
DATE	12/12

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CADD REF.

TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Noise Monitoring Stations
(Construction Airborne Noise)
(Sheet 2 of 3)

SCALE	DRAWING NO.	REV.
1:2000 (A3)	Figure 1.12	A

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NMS-CA-3/NMS-CA-4

Legend

- Proposed Alignment
- Works Area
- Noise Monitoring Station

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REV	DESCRIPTION	BY	DATE	APPROVED
A	FIRST ISSUE	GL	12/12	ST

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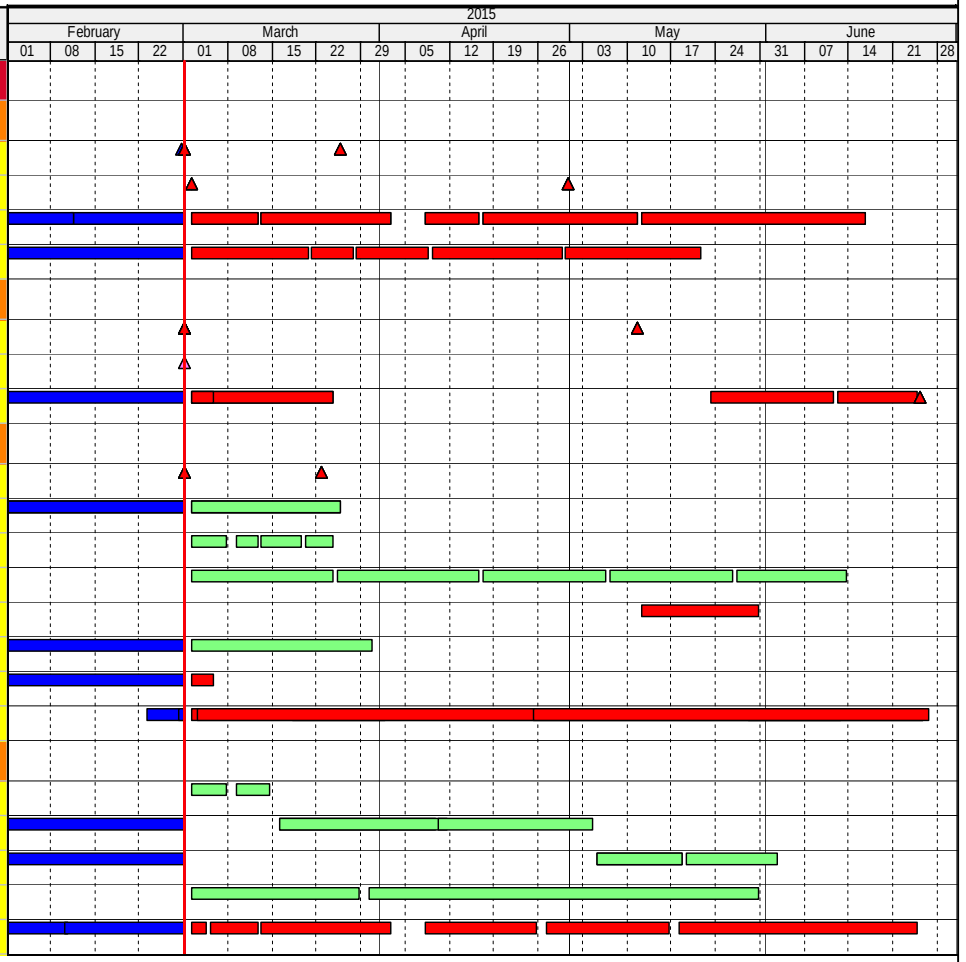
TITLE
CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Noise Monitoring Stations
(Construction Airborne Noise)
(Sheet 3 of 3)

SCALE 1:2000 (A3)
DRAWING NO. Figure 1.13
REV. A

Appendix A

Construction Programme

Activity ID	Activity Name	Original Duration	Start	Finish	Physical % Complete	Total Float
CONTRACT 1103:- HIN KENG TO DIAMOND HILL TUNNELS						
COST CENTER C - TBM TUNNELS BETWEEN DIH and D Ch 95+357						
	Milestone Schedule - TBM Tunnels between DIH and D Ch95+357					
	TBM Tunnel Segment Manufacturing					
	TBM Tunnel Up Track - DIH U97+064 to U95+376					
	Tunnels Sumps					
COST CENTER F - MA CHAI HANG VENTILATION BUILDING (MCV)						
	COST CENTER F - Milestone Schedule - MCV					
	MCV - Site Preparation					
	MCV - Shaft Excavation and ELS					
COST CENTER G - FUNG TAK EAP/EEP BUILDING (FTA)						
	COST CENTER G - Milestone Schedule - FTA					
	FTA - Utilities					
	FTA - Shaft Excavation and ELS					
	FTA - C&S Works					
	FTA - Connection Tunnels					
	PTT - Demolition and Site Clearance					
	PTT - Sheet Pile Retaining Wall					
	PTT - RC Concrete and ELS Work					
COST CENTER H - HIN KENG WORKING SHAFT						
	HIK - Site Preparation					
	HIK - Pipe Pile and Grouting					
	HIK - Excavation and ELS					
	Undrained Tunnels without Ventilation Duct (Ch D93+176 to D93+300)					
	Excavation and Temporary Support from HIK (Ch D93+300 to D95+357) 2057m					



VINCI CONSTRUCTION GRANDS PROJETS

Three Month Rolling Programme
As of 1-Mar-2015

Date	Revision	Checked	Approved
5-Mar-15	Submission for MTR Information	QT	EC

Appendix B

Environmental Monitoring Programme in Reporting Month

SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Impact Monitoring Schedule - February 2015

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L_{Aeq}, 30 min	
01-Feb-15 Sun			
02-Feb-15 Mon			
03-Feb-15 Tues			
04-Feb-15 Wed			
05-Feb-15 Thu			
06-Feb-15 Fri			
07-Feb-15 Sat			
08-Feb-15 Sun			
09-Feb-15 Mon			
10-Feb-15 Tue			
11-Feb-15 Wed			
12-Feb-15 Thu			
13-Feb-15 Fri			
14-Feb-15 Sat			
15-Feb-15 Sun			
16-Feb-15 Mon			
17-Feb-15 Tue			
18-Feb-15 Wed			
19-Feb-15 Thu			
20-Feb-15 Fri			
21-Feb-15 Sat			
22-Feb-15 Sun			
23-Feb-15 Mon			
24-Feb-15 Tue			
25-Feb-15 Wed			
26-Feb-15 Thu			
27-Feb-15 Fri			
28-Feb-15 Sat			

	Public Holiday
	Monitoring Day

Monitoring Details

Monitoring	Locations	Parameters
Air Quality	DMS-1 - C.U.H.K.A.A Thomas Cheung School, DMS-2 - Price Memorial Catholic Primary School and DMS-3 / DMS-4 - Hong Kong Sheng Kung Hui Nursing Home	24-hour TSP
Noise	NMS-CA-1 - C.U.H.K.A.A Thomas Cheung School, NMS-CA-2 - Price Memorial Catholic Primary School and NMS-CA-3 /NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home	$L_{Aeq(30\ min)}$, L_{10}, L_{90}

Appendix C

Environmental Mitigation Implementation Schedule (EMIS)

Environmental Mitigation Implementation Schedule – Works Contract 1103

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report for the reporting month. Chapters 15 & 16 describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Pre-Construction Phase)							
S5.4	E1	Engineering works should not encroach into country park boundary, Tei Lung Hau Stream and secondary woodland near the portal at Hin Keng	Minimize ecological impacts	Lion Rock Country Park, Tei Lung Hau Stream	Detailed design and construction stage	• AFCD's requirements • EIAO • Country Parks Ordinance	✓
	E2	<u>Habitat Loss</u> A detailed vegetation survey should be conducted in the Hin Keng Portal area to locate and enumerate individuals of *Aquilaria sinensis* which will potentially be affected by construction and operation of the Portal. A suitable site for transplanting all affected individuals within the footprint area should be identified and assessed for its suitability. A transplantation plan should then be drawn up and details of the transplantation methodologies and programme along with post-transplantation monitoring should be included.	Minimize ecological impacts on important species	Hin Keng Portal areas	Prior to site clearance	• AFCD's requirements	✓
S5.7	E3	<u>Tree felling and vegetation removal</u> Precautionary checks of the vegetation for the presence of nesting bird species of conservation interest should be carried out before vegetation clearance by an ecologist.	Minimize ecological impacts to breeding bird species of conservation interest	Works sites for DIH	Prior to site clearance	• AFCD's requirements	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)							
S5.7	E5	<u>Good Site Practices</u> Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented: • Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream; • Avoidance of soil storage against trees or close to waterbodies in particular the Tei Lung Hau stream; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. Tei Lung Hau Stream and the adjoining secondary woodland, tunnel on hill at top of slope stabilisation works; • No on-site burning of waste; • Waste and refuse in appropriate receptacles.	Minimize ecological impacts	All construction sites	Construction stage		✓ ✓ ✓ ✓ ✓

Environmental Mitigation Implementation Schedule – Works Contract 1103

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.7	E7	<u>Water Quality and Hydrology</u> • Implement water control measures (ETWB TCW No. 5/2005, Protection of natural streams/ rivers from adverse impacts arising from construction works to avoid direct or indirect impacts on the Tei Lung Hau Stream) and good site practices. • Canopy tubes should be installed from the shaft structure and extend the full width of the stream. These canopy tubes with sieves along its length should be grouted and form a stable and low permeable 'umbrella' for further mining works to be carried out in stages. The canopy tubes beneath the stream area are within Completely Decomposed Granite (CDG) stratum.	• Avoid indirect water impact to any wetland habitats or wetland fauna • Minimize the drawdown of water table	Works area in Hin Keng	Construction stage	• TCW No. 5/2005	✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape and Visual (Construction Phase)							
S6.9.3	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u> • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees	Minimize visual & landscape impact	Within Project Site	Construction stage	TM-EIAO	✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.					✓
S6.12	LV2	• <u>Decorative Hoarding</u> Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. • <u>Management of facilities on work sites</u> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. • <u>Tree Transplanting</u> Trees of high to medium survival rate would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.	Minimize visual & landscape impact	Within Project Site	Detailed design and construction stage	EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006	✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality (Construction Phase)							
-	A1	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and • plant should be serviced regularly to avoid emission of • black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra-low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	All construction sites	Construction stage	• APCO	✓
		Open burning shall be prohibited	Reduce air pollution emission from work site	All construction sites	Construction stage	• APCO	✓
Construction Dust Impact							
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Rdr
S7.6.5	D2	• Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area and once per 1.5 hour at those in the Tai Wai area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	Rdr

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		maintain an equivalent intensity of no less than 1.8 L/m2 to achieve the dust removal efficiency					
S7.6.5	D3	• Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction	Minimize dust impact at the nearby sensitive receivers	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	✓ Rdr ✓ ✓ ✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;					✓ ✓ N/A ✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					✓ ✓ N/A
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Selected representative dust monitoring station	Construction stage	• TM-EIA	✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Airborne)							
S8.3.6	N1	Implement the following good site practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise	All construction sites	Construction stage	• Annex 5, TM-EIA	✓ ✓ ✓ ✓ ✓ ✓
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	All construction sites	Construction stage	• Annex 5, TM-EIA	✓
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and	Screen the noisy plant items to be used at all construction sites	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	Rdr

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		saw.					
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	✓
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	✓
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Selected representative noise monitoring station	Construction stage	• TM-EIA	✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Water Quality (Construction Phase)							
S10.7.1	W1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>*Construction Runoff and Site Drainage*</u> • At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m^3/s a sedimentation basin of $30m^3$ would be required and for a flow rate of 0.5 m^3/s the basin would be 150 m^3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the	To minimize water quality impact from construction site runoff and general construction activities	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than $50m^3$ 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					✓ ✓ Rdr ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		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 be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, 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, especially for areas located near steep slopes.					✓
		• 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 sited wheel washing facilities should be provided at every construction site exit where practicable. 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.					✓
		• Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.					✓
		• Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.					✓
		• All fuel tanks and storage areas should be provided with locks					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		and sited 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 water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices					✓ ✓ ✓
S10.7.1	W2	<u>*Tunnelling Works*</u> • Cut-&-cover/ open cut tunnelling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge • The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. • Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.	To minimize construction water quality impact from tunneling works	All tunneling portion	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-water • TM-EIAO	✓ ✓ ✓ ✓
S10.7.1	W3	<u>*Sewage Effluent*</u>	To minimize water quality	All construction sites	Construction	• Water Pollution	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		• Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	from sewage effluent	where practicable	stage	Control Ordinance • TM-water	✓
S10.7.1	W4	<u>*Groundwater from Contaminated Area:*</u> • No direct discharge of groundwater from contaminated areas should be adopted. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in this EIA report for compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water) and the existence of prohibited substance should be confirmed. The review results should be submitted to EPD for examination If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, the contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground. • If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers. • If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality	To minimize groundwater quality impact from contaminated area	Excavation areas where contamination is found.	Construction stage	• Water Pollution Control Ordinance • TM-water • TM-EIAO	N/A N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		will not be affected by the recharge operation as indicated in the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.					
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	Rdr ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Waste Management (Construction Phase)							
S11.4.1.1	WM1	*On-site sorting of C&D material* • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	All construction sites	Construction stage	• DEVB TC(W) No. 6/2010	✓
S11.5.1	WM2	*Construction and Demolition Material* • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance	✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation				• ETWB TCW No. 19/2005	✓ ✓ ✓ ✓
S11.5.1	WM3	<u>*C&D Waste*</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.					
S11.5.1	WM4	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.	Minimize production of the general refuse and avoid odour, pest and litter impacts	All construction sites	Construction stage	• Waste Disposal Ordinance	✓ ✓ ✓ ✓
S11.5.1	WM5	Excavated Contaminated Soils Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.	To remediate contaminated soil	Site L4 (Former Tai Hom Village)	Site remediation	• Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boat yards and Car Repair/Dismantling Workshop.	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S11.5.1	WM7	*Chemical Waste* • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.	Control the chemical waste and ensure proper storage, handling and disposal.	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	✓ ✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	All construction sites	Construction stage	• EIAO Guidance Note No.4/2010 • TM-EIAO	✓
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	All construction sites	Construction stage	• EIAO Guidance Note No.4/2010 • TM-EIAO	✓ ✓ ✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13A.10.2.1 and A13A.10.2.4	The truck design should comply with the Requirements for Approval of an Explosives Delivery Vehicle (CEDD 2) and limit the amount of combustibles in the cabin. This should be combined with monthly vehicle inspection	To meet the ALARP requirement.	Explosive Magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.2	Blasting activities including storage, transport and use of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions.	To ensure that the risks from the proposed explosives storage, transport and use would not be unacceptable	Works areas at which explosives would be stored and/or used.	Construction phase	•Dangerous Goods Ordinance	✓
Chapter 13.13	A13A.10.2.1 and A13A.10.2.5	Only the required quantity of explosives for a particular blast should be transported to avoid the return of unused explosives to the temporary magazines. The number of return trips to the magazine should be minimized. If disposal is required for small quantities, disposal should be made in a controlled and safe manner by a Registered Shotfirer.	To reduce the risk during explosives transport.	Works areas at which explosives would be stored and/ or used.	Construction phase		✓
Chapter 13.13	A13A.10.2.1	A minimum headway between two consecutive truck conveys of at least 10 min is recommended.	To ensure that the risk from the proposed explosives transport would not be unacceptable	Along explosives transport route.	Construction phase.		✓
Chapter 13.13	A13A.10.2.1	The explosive truck accident frequency should be minimized by implementing a dedicated training programme for both the driver and his attendants, including regular briefing sessions, implementation of a defensive driving attitude. In addition, drivers should be selected based on good safety record, and medical checks.	To meet the ALARP requirement.	-	Construction phase		✓
Chapter 13.13	A13A.10.2.1	The explosive truck fire involvement frequency should be minimized by implementing a better emergency response and training to make	To meet the ALARP requirement.	-	Construction phase		

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with the required amount and type of fire extinguishers and shall be agreed with Mines Division.					✓
Chapter 13.13	A13A.10.2.1	The contractor should as far as practicable combine the explosive deliveries for a given work area.	To meet the ALARP requirement.	-	Construction phase		✓
Chapter 13.13	A13A.10.2.1	The Contractor should as far as practicable use the preferred transport route.	To ensure that the risk from the proposed explosives transport would not be unacceptable	Along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.10.2.1	The Contractor should coordinate explosives deliveries with the delivery of chlorine to Shatin Water Treatment Works in order to avoid overlapping.	To ensure that the risk from the proposed explosives transport would not be unacceptable	Along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.10.2.4	Use only experienced driver(s) with good safety record for explosive vehicle(s). Training should be provided to ensure it covers all major safety subjects.	To ensure safe transport of explosives	At suitable location	Construction phase		✓
Chapter 13.13	A13A.10.2.4	Develop procedure to ensure that parking space on the site is available for the explosive truck. Confirmation of parking space should be communicated to truck drivers before delivery.	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Explosive magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.3	Delivery vehicles shall not be permitted to remain unattended within the magazine site (or appropriately wheel-locked).	To reduce the risk of fire within the magazine	Explosive Magazine	Construction phase		✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13A.10.2.3	Good house-keeping within and outside of the magazine to ensure that combustible materials (including vegetation) are removed and not allowed to accumulate.	To reduce the risk of fire within the magazine	Explosive Magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.4	Detonators shall not be transported in the same vehicle with other Class 1 explosives	To reduce the risk of explosion during the transport of cartridged emulsion	-	Construction phase		✓
Chapter 13.13	A13A.10.2.2	Emergency plan (ie magazine operational manual) shall be developed to address uncontrolled fire in magazine area. The case of fire near an explosive carrying truck in jammed traffic should also be covered. Drill of the emergency plan should be carried out at regular intervals.	To reduce the risk of fire	Explosive Magazine and along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.10.2.2	The magazine storage quantities need to be reported on a monthly basis to ensure that the two day storage capacity is not exceeded.	To reduce the risk within the magazine	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.2	Adverse weather working guideline should be developed to clearly define procedure for transport explosives during thunderstorm.	To ensure safe transport of explosives	Along explosives transport route.	Construction phase		✓
Chapter 13.13	A13A.10.2.4	During transport of the explosives within the tunnel, hot work should not be permitted	To ensure safe transport of explosives	Along explosives transport route.	Construction phase		✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13A.10.2.4	Ensure that packaging of detonators remains intact until handed over at blasting site.	To reduce the risk of explosion during the transport of detonator	-	Construction phase		✓
Chapter 13.13	A13A.10.2.4	Steel vehicle tray welded to a steel vertical fire screen should be mounted at least 150 mm behind the drivers cab and 100 mm from the steel cargo compartment, the vertical screen shall protrude 150 mm in excess of all three (3) sides of the steel cargo compartment	To reduce the risk during explosives transport.	-	Construction phase		✓
Chapter 13.13	A13A.10.2.5	Ensure cartridged emulsion with high water content should be preferred. Also, the emulsion with perchlorate formulation should be avoided.	To ensure safe explosives to be used	-	Construction phase		✓
Chapter 13.13	A13A.10.2.3	Traffic Management should be implemented within the temporary magazine site, to ensure that no more than 1 vehicle will be loaded at any time, in order to avoid accidents involving multiple vehicles within the site boundary. Based on the construction programme, considering that 6 trucks could be loaded over a peak 2 hour period, this is considered feasible.	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.3	The design of the fill slope close to the temporary magazine site should consider potential washout failures and incorporate engineering measures to prevent a washout causing damage to the temporary magazine stores	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.2	The security plan should address different alert security level to reduce opportunity for arson / deliberate initiation of explosives. The corresponding security procedure should be implemented with respect to prevailing security alert status announced by the	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		Government.					
Chapter 13.13	A13A.10.2.3	A suitable work control system should be introduced, such as an operational manual including Permit-to-Work system.	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13A.10.2.3	The magazine building shall be regularly checked for water seepage through the roof, walls or floor.	To ensure that the risks from the proposed explosives storage would not be unacceptable	Temporary explosives magazine	Construction phase		✓
Chapter 13.13	A13B.7.2	Blast charge weight (MIC) should be within the maximum MIC as specified for the given section.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	Temporary mitigation measures such as blast doors or heavy duty blast curtains should be installed at the access adits, shafts/ portals and at suitable locations underground to prevent flyrock and control the air overpressure.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	Blasting from multiple faces as well as different locations will be carried out for this project. Good communication and control will need to be adopted in ensuring that the works are carried out safely.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	It is intended that complete evacuation of the underground tunnels need not be carried out and secure refuge areas should be identified to workers in the area.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	A Chief Shotfirer and a Blasting Coordinator shall be employed in addition to the normal blasting personnel to ensure that the works are safe and coordinated between blasting areas and between	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		adjacent contracts.					
Chapter 13.13	A13B.7.2	Shotfirer to be provided with a lightning detector, and appropriate control measures should be in place.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	A speed limit for the diesel vehicle truck and bulk emulsion truck in the tunnel should be enforced. The truck may be escorted while underground to ensure route is clear from hazards and obstructions.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	Hot work should be suspended during passage of the diesel vehicle truck and bulk emulsion truck in the tunnel.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	For any construction works related to use of explosives near gas facilities and gas pipes, the requirements of the Code of Practice on Avoiding Danger from Gas Pipes must be respected, in particular, to ensure liaison/coordination with HKCG with sufficient notice of planned works and to follow prescribed emergency procedures in case of leaks.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13B.7.2	A detailed liaison between the contractor and HKCG should be established. HKCG should be notified about the blasting schedule in written format within a reasonable period of time prior to blasting in order to ensure the gas safety during the construction period. Also, liaison should be made with HKCG to develop an emergency plan.	To ensure safe use of explosives	Along tunnel alignment	Construction phase		✓
Chapter 13.13	A13C.8	Installation of on-site gas monitors in all relevant SCL construction/operation areas;	To reduce the risks to the SCL staff, construction workers and passengers	-	Construction and operation phases		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Chapter 13.13	A13C.8	Establishment of emergency response and evacuation plans (co-operation of various parties/departments required. For the operational phase the emergency plan should also include adequate procedures for controlling the tunnel ventilation system and stopping of the SCL train traffic in order to prevent the trains moving into the affected areas.)	To reduce the risks to the SCL staff, construction workers and passengers	-	Construction and operation phases		✓
Chapter 13.13	A13C.8	Safety/emergency response/evacuation training and drills for all personnel	To reduce the risks to the SCL staff, construction workers and passengers	-	Construction and operation phases		✓

Appendix D

Calibration Certificates for Air Monitoring Equipment

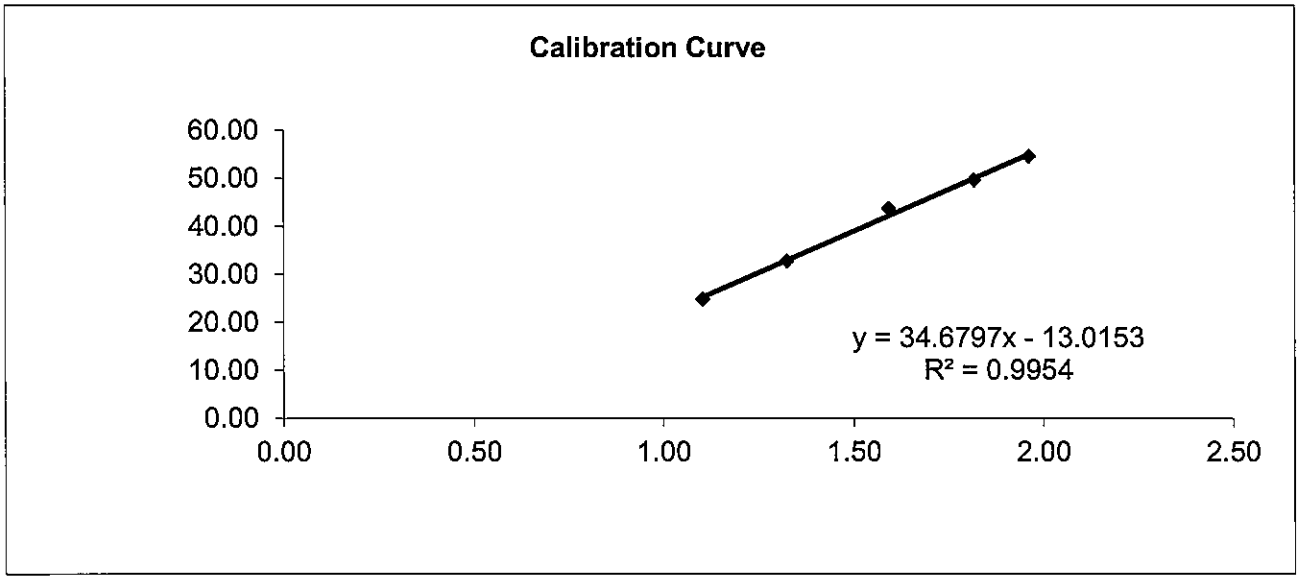
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	23-Dec-14	**Barometric pressure**	755 mm Hg
Next Calibration date	21-Feb-15	**Tempature (°C)**	28 °C
Sampler location	DMS1 - Thomas Cheung School	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	3763	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m_s	2.06238
Intercept of the standard curve, b_s	-0.2415

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	4.20	25.00	1.10	24.79
7	6.30	33.00	1.32	32.73
10	9.40	44.00	1.59	43.64
13	12.50	50.00	1.82	49.59
18	14.70	55.00	1.96	54.54



Linear Regression

Sampler slope (m) :	**34.6797**
Sampler intercept (b) :	**-13.0153**
Correlation coefficient (R^2) :	**0.9954**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: Carry Date: 23/12/2014

Checked by: A Rollinson Date: 23/12/2014

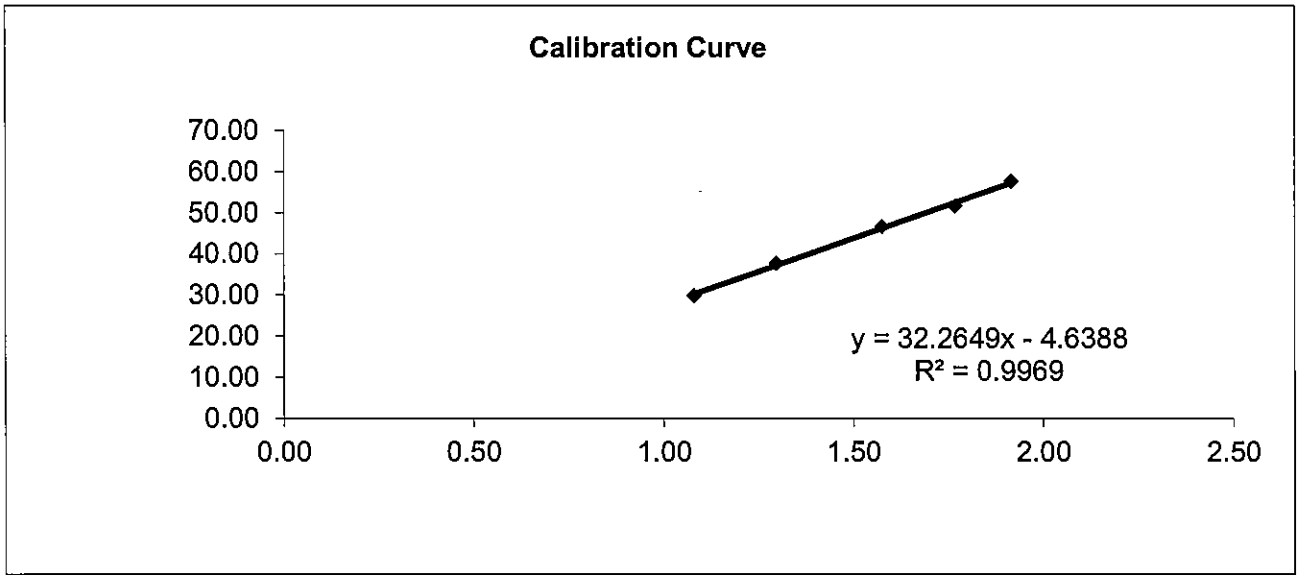
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	23-Dec-14	**Barometric pressure**	755 mm Hg
Next Calibration date	21-Feb-15	**Tempature (°C)**	28 °C
Sampler location	DMS2 - Price Memorial Catholic Pri	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	3761	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m_s	2.06238
Intercept of the standard curve, b_s	-0.2415

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	4.00	30.00	1.08	29.75
7	6.00	38.00	1.29	37.69
10	9.20	47.00	1.58	46.61
13	11.80	52.00	1.77	51.57
18	14.00	58.00	1.92	57.52



Linear Regression

Sampler slope (m) :	**32.2649**
Sampler intercept (b) :	**-4.6388**
Correlation coefficient (R^2) :	**0.9969**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: Corey Date: 23/12/2014

Checked by: A Rollens Date: 23/12/2014

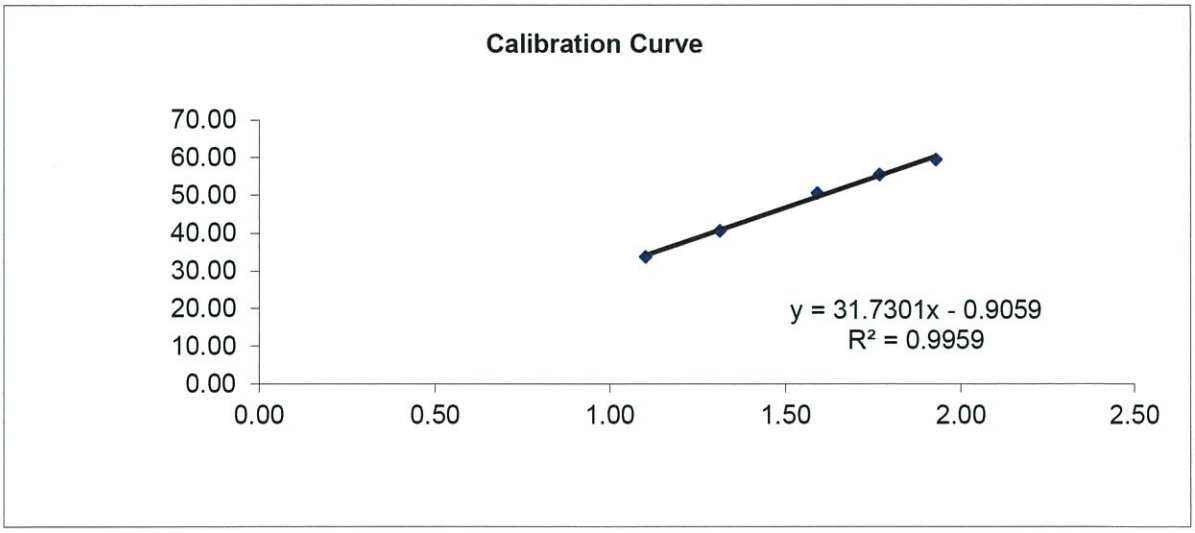
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	23-Dec-14	**Barometric pressure**	755 mm Hg
Next Calibration date	21-Feb-15	**Tempature (°C)**	28 °C
Sampler location	DMS3 - Sheng Kung Hui Nursing Hc	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	3762	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m_s	2.06238
Intercept of the standard curve, b_s	-0.2415

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	4.20	34.00	1.10	33.72
7	6.20	41.00	1.31	40.66
10	9.40	51.00	1.59	50.58
13	11.80	56.00	1.77	55.54
18	14.20	60.00	1.93	59.50



Linear Regression

Sampler slope (m) :	**31.7301**
Sampler intercept (b) :	**-0.9059**
Correlation coefficient (R^2) :	**0.9959**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 23/12/2014

Checked by: _____ Date: 23/12/2014

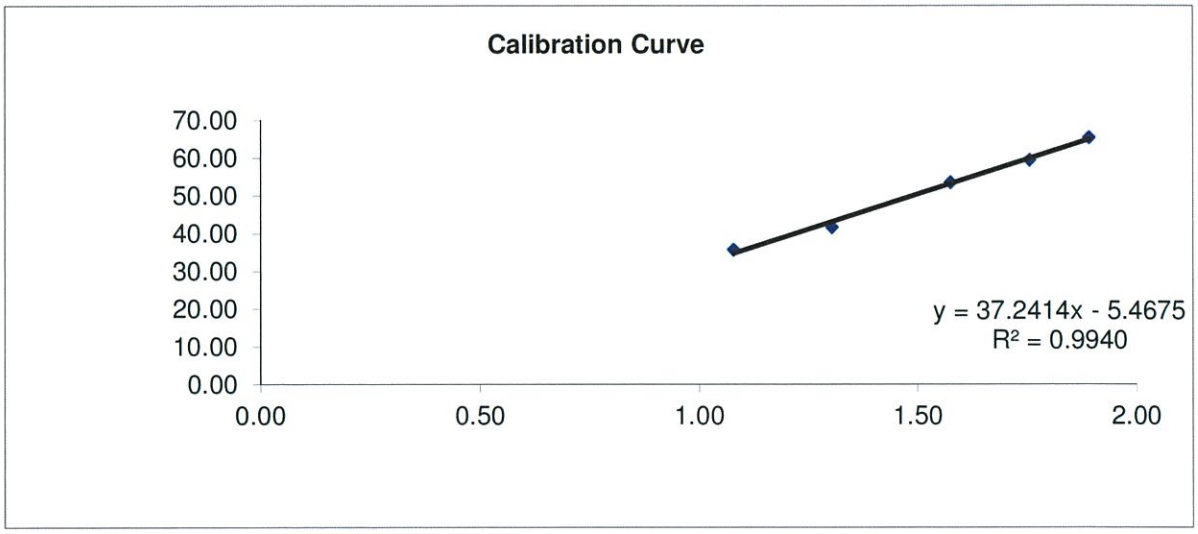
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	17-Feb-15	**Barometric pressure**	755 mm Hg
Next Calibration date	18-Apr-15	**Tempature (°C)**	28 °C
Sampler location	DMS1 - Thomas Cheung School	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	3763	**T_{std}**	298 K

Calibrator model	GMW-2536
Calibrator serial number	2421
Slope of the standard curve, m_s	2.06238
Intercept of the standard curve, b_s	-0.2415

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	4.00	36.00	1.08	35.70
7	6.10	42.00	1.30	41.65
10	9.20	54.00	1.58	53.55
13	11.60	60.00	1.75	59.50
18	13.60	66.00	1.89	65.45



Linear Regression

Sampler slope (m) :	**37.2414**
Sampler intercept (b) :	**-5.4675**
Correlation coefficient (R^2) :	**0.9940**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 17 Feb 2015

Checked by: _____ Date: 17 February 2015

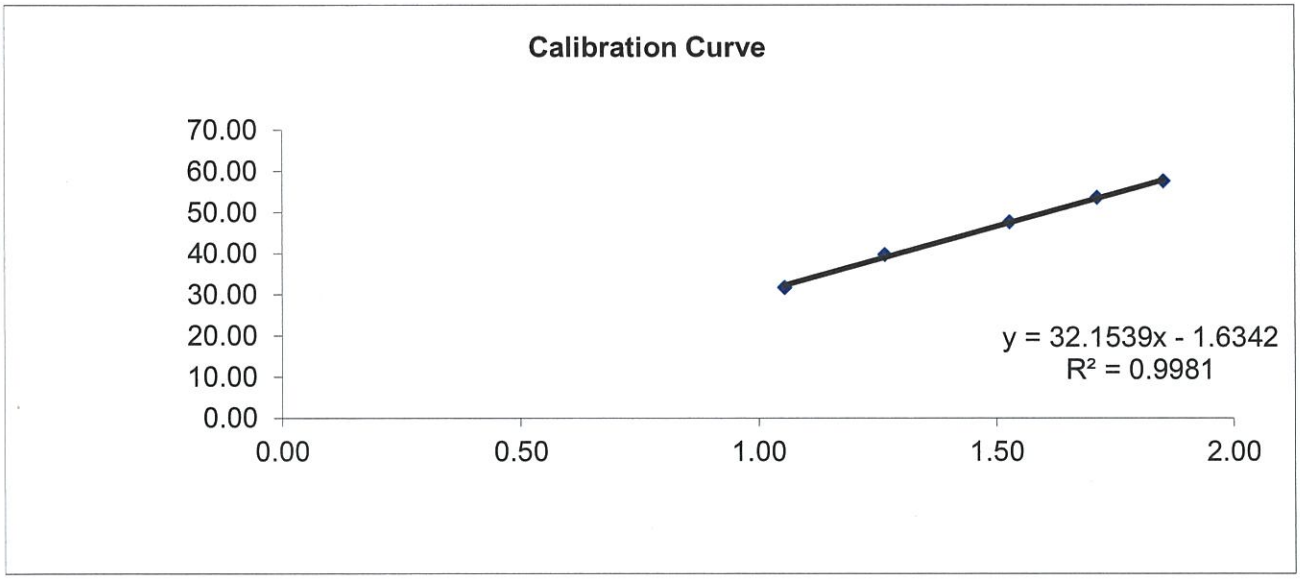
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	17-Feb-15	**Barometric pressure**	755 mm Hg
Next Calibration date	18-Apr-15	**Tempature (°C)**	28 °C
Sampler location	DMS2 - Price Memorial Catholic Pri	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	3761	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m_s	2.06238
Intercept of the standard curve, b_s	-0.2415

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.80	32.00	1.05	31.74
7	5.70	40.00	1.27	39.67
10	8.60	48.00	1.53	47.60
13	11.00	54.00	1.71	53.55
18	13.00	58.00	1.85	57.52



Linear Regression

Sampler slope (m) : **32.1539**
Sampler intercept (b) : **-1.6342**
Correlation coefficient (R^2) : **0.9981**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 17 Feb 2015

Checked by: _____ Date: 17-February-2015

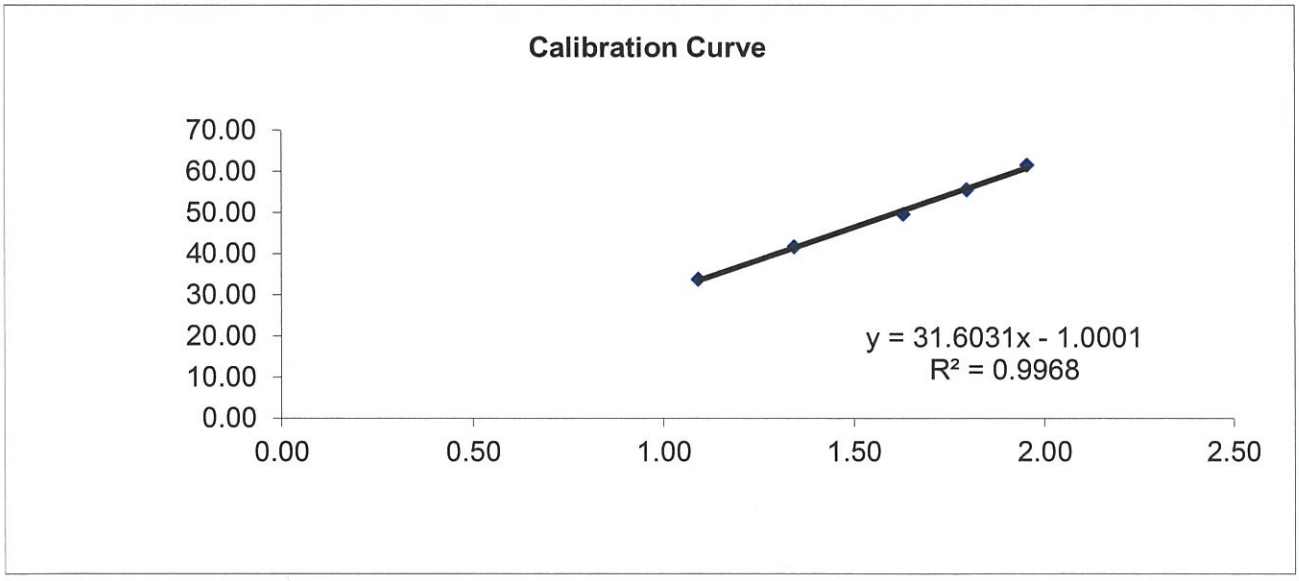
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	17-Feb-15	**Barometric pressure**	755 mm Hg
Next Calibration date	18-Apr-15	**Tempature (°C)**	28 °C
Sampler location	DMS3 - Sheng Kung Hui Nursing H	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	3762	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	2421
Slope of the standard curve, m_s	2.06238
Intercept of the standard curve, b_s	-0.2415

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	4.10	34.00	1.09	33.72
7	6.50	42.00	1.34	41.65
10	9.90	50.00	1.63	49.59
13	12.20	56.00	1.80	55.54
18	14.60	62.00	1.95	61.49



Linear Regression

Sampler slope (m) :	**31.6031**
Sampler intercept (b) :	**-1.0001**
Correlation coefficient (R^2) :	**0.9968**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 17 Feb 2015

Checked by: _____ Date: 17-February-2015

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jan 27, 2014 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2421 Pa (mm) - 754.38

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	1.4360	3.2	2.00
2	NA	NA	1.00	1.0120	6.4	4.00
3	NA	NA	1.00	0.9090	7.9	5.00
4	NA	NA	1.00	0.8650	8.8	5.50
5	NA	NA	1.00	0.7140	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0052	0.7000	1.4209		0.9957	0.6934	0.8814
1.0010	0.9891	2.0095		0.9915	0.9798	1.2464
0.9989	1.0989	2.2467		0.9894	1.0885	1.3936
0.9977	1.1535	2.3564		0.9883	1.1426	1.4616
0.9925	1.3901	2.8419		0.9831	1.3769	1.7627
Qstd slope (m) =		2.06238		Qa slope (m) =		1.29142
intercept (b) =		-0.02415		intercept (b) =		-0.01498
coefficient (r) =		0.99994		coefficient (r) =		0.99994
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jan 20, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2421 Pa (mm) - 749.3

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	1.4130	3.2	2.00
2	NA	NA	1.00	1.0060	6.3	4.00
3	NA	NA	1.00	0.9020	7.8	5.00
4	NA	NA	1.00	0.8590	8.7	5.50
5	NA	NA	1.00	0.7090	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9984	0.7066	1.4162		0.9957	0.7047	0.8843
0.9943	0.9884	2.0027		0.9916	0.9857	1.2507
0.9922	1.1000	2.2391		0.9895	1.0970	1.3983
0.9911	1.1538	2.3484		0.9884	1.1506	1.4665
0.9858	1.3905	2.8323		0.9831	1.3867	1.7687
Qstd slope (m) =		2.07308		Qa slope (m) =		1.29813
intercept (b) =		-0.04607		intercept (b) =		-0.02877
coefficient (r) =		0.99995		coefficient (r) =		0.99995
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

Appendix E

Dust Results

Location: DMS-1 - C.U.H.K.A.A. Thomas Cheung School

Details of 24-Hour TSP Monitoring

Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m^3)	24-hour TSP Level ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish					
103187	Feb-15	4-Feb-15	00:00	00:00	DMS1	Fine	Normal Operation	765.0	765.0	15.8	15.9	36.0	36.0	2.8084	2.9838	0.1754	1.1967	1.1965	1.1966	2321.08	2345.08	1440.00	1723.10	101.8	148.7	260.0
103190	Feb-15	10-Feb-15	00:00	00:00	DMS1	Fine	Normal Operation	764.3	763.5	16.9	17.1	36.0	36.0	2.8353	3.0154	0.1801	1.1942	1.1932	1.1937	2845.08	2869.08	1440.00	1718.93	104.8	148.7	260.0
103221	Feb-15	16-Feb-15	00:00	00:00	DMS1	Fine	Normal Operation	762.8	762.8	17.4	17.2	36.0	36.0	2.7552	2.9717	0.2165	1.1922	1.1926	1.1924	2869.08	2893.08	1440.00	1717.06	126.1	148.7	260.0
103205	Feb-15	18-Feb-15	00:00	00:00	DMS1	Fine	Normal Operation	763.5	763.5	17.0	16.8	36.0	36.0	2.7434	2.9302	0.1868	1.1934	1.1938	1.1936	2893.09	2917.09	1440.00	1718.78	108.7	148.7	260.0
103208	Feb-15	24-Feb-15	00:00	00:00	DMS1	Fine	Normal Operation	763.5	763.5	17.1	17.1	36.0	36.0	2.7542	2.8323	0.0781	1.1932	1.1932	1.1932	2917.10	2941.10	1440.00	1718.21	45.5	148.7	260.0
103213	Feb-15	27-Feb-15	00:00	00:00	DMS1	Fine	Normal Operation	763.5	763.5	16.8	16.8	34.0	34.0	2.7413	2.7739	0.0326	1.1353	1.1353	1.1353	2941.11	2965.11	1440.00	1634.83	19.9	148.7	260.0

Average (µg/m3)	84.5
Max (µg/m3)	126.1
Min (µg/m3)	19.9

Location: DMS-2 Price Memorial Catholic Primary School

Details of 24-Hour TSP Monitoring

Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m^3)	24-hour TSP Level ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish					
103188	Feb-15	4-Feb-15	00:00	00:00	DMS2	Fine	Normal Operation	765.0	765.0	15.8	15.9	42.0	42.0	2.8154	2.9934	0.1780	1.4200	1.4197	1.4199	2280.1	2304.1	1440.00	2044.6	87.1	167.4	260.0
103191	Feb-15	10-Feb-15	00:00	00:00	DMS2	Fine	Normal Operation	764.3	763.5	16.9	17.1	42.0	42.0	2.8250	3.0403	0.2153	1.4169	1.4158	1.4164	2304.1	2328.1	1440.00	2039.5	105.6	167.4	260.0
103222	Feb-15	16-Feb-15	00:00	00:00	DMS2	Fine	Normal Operation	762.8	762.8	17.4	17.2	38.0	38.0	2.7689	3.0137	0.2448	1.2923	1.2927	1.2925	2328.13	2352.13	1440.00	1861.20	131.5	167.4	260.0
103206	Feb-15	18-Feb-15	00:00	00:00	DMS2	Fine	Normal Operation	763.5	763.5	17.0	16.8	44.0	44.0	2.7608	2.9538	0.1930	1.4772	1.4777	1.4775	2352.14	2376.14	1440.00	2127.53	90.7	167.4	260.0
103214	Feb-15	24-Feb-15	00:00	00:00	DMS2	Fine	Normal Operation	763.5	763.5	17.1	17.1	40.0	40.0	2.7498	2.8211	0.0713	1.3546	1.3546	1.3546	2376.15	2390.15	840.00	1137.86	62.7	167.4	260.0
103212	Feb-15	27-Feb-15	00:00	00:00	DMS2	Fine	Normal Operation	763.5	763.5	16.8	16.8	40.0	40.0	2.7344	2.8036	0.0692	1.3552	1.3552	1.3552	2328.13	2352.13	1440.00	1951.49	35.5	167.4	260.0

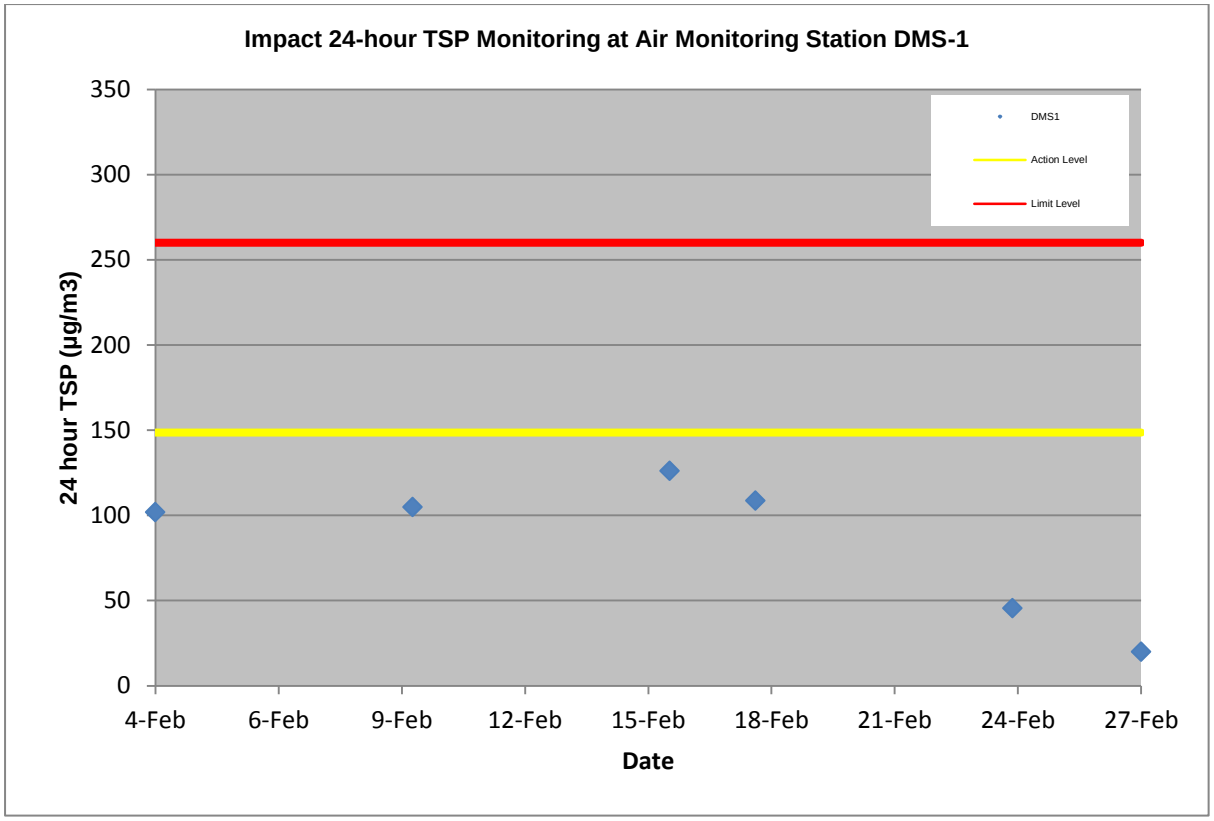
Average (µg/m3)	85.5
Max (µg/m3)	131.5
Min (µg/m3)	35.5

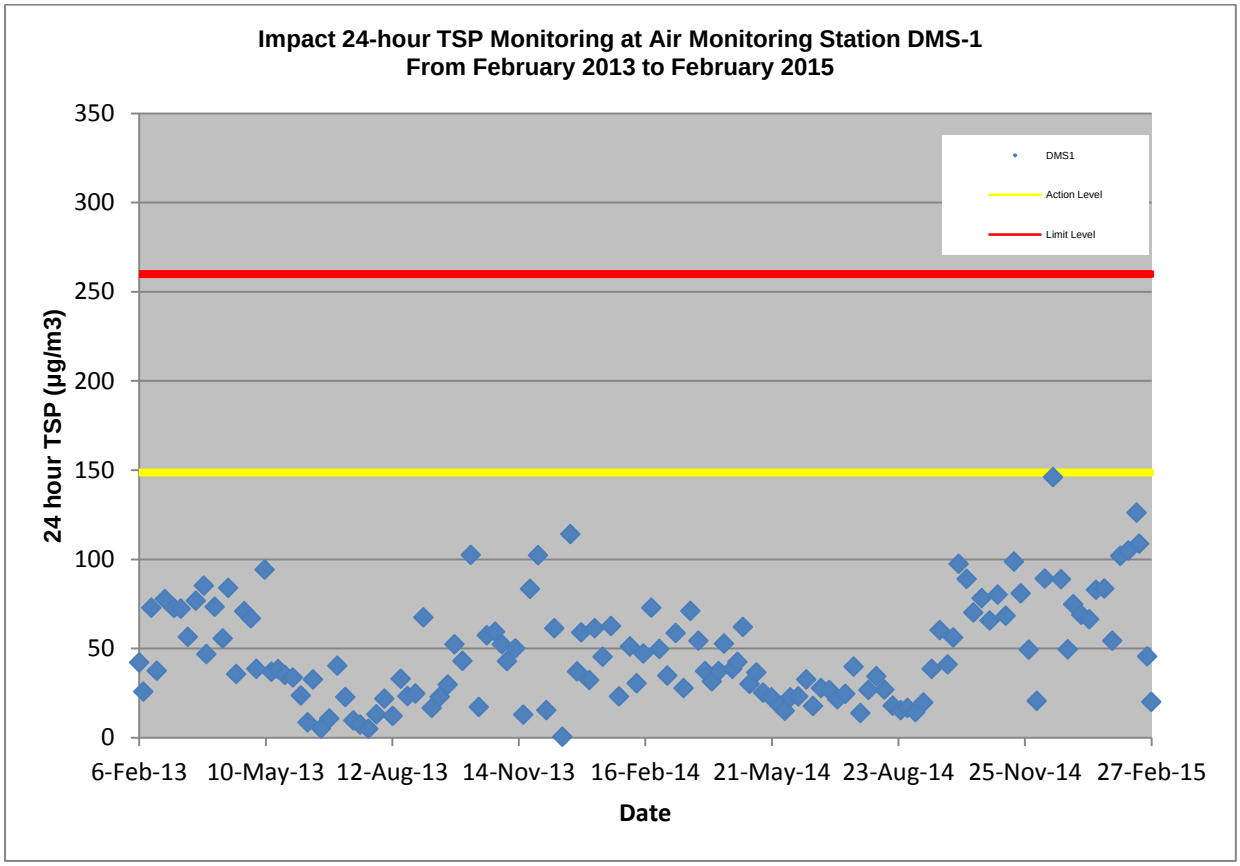
Location: DMS-3/DMS-4 - Hong Kong Sheng Kung Hui Nursing Home

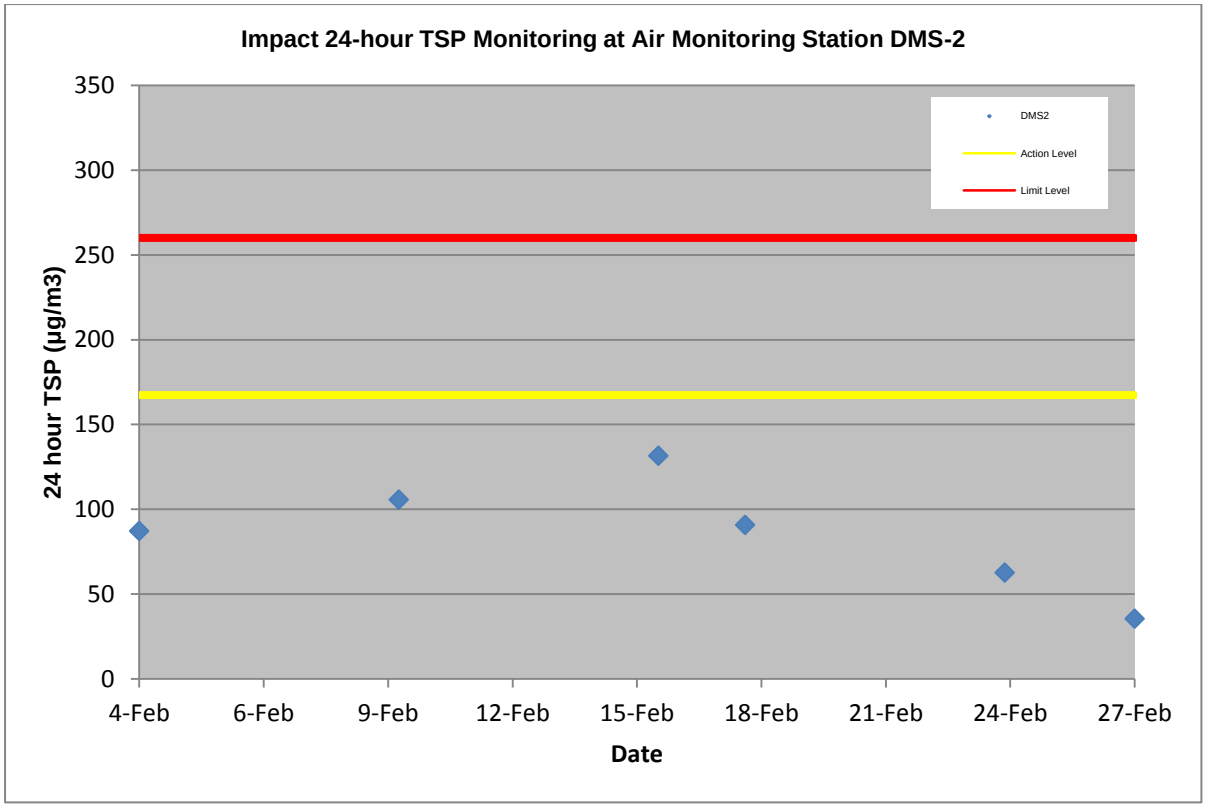
Details of 24-Hour TSP Monitoring

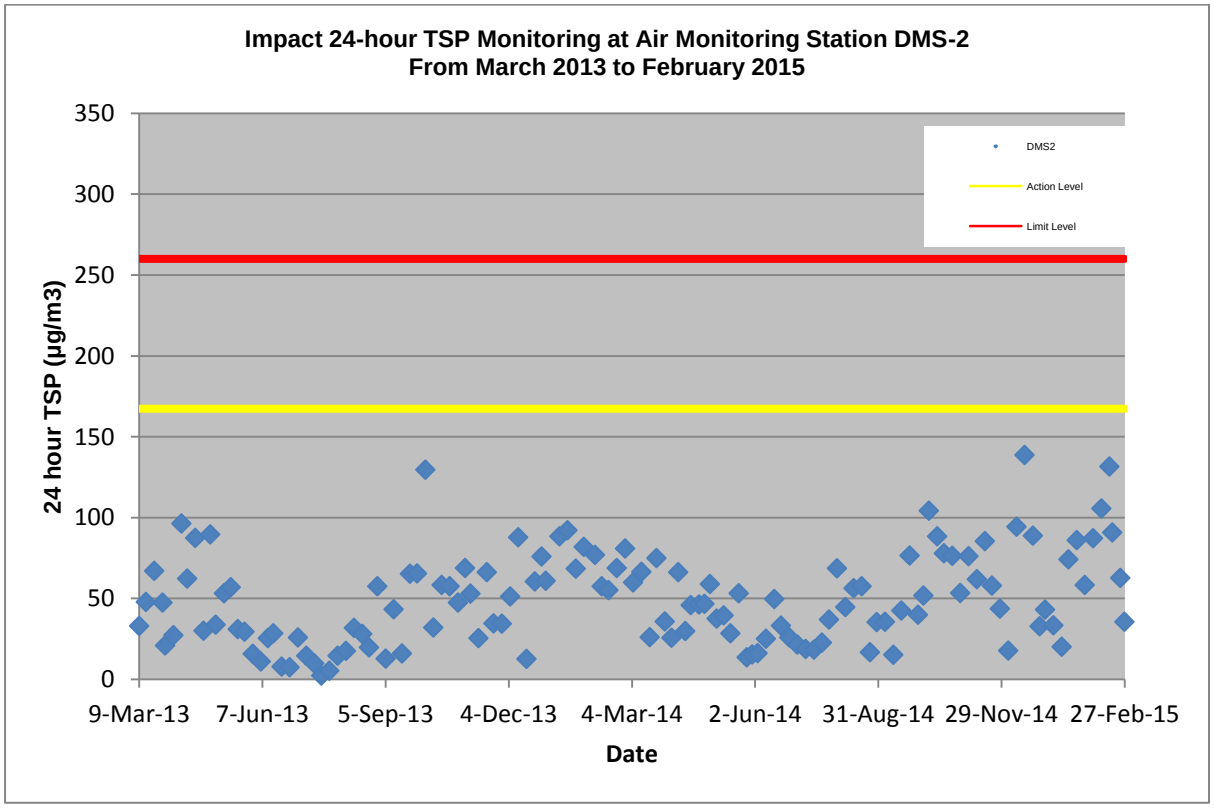
Filter No.	Month	Date	Time periods		Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m^3)	24-hour TSP Level ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
			Start	Finish				Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish					
103189	Feb-15	4-Feb-15	00:00	00:00	DMS3	Fine	Normal Operation	765.0	765.0	15.8	15.9	44.0	44.0	2.8026	3.0094	0.2068	1.5087	1.5084	1.5086	2336.58	2360.58	1440.00	2172.31	95.2	159.1	260.0
103192	Feb-15	10-Feb-15	00:00	00:00	DMS3	Fine	Normal Operation	764.3	763.5	16.9	17.1	44.0	44.0	2.8195	3.0612	0.2417	1.5041	1.5023	1.5032	2360.58	2384.58	1440.00	2164.61	111.7	159.1	260.0
103223	Feb-15	16-Feb-15	00:00	00:00	DMS3	Fine	Normal Operation	762.8	762.8	17.4	17.2	44.0	44.0	2.7608	3.0350	0.2742	1.5005	1.5012	1.5009	2384.58	2408.58	1440.00	2161.22	126.9	159.1	260.0
103207	Feb-15	18-Feb-15	00:00	00:00	DMS3	Fine	Normal Operation	763.5	763.5	17.0	16.8	44.0	44.0	2.7607	2.9833	0.2226	1.5027	1.5034	1.5031	2408.58	2432.58	1440.00	2164.39	102.8	159.1	260.0
103210	Feb-15	24-Feb-15	00:00	00:00	DMS3	Fine	Normal Operation	763.5	763.5	17.1	17.1	44.0	44.0	2.7434	2.8360	0.0926	1.5023	1.5023	1.5023	2432.59	2456.59	1440.00	2163.31	42.8	159.1	260.0
103213	Feb-15	27-Feb-15	00:00	00:00	DMS3	Fine	Normal Operation	763.5	763.5	16.8	16.8	44.0	44.0	2.7553	2.8212	0.0659	1.5034	1.5034	1.5034	2456.60	2480.60	1440.00	2164.90	30.4	159.1	260.0

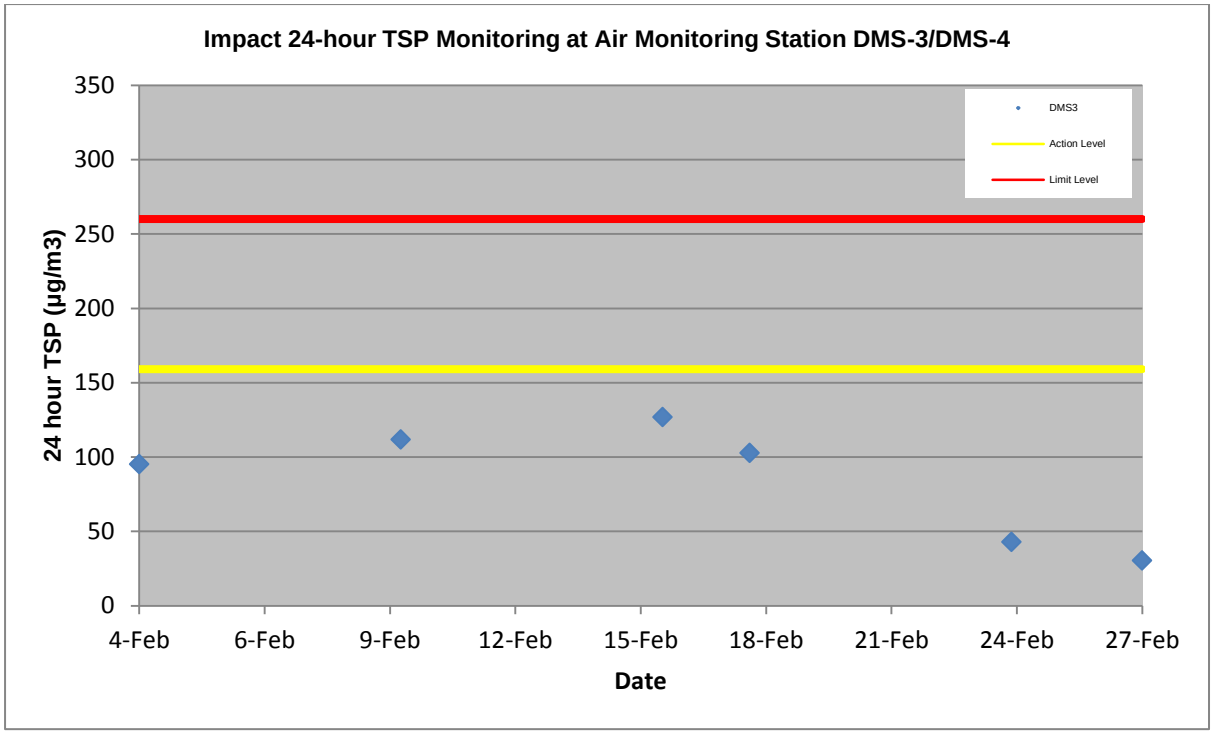
Average (µg/m3)	85.0
Max (µg/m3)	126.9
Min (µg/m3)	30.4

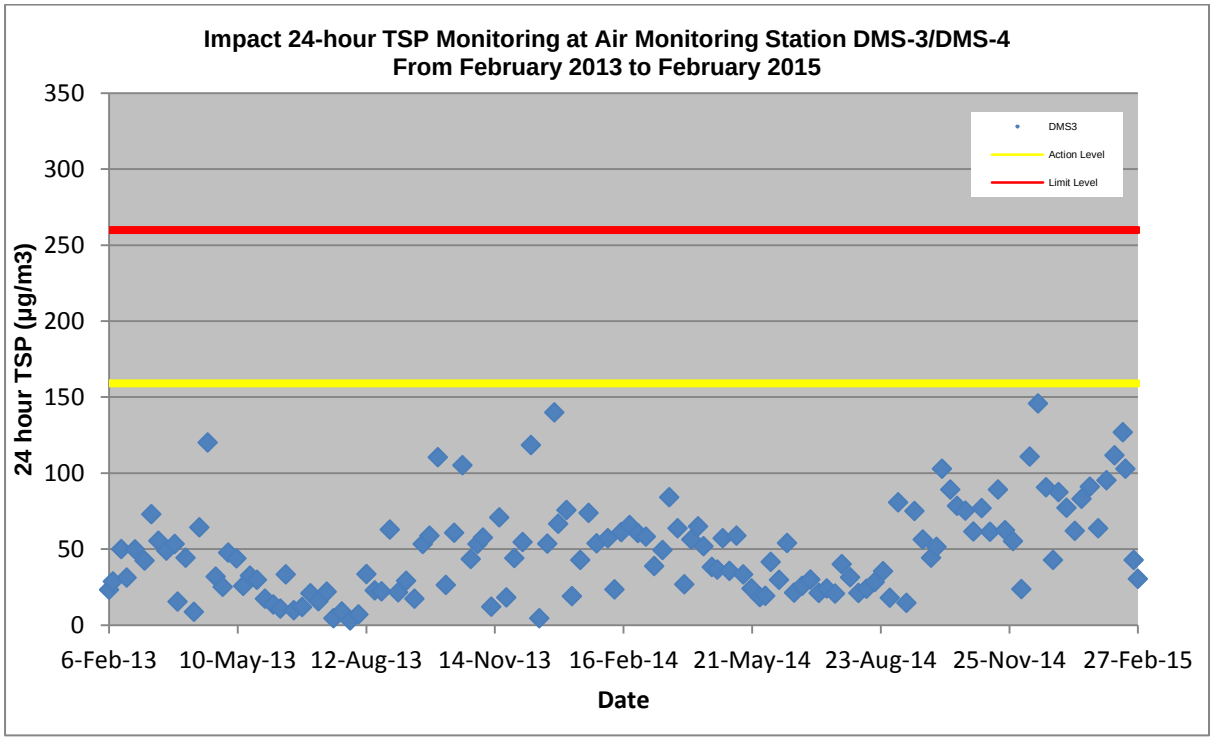

Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-1
350
300
250
200
150
100
50
0
24 hour TSP (µg/m3)
4-Feb
6-Feb
9-Feb
12-Feb
15-Feb
18-Feb
21-Feb
24-Feb
27-Feb
Date
DMS1
Action Level
Limit Level


Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-1
From February 2013 to February 2015
350
300
250
200
150
100
50
0
24 hour TSP (µg/m3)
6-Feb-13
10-May-13
12-Aug-13
14-Nov-13
16-Feb-14
21-May-14
23-Aug-14
25-Nov-14
27-Feb-15
Date
DMS1
Action Level
Limit Level


Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-2
350
300
250
200
150
100
50
0
24 hour TSP (µg/m3)
4-Feb
6-Feb
9-Feb
12-Feb
15-Feb
18-Feb
21-Feb
24-Feb
27-Feb
Date
DMS2
Action Level
Limit Level


Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-2
From March 2013 to February 2015
350
300
250
200
150
100
50
0
24 hour TSP (µg/m3)
9-Mar-13
7-Jun-13
5-Sep-13
4-Dec-13
4-Mar-14
2-Jun-14
31-Aug-14
29-Nov-14
27-Feb-15
Date
DMS2
Action Level
Limit Level


Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-3/DMS-4
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
4-Feb
6-Feb
9-Feb
12-Feb
15-Feb
18-Feb
21-Feb
24-Feb
27-Feb
Date
DMS3
Action Level
Limit Level

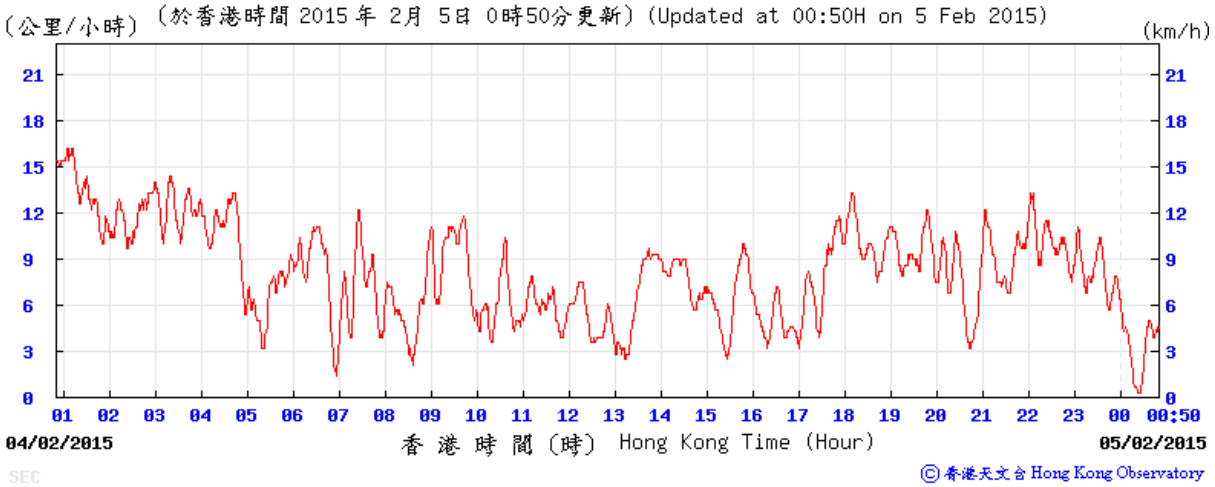

Impact 24-hour TSP Monitoring at Air Monitoring Station DMS-3/DMS-4
From February 2013 to February 2015
24 hour TSP (µg/m3)
350
300
250
200
150
100
50
0
6-Feb-13
10-May-13
12-Aug-13
14-Nov-13
16-Feb-14
21-May-14
23-Aug-14
25-Nov-14
27-Feb-15
Date
DMS3
Action Level
Limit Level

Appendix F

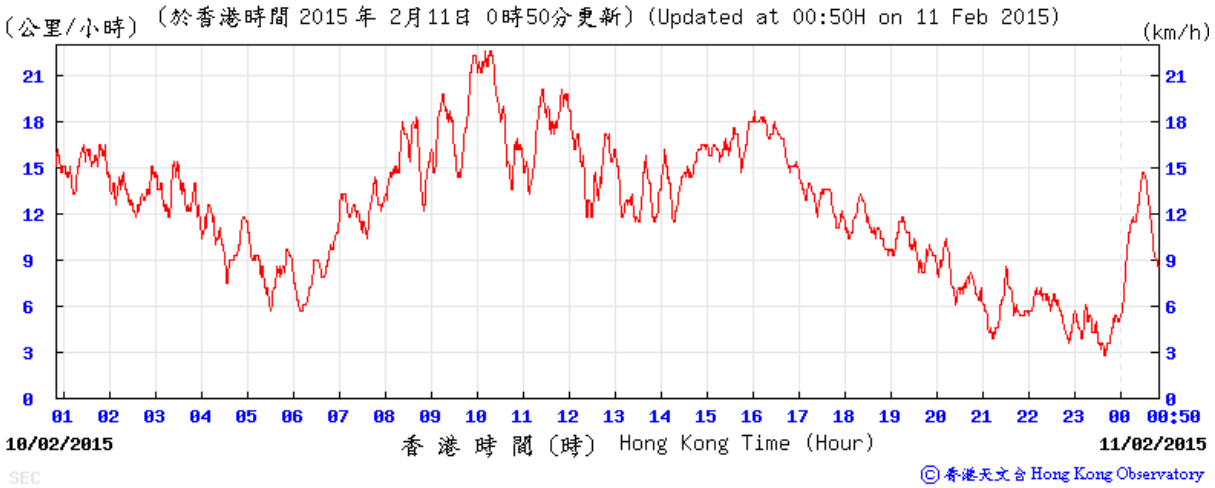
Wind data

Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

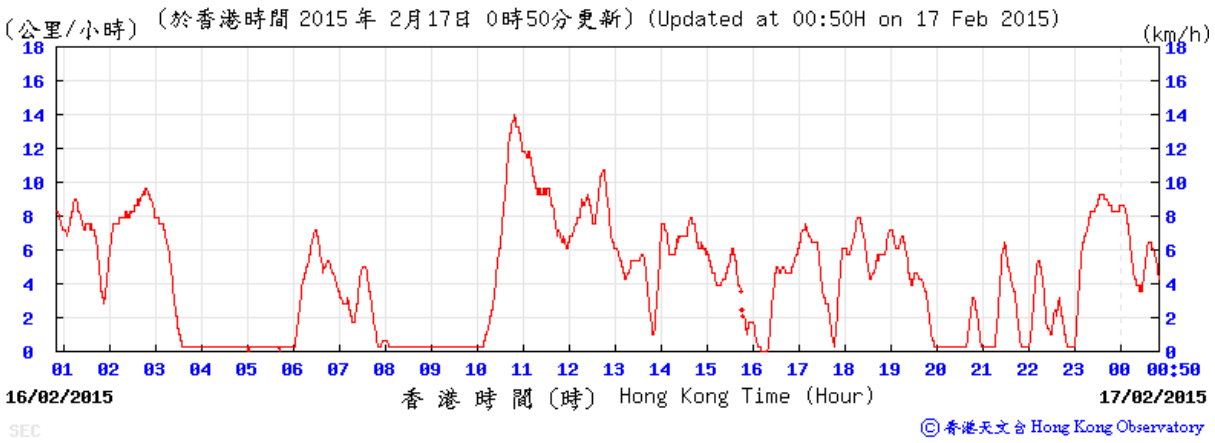
4 February 2015



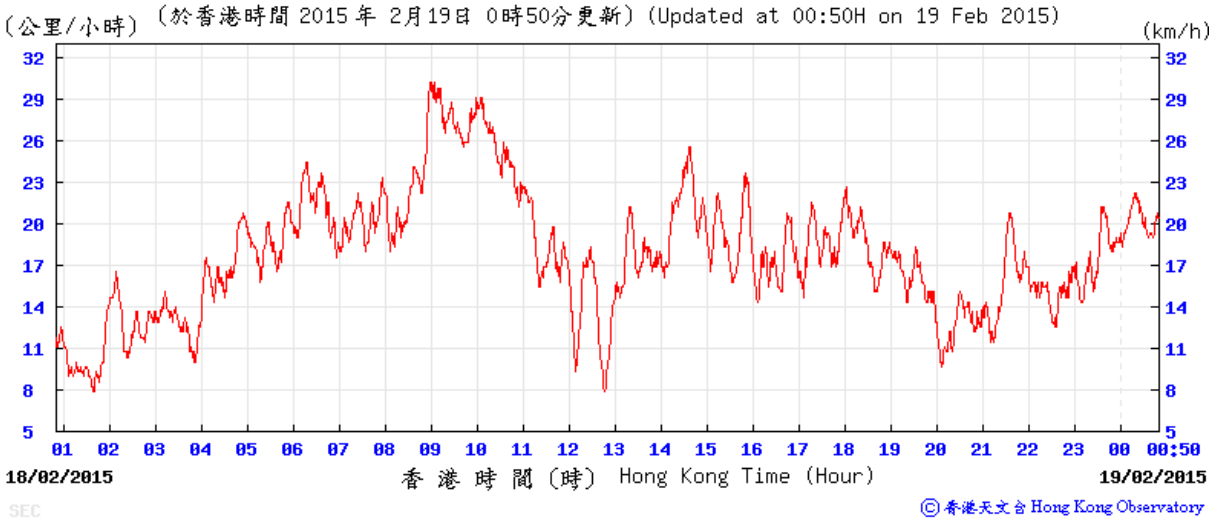
10 February 2015



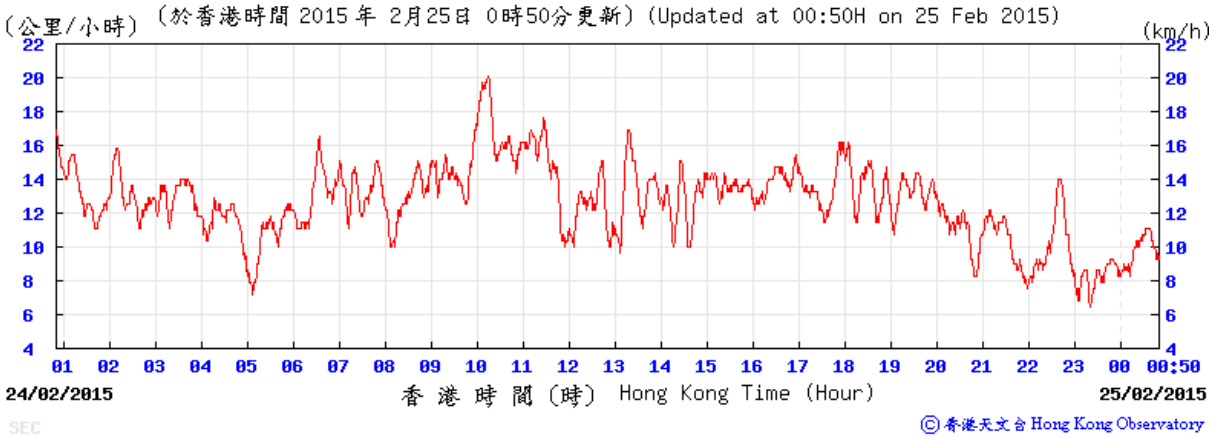
16 February 2015



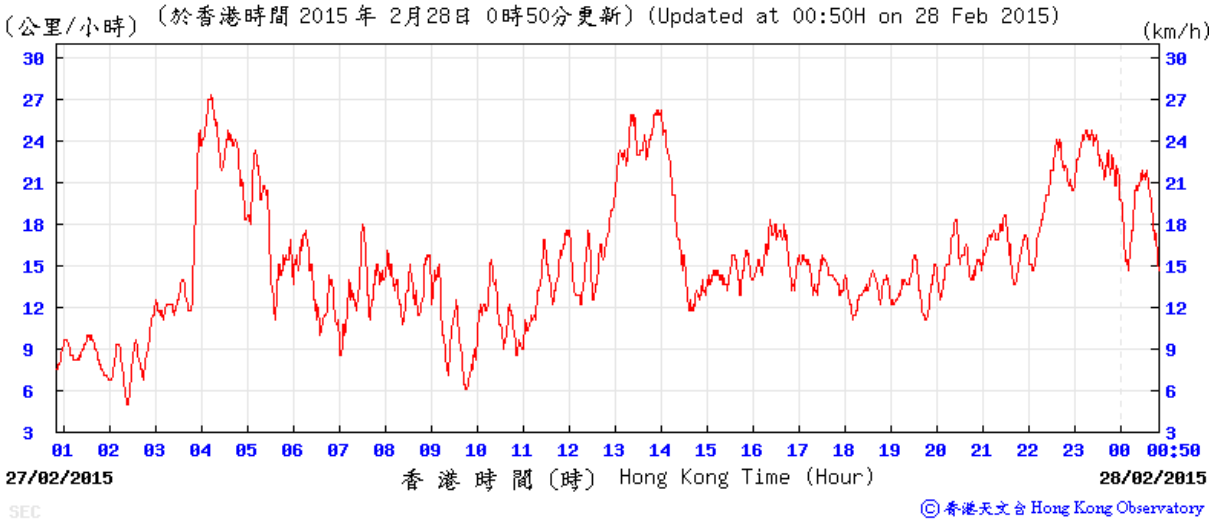
18 February 2015



24 February 2015

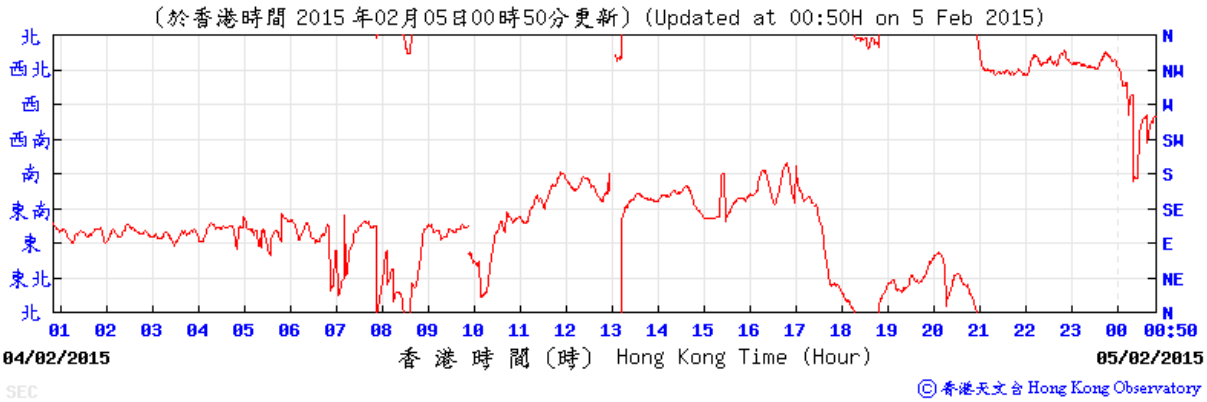


27 February 2015

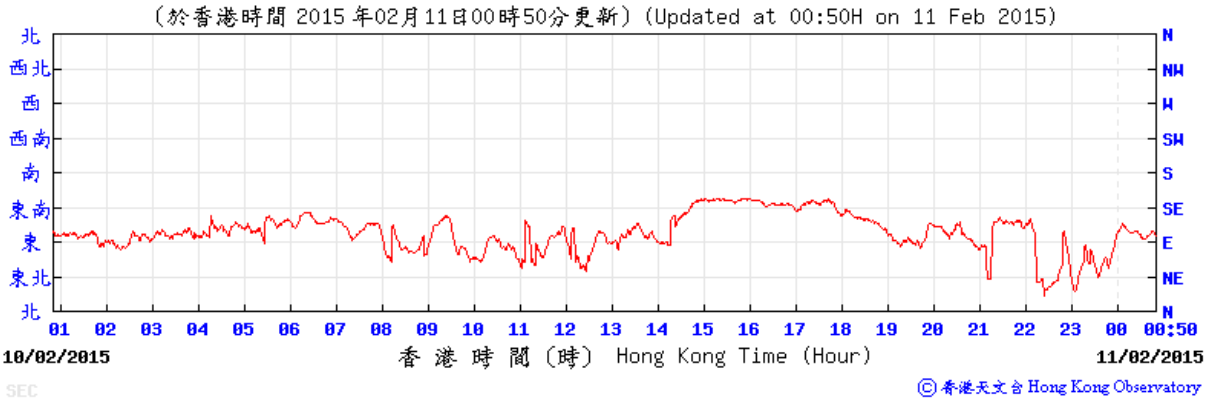


Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

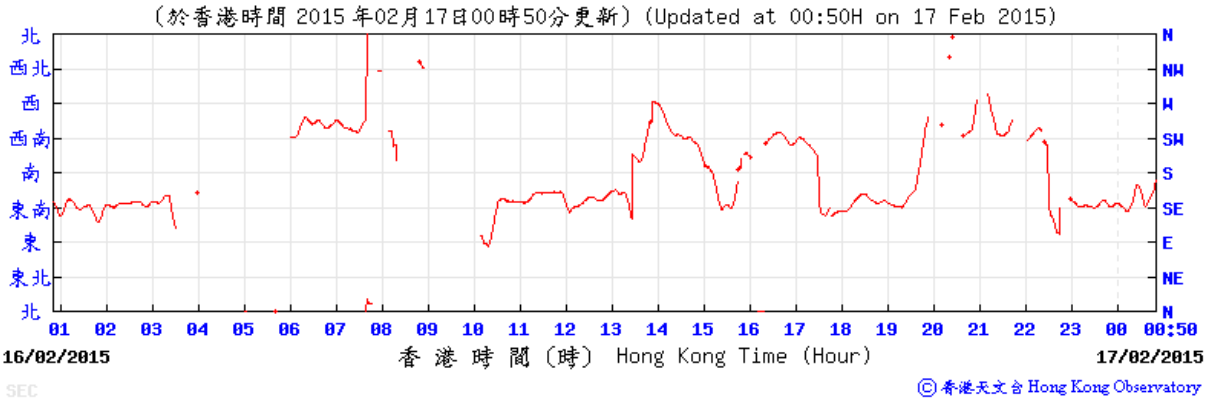
4 February 2015



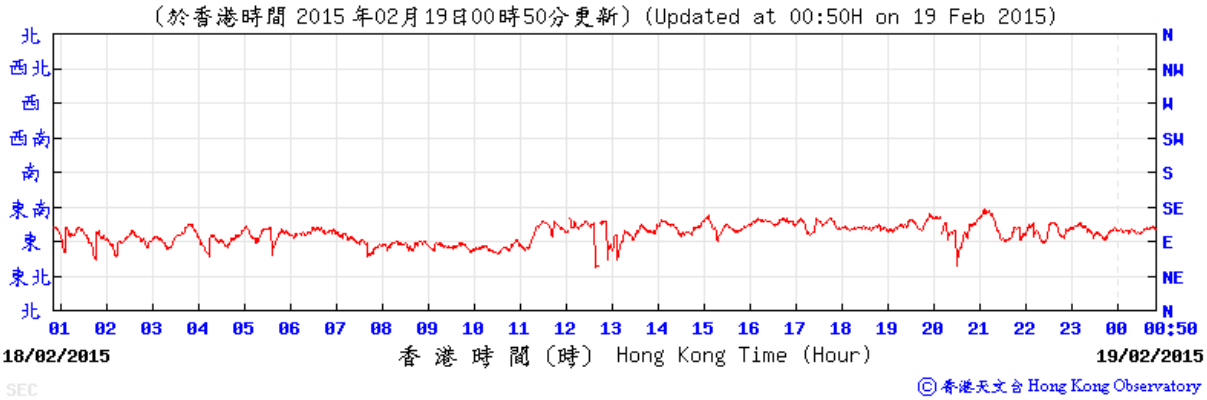
10 February 2015



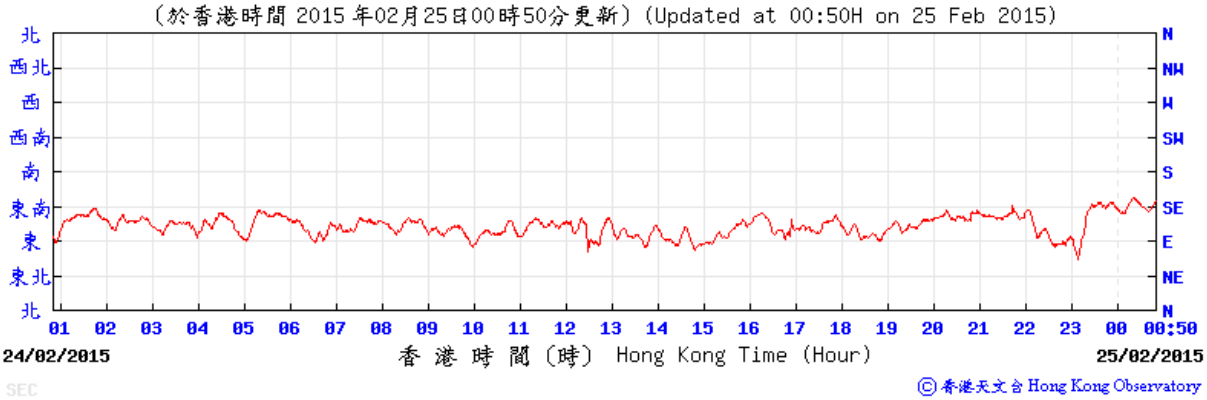
16 February 2015



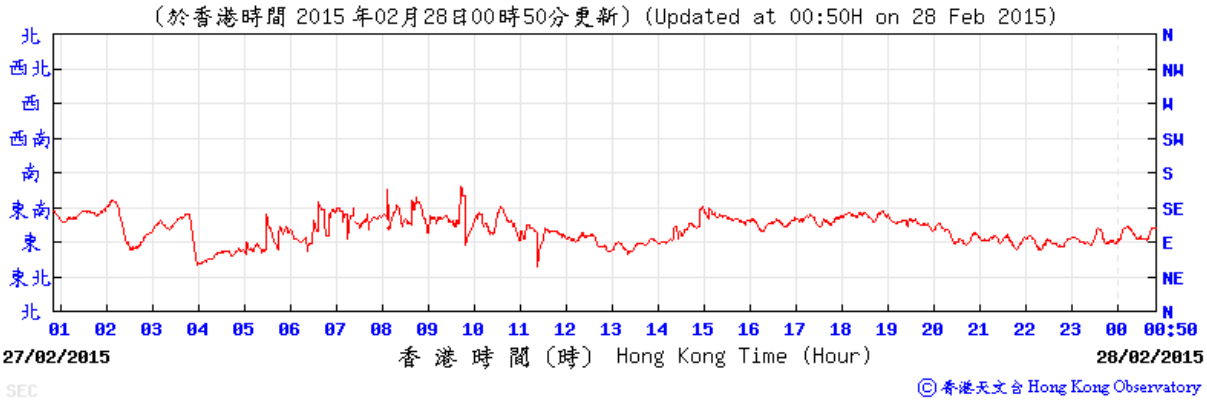
18 February 2015



24 February 2015

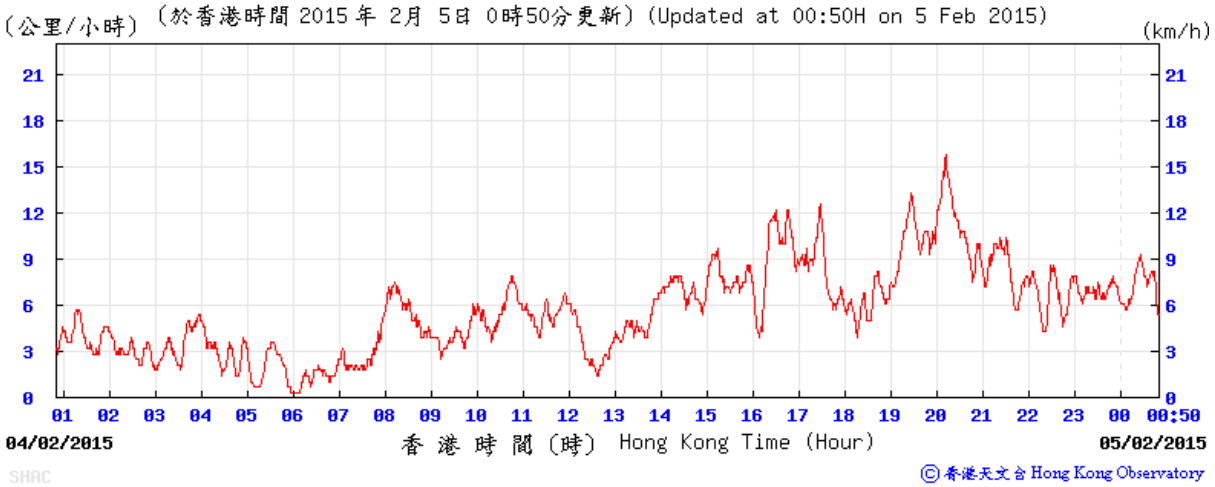


27 February 2015

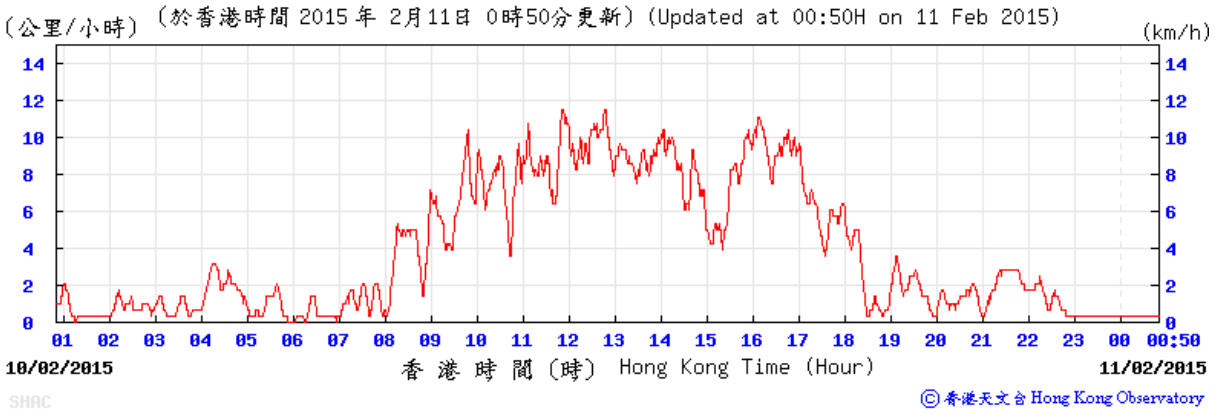


Average wind speed obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

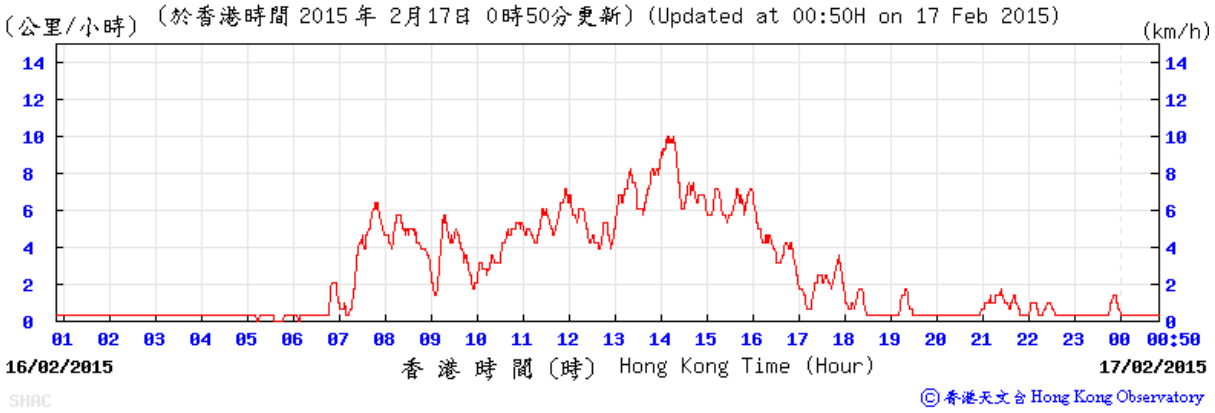
4 February 2015



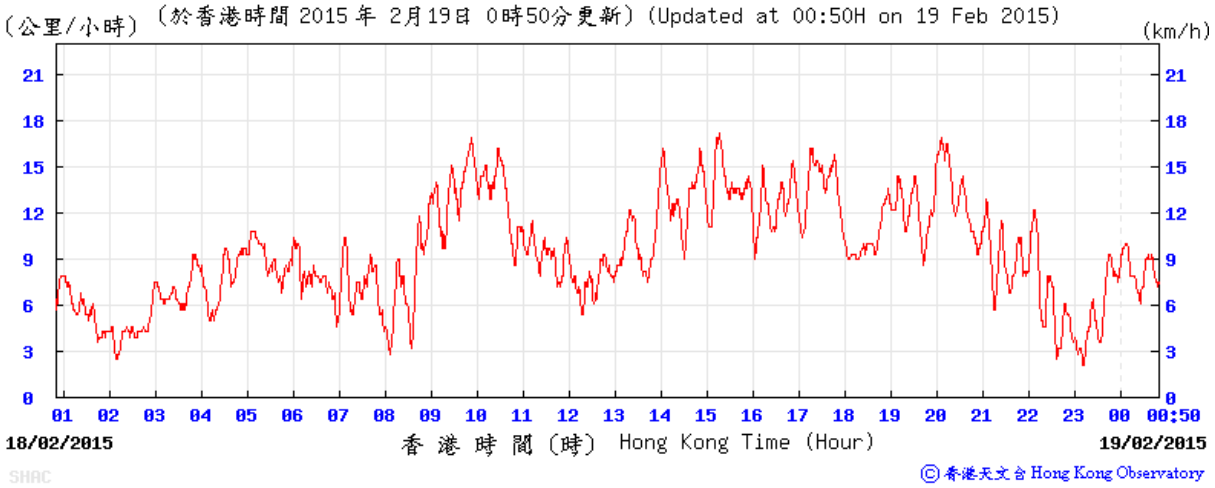
10 February 2015



16 February 2015



18 February 2015



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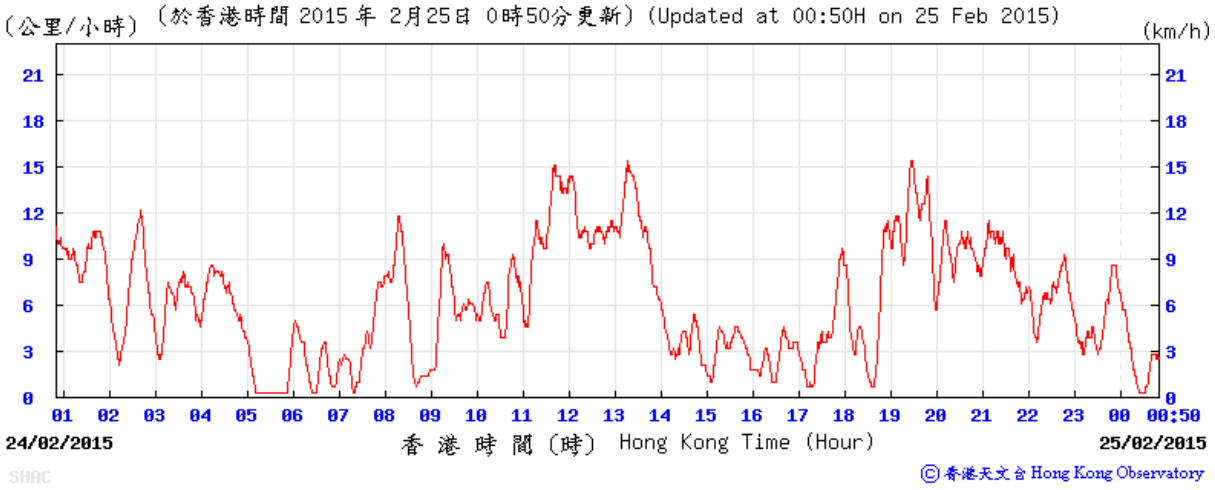
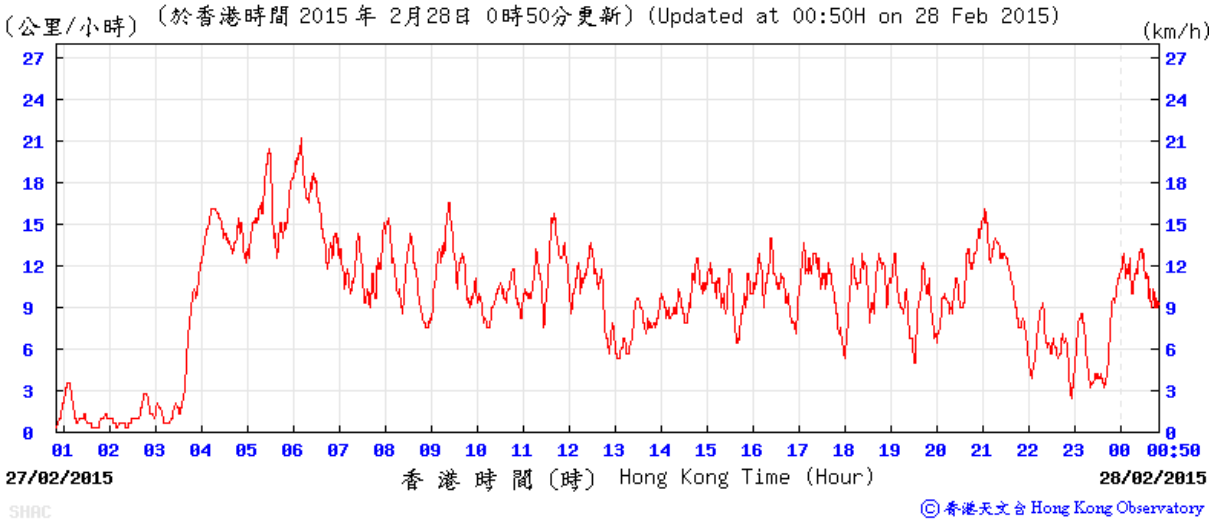
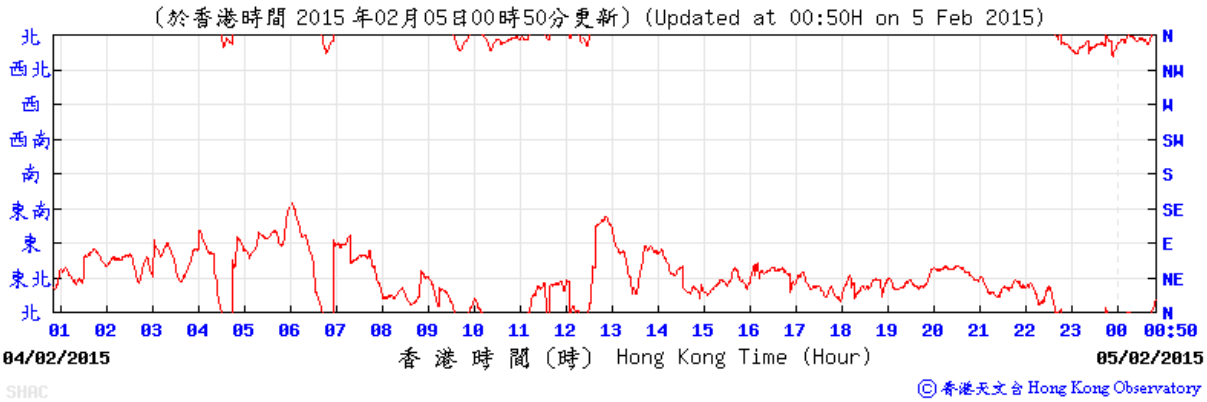


27 February 2015

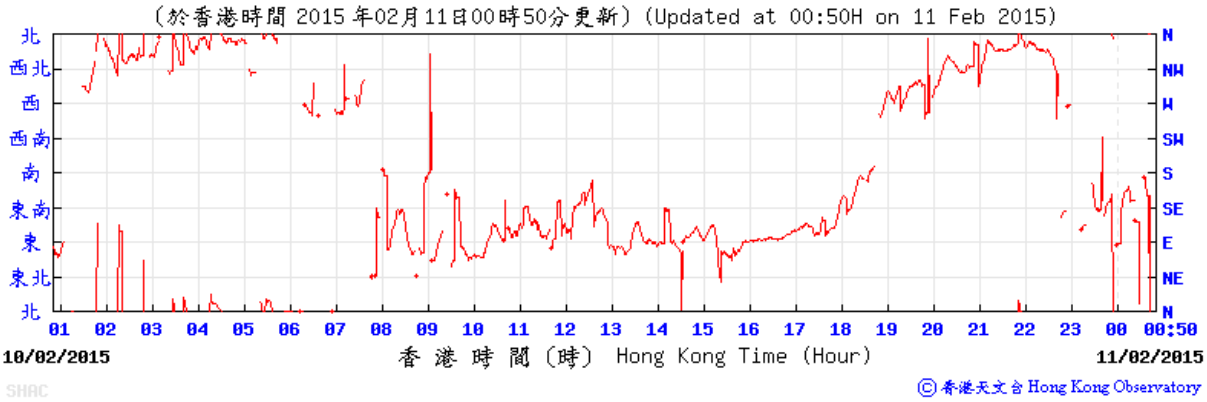


Average wind direction obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

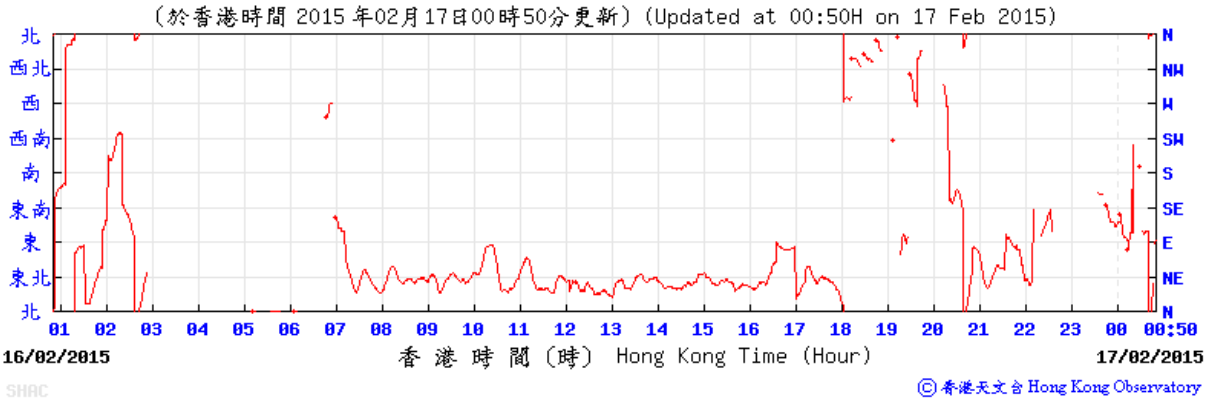
4 February 2015



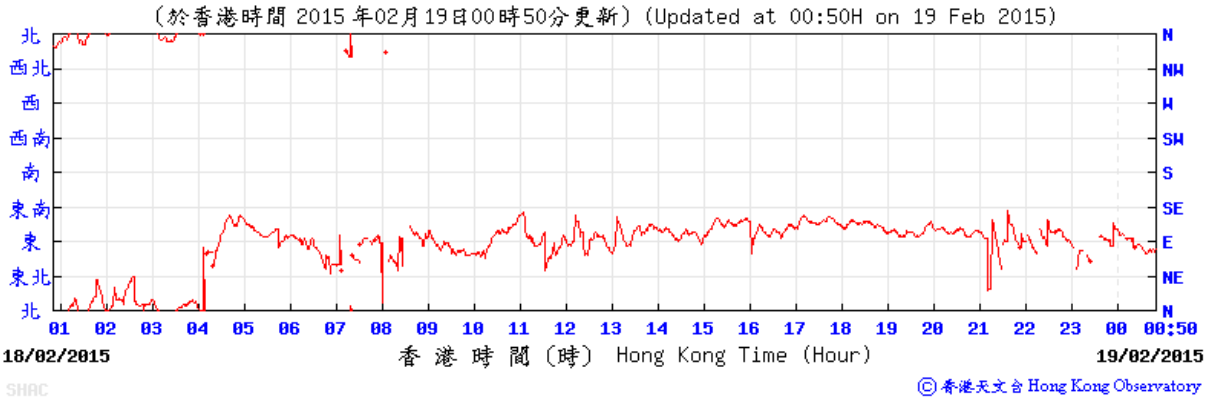
10 February 2015



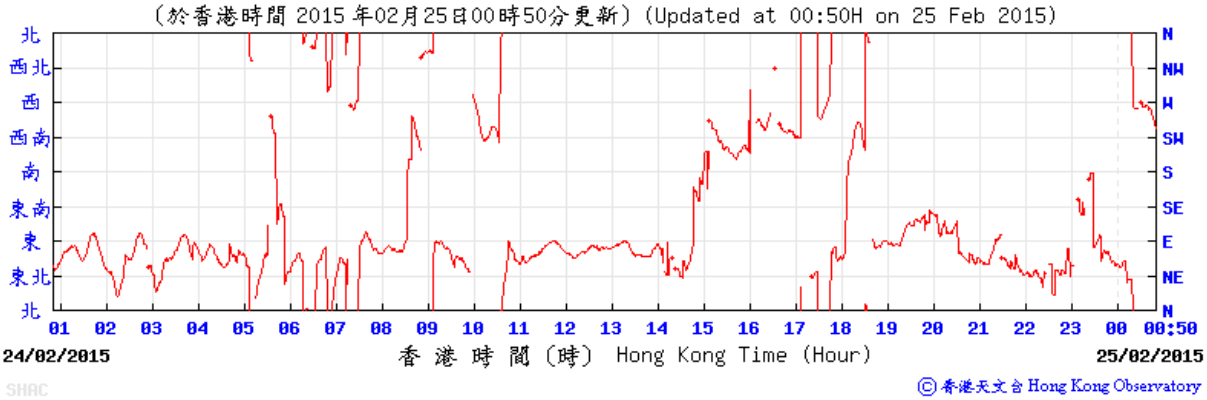
16 February 2015



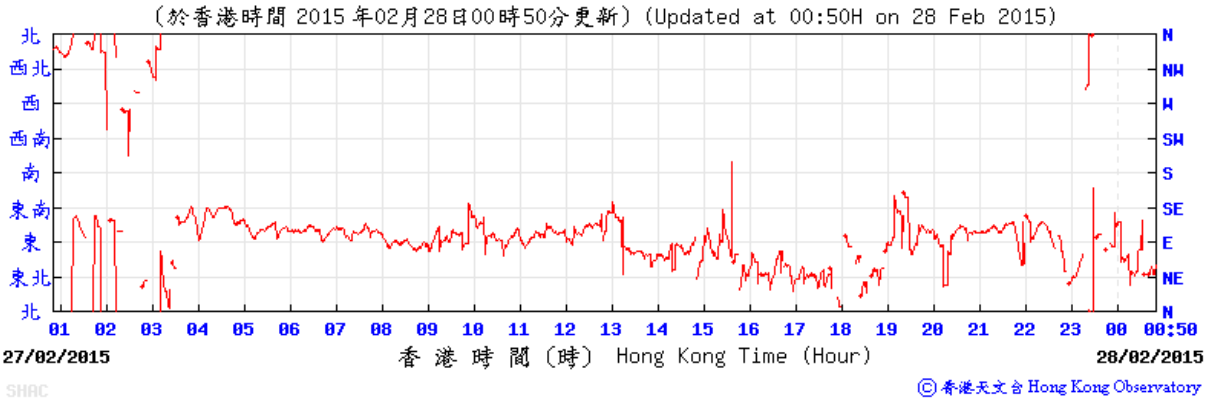
18 February 2015



24 February 2015



27 February 2015



Appendix G

Calibration Certificates of Noise Monitoring Equipment

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C145333
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-2191) Date of Receipt / 收件日期 : 25 August 2014

Description / 儀器名稱 : Integrating Sound Level Meter
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2320694
Supplied By / 委託者 : Ove Arup & Partners Hong Kong Co., Ltd.
Level 5, Festival Walk, 80 Tat Chee Avenue, Kowloon Tong, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 30 August 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 1 September 2014

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C145333
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	93.9

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

Certificate of Calibration
校正證書

Certificate No. : C145333
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C145333
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.0	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	89.9	± 0.5
			60 sec.			$1/10^3$		80	79.2	± 1.0
			5 min.			$1/10^4$		70	69.2	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2791364

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

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

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C145331
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-2191) Date of Receipt / 收件日期 : 25 August 2014

Description / 儀器名稱 : Acoustical Calibrator
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2713427
Supplied By / 委託者 : Ove Arup & Partners Hong Kong Co., Ltd.
Level 5, Festival Walk, 80 Tat Chee Avenue, Kowloon Tong,
Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 30 August 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 1 September 2014

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C145331
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Appendix H

Noise Results

Location: NMS-CA-1 - C.U.H.K.A.A Thomas Cheung School

Daytime Noise Monitoring Results

Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L_{Aeq},30min	Limit	L_{10},30min	L_{90},30min	L_{Aeq},30min	L_{Aeq},30min
05-Feb-15	13:50-14:20	58.7	70.0	61.0	52.5	57.0	53.8
11-Feb-15	14:00-14:30	56.8	70.0	60.5	52.5	57.0	< Baseline Level
17-Feb-15	11:15-11:45	57.9	70.0	61.0	52.0	57.0	50.6
23-Feb-15	11:05-11:35	57.4	70.0	55.0	49.5	57.0	< Baseline Level

Notes: (*): Façade correction is included
(#): Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

Average L_{Aeq},30min	57.7
Max L_{Aeq},30min	58.7
Min L_{Aeq},30min	56.8

Location: NMS-CA-2 - Price Memorial Catholic Primary School

Daytime Noise Monitoring Results

Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L_{Aeq},30min	Limit	L_{10},30min	L_{90},30min	L_{Aeq},30min	L_{Aeq},30min
05-Feb-15	08:40-09:10	68.4	70.0	70.0	63.5	66.0	64.7
11-Feb-15	09:00-09:30	69.2	70.0	71.0	64.0	66.0	66.4
17-Feb-15	08:45-09:15	69.0	70.0	71.0	66.5	66.0	66.0
23-Feb-15	08:45-09:15	66.2	70.0	68.0	62.5	66.0	< Baseline Level

Notes: (*): Façade correction is included
(#): Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

Average L_{Aeq},30min	68.2
Max L_{Aeq},30min	69.2
Min L_{Aeq},30min	66.2

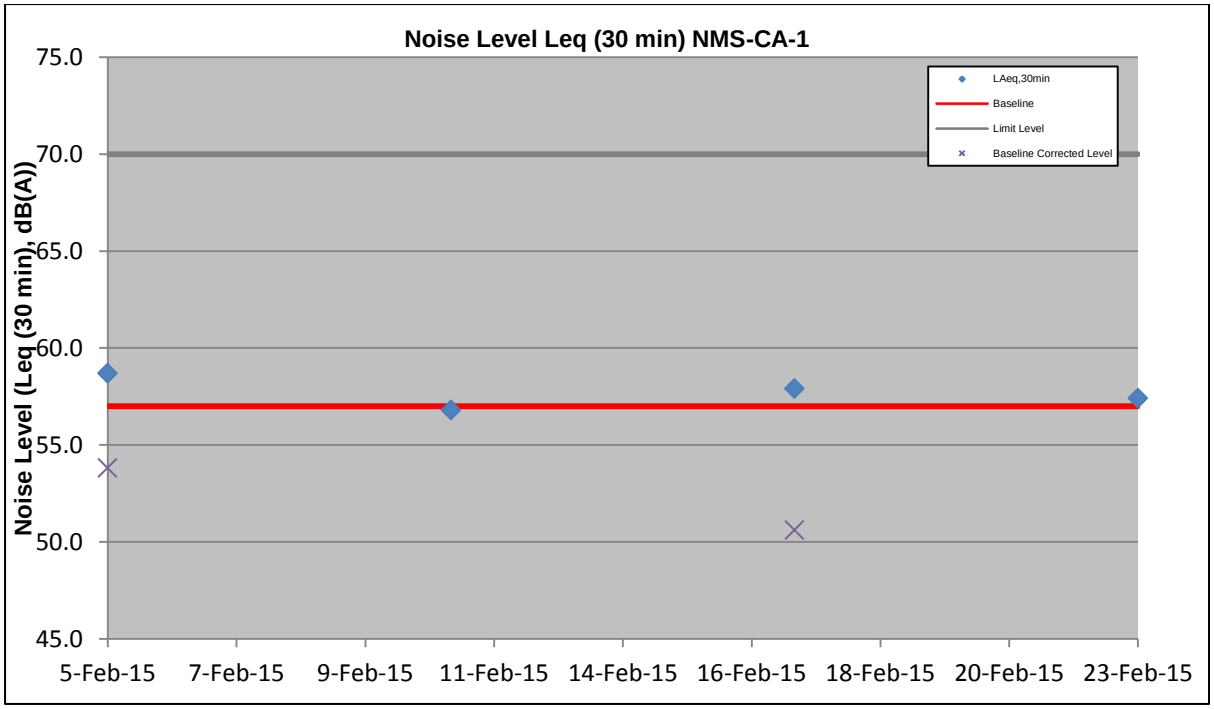
Location: NMS-CA-3 / NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home

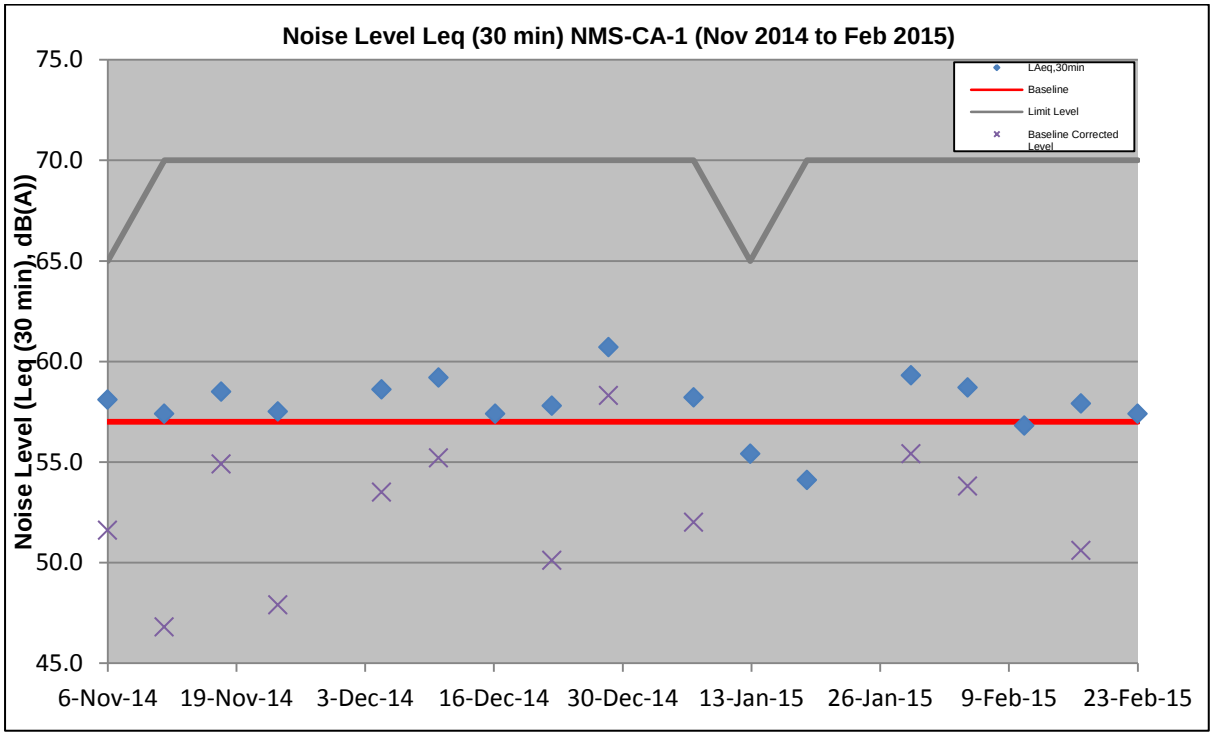
Daytime Noise Monitoring Results

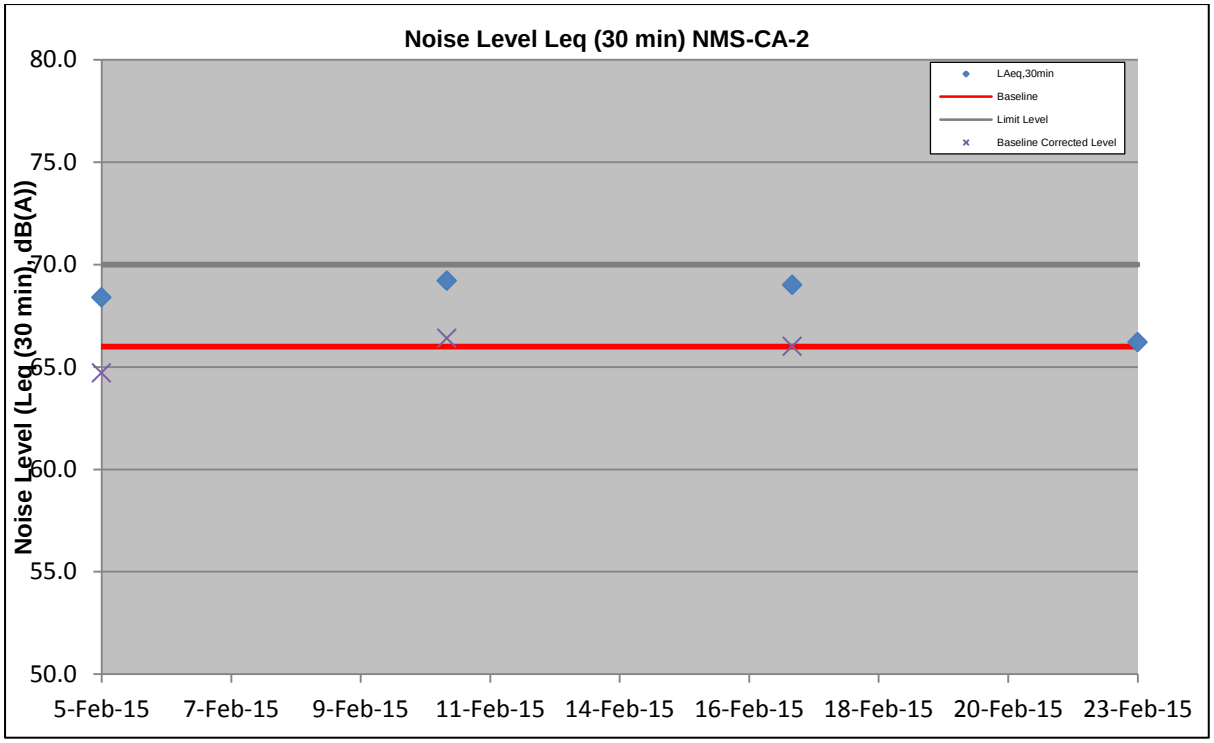
Date	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Baseline Corrected Level
		L_{Aeq},30min	Limit	L_{10},30min	L_{90},30min	L_{Aeq},30min	L_{Aeq},30min
05-Feb-15	10:00-10:30	70.6	70.0	72.5	65.5	73.0	< Baseline Level
11-Feb-15	10:30-11:00	71.1	70.0	73.0	66.5	73.0	< Baseline Level
17-Feb-15	09:50-10:20	71.2	70.0	74.0	66.5	73.0	< Baseline Level
23-Feb-15	10:00-10:30	67.8	70.0	70.0	63.0	73.0	< Baseline Level

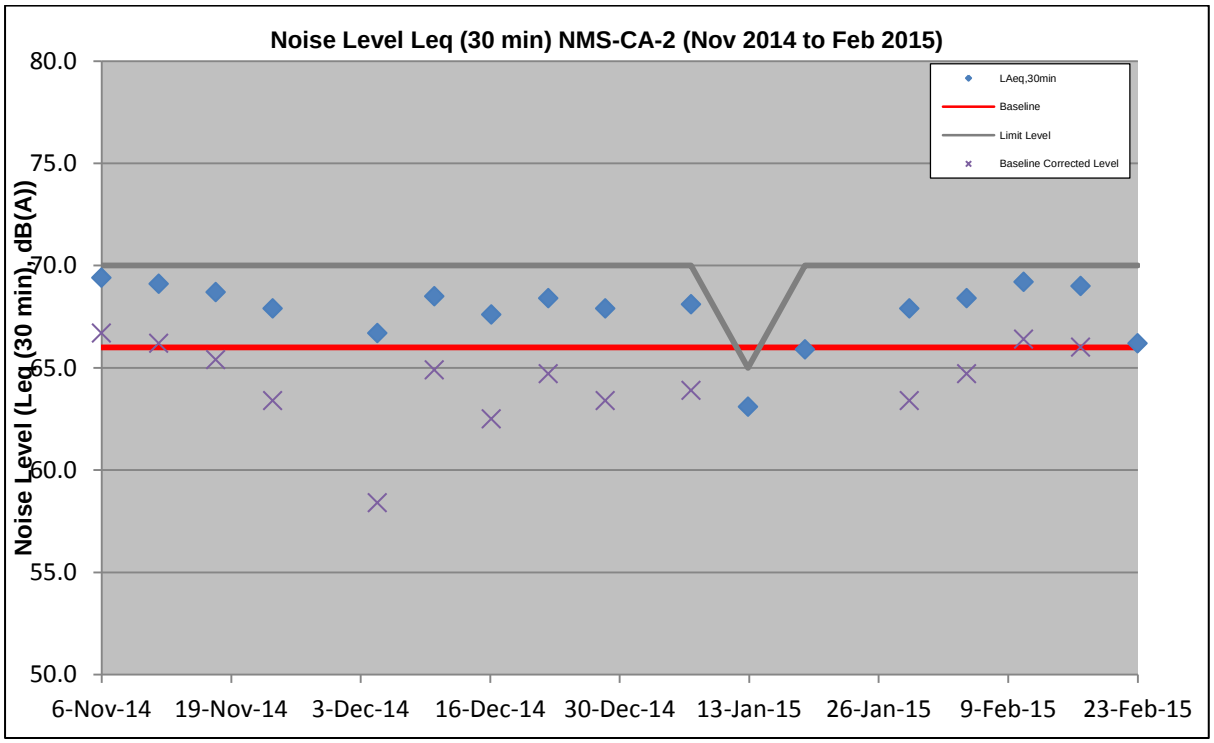
Notes: (*): Façade correction is included
(#): Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

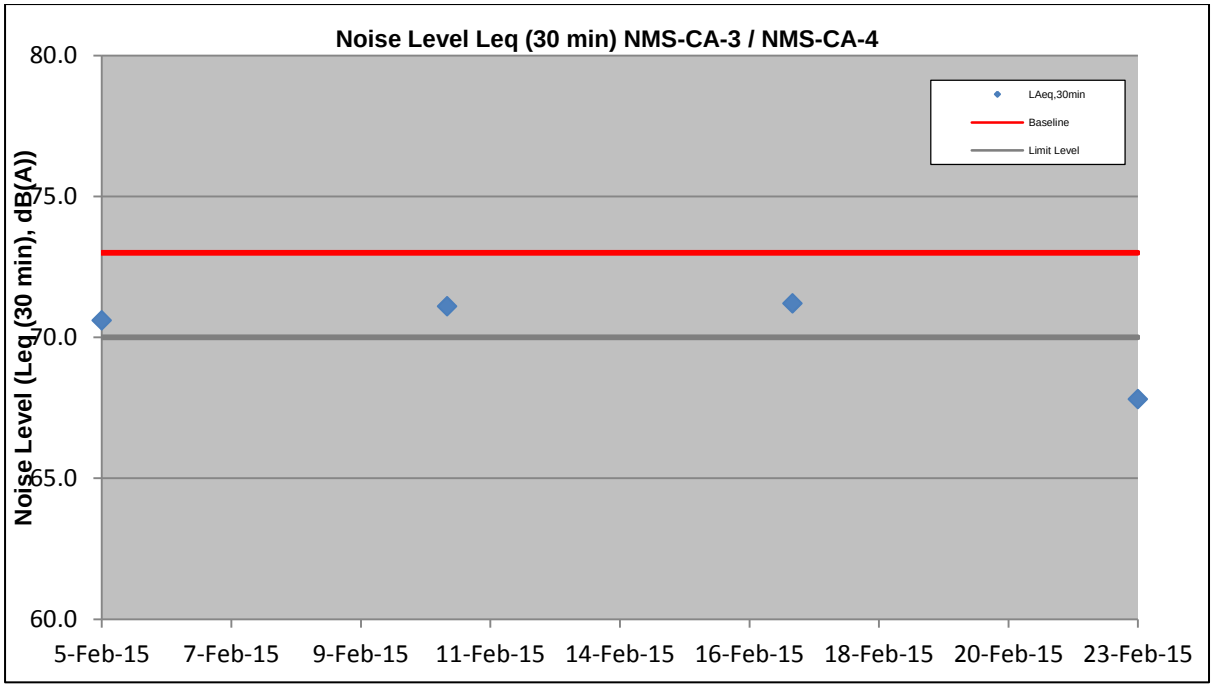
Average L_{Aeq},30min	70.2
Max L_{Aeq},30min	71.2
Min L_{Aeq},30min	67.8

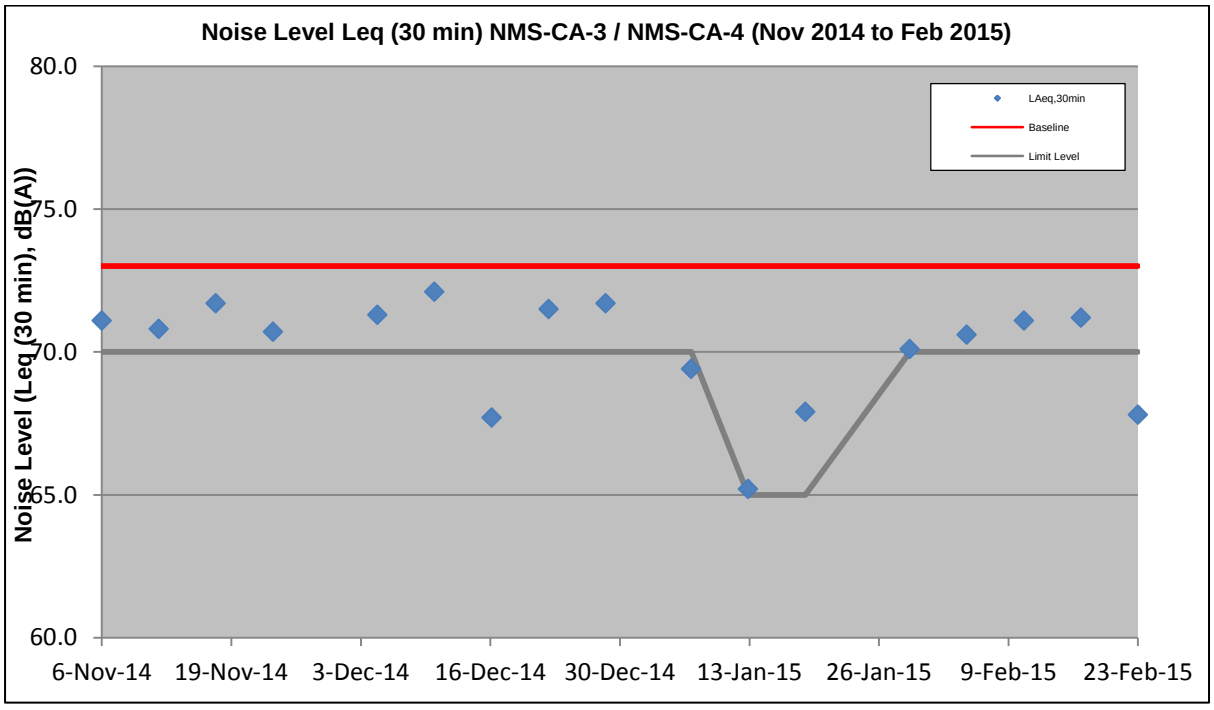

Noise Level Leq (30 min) NMS-CA-1
Noise Level (Leq (30 min), dB(A))
75.0
70.0
65.0
60.0
55.0
50.0
45.0
5-Feb-15
7-Feb-15
9-Feb-15
11-Feb-15
14-Feb-15
16-Feb-15
18-Feb-15
20-Feb-15
23-Feb-15
LAeq,30min
Baseline
Limit Level
Baseline Corrected Level


Noise Level Leq (30 min) NMS-CA-1 (Nov 2014 to Feb 2015)
Noise Level (Leq (30 min), dB(A))
75.0
70.0
65.0
60.0
55.0
50.0
45.0
6-Nov-14
19-Nov-14
3-Dec-14
16-Dec-14
30-Dec-14
13-Jan-15
26-Jan-15
9-Feb-15
23-Feb-15
LAeq,30min
Baseline
Limit Level
Baseline Corrected Level


Noise Level Leq (30 min) NMS-CA-2
Noise Level (Leq (30 min), dB(A))
80.0
75.0
70.0
65.0
60.0
55.0
50.0
5-Feb-15
7-Feb-15
9-Feb-15
11-Feb-15
14-Feb-15
16-Feb-15
18-Feb-15
20-Feb-15
23-Feb-15
LAeq,30min
Baseline
Limit Level
Baseline Corrected Level


Noise Level Leq (30 min) NMS-CA-2 (Nov 2014 to Feb 2015)
Noise Level (Leq (30 min), dB(A))
80.0
75.0
70.0
65.0
60.0
55.0
50.0
6-Nov-14
19-Nov-14
3-Dec-14
16-Dec-14
30-Dec-14
13-Jan-15
26-Jan-15
9-Feb-15
23-Feb-15
LAeq,30min
Baseline
Limit Level
Baseline Corrected Level


Noise Level Leq (30 min) NMS-CA-3 / NMS-CA-4
Noise Level (Leq (30 min), dB(A))
80.0
75.0
70.0
65.0
60.0
5-Feb-15
7-Feb-15
9-Feb-15
11-Feb-15
14-Feb-15
16-Feb-15
18-Feb-15
20-Feb-15
23-Feb-15
LAeq,30min
Baseline
Limit Level


Noise Level Leq (30 min) NMS-CA-3 / NMS-CA-4 (Nov 2014 to Feb 2015)
Noise Level (Leq (30 min), dB(A))
80.0
75.0
70.0
65.0
60.0
6-Nov-14
19-Nov-14
3-Dec-14
16-Dec-14
30-Dec-14
13-Jan-15
26-Jan-15
9-Feb-15
23-Feb-15
LAeq,30min
Baseline
Limit Level

Appendix I

Event/Action Plan for Air Quality, Airborne Noise and Landscape and Visual

Event and Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
Action Level				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing;	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2. Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

Limit Level				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Airborne Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level	1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures	1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event / Action Plan for Landscape and Visual

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures.	1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures.	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Note:
ET – Environmental Team
IEC – Independent Environmental Checker
ER – Engineer's Representative

Appendix J

Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE

Name of Department: ENV

Contract No.:MTR-SCL1103

Monthly Summary Waste Flow Table for 2015

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	36.897	0.000	0.000	31.770	5.127	0.000	0.000	0.086	0.000	1.400	0.194
Feb	34.994	0.000	0.000	28.434	6.559	0.000	0.000	0.138	0.000	0.800	0.153
Mar											
Apr											
May											
Jun											
Sub-total	71.891	0.000	0.000	60.204	11.687	0.000	0.000	0.224	0.000	2.200	0.347
July											
August											
September											
October											
November											
December											
Total	71.891	0.000	0.000	60.204	11.687	0.000	0.000	0.224	0.000	2.200	0.347

Comments:

1) Assumption: The densities of Rock, Soil, Mixed Rock and Soil, and Regular Spoil are 2.0 ton/m3; the density of general refuse is 1.0 ton/m3; the density of waste oil is 1.0 ton/m3.

2) The cut-off date of waste amount in Feb is 28/2/2015 for TKO137FB/TM38FB, NENT landfill, Kai Tak 1108A and Nam Cheong 820.

3) The amounts of waste in Feb are 153.21 tons for NENT Landfill, 13118.7 tons for TKO137FB/TM38 FB, 52795.7 tons for Kai Tak Contract 1108A and 4073.06 tons for Contract 820.

4) The amount of paper waste in Feb is 138kg, for cut-off date as 28/2/2015.

5) The amount of chemical waste in Feb is 800L for cut-off date as 28/2/2015.

Appendix K

Environmental Monitoring Programme for Coming Month

SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Tentative Impact Monitoring Schedule - February 2015

Date	Air Quality	Noise	Site Inspection
	24-hours TSP	L_{Aeq}, 30 min	
01-Feb-15 Sun			
02-Feb-15 Mon			
03-Feb-15 Tues			
04-Feb-15 Wed			
05-Feb-15 Thu			
06-Feb-15 Fri			
07-Feb-15 Sat			
08-Feb-15 Sun			
09-Feb-15 Mon			
10-Feb-15 Tue			
11-Feb-15 Wed			
12-Feb-15 Thu			
13-Feb-15 Fri			
14-Feb-15 Sat			
15-Feb-15 Sun			
16-Feb-15 Mon			
17-Feb-15 Tue			
18-Feb-15 Wed			
19-Feb-15 Thu			
20-Feb-15 Fri			
21-Feb-15 Sat			
22-Feb-15 Sun			
23-Feb-15 Mon			
24-Feb-15 Tue			
25-Feb-15 Wed			
26-Feb-15 Thu			
27-Feb-15 Fri			
28-Feb-15 Sat			

	Public Holiday
	Monitoring Day

Monitoring Details

Monitoring	Locations	Parameters
Air Quality	DMS-1 - C.U.H.K.A.A Thomas Cheung School, DMS-2 - Price Memorial Catholic Primary School and DMS-3 / DMS-4 - Hong Kong Sheng Kung Hui Nursing Home	24-hour TSP
Noise	NMS-CA-1 - C.U.H.K.A.A Thomas Cheung School, NMS-CA-2 - Price Memorial Catholic Primary School and NMS-CA-3 /NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home	$L_{Aeq(30\ min)}$, L_{10}, L_{90}

Appendix L

Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Ove Arup and Partners HK Ltd.

SCL 1103 Hin Keng to Diamond Hill Tunnels Construction Stage Environmental Complaint Log (February 2015)

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date Complaint Received from EPD	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date Complaint Received by ET	ET's Investigation Date	Investigation/Mitigation Measures	Status
EP3/K11/RE/00001881-2015	-	-	3 Feb 2015	23 January 2015	SCL Construction Site in Diamond Hill	Contract 1103	Complaint on Construction Noise generated from SCL sites after mid-night during late January 2015	4 Feb 2015	4 Feb 2015	a. Construction works within the construction site were carried out within restricted hours in accordance with the valid Construction Noise Permits. It was further confirmed that all construction works at the Diamond Hill site were carried out inside the noise enclosure of the shaft and STP in accordance with the CNP GW-RE1214-14. All openings for the noise enclosure were properly closed and sealed during the restricted hours. b. From regular checking and daily site progress record, there were neither night works nor heavy vehicles on ground surface between 23 – 26 January, only minor repairing works was conducted at the bottom of the TBM shaft. c. Spot check was carried out after midnight on 4 Feb 2015 to ensure CNP compliance and the following were found: - No construction activities / machines were in operation on the ground surface or outside the noise enclosure; - All the CNP conditions were fully complied with. d. Additional trainings and toolbox talks were provided to workers to ensure no surface construction works during restricted hours and further enhance their awareness regarding the CNP compliance as well as avoidance of potential noise source for night-time work. As a precautionary measure, random checks on site arrangement and PME conditions will be on-going to ensure all CNP conditions are fully complied with.	Closed
EP3/K11/RE/00002136-2015	-	-	3 Feb 2015	26 January 2015	SCL Construction Site in Diamond Hill	Contract 1103	Complaint on Construction Noise generated from SCL sites after mid-night during late January 2015	4 Feb 2015	4 Feb 2015		Closed

EP3/K11/RE/00001087-2015	-	-	3 Feb 2015	January 2015	SCL Construction Site in Diamond Hill	Contract 1103	Complaint on soil/muddy water discharged into Kai Tak Nullah from the construction activities of SCL sites. EPD staff inspected on 10, 19 and 23 Jan, and observed a thin layer of muddy sediment at the Kai Tak Nullah adjacent to the sites.	4 Feb 2015	4 Feb 2015	a. All construction runoff and effluents were collected by sedimentation tank and treated by wastewater treatment facilities before discharging. According to the monthly effluent quality report (January 2015), the water sample collected from the designated discharge point found no non-compliance with the valid discharge licence (Licence. No.: WT00014697-2012) under the Water Pollution Control Ordinance. b. Based on the regular visual inspection and photo record of the designated discharge point taken on 10, 19 and 23 Jan (as attached), the discharged water was clear and no muddy sediment found at the designated discharge point. c. Based on the ad-hoc visual inspection at the Kai Tak Nullah on 23 Jan, no sign of muddy water overflow were spotted from the culvert/maintenance manhole connected to 1103 site area (as attached). However, a thin layer of sediment was observed elsewhere at the nullah d. Hence, all waste water were properly collected and treated before discharged from 1103 construction site.	Closed

Ove Arup and Partners HK Ltd.

SCL 1103 Hin Keng to Diamond Hill Tunnels Construction Stage
Environmental Complaint Log (Cumulative)

Reporting Month	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Prosecutions in Reporting Month
February 2013	0	0	0
March 2013	0	0	0
April 2013	0	0	0
May 2013	0	0	0
June 2013	0	0	0
July 2013	0	0	0
August 2013	0	0	0
September 2013	0	0	0
October 2013	0	0	0
November 2013	0	0	0
December 2013	0	0	0
January 2014	0	0	0
February 2014	0	0	0
March 2014	0	0	0
April 2014	0	0	0
May 2014	0	0	0
June 2014	0	0	0
July 2014	0	0	0
August 2014	0	0	0
September 2014	0	0	0
October 2014	0	0	0
November 2014	1	0	0
December 2014	2	0	0
January 2015	0	0	0
February 2015	3	0	0
Total	6	0	0

Appendix F

24th EM&A Report for Works Contract 1106 – Diamond Hill Station

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No. 24

[Period from 1 to 28 February 2015]

Works Contract 1106 – Diamond Hill Station

(March 2015)

Certified by: Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 12th March 2015

Sembawang – Leader Joint Venture

Shatin to Central Link – Contract 1106 Diamond Hill Station

Monthly Environmental Monitoring and Audit Report For February 2015

(Version 2.1)

Certified By

Dr. Priscilla Choy
(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 24th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for **MTR Shatin to Central Link (SCL) Works Contract 1106 – Diamond Hill Station**. This report documents the findings of EM&A Works conducted from 1 to 28 February 2015.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:
   - Excavation and ELS works;
   - Interchange Adit - Excavation and ELS works;
   - West Unpaid Adit - Excavation and ELS works;
   - Entrance A1 – Erection of temporary working platform; excavation and ELS works; and,
   - Structural works – Headwall construction; base slab & blinding works.

Environmental Monitoring and Audit Progress

3. A summary of the monitoring activities in this reporting period is listed below:

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours

Noise Monitoring Station ID

- NMS-CA-3(1)(3)/NMS-CA-4(2)(3) (H.K. Sheng Kung Hui Nursing Home) 4 times
- NMS-CA-4(1)/NMS-CA-3(2) (Block 1, Rhythm Garden (north-eastern façade)) 4 times
- NMS-CA-5(1)/NMS-CA-2(2) (Block 1, Rhythm Garden (northern façade)) 4 times

- Construction Dust (24-hour TSP) Monitoring

Dust Monitoring Station ID

- DMS-3(1) (4) /DMS-4(2) (4) (H.K. Sheng Kung Hui Nursing Home) 6 times
- DMS-4(1)/ DMS-3(2) (Block 1, Rhythm Garden) 5 times

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Noise monitoring on NMS-CA-3(1)/ NMS-CA-4(2) (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.
(4) Dust monitoring on DMS-3(1)/ DMS-4(2) (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.

Cultural Heritage

4. An Archaeological Action Plan (AAP) for the survey-cum-excavation at the former Tai Hom Village site was approved by EPD on 8 April 2013. A Licence to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been subsequently obtained from Antiquities and Monuments Office (AMO) on 19 April 2013. The archaeological survey-cum-excavation at Former Tai Hom Village

commenced on 25 April 2013 and the fieldwork had been completed in September 2013 in accordance with the Licence granted and the approved AAP. A draft Archaeological Survey-cum-Excavation Report was submitted to AMO for review in March 2014. Comments from AMO were received in September 2014 and the Report is under revision.

5. The Conservation Plans for the two historic buildings, namely Former Royal Air Force Hangar and the Old Pillbox at the former Tai Hom Village site, were approved by EPD on 24 April 2013. Dismantling works on Former Royal Air Force Hangar was carried out in accordance with the approved Conservation Plan and completed in June 2013. Relocation works for the Old Pillbox had been completed in November 2013 in accordance with the approved Conservation Plan. Regular maintenance and inspection works of the two historic buildings were carried out in accordance with the approved Conservation Plan.

Waste Management

6. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 17,022m^3 of inert C&D materials were generated from the Project and were sent to SCL1108A, SCL1108 and Tuen Mun Area 38 Fill Bank during the reporting month. 85m^3 of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. No chemical waste was collected by licensed collector during the reporting month. No plastics, metal and paper/ cardboard packaging were generated in this reporting month.

Landscape and Visual

7. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 12 and 26 February 2015. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 6.

Environmental Site Inspection

8. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 5, 12, 17 and 26 February 2015. The representative of the IEC joined the site inspection on 26 February 2015. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summons and Successful Prosecution

9. Two Action Level exceedances of regular construction noise monitoring were recorded as two complaints related to construction noise were received in February 2015. No Limit Level of regular construction noise monitoring exceedance was recorded.

10. No exceedance of the Action and Limit Levels of 24-hour TSP monitoring was recorded during the reporting period.

11. No non-compliance event was recorded during the reporting period.

12. No Project related notification of summons/ successful prosecutions were received in this reporting period. However two complaints on construction noise and one complaint regarding muddy water discharge in Kai Tuk Nullah were received in February 2015.

Future Key Issues

13. Major site activities for the coming reporting month will include:

- Excavation and ELS works;
- Interchange Adit - Excavation and ELS works;
- West Unpaid Adit - Remedial works for completed Barrette; excavation and ELS works; base slab construction;
- Entrance A1- Excavation & ELS works; and,
- Structural works - Construct track base slab; plate load testing; concrete curing & removal of temp strut.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Sembawang – Leader Joint Venture (SLJV) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL)Works Contract 1106 – Diamond Hill Station (hereafter referred to as the Project).

Purpose of the Report

1.2 This is the 24th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 28 February 2015.

Structure of the Report

1.3 The structure of the report is as follows:

Section 1: **Introduction -** details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures -** summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance -** summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

2.2 The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts. This Works Contract 1106 covers the construction of Shatin-to-Central Link (SCL) station in Diamond Hill (DIH).

General Site Description

2.3 For Works Contract 1106, the works area for the DIH station is located to the northeast of Choi Hung Road next to the existing Kwun Tong Line DIH Station. The DIH station will be constructed by cut-and-cover method. The alignment and works area for the Works Contract 1106 are shown in **Figure 1**.

Construction Programme and Activities

2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.

- Excavation and ELS works;
- Interchange Adit - Excavation and ELS works;
- West Unpaid Adit – Excavation and ELS works;
- Entrance A1 – Erection of temporary working platform; excavation &ELS works; and,
- Structural works – Headwall construction; base slab & blinding works.

Project Organisation

2.5 The project organizational chart and contact details are shown in **Figure 4.**

Status of Environmental Licences, Notification and Permits

2.6 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since the commencement of the construction works in March 2013 is presented in Table 2.1.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012/H	10/09/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
No.: 378656	28/08/2014	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No.: 7016601	27/12/2012	N/A	Valid
Registration of Chemical Waste Producer			
5213-281-S3711-02	28/01/2015	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00014959-2012	14/01/2013	31/01/2018	Valid
WT00016920-2013	06/09/2013	30/09/2018	Valid
Construction Noise Permit (CNP)			
GW-RE1325-14	29/11/2014	25/05/2015	Valid

Summary of EM&A Requirements

2.7 The EM&A programme under Works Contract 1106 requires regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

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

2.9 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was rejected; alternative locations were proposed and agreed by the ER (Engineer's Representative), IEC (Independent Environmental Checker) and EPD (Environmental Protection Department). The construction noise monitoring locations are listed in **Table 3.1** and shown in **Figure 2**.

Table 3.1 Regular Construction Noise Monitoring Location

Regular Construction Noise Monitoring Location	Description	Type of Measurement
NMS-CA-3(1)(3)(4)/ NMS-CA-4 (2)(3)(4)	Hong Kong Sheng Kung Hui Nursing Home	Façade
NMS-CA-4(1)/ NMS-CA-3(2)	Block 1, Rhythm Garden (north-eastern façade)	Façade
NMS-CA-5 (1) (5)/ NMS-CA-2(2)(5)	Block 1, Rhythm Garden (northern façade)	Façade

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
(4) Noise monitoring on NMS-CA-3(1)/ NMS-CA-4(2) (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.
(5) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.

Monitoring Parameter and Frequency

3.2 Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period of monitoring stations at Rhythm Garden is shown in **Appendix D**.

3.3 The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). L_{Aeq} (30min) (as six consecutive $L_{eq,\ 5\text{-}min}$ readings) was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays.

Monitoring Equipment and Methodology

Field Monitoring

3.4 The monitoring procedures are as follows:

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure good 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
  - measurement time : 5 minutes (obtaining six consecutive $L_{eq,5min}$ readings for a $L_{eq,30\ min}$ reading)

- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station was checked with the portable wind meter. 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.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- At the end of the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- A façade correction of +3dB(A) shall be made to the noise parameter obtained by free field measurement.

Monitoring Equipment

3.5 The sound level meters and calibrator used for the noise measurement, as listed in **Table 3.2**, compile with the IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in **Appendix C**.

Table 3.2 Noise Monitoring Equipment

Monitoring Equipment	Model (Serial no.)
Sound Level Meter	SVAN 955 (Serial no.: 12553 and 14303) SVAN 957 (Serial no.: 21460 and 23853)
Calibrator	SV30A (Serial no.: 24803, 24791 and 24780) B&K 4231 (Serial no.: 2412367)

Maintenance and Calibration

3.6 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix C**.

Action & Limit Level for Construction Noise Monitoring

3.7 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix I.**

Continuous Noise Monitoring

3.8 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1106.

Regular Construction Dust Monitoring

3.9 The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in **Table 3.3** and shown in **Figure 3**. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.3 Dust Monitoring Location

Regular Dust Monitoring Location	Description
DMS-3(1)(3)(4)/ DMS-4(2)(3)(4)/	Hong Kong Sheng Kung Hui Nursing Home
DMS-4(1) / DMS-3(2)	Block 1, Rhythm Garden

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
(4) Dust monitoring on DMS-3(1)/DMS-4(2) (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103.

Monitoring Parameter and Frequency

3.10 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**. The TSP monitoring at Rhythm Garden was conducted as per the schedule presented in **Appendix D**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring(1)	Throughout the construction period	24-hour TSP	Once per 6 days

Note:
(1) 1- hour TSP shall be conducted when one documented valid complaint is received.

Monitoring Equipment

3.11 **Table 3.5** summarizes the equipment used for the dust monitoring.

Table 3.5 Dust Monitoring Equipment

Equipment	Model and Make	Qty.
HVS	Tisch Environmental, Inc.; Model no. TE-5170, Serial no.: 2352	1
Calibration Orifice	Tisch Environmental, Inc.; Model no. TE – 5025A Orifice ID: 0993 and 2896	2

Instrumentation

3.12 High Volume Samplers (HVS) connected with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 Appendix B (Part 50).

HVS Installation

3.13 The following guidelines were adopted during the installation of HVS:

- Sufficient support was provided 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 samplers were more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction

during monitoring.

Filters Preparation

3.14 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter. A HOKLAS accredited laboratory, Wellab Ltd. (HOKLAS Registration No. 083), was responsible for the preparation of pre-weighed filter papers for Cinotech's monitoring team.

3.15 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

3.16 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

3.17 Operating/analytical procedures for the TSP monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
- The power supply was checked to ensure the sampler worked properly.
- The filter holding frame and the area surrounding the filter were cleaned.
- On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- 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 to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminum strip.
- A new flow rate record chart was set into the flow recorder.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet before and after sampling.
- The elapsed time and other relevant information was recorded. After sampling, the sampled filter was removed carefully and folded in half-length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed and sent to the Wellab Ltd. for weighing.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment 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%. Weighing results were returned to Cinotech for further analysis of TSP concentrations.

Maintenance/Calibration

3.18 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.
- Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. Copies of calibration certificates are attached in **Appendix C**.
- The HVS calibration orifice will be calibrated annually.

Action and Limit Levels for Dust Monitoring

3.19 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix I.**

Cultural Heritage

3.20 An Archaeological Action Plan (AAP) for the survey-cum-excavation at the former Tai Hom Village site was approved by EPD on 8 April 2013. A Licence to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been subsequently obtained from Antiquities and Monuments Office (AMO) on 19 April 2013. The archaeological survey-cum-excavation at Former Tai Hom Village shall be conducted in accordance with the Licence granted and the approved AAP.

3.21 The Conservation Plans for the two historic buildings, namely Former Royal Air Force Hangar and the Old Pillbox at the former Tai Hom Village site, were approved by EPD on 24 April 2013. Dismantling works on Former Royal Air Force Hangar and relocation work of the Old Pillbox shall be carried out in accordance with the approved Conservation Plan. Regular maintenance and inspection works of the two historic buildings shall be carried out in accordance with the approved Conservation Plan.

Landscape and Visual

3.22 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is given in **Appendix J**. The Event / Action Plan (EAP) for landscape and visual are presented in **Appendix I.**

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix J**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (January 2015)	13th February 2015

5 MONITORING RESULTS

Regular Construction Noise Monitoring

5.1 A total of 8 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. No exceedance of the limit level was recorded at designated monitoring stations.

5.2 The noise monitoring results recorded at NMS-CA-5(1)/NMS-CA-2(2) (Block 1, Rhythm Garden (northern façade)) on 2, 12 and 18 February exceeded the daytime construction noise criterion. However, the results are not considered as exceedance the results were below the baseline noise level; the noise monitoring result recorded on 24 February did not exceed the daytime construction noise criterion. All noise monitoring results recorded at NMS-CA-4(1)/NMS-CA-3(2) (Block 1, Rhythm Garden (north-eastern façade)) in February did not exceed the daytime construction noise criterion.

5.3 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.

5.4 The noise monitoring results together with their graphical presentations are presented in **Appendix F**(3).

5.5 Two Action Level exceedances were recorded as two complaints related to construction noise were received in February 2015. No exceedance of the Limit Levels of construction noise due to the Project was recorded during the reporting period. The summary of exceedance in this reporting month is provided in **Appendix G** and the details of the complaints are presented in **Appendix L**.

Regular Dust Monitoring

5.6 A total of 5 sets of 24-hour TSP monitoring were carried out at the designated monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. The monitoring results together with their graphical presentations are presented in **Appendix E**(3) and a summary of the dust monitoring results in this reporting month is given in **Table 5.1**.

Table 5.1 Summary Table of Dust Monitoring Results during the reporting month

Parameter	Minimum µg/m³	Maximum µg/m³	Average µg/m³	Action Level, µg/m³	Limit Level, µg/m³
24-hr TSP (DMS-3(1)(4)/ DMS-4(2)(4))	30.4	126.9	85.0	159.1	260
24-hr TSP (DMS-4(1)/ DMS-3(2))	41.8	152.8	81.4	160.4	260

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) The monitoring results and graphical presentation for H.K. Sheng Kung Hui Nursing Home are presented in Monthly EM&A Report for Contract 1103.
(4) Dust monitoring on DMS-3(1)/DMS-4(2) (Hong Kong Sheng Kung Hui Nursing Home) is carried out by Environmental Team of SCL Works Contract 1103

5.7 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.

5.8 Wind monitoring data were obtained from Kai Tak Meteorological Station of Hong Kong Observatory and shown on **Appendix E**.

5.9 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during the reporting period. The summary of exceedance is provided in **Appendix G**.

Cultural Heritage

5.10 An Archaeological Action Plan (AAP) for the survey-cum-excavation at the former Tai Hom Village site was approved by EPD on 8 April 2013. A Licence to Excavate and Search for Antiquities under Antiquities and Monuments Ordinance has been subsequently obtained from Antiquities and Monuments Office (AMO) on 19 April 2013. The archaeological survey-cum-excavation at Former Tai Hom Village commenced on 25 April 2013 and completed in September 2013 in accordance with the Licence granted and the approved AAP. A draft Archaeological Survey-cum-Excavation Report was submitted to AMO for review in March 2014. Comments from AMO were received in September 2014 and the Report is under revision.

5.11 The Conservation Plans for the two historic buildings, namely Former Royal Air Force Hangar and the Old Pillbox at the former Tai Hom Village site, were approved by EPD on 24 April 2013. Dismantling works on Former Royal Air Force Hangar was carried out in accordance with the approved Conservation Plan and completed in June 2013. Relocation works for the Old Pillbox had been completed in November 2013 in accordance with the approved Conservation Plan. Regular maintenance and inspection works of the two historic buildings were carried out in accordance with the approved Conservation Plan.

Waste Management

5.12 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes like plastics and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.2**. 17,022m^3 of C&D materials, 85m^3 of general refuse were generated. No chemical waste was collected by licensed collector during the reporting month. No plastics, metal and paper/ cardboard packaging were generated in this reporting month. Detail of waste management data is presented in **Appendix K**.

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) [a]	C&D Materials (non-inert) [b]				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/ cardboard	Plastics	Metals
February 2015	17,022m^3	85m^3	0kg	0kg	0kg	0kg

Notes:
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil, which were delivered to SCL 1108A, SCL1108 and Tuen Mun Area 38 Fill Bank during the reporting month.
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. General refuse was delivered to designated landfill for disposal.

Landscape and Visual

5.13 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 12 and 26 February 2015. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

6.1 Site audits were carried out by ET on 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 H**.

6.2 Site audits were conducted on 5, 12, 17 and 26 February 2015. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 26 February 2015. No site inspection was conducted by the EPD in February 2015. The details of observations during site audits carried out by ET can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix J**.

6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	26 February 2015	Reminder: The Contractor is reminded to properly maintain the waste water pool near the site entrance and ensure the functionality of the water pump at the pool to prevent overflow of untreated waste water into the discharge point.	The follow up action will be reported in the next reporting month.
Noise	---	---	---
Landscape and Visual	29 January 2015	Observation: Some construction wastes and construction materials were placed inside the tree protection zones, near the trees at W8. The contractor was reminded to remove the construction wastes, properly set up and maintained the tree protection zones and provided sufficient space between the trees and the construction materials.	As observed on 5 Feb., The construction wastes inside one of the tree protection zone at W8 had been removed. However construction materials was still placed near another tree at W8. This observation had been included in the reminder on 5 Feb. for rectification.
	5 February 2015	Reminder: The construction materials were placed near a tree at W8. Sufficient space should be provided between the tree and the materials. The tree protection zone should also be set up properly.	As observed on 12 Feb., The construction materials (steel bar) were still placed near the tree. This item had been included in the observation on 12 Feb. for rectification.
	12 February 2015	Observation: The construction materials (steel bar) were still placed near the tree at W8. Sufficient space should be provided between the tree and the materials. The tree protection zone should also be properly set up. In addition, a rope was tied on to a tree near the site entrance and it should be removed.	As observed on 17 Feb., the rope was removed from the tree near the site entrance. However the steel bars were still placed near the tree at W8. This item had been included in the observation on 17 Feb. for rectification.

Parameters	Date	Observations and Recommendations	Follow-up
	17 February 2015	Observation: The steel bars were still placed near the tree at W8. Sufficient space should be provided between the tree and construction materials. The tree protection zone should also be properly set up.	As observed on 26 Feb., the steel bars were still placed near the tree at W8. This item had been included in the observation on 26 Feb. for rectification.
	26 February 2015	Observation: The steel bars were still placed near the tree at W8. Sufficient space should be provided between the tree and construction materials. The tree protection zones for the trees at W8 and A1 should also be set up properly.	The follow up action will be reported in the next reporting month.
Cultural Heritage	---	---	---
Air Quality	29 January 2015	Reminder: The contractor was reminded to water spray the worksite in between the West Unpaid Link and Interchange Adit regularly to avoid dust generation.	As observed on 5 Feb., water was regularly sprayed on the construction site.
	29 January 2015	Reminder: The contractor was reminded to properly maintain the crane next to the MBME to avoid white smoke emission.	As observed on 5 Feb., no smoke was observed emitting from the crane during operation.
	12 February 2015	Reminder: The breaking works area, haul road and work site near the ramp should be sprayed with water regularly to avoid dust generation.	As observed on 17 Feb., water was sprayed on the areas to avoid dust generation.
	17 February 2015	Reminder: Water should be sprayed on haul roads and where stone breaking work is being carried out to avoid dust generation.	As observed on 26 Feb., water was sprayed on the haul roads and where breaking work was carried out to avoid dust generation.
Waste/ Chemical Management	26 February 2015	Observation: Chemical container next to the tree: DT 1847 near the ramp was observed without a drip tray. Drip tray should be provided underneath the container to avoid chemical spillage.	The follow up action will be reported in the next reporting month.
Permits/ Licenses	---	---	---

7 EIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

7.1 Two Action Level exceedances of regular construction noise monitoring were recorded as two complaints related to construction noise were received in February 2015. The details of the complaints are presented in **Appendix L.** No exceedance of Limit Levels of the regular construction noise monitoring was recorded during the reporting month.

7.2 No exceedance of the Action and Limit Levels of the regular 24-hour TSP monitoring was recorded during the reporting month.

7.3 The summary of exceedance in this reporting month is provided in **Appendix G**.

Summary of Environmental Non-Compliance

7.4 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

7.5 Two complaints on construction noise and one complaint regarding muddy water discharge in Kai Tak Nullah were received in the reporting month. The details of the environmental complaints received in the reporting month are shown in the Environmental Complaint Log in **Appendix L**. The Cumulative Complaint Log since the commencement of the Project is also presented in **Appendix L.**

Summary of Environmental Summon and Successful Prosecution

7.6 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix L**.

8 FUTURE KEY ISSUES

Construction Programme for the Next Month

8.1 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Excavation and ELS works;
- Interchange Adit - Excavation and ELS works;
- West Unpaid Adit - Remedial works for completed Barrette; excavation and ELS works; base slab construction;
- Entrance A1- Excavation & ELS works; and,
- Structural works - Construct track base slab; plate load testing; concrete curing & removal of temp strut.

Key Issues in the Next Month

8.2 Key issues to be considered in the coming month include:

- Dust arising from loading, unloading, transfer, handling or storage of bulk cement or dry PFA and excavated materials;
- Control of silty surface runoff;
- Preservation of Former Royal Air Force Hangar and Old Pillbox after dismantling and relocation;
- Preservation and protection of retained and transplanted trees; and
- Implementation of mitigation measures for noise nuisance from construction works.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at Rhythm Garden in the next reporting period is presented in **Appendix D**. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 28 February 2015 in accordance with EM&A Manual and the requirement under EP.

9.2 Two Action Level exceedances of regular construction noise monitoring were recorded as two complaints related to construction noise were received in February 2015. No exceedance of the Limit Level of regular construction noise monitoring was recorded during the reporting month. No exceedance of the Action and Limit Levels of regular 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting month.

9.3 4 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 2 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.

9.4 Two complaints on construction noise and one complaint regarding muddy water discharge in Kai Tuk Nullah were received in the reporting month. No successful prosecution or notification of summons received during the reporting month.

9.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times.

Construction Noise

- N/A

Landscape and Visual

- "No-intrusion zone" should be established and maintained for existing trees as far as practicible. The Contractor is reminded to closely monitor and restrict the site working staff and construction plants from entering the erected "no-intrusion zone" for existing trees and avoid placing construction materials within the tree protection zone for maximizing the protection. No construction works should be carried out in the "no-intrusion zone" for existing trees.

Air Quality

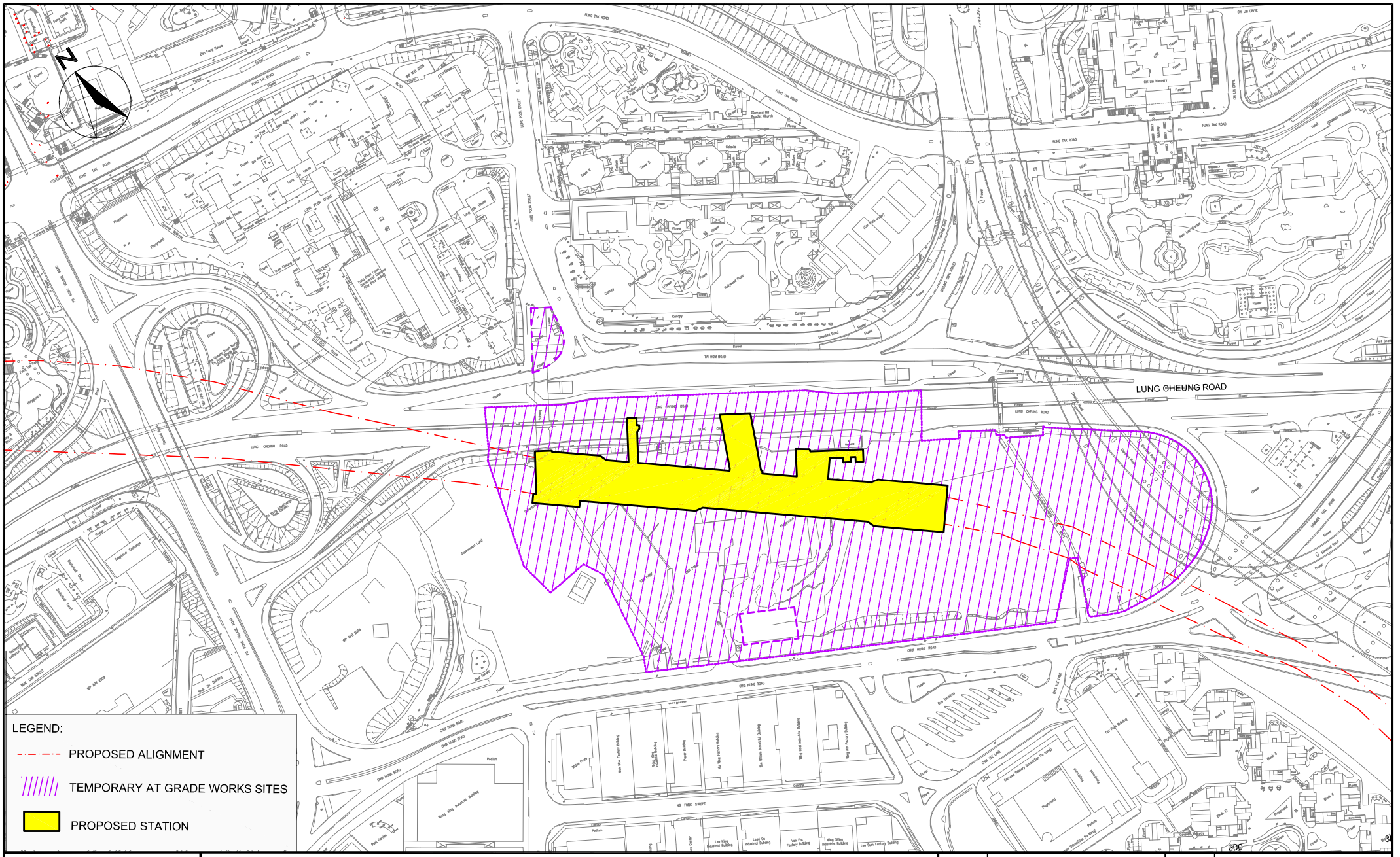
- Work sites, exposed areas and paved haul roads should be watered regularly, preferable once every working hour, to avoid dust generation.
- Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust

suppression chemical continuously.

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals and oil containers shall be sustained. Drip trays should also be properly maintained.

FIGURES



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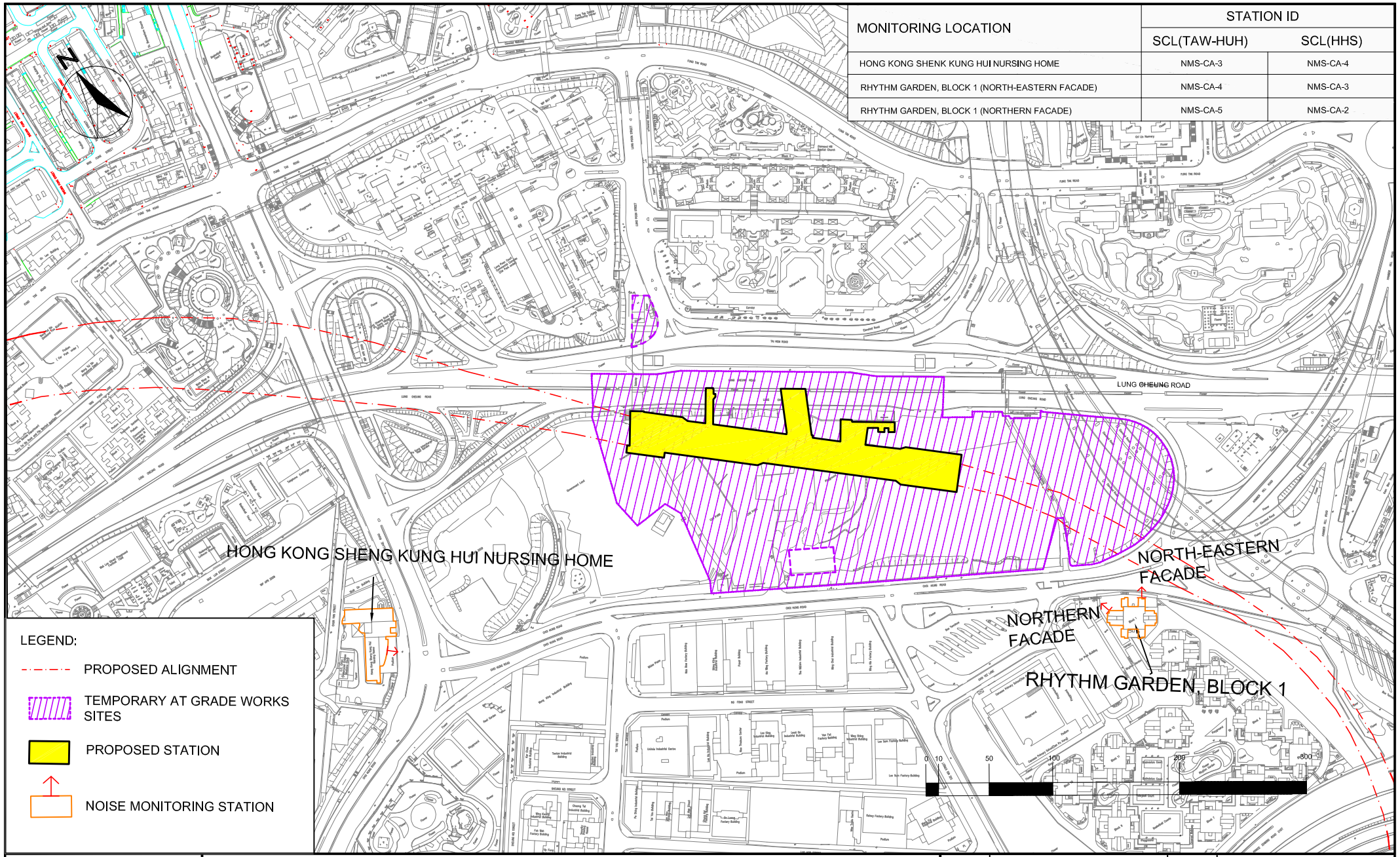
SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION

SITE LAYOUT PLAN

SCALE	1:80	DATE	MAY 2013
CHECK	KC	DRAWN	JW
JOB No.	MA12051	FIGURE NO. 1	REV -

MONITORING LOCATION	STATION ID	
	SCL(TAW-HUH)	SCL(HHS)
HONG KONG SHENK KUNG HUI NURSING HOME	NMS-CA-3	NMS-CA-4
RHYTHM GARDEN, BLOCK 1 (NORTH-EASTERN FACADE)	NMS-CA-4	NMS-CA-3
RHYTHM GARDEN, BLOCK 1 (NORTHERN FACADE)	NMS-CA-5	NMS-CA-2



CINOTECH
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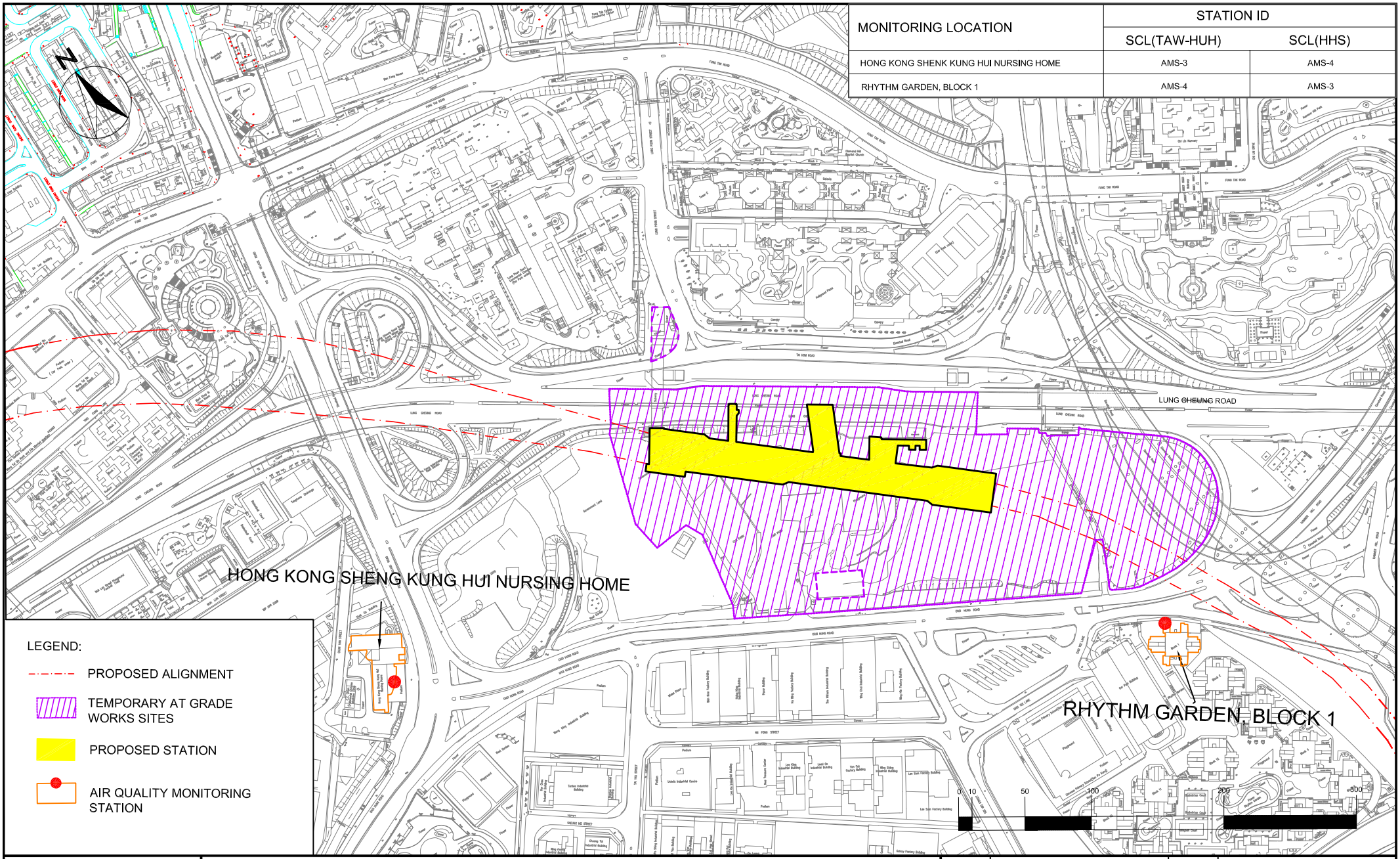
SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION

LOCATION OF NOISE MONITORING STATIONS(CONSTRUCTION AIRBORNE NOISE)

SCALE	1:100	DATE	MAY 2013
CHECK	KC	DRAWN	JW
JOB No.	MA12051	FIGURE NO. 2	REV -



MONITORING LOCATION	STATION ID	
	SCL(TAW-HUH)	SCL(HHS)
HONG KONG SHENK KUNG HUI NURSING HOME	AMS-3	AMS-4
RHYTHM GARDEN, BLOCK 1	AMS-4	AMS-3

LEGEND:

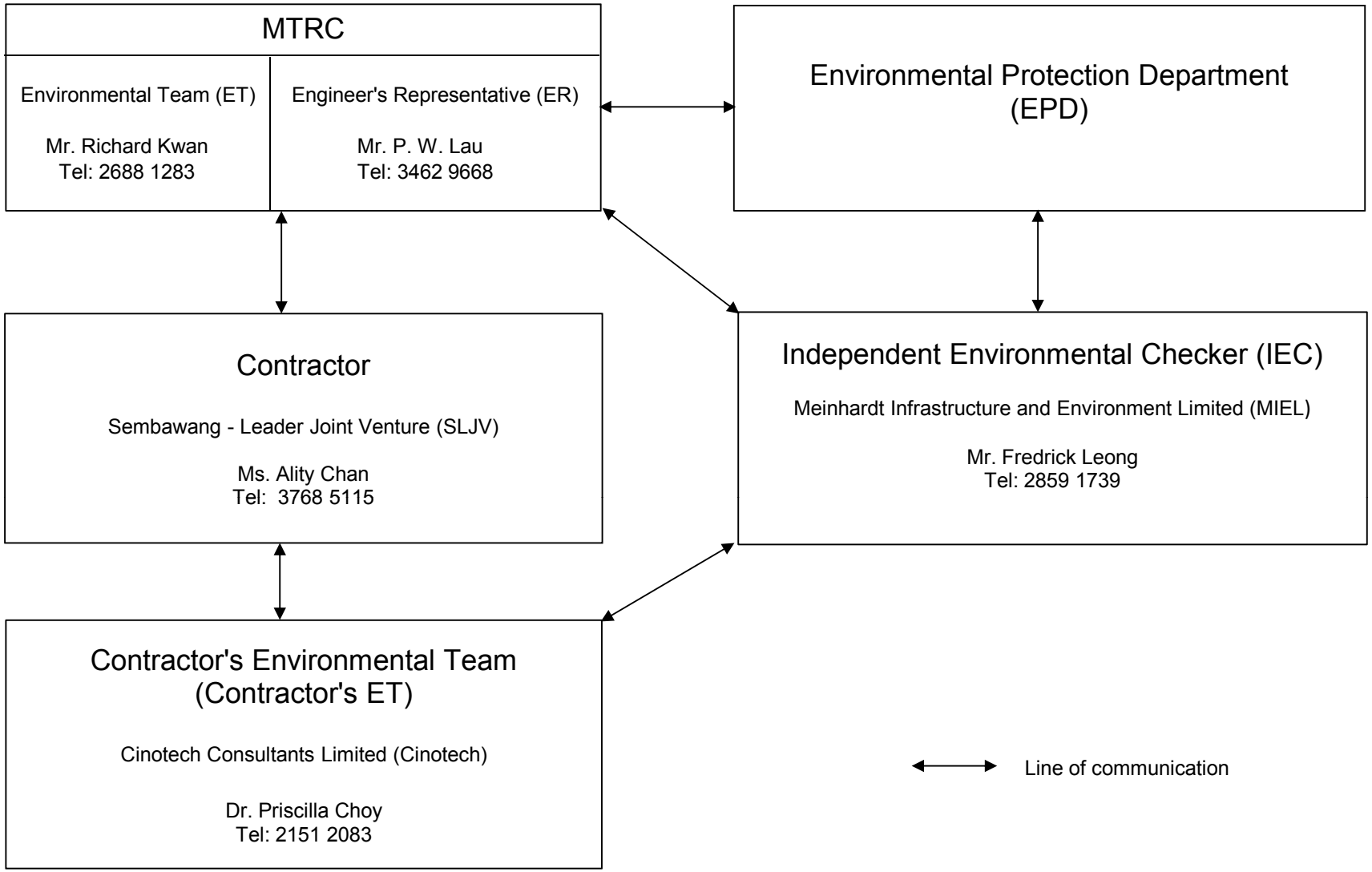
- PROPOSED ALIGNMENT
- TEMPORARY AT GRADE WORKS SITES
- PROPOSED STATION
- AIR QUALITY MONITORING STATION

CINOTECH
Cinotech Consultants Limited

SHATIN TO CENTRAL LINK CONTRACT 1106
DIAMOND HILL STATION

LOCATION OF AIR QUALITY MONITORING STATIONS

SCALE	1:100	DATE	MAY 2013
CHECK	KC	DRAWN	JW
JOB No.	MA12051	FIGURE NO. 3	REV -



Title	Scale	Proposal
MTR SCL Works Contract 1106 Diamond Hill Station Organisation Chart and Key Contact of the Project	N.T.S	No. MA12051
	Date Sep-14	Figure 4

CINOTECH

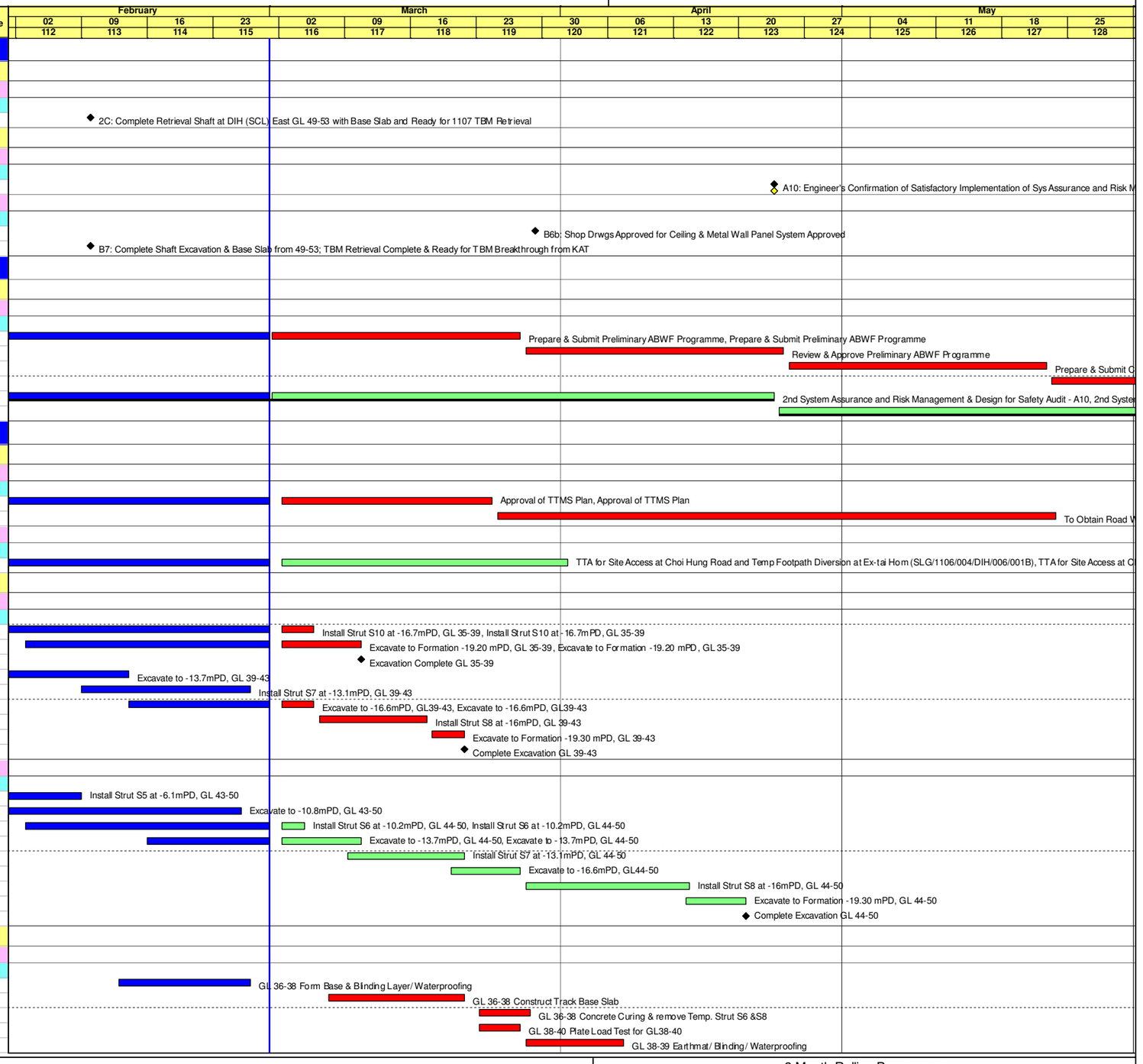
APPENDIX A
TENTATIVE CONSTRCUTION PROGRAMME

Contract 1106 - Diamond Hill Station

MTR

Sembawang - Leader Joint Venture

Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete
Contract Dates					
Completion Obligation Dates					
The Whole of the Works					
Completion Dates					
C1106.CDW02C	2C: Complete Retrieval Shaft at DIH (SCL) East GL 49-53 with Base S	0		10-Feb-15 A	100%
Milestone Dates					
Cost Centre A Milestones					
Preliminaries					
C1106.MSA10	A10: Engineer's Confirmation of Satisfactory Implementation of Sys Ass	0		23-Apr-15	0%
Cost Centre B (Option 5 Tender (SCL), Entrances & Adits)					
Completion Dates					
C1106.MSB06	B6b: Shop Drwgs Approved for Ceiling & Metal Wall Panel System Appr	0		29-Mar-15*	0%
C1106.MSB07	B7: Complete Shaft Excavation & Base Slab from 49-53; TBM Retrieval	0		10-Feb-15 A	100%
Cost Centre A - Preliminaries					
General Requirements					
Submissions					
General					
C1106.GS0278	Prepare & Submit Preliminary ABWF Programme	28	15-Dec-14 A	27-Mar-15	62%
C1106.GS0282	Review & Approve Preliminary ABWF Programme	28	28-Mar-15	24-Apr-15	0%
C1106.GS0285	Prepare & Submit CSD/SEM Drwg GL 31-53	28	25-Apr-15	22-May-15	0%
C1106.GS0290	Review & Approve CSD/SEM Drwg GL 31-53	28	23-May-15	19-Jun-15	0%
C1106.GS0335	2nd System Assurance and Risk Management & Design for Safety Audi	92	22-Jan-15 A	23-Apr-15	40%
C1106.GS0337	3rd Safety Management & Environmental Monitoring Audit -A11	90	24-Apr-15	22-Jul-15	0%
Cost Centre B: SCL- DIH Station, Entrances and Adits					
TTMS Implementation					
Submissions					
TTM Submission					
C1106.TMS0333	Approval of TTMS Plan	28	29-Oct-14 A	24-Mar-15	75%
C1106.TMS0335	To Obtain Road Works Advice from Road Management Office & ready	60	25-Mar-15	23-May-15	0%
Choi Hung Road					
TTA Implementation					
C1106.TMS0564	TTA for Site Access at Choi Hung Road and Temp Footpath Diversion a	90	15-Sep-14 A	01-Apr-15	75%
Earthworks					
DIH (SCL) Gridline 35 - 43					
Excavation & ELS Works					
C1106.BEX3590	Install Strut S10 at -16.7mPD, GL 35-39	7	29-Jan-15 A	05-Mar-15	90%
C1106.BEX3595	Excavate to Formation -19.20 mPD, GL 35-39	8	03-Feb-15 A	10-Mar-15	75%
C1106.BEX3605	Excavation Complete GL 35-39	0		10-Mar-15	0%
C1106.BEX3985	Excavate to -13.7mPD, GL 39-43	4	21-Jan-15 A	14-Feb-15 A	100%
C1106.BEX3987	Install Strut S7 at -13.1mPD, GL 39-43	10	09-Feb-15 A	27-Feb-15 A	100%
C1106.BEX3990	Excavate to -16.6mPD, GL39-43	4	14-Feb-15 A	05-Mar-15	80%
C1106.BEX3992	Install Strut S8 at -16mPD, GL 39-43	10	06-Mar-15	17-Mar-15	0%
C1106.BEX3995	Excavate to Formation -19.30 mPD, GL 39-43	4	18-Mar-15	21-Mar-15	0%
C1106.BEX4870	Complete Excavation GL 39-43	0		21-Mar-15	0%
DIH (SCL) Gridline 43 - 50					
Excavation & ELS Works					
C1106.BEX4015	Install Strut S5 at -6.1mPD, GL 43-50	14	14-Jan-15 A	09-Feb-15 A	100%
C1106.BEX4020	Excavate to -10.8mPD, GL 43-50	10	24-Jan-15 A	26-Feb-15 A	100%
C1106.BEX4025	Install Strut S6 at -10.2mPD, GL 44-50	12	03-Feb-15 A	04-Mar-15	70%
C1106.BEX4030	Excavate to -13.7mPD, GL 44-50	8	16-Feb-15 A	10-Mar-15	20%
C1106.BEX4033	Install Strut S7 at -13.1mPD, GL 44-50	12	09-Mar-15	21-Mar-15	0%
C1106.BEX4035	Excavate to -16.6mPD, GL44-50	7	20-Mar-15	27-Mar-15	0%
C1106.BEX4869	Install Strut S8 at -16mPD, GL 44-50	12	28-Mar-15	14-Apr-15	0%
C1106.BEX4875	Excavate to Formation -19.30 mPD, GL 44-50	6	14-Apr-15	20-Apr-15	0%
C1106.BEX4880	Complete Excavation GL 44-50	0		20-Apr-15	0%
Structural Works					
Track Slab/ Bottom Level					
Base Slab					
C1106.BBS1225	GL 36-38 Form Base & Blinding Layer/ Waterproofing	12	13-Feb-15 A	27-Feb-15 A	100%
C1106.BBS1230	GL 36-38 Construct Track Base Slab	13	07-Mar-15*	21-Mar-15	0%
C1106.BBS1235	GL 36-38 Concrete Curing & remove Temp. Strut S6 &S8	6	23-Mar-15	28-Mar-15	0%
C1106.BBS1240	GL 38-40 Plate Load Test for GL38-40	5	23-Mar-15	27-Mar-15	0%
C1106.BBS1245	GL 38-39 Earthmat/ Blinding/ Waterproofing	6	28-Mar-15	07-Apr-15	0%



Remaining Work
Critical Remaining Work
Baseline (PMP)
Actual Work
Milestone
Baseline Milestone

MTR Contract 1106 - Diamond Hill Station
Three Month Rolling Programme
As of 28 February 2015

3 Month Rolling Programme

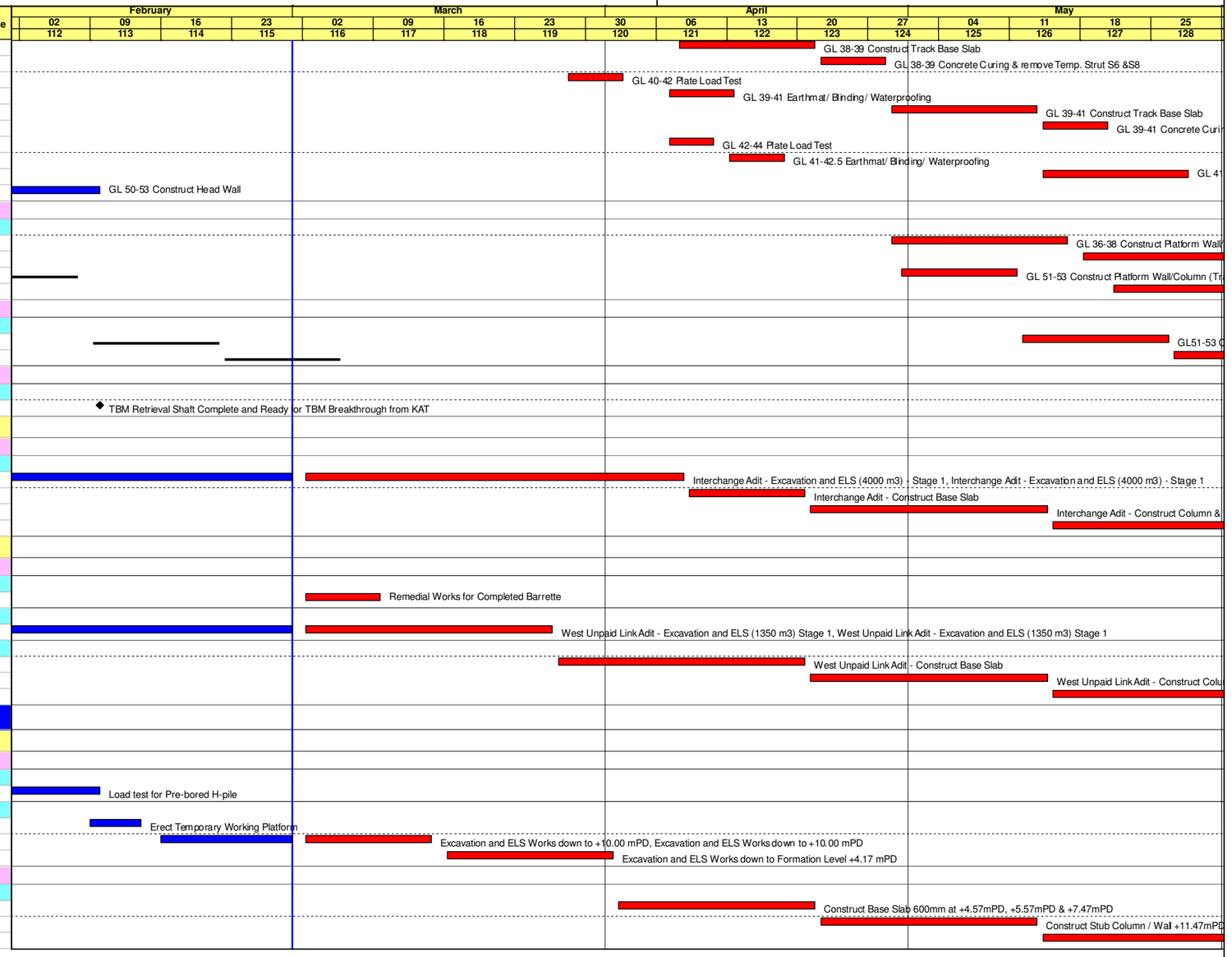
Date	Revision	Checked	Approved
02-Mar-15	C-1106-3MRP/ 26		

Contract 1106 - Diamond Hill Station

MTR

Sembawang - Leader Joint Venture

Activity ID	Activity Name	Orig Dur	Forecast Start	Forecast Finish	% Complete
C1106.BBS1253	GL 38-39 Construct Track Base Slab	12	08-Apr-15	21-Apr-15	0%
C1106.BBS1260	GL 38-39 Concrete Curing & remove Temp. Strut S6 &S8	6	22-Apr-15	28-Apr-15	0%
C1106.BBS1265	GL 40-42 Plate Load Test	5	28-Mar-15	02-Apr-15	0%
C1106.BBS1268	GL 39-41 Earthmat/ Blinding/ Waterproofing	6	07-Apr-15	13-Apr-15	0%
C1106.BBS1270	GL 39-41 Construct Track Base Slab	12	29-Apr-15	13-May-15	0%
C1106.BBS1272	GL 39-41 Concrete Curing & remove Temp. Strut S6 &S8	6	14-May-15	20-May-15	0%
C1106.BBS1274	GL 42-44 Plate Load Test	5	07-Apr-15	11-Apr-15	0%
C1106.BBS1278	GL 41-42.5 Earthmat/ Blinding/ Waterproofing	6	13-Apr-15	18-Apr-15	0%
C1106.BBS1279	GL 41-42.5 Construct Track Base Slab	12	14-May-15	28-May-15	0%
C1106.BBS1297	GL 50-53 Construct Head Wall	18	27-Jan-15 A	10-Feb-15 A	100%
Platform Level (Level L5)					
Wall & Column					
C1106.BPL2107	GL 36-38 Construct Platform Wall/Column (Track Level to Mezzanine)	15	29-Apr-15	16-May-15	0%
C1106.BPL2115	GL 38-39 Construct Platform Wall/Column (Track Level to Mezzanine)	15	18-May-15	04-Jun-15	0%
C1106.BPL2170	GL 51-53 Construct Platform Wall/Column (Track Level to Mezzanine)	9	30-Apr-15	11-May-15	0%
C1106.BPS2125	GL 45-47 Construct Platform Wall/Column (Track Level to Mezzanine)	9	21-May-15	01-Jun-15	0%
Mezzanine Level (Level L3 & L4)					
Beam & Slab					
C1106.BMZ4380	GL51-53 Construct Mezzanine Beam/Slab (with hole)	12	12-May-15	26-May-15	0%
C1106.BMZ4390	GL51-53 Concrete Curing for Mezzanine Beam/Slab (with hole)	12	27-May-15	07-Jun-15	0%
Multi-Level					
Opening at GL 51-53 N-P (10m x 10m)					
C1106.BML5946	TBM Retrieval Shaft Complete and Ready for TBM Breakthrough from	0		10-Feb-15 A	100%
Construction of Interchange Adit					
Construction of Interchange Adit					
Gridline U-V					
C1106.BIA7040	Interchange Adit - Excavation and ELS (4000 m3) - Stage 1	25	17-Jan-15 A	08-Apr-15	50%
C1106.BIA7050	Interchange Adit - Construct Base Slab	10	09-Apr-15	20-Apr-15	0%
C1106.BIA7055	Interchange Adit - Construct Column & Walls and Bulk Head Wall	20	21-Apr-15	14-May-15	0%
C1106.BIA7060	Interchange Adit - Construct Top Slab	16	15-May-15	03-Jun-15	0%
Construction of West Unpaid Link Adit					
West Adit Link - South Section					
Adit Cofferdam					
C1106.BWA8279	Remedial Works for Completed Barrette	7	02-Mar-15	09-Mar-15	0%
Adit - Excavation					
C1106.BWA8310	West Unpaid Link Adit - Excavation and ELS (1350 m3) Stage 1	18	17-Jan-15 A	26-Mar-15	60%
Civil & Structural Works					
C1106.BWA8320	West Unpaid Link Adit - Construct Base Slab	18	27-Mar-15	20-Apr-15	0%
C1106.BWA8330	West Unpaid Link Adit - Construct Column & Walls and Bulk Head	20	21-Apr-15	14-May-15	0%
C1106.BWA8340	West Unpaid Link Adit - Construct Top Slab and Concrete Upstand	25	15-May-15	13-Jun-15	0%
Cost Centre C: KTL - DIH Entrance A1 Works					
Entrance A1 (24 hr Walkway and New Lift)					
Piling and Excavation					
Piling Works					
C1106.CEA3165	Load test for Pre-bored H-pile	6	30-Jan-15 A	10-Feb-15 A	100%
Excavation & Structural Works					
C1106.CEA3168	Erect Temporary Working Platform	12	09-Feb-15 A	14-Feb-15 A	100%
C1106.CEA3172	Excavation and ELS Works down to +10.00 mPD	15	16-Feb-15 A	14-Mar-15	40%
C1106.CEA3175	Excavation and ELS Works down to Formation Level +4.17 mPD	15	16-Mar-15	01-Apr-15	0%
Structural Works					
Excavation & Structural Works					
C1106.CEA3315	Construct Base Slab 600mm at +4.57mPD, +5.57mPD & +7.47mPD	14	02-Apr-15	21-Apr-15	0%
C1106.CEA3320	Construct Stub Column / Wall +11.47mPD, +10.92mPD	18	22-Apr-15	13-May-15	0%
C1106.CEA3330	Construct RC Shaft Wall +11.98mPD	18	14-May-15	04-Jun-15	0%



Remaining Work
Critical Remaining Work
Baseline (PMP)
Actual Work
Milestone
Baseline Milestone

2 of 2

MTR Contract 1106 - Diamond Hill Station
Three Month Rolling Programme
As of 28 February 2015

3 Month Rolling Programme

Date	Revision	Checked	Approved
02-Mar-15	C-1106-3MRP/ 26		

APPENDIX B
ACTION AND LIMIT LEVELS

APPENDIX B – Action and Limit Levels

24-Hour TSP

Regular Dust Monitoring Location	Description	Action Level, µg/m^3	Limit Level, µg/m^3
DMS-3$^{(1)(3)(4)}$/ DMS-4$^{(2)(3)(4)}$/	Hong Kong Sheng Kung Hui Nursing Home	159.1	260
DMS-4$^{(1)}$/ DMS-3$^{(2)}$	Block 1, Rhythm Garden	160.4	

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
(4) Dust monitoring on DMS-3$^{(1)}$/DMS-4$^{(2)}$ is carried out by Environmental Team of SCL Works Contract 1103.

Construction Noise

Regular Construction Noise Monitoring Location$^{(1)}$	Description	Time Period	Action Level	Limit Level (Leq (30-min))
NMS-CA-3$^{(1)(3)(4)}$/ NMS-CA-4$^{(2)(3)(4)}$	Hong Kong Sheng Kung Hui Nursing Home	0700-1900 hrs on normal weekdays	When one documented complaint is received	70 dB(A)
NMS-CA-4$^{(1)}$/ NMS-CA-3$^{(2)}$	Block 1, Rhythm Garden (north-eastern façade)			75 dB(A)
NMS-CA-5$^{(1)(5)}$/ NMS-CA-2$^{(2)(5)}$	Block 1, Rhythm Garden (northern façade)			65 / 70 dB(A)$^{(6)}$

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Access to the monitoring location at Shek On House (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Hong Kong S.K.H Nursing Home) was proposed and approved by the ER and agreed by the IEC and EPD.
(4) Noise monitoring on NMS-CA-3$^{(1)}$/ NMS-CA-4$^{(2)}$ is carried out by Environmental Team of SCL Works Contract 1103.
(5) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.
(6) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

APPENDIX C
CALIBRATION CERTIFICATES FOR MONITORING EQUIPEMENT

CINOTECH

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0011

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK

Date: 22-Dec-14 Next Due Date: 21-Feb-15

Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	286.7	Pressure, Pa (mmHg)	771.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.8	3.53	61.04	8.2	2.94
2	9.1	3.10	53.66	6.2	2.56
3	7.2	2.76	47.78	5.1	2.32
4	5.2	2.34	40.67	3.4	1.89
5	3.2	1.84	31.99	2.0	1.45

By Linear Regression of Y on X

Slope , mw = 0.0513 **Intercept, bw =** -0.1796

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

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

Remarks:

Conducted by: Wk. Tong Signature: Kwai Date: 22/12/14

Checked by: [illegible] Signature: [illegible] Date: 22 December 2014

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

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	299
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	761.8
Date	27 September 2014	**Equipment No.:**	A-04-04

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

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

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

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

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

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=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

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

PATRICK TSE
Laboratory Manager

CINOTECH

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0012

Station: DMS-4 - Rhythm Garden, Block 1 Operator: WK

Date: 18-Feb-15 Next Due Date: 17-Apr-15

Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	291.5	Pressure, Pa (mmHg)	768.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0593	Intercept, bc	-0.0218
Last Calibration Date:	4-Feb-15	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.9	3.51	59.50	7.9	2.86
2	9.2	3.08	52.36	6.2	2.53
3	7.4	2.77	47.00	5.0	2.27
4	5.1	2.30	39.08	3.3	1.85
5	3.3	1.85	31.51	2.1	1.47

By Linear Regression of Y on X

Slope , mw = **0.0499** **Intercept, bw =** **-0.0935**

Correlation coefficient* = **0.9996**

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.07**

Remarks:

Conducted by: WK Tang Signature: Date: 18/2/15

Checked by: Signature: Date: 19 February 2015

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

Equipment No A-04-06

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

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

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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/140919/1
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20
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	: 23 degree Celsius
Relative Humidity	: 55%

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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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/150103
Date of Issue:	2015-01-05
Date Received:	2015-01-03
Date Tested:	2015-01-03
Date Completed:	2015-01-05
Next Due Date:	2016-01-04

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	: 20 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

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

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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/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24
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	: 55%

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

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/N/141129/1_v1
Date of Issue:	2014-12-01
Date Received:	2014-11-29
Date Tested:	2014-11-29
Date Completed:	2014-12-01
Next Due Date:	2015-11-30
Page:	1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/141003/1
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
Page:	1 of 1

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 22 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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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/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

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	: 22 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/141003/3
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
Page:	1 of 1

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 22 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

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

Test Report No.:	C/N/140822/2
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24
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	: 20 degree Celsius
Relative Humidity	: 64%

Methodology:

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

Results:

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

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

PATRICK TSE
Laboratory Manager

APPENDIX D
IMPACT MONITORING SCHEDULE

Shatin to Central Link – Contract 1106 Diamond Hill Station
Impact Air Quality and Noise Monitoring Schedule for February 2015

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)
NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

Shatin to Central Link – Contract 1106 Diamond Hill Station
Tentative Impact Air Quality and Noise Monitoring Schedule for March 2015

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

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)
NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

APPENDIX E
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONIS

Appendix E - 24-hour TSP Monitoring Results

Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

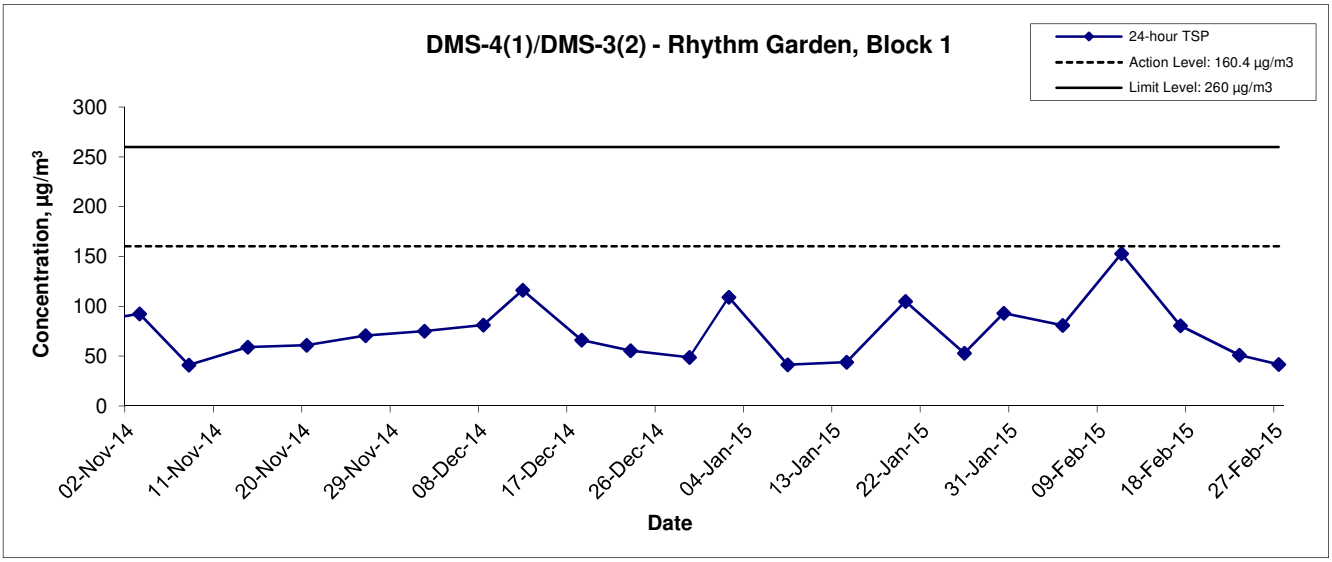
Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (µg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
5-Feb-15	9:00	Sunny	285.4	772.9	3.1709	3.3131	0.1422	3782.2	3806.2	24.0	1.22	1.22	1.22	1759.2	80.8
11-Feb-15	9:00	Sunny	288.2	767.6	3.2393	3.5061	0.2668	3806.2	3830.2	24.0	1.21	1.21	1.21	1745.9	152.8
17-Feb-15	9:00	Cloudy	290.9	766.1	3.3055	3.4455	0.1400	3830.2	3854.2	24.0	1.21	1.21	1.21	1736.8	80.6
23-Feb-15	9:00	Cloudy	291.5	765.4	3.2051	3.2945	0.0894	3854.2	3878.2	24.0	1.22	1.22	1.22	1754.3	51.0
27-Feb-15	9:00	Cloudy	291.6	765.7	3.1880	3.2614	0.0734	3878.2	3902.2	24.0	1.22	1.22	1.22	1754.3	41.8
														Min	41.8
														Max	152.8
														Average	81.4

Remarks:

(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

24-hour TSP Concentration Levels



Remarks:

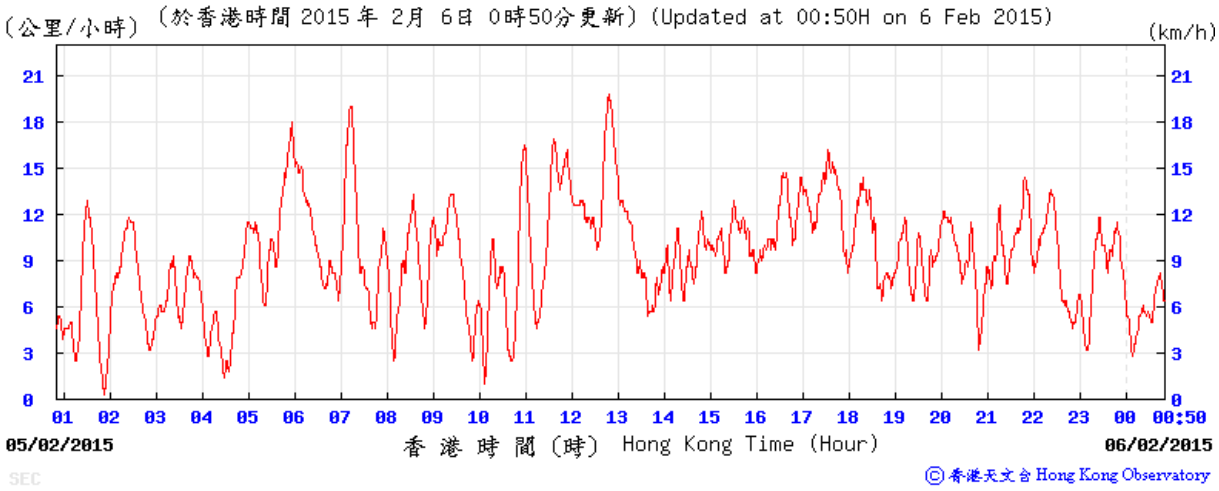
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

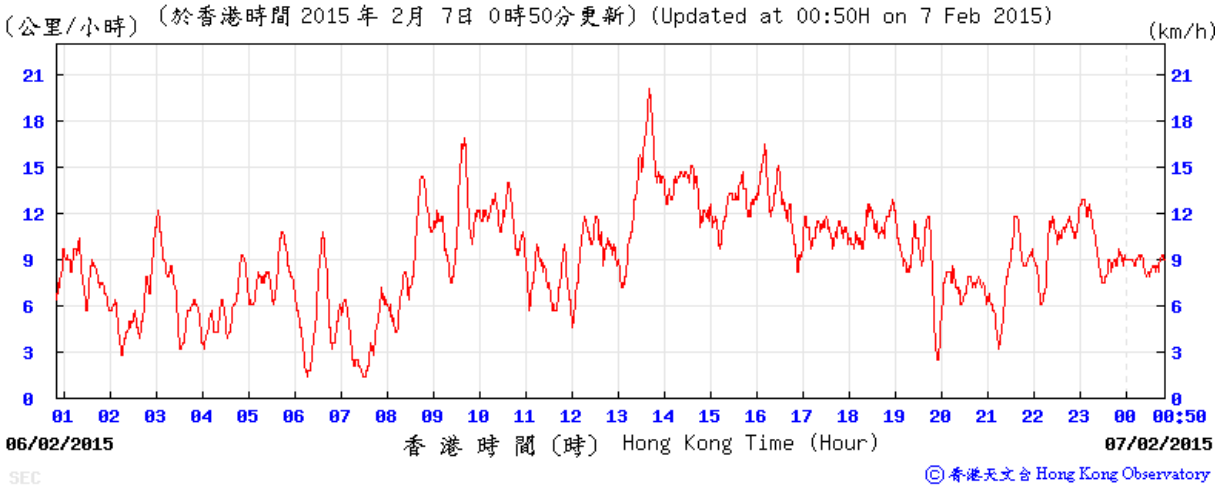
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Title		Scale	Project No.	
	Shatin to Central Link – Contract 1106 Diamond Hill Station	N.T.S	MA12051	CINOTECH
	Graphical Presentation of 24-hour TSP Monitoring Results	Date: Mar 15	Appendix: E	

Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

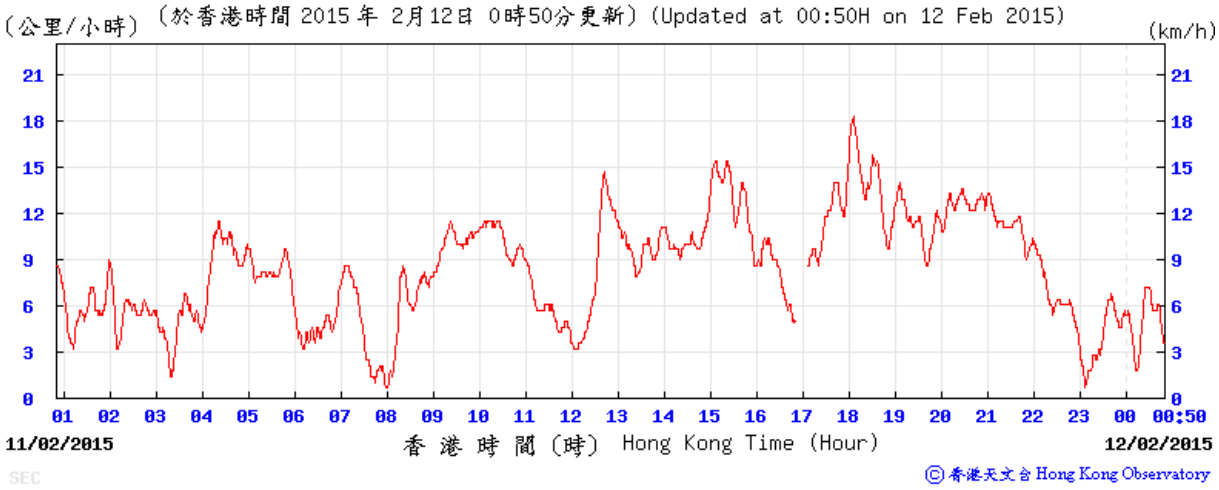
5-6 February 2015

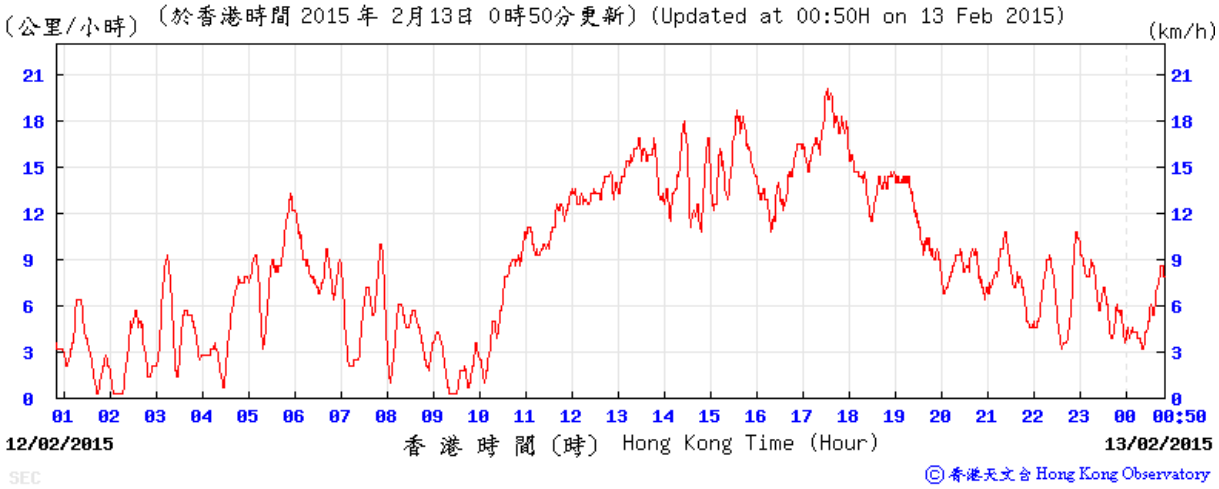




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

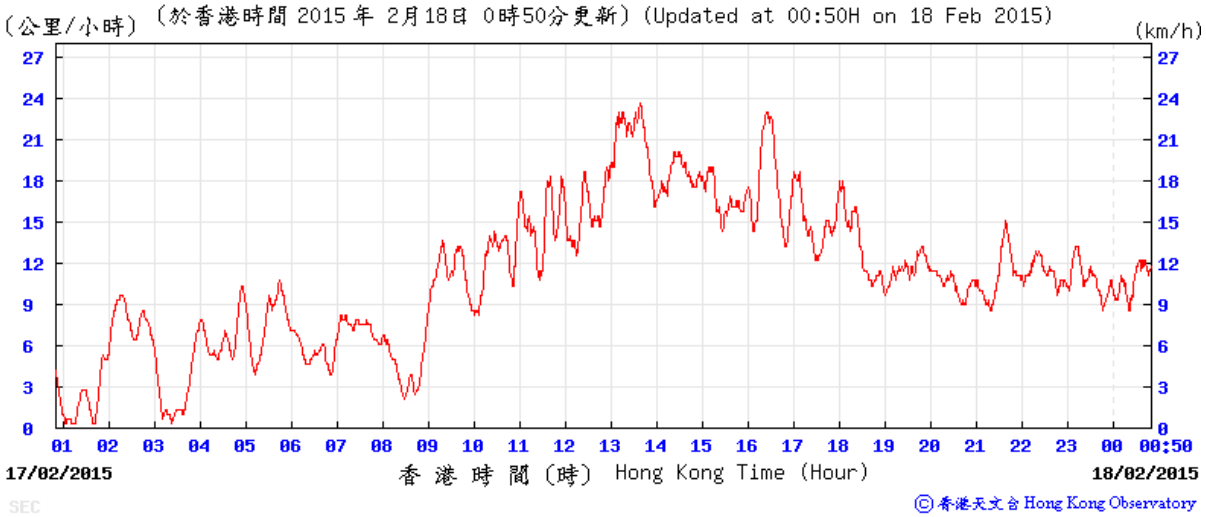
11-12 February 2015

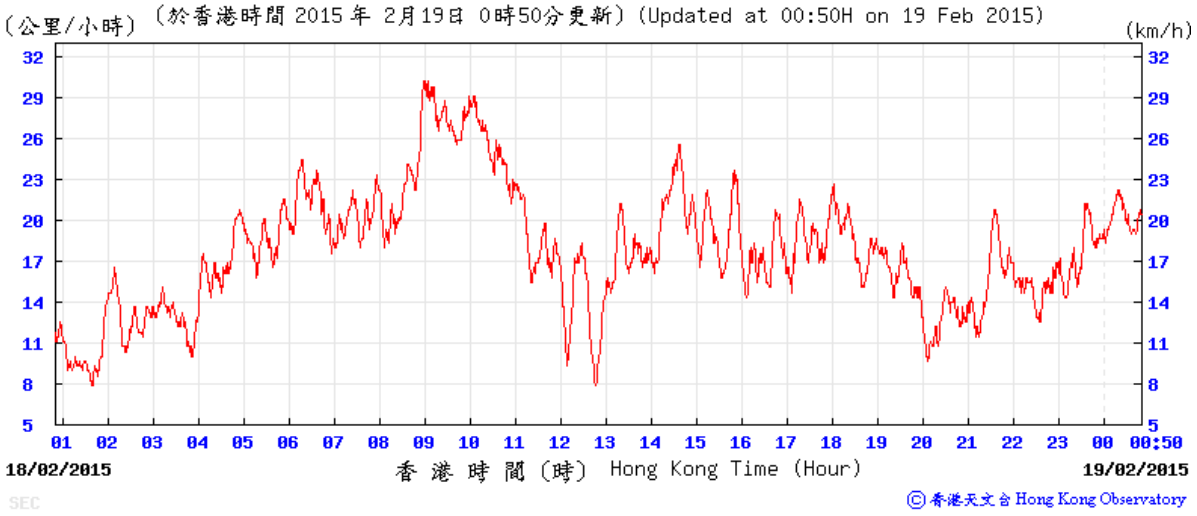




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

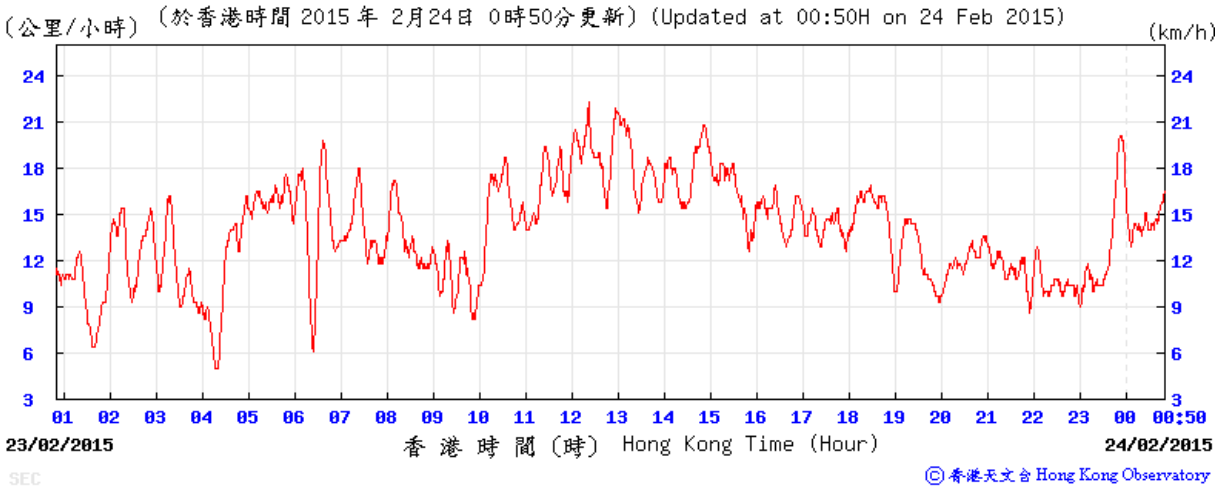
17-18 February 2015

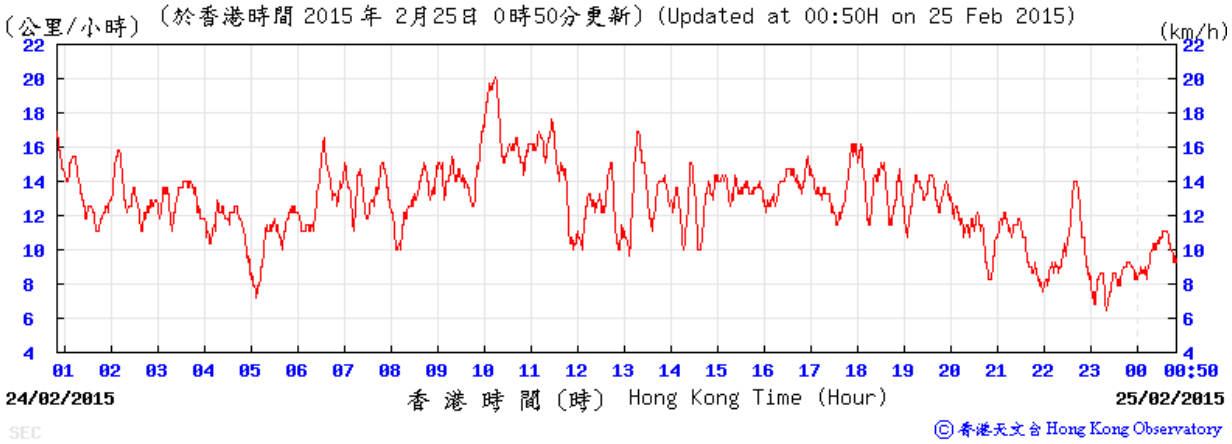




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

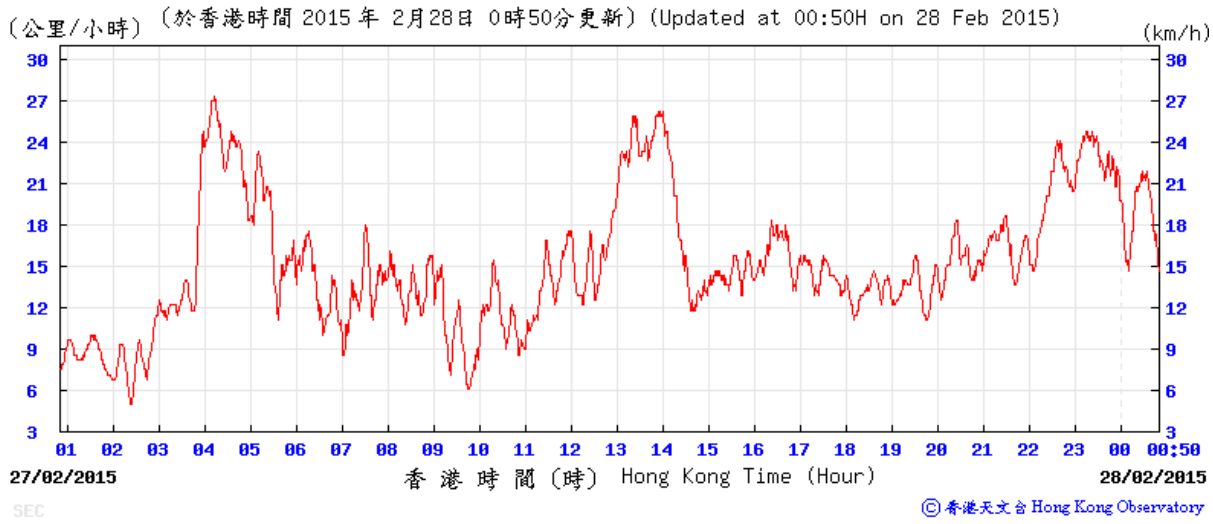
23-24 February 2015

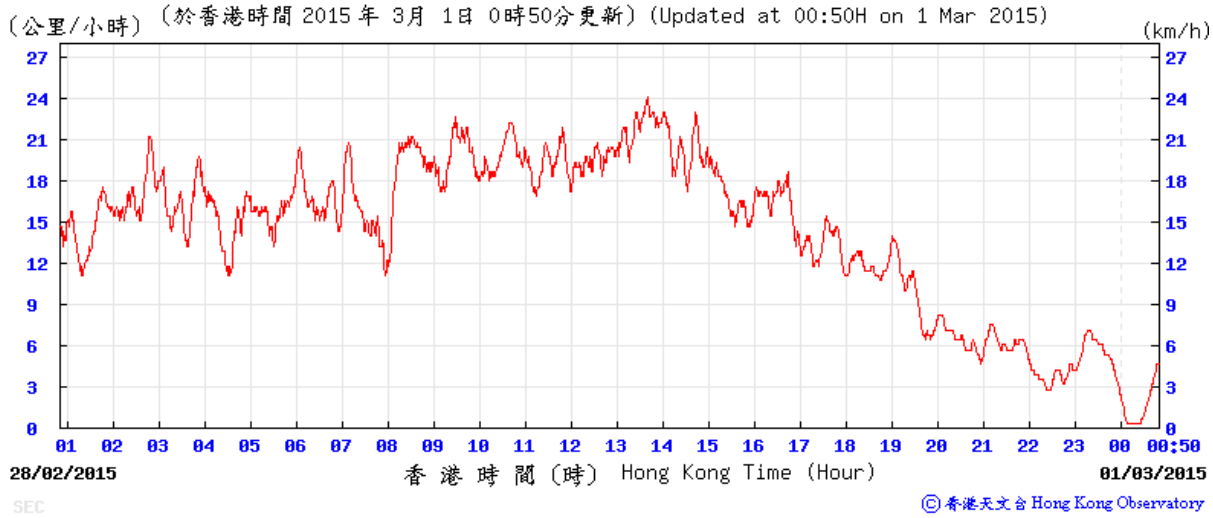




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

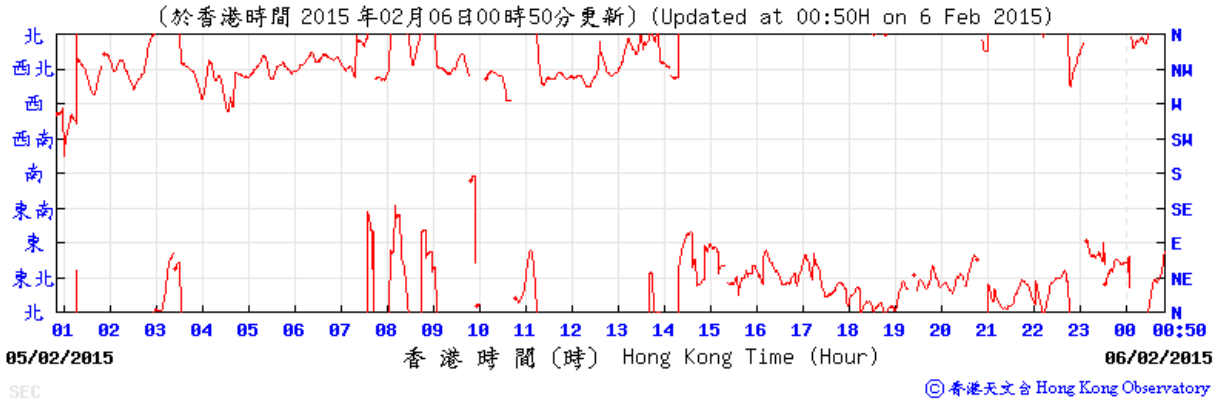
27-28 February 2015

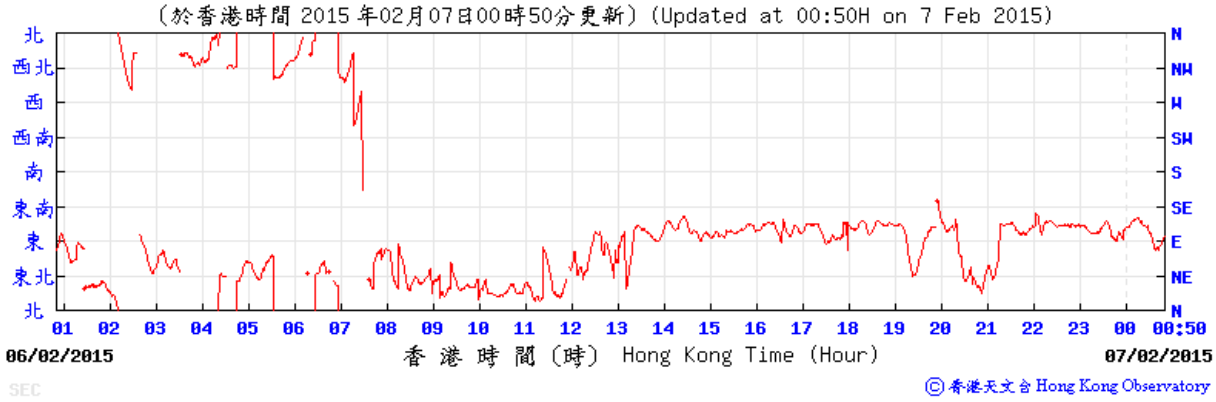




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

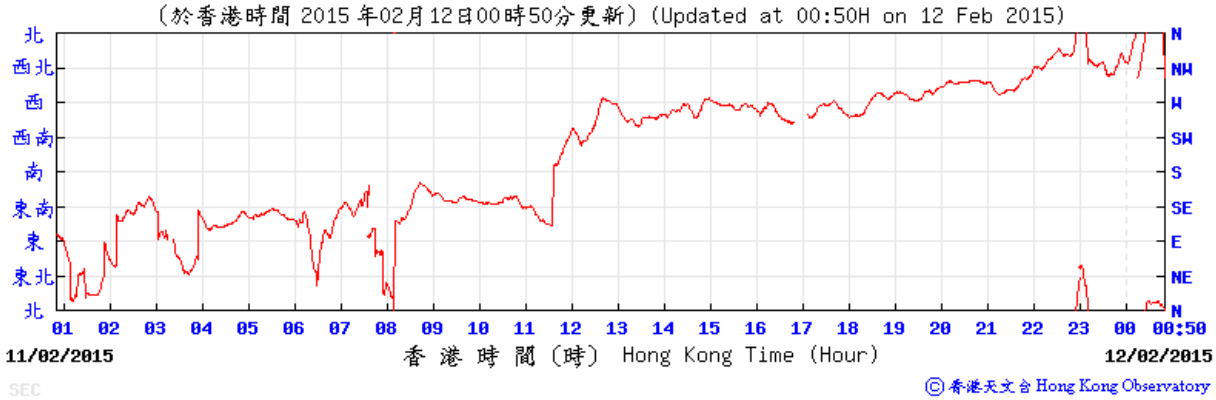
5-6 February 2015

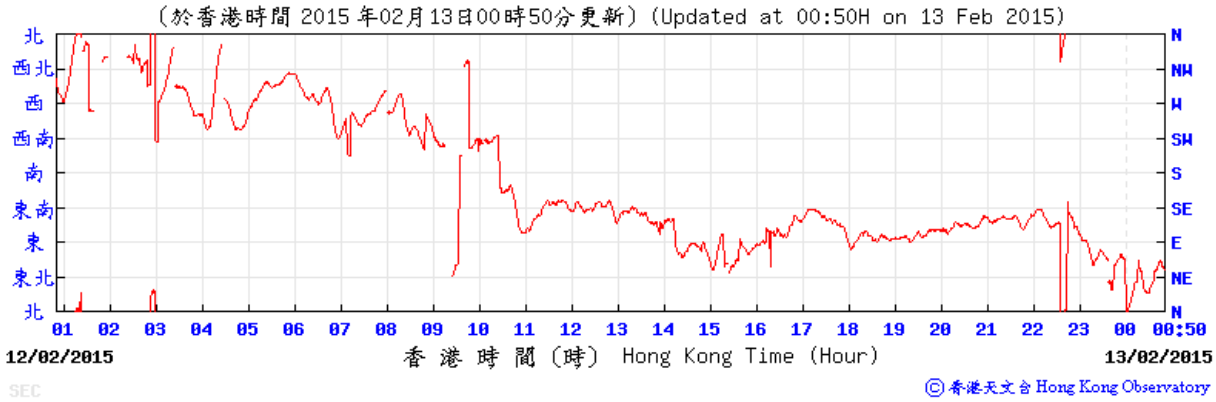




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

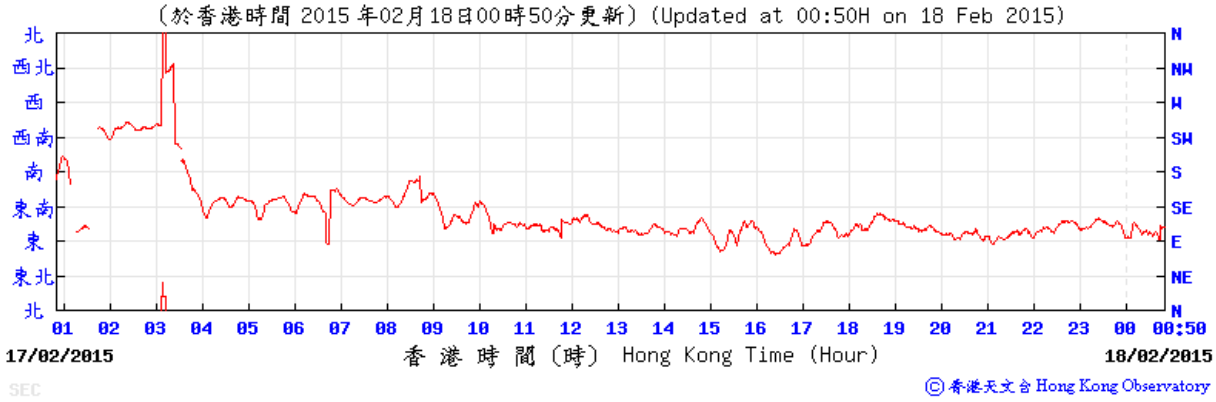
11-12 February 2015

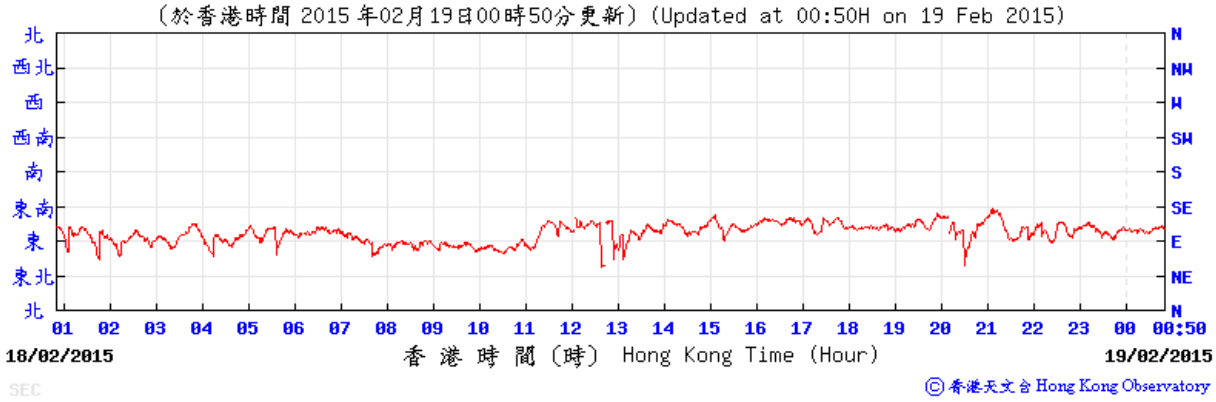




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

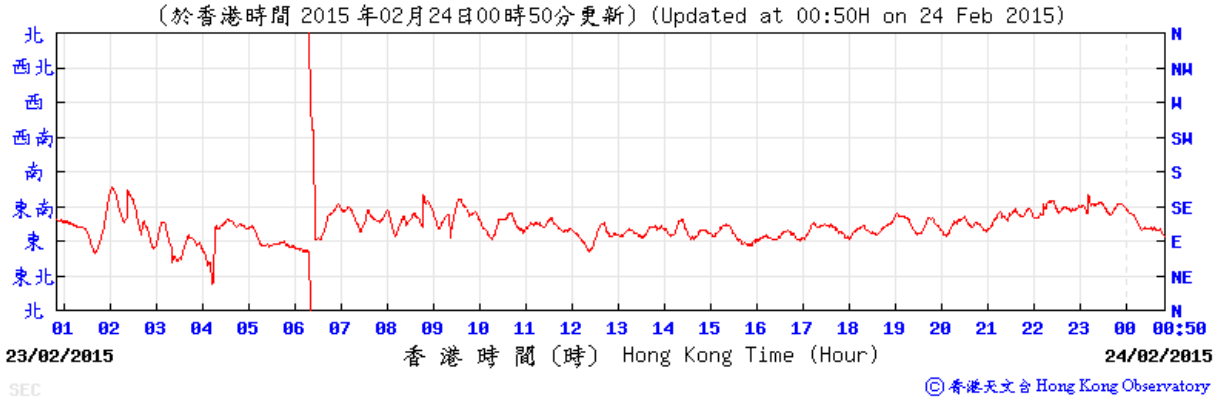
17-18 February 2015

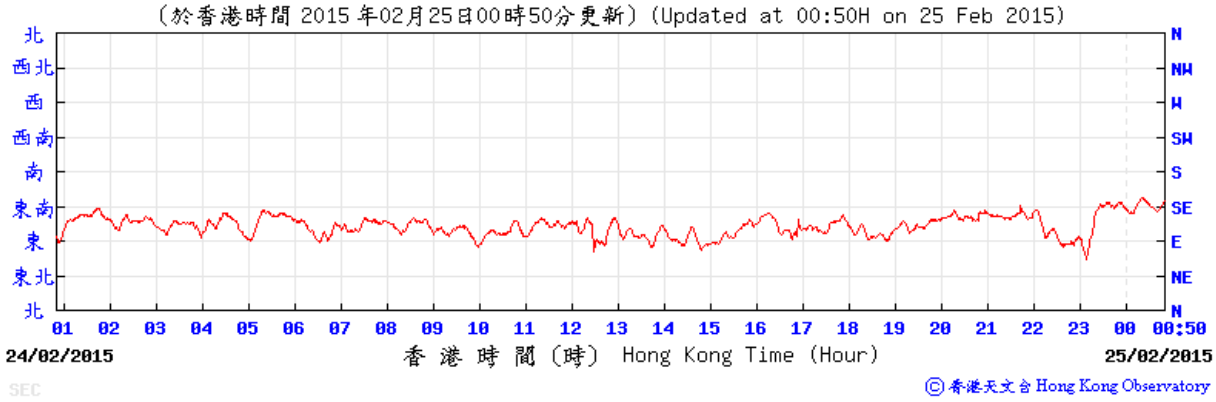




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

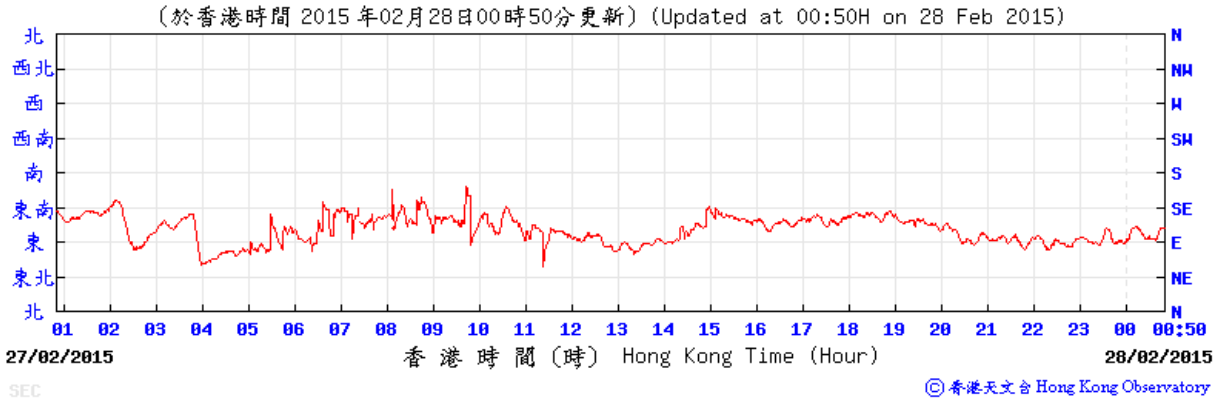
23-24 February 2015

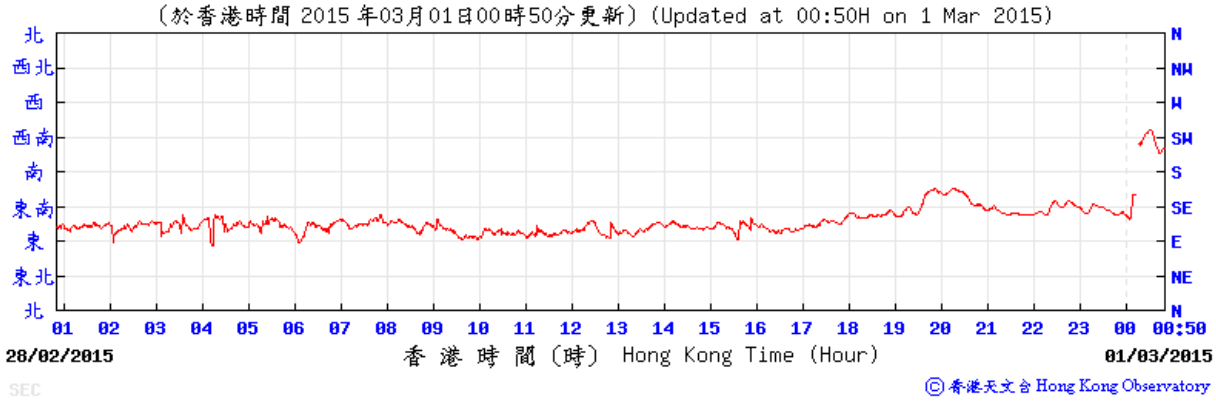




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

27-28 February 2015





APPENDIX F
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix F - Noise Monitoring Results

Location NMS-CA-4(1)/NMS-CA-3(2) - Block 1, Rhythm Garden (north-eastern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
2-Feb-15	Sunny	16:40	73.2	74.5	71.7	73.5	71	69.9
		16:45	74.1	75.4	72.8			
		16:50	74.0	75.5	72.2			
		16:55	73.3	74.5	71.9			
		17:00	73.1	74.5	71.6			
		17:05	73.4	74.6	72.0			
12-Feb-15	Sunny	16:30	73.2	75.0	71.1	72.5		67.2
		16:35	72.4	73.7	71.0			
		16:40	72.3	73.7	71.0			
		16:45	72.8	73.8	71.6			
		16:50	72.3	73.3	71.1			
		16:55	72.0	73.2	70.7			
18-Feb-15	Cloudy	13:39	73.2	74.5	71.6	73.3		69.4
		13:44	73.5	74.9	72.0			
		13:49	73.2	74.4	71.7			
		13:54	73.0	74.3	71.5			
		13:59	73.4	74.6	71.9			
		14:04	73.5	74.7	72.2			
24-Feb-15	Cloudy	15:30	70.1	71.3	68.0	70.4		70.4 Measured ≦ Baseline Level
		15:35	70.3	71.4	69.1			
		15:40	70.2	71.5	68.1			
		15:45	70.7	71.7	68.5			
		15:50	70.5	71.5	68.1			
		15:55	70.3	71.4	68.2			

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

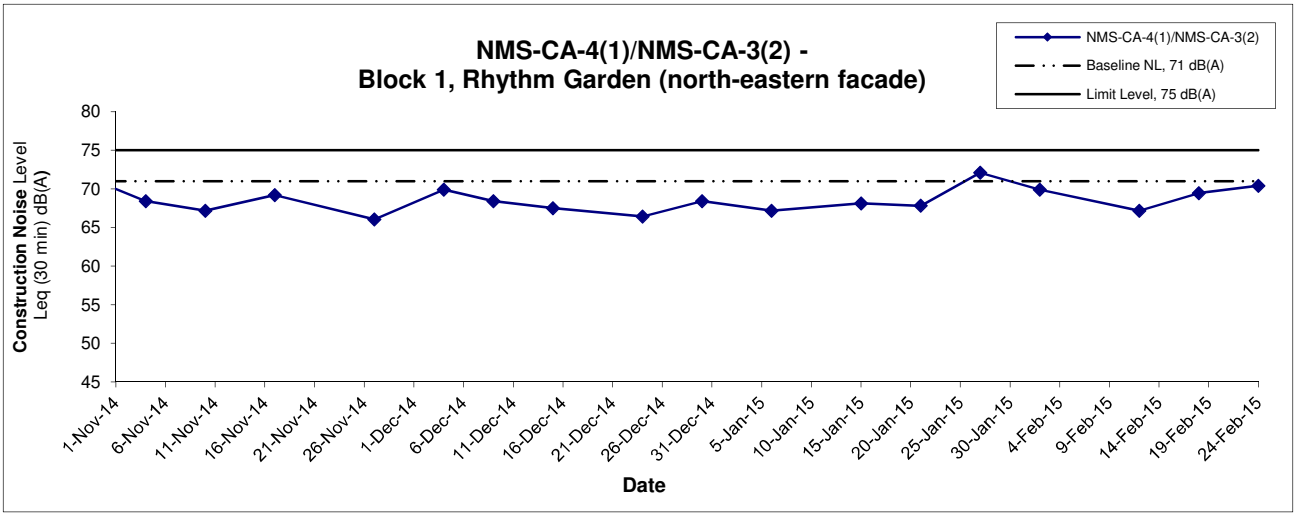
Appendix F - Noise Monitoring Results

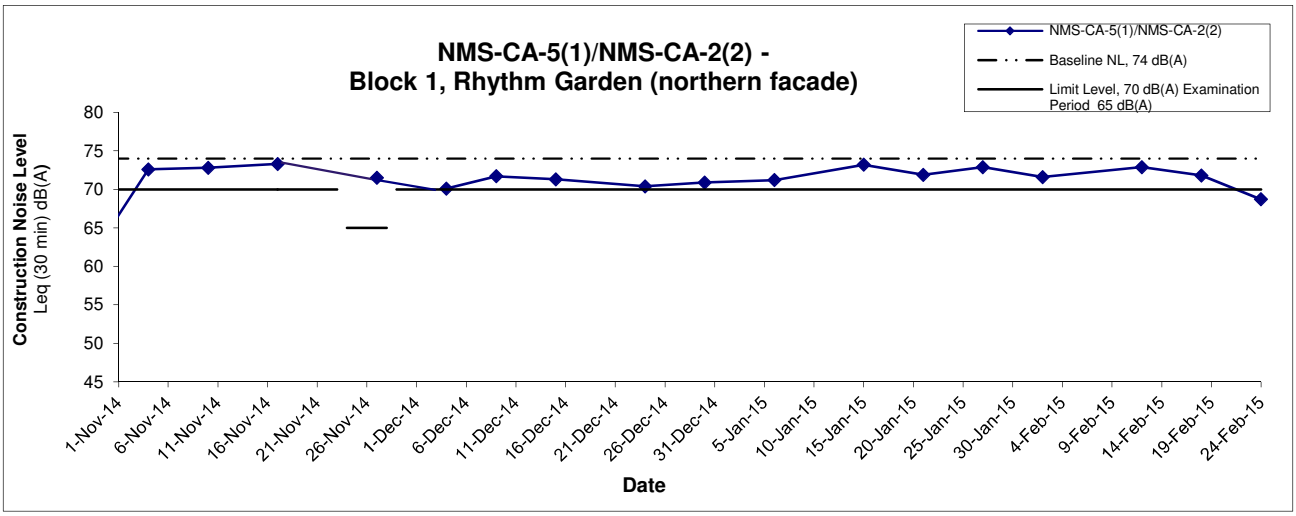
Location NMS-CA-5(1)/NMS-CA-2(2) - Block 1, Rhythm Garden (northern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
2-Feb-15	Sunny	16:00	71.7	72.9	70.2	71.6	74	71.6 Measured ≦ Baseline Level
		16:05	71.6	72.7	70.7			
		16:10	71.5	72.7	70.1			
		16:15	71.3	72.5	70.0			
		16:20	71.4	72.6	70.1			
		16:25	71.8	72.7	70.8			
12-Feb-15	Sunny	15:55	70.2	71.6	68.6	72.9		72.9 Measured ≦ Baseline Level
		16:00	71.7	73.3	69.7			
		16:05	73.9	76.5	69.9			
		16:10	73.4	75.6	70.4			
		16:15	71.9	74.1	69.2			
		16:20	74.8	77.5	70.2			
18-Feb-15	Cloudy	13:00	71.4	72.9	69.8	71.8		71.8 Measured ≦ Baseline Level
		13:05	71.6	72.9	70.5			
		13:10	71.8	73.2	70.2			
		13:15	72.1	73.4	70.6			
		13:20	71.9	73.2	70.5			
		13:25	71.8	73.2	70.1			
24-Feb-15	Cloudy	14:55	68.7	69.8	67.1	68.7		68.7 Measured ≦ Baseline Level
		15:00	68.8	70.3	67.1			
		15:05	68.9	70.5	67.0			
		15:10	68.7	70.2	67.1			
		15:15	68.6	69.9	67.1			
		15:20	68.5	69.8	67.0			

.

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Noise Levels





Remarks:

(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

(3) In case of Measured Level ≦ Baseline Level, only Measured Level is presented on the graphical presentation.

Title: Shatin to Central Link - Contract 1106 - Diamond Hill Station Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Mar 15	Project No.: MA12051 Appendix: F	CINOTECH

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: February 2015

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring
(Two Action Level exceedances were recorded as two complaints related to construction noise were received in February 2015. No Limit Level exceedance was recorded.)

APPENDIX H
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150205
Date	5 February 2015 (Thursday)
Time	13:30 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150205-R01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • The construction materials were placed near a tree at W8. Sufficient space should be provided between the tree and the materials. The tree protection zone should also be set up properly. ***Part E – Air Quality*** No environmental deficiency was identified during the site inspection. ***Part F – Cultural Heritage*** • No environmental deficiency was identified during the site inspection. ***Part G - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part H – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part I – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part J - Others*** • Follow-up on previous audit section (Ref. No.:150129), item 150129-O01is marked as a new item: 150205-R01 and follow up action is needed to be reviewed.	D 2, 3

	Name	Signature	Date
Recorded by	Kenneth Yuen		10 February 2015
Checked by	Dr. Priscilla Choy		10 February 2015

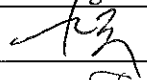
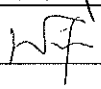
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150212
Date	12 February 2015 (Thursday)
Time	13:30 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150212-O01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • The construction materials (steel bar) were still placed near the tree at W8. Sufficient space should be provided between the tree and the materials. The tree protection zone should also be properly set up. In addition, a rope was tied on to a tree near the site entrance and it should be removed.	D 2, 3
150212-R02	***Part E – Air Quality*** • The breaking works area, haul road and work site near the ramp should be sprayed with water regularly to avoid dust generation. ***Part F – Cultural Heritage*** • No environmental deficiency was identified during the site inspection. ***Part G - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part H – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part I – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part J - Others*** • Follow-up on previous audit section (Ref. No.:150205), item 1500205-R01 is marked as a new item: 150212-O01 and follow up action is needed to be reviewed.	E 5

	Name	Signature	Date
Recorded by	Kenneth Yuen		16 February 2015
Checked by	Dr. Priscilla Choy		16 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150217
Date	17 February 2015 (Tuesday)
Time	13:30 – 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B – Water Quality • No environmental deficiency was identified during the site inspection. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual***	
150217-O01	• The steel bars were still placed near the tree at W8. Sufficient space should be provided between the tree and construction materials. The tree protection zone should also be properly set up.	D 2, 3
	Part E – Air Quality	
150217-R02	• Water should be sprayed on haul roads and where stone breaking work is being carried out to avoid dust generation.	E 5
	Part F – Cultural Heritage • No environmental deficiency was identified during the site inspection. ***Part G - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part H – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part I – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part J - Others*** • Follow-up on previous audit section (Ref. No.:150212), item 150212-O01 is marked as a new item: 150217-O01 and follow up action is needed to be reviewed.	

	Name	Signature	Date
Recorded by	Kenneth Yuen		24 February 2015
Checked by	Dr. Priscilla Choy		24 February 2015

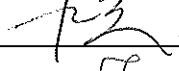
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150226
Date	26 February 2015 (Thursday)
Time	13:30 – 16:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150226-R03	***Part B – Water Quality*** • The Contractor is reminded to properly maintain the waste water pool near the site entrance and ensure the functionality of the water pump at the pool to prevent overflow of untreated waste water into the discharge point. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection.	B 7
150226-O01	***Part D – Landscape & Visual*** • The steel bars were still placed near the tree at W8. Sufficient space should be provided between the tree and construction materials. The tree protection zones for the trees at W8 and A1 should also be set up properly. ***Part E – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part F – Cultural Heritage*** • No environmental deficiency was identified during the site inspection. ***Part G - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection.	D 2, 3
150226-O02	***Part H – Waste/Chemical Management*** • Chemical container next to the tree: DT 1847 near the ramp was observed without a drip tray. Tray should be provided underneath the container to avoid chemical spillage. ***Part I – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part J - Others*** • Follow-up on previous audit section (Ref. No.:150217), item 150217-O01 is marked as a new item: 150226-O01 and follow up action is needed to be reviewed.	H 10

	Name	Signature	Date
Recorded by	Kenneth Yuen		2 March 2015
Checked by	Dr. Priscilla Choy		2 March 2015

APPENDIX I
EVENT AND ACTION PLANS

Event and Action Plan for Air Quality Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1106 ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing;	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2.Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease addtional monitoring	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

LIMIT LEVEL				
1.Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
2.Exceedance for two or more consecutive samples	1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Noise Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1106 ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. .	1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures	1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Landscape and Visual during Construction Phase

Action Level	Works Contract 1106 ET	IEC	ER	Contractor
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures.	1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures.	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

APPENDIX J
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Cultural Heritage Impact (Construction Phase)								
S4.8.1	CH1	Submit an Archaeological Action Plan. Survey-cum-excavation shall be conducted prior to the construction works at the former Tai Hom Village site.	Salvage cultural remains at the Former Tai Hom Village Site	Contractor	Former Tai Hom Village Site	Prior to the Construction Phase of DIH site	• AMO's requirements	^ ^
S4.8.2	CH2	Submit a Conservation Plan for the Former Royal Air Force Hangar and the Old Pillbox to AMO for agreement.	Proposal for conservation of 2 historical buildings	Contractor	Former Tai Hom Village Site	Prior to the Construction Phase of DIH site	• AMO's requirements • Principles for the Conservation of Heritage Sites in China • Burra Charter, the Australia's ICOMOS Charter for Places of Cultural Significance	^
Ecology (Construction Phase)								
S5.7	E1	<u>Good Site Practices</u> Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for	Minimise ecological impacts	Contractor	All construction sites	During Construction	• ProPECC PN 1/94	*

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented: • No on-site burning of waste; • Waste and refuse in appropriate receptacles.						^ ^
Landscape & Visual (Construction Phase)								
S6.12	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u> • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.						* ^
Table 6.9	LV2	<u>Decorative Hoarding</u> • Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <u>Management of facilities on work sites</u> • To provide proper management of the facilities on the sites, give	Minimize the visual and landscape impact of the Project during construction phase	Contractor	Within Project Site	Detailed design and construction stage	• EIAO – TM •ETWB TCW 2/2004 • ETWB TCW 3/2006	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. <u>Tree Transplanting</u> • Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.						^
Air Quality (Construction Phase)								
/	A1	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	APCO	^
Construction Dust Impact								
S7.6.6	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust	*

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
							impact to meet HKAQO and TM-EIA criteria	
S7.6.6	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m^2 to achieve the dust removal efficiency	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	*
S7.6.6	D3	• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;						^ ^ ^ *

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;						^
		• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;						N/A
		• Any skip hoist for material transport should be totally enclosed by impervious sheeting;						^
		• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;						^
		• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;						^
		• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and						^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						N/A
S7.6.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	^
Construction Airborne Noise								
S8.5.6	AN1	Implement the following good site practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible	Control construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.						^
S8.5.6	AN2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN4	Use “Quiet” plant	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
			noise					
S8.5.6	AN6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	•TM-EIA	^
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> • At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m^3/s a sedimentation basin of $30m^3$ would be required and for a flow rate of 0.5 m^3/s the basin would be 150 m^3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and						^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than $50m^3$ 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						* ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		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 be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, 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, especially for areas located near steep slopes • 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 sited wheel washing facilities should be provided at every construction site exit where practicable. 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. • Oil interceptors should be provided in the drainage system						^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited 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 water sensitive receivers nearby • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices.						N/A ^ ^ ^ *
S10.7.1	W3	<u>Sewage Effluent</u> • Portable chemical toilets and sewage holding tanks are	To minimize water quality from sewage effluent	Contractor	All construction sites where	Construction stage	• Water Pollution Control Ordinance	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.			practicable		• TM-water	
S10.7.1	W5	Accidental Spillage In order to prevent accidental spillage of chemicals, the following is recommended: • Proper storage and handling facilities should be provided; • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains; • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings; and • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	 * * ^ ^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	On-site sorting of C&D material • Geological assessment should be carried out by competent	Separation of unsuitable rock from ending up at	Contractor	All construction sites	Construction stage	• DEVB TC(W) No. 6/2010	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc.). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc. should also be explored.	concrete batching plants and be turned into concrete for structural use					
S11.5.1	WM2	<u>Construction and Demolition Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;	Good site practice to minimize the waste generation and recycle the	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions)	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and EPD and get their approval before implementation	C&D materials as far as practicable so as to reduce the amount for final disposal				Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	^ ^ N/A ^ ^ ^
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction	Good site practice to minimize the waste generation and recycle the C&D materials as far as	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	practicable so as to reduce the amount for final disposal				• Waste Disposal Ordinance • ETWB TCW No.19/2005	^
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						^ ^
S11.5.1	WM6	<u>Chemical Waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450L unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; be enclosed on at	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All Construction Sites	Construction Stage	• Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^ ^ ^

SCL Works Contract 1106 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; be covered to prevent rainfall entering; and be arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; and be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						^

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

• Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

N/A Not Applicable

APPENDIX K
WASTE GENERATION IN THE REPORTING MONTH

Contract No: MTR SCL 1106 - Diamond Hill Station
Date of Report: February, 2015

Monthly Summary Waste Flow Table for 2015

Monthly	Actual Quantities of C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly					Remarks
	Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in other Projects (See Note 2)	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste (See Note 3)	Others, e.g. general refuse	
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)	
Jan	26.502	0.000	0.000	25.020	1.482	0.000	0.000	0.389	0.000	0.000	0.062	
Feb	17.022	0.000	0.000	14.903	2.119	0.000	0.000	0.000	0.000	0.000	0.085	
Mar												
Apr												
May												
Jun												
Sub-total	43.525	0.000	0.000	39.924	3.601	0.000	0.000	0.389	0.000	0.000	0.147	
Jul												
Aug												
Sept												
Oct												
Nov												
Dec												
Total	43.525	0.000	0.000	39.924	3.601	0.000	0.000	0.389	0.000	0.000	0.147	

Notes:

1) Assume the densities of Rock, Soil, Mix Rock and Soil, are Regular Spoil to be 2.0 tonnes/m^3. Assumption the densities of general refuse is 1.0 tonnes/m^3
2) Inert C&D material was delivered to Kai Tak Barging Point Facility (Contract 1108A) & Contract 1108.
3) Chemical waste includes waste diesel oil. It is assumed density of diesel oil to be 0.8kg/L.
4) figures are rounded up to 3 decimal places

APPENDIX L
CUMULATIVE LOG FOR COMPLAINT LOGS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix L - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecution

Reporting Month	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Prosecutions in Reporting Month
March 2013	0	0	0
April 2013	0	0	0
May 2013	0	0	0
June 2013	0	0	0
July 2013	0	0	0
August 2013	0	0	0
September 2013	0	0	0
October 2013	0	0	0
November 2013	0	0	0
December 2013	0	0	0
January 2014	0	0	0
February 2014	0	0	0
March 2014	0	0	0
April 2014	0	0	0
May 2014	0	0	0
June 2014	0	0	0
July 2014	0	0	0
August 2014	0	0	0
September 2014	0	0	0
October 2014	0	0	0
November 2014	0	0	0
December 2014	0	0	0
January 2015	0	0	0
February 2015	3	0	0
Total	**3**	**0**	**0**

Environmental Complaint Log (February 2015)

Contractor Log Ref.	Complaint Location/ Nature	Incoming Complaint Reference no.	Complainant/ Date or Period of Complaint Received	Date of Complaint received from EPD	Details of Complaint	Investigation/ Mitigation Action	Status
CP 16	SCL sites at Diamond Hill / Construction Noise	EP3/K11/RE /00001881-2015	A resident living in Diamond Hill/ Late January 2015	3rd February 2015	As per information from EPD and MTR, the complainant complained about the construction noise generated from SCL sites after midnight between 03:00am and 04:00am during late January 2015.	According to the information provided by the Contractor, no construction activity was being carried out during the time of complaint in late January 2015. All construction works carried out in late January 2015 were in compliance with the conditions stated in the valid CNP (Permit No.: GW-RE1325-14). The ad-hoc inspections conducted by the Contractor also revealed that no construction activity was carried out during restricted hours on 27th January 2015 and 2nd February 2015. It is observed that the Contractor has implemented appropriate noise mitigation measures (like use of acoustic mat & quiet PME) to reduce noise nuisance to adjacent NSRs. The site workers were also briefed/trained to ensure that the conditions stated in permits are strictly followed. Ad-hoc inspections were also carried out regularly. The Contractor also took immediate actions after the complaint was received (with additional toolbox talks and training) to ensure compliance with CNP conditions. The environmental conditions of the site and effectiveness of the implementation of mitigation measures will be continuously	Closed
CP 17	SCL sites at Diamond Hill / Construction Noise	EP3/K11/RE /00002136-2015	A resident living in Rhythm Garden/ Late January 2015	3rd February	As per information from EPD and MTR, the complainant complained about the construction noise generated from SCL sites during midnight to around 01:00am for a few consecutive days during late January 2015.		Closed

						reviewed.	
CP 18	SCL sites at Diamond Hill / Muddy Water Discharge	EP3/K11/RE /00001087-2015	---/ January 2015	3rd February	The complainant complained about the soil/muddy water discharge from the construction activities of SCL sites into Kai Tak Nullah. EPD conducted site inspections on 10, 19 and 23 January 2015 and observed a thin layer of muddy sediment at Kai Tak Nullah adjacent to the sites.	The Contractor has provided proper site drainage system and wastewater treatment system to collect and treat wastewater generated by the construction works. No adverse finding on water quality, especially effluent quality, was recorded in the regular weekly site inspections in January 2015. Results of daily checks and tests conducted in January 2015 showed that all qualities of wastewater tested complied with the corresponding conditions stated in the valid Effluent Discharge License (Reference no.: WT00014959-2012). In addition, as observed from the records of Kai Tak Nullah condition inspection in January 2015, the culvert linking to the designated discharge point was free of sediment and no sign of wastewater overflow was observed. However a thin layer of muddy sediment was observed elsewhere at Kai Tak Nullah. It is believed that the wastewater was properly collected and treated before discharging at designated discharge point and no substandard effluent was discharged from SCL 1106 construction site in January 2015. The environmental conditions of the site and effectiveness of mitigation measures implementation will be continuously reviewed	Closed

Log for Notifications of Summons (February 2015)

Log Ref.	Location/Nature	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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Log for Successful Prosecutions (February 2015)

Log Ref.	Location/Nature	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
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Appendix G

22nd EM&A Report for Works Contract 1107 –
Diamond Hill to Kai Tak Tunnels

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No.22

[Period from 1 to 28 February 2015]

Works Contract 1107 – Diamond Hill to Kai Tak Tunnels

(March 2015)

Certified by: Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 10th March 2015

Chun Wo – SELI Joint Venture

Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tak Tunnels

Monthly Environmental Monitoring and Audit Report For February 2015

(Version 2.0)

Certified By

Dr. Priscilla Choy
(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 22nd monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for **MTR Shatin to Central Link (SCL) Works Contract 1107 – Diamond Hill to Kai Tak Tunnels**. This report documents the findings of EM&A Works conducted from 1 to 28 February 2015.

Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:

- Removal of old foundation works;
- Tunnels construction at Cut and Cover tunnels;
- Site preparation works; and,
- TBM excavation.

Variation in Construction Method

3. Environmental Monitoring and Audit Progress:

As of the reporting month, an alignment section of approximately 90m long between DIH and KAT under this Works Contract 1107 will be constructed by the cut-and-cover method, instead of bored tunnelling method as assessed in the approved Environmental Impact Assessment (EIA) Report of Shatin to Central Link - Stabling Sidings at Hung Hom Freight Yard (hereafter referred to as SCL (HHS)) [Register No.: AEIAR-164/2012] due to increased construction risk caused by potential left-in piles. Also, pile removal works would be conducted if reinforced bored piles are identified along the bored tunnelling section. Application for variation of Environmental Permit (VEP) was approved by the EPD for the varied construction method. The updated EP (EP No.: EP-438/2012/F) was issued by EPD on 15 July 2014. Application for variation of Environmental Permit (VEP) was approved by the EPD for including the installation and operation of a Mobile Batching Machinery Equipment at Diamond Hill during the construction of SCL (TAW-HUH). The updated EP (EP No.: EP-438/2012/G) was issued by EPD on 14 August 2014. Application for variation of Environmental Permit (VEP) was approved by the EPD for varying Figure 11 of the previous Environment Permit. The updated EP (EP No.: EP-438/2012/H) was issued by EPD on 10 September 2014.

4. A summary of the monitoring activities in this reporting period is listed below:

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours
  Noise Monitoring Station ID
  - NMS-CA-4(1)(3)/NMS-CA-3(2)(3) (Block 1, Rhythm Garden (north-eastern façade)) 4 times
  - NMS-CA-5(1)(4)/NMS-CA-2(2)(4) (Block 1, Rhythm Garden (northern façade)) 4 times
- Construction Dust (24-hour TSP) Monitoring
  Dust Monitoring Station ID
  - DMS-4(1)(5)/ DMS-3(2)(5) (Block 1, Rhythm Garden) 5 times

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Noise monitoring on NMS-CA-4[(1)]/ NMS-CA-3[(2)] (Block 1, Rhythm Garden (north-eastern façade) is carried out by Environmental Team of SCL Works Contract 1106.
(4) Noise monitoring on NMS-CA-5[(1)]/ NMS-CA-2[(2)] (Block 1, Rhythm Garden (northern façade) is carried out by Environmental Team of SCL Works Contract 1106.
(5) Dust monitoring on DMS-4[(1)]/ DMS-3[(2)] (Block 1, Rhythm Garden) is carried out by Environmental Team of SCL Works Contract 1106.

Waste Management

5. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Details of waste management data is presented in Section 5 and **Appendix K**.

Landscape and Visual

6. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 12 and 25 February 2015. Most of the necessary mitigation measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 6.

Environmental Site Inspection

7. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 5, 12, 18 and 25 February 2015. The representative of the IEC joined the site inspection on 5 February 2015. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance/Non-conformance/Complaint/Summons and Successful Prosecution

8. No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.

9. No non-compliance event was recorded during the reporting period.

10. No Project related environmental complaint and notification of summons/ successful prosecution was received in this reporting period.

Future Key Issues

11. Major site activities for the coming reporting month will include:

- Removal of old foundation works;
- Tunnel construction at Cut and Cover tunnels;
- Site preparation works and
- TBM excavation.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Chun Wo – SELI Joint Venture (CSJV) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL)Works Contract 1107 – Diamond Hill to Kai Tak Tunnels (hereafter referred to as the Project).

Purpose of the Report

1.2 This is the 22nd EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 28 February 2015. The major construction works for Contract 1107 commenced on 27 May 2013.

Structure of the Report

1.3 The structure of the report is as follows:

Section 1: **Introduction -** details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures -** summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance -** summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

2.2 The construction of the SCL (TAW-HUH) and SCL (HHS) have been divided into a series of civil construction works contracts. This Works Contract 1107 covers the construction of running tunnel from Kai Tak (KAT) North to SCL Diamond Hill (DIH) Station which is under the approved SCL (HHS) EIA Report. This construction contract was awarded to Chun Wo - SELI Joint Venture (CSJV) in March 2013.

General Site Description

2.3 The construction of tunnel from KAT to DIH will employ either cut-and-cover method or bored tunneling. The alignment and works area for the Works Contract 1107 are shown in **Figure 1**.

Construction Programme and Activities

2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.

- Removal of old foundation works;
- Tunnels construction at Cut and Cover tunnels;
- Site preparation works; and,
- TBM excavation.

Project Organisation

2.5 The project organizational chart and contact details are shown in **Figure 4.**

Status of Environmental Licences, Notification and Permits

2.6 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in Table 2.1. A new Construction Noise Permit (CNP): GW-RE0158-15 was granted in this reporting month.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012/H	10/09/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
Ref no.: 357051	18/03/2013	N/A	Valid
Billing Account for Construction Waste Disposal			
Account No. 7017163	26/03/2013	N/A	Valid
Registration of Chemical Waste Producer			
5213-286-C3798-01	29/04/2013	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00015861-2013	13/05/2013	31/05/2018	Valid
WT00016009-2013	23/05/2013	31/05/2018	Valid
Construction Noise Permit (CNP)			
GW-RE0884-14	14/08/2014	04/02/2015	Valid
GW-RE1496-14	05/01/2015	28/06/2015	Valid
GW-RE0085-15	31/01/2015	30/07/2015	Valid
GW-RE0158-15	17/02/2015	11/06/2015	Valid

Summary of EM&A Requirements

2.7 The EM&A programme under Works Contract 1107 require regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

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

2.9 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring stations. Since access to some of the proposed monitoring locations stated in the EM&A Manual was rejected; alternative locations were proposed and agreed by the ER (Engineer's Representative), IEC (Independent Environmental Checker) and EPD (Environmental Protection Department). The construction noise monitoring locations are listed in **Table 3.1** and shown in **Figure 2**.

Table 3.1 Regular Construction Noise Monitoring Location

Regular Construction Noise Monitoring Location[4][5]	Description	Type of Measurement
NMS-CA-4[1]/ NMS-CA-3[2]	Block 1, Rhythm Garden (north-eastern façade)	Façade
NMS-CA-5 [1] [3]/ NMS-CA-2[2][3]	Block 1, Rhythm Garden (northern façade)	Façade

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.
(4) Noise monitoring on NMS-CA-4[1]/ NMS-CA-3[2] (Block 1, Rhythm Garden (north-eastern façade) is carried out by Environmental Team of SCL Works Contract 1106.
(5) Noise monitoring on NMS-CA-5[1]/ NMS-CA-2[2] (Block 1, Rhythm Garden (northern façade) is carried out by Environmental Team of SCL Works Contract 1106.

Monitoring Parameter and Frequency

3.2 Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period of monitoring stations at Rhythm Garden is shown in **Appendix D**.

3.3 The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). L_{Aeq} (30min) (as six consecutive $L_{eq,\ 5\text{-}min}$ readings) was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays.

Monitoring Equipment and Methodology

Field Monitoring

3.4 The monitoring procedures are as follows:

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure good 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
  - measurement time : 5 minutes (obtaining six consecutive $L_{eq,5min}$ readings for a $L_{eq,30\ min}$ reading)

- Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station was checked with the portable wind meter. 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.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- At the end of the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- A façade correction of +3dB(A) shall be made to the noise parameter obtained by free field measurement.

Monitoring Equipment

3.5 The sound level meters and calibrator used for the noise measurement, as listed in **Table 3.2**, compile with the IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters are included in **Appendix C**.

Table 3.2 Noise Monitoring Equipment

Monitoring Equipment	Model (Serial no.)
Sound Level Meter	SVAN 955 (Serial no.: 12553 and 14303) SVAN 957 (Serial no.: 21460 and 23853)
Calibrator	SV30A (Serial no.: 24803, 24791 and 24780) B&K 4231 (Serial no.: 2412367)

Maintenance and Calibration

3.6 Maintenance and Calibration procedures were as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix C**.

Action & Limit Level for Construction Noise Monitoring

3.7 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix I.**

Continuous Noise Monitoring

3.8 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared submitted under EP Condition 2.9 and Condition 2.10 respectively, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1107.

Regular Construction Dust Monitoring

3.9 The proposed dust monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are listed in **Table 3.3** and shown in **Figure 3**. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.3 Dust Monitoring Location

Regular Dust Monitoring Location	Description
DMS-4(1)(3)/ DMS-3(2)(3)	Block 1, Rhythm Garden

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Dust monitoring on DMS-4(1)/DMS-3(2) (Block 1, Rhythm Garden) is carried out by Environmental Team of SCL Works Contract 1106.

Monitoring Parameter and Frequency

3.10 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**. The TSP monitoring at Rhythm Garden was conducted as per the schedule presented in **Appendix D**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring(1)	Throughout the construction period	24-hour TSP	Once per 6 days

Note:
(1) 1- hour TSP shall be conducted when one documented valid complaint is received.

Monitoring Equipment

3.11 **Table 3.5** summarizes the equipment used for the dust monitoring.

Table 3.5 Dust Monitoring Equipment

Equipment	Model and Make	Qty.
HVS	Tisch Environmental, Inc.; Model no. TE-5170, Serial no.: 2352	1
Calibration Orifice	Tisch Environmental, Inc.; Model no. TE – 5025A Orifice ID: 0993 and 2896	2

Instrumentation

3.12 High Volume Samplers (HVS) connected with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 Appendix B (Part 50).

HVS Installation

3.13 The following guidelines were adopted during the installation of HVS:

- Sufficient support was provided 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 samplers were more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

3.14 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter. A HOKLAS accredited laboratory, Wellab Ltd. (HOKLAS Registration No. 083), was responsible for the preparation of pre-weighed filter papers for Cinotech's monitoring team.

3.15 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

3.16 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

3.17 Operating/analytical procedures for the TSP monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
- The power supply was checked to ensure the sampler worked properly.
- The filter holding frame and the area surrounding the filter were cleaned.
- On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- 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 to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminum strip.
- A new flow rate record chart was set into the flow recorder.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet before and after sampling.
- The elapsed time and other relevant information was recorded. After sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed and sent to the Wellab Ltd. for weighing.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment 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%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

3.18 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.
- Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. Copies of calibration certificates are attached in **Appendix C**.
- The HVS calibration orifice will be calibrated annually.

Action and Limit Levels for Dust Monitoring

3.19 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix I.**

Landscape and Visual

3.20 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The Event / Action Plan (EAP) for landscape and visual is presented in **Appendix I**. The implementation status is given in **Appendix J**.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix J**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (January 2015)	13th February 2015

5 MONITORING RESULTS

Regular Construction Noise Monitoring

5.1 A total of 8 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. No exceedance of the limit level was recorded at designated monitoring stations.

5.2 The noise monitoring results recorded at NMS-CA-5[(1)]/NMS-CA-2[(2)] (Block 1, Rhythm Garden (northern façade)) on 2, 12 and 18 February exceeded the daytime construction noise criterion. However, the results are not considered as exceedance the results were below the baseline noise level; the noise monitoring result recorded on 24 February did not exceed the daytime construction noise criterion. All noise monitoring results recorded at NMS-CA-4[(1)]/NMS-CA-3[(2)] (Block 1, Rhythm Garden (north-eastern façade)) in February did not exceed the daytime construction noise criterion.

5.3 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.

5.4 The noise monitoring results together with their graphical presentations are presented in **Appendix F**.

5.5 No exceedance of the Action and Limit Levels of construction noise due to the Project was recorded during the reporting period.

Regular Dust Monitoring

5.6 A total of 5 sets of 24-hour TSP monitoring were carried out at the designated monitoring stations during normal weekdays of the reporting period by ET of SCL Works Contract 1106. The monitoring results together with their graphical presentations are presented in **Appendix E** and a summary of the dust monitoring results in this reporting month is given in **Table 5.1**.

Table 5.1 Summary Table of Dust Monitoring Results during the reporting month

Parameter	Minimum µg/m³	Maximum µg/m³	Average µg/m³	Action Level, µg/m³	Limit Level, µg/m³
24-hr TSP (DMS-4[(1)(3)]/ DMS-3[(2)(3)])	41.8	152.8	81.4	160.4	260

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Dust monitoring on DMS-4[(1)]/DMS-3[(2)] (Block 1, Rhythm Garden) is carried out by Environmental Team of SCL Works Contract 1106.

5.7 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.

5.8 Wind monitoring data were obtained from Kai Tak Meteorological Station of Hong Kong Observatory and shown on **Appendix E**.

5.9 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during

the reporting period.

Waste Management

5.10 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes like plastics and paper/cardboard packaging materials. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.2**. 2,295m^3 of C&D materials, 45m^3 of general refuse, and no chemical waste were generated and disposed; No plastic but 7,370kg of metals and 120kg of paper/cardboard were generated and recycled during this reporting month. Details of waste management data is presented in **Appendix K**.

Table 5.2 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) [(a)]	C&D Materials (non-inert) [(b)]				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/ cardboard	Plastics	Metals
February 2015	*2,295m^3*	*45 m^3*	*0 kg*	*120 kg*	*0 kg*	*7,370 kg*

Notes:
(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil,
(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

Landscape and Visual

5.11 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 12 and 25 February 2015. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audit

6.1 Site audit was carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audit are attached in **Appendix H**.

6.2 Site audits were conducted on 5, 12, 18 and 25 February 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 5 February 2015. No site inspection was conducted by EPD on the reporting month. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix J**.

6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	---	---	---
Noise	---	---	---
Landscape and Visual	---	---	---
Air Quality	---	---	---
Waste / Chemical Management	28 January 2015	Reminder: Contractor was reminded to provide drip tray underneath the oil drum at TBM workshop to avoid oil spillage.	As observed on 5 Feb., the oil drum was removed.
	5 February 2015	Observation: Chemical containers and oil drum were placed on the ground at segment area near East Gate without a drip tray. Tray should be provided underneath the containers and oil drum to prevent chemical/oil spillage.	As observed on 12 Feb., drip tray was provided underneath the chemical containers and oil drum to prevent chemical/oil spillage.
	18 February 2015	Observation: General refuses were disposed at the recycling bins. The Contractor should remind workers that the recycling bins are strictly for the disposal of recyclable materials only and general refuses should be disposed at a separate container. The Contractor should also clear the refuses regularly to avoid accumulation.	As observed on 25 Feb., The general refuses had been removed and no general refuses were disposed at the recycling bins.
	25 February 2015	Reminder: The barrels near the tree at the soil mixing area should be placed further away from the tree. A drip tray should also be placed underneath the container to avoid chemical spillage.	The follow up action will be reported in the next reporting month
Permits/Licenses	---	---	---

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

7.1 No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period. The summary of exceedance is provided in **Appendix G**.

Summary of Environmental Non-Compliance

7.2 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

7.3 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix L**.

Summary of Environmental Summon and Successful Prosecution

7.4 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix L**.

8 FUTURE KEY ISSUES

Construction Programme for the Next Month

8.1 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Removal of old foundation works;
- Tunnel construction at cut and cover tunnels;
- Site preparation works and
- TBM excavation.

Key Issues in the Next Month

8.2 Key issues to be considered in the coming month include:

- Dust impact from excavating works;
- Dust arising from loading, unloading, transfer, handling or storage of bulk cement or dry PFA and bentonite;
- Treatment of wastewater from shaft excavation works;
- To ensure the performance of sorting of C&D materials at source (during generation); and
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at Rhythm Garden in the next reporting period is presented in **Appendix D**. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 28 February 2015 in accordance with EM&A Manual and the requirement under EP.

9.2 No exceedance of the Action and Limit Levels of regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting month.

9.3 4 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 2 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.

9.4 There was no Project related environmental complaint, successful prosecution or notification of summons received during the reporting month.

9.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- N/A

Landscape and Visual

- N/A

Noise

- N/A

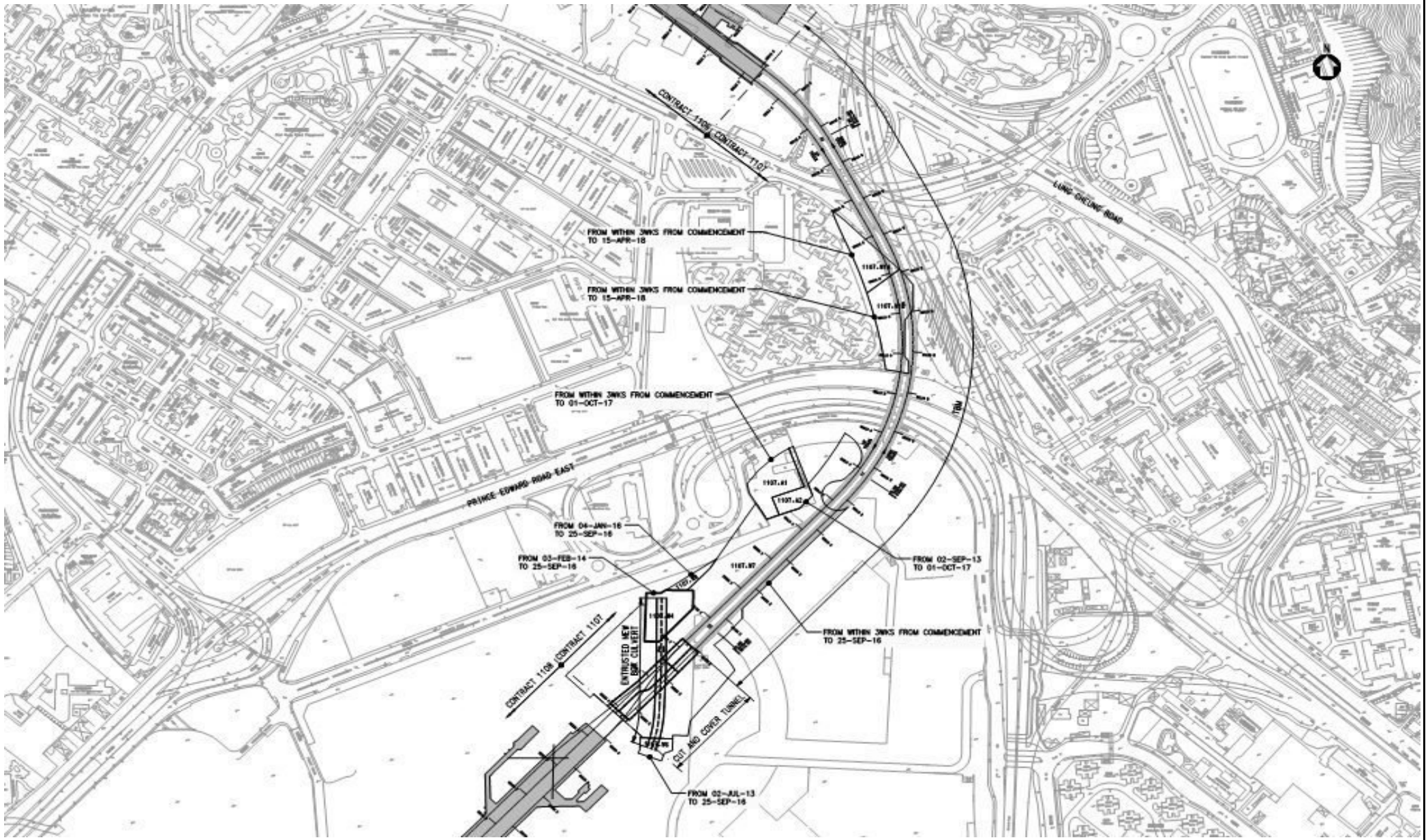
Air Quality

- N/A

Waste/Chemical Management

- Drip tray of appropriate size should be provided to chemical containers to prevent chemical leakage. The chemical storage area should also be properly maintained.
- Recycling bins are strictly for the disposal of recyclable materials only and general refuses should be disposed at a separate container. The refuses should also be removed on a regular basis to avoid accumulation.

FIGURES



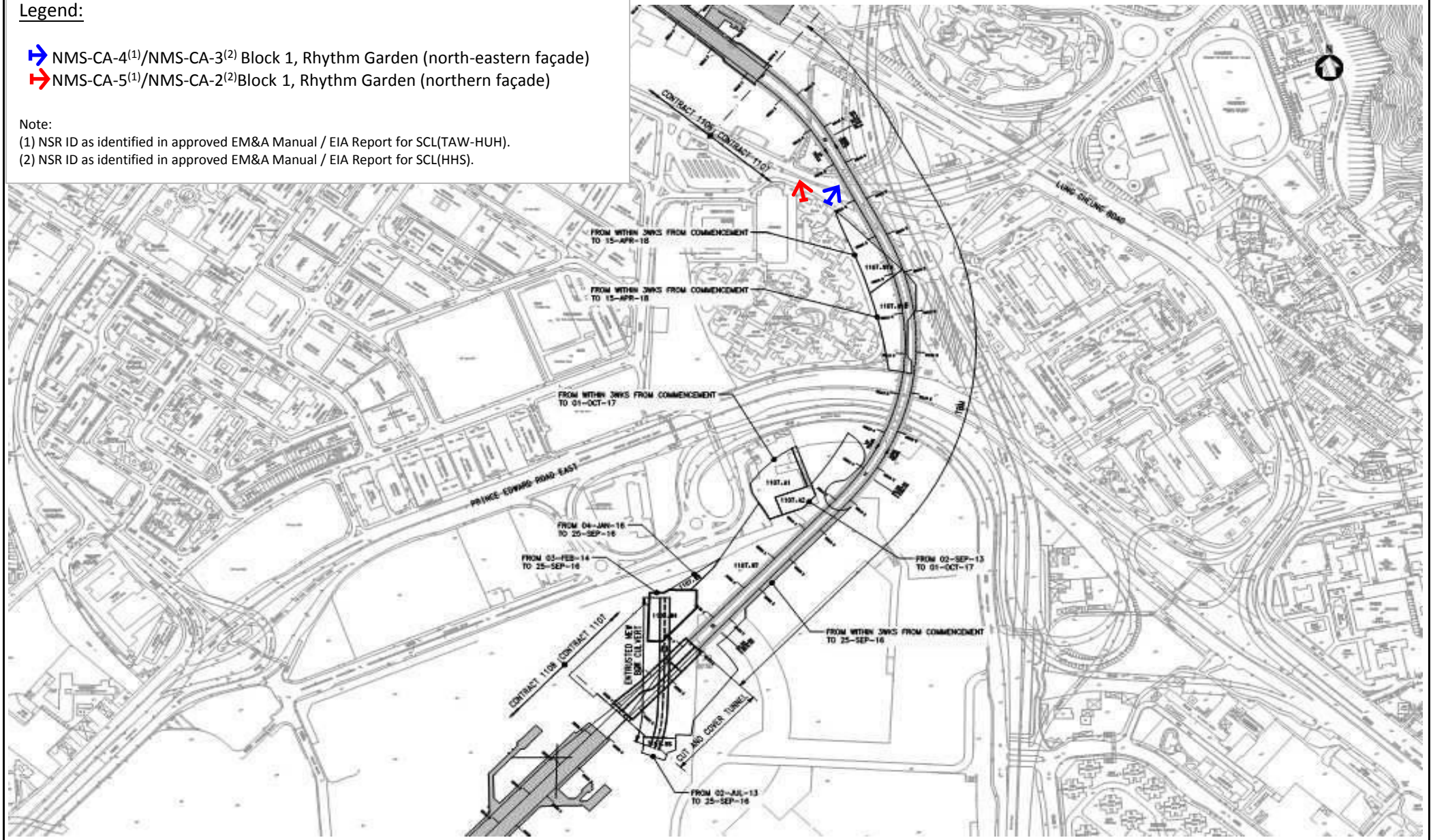
Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Site Layout Plan	Scale N.T.S Date May-13	Project No. MA13018 Figure 1

CINOTECH

Legend:

NMS-CA-4[1]/NMS-CA-3[2] Block 1, Rhythm Garden (north-eastern façade)
NMS-CA-5[1]/NMS-CA-2[2]Block 1, Rhythm Garden (northern façade)

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

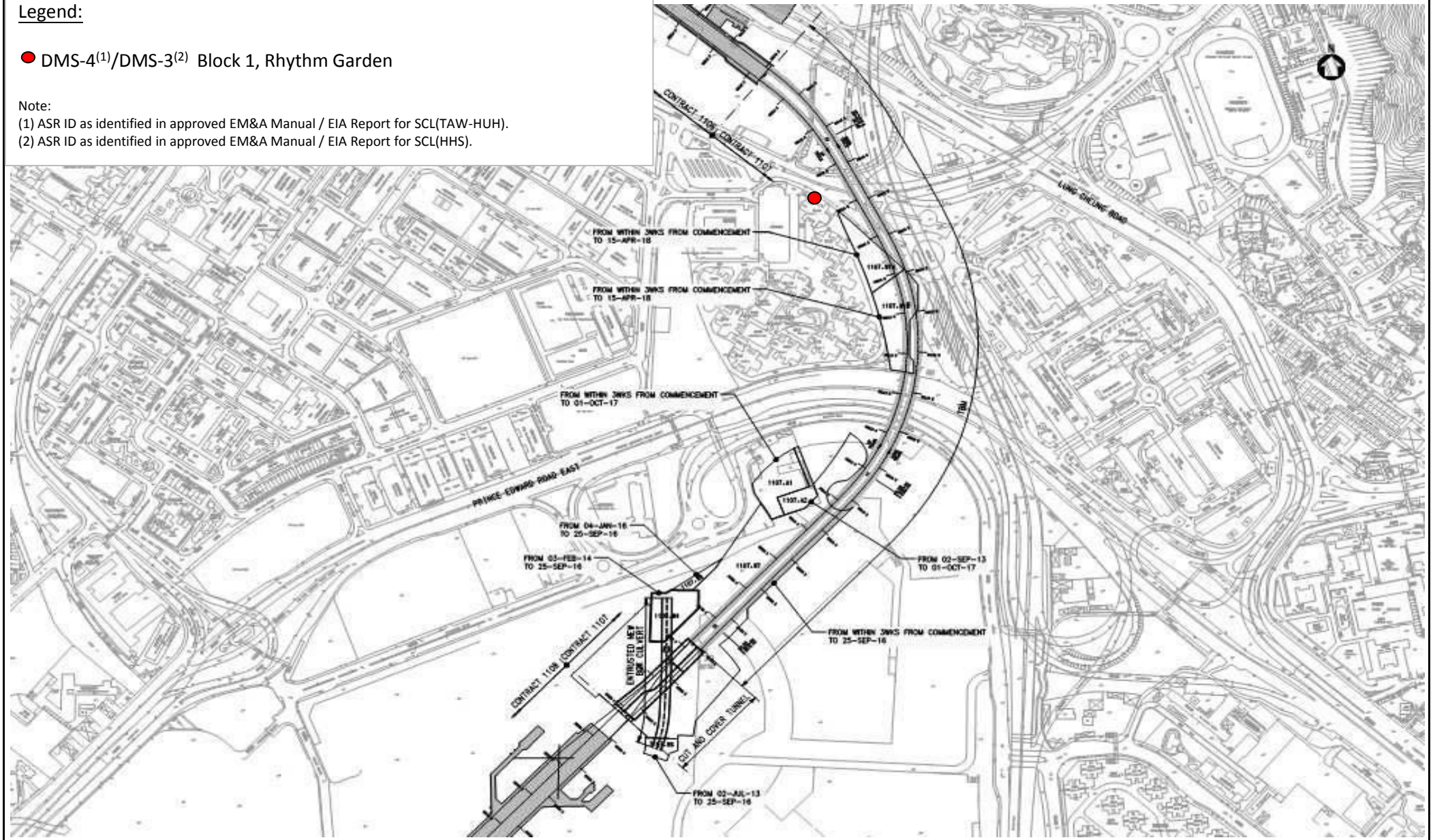


Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Locations of Constrcution Noise Monitoring	Scale N.T.S	Project No. MA13018	CINOTECH
		Date May-13	Figure 2	

Legend:

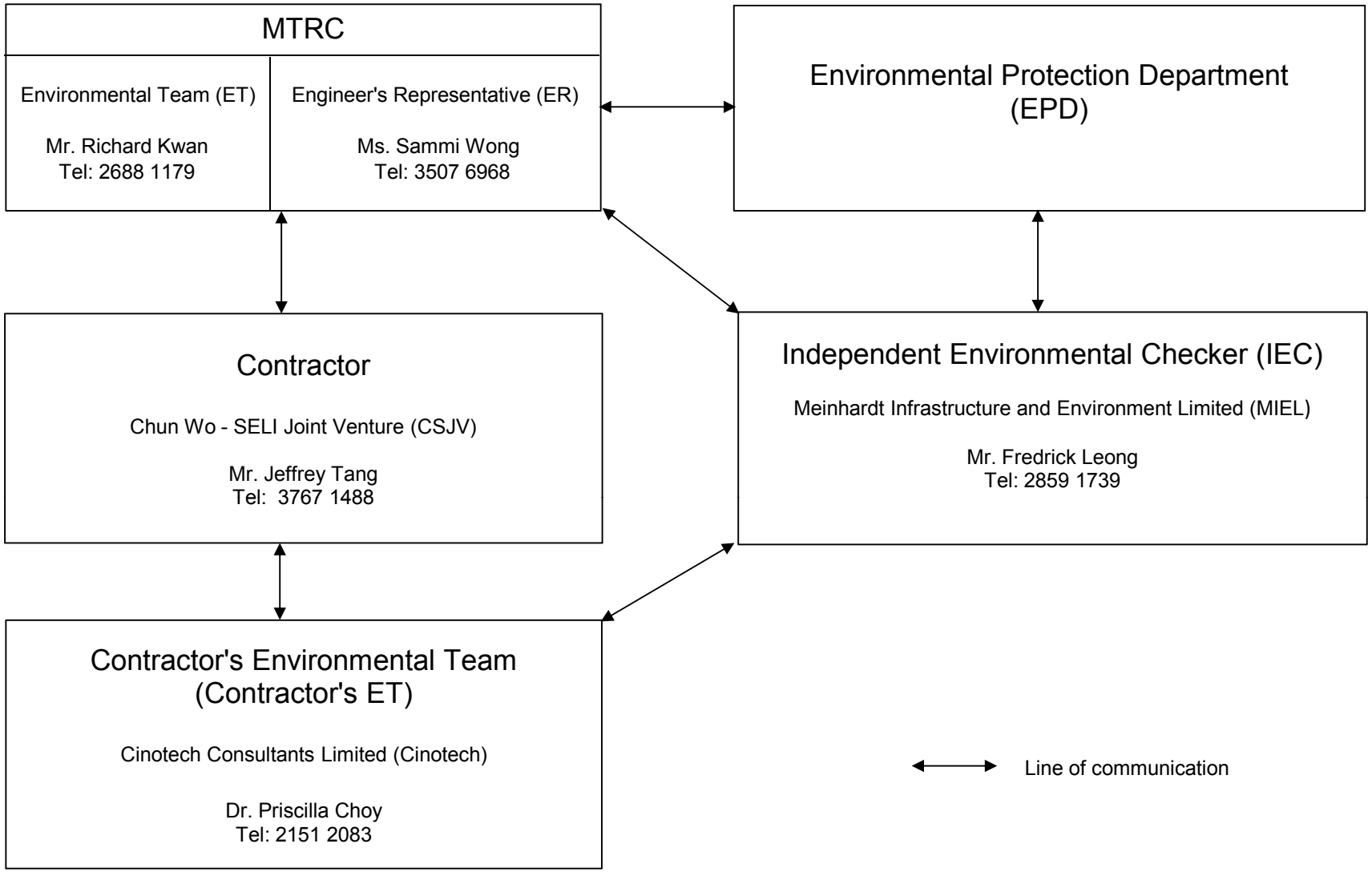
● DMS-4(1)/DMS-3(2) Block 1, Rhythm Garden

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).



Title	MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Location of Dust Monitoring	Scale N.T.S Date May-13	Project No. MA13018 Figure 3

CINOTECH

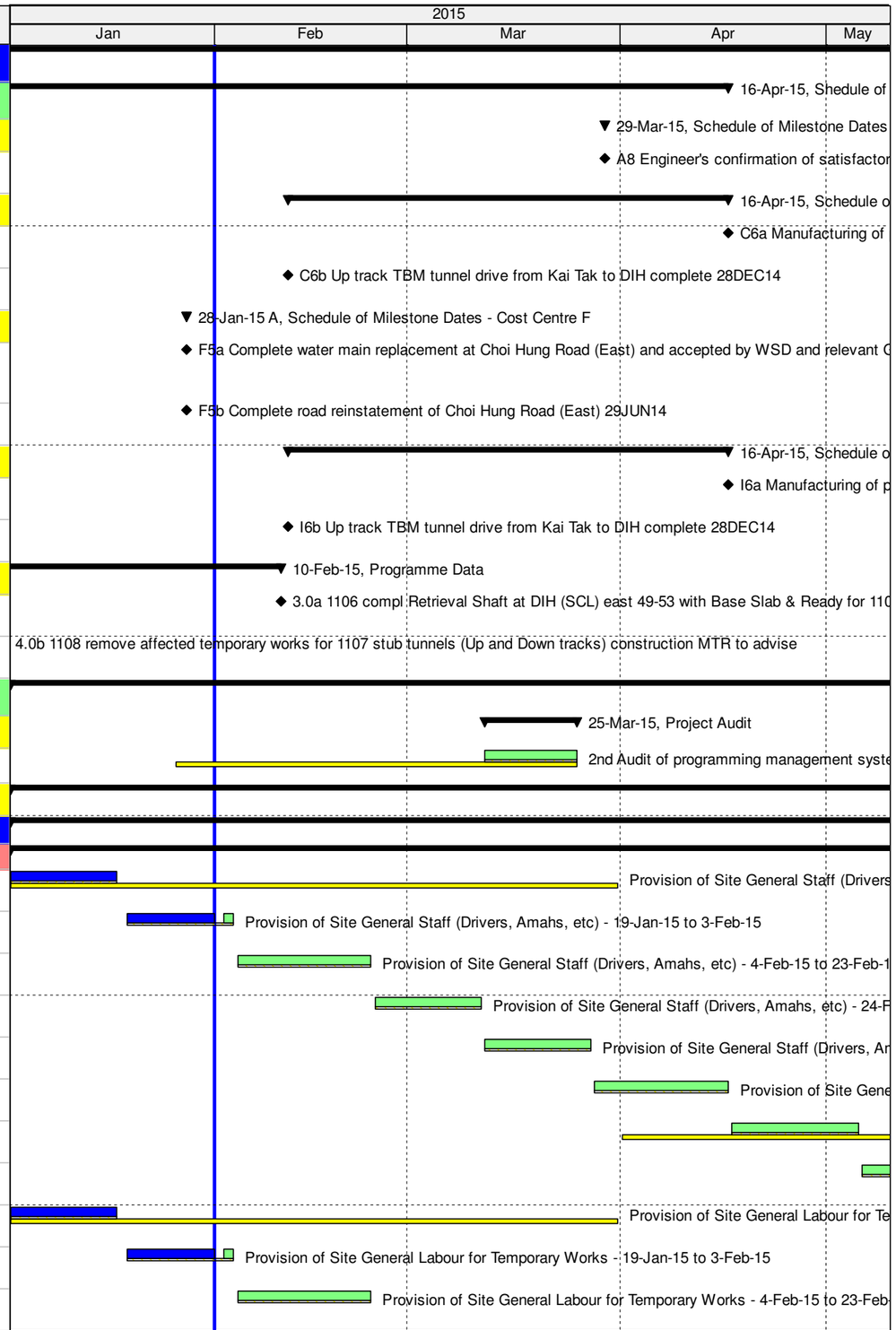


Title	Scale	Proposal
MTR SCL Works Contract 1107 Diamond Hill to Kai Tak Tunnels Organisation Chart and Key Contact of the Project	N.T.S	No. MA13018
	Date Jul 2014	Figure 4

CINOTECH

APPENDIX A
TENTATIVE CONSTRUCTION PROGRAMME

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish
**MTRC SCL 1107 Diamond Hill to Kai Tak ' **		131	13-Dec-13	30-Jun-15	09-Dec-14	22-May-15	09-Dec-14 A	22-May-15
Shedule of Completion Obligation & Oth		106	11-Jun-14	29-Mar-15	01-Jan-15	13-Apr-15	01-Jan-15 A	16-Apr-15
Schedule of Milestone Dates - Cost Centre A		0	29-Mar-15	29-Mar-15	29-Mar-15	29-Mar-15	29-Mar-15	29-Mar-15
1107.MS10230	A8 Engineer's confirmation of satisfactory implementation of Programming Management System	0		29-Mar-15		29-Mar-15		29-Mar-15*
Schedule of Milestone Dates - Cost Centre C		64	06-Oct-14	19-Dec-14	02-Feb-15	13-Apr-15	11-Feb-15	16-Apr-15
1107.MS10440	C6a Manufacturing of pre-cast tunnel lining segment 70% by number complete and delivery to site 28DEC14	0		19-Dec-14		13-Apr-15		16-Apr-15*
1107.MS10450	C6b Up track TBM tunnel drive from Kai Tak to DIH complete 28DEC14	0		06-Oct-14		02-Feb-15		11-Feb-15*
Schedule of Milestone Dates - Cost Centre F		0	11-Jun-14	11-Jun-14	17-Jan-15	17-Jan-15	28-Jan-15 A	28-Jan-15 A
1107.MS10680	F5a Complete water main replacement at Choi Hung Road (East) and accepted by WSD and relevant Governments 29JUN14	0		11-Jun-14		17-Jan-15		28-Jan-15 A
1107.MS10690	F5b Complete road reinstatement of Choi Hung Road (East) 29JUN14	0		11-Jun-14		17-Jan-15		28-Jan-15 A
Schedule of Milestone Dates - Cost Centre I (fo		64	06-Oct-14	19-Dec-14	02-Feb-15	13-Apr-15	11-Feb-15	16-Apr-15
1107.MS10810	I6a Manufacturing of pre-cast tunnel lining segment 70% by number complete and delivery to site 28DEC14	0		19-Dec-14		13-Apr-15		16-Apr-15*
1107.MS10820	I6b Up track TBM tunnel drive from Kai Tak to DIH complete 28DEC14	0		06-Oct-14		02-Feb-15		11-Feb-15*
Programme Data		41	28-Sep-14	19-Oct-14	01-Jan-15	01-Jan-15	01-Jan-15 A	10-Feb-15
1107.ID10950	3.0a 1106 compl Retrieval Shaft at DIH (SCL) east 49-53 with Base Slab & Ready for 1107 TBM Retr 28SEP14 MTR to advise	0		28-Sep-14		01-Jan-15		10-Feb-15*
1107.ID10990	4.0b 1108 remove affected temporary works for 1107 stub tunnels (Up and Down tracks) construction MTR to advise	0	19-Oct-14		01-Jan-15		01-Jan-15 A	
Cost Centre A - Preliminaries		114	02-Jan-15	30-Jun-15	02-Jan-15	22-May-15	02-Jan-15 A	22-May-15
Project Audit		12	26-Jan-15	25-Mar-15	12-Mar-15	25-Mar-15	12-Mar-15	25-Mar-15
1107.12490	2nd Audit of programming management system	12	26-Jan-15	25-Mar-15	12-Mar-15	25-Mar-15	12-Mar-15*	25-Mar-15
Site Enabling Works		114	02-Jan-15	30-Jun-15	02-Jan-15	22-May-15	02-Jan-15 A	22-May-15
Site Setup		114	02-Jan-15	30-Jun-15	02-Jan-15	22-May-15	02-Jan-15 A	22-May-15
Misc Items		114	02-Jan-15	30-Jun-15	02-Jan-15	22-May-15	02-Jan-15 A	22-May-15
1107.19020	Provision of Site General Staff (Drivers, Amahs, etc) - 2-Jan-15 to 17-Jan-15	14	02-Jan-15	31-Mar-15	02-Jan-15	17-Jan-15	02-Jan-15 A	17-Jan-15 A
1107.19021	Provision of Site General Staff (Drivers, Amahs, etc) - 19-Jan-15 to 3-Feb-15	14			19-Jan-15	03-Feb-15	19-Jan-15 A	03-Feb-15
1107.19022	Provision of Site General Staff (Drivers, Amahs, etc) - 4-Feb-15 to 23-Feb-15	14			04-Feb-15	23-Feb-15	04-Feb-15	23-Feb-15
1107.19023	Provision of Site General Staff (Drivers, Amahs, etc) - 24-Feb-15 to 11-Mar-15	14			24-Feb-15	11-Mar-15	24-Feb-15	11-Mar-15
1107.19024	Provision of Site General Staff (Drivers, Amahs, etc) - 12-Mar-15 to 27-Mar-15	14			12-Mar-15	27-Mar-15	12-Mar-15	27-Mar-15
1107.19025	Provision of Site General Staff (Drivers, Amahs, etc) - 28-Mar-15 to 16-Apr-15	14			28-Mar-15	16-Apr-15	28-Mar-15	16-Apr-15
1107.19030	Provision of Site General Staff (Drivers, Amahs, etc) - 17-Apr-15 to 5-May-15	15	01-Apr-15	30-Jun-15	17-Apr-15	05-May-15	17-Apr-15	05-May-15
1107.19031	Provision of Site General Staff (Drivers, Amahs, etc) - 6-May-15 to 22-May-15	15			06-May-15	22-May-15	06-May-15	22-May-15
1107.19210	Provision of Site General Labour for Temporary Works - 2-Jan-15 to 17-Jan-15	14	02-Jan-15	31-Mar-15	02-Jan-15	17-Jan-15	02-Jan-15 A	17-Jan-15 A
1107.19211	Provision of Site General Labour for Temporary Works - 19-Jan-15 to 3-Feb-15	14			19-Jan-15	03-Feb-15	19-Jan-15 A	03-Feb-15
1107.19212	Provision of Site General Labour for Temporary Works - 4-Feb-15 to 23-Feb-15	14			04-Feb-15	23-Feb-15	04-Feb-15	23-Feb-15



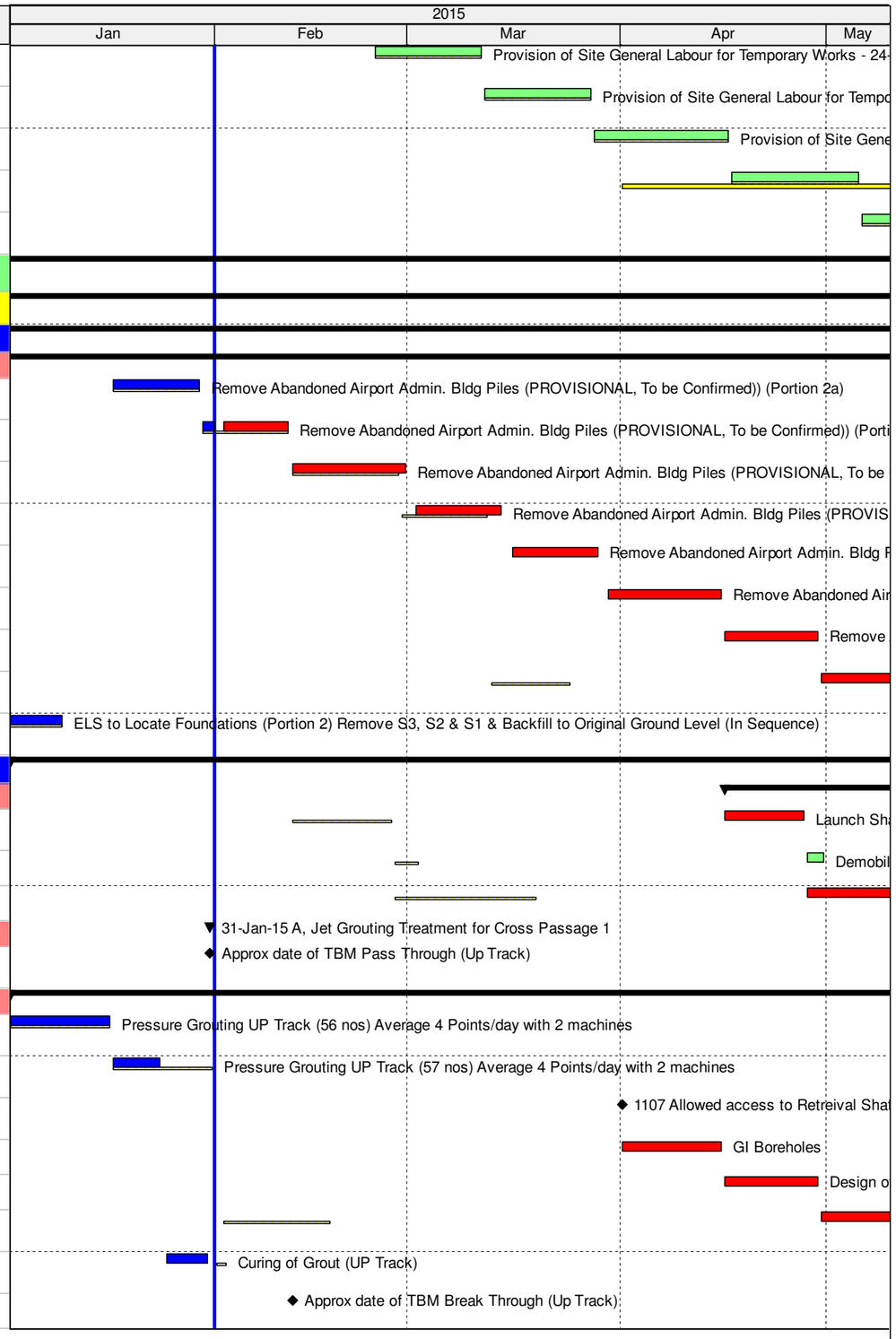
MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme

Data Date 01-Feb-15

Date	Revision	Checked	Approved
See 2nd Col	0	KCL	KCL

Master Prog Baseline Bar ◆ ◆ Milestone
Last Month Forecast Bar ▼ Summary
Actual Work
Remaining Work
Critical Remaining Work

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish
1107.19213	Provision of Site General Labour for Temporary Works - 24-Feb-15 to 11-Mar-15	14			24-Feb-15	11-Mar-15	24-Feb-15	11-Mar-15
1107.19214	Provision of Site General Labour for Temporary Works - 12-Mar-15 to 27-Mar-15	14			12-Mar-15	27-Mar-15	12-Mar-15	27-Mar-15
1107.19215	Provision of Site General Labour for Temporary Works - 28-Mar-15 to 16-Apr-15	14			28-Mar-15	16-Apr-15	28-Mar-15	16-Apr-15
1107.19220	Provision of Site General Labour for Temporary Works - 17-Apr-15 to 5-May-15	15	01-Apr-15	30-Jun-15	17-Apr-15	05-May-15	17-Apr-15	05-May-15
1107.19221	Provision of Site General Staff (Drivers, Amahs, etc) - 6-May-15 to 22-May-15	15			06-May-15	22-May-15	06-May-15	22-May-15
Cost Centre C - Tunnel Construction by T		128	13-Dec-13	11-Mar-15	09-Dec-14	13-May-15	09-Dec-14 A	19-May-15
Site Enabling Works for TBM		115	13-Dec-13	07-Oct-14	24-Dec-14	24-Mar-15	24-Dec-14 A	18-May-15
OPTION 3 - Obstruction Removal		110	12-Feb-14	18-Feb-14	24-Dec-14	24-Mar-15	24-Dec-14 A	12-May-15
Removal of Abandoned Airport Admin Bldg Foundations DN		110	12-Feb-14	18-Feb-14	24-Dec-14	24-Mar-15	24-Dec-14 A	12-May-15
1107.13560d	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2a)	11			17-Jan-15	29-Jan-15	17-Jan-15 A	29-Jan-15 A
1107.13560e	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2b)	12			30-Jan-15	11-Feb-15	30-Jan-15 A	11-Feb-15
1107.13560f	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2c)	12			12-Feb-15	27-Feb-15	12-Feb-15	28-Feb-15
1107.13560g	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2d)	12			28-Feb-15	12-Mar-15	02-Mar-15	14-Mar-15
1107.13560h	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2e)	12					16-Mar-15	28-Mar-15
1107.13560i	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2f)	12					30-Mar-15	15-Apr-15
1107.13560j	Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed)) (Portion 2g)	12					16-Apr-15	29-Apr-15
1107.13570	Reinstatement of Area (PROVISIONAL, To be Confirmed)) (Portion 1)	10	12-Feb-14	18-Feb-14	13-Mar-15	24-Mar-15	30-Apr-15	12-May-15
1107.20067	ELS to Locate Foundations (Portion 2) Remove S3, S2 & S1 & Backfill to Original Ground Level (In Sequence)	12			24-Dec-14	09-Jan-15	24-Dec-14 A	09-Jan-15 A
Ground Treatment		110	13-Dec-13	07-Oct-14	02-Jan-15	19-Mar-15	02-Jan-15 A	18-May-15
Jet Grouting Treatment for KAT TBM Launch Shaft		27	13-Dec-13	02-Jan-14	12-Feb-15	19-Mar-15	16-Apr-15	18-May-15
1107.12990c	Launch Shaft Jet Grouting Stage 2 (After Pile Extraction) (12 nos)	10			12-Feb-15	26-Feb-15	16-Apr-15	27-Apr-15
1107.13000	Demobilise	3	13-Dec-13	16-Dec-13	27-Feb-15	02-Mar-15	28-Apr-15	30-Apr-15
1107.13010	Curing of Grout	21	13-Dec-13	02-Jan-14	27-Feb-15	19-Mar-15	28-Apr-15	18-May-15
Jet Grouting Treatment for Cross Passage 1		0	11-Sep-14	11-Sep-14	31-Jan-15	31-Jan-15	31-Jan-15 A	31-Jan-15 A
1107.13290	Approx date of TBM Pass Through (Up Track)	0	11-Sep-14		31-Jan-15		31-Jan-15 A	
Pressure Grouting Treatment for DIH TBM Retrieval Shaft		109	07-Oct-14	07-Oct-14	02-Jan-15	17-Feb-15	02-Jan-15 A	16-May-15
1107.13430b	Pressure Grouting UP Track (56 nos) Average 4 Points/day with 2 machines	13			02-Jan-15	16-Jan-15	02-Jan-15 A	16-Jan-15 A
1107.13430c	Pressure Grouting UP Track (57 nos) Average 4 Points/day with 2 machines	13			17-Jan-15	31-Jan-15	17-Jan-15 A	24-Jan-15 A
1107.13430d	1107 Allowed access to Retreival Shaft Grout Block Area DN Track (ERF no. 1107-ERFC-SCONE-PLP-001030)	0					01-Apr-15*	
1107.13430e	GI Boreholes	10					01-Apr-15	15-Apr-15
1107.13430f	Design of Grouting	12					16-Apr-15	29-Apr-15
1107.13431a	Pressure Grouting DN Track (56 nos) Average 4 Points/day with 2 machines	14			02-Feb-15	17-Feb-15	30-Apr-15	16-May-15
1107.13432	Curing of Grout (UP Track)	2			01-Feb-15	02-Feb-15	25-Jan-15 A	31-Jan-15 A
1107.13470	Approx date of TBM Break Through (Up Track)	0	07-Oct-14		03-Feb-15		12-Feb-15*	



MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme

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Date	Revision	Checked	Approved
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Master Prog Baseline Bar ◆ Milestone
Last Month Forecast Bar ▼ Summary
Actual Work
Remaining Work
Critical Remaining Work

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish
Tunnel Boring Construction - UP Track		104	25-Aug-14	08-Jan-15	05-Jan-15	07-May-15	05-Jan-15 A	13-May-15
1107.14020	TBM Boring Next 23 m (60%)	3	25-Aug-14	28-Aug-14	05-Jan-15	07-Jan-15	05-Jan-15 A	07-Jan-15 A
1107.14029	TBM Boring Next 150m	12			06-Jan-15	19-Jan-15	06-Jan-15 A	19-Jan-15 A
1107.14030	TBM Boring Remaining 151m (100% complete) - TBM Break Through	12	29-Aug-14	06-Oct-14	20-Jan-15	02-Feb-15	20-Jan-15 A	11-Feb-15
1107.14032	Float Indicator against MileStone C6b	0		06-Oct-14		02-Feb-15		11-Feb-15
1107.14050	C6b Up track TBM tunnel drive from Kai Tak to DIH complete	0		28-Dec-14		02-Feb-15		11-Feb-15*
1107.14055	TBM Shield Retrieval at 1106/DIH- Probing Grout Block	9					11-Feb-15	24-Feb-15
1107.14056	TBM Shield Retrieval at 1106/DIH- Stich Coring & Grout Seal	15					25-Feb-15	13-Mar-15
1107.14060	TBM Shield Retrieval at 1106/DIH- Install Cradle & Break through	7	07-Oct-14	10-Nov-14	03-Feb-15	11-Feb-15	14-Mar-15	21-Mar-15
1107.14061	TBM Retrieval at 1106/DIH- Clear debris & Slide TBM	4			12-Feb-15	03-Mar-15	23-Mar-15	26-Mar-15
1107.14062	TBM Retrieval at 1106/DIH- Cutterhead & Conveyor	9			25-Feb-15	12-Mar-15	27-Mar-15	09-Apr-15
1107.14063	TBM Retrieval at 1106/DIH- Front Shield	15					01-Apr-15	21-Apr-15
1107.14064	TBM Retrieval at 1106/DIH- Mid Shield	11					14-Apr-15	25-Apr-15
1107.14065	TBM Retrieval at 1106/DIH- Tail Shield & Erector	7					27-Apr-15	05-May-15
1107.14070	TBM Back up Retrieval at 1106/DIH- All Decks	6	11-Nov-14	08-Dec-14	13-Mar-15	26-Mar-15	27-Mar-15	02-Apr-15
1107.140700	TBM Back up Retrieval at 1106/DIH- Remove Tunnel Utilities	11			27-Mar-15	13-Apr-15	07-Apr-15	18-Apr-15
1107.14071	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Drill & Install dowels	8	09-Dec-14	08-Jan-15	14-Apr-15	22-Apr-15	20-Apr-15	28-Apr-15
1107.140710	RC Stitch Joint between Tunnel Lining & 1106 D-Wall- Formwork, Rebar & Concrete	12			23-Apr-15	07-May-15	29-Apr-15	13-May-15
1107.14080	UP Track Tunnel Invert & Walkway- Ring 527 to 1106 Retrieval shaft	10	07-Oct-14	08-Nov-14	03-Feb-15	13-Feb-15	20-Apr-15	30-Apr-15
1107.14081	UP Track Tunnel Invert & Walkway- Rings 421 to 526	10			14-Feb-15	28-Feb-15	02-May-15	13-May-15
Tunnel Boring Construction - DN Track		12	07-Oct-14	10-Nov-14	03-Feb-15	09-Feb-15	06-May-15	19-May-15
1107.14140	Re-assembly of TBM in Shaft- Front shield, cutterhead, & screw conveyor Pt 1	12	07-Oct-14	10-Nov-14	03-Feb-15	09-Feb-15	06-May-15	19-May-15
Production of Pre - Cast Tunnel Lining		123	28-Sep-14	11-Mar-15	09-Dec-14	13-May-15	09-Dec-14 A	13-May-15
Production of Segments		123	28-Sep-14	11-Mar-15	09-Dec-14	13-May-15	09-Dec-14 A	13-May-15
1107.14732a	48 Rings of Segment Production (Culmalative 738) (RC)	12			30-Dec-14	13-Jan-15	30-Dec-14 A	13-Jan-15 A
1107.14732b	48 Rings of Segment Production (Culmalative 786) (RC)	12			14-Jan-15	27-Jan-15	14-Jan-15 A	27-Jan-15 A
1107.14732c	48 Rings of Segment Production (Culmalative 834) (RC)	12			28-Jan-15	10-Feb-15	28-Jan-15 A	10-Feb-15
1107.14732d	48 Rings of Segment Production (Culmalative 882) (RC)	12			11-Feb-15	27-Feb-15	11-Feb-15	27-Feb-15
1107.14740	48 Rings of Segment Production (Culmalative 930) (RC) (70%)	12	20-Dec-14	11-Mar-15	28-Feb-15	13-Mar-15	28-Feb-15	13-Mar-15
1107.14740a	48 Rings of Segment Production (Culmalative 978) (RC)	12			14-Mar-15	27-Mar-15	14-Mar-15	27-Mar-15
1107.14740b	48 Rings of Segment Production (Culmalative 1026) (RC)	12			28-Mar-15	14-Apr-15	28-Mar-15	14-Apr-15
1107.14740c	48 Rings of Segment Production (Culmalative 1074) (RC)	12			15-Apr-15	28-Apr-15	15-Apr-15	28-Apr-15
1107.14740d	48 Rings of Segment Production (Culmalative 1122) (RC)	12			29-Apr-15	13-May-15	29-Apr-15	13-May-15
1107.14790	C5a Manufacturing of pre-cast tunnel lining segment 20% by number complete and delivery to site	0		28-Sep-14		09-Dec-14		09-Dec-14 A
1107.14800	C6a Manufacturing of pre-cast tunnel lining segment 70% by number complete and delivery to site	0		28-Dec-14		13-Apr-15		16-Apr-15*

MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme

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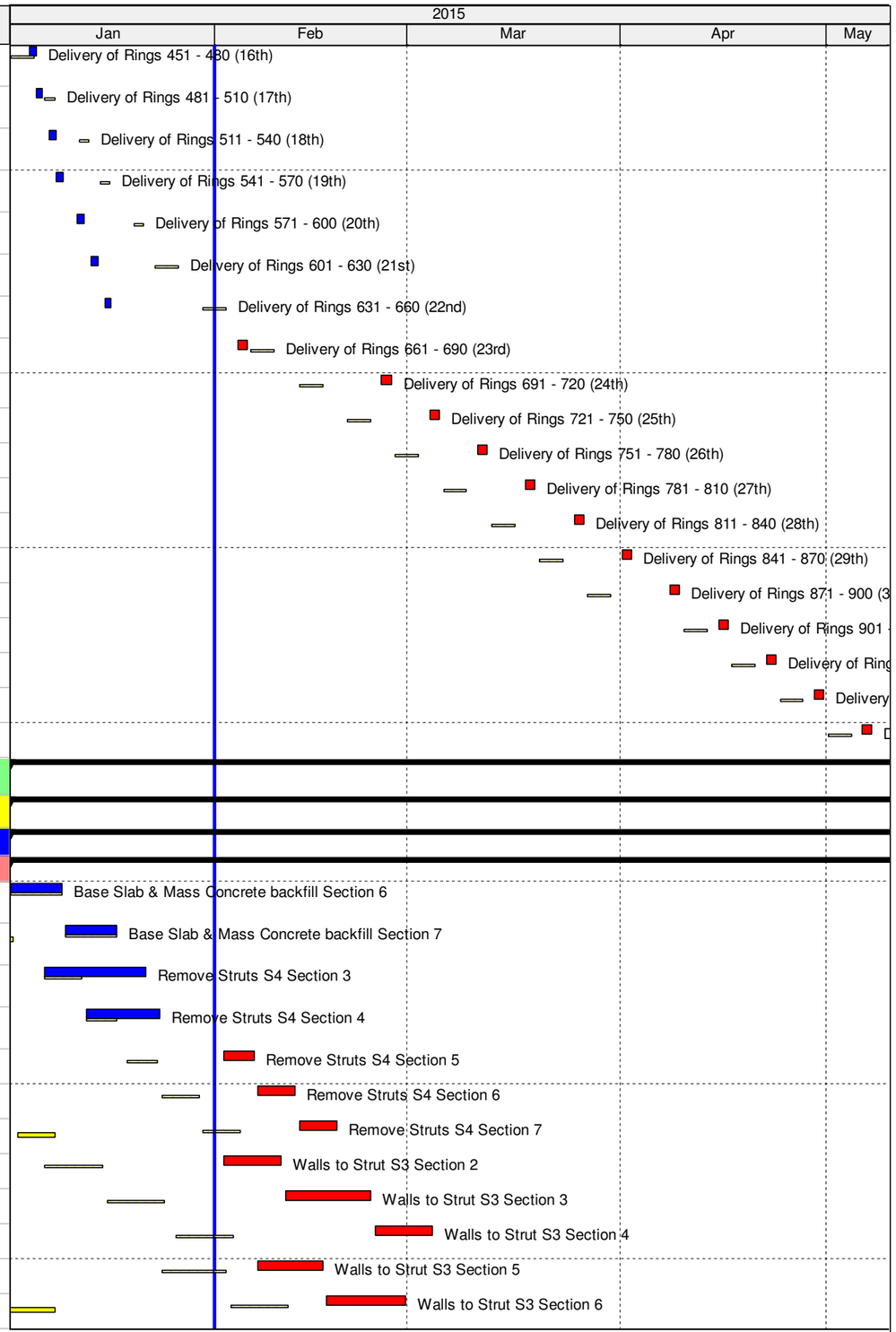
Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish
1107.20800	Delivery of Rings 451 - 480 (16th)	2			02-Jan-15	05-Jan-15	05-Jan-15 A	06-Jan-15 A
1107.20810	Delivery of Rings 481 - 510 (17th)	2			07-Jan-15	08-Jan-15	06-Jan-15 A	07-Jan-15 A
1107.20820	Delivery of Rings 511 - 540 (18th)	2			12-Jan-15	13-Jan-15	08-Jan-15 A	09-Jan-15 A
1107.20830	Delivery of Rings 541 - 570 (19th)	2			15-Jan-15	16-Jan-15	09-Jan-15 A	10-Jan-15 A
1107.20840	Delivery of Rings 571 - 600 (20th)	2			20-Jan-15	21-Jan-15	12-Jan-15 A	13-Jan-15 A
1107.20850	Delivery of Rings 601 - 630 (21st)	2			23-Jan-15	26-Jan-15	14-Jan-15 A	15-Jan-15 A
1107.20860	Delivery of Rings 631 - 660 (22nd)	2			30-Jan-15	02-Feb-15	16-Jan-15 A	17-Jan-15 A
1107.20910	Delivery of Rings 661 - 690 (23rd)	2			06-Feb-15	09-Feb-15	04-Feb-15*	05-Feb-15
1107.20920	Delivery of Rings 691 - 720 (24th)	2			13-Feb-15	16-Feb-15	25-Feb-15	26-Feb-15
1107.20930	Delivery of Rings 721 - 750 (25th)	2			20-Feb-15	23-Feb-15	04-Mar-15	05-Mar-15
1107.20940	Delivery of Rings 751 - 780 (26th)	2			27-Feb-15	02-Mar-15	11-Mar-15	12-Mar-15
1107.20950	Delivery of Rings 781 - 810 (27th)	2			06-Mar-15	09-Mar-15	18-Mar-15	19-Mar-15
1107.20960	Delivery of Rings 811 - 840 (28th)	2			13-Mar-15	16-Mar-15	25-Mar-15	26-Mar-15
1107.20970	Delivery of Rings 841 - 870 (29th)	2			20-Mar-15	23-Mar-15	01-Apr-15	02-Apr-15
1107.20980	Delivery of Rings 871 - 900 (30th)	2			27-Mar-15	30-Mar-15	08-Apr-15	09-Apr-15
1107.20990	Delivery of Rings 901 - 930 (31st) (70%)	2			10-Apr-15	13-Apr-15	15-Apr-15	16-Apr-15
1107.21000	Delivery of Rings 931 - 960 (32nd)	2			17-Apr-15	20-Apr-15	22-Apr-15	23-Apr-15
1107.21010	Delivery of Rings 961 - 990 (33rd)	2			24-Apr-15	27-Apr-15	29-Apr-15	30-Apr-15
1107.21020	Delivery of Rings 991 - 1020 (34th)	2			01-May-15	04-May-15	06-May-15	07-May-15
Cost Centre D - KAT Cut & Cover Tunnels		107	20-Nov-14	04-Mar-15	02-Jan-15	16-Apr-15	02-Jan-15 A	14-May-15
Excavation & C&C Tunnel Structure		107	20-Nov-14	04-Mar-15	02-Jan-15	16-Apr-15	02-Jan-15 A	14-May-15
C&C Tunnel Structure (Previously Boxes 2B & 1B)		107	20-Nov-14	04-Mar-15	02-Jan-15	16-Apr-15	02-Jan-15 A	14-May-15
Tunnel Structure		107	20-Nov-14	04-Mar-15	02-Jan-15	16-Apr-15	02-Jan-15 A	14-May-15
1107.16830	Base Slab & Mass Concrete backfill Section 6	7	12-Dec-14	20-Dec-14	02-Jan-15	09-Jan-15	02-Jan-15 A	09-Jan-15 A
1107.16840	Base Slab & Mass Concrete backfill Section 7	7	22-Dec-14	02-Jan-15	10-Jan-15	17-Jan-15	10-Jan-15 A	17-Jan-15 A
1107.16870	Remove Struts S4 Section 3	5	24-Nov-14	28-Nov-14	07-Jan-15	12-Jan-15	07-Jan-15 A	22-Jan-15 A
1107.16880	Remove Struts S4 Section 4	5	03-Dec-14	08-Dec-14	13-Jan-15	17-Jan-15	13-Jan-15 A	24-Jan-15 A
1107.16890	Remove Struts S4 Section 5	5	12-Dec-14	17-Dec-14	19-Jan-15	23-Jan-15	02-Feb-15	06-Feb-15
1107.16900	Remove Struts S4 Section 6	5	22-Dec-14	29-Dec-14	24-Jan-15	29-Jan-15	07-Feb-15	12-Feb-15
1107.16910	Remove Struts S4 Section 7	5	03-Jan-15	08-Jan-15	30-Jan-15	04-Feb-15	13-Feb-15	18-Feb-15
1107.16930	Walls to Strut S3 Section 2	8	20-Nov-14	28-Nov-14	07-Jan-15	15-Jan-15	02-Feb-15	10-Feb-15
1107.16940	Walls to Strut S3 Section 3	8	29-Nov-14	08-Dec-14	16-Jan-15	24-Jan-15	11-Feb-15	23-Feb-15
1107.16950	Walls to Strut S3 Section 4	8	09-Dec-14	17-Dec-14	26-Jan-15	03-Feb-15	24-Feb-15	04-Mar-15
1107.16960	Walls to Strut S3 Section 5	8	18-Dec-14	29-Dec-14	24-Jan-15	02-Feb-15	07-Feb-15	16-Feb-15
1107.16970	Walls to Strut S3 Section 6	8	30-Dec-14	08-Jan-15	03-Feb-15	11-Feb-15	17-Feb-15	28-Feb-15



MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme

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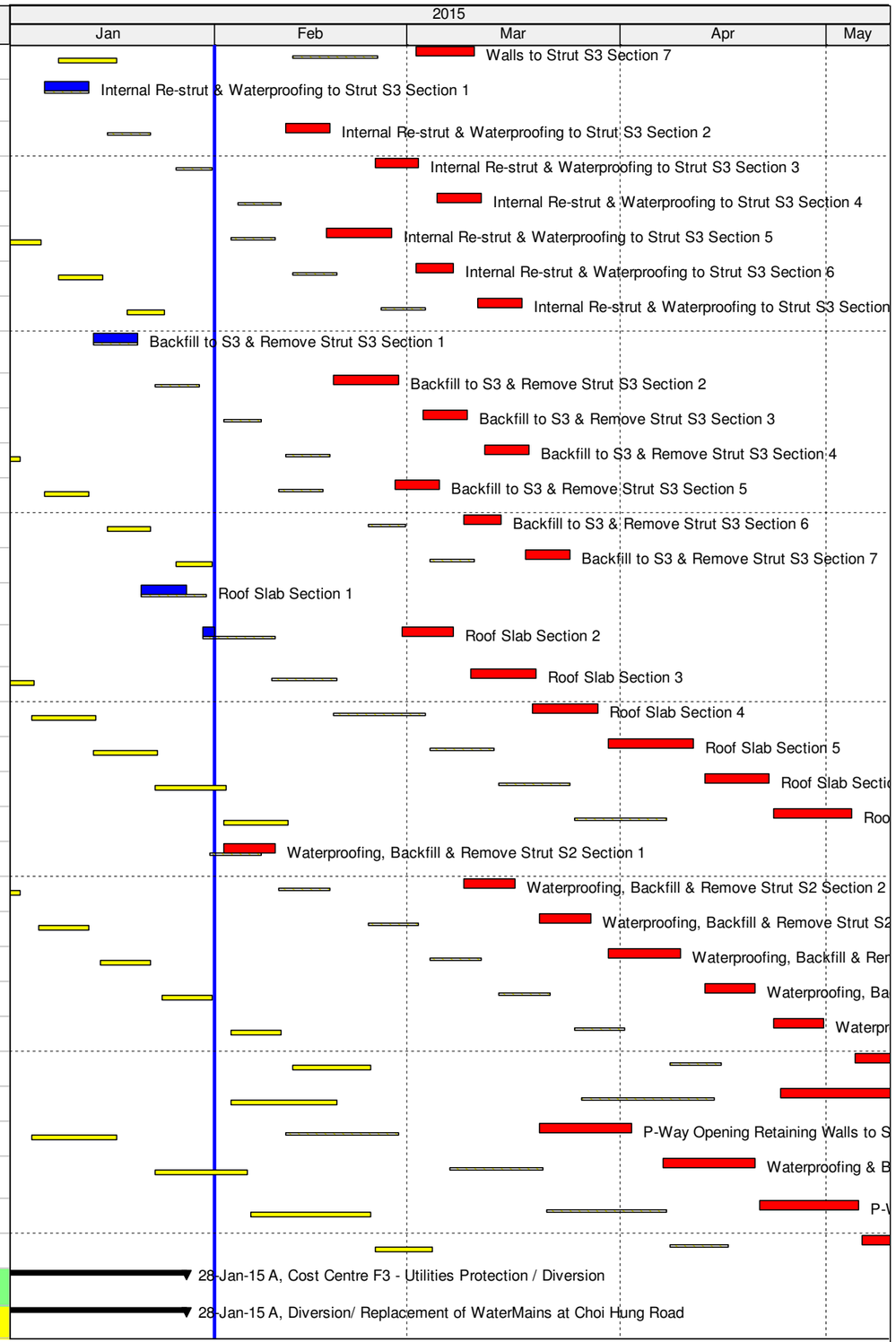
1107.16980	Walls to Strut S3 Section 7	8	09-Jan-15	17-Jan-15	12-Feb-15	24-Feb-15	02-Mar-15	10-Mar-15
1107.16990	Internal Re-strut & Waterproofing to Strut S3 Section 1	6	20-Nov-14	26-Nov-14	07-Jan-15	13-Jan-15	07-Jan-15 A	13-Jan-15 A
1107.17000	Internal Re-strut & Waterproofing to Strut S3 Section 2	6	29-Nov-14	05-Dec-14	16-Jan-15	22-Jan-15	11-Feb-15	17-Feb-15
1107.17010	Internal Re-strut & Waterproofing to Strut S3 Section 3	6	09-Dec-14	15-Dec-14	26-Jan-15	31-Jan-15	24-Feb-15	02-Mar-15
1107.17020	Internal Re-strut & Waterproofing to Strut S3 Section 4	6	18-Dec-14	24-Dec-14	04-Feb-15	10-Feb-15	05-Mar-15	11-Mar-15
1107.17030	Internal Re-strut & Waterproofing to Strut S3 Section 5	6	30-Dec-14	06-Jan-15	03-Feb-15	09-Feb-15	17-Feb-15	26-Feb-15
1107.17040	Internal Re-strut & Waterproofing to Strut S3 Section 6	6	09-Jan-15	15-Jan-15	12-Feb-15	18-Feb-15	02-Mar-15	07-Mar-15
1107.17050	Internal Re-strut & Waterproofing to Strut S3 Section 7	6	19-Jan-15	24-Jan-15	25-Feb-15	03-Mar-15	11-Mar-15	17-Mar-15
1107.17060	Backfill to S3 & Remove Strut S3 Section 1	6	27-Nov-14	03-Dec-14	14-Jan-15	20-Jan-15	14-Jan-15 A	20-Jan-15 A
1107.17070	Backfill to S3 & Remove Strut S3 Section 2	6	06-Dec-14	12-Dec-14	23-Jan-15	29-Jan-15	18-Feb-15	27-Feb-15
1107.17080	Backfill to S3 & Remove Strut S3 Section 3	6	16-Dec-14	22-Dec-14	02-Feb-15	07-Feb-15	03-Mar-15	09-Mar-15
1107.17090	Backfill to S3 & Remove Strut S3 Section 4	6	27-Dec-14	03-Jan-15	11-Feb-15	17-Feb-15	12-Mar-15	18-Mar-15
1107.17100	Backfill to S3 & Remove Strut S3 Section 5	6	07-Jan-15	13-Jan-15	10-Feb-15	16-Feb-15	27-Feb-15	05-Mar-15
1107.17110	Backfill to S3 & Remove Strut S3 Section 6	6	16-Jan-15	22-Jan-15	23-Feb-15	28-Feb-15	09-Mar-15	14-Mar-15
1107.17120	Backfill to S3 & Remove Strut S3 Section 7	6	26-Jan-15	31-Jan-15	04-Mar-15	10-Mar-15	18-Mar-15	24-Mar-15
1107.17130	Roof Slab Section 1	9	04-Dec-14	13-Dec-14	21-Jan-15	30-Jan-15	21-Jan-15 A	28-Jan-15 A
1107.17140	Roof Slab Section 2	9	13-Dec-14	23-Dec-14	30-Jan-15	09-Feb-15	30-Jan-15 A	07-Mar-15
1107.17150	Roof Slab Section 3	9	23-Dec-14	05-Jan-15	09-Feb-15	18-Feb-15	10-Mar-15	19-Mar-15
1107.17160	Roof Slab Section 4	9	05-Jan-15	14-Jan-15	18-Feb-15	03-Mar-15	19-Mar-15	28-Mar-15
1107.17170	Roof Slab Section 5	9	14-Jan-15	23-Jan-15	04-Mar-15	13-Mar-15	30-Mar-15	11-Apr-15
1107.17180	Roof Slab Section 6	9	23-Jan-15	02-Feb-15	14-Mar-15	24-Mar-15	13-Apr-15	22-Apr-15
1107.17190	Roof Slab Section 7	9	02-Feb-15	11-Feb-15	25-Mar-15	07-Apr-15	23-Apr-15	04-May-15
1107.17200	Waterproofing, Backfill & Remove Strut S2 Section 1	7	15-Dec-14	22-Dec-14	31-Jan-15	07-Feb-15	02-Feb-15	09-Feb-15
1107.17210	Waterproofing, Backfill & Remove Strut S2 Section 2	7	24-Dec-14	03-Jan-15	10-Feb-15	17-Feb-15	09-Mar-15	16-Mar-15
1107.17220	Waterproofing, Backfill & Remove Strut S2 Section 3	7	06-Jan-15	13-Jan-15	23-Feb-15	02-Mar-15	20-Mar-15	27-Mar-15
1107.17230	Waterproofing, Backfill & Remove Strut S2 Section 4	7	15-Jan-15	22-Jan-15	04-Mar-15	11-Mar-15	30-Mar-15	09-Apr-15
1107.17240	Waterproofing, Backfill & Remove Strut S2 Section 5	7	24-Jan-15	31-Jan-15	14-Mar-15	21-Mar-15	13-Apr-15	20-Apr-15
1107.17250	Waterproofing, Backfill & Remove Strut S2 Section 6	7	03-Feb-15	10-Feb-15	25-Mar-15	01-Apr-15	23-Apr-15	30-Apr-15
1107.17260	Waterproofing, Backfill & Remove Strut S2 Section 7	7	12-Feb-15	23-Feb-15	08-Apr-15	15-Apr-15	05-May-15	12-May-15
1107.17340	Strip Formwork & Undertrack/Walkway Slab - UP Track	14	03-Feb-15	18-Feb-15	26-Mar-15	14-Apr-15	24-Apr-15	11-May-15
1107.17380	P-Way Opening Retaining Walls to S1 Level	12	05-Jan-15	17-Jan-15	11-Feb-15	27-Feb-15	20-Mar-15	02-Apr-15
1107.17390	Waterproofing & Backfill to S1 Level & Remove Strut S1 Section 1 - 4	12	23-Jan-15	05-Feb-15	07-Mar-15	20-Mar-15	07-Apr-15	20-Apr-15
1107.17400	P-Way Opening Retaining Walls to OGL	12	06-Feb-15	23-Feb-15	21-Mar-15	07-Apr-15	21-Apr-15	05-May-15
1107.17408	Backfill to Original Ground Level Section 1 - 4	8	24-Feb-15	04-Mar-15	08-Apr-15	16-Apr-15	06-May-15	14-May-15
Cost Centre F3 - Utilities Protection / Div		32	29-Jun-14	29-Aug-14	10-Dec-14	20-Jan-15	10-Dec-14 A	28-Jan-15 A
Diversion/ Replacement of WaterMains at Choi		32	29-Jun-14	29-Aug-14	10-Dec-14	20-Jan-15	10-Dec-14 A	28-Jan-15 A



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Master Prog Baseline Bar ◆ Milestone

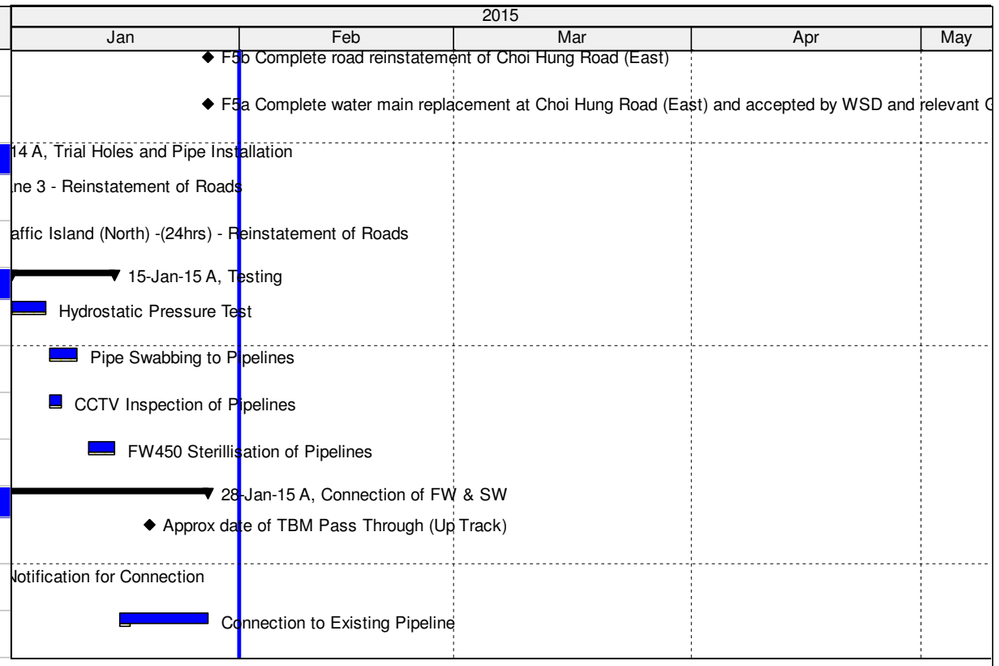
Last Month Forecast Bar ▼ Summary

Actual Work

Remaining Work

Critical Remaining Work

Activity ID	Activity Name	O Dur	MP Start	MP Finish	Last Mth Start	Last Mth Finish	Start	Finish
1107.17680	F5b Complete road reinstatement of Choi Hung Road (East)	0		29-Jun-14		17-Jan-15		28-Jan-15 A
1107.17690	F5a Complete water main replacement at Choi Hung Road (East) and accepted by WSD and relevant Governments	0		29-Jun-14		17-Jan-15		28-Jan-15 A
Trial Holes and Pipe Installation		12			10-Dec-14	23-Dec-14	10-Dec-14 A	23-Dec-14 A
1107.20271c	TP11 Lane 3 - Reinstatement of Roads	12			10-Dec-14	23-Dec-14	10-Dec-14 A	23-Dec-14 A
1107.20280c	TP03 Traffic Island (North) -(24hrs) - Reinstatement of Roads	12			10-Dec-14	23-Dec-14	10-Dec-14 A	23-Dec-14 A
Testing		12			02-Jan-15	15-Jan-15	02-Jan-15 A	15-Jan-15 A
1107.20290	Hydrostatic Pressure Test	4			02-Jan-15	06-Jan-15	02-Jan-15 A	06-Jan-15 A
1107.20300	Pipe Swabbing to Pipelines	4			07-Jan-15	10-Jan-15	07-Jan-15 A	10-Jan-15 A
1107.20310	CCTV Inspection of Pipelines	2			07-Jan-15	08-Jan-15	07-Jan-15 A	08-Jan-15 A
1107.20320	FW450 Sterillisation of Pipelines	4			12-Jan-15	15-Jan-15	12-Jan-15 A	15-Jan-15 A
Connection of FW & SW		30	29-Aug-14	29-Aug-14	12-Dec-14	20-Jan-15	12-Dec-14 A	28-Jan-15 A
1107.17700	Approx date of TBM Pass Through (Up Track)	0	29-Aug-14		20-Jan-15		20-Jan-15 A	
1107.20330	Notification for Connection	14			12-Dec-14	30-Dec-14	12-Dec-14 A	30-Dec-14 A
1107.20340	Connection to Existing Pipeline	2			16-Jan-15	17-Jan-15	16-Jan-15 A	28-Jan-15 A



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APPENDIX B
ACTION AND LIMIT LEVELS

APPENDIX B – Action and Limit Levels

24-Hour TSP

Regular Dust Monitoring Location	Description	Action Level, µg/m^3	Limit Level, µg/m^3
DMS-4[(1)(3)]/ DMS-3[(2)(3)]	Block 1, Rhythm Garden	160.4	260

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Dust monitoring on DMS-3[(1)]/DMS-4[(2)] is carried out by Environmental Team of SCL Works Contract 1106.

Construction Noise

Regular Construction Noise Monitoring Location[(1)]	Description	Time Period	Action Level	Limit Level
NMS-CA-4[(1)(5)]/ NMS-CA-3[(2)(5)]	Block 1, Rhythm Garden (north-eastern façade)	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)
NMS-CA-5 [(1) (3)(5)]/ NMS-CA-2[(2)(3)(5)]	Block 1, Rhythm Garden (northern façade)			65 / 70 dB(A) [(4)]

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).
(3) Access to the monitoring location at Canossa Primary School (San Po Kong) (originally proposed in the approved EM&A Manual) was denied during the baseline monitoring. An alternative location (Block 1, Rhythm Garden (northern façade)) was proposed and approved by the ER and agreed by the IEC and EPD.
(4) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.
(5) Noise monitoring on Block 1, Rhythm Garden are carried out by Environmental Team of SCL Works Contract 1106.

APPENDIX C
CALIBRATION CERTIFICATES FOR MONITORING EQUIPEMENT

CINOTECH

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0011

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK

Date: 22-Dec-14 Next Due Date: 21-Feb-15

Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	286.7	Pressure, Pa (mmHg)	771.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.8	3.53	61.04	8.2	2.94
2	9.1	3.10	53.66	6.2	2.56
3	7.2	2.76	47.78	5.1	2.32
4	5.2	2.34	40.67	3.4	1.89
5	3.2	1.84	31.99	2.0	1.45

By Linear Regression of Y on X

Slope , mw = 0.0513 **Intercept, bw =** -0.1796

Correlation coefficient* = 0.9989

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

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

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

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

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

Remarks:

Conducted by: Wk. Tong Signature: Kwai Date: 22/12/14

Checked by: [illegible] Signature: [illegible] Date: 22 December 2014

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

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	299
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	761.8
Date	27 September 2014	**Equipment No.:**	A-04-04

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

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

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

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

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

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=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

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

PATRICK TSE
Laboratory Manager

CINOTECH

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0012

Station: DMS-4 - Rhythm Garden, Block 1 Operator: WK

Date: 18-Feb-15 Next Due Date: 17-Apr-15

Equipment No.: A-01-57 Serial No. 2352

Ambient Condition			
Temperature, Ta (K)	291.5	Pressure, Pa (mmHg)	768.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0593	Intercept, bc	-0.0218
Last Calibration Date:	4-Feb-15	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.9	3.51	59.50	7.9	2.86
2	9.2	3.08	52.36	6.2	2.53
3	7.4	2.77	47.00	5.0	2.27
4	5.1	2.30	39.08	3.3	1.85
5	3.3	1.85	31.51	2.1	1.47

By Linear Regression of Y on X

Slope , mw = **0.0499** **Intercept, bw =** **-0.0935**

Correlation coefficient* = **0.9996**

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.07**

Remarks:

Conducted by: WK Tang Signature: Date: 18/2/15

Checked by: Signature: Date: 19 February 2015

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

Equipment No A-04-06

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

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

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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/140919/1
Date of Issue:	2014-09-21
Date Received:	2014-09-19
Date Tested:	2014-09-21
Date Completed:	2014-09-21
Next Due Date:	2015-09-20
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	: 23 degree Celsius
Relative Humidity	: 55%

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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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/150103
Date of Issue:	2015-01-05
Date Received:	2015-01-03
Date Tested:	2015-01-03
Date Completed:	2015-01-05
Next Due Date:	2016-01-04

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	: 20 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

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

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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/140822/1
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24
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	: 55%

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

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

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

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

Test Report No.:	C/N/141129/1_v1
Date of Issue:	2014-12-01
Date Received:	2014-11-29
Date Tested:	2014-11-29
Date Completed:	2014-12-01
Next Due Date:	2015-11-30
Page:	1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperatre	: 20 degree Celsius
Relative Humidity	: 64%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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

PATRICK TSE
Laboratory Manager

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TEST REPORT

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

Test Report No.:	C/N/141003/1
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
Page:	1 of 1

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 22 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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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/141003/2
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03

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	: 22 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/141003/3
Date of Issue:	2014-10-04
Date Received:	2014-10-03
Date Tested:	2014-10-03
Date Completed:	2014-10-04
Next Due Date:	2015-10-03
Page:	1 of 1

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

Item for calibration:

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

Test conditions:

Room Temperatre	: 22 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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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/140822/2
Date of Issue:	2014-08-25
Date Received:	2014-08-22
Date Tested:	2014-08-22
Date Completed:	2014-08-25
Next Due Date:	2015-08-24
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	: 20 degree Celsius
Relative Humidity	: 64%

Methodology:

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

Results:

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

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

PATRICK TSE
Laboratory Manager

APPENDIX D
IMPACT MONITORING SCHEDULE

Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tuk Tunnels
Impact Air Quality and Noise Monitoring Schedule for February 2015

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)
NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

Shatin to Central Link – Contract 1106 Diamond Hill to Kai Tuk Tunnels
Tentative Impact Air Quality and Noise Monitoring Schedule for March 2015

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

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

Air Quality Monitoring Station

DMS-4: - Rhythm Garden, Block 1

Noise Monitoring Station

NMS-CA-4: - Block 1, Rhythm Garden (north-eastern façade)
NMS-CA-5: - Block 1, Rhythm Garden (northern façade)

APPENDIX E
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONIS

Appendix E - 24-hour TSP Monitoring Results

Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

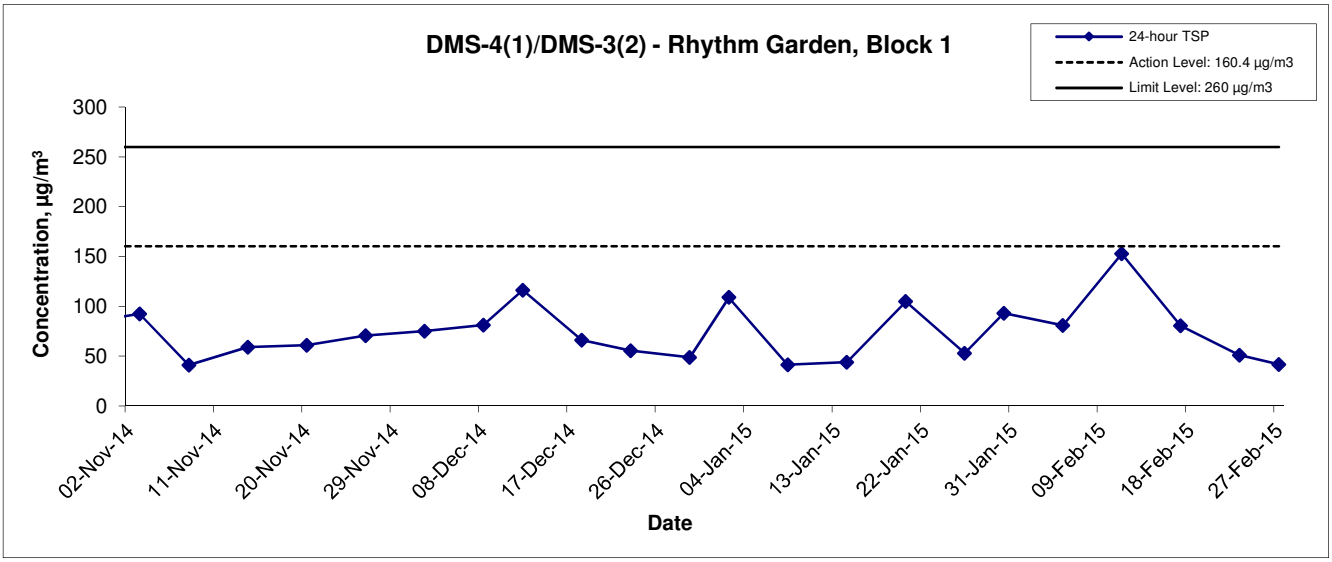
Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (µg/m^3)
					Initial	Final		Initial	Final		Initial	Final			
5-Feb-15	9:00	Sunny	285.4	772.9	3.1709	3.3131	0.1422	3782.2	3806.2	24.0	1.22	1.22	1.22	1759.2	80.8
11-Feb-15	9:00	Sunny	288.2	767.6	3.2393	3.5061	0.2668	3806.2	3830.2	24.0	1.21	1.21	1.21	1745.9	152.8
17-Feb-15	9:00	Cloudy	290.9	766.1	3.3055	3.4455	0.1400	3830.2	3854.2	24.0	1.21	1.21	1.21	1736.8	80.6
23-Feb-15	9:00	Cloudy	291.5	765.4	3.2051	3.2945	0.0894	3854.2	3878.2	24.0	1.22	1.22	1.22	1754.3	51.0
27-Feb-15	9:00	Cloudy	291.6	765.7	3.1880	3.2614	0.0734	3878.2	3902.2	24.0	1.22	1.22	1.22	1754.3	41.8
														Min	41.8
														Max	152.8
														Average	81.4

Remarks:

(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

24-hour TSP Concentration Levels



Remarks:

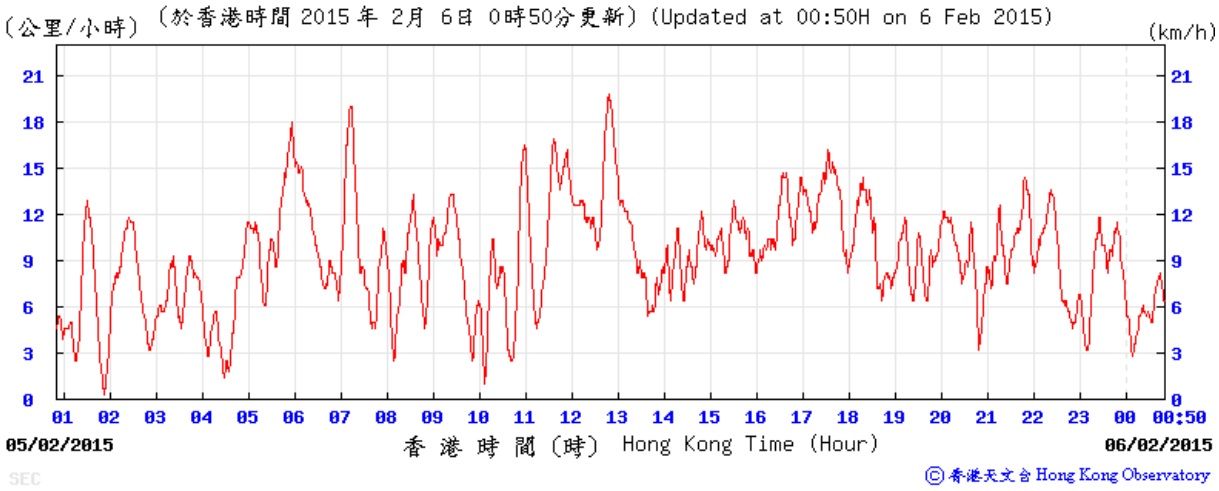
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

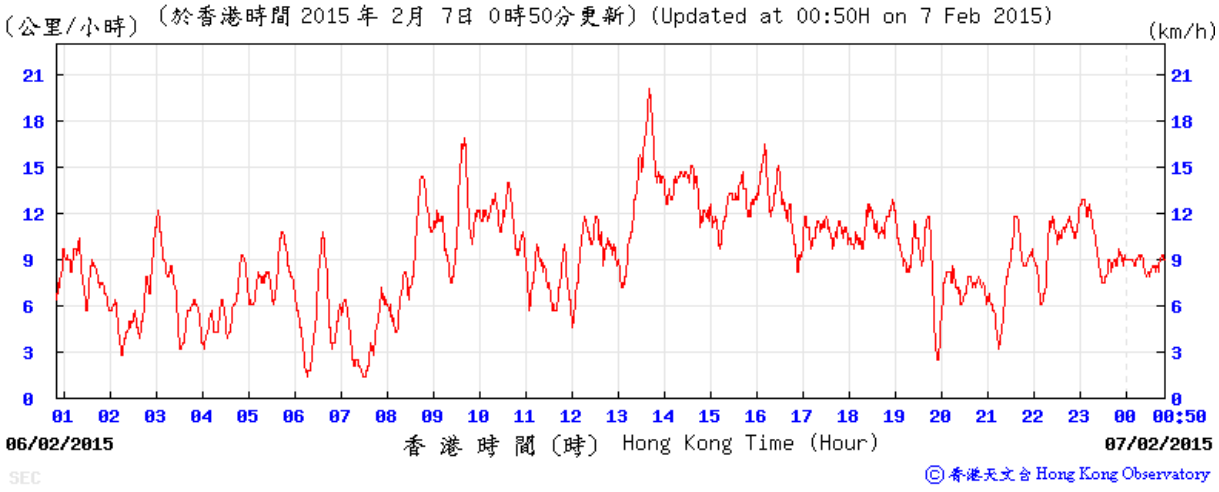
(2) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Title	Scale	Project No.	
Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tuk Tunnels Graphical Presentation of 24-hour TSP Monitoring Results	N.T.S	MA13018	CINOTECH
	Date: Mar 15	Appendix: E	

Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

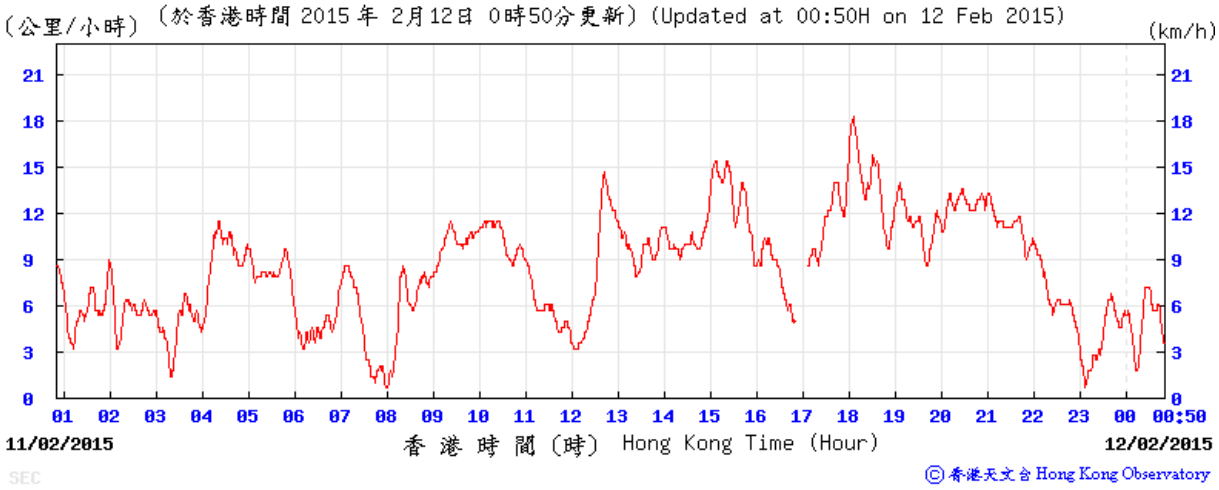
5-6 February 2015

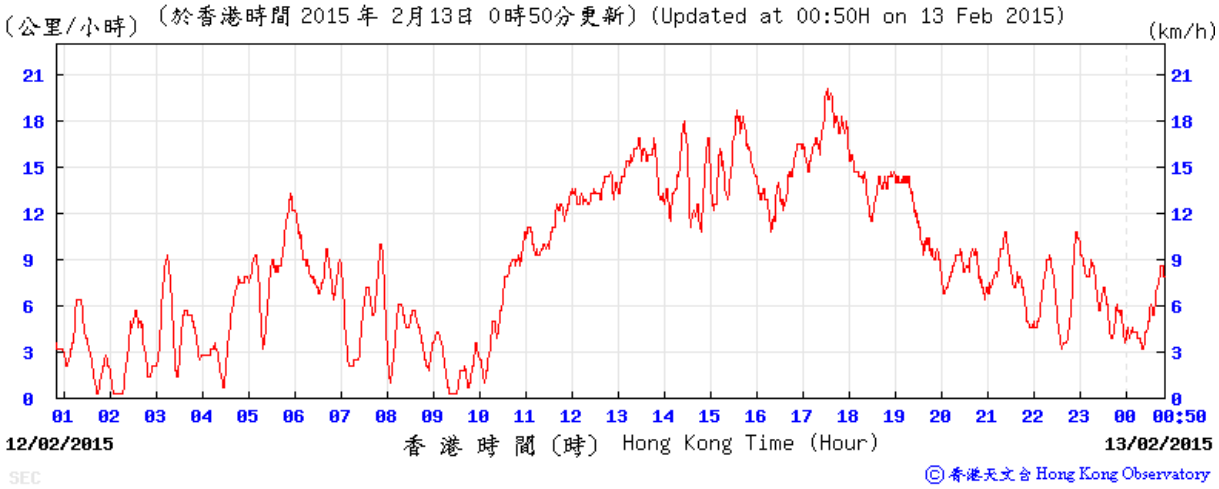




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

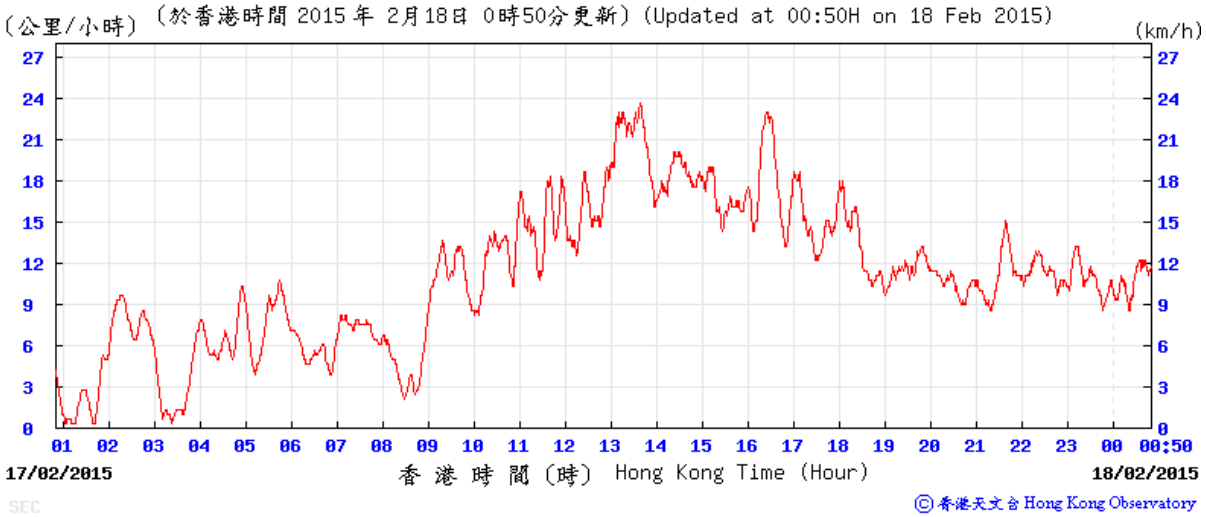
11-12 February 2015

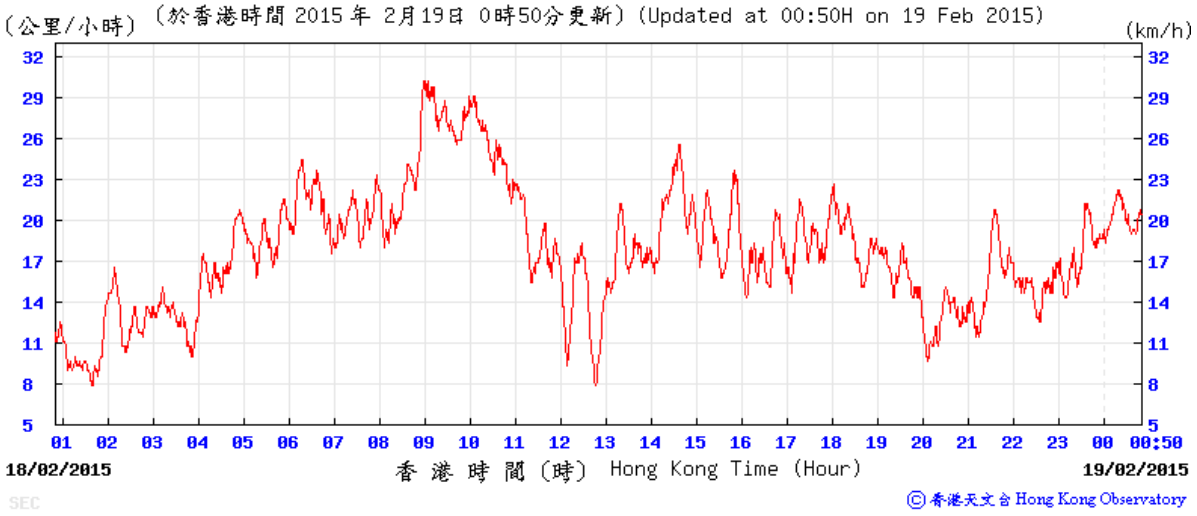




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

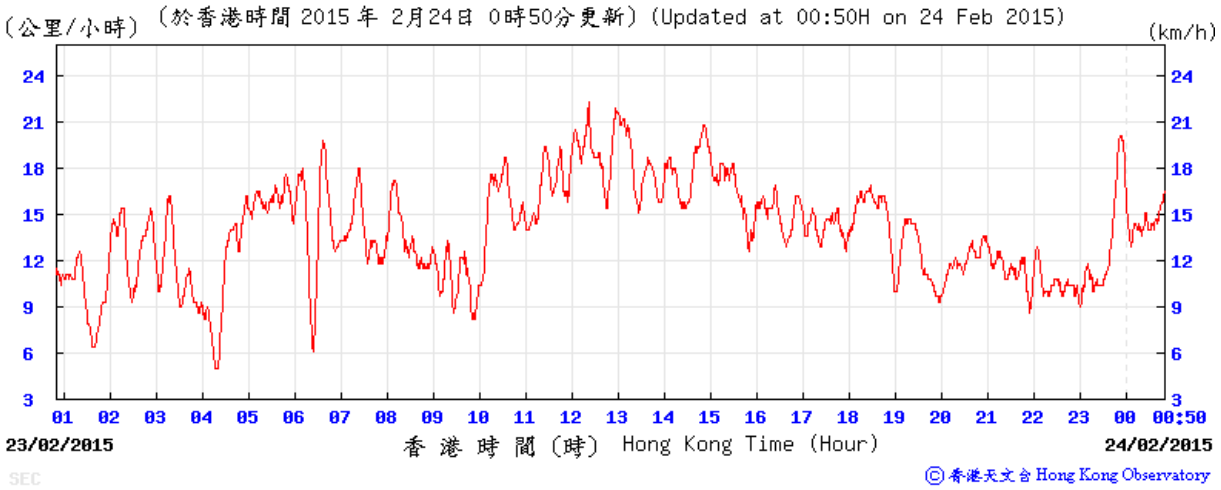
17-18 February 2015

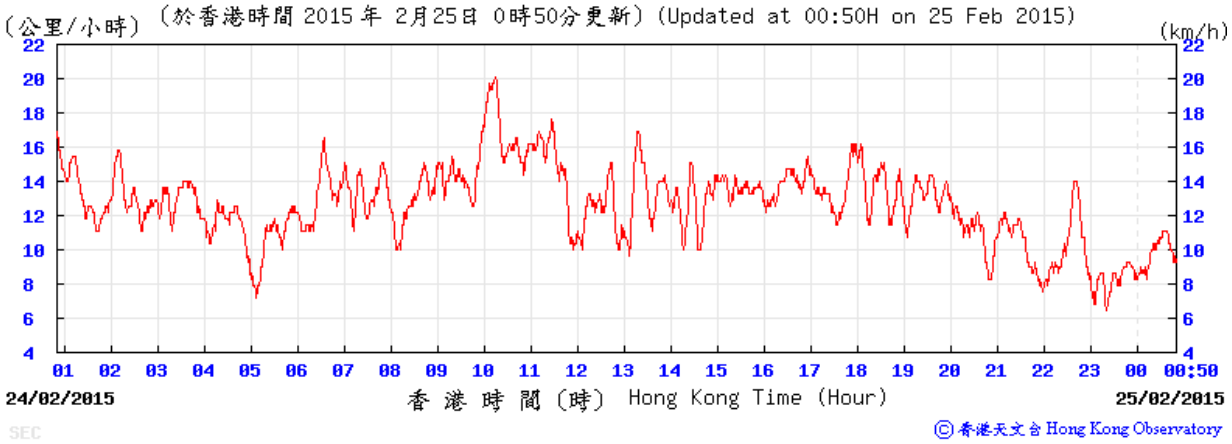




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

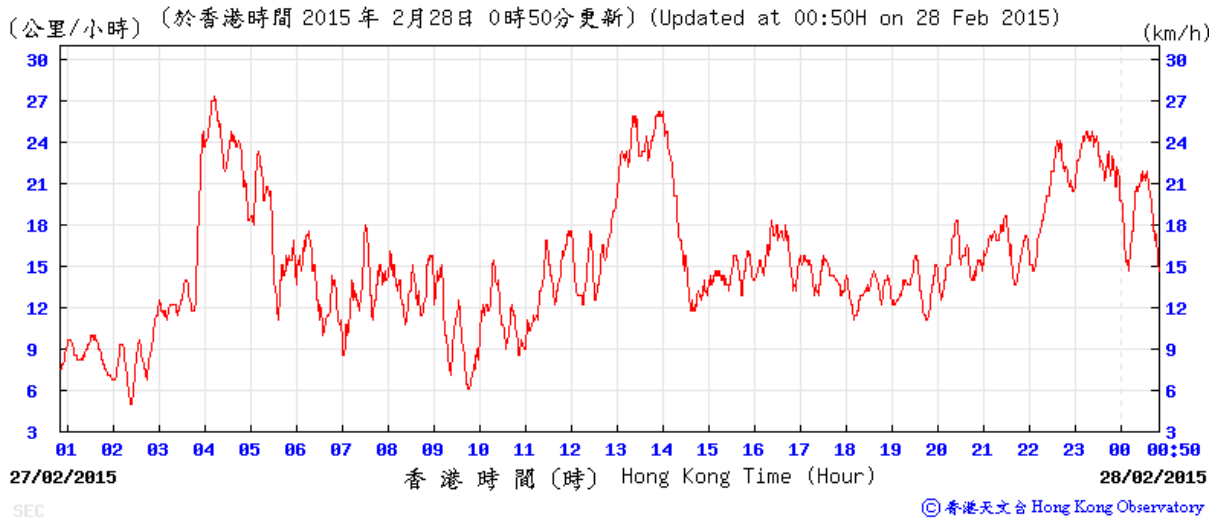
23-24 February 2015

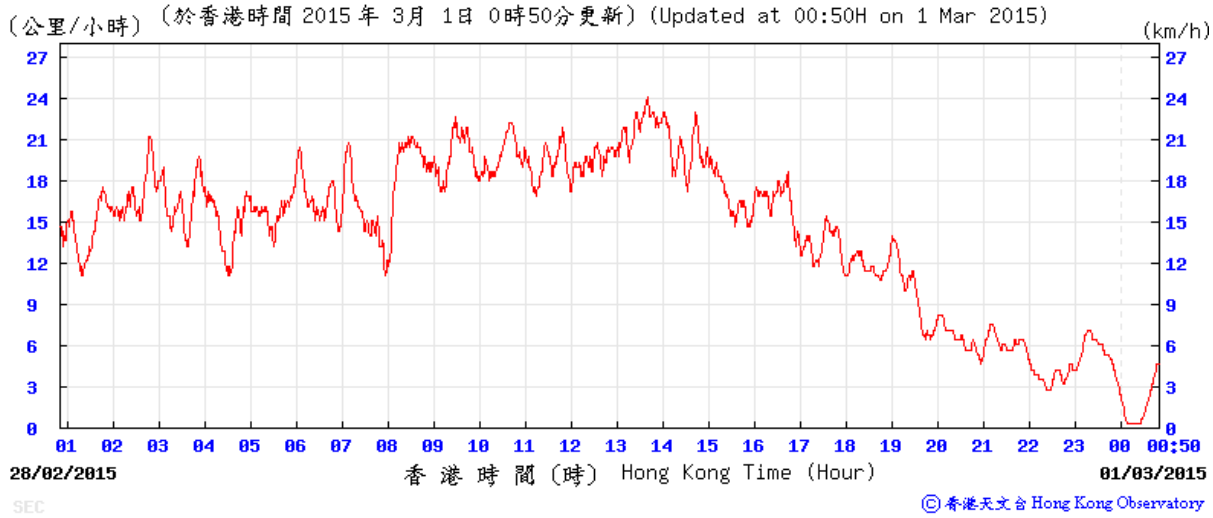




Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

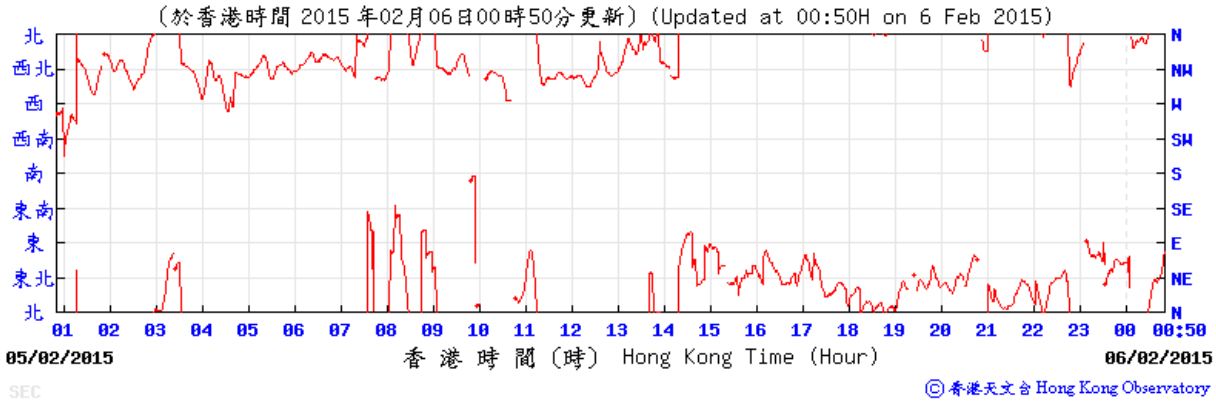
27-28 February 2015

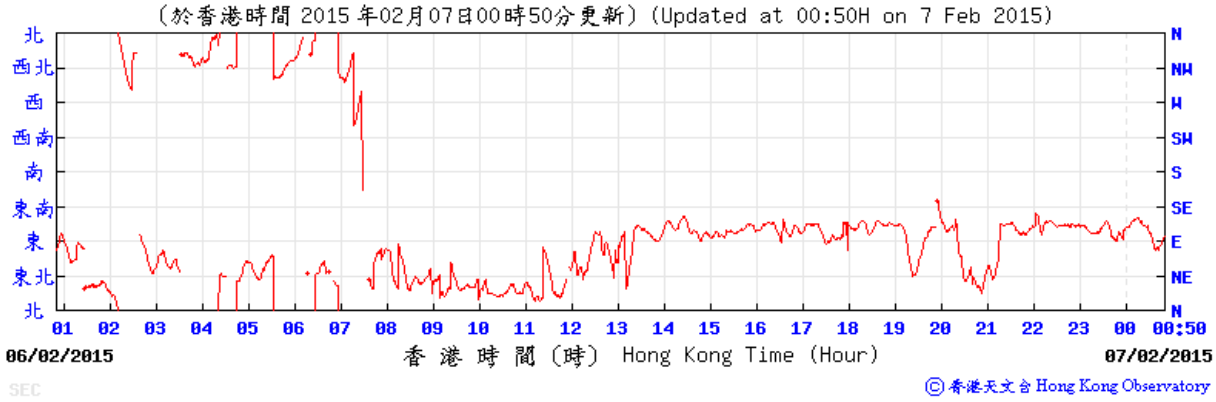




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

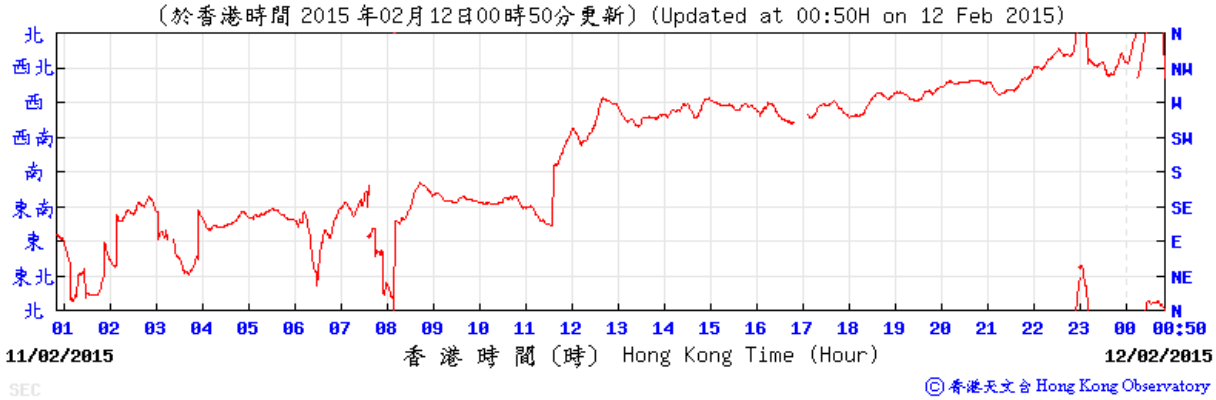
5-6 February 2015

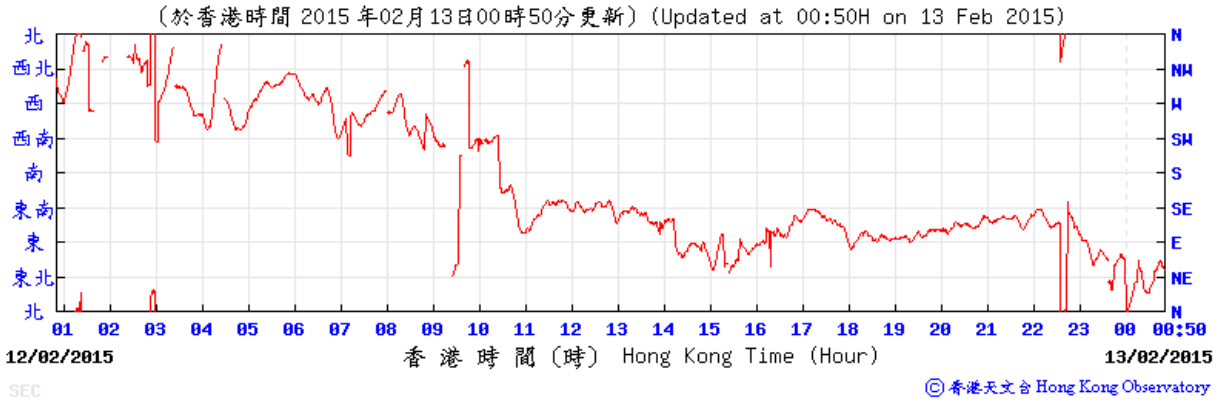




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

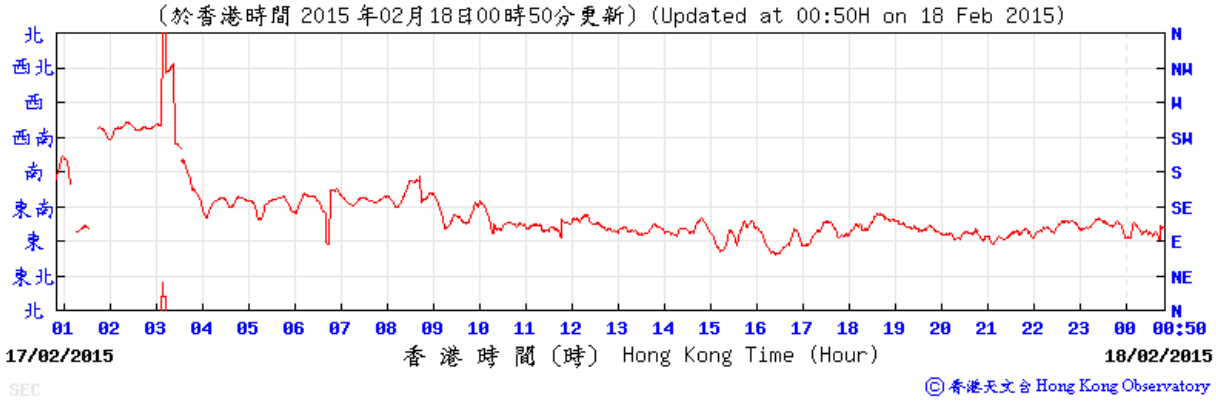
11-12 February 2015

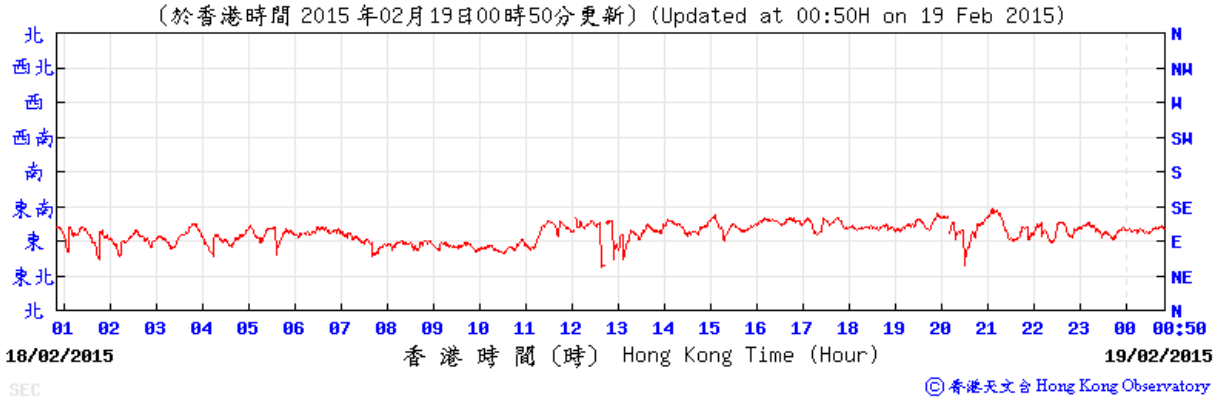




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

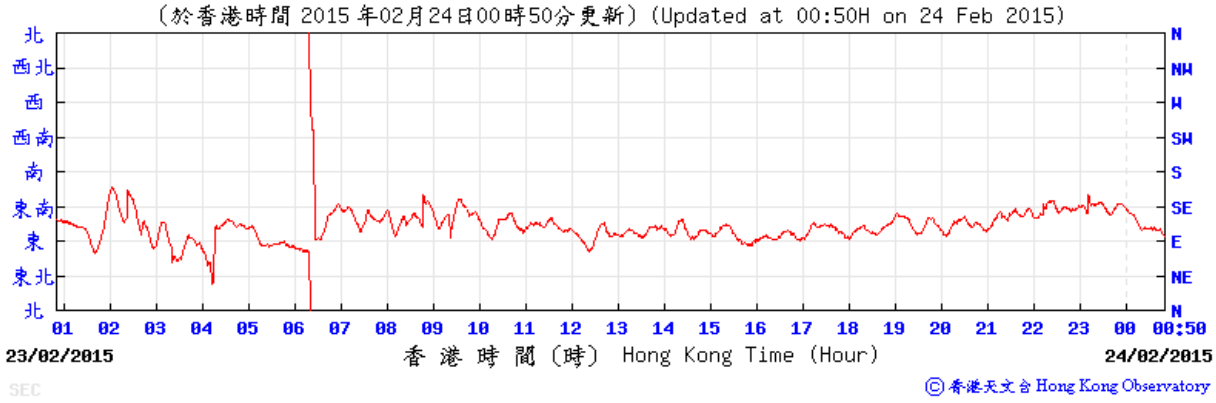
17-18 February 2015

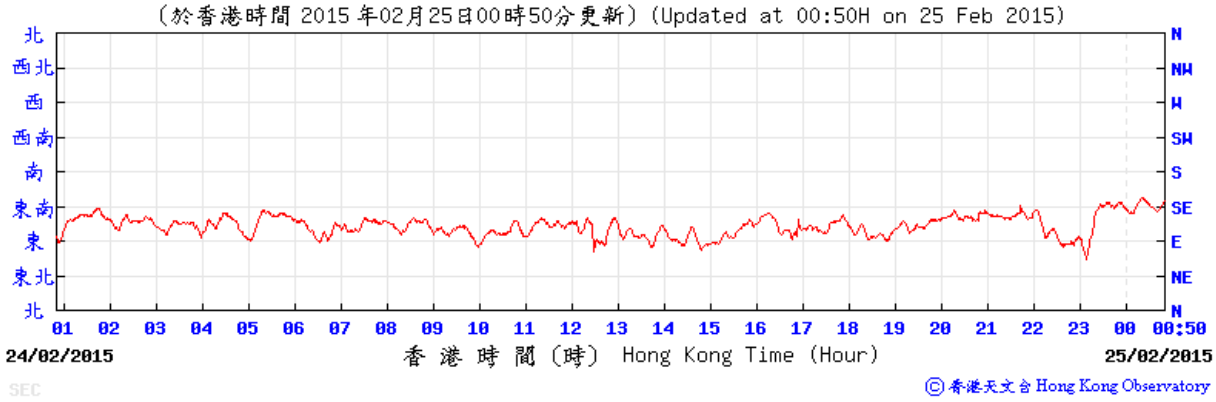




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

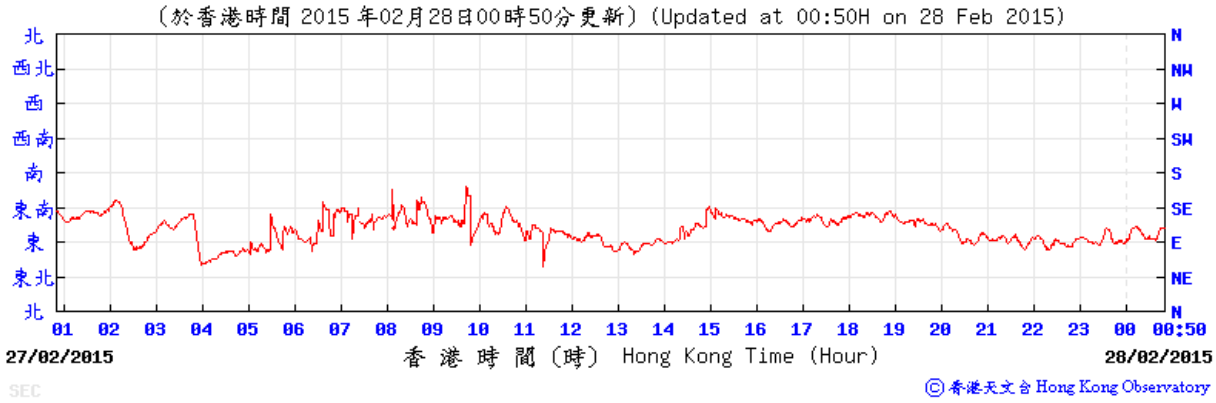
23-24 February 2015

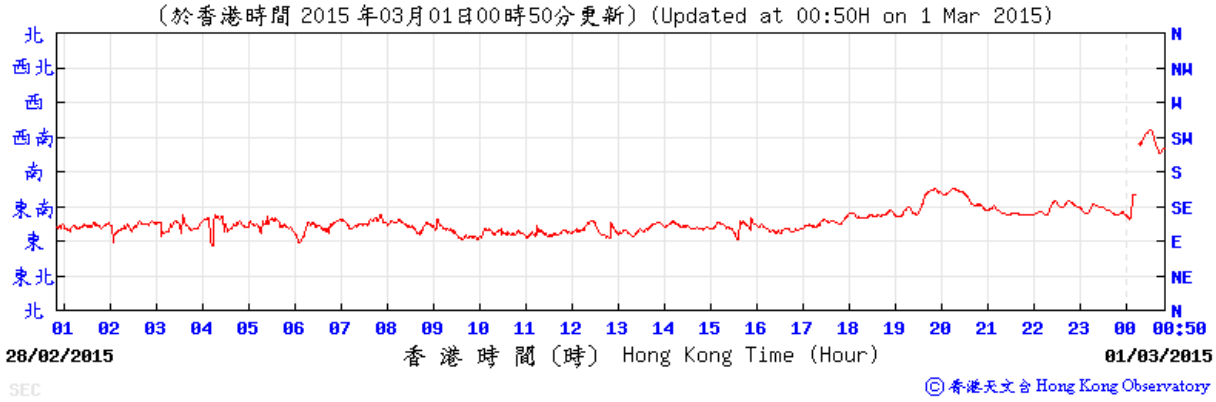




Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

27-28 February 2015





APPENDIX F
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix F - Noise Monitoring Results

Location NMS-CA-4(1)/NMS-CA-3(2) - Block 1, Rhythm Garden (north-eastern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
2-Feb-15	Sunny	16:40	73.2	74.5	71.7	73.5	71	69.9
		16:45	74.1	75.4	72.8			
		16:50	74.0	75.5	72.2			
		16:55	73.3	74.5	71.9			
		17:00	73.1	74.5	71.6			
		17:05	73.4	74.6	72.0			
12-Feb-15	Sunny	16:30	73.2	75.0	71.1	72.5		67.2
		16:35	72.4	73.7	71.0			
		16:40	72.3	73.7	71.0			
		16:45	72.8	73.8	71.6			
		16:50	72.3	73.3	71.1			
		16:55	72.0	73.2	70.7			
18-Feb-15	Cloudy	13:39	73.2	74.5	71.6	73.3		69.4
		13:44	73.5	74.9	72.0			
		13:49	73.2	74.4	71.7			
		13:54	73.0	74.3	71.5			
		13:59	73.4	74.6	71.9			
		14:04	73.5	74.7	72.2			
24-Feb-15	Cloudy	15:30	70.1	71.3	68.0	70.4		70.4 Measured ≦ Baseline Level
		15:35	70.3	71.4	69.1			
		15:40	70.2	71.5	68.1			
		15:45	70.7	71.7	68.5			
		15:50	70.5	71.5	68.1			
		15:55	70.3	71.4	68.2			

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Appendix F - Noise Monitoring Results

Location NMS-CA-5(1)/NMS-CA-2(2) - Block 1, Rhythm Garden (northern façade)								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
2-Feb-15	Sunny	16:00	71.7	72.9	70.2	71.6	74	71.6 Measured ≦ Baseline Level
		16:05	71.6	72.7	70.7			
		16:10	71.5	72.7	70.1			
		16:15	71.3	72.5	70.0			
		16:20	71.4	72.6	70.1			
		16:25	71.8	72.7	70.8			
12-Feb-15	Sunny	15:55	70.2	71.6	68.6	72.9		72.9 Measured ≦ Baseline Level
		16:00	71.7	73.3	69.7			
		16:05	73.9	76.5	69.9			
		16:10	73.4	75.6	70.4			
		16:15	71.9	74.1	69.2			
		16:20	74.8	77.5	70.2			
18-Feb-15	Cloudy	13:00	71.4	72.9	69.8	71.8		71.8 Measured ≦ Baseline Level
		13:05	71.6	72.9	70.5			
		13:10	71.8	73.2	70.2			
		13:15	72.1	73.4	70.6			
		13:20	71.9	73.2	70.5			
		13:25	71.8	73.2	70.1			
24-Feb-15	Cloudy	14:55	68.7	69.8	67.1	68.7		68.7 Measured ≦ Baseline Level
		15:00	68.8	70.3	67.1			
		15:05	68.9	70.5	67.0			
		15:10	68.7	70.2	67.1			
		15:15	68.6	69.9	67.1			
		15:20	68.5	69.8	67.0			

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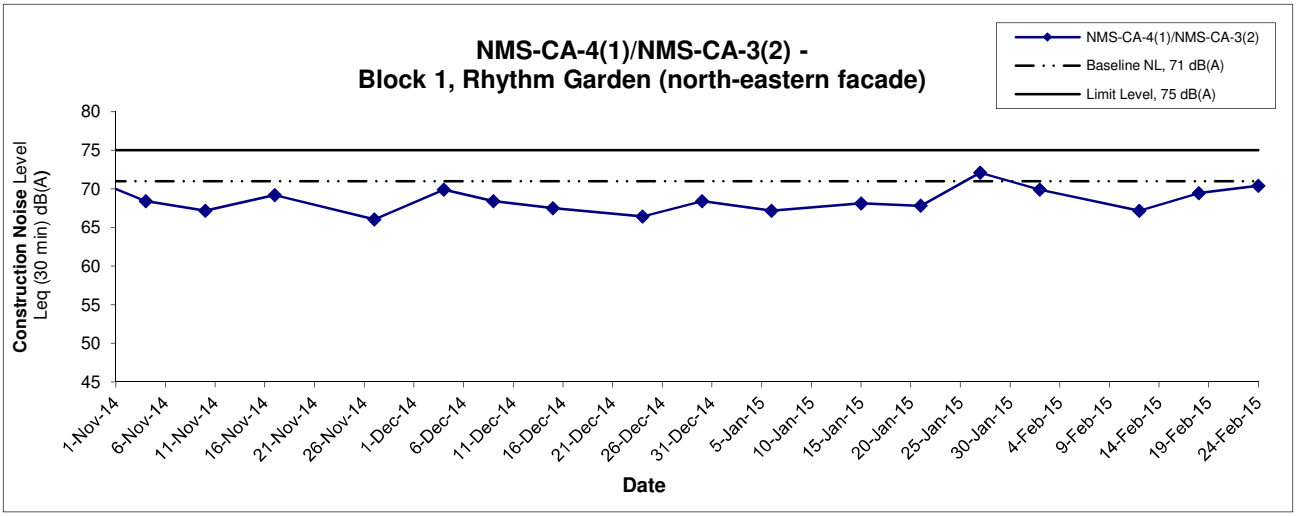
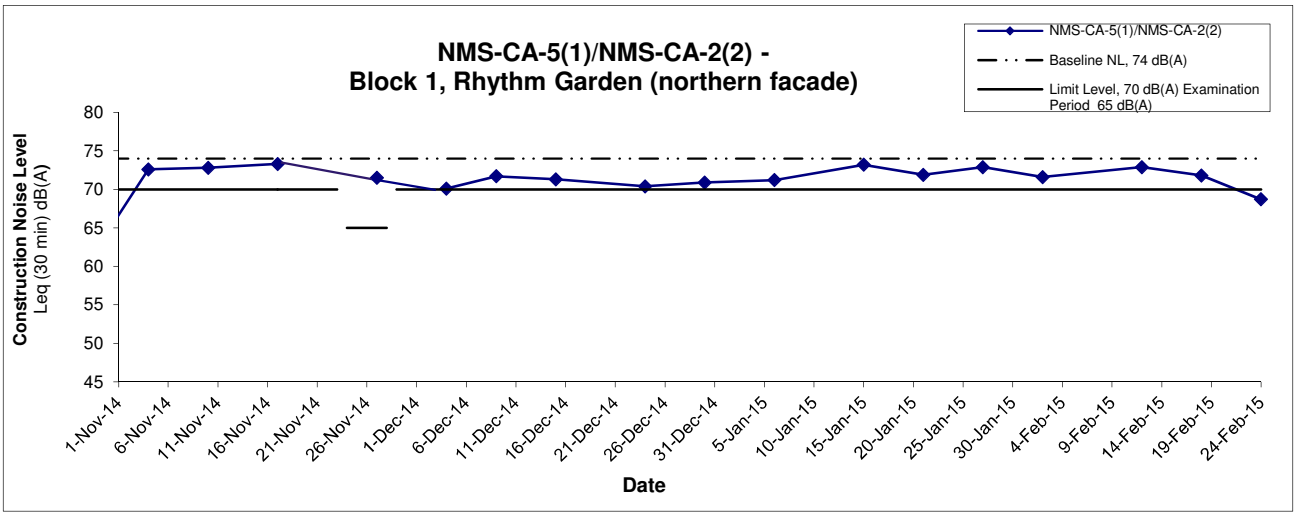
Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

Noise Levels





Remarks:

(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

(2) Station ID as identified in approved EM&A Manual / EIA Report for SCL(HHS).

(3) In case of Measured Level ≦ Baseline Level, only Measured Level is presented on the graphical presentation.

Title: Shatin to Central Link - Contract 1107 - Diamond Hill to Kai Tuk Tunnels Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Mar 15	Project No.: MA13018 Appendix: F	CINOTECH

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: February 2015

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX H
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150205
Date	5 February 2015 (Thursday)
Time	9:00 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150205-O01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management*** • Chemical containers and oil drum were placed on the ground at segment area near East Gate without a drip tray. Tray should be provided underneath the containers and oil drum to prevent chemical/oil spillage. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.: 150128), the environmental deficiency was observed improved rectified by Contractor.	F 10

	Name	Signature	Date
Recorded by	Kenneth Yuen		9 February 2015
Checked by	Dr. Priscilla Choy		9 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150212
Date	12 February 2015 (Thursday)
Time	9:00 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B – Water Quality • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.: 150205), the environmental deficiency was observed improved rectified by Contractor.	

	Name	Signature	Date
Recorded by	Kenneth Yuen		13 February 2015
Checked by	Dr. Priscilla Choy		13 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150218
Date	18 February 2015 (Wednesday)
Time	9:00 – 10:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150218-O01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management*** • General refuses were disposed at the recycling bins. The Contractor should remind workers that the recycling bins are strictly for the disposal of recyclable materials only and general refuses should be disposed at a separate container. The Contractor should also clear the refuses regularly to avoid accumulation. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.: 150212), no major environmental deficiency was observed during the site inspection.	F 1i, iii

	Name	Signature	Date
Recorded by	Kenneth Yuen		24 February 2015
Checked by	Dr. Priscilla Choy		24 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150225
Date	25 February 2015 (Wednesday)
Time	9:00 – 10:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150225-R01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part D – Air Quality*** • No environmental deficiency was identified during the site inspection. ***Part E - Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part F – Waste/Chemical Management*** • The barrels near the tree at the soil mixing area should be placed further away from the tree. A drip tray should also be placed underneath the container to avoid chemical spillage. ***Part G – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part H - Others*** • Follow-up on previous audit section (Ref. No.: 150218), the environmental deficiency was observed improved/rectified by the Contractor.	F 10

	Name	Signature	Date
Recorded by	Kenneth Yuen		27 February 2015
Checked by	Dr. Priscilla Choy		27 February 2015

APPENDIX I
EVENT AND ACTION PLANS

Appendix I - Event and Action Plan for Noise Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1107 ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. .	1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures	1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Appendix I - Event and Action Plan for Air Quality Monitoring during Construction Phase

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing;	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2.Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease addtional monitoring	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

Appendix I - Event and Action Plan for Air Quality Monitoring during Construction Phase

LIMIT LEVEL				
1.Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
2.Exceedance for two or more consecutive samples	1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix I - Event and Action Plan for Landscape and Visual during Construction Phase

EVENT	ACTION			
	Works Contract 1107 ET	**IEC**	**ER**	**CONTRACTOR**
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures.	1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures.	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

APPENDIX J
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Landscape & Visual (Construction Phase)								
S6.12	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u> • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	•TM-EIAO	N/A ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.						^
Table 6.9	LV2	<u>Decorative Hoarding</u> • Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. <u>Management of facilities on work sites</u> • To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. <u>Tree Transplanting</u> • Trees of medium to high survival rate that would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB	Minimize the visual and landscape impact of the Project during construction phase	Contractor	Within Project Site	Detailed design and construction stage	• EIAO – TM •ETWB TCW 2/2004 • ETWB TCW 3/2006	N/A N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		TCW No 3/2006.						
Air Quality (Construction Phase)								
/	A1	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	• APCO	^
Construction Dust Impact								
S7.6.6	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^
S7.6.6	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		an equivalent intensity of no less than 1.8 L/m^2 to achieve the dust removal efficiency						
S7.6.6	D3	• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extending beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary	Minimize dust impact at the nearby sensitive receivers	Contractor	All Construction Sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^ ^ ^ N/A ^ N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting;						^ ^ ^ N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					^ ^ ^ N/A
S7.6.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	^
Construction Airborne Noise								
S8.5.6	AN1	Implement the following good site practices: • only well-maintained plant should be operated on-site and plant	Control construction airborne	Contractor	All Construction Sites where	Construction stage	• Annex 5, TM-EIA	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	noise		practicable			^ ^ ^ ^ N/A
S8.5.6	AN2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy	Screen the noisy plant items to be used at all	Contractor	All Construction Sites	Construction stage	• Annex 5, TM-EIA	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		plants including air compressor, generators and saw.	construction sites					
S8.5.6	AN4	Use "Quiet" plant	Reduce the noise levels of plant items	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	N/A
S8.5.6	AN5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All Construction Sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.5.6	AN6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	•TM-EIA	^
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Noise for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> • At the start of site establishment (including the barging facilities), perimeter cut-off drains to direct off-site water around the site	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m^3/s a sedimentation basin of $30m^3$ would be required and for a flow rate of 0.5 m^3/s the basin would be 150 m^3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction.						^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via						^ N/A ^ N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m^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 be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, 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, especially for areas located near steep slopes • 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 sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure						^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		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. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited 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 water sensitive receivers nearby • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable.						N/A ^ N/A ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Adopt best management practices.						^
S10.7.1	W2	<u>Tunneling Works</u> • Cut-&-cover/ open cut tunnelling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge • The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. • Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-water • TM-EIAO	^ ^ ^ ^
S10.7.1	W3	<u>Sewage Effluent</u>	To minimize water quality	Contractor	All construction	Construction	• Water Pollution	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	from sewage effluent		sites where practicable	stage	Control Ordinance • TM-water	^
S10.7.1	W5	Accidental Spillage In order to prevent accidental spillage of chemicals, the following is recommended: • Proper storage and handling facilities should be provided; • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains; • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings; and • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	* * ^ N/A
Waste Management (Construction Waste)								
S11.4.1.1	WM1	On-site sorting of C&D material • Geological assessment should be carried out by competent	Separation of unsuitable rock from ending up at	Contractor	All construction sites	Construction stage	• DEVB TC(W) No. 6/2010	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.	concrete batching plants and be turned into concrete for structural use					
S11.5.1	WM2	<u>Construction and Demolition Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;	Good site practice to minimize the waste generation and recycle the	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions)	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and EPD and get their approval before implementation	C&D materials as far as practicable so as to reduce the amount for final disposal				Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	^ ^ N/A ^ ^ ^
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the	Good site practice to minimize the waste generation and recycle the C&D materials as far as	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	practicable so as to reduce the amount for final disposal				• Waste Disposal Ordinance • ETWB TCW No.19/2005	*
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	* *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						^ ^
S11.5.1	WM6	<u>Chemical Waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450L unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; be enclosed on at least 3 sides; have an impermeable floor and bunding of	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All Construction Sites	Construction Stage	• Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; be covered to prevent rainfall entering; and be arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; and be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						N/A

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

• Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

N/A Not Applicable

APPENDIX K
WASTE GENERATION IN THE REPORTING MONTH

CW - SELI Joint Venture

Name of Department: MTRC

Contract No.:1107

Monthly Summary Waste Flow Table for 2015

Year	Estimated Quantities of Inert C&D Materials (in '000m^3) (see Note 3)										Estimated Quantities of C&D Wastes									
	Total Quantity Generated		Suitable for Recycled Aggregates		Reused in the Contract		Reused in other Projects		Disposed as Public Fill		Metals		Paper/cardboard packaging		Plastics (see Note 3)		Chemical Waste		Others, e.g. general refuse	
	(a)		(b)		(c)		(d)		(e=a-b-c-d)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000litre)		(in '000m3)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
January	10.400	9.730	0.000	0.000	0.000	0.000	6.000	8.515	4.400	1.215	0.000	0.000	0.100	0.168	1.000	1.600	0.000	0.000	0.100	0.060
February	6.400	2.295	0.000	0.000	0.000	0.000	2.000	1.700	4.400	0.595	0.000	7.370	0.100	0.120	0.000	0.000	0.000	0.000	0.100	0.045
March	4.000		0.000		0.000		2.000		2.000		0.000		0.100		0.000		0.000		0.100	
April	4.000		0.000		0.000		2.000		2.000		0.000		0.100		0.000		0.100		0.100	
May	4.000		0.000		0.000		2.000		2.000		0.000		0.100		0.000		0.000		0.100	
June	4.000		0.000		0.000		2.000		2.000		0.000		0.100		0.000		0.000		0.100	
July	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.100		0.000		0.100	
August	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.000		0.000		0.100	
September	9.000		0.000		0.000		7.000		2.000		1.000		0.100		0.000		0.000		0.100	
October	9.000		0.000		0.000		7.000		2.000		1.000		0.100		0.000		0.000		0.100	
November	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.000		0.100		0.100	
December	9.000		0.000		0.000		7.000		2.000		0.000		0.100		0.100		0.000		0.100	
Total	**86.800**	**12.025**	**0.000**	**0.000**	**0.000**	**0.000**	**58.000**	**10.215**	**28.800**	**1.810**	**2.000**	**7.370**	**1.200**	**0.288**	**1.200**	**1.600**	**0.200**	**0.000**	**1.200**	**0.105**

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(3) The quantitles of C&D Materials, in m^3, was calculated by multiply the no. of truck with the volume of truck, which is 5m^3.

APPENDIX L
CUMULATIVE LOG FOR COMPLAINT LOGS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix L - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
N/A	Kai Ching Estate near Shaft A	8 December 2014	A resident of Kai Ching Estate complained about an incident of construction noise disturbance generated from operation of equipment, at the area adjacent to Shaft A in the night.	The Contractor had taken the following mitigation measures: • Hoardings and noise absorption blankets were erected along the site boundary to shield residents of Kai Ching Estate from noisy works during the time of the complaint; • The equipment involved in this complaint: the water pump, was removed immediately after the complaint was received to reduce noise nuisance to nearby noise sensitive receivers; • The low area near shaft A enclosure was backfilled to eliminate the flooding issue, thus the need of the water pump;	Closed
N/A	Kai Ching Estate near Site Entrance	15 December 2014	A resident of Kai Ching Estate complained about an incident of noise disturbance, generated from some sort of alarm noise at	The alarm bell was installed to alert pedestrians of moving vehicles. During the time of complaint,	Closed

			night from the construction site entrance.	vehicles might had moved in or out of the site, thus triggering the alarm. To avoid the same incident from happening again, the Contractor has agreed to permanently terminate the alarm bell.	

Cumulative Log for Notifications of Summons

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

Cumulative Log for Successful Prosecutions

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
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Appendix H

21st Monthly EM&A Report for Works Contract 1112 – Hung Hom Station and Stabling Sidings

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section and
Mong Kok East to Hung Hom Section

Monthly EM&A Report

[Period from 1 to 28 February 2015]

(March 2015)

Certified by: Vivian Chan

Position: Environmental Team Leader

Date: 13 March 2015

21st Monthly EM&A Report for February 2015

Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings

March 2015

AUSTRALIA | ASIA | MIDDLE EAST | AFRICA | PACIFIC

Project/Deliverable No.	7076187 | D50/01
Project Name	Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings
Report Name	21st Monthly EM&A Report for February 2015
Report Date	March 2015
Report for	Leighton Contractors (Asia) Limited

PREPARATION, REVIEW AND AUTHORISATION

Revision #	Date	Prepared by	Reviewed by	Approved by
1.0 (Draft)	Feb 2015	Samantha KONG	Vivian CHAN	Alexi BHANJA
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Introduction

The construction works of MTRC Shatin to Central Link Works Contract 1112- Hung Hom Station and Stabling Sidings (the Project) comprise permanent works and the necessary temporary works for Hung Hom Station (HUH), Hung Hom Stabling Sidings (HHS), the South Approach Tunnels (SAT) and the North Approach Tunnels (NAT) to the new station, HHS and any reprovisioning remedial and improvement works (RRIW).

Construction works of the Project commenced on 3 June 2013. This is the 21st Monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 28 February 2015 in accordance with the EM&A manual.

During the reporting month, the following activity took place for the Project:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

Landscape and Visual Monitoring

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 11 and 25 February 2015. All necessary mitigation measures have been implemented by the Contractor.

Air Quality Monitoring

Air quality (24-hour TSP) monitoring was carried out on 3, 9, 13, 17, 23 and 28 February 2015. No exceedance of Action and Limit Level of 24-hour TSP monitoring was recorded at the monitoring location in the reporting month.

Noise Quality Monitoring

Construction airborne noise monitoring can be referred to the Monthly EM&A Report for Contract 1111.

Waste Management

175,700 kg of general refuse was generated from the Project and disposed of at NENT landfill. 168,820 kg of asphalt was recycled from the Project. A total of 13,957 m^3 inert construction and demolition (C&D) materials were generated from the Project, where 3,032 m^3 was imported from

SCL 1111, 8,414 m^3 was reused in other projects, 5,543 m^3 was disposed of at TM38 Public Fill, and none was disposed of at TKO137 Public Fill. No chemical waste was disposed. A total of 816 m3 Type 1 marine sediments marine were disposed, of which 1,292 m^3 was generated from SCL1111. 462 kg of paper/cardboard packaging and 263,100 kg of metals were recycled during the reporting month.

Environmental Auditing

A total of 4 weekly environmental site audits were conducted on 5, 12, 18 and 26 February 2015. The IEC joint site audit was undertaken on 12 February 2015.

Compliant, Notification of Summons and Successful Prosecution

One environmental complaint was reported during the reporting month.

No summons or prosecution related to the environmental issues were received in the reporting period.

Future Key Issues

Major site activities for the coming reporting month will include:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Modification works at Concourse level
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

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

1 INTRODUCTION

1.1 Project Background

1.1.1 The Shatin to Central Link (SCL) is a designated project (DP) under the Environmental Impact Assessment Ordinance (EIAO). For the purposes of the Environmental Impact Assessment (EIA), five EIA studies have been conducted to cover different sections of the SCL. These are Tai Wai to Hung Hom Section (SCL (TAW-HUH)), Mong Kok East to Hung Hom Section (SCL (MKK-HUH)), Hung Hom to Admiralty Section (SCL (HUH-ADM)), Protection Works at Causeway Bay Typhoon Shelter and Stabling Sidings at Hung Hom Freight Yard (SCL (HHS)).

1.1.2 Three EIA reports are of relevance to Works Contract 1112 (the Project), namely EIA for SCL (TAW-HUH) (Register No. AEIAR-167/2012), EIA for SCL (MKK-HUH) (Register No. AEIAR-165/2012) and EIA for SCL (HHS) (Register No. AEIAR-164/2012). These were submitted and subsequently approved with conditions by the Environmental Protection Department (EPD) on 17 March2012. Two Environmental Permits (EPs), Environmental Permit No. EP-437/2012 for SCL (MKK-HUH) and Environmental Permit No. EP-438/2012 for SCL (TAW-HUH) were subsequently obtained on 22 March 2012. A recent application for variation of the EP for SCL (TAW-HUH) was approved and a varied EP (EP No. EP-438/2012/H) was issued by Director of Environmental Protection (DEP) on 10 September 2014.

1.1.3 Construction of the SCL has been divided into a number of works contracts. This Works Contract 1112 was awarded to Leighton Contractors (Asia) Limited (the Contractor) in March 2013. Leighton has engaged SMEC Asia Limited as the Environmental Team under the EIAO for Works Contract 1112.

1.2 Purpose of the Report

1.2.1 This is the 21st EM&A report which summarizes the monitoring results and audit findings during the reporting period from 1 to 28 February 2015.

1.3 Report Structure

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Parameters
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection and Audit
- Section 7: Environmental Non-conformance
- Section 8: Future Key Issues
- Section 9: Conclusions and Recommendations

2 PROJECT INFORMATION

2.1 General Site Description

2.1.1 The works under Works Contract 1112 comprise permanent works and the necessary temporary works for Hung Hom Station (HUH), Hung Hom Stabling Sidings (HHS), the South Approach Tunnels (SAT) and the North Approach Tunnels (NAT) to the new station, HHS and any reprovisioning remedial and improvement works (RRIW). The major permanent works under Works Contract 1112 generally comprise the following:

- New HUH integrated with the existing HUH station, with associated entrances, ventilation facilities, plant rooms, other ancillary facilities, and ABWF works.
- Modification of the existing HUH station to allow interchange between Existing East Rail Line and SCL(TAW-HUH), and between SCL(MKK-HUH) and SCL(TAW-HUH) comprising alteration and addition works at podium level, mid-level, and platform level.
- Running tunnels of the SCL(TAW-HUH) at the south and north ends of the new HUH to the existing stub tunnel of Existing West Rail and interface with Works Contract 1111.
- Running tunnels of the SCL(MKK-HUH) at the south and north ends of the new HUH to the proposed North Ventilation Building and interface with Works Contract 1111.
- Extensive underpinning and modification of the existing podium structure of HUH and the Hong Kong Coliseum, and associated protection works.
- Diversion, modification and dismantling of existing building services associated with underpinning and modification of existing structures.
- Demolition and clearance of the majority of the existing Hung Hom Freight Terminal infrastructure.
- Protection, diversion, and modification of utilities and services.
- Launching and retrieval track connecting the SCL(TAW-HUH) to HHS from the turnout close to WRL at the south and interface with Works Contract 1111 at the north.
- CLP Transformer Building.
- Demolition of the existing International Mail Centre adjacent to Salisbury Road, the MTR Freight Operations Building within the southern end of the Hung Hom Freight Terminal, and other ancillary buildings.
- Reconstruction of Cheong Wan Road Viaduct.
- Civil, BS and ABWF provisions for designated and interfacing contracts.
- Landscape works.
- Modification to various parts of existing disused Freight Yard structure for provision of HHS, comprising alteration and addition works at underground level, ground level, mezzanine level and podium level including new

accommodation and plant areas and stablings and associated track provisions connecting to the interface with Works Contract 1111.

- Extensive underpinning of the podium structures above the existing disused Freight Yard for provision of HHS and its associated works.
- Construct part of the shunting track.
- Construct the emergency track and its associated works which connect the stabling siding to the mainline which run parallel with the northern approach of HUH.
- Construct the semi-enclosed noise enclosure and its associated works over the entire HHS north fan area.

2.1.2 The works area for the Works Contract 1112 is shown in ***Appendix A***.

2.2 Construction Programme and Activities

2.2.1 The summary of construction programme is presented in ***Appendix B***.

2.2.2 The major construction activities carried out by the Contractor in the reporting period are summarized as below:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

2.3 Project Organisation

2.3.1 The project organization structure is presented in ***Appendix C***. The contact names and numbers for key personnel of the Project are summarized in ***Table 2-1***.

Table 2-1 Contact Information of Key Personnel

Company	Position	Name	Telephone	Fax
MTR	Construction Manager	Mr Kit CHAN	3127 6203	3127 6422
	SCL Project Environmental Team Leader	Mr Richard KWAN	2688 1283	2993 7577
Meinhardt	Independent Environmental Checker	Mr Fredrick LEONG	2859 1739	2540 1580

Company	Position	Name	Telephone	Fax
Leighton	Environmental Manager	Mr Kevin HARMAN	3973 0270	2356 9355
SMEC	ET Leader	Ms Vivian CHAN	3995 8140	3995 8101

2.4 Status of Environmental Licences, Notification and Permits

2.4.1 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in ***Table 2-2***.

Table 2-2 Status of Environmental Licenses, Notification and Permits

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
Environmental Permit				
EP-437/2012	22 Mar 2012	-	Valid	EP for SCL (MKK-HUH)
EP-438/2012/H	10 Sep 2014	-	Valid	EP for SCL (TAW-HUH)
Construction Noise Permit				
GW-RE1029-14	11 Sep 2014	10 Mar 2015	Valid	Generator for intrafor office in barging point
GW-RE1171-14	14 Oct 2014	13 Apr 2015	Valid	Pipe jacking works
GW-RE1203-14	24 Oct 2014	23 Apr 2015	Valid	Preparatory Works for Podium Concourse Modification Stage 1
GW-RE-1200-14	14 Nov 2014	13 May 2015	Valid	Dewatering at HHS
GW-RE1283-14	30 Nov 2014	29 May 2015	Valid	ADMS installations within live rail areas
GW-RE1408-14	20 Dec 2014	17 May 2015	Valid	CNP for SAT shafts
GW-RE1429-14	3 Jan 2015	30 Mar 2015	Valid until withdrawal on 25 February 2015	Loading and unloading of scissor lift outside Hung Hom station
GW-RE1445-14	31 Dec 2014	31 Mar 2015	Valid	Delivery of Heavy vehicles
GW-RE1449-14	30 Dec 2014	28 Feb 2015	Valid until cancellation on 28 Feb 2015	Erection of 9m protection barrier for bored pile GP1
GW-RE1450-14	22 Dec 2014	22 May 2015	Valid	Cheong Wan Road Bridge Deck Construction / Washing CJ for NAT
GW-RE1471-14	22 Dec 2014	22 May 2015	Valid	Underpinning works under podium

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
GW-RE1486-14	23 Dec 2014	23 May 2015	Valid until withdrawal on 12 Feb 2015	Works under podium
GW-RE0049-15	24 Jan 2015	28 Feb 2015	Valid until cancellation on 28 Feb 2015	Removal of temporary footbridge
GW-RE0065-15	22 Jan 2015	18 Feb 2015	Valid until cancellation on 18 Feb 2015	Concreting inside concourse during NTH
GW-RE0113-15	5 Feb 2015	5 Jul 2015	Valid	HHS building works
GW-RE0137-15	11 Feb 2015	11 Aug 2015	Valid	1875 drainage diversion works
PP-RE0001	9 Feb 2015	8 Aug 2015	Valid	Piling works
GW-RE0179-15	25 Feb 2015	30 Apr 2015	Valid	Loading and unloading of scissor lift outside Hung Hom station
Wastewater Discharge License				
WT00015983-2013	28 Jun 2013	30 Jun 2018	Valid	-
Chemical Waste Producer Registration				
5213-213-L2603-03	28 Jun 2013	-	Valid	-
Billing Account for Construction Waste Disposal				
7017179	27 Mar 2013	-	Active Account	-
Notification Under Air Pollution Control (Construction Dust) Regulation				
357078	18 Mar 2013	-	Notified	-
Marine Dumping Permit				
EP/MD/14-135	1 Nov 2014	1 Apr 2015	Valid	Type 1 – Open Sea Disposal
EP/MD/14-135	24 Dec 2014	1 Apr 2015	Valid	Additional Vessel for Hopper Barge (Vessel Licence No. B141011)
EP/MD/15-211	1 Feb 2015	28 Feb 2015	Valid until cancellation on 28 Feb 2015	Excavated Sediment Requiring Type 2 - Confined Marine Disposal
Notification of Asbestos Abatement Works				
AX141187	11 Oct 2014 (earliest commencement date)	-	Notified	Demolition of International Mail Centre, 80 Salisbury Road, Hung Hom

Permit / Licence No. / Notification / Reference No.	Valid Period		Status	Remark
	From	To		
AX141235	27 Oct 2014 (earliest commencement date)	-	Notified	Demolition of Freight Operation Building, MTR Hung Hom Depot
Notification of New Expiration Date of Sediment Quality Report (SQR)				
EP60/G1/12-395/Part XXVI	3 Nov 2014	22 Jan 2017	Notified	Data Reliability Review on Sediment Quality Report

3 ENVIRONMENTAL MONITORTING PARAMETERS

3.1 Landscape and Visual Impact Monitoring

3.1.1 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period.

3.2 Air Quality Monitoring

Parameter, Frequency and Duration

3.2.1 In accordance with the EM&A Manual, 24-hour Total Suspended Particulates (TSP) level at the designated air quality monitoring station is required throughout the construction period. The monitoring parameters and frequency are provided in ***Table 3-1***.

Table 3-1 Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
1-hour TSP	3 times in every 6 days when one documented valid complaint is received
24-hour TSP [1]	Once per 6 days

Note:
1. 24-hour TSP will be conducted when project-related construction activities are being undertaken within a radius of 500m from monitoring stations.

Monitoring Location

3.2.2 One air quality monitoring station was set up at the location in accordance with the approved EM&A Manuals. The location of the construction dust monitoring station is summarised in ***Table 3-2*** and shown in ***Appendix D***.

3.2.3 The monitoring location of AM2 has been located on the roof of the Site Office Building next to Harbourfront Horizon since 19 March 2014.

Table 3-2 Air Quality Monitoring Location

ID	Location
AM2 [1]	Harbourfront Horizon [2]

Note:
1. Different IDs were used in various EM&A Manuals for dust monitoring location at Harbourfront Horizon, DMS-12 was used in EM&A Manual for SCL(TAW-HUH), AM2 were used in EM&A Manual and EIA report for SCL(MKK-HUH), and DMS-1 Works Contract 1112 were used in EM&A Manual and EIA report for HHS. For ease of future reference, AM2 will be adopted for EM&A reporting for Works Contract 1112 when referring to this monitoring location.
2. Air quality monitoring location at Harbourfront Horizon is the same as monitoring station CD6a as proposed in the EM&A Manual for "Kwun Tong Line Extension (KTE)". Access to Harbourfront Horizon was rejected by the owner during preparation for baseline

monitoring for the KTE in early 2011. A representative monitoring location at the adjacent Finger Pier, at about 25m from Harbourfront Horizon, was adopted as an alternative monitoring location for KTE. This monitoring location is considered the most appropriate alternative monitoring location for AM2 and have been adopted for dust monitoring for Contract 1112.

Monitoring Equipment

3.2.4 The air quality monitoring was performed using High Volume Sampler (HVS). The HVS meets all the requirements of the EM&A Manual. Detail of the HVS used in air quality monitoring is provided in ***Table 3-3***.

Table 3-3 Air Quality Monitoring Equipment

Equipment	Brand and Model	Serial Number
High Volume Sampler	GS-2310 Accu-vol	694-0665
Calibration Kit	Tisch (TE-5025A)	1612

3.2.5 The HVS were calibrated in every six months interval using calibration kit which is re-calibrated by the manufacturer after one year of use. The calibration certificate of the calibration kit and the calibration spreadsheet of the HVS is provided in ***Appendix E***.

Monitoring Procedures

3.2.6 Specifications of HVS are as follow:

i. 0.6 - 1.7m^3 per minute adjustable flow range
ii. Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation
iii. Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation
iv. Capable of providing a minimum exposed area of 406cm^2
v. Flow control accuracy: +/- 2.5% deviation over 24-hour sampling period
vi. Equipped with a shelter to protect the filter and sampler
vii. Incorporated with an electronic mass flow rate controller or other equivalent devices
viii. Equipped with a flow recorder for continuous monitoring
ix. Provided with a peaked roof inlet
x. Incorporated with a manometer
xi. Able to hold and seal the filter paper to the sampler housing at horizontal position
xii. Easily changeable filter and
xiii. Capable of operating continuously for a 24-hour period.

3.2.7 Preparation of Filter Papers

i. Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.

ii. All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25°C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

iii. All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

3.2.8 Field Monitoring

i. The power supply was checked to ensure the HVS works properly.
ii. The filter holder and the area surrounding the filter were cleaned.
iii. The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
iv. The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
v. The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
vi. Then the shelter lid was closed and was secured with the aluminium strip.
vii. The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
viii. A new flow rate record sheet was set into the flow recorder.
ix. On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.3 m^3/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m^3/min).
x. The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
xi. The initial elapsed time was recorded.
xii. At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
xiii. The final elapsed time was recorded.
xiv. The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
xv. It was then placed in a clean plastic envelope and sealed.
xvi. All monitoring information was recorded on a standard data sheet.
xvii. Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

Wind Data Monitoring

3.2.9 Average wind data (wind speed and direction) at the King's Park meteorological station during the monitoring period were obtained from the Hong Kong Observatory (HKO) and presented in ***Appendix F***.

Monitoring Schedule

3.2.10 The schedule for environmental monitoring in February 2015 is provided in ***Appendix G***.

3.3 Construction Noise Monitoring

3.3.1 In accordance with the approved EM&A Manuals for SCL (TAW-HUH), SCL (MKK-HUH) and SCL (HHS), construction noise monitoring is required at No. 234-238 Chatham Road North (originally proposed as Wing Fung Building in the approved EM&A Manuals).

3.3.2 Construction airborne noise monitoring requirement details at No. 234-238 Chatham Road North (NM2) can be referred to the Monthly EM&A Report for Contract 1111.

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

4.1.1 All environmental mitigation measures and requirements as stated in EIA Reports, Environmental Permits and EM&A Manuals are implemented. The implementation status of the environmental mitigation measures for this Works Contract during the reporting period is summarized in ***Appendix H***.

4.1.2 Submissions to EPD during construction stage had been made in accordance with the EP requirements. A summary of EP submission requirements and their status is presented in ***Table 4-1***.

Table 4-1 Summary of Status of Required Submission under EP

Required Submission	Environmental Permit	Date of Submission	Status
EP Condition 3.4 - Monthly Environmental Monitoring & Audit (EM&A) Report	EP-437/2012	13 February 2015	Submitted
	EP-438/2012/H	13 February 2015	Submitted

5 MONITORING RESULTS

5.1 Landscape and Visual

5.1.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 11 and 25 February 2015. All necessary mitigation measures have been implemented by the Contractor.

5.1.2 The Event and Action Plan for Landscape and Visual Impact Monitoring is provided in ***Appendix I***.

5.2 Air Quality Monitoring

5.2.1 The monitoring results for 24-hour TSP are summarized in ***Table 5-1.*** Detailed air quality monitoring results are presented in ***Appendix J***.

Table 5-1 Summary of 24-hour TSP Monitoring Results

ID	Average (µg/m^3)	Range (µg/m^3)	Action Level (µg/m^3)	Limit Level (µg/m^3)
AM2	70.0	29.1 – 113.7	182	260

5.2.2 No Action and Limit Level exceedance was recorded in the reporting month.

5.2.3 The Event and Action Plan is provided in ***Appendix I***.

5.3 Regular Construction Noise Monitoring

5.3.1 Construction airborne noise monitoring results in the reporting month can be referred to the Monthly EM&A Report for Contract 1111.

5.4 Waste Management

5.4.1 Receptacles for collection of general refuse were provided at the site. As advised by the Contractor, 175,700 kg of general refuse was generated from the Project and disposed of at NENT landfill. 168,820 kg of asphalt was recycled from the Project. A total of 13,957 m^3 inert construction and demolition (C&D) materials were generated from the Project, where 3,032 m^3 was imported from SCL 1111, 8,414 m^3 was reused in other projects, 5,543 m^3 was disposed of at TM38 Public Fill, and none was disposed of at TKO137 Public Fill. No chemical waste was disposed. A total of 816 m^3 Type 1 marine sediments marine were disposed, of which 1,292 m^3 was generated from SCL1111. 462 kg of paper/cardboard packaging and 263,100 kg of metals were recycled during the reporting month. The waste flow table is presented in ***Appendix K***.

5.4.2 A billing account for construction waste disposal has been approved and a trip ticket system was implemented to record the waste generated from the Project in the reporting month.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1.1 Weekly site audits were conducted by the ET and attended by the ER and the Contractor to monitor the timely implementation of proper environmental management practices and mitigation measures at the site. 4 site audits were carried out on 5, 12, 18 and 26 February 2015 during the reporting month. Representative of the IEC joined the site inspection on 12 February 2015. A summary of the implementation schedule of environmental mitigation measures is provided in ***Appendix H***.

6.1.2 EPD inspections were conducted on 13 February 2015 for investigation upon receipt of the complaint regarding dust nuisance at Hung Hom building demolition site, Tsim Sha Tsui.

6.1.3 During the weekly site inspections, no non-conformance was identified. Details of observations recorded during site inspection are summarized in ***Table 6-1***.

Table 6-1 Observations and Recommendations of Site Audits

Parameters	Description	Works Area	Observation Date	Status
Air Quality	White smoke emission was observed. The Contractor should review the efficiency of exhaust system regularly and maintain equipment in good condition.	NAT	29 January 2015	The item was rectified by the Contractor on 5 February 2015.
		NAT	29 January 2015	The item was rectified by the Contractor on 5 February 2015.
		NAT	29 January 2015	The item was rectified by the Contractor on 5 February 2015.
		HHS (E27a)	5 February 2015	The item was rectified by the Contractor on 18 February 2015.
		SAT	5 February 2015	The item was rectified by the Contractor on 12 February 2015.
		SAT	5 February 2015	The item was rectified by the Contractor on 12 February 2015.
		HHS (M30)	12 February 2015	The item was rectified by the Contractor on 18 February 2015.
		NAT	12 February 2015	The item was rectified by the Contractor on 18 February 2015.

Parameters	Description	Works Area	Observation Date	Status
	Grouting facility was not properly enclosed. The Contractor should ensure all grouting facilities with proper enclosure (3 sides plus top enclosure).	SAT	5 February 2015	The item was rectified by the Contractor on 12 February 2015.
	Dry exposed works areas were observed. The Contractor should provide sufficient dust suppression measures to prevent dust generation.	NAT	12 February 2015	The item was rectified by the Contractor on 18 February 2015.
		SAT	12 February 2015	The item was rectified by the Contractor on 18 February 2015.
		HHS	12 February 2015	The item was rectified by the Contractor on 18 February 2015.
Waste/ Chemicals Management	Chemical containers and machineries were observed without secondary containment. The Contractor should provide secondary containment to all chemical containers to prevent land contamination.	HUH (O/P-11/12)	29 January 2015	The item was rectified by the Contractor on 5 February 2015.
		HUH (P/Q-15)	29 January 2015	The item was rectified by the Contractor on 5 February 2015.
		HHS (M41)	29 January 2015	The item was rectified by the Contractor on 5 February 2015.
		NAT	5 February 2015	The item was rectified by the Contractor on 12 February 2015.
		HHS (G9)	12 February 2015	The item was rectified by the Contractor on 18 February 2015.
		HHS (M31)	12 February 2015	The item was rectified by the Contractor on 18 February 2015.
		NAT	12 February 2015	The item will be followed-up in the next reporting month.
		NAT	18 February 2015	The item was rectified by the Contractor on 26 February 2015.
		SAT	18 February 2015	The item will be followed-up in the next reporting

Parameters	Description	Works Area	Observation Date	Status
				month.
	Stagnant water was found inside the drip tray. The Contractor should clear the stagnant water inside drip trays regularly.	NAT	26 February 2015	The item will be followed-up in the next reporting month.
	Oil Stains were observed. The Contractor should clean the oil stains and dispose the removed soil as chemical waste.	HHS (G9)	12 February 2015	The item was rectified by the Contractor on 18 February 2015.

Note:

1. HUH: Hung Hom Station
2. HHS: Hung Hom Stabling Sidings
3. NAT: North Approach Tunnels
4. SAT: South Approach Tunnels
5. N/A: Not Applicable
6. M5a: Works area close to the intersection of Salisbury Road and Hong Wan Path
7. IMC: International Mail Centre

6.1.4 Follow-up actions requested by Contractor's ET and IEC during site inspections were undertaken by the Contractor and the work were confirmed in the following weekly site inspection. Follow-up actions that are still outstanding in the reporting month will be inspected in site inspections in following month, until the corresponding action has been satisfactorily completed by the Contractor.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of Monitoring Exceedances

7.1.1 All 24-hour TSP results were below the Action and Limit level at all monitoring locations in the reporting month.

7.2 Summary of Environmental Non-Compliance

7.2.1 No environmental non-compliance event was recorded during the reporting month.

7.3 Summary of Environmental Complaint

7.3.1 EPD received one public complaint on 7 February 2015 regarding dust nuisance. The investigation report was submitted to EPD on 23 February 2015. Details and cumulative statistics on environmental complaints can be referred to ***Appendix L***

7.4 Summary of Environmental Summons and Successful Prosecution

7.4.1 No summon was received during the reporting month.

7.4.2 The cumulative statistics on notification of summons and successful prosecutions is provided in ***Appendix L***.

8 FUTURE KEY ISSUES

8.1 Construction Programme for Next Month

8.1.1 The construction programme for the upcoming month is provided in ***Appendix B*** and the key issues to be considered in the upcoming months include:

- Piling for HUH, NAT and SAT
- Diaphragm wall construction at HUH
- Initial excavation at HUH and HHS
- Barging point operation at Hung Hom Freight Pier
- Operation of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)
- Modification works at Concourse level
- Underpinning works at HUH
- Reconstruction of Cheong Wan Road Viaduct
- Demolition of International Mail Centre and Freight Operations Building

8.2 Key Issues for the Coming Months

8.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise and waste management.

8.3 Monitoring Schedule for Next Month

8.3.1 The tentative schedule for environmental monitoring in March 2015 is provided in ***Appendix G***.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

9.1.1 The construction phase of the Project was commenced on 3 June 2013. The EM&A programme has been implemented to include air quality monitoring and environmental site audits. This is the 21st Monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 28 February 2015.

9.1.2 6 nos. of 24-hour TSP monitoring were carried out in the reporting month.

9.1.3 No exceedance of the Action and Limit Levels of air quality monitoring was recorded at the designated monitoring stations during reporting period.

9.1.4 Two landscape and visual monitoring and four environmental site audits were conducted in the reporting month. Recommendations on remedial actions were provided to the Contractor for deficiencies identified during the site audits.

9.1.5 One environmental complaint was reported during the reporting month.

9.1.6 The ET will keep track on the EM&A programme to ensure the compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

9.2 Recommendations

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

Air Quality Impact

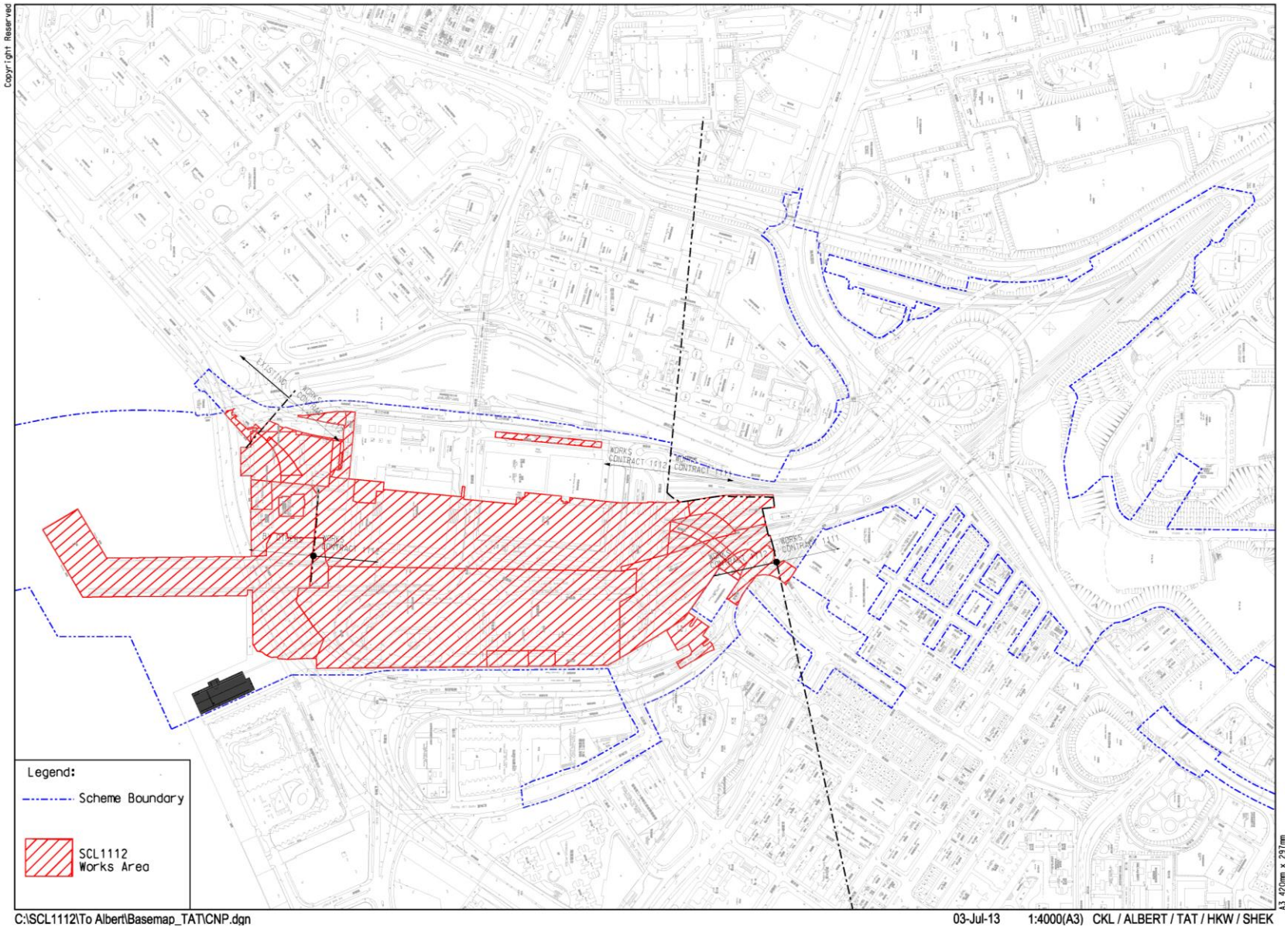
- Maintain all site plant equipment to function in good condition to prevent fume generation.
- Ensure all grouting facilities with proper enclosure.
- Provide sufficient dust suppression measures to prevent dust generation.

Chemical and Waste Management

- Provide secondary containment with proper maintenance and usage to prevent any possibility in contaminating the land.
- Clean the oil stain and dispose the removed soil as chemical waste.
- Clear the stagnant water inside drip trays regularly.

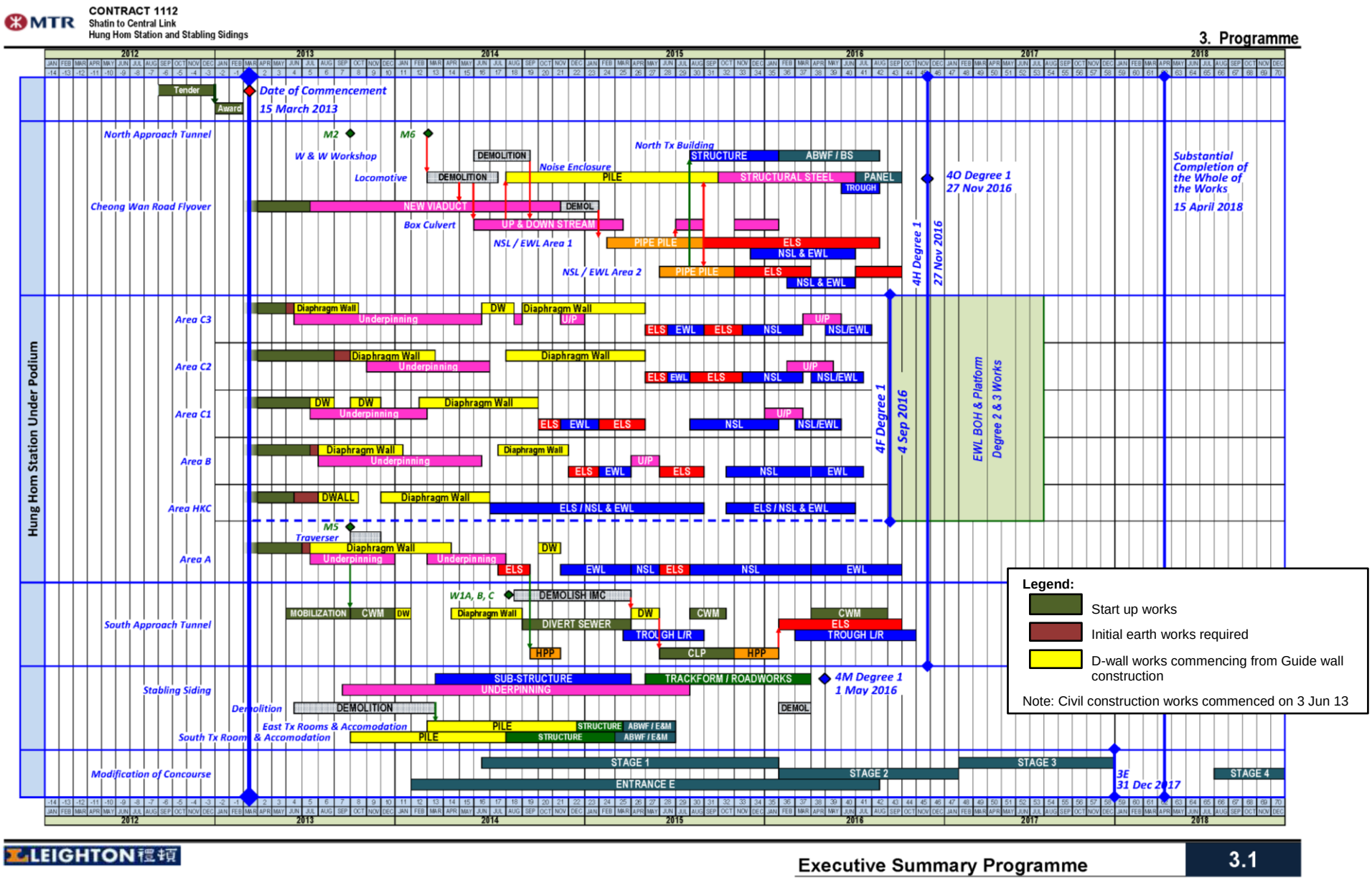
APPENDIX A

Project Works Boundary


Copyright Reserved
Legend:
Scheme Boundary
SCL1112
Works Area
C:\SCL1112\To Albert\Basemap_TAT\CNP.dgn
03-Jul-13
1:4000(A3) CKL / ALBERT / TAT / HKW / SHEK
A3 420mm x 297mm

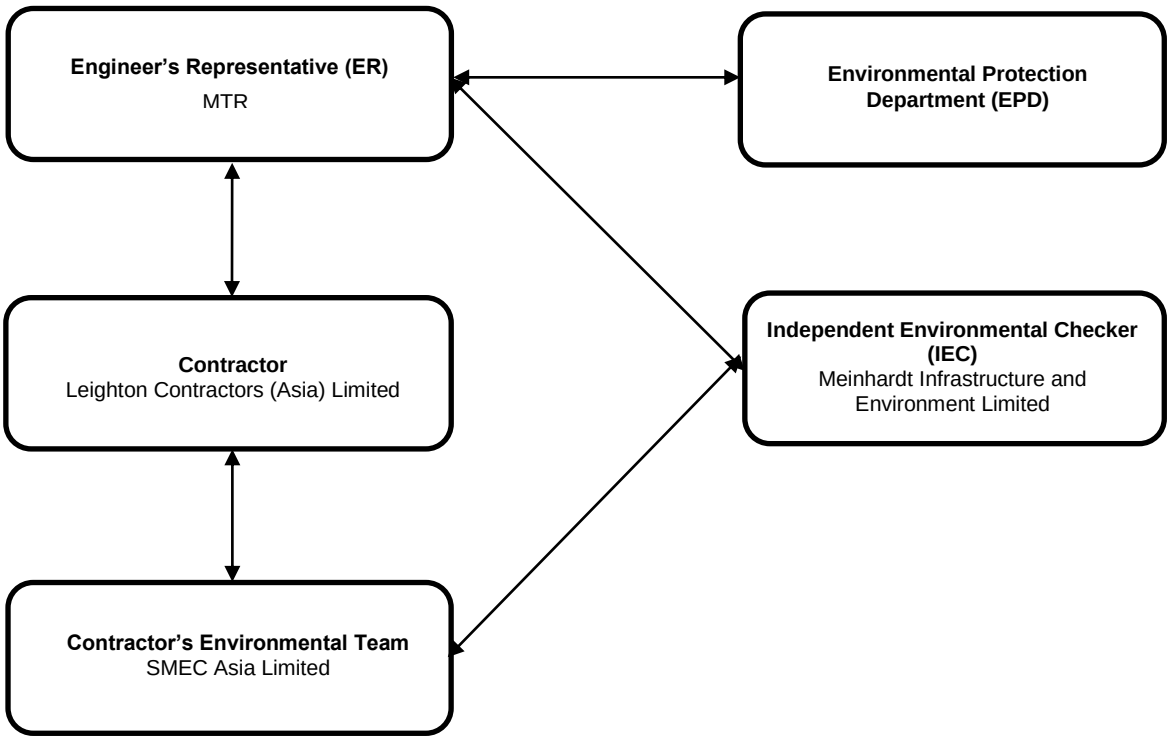
APPENDIX B

Construction Programme


MTR
CONTRACT 1112
Shatin to Central Link
Hung Hom Station and Stabling Sidings
3. Programme
2012
2013
2014
2015
2016
2017
2018
Tender
Award
Date of Commencement
15 March 2013
Hung Hom Station Under Podium
North Approach Tunnel
M2
M6
W & W Workshop
Locomotive
DEMOLITION
Noise Enclosure
North Tx Building
STRUCTURE
ABWF / BS
PILE
STRUCTURAL STEEL
PANEL
TROUGH
4O Degree 1
27 Nov 2016
Substantial Completion of the Whole of the Works
15 April 2018
Cheong Wan Road Flyover
NEW VIADUCT
DEMOL
Box Culvert
UP & DOWN STREAM
NSL / EWL Area 1
PIPE PILE
ELS
NSL & EWL
NSL / EWL Area 2
4H Degree 1
27 Nov 2016
Area C3
Area C2
Area C1
Area B
Area HKC
Area A
Diaphragm Wall
Underpinning
DW
U/P
ELS
EWL
NSL
NSL/EWL
DWALL
ELS / NSL & EWL
4F Degree 1
4 Sep 2016
EWL BOH & Platform
Degree 2 & 3 Works
M5
Traverser
South Approach Tunnel
W1A, B, C
DEMOLISH IMC
MOBILIZATION
CWM
DIVERT SEWER
TROUGH L/R
HPP
CLP
Stabling Siding
SUB-STRUCTURE
TRACKFORM / ROADWORKS
UNDERPINNING
4M Degree 1
1 May 2016
Demolition
East Tx Rooms & Accomodation
South Tx Room & Accomodation
ABWF / E&M
Modification of Concourse
STAGE 1
STAGE 2
STAGE 3
STAGE 4
ENTRANCE E
3E
31 Dec 2017
Legend:
Start up works
Initial earth works required
D-wall works commencing from Guide wall construction
Note: Civil construction works commenced on 3 Jun 13
LEIGHTON 禮頓
Executive Summary Programme
3.1

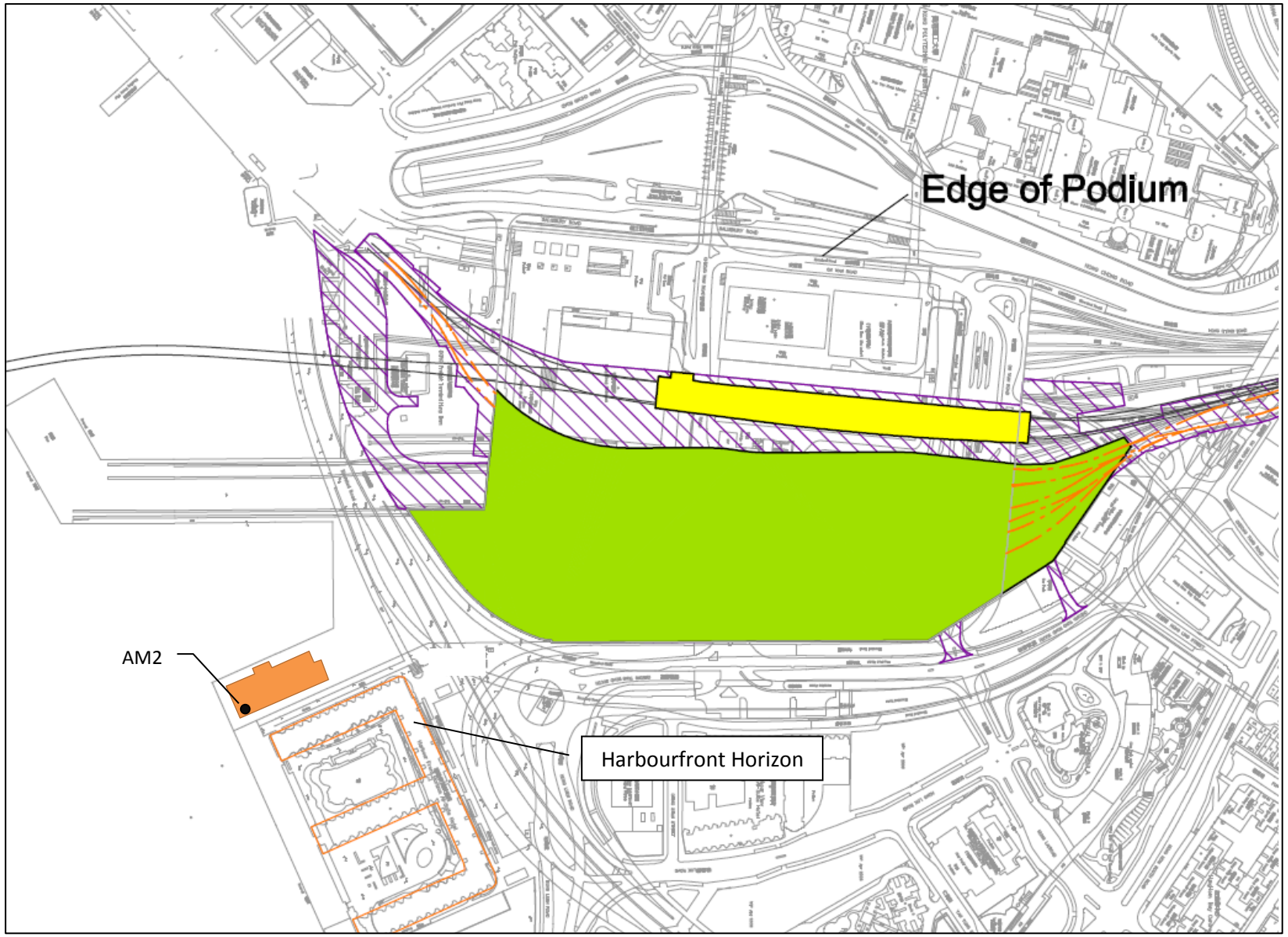
APPENDIX C

Project Organisation for Environmental Works


Engineer's Representative (ER)
MTR
Environmental Protection Department (EPD)
Contractor
Leighton Contractors (Asia) Limited
Independent Environmental Checker (IEC)
Meinhardt Infrastructure and Environment Limited
Contractor's Environmental Team
SMEC Asia Limited

APPENDIX D

Location of Air Quality Monitoring Station


Edge of Podium
AM2
Harbourfront Horizon

APPENDIX E

Calibration Certificates for Monitoring Equipment

TSP Sampler Calibration

SITE

Location:	Hung Hom	Calibration Date:	December 6, 2014
Sampler:	Hunghom MTR TSP	Next Calibration Date:	February 6, 2015
Serial No	694-0665	Tech:	Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	40.15	Corrected Pressure (mm Hg):	1020
Temperature (deg F):	63	Temperature (deg K):	290
Average Press. (in Hg):	40.15	Corrected Average (mm Hg):	1020
Average Temp. (deg F):	63	Average Temp. (deg K):	290

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.00757
Model:	TE-5025A	Qstd Intercept:	-0.01628
Serial#:	1612	Date Certified:	April 7, 2014

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	11.80	2.017	60.0	70.43	Slope =	35.0633
2	10.00	1.857	54.0	63.39	Intercept =	-1.0616
3	7.80	1.641	48.0	56.34	Corr. coeff.=	0.9991
4	5.00	1.316	38.0	44.60		
5	3.00	1.021	30.0	35.21	# of Observations:	5

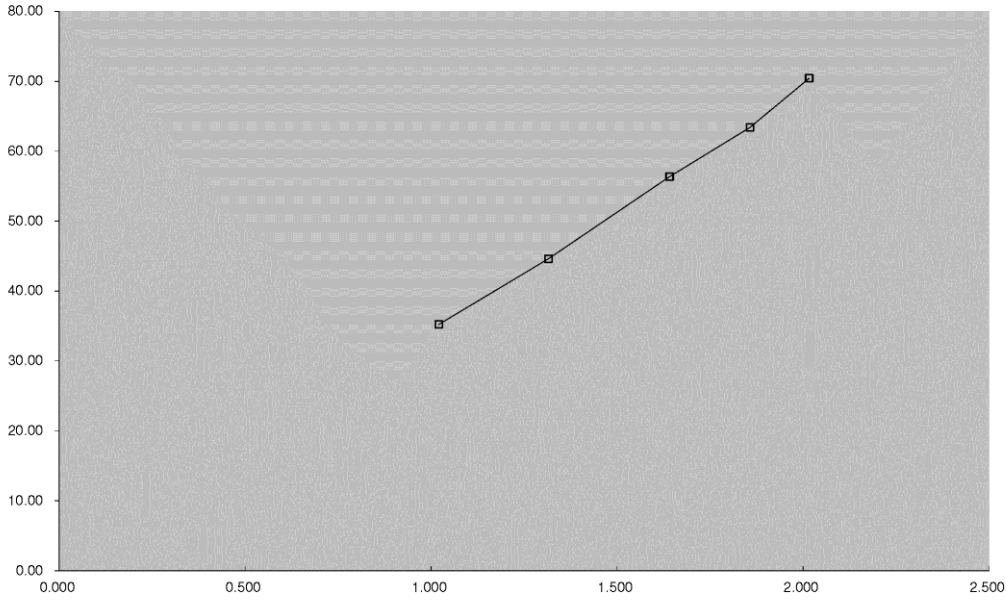
Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

Reviewer: Sam Wong Signature: _____ Date: December 6, 2014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70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0.000
0.500
1.000
1.500
2.000
2.500

TSP Sampler Calibration

SITE

Location:	Hung Hom	Calibration Date:	February 6, 2015
Sampler:	Hunghom MTR TSP	Next Calibration Date:	April 6, 2015
Serial No	694-0665	Tech:	Sam Wong

CONDITIONS

Barometric Pressure (in Hg):	40.38	Corrected Pressure (mm Hg):	1026
Temperature (deg F):	50	Temperature (deg K):	283
Average Press. (in Hg):	40.38	Corrected Average (mm Hg):	1026
Average Temp. (deg F):	50	Average Temp. (deg K):	283

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.00757
Model:	TE-5025A	Qstd Intercept:	-0.01628
Serial#:	1612	Date Certified:	April 7, 2014

CALIBRATIONS

Plate or Test #	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
1	11.80	2.048	60.0	71.53	Slope =	35.0633
2	10.00	1.886	54.0	64.37	Intercept =	-1.0737
3	7.80	1.666	48.0	57.22	Corr. coeff.=	0.9991
4	5.00	1.336	38.0	45.30		
5	3.00	1.037	30.0	35.76	# of Observations:	5

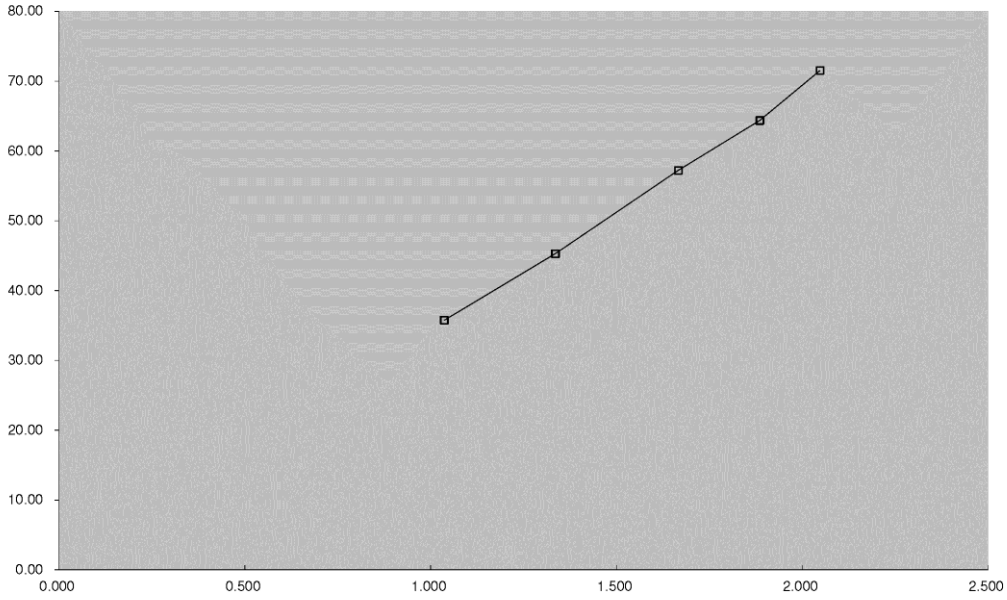
Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure

Reviewer: Sam Wong Signature: _____ Date: February 6, 2015


80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0.000
0.500
1.000
1.500
2.000
2.500

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

TISCH Environmental

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Apr 07, 2014 Rootsmeter S/N 0438320 Ta (K) - 294
Operator Tisch Orifice I.D. - 1612 Pa (mm) - 742.95

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	1.3940	3.2	2.00
2	NA	NA	1.00	0.9790	6.4	4.00
3	NA	NA	1.00	0.8800	7.8	5.00
4	NA	NA	1.00	0.8350	8.8	5.50
5	NA	NA	1.00	0.6910	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9866	0.7077	1.4077		0.9957	0.7142	0.8896
0.9823	1.0034	1.9908		0.9914	1.0127	1.2581
0.9804	1.1140	2.2258		0.9894	1.1243	1.4066
0.9791	1.1726	2.3345		0.9881	1.1834	1.4753
0.9739	1.4094	2.8155		0.9829	1.4224	1.7793
Qstd slope (m) =		2.00757		Qa slope (m) =		1.25710
intercept (b) =		-0.01628		intercept (b) =		-0.01029
coefficient (r) =		0.99989		coefficient (r) =		0.99989
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

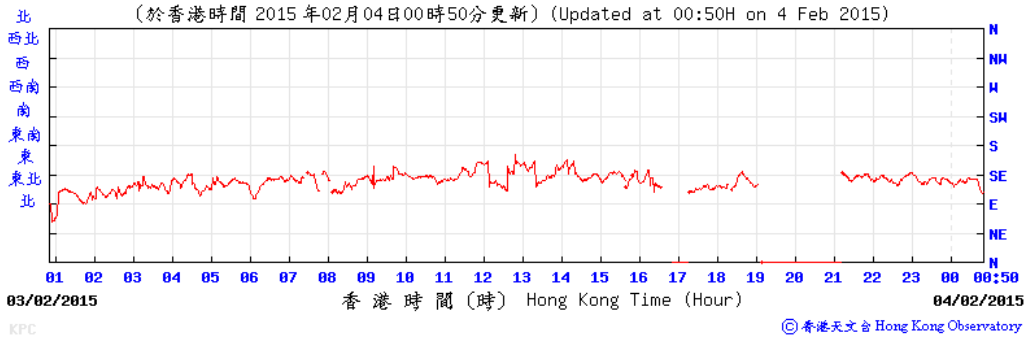
For subsequent flow rate calculations:

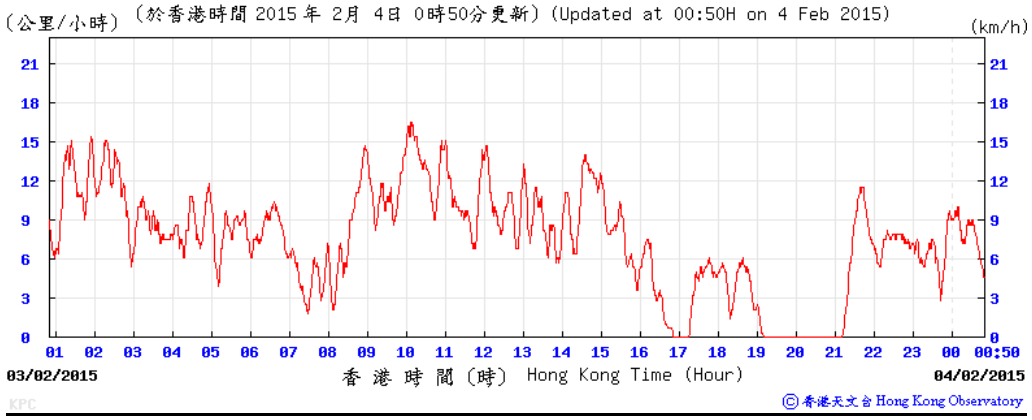
Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

Appendix F

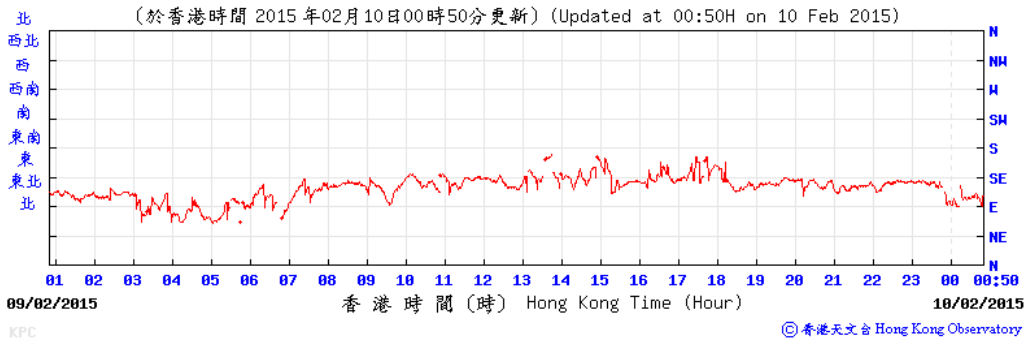
Wind Data

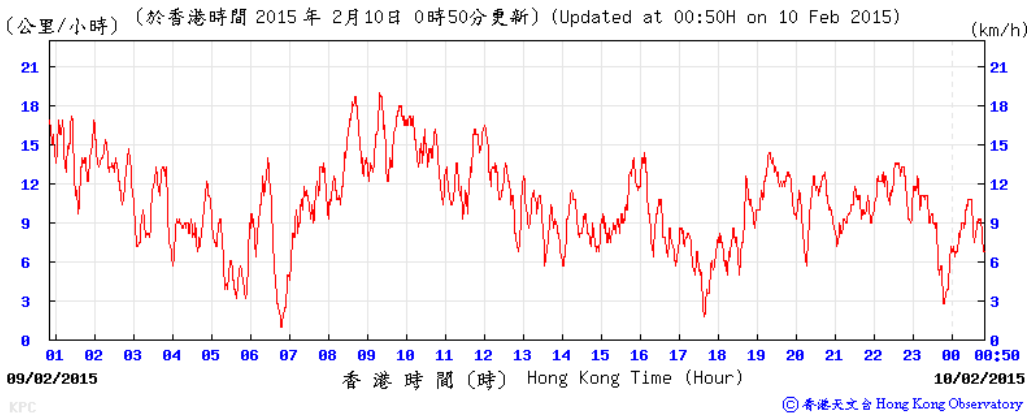
3 February 2015



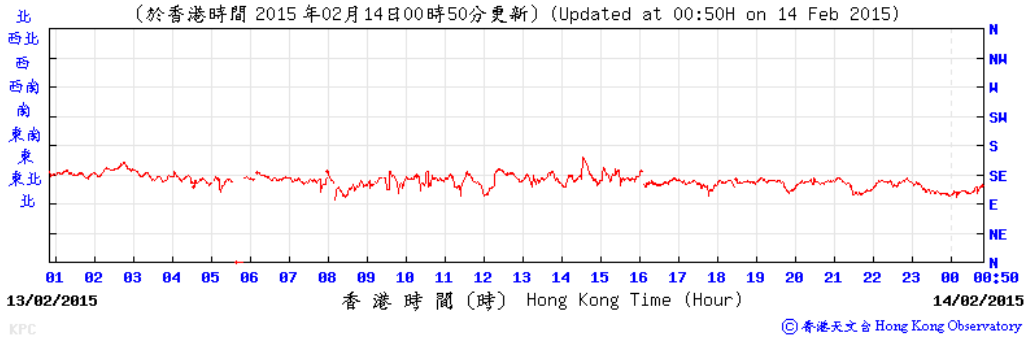


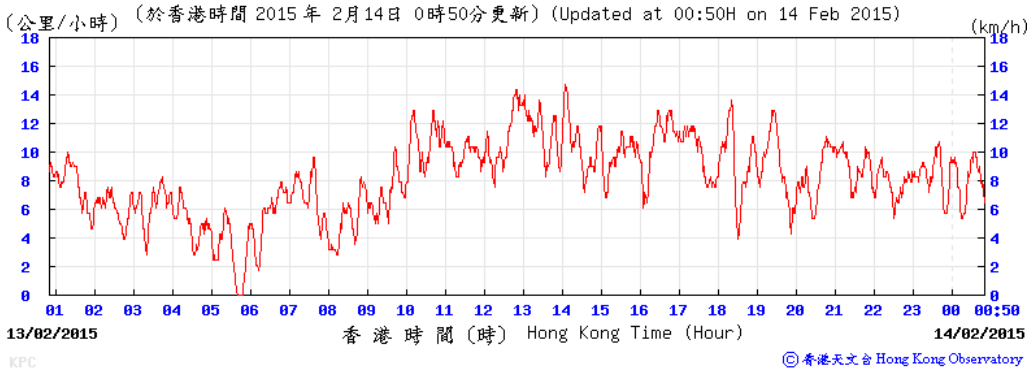
9 February 2015



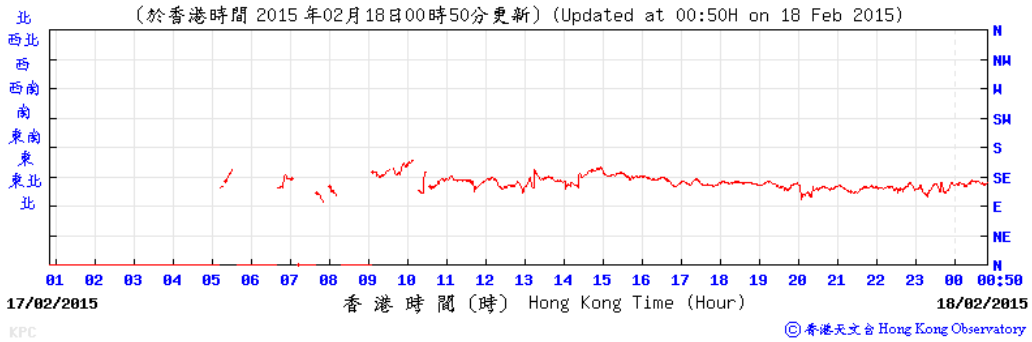


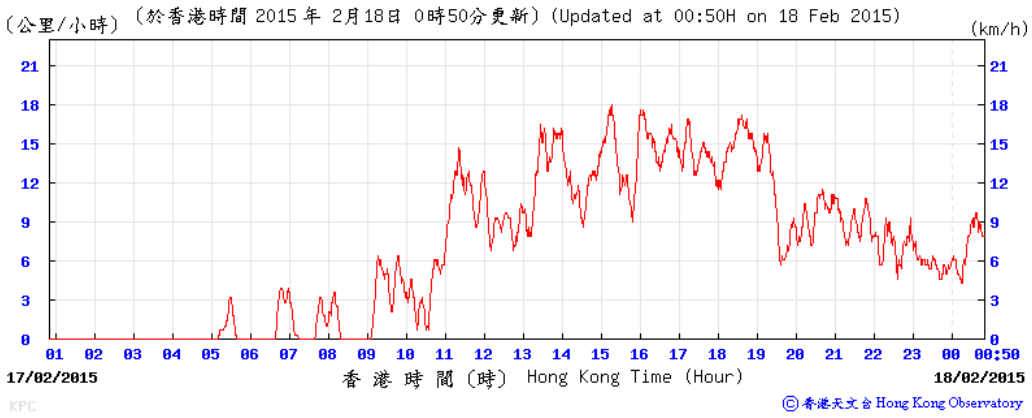
13 February 2015



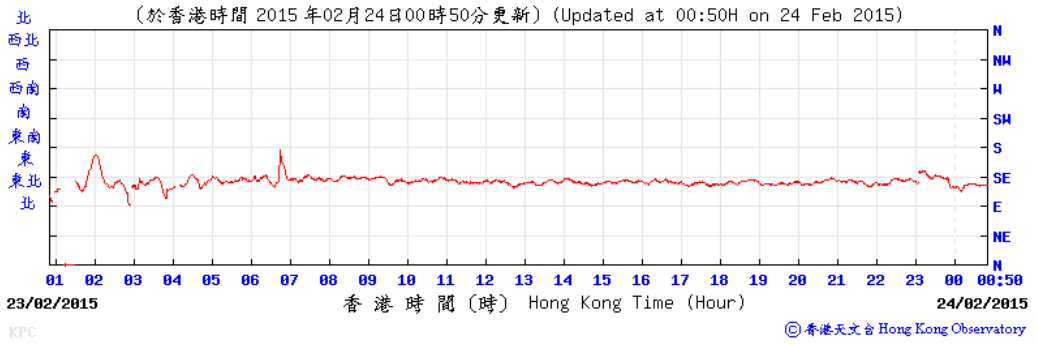


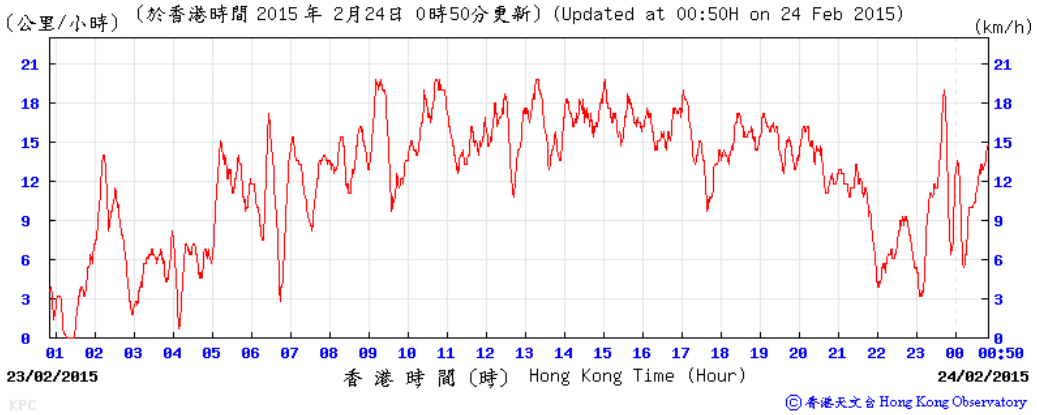
17 February 2015



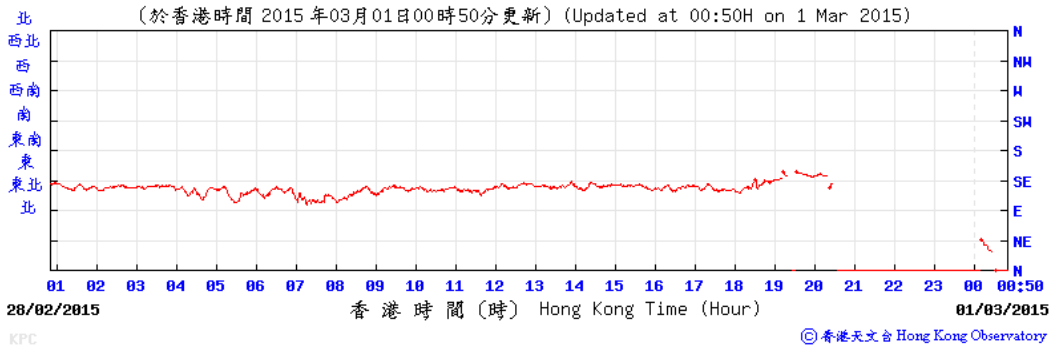


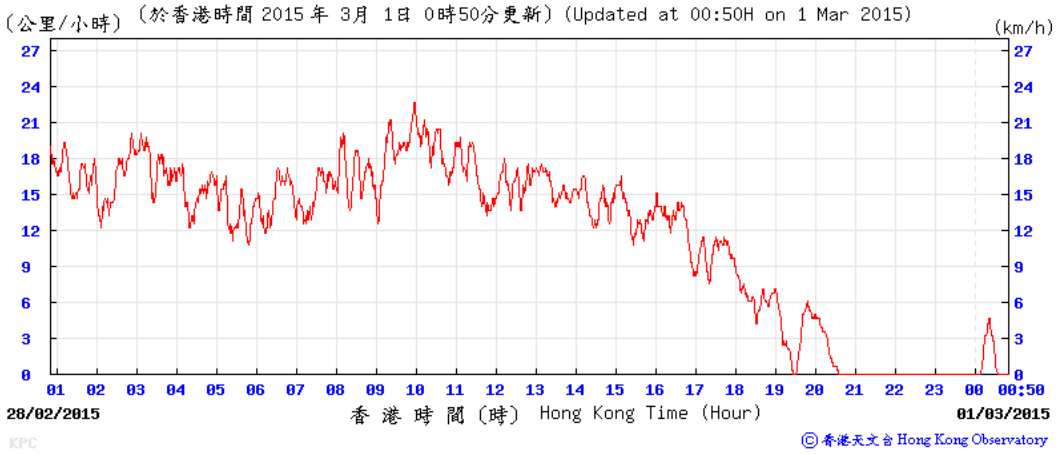
23 February 2015





28 February 2015





Appendix G

Environmental Monitoring Programme

Environmental Monitoring Schedule for SCL1112 in February 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 24 hr TSP	4	5	6	7
8	9 24 hr TSP	10	11	12	13 24 hr TSP	14
15	16	17 24 hr TSP	18	19	20	21
22	23 24 hr TSP	24	25	26	27	28 24 hr TSP

Environmental Monitoring Schedule for SCL1112 in March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6 24 hr TSP	7
8	9	10	11	12 24 hr TSP	13	14
15	16	17	18 24 hr TSP	19	20	21
22	23	24 24 hr TSP	25	26	27	28
29	30 24 hr TSP	31				

APPENDIX H

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
Landscape & Visual (Construction Phase)							
S6.9.3 and S6.12 of Ref.1; Table 4.9 of Ref. 2; S6.12 of Ref. 3	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of existing soil</u> • For soil conservation, existing topsoil will be re-used where possible for new planting areas within the project. The construction programme will consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up onsite as necessary. <u>No-intrusion zone</u> • To maximise protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor will closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. <u>Protection of retained trees</u> • All retained trees will be recorded photographically at the commencement of the contract, and carefully protected during the construction period. • The contractor will be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites.	Minimise visual and landscape impact	Contractor	Within project site	Construction Stage	EIAO-TM	^ ^ ^ ^
S6.12 of Ref.1; Table 4.9 of Ref. 2; Table 6.9 of Ref. 3	<u>Decorative hoarding</u> • Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding will be designed to be compatible with the existing urban context. <u>Management of facilities on work sites</u> • To provide proper management of the facilities on the site, give control on the height and disposition/ arrangement of all facilities on the works site to minimise visual impact to adjacent VSRs. <u>Tree transplanting</u> • Trees of medium to high survival rate that would be affected by the works will be transplanted where possible and	Minimise the visual and landscape impact of the Project during construction phase	Contractor	Within project site	Detailed design and construction stage	EIAO-TM ETWB TCW 2/2004 ETWB TCW 3/2006	^ ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	practicable. Tree transplanting proposal including final location for transplanted trees will be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.						
Air Quality (Construction Phase)							
N.A.	Emission from Vehicles and Plants: • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra-low sulphur diesel fuel (ULSD).	Reduce air pollution emission from construction vehicles and plants	Contractor	All constructions sites	Construction stage	Air Pollution Control Ordinance (APCO)	^ * ^
Construction Dust Impact							
S7.6.5 of Ref. 1; S7.6.6 of Ref. 3	The contractor will follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	APCO To control the dust impact to meet HKAQO and EIAO-TM criteria	^
S5.20, S5.21, S5.50 and Table 5.4 of Ref. 2	Barging Facility: • Unloading of spoils to barge – the unloading process should be undertaken within a 3-sided screen with top tipping hall. Water spraying and flexible dust curtains should be provided at the discharge point for dust suppression. • Transportation of the spoil from the construction sites to the Barging Point – watering once along all paved haul roads to reduce dust emission by 91.7%. This dust suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.7 L/m2 once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7L/m^2 to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A programme as specified in the	To minimize the construction dust impacts to the nearby sensitive receivers	Contractor	Barging point at Hung Hom Freight Pier	Construction stage	APCO	^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	EM&A Manual. • Vehicles leaving the barging facilities – vehicles would be required to pass through the wheel washing facilities to be provided at site exit.						^
S7.6.5 of Ref. 1; S5.50 of Ref. 2; S7.6.6 of Ref. 3	Mitigation measures in form of regular watering under a good site practice will be adopted. Watering once per hour on exposed worksites and haul road will be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but will be sufficient to maintain an equivalent intensity of no less than 1.8 L/m^2 to achieve the dust removal efficiency.	Minimise dust impact at the nearby sensitive receivers	Contractor	Active works areas, exposed areas and paved haul roads	Construction stage	APCO To control the dust impact to meet HKAQO and EIAO-TM criteria	*
S7.6.5 of Ref. 1; S5.51 of Ref. 2; S7.6.6 of Ref. 3	• Any excavated or stockpile of dusty material will be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading. • Any dusty materials remaining after a stockpile is removed will be wetted and cleared from the surface of roads. • A stockpile of dusty material will not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site will be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle. • Where practicable, vehicle washing facilities with high pressure water jet will be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point will be paved with concrete, bituminous materials or hardcore. • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high will be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice will also be adopted by the contractor to ensure the conditions of the hoardings are properly maintained in construction period. • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit will be kept clear of dusty materials. • Surfaces where any pneumatic or power-driven drilling,	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	APCO Air Pollution Control (Construction Dust) Regulation To control the dust impact to meet HKAQO and EIAO-TM criteria	^ ^ ^ ^ ^ ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	cutting, polishing or other mechanical breaking operation takes place will be sprayed with water or a dust suppression chemical continuously. • Any area that involves demolition activities will be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet. • Where scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground floor level of the building, or a canopy will be provided from the first floor level up to the highest level of the scaffolding. • Any skip hoist for material transport will be totally enclosed by impervious sheeting. • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) will be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Cement or dry PFA delivered in bulk will be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed. • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA will be carried out in a totally enclosed system or facility, and any vent or exhaust will be fitted with an effective fabric filter or equivalent air pollution control system. • Exposed earth will be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						^ N/A ^ ^ ^ * ^
S7.6.5 of Ref. 1; S5.57 of Ref. 2; S7.6.6 of Ref. 3	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Harbourfront Horizon	Construction stage	EIAO-TM APCO	^

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Construction Airborne Noise							
S8.3.6 of Ref. 1; S6.61 of Ref. 2; S8.5.6 of Ref. 3	Implement the following good site practices: • Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction programme. • Machines and plant (such as trucks, cranes) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum. • Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs. • Silencers or mufflers on construction equipment will be properly fitted and maintained during the construction works. • Mobile plant will be sited as far away from NSRs as possible and practicable. • Material stockpiles, mobile container site office and other structures will be effectively utilised, where practicable, to screen noise from onsite construction activities.	Control construction airborne noise	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^ ^ ^ ^ ^ ^
S8.3.6 of Ref. 1; S6.68 of Ref. 2; S8.5.6 of Ref. 3	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings will be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^
S8.3.6 of Ref. 1; S6.64 – 6.67 and Table 6.20 of Ref. 2; S8.5.6 of Ref. 3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^
S8.3.6 of Ref. 1; S6.62 – 6.63 and Table 6.19 of Ref. 2; S8.5.6 of Ref. 3	The following quiet PME should be used: • Asphalt Paver (SWL=101dB(A)) • Backhoe (SWL=106dB(A)) • Backhoe with Hydraulic Breaker (SWL=110dB(A)) • Concrete lorry mixer (SWL=96dB(A)) • Concrete mixer truck (SWL=96dB(A)) • Concrete Pump (SWL=106dB(A)) • Concrete Pump Truck (SWL=106dB(A)) • Crane, mobile (SWL=94dB(A)) • Crawler Crane (SWL=102dB(A))	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^

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	• Drill, hand-held (SWL=98dB(A)) • Dump truck (SWL=104dB(A)) • Excavator (SWL=106dB(A)) • Flat Bed Lorry (SWL=102dB(A)) • Generator (SWL=95dB(A)) • Giken Piler and Power-pack (SWL=94dB(A)) • Hydraulic breaker (SWL=110dB(A)) • Hydraulic excavator (SWL=106dB(A)) • Lorry (SWL=102dB(A)) • Lorry with crane/ grab (SWL=94dB(A)) • Mini Piling Rig (SWL=112dB(A)) • Piling Rig (SWL=112dB(A)) • Poker, vibrator, hand-held (SWL=98dB(A)) • Road Roller (SWL=101dB(A)) • Rock Drill (SWL = 108dB(A) • Roller (SWL = 101dB(A) • Truck (SWL=103dB(A)) • Vibratory Hammer (SWL=118dB(A))						
S8.3.6 of Ref. 1; S8.5.6 of Ref. 3	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	Annex 5, EIAO-TM	^
S8.3.6 of Ref. 1; S8.5.6 of Ref. 3	Implement noise monitoring under EM&A programme.	Monitoring of construction noise impact	Contractor	Wing Fung Building	Construction stage as required by IEC	TM-EIA	^

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Water Quality (Construction Phase)							
S10.7.1 of Ref. 1;S8.41 – 8.39 and S8.50 of Ref. 2; S10.7.1 of Ref. 3	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, EPD, 1994 (ProPECC PN1/94), construction phase mitigation measures will include the following: <u>Construction runoff and site drainage</u> • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site will be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers will be provided onsite to direct stormwater to silt removal facilities. The design of the temporary onsite drainage system will be undertaken by the contractor prior to commencement of construction. • The dikes or embankments for flood protection will be implemented around the boundaries of earthwork areas. Temporary ditches will be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps will be incorporated in the permanent drainage channels to enhance deposition rates. • The design of silt removal facilities will be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps will be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1m^3/s a sedimentation basin of 30m^3 would be required and for a flow rate of 0.5m^3/s the basin would be 150m^3. Detailed design of the sand/silt traps will be undertaken by the contractor prior to the commencement of works. • All exposed earth areas will be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces will be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures will be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit will be removed regularly and disposed of by spreading evenly over stable,	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	Water Pollution Control Ordinance (WPCO) ProPECC PN1/94 EIAO-TM TM-Water Technical Memorandum on Effluent Discharge Standard (TM-DSS)	^ ^ ^ ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	vegetated areas. • Measures will be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they will be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations will be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than $50m^3$ will be covered with tarpaulin or similar fabric during rainstorms. • Measures will be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) will 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 be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention will be paid to the control of silty surface runoff during storms, especially areas near steep slopes. • All vehicles and plant will 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 sited wheel washing facilities will be provided at every construction site exit where practicable. Wash-water will 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 will be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors will be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors will be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass will be provided for						^ ^ ^ ^ ^ ^

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	the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site will be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas will be provided with locks and sited 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 water sensitive receivers nearby. • All the earth works involving will be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt Best Management Practices.						^ ^ ^ ^
S10.7.1 of Ref. 1; S10.7.1 of Ref. 3	<u>Tunnelling works</u> • Cut-and-cover/ open-cut tunnelling work will be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Uncontaminated discharge will pass through sedimentation tanks prior to off-site discharge. • The wastewater with a high concentration of SS will be treated (eg, by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. • Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It will be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) will be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 will be adhered to in the handling and disposal of bentonite slurries.	To minimize construction water quality impact from tunnelling works	Contractor	All tunnelling portion	Construction stage	WPCO ProPECC PN1/94 EIAO-TM TM-Water	^ ^ ^ ^

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S8.68 of Ref. 2; S10.7.1 of Ref. 1	Operation of Barging Facilities The following good practice shall apply for the barging facilities operations: • All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; • Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation; • All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and • Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. • Mitigation measures as outlined for control of *construction runoff and site drainage* provide above should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate.	To minimize water quality impact from operation of barging facility	Contractor	All barging facilities	Construction stage	WPCO TM-EIA	^ ^ ^ ^ ^
S8.51 – 8.52 of Ref. 2	Bentonite Slurries: • Bentonite slurries used in diaphragm wall construction should be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry should either be dewatered or mixed with inert fill material for disposal to a public filling area. • If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the TM-DSS.	To minimize water quality impact from bentonite slurries	Contractor	All works area	Construction stage	WPCO TM-EIA	^ ^
S8.53 – 8.54 of Ref. 2	Wastewater from Building Construction: • Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains • Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as washing and general cleaning etc., can minimise water	To minimize water quality impact from building construction	Contractor	All construction sites where practicable	Construction stage	WPCO EIAO-TM	^ N/A

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	consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office of EPD.						
S8.62 of Ref. 2	Excavation Activities: • The construction programme should be properly planned to minimise soil excavation, if any, in rainy seasons. This prevents soil erosion from exposed soil surfaces. Any exposed soil surfaces should also be properly protected to minimise the potential for dust emission, increased siltation and contamination of runoff. In areas where a large amount of exposed soils exist, earth bunds or sand bags should be provided. Exposed stockpiles should be covered with tarpaulin or impervious sheets at all times. The stockpiles of materials should be placed at locations away from water environment so as to avoid releasing materials into the water bodies. Final surfaces of earthworks should be compacted and protected by permanent work.	To minimize water quality impact from excavation activities	Contractor	All excavation works areas	Construction stage	WPCO EIAO-TM	^
S8.63 of Ref. 2	Diaphragm Wall • The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be implemented to control site run-off and drainage as well as any site effluents generated from the works areas, and to prevent run-off and construction wastes from entering nearby water environment. Proper handling of bentonite slurries used in diaphragm wall construction should be adopted.	To minimize water quality impact from diaphragm walling	Contractor	All diaphragm walling works areas	Construction stage	WPCO EIAO-TM	^
S8.60 – 8.61 of Ref. 2; S10.7.1 of Ref. 3	Sewage effluent Portable chemical toilets are recommended for handling the construction sewage generated by the workforce. A licensed contractor will be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	WPCO TM-Water	^
S8.64 of Ref. 2; S10.7.1 of Ref. 3	Groundwater seepage As some proposed works areas at Hung Hom are near Victoria Harbour, high ground water level regime due to both tidal effects and rainwater infiltration is anticipated. Appropriate measures will be deployed to minimise the intrusion of groundwater into excavation works areas. In case seepage of groundwater occurs, groundwater will be pumped out from the works areas and discharged into the storm system via silt	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found.	Construction stage	WPCO TM-Water EIAO-TM	^

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	removal facilities. Groundwater from dewatering process will also be discharged into the storm system via silt traps.						
S10.7.1 of Ref. 1; S8.57 – 8.59 of Ref. 2; S10.7.1 of Ref. 3	<u>Accidental spillage</u> To prevent accidental spillage of chemicals, the following is recommended: • Proper storage and handling facilities will be provided. • All the tanks, containers, storage area will be bunded and the locations will be locked as far as possible from the sensitive watercourse and stormwater drains. • The contractor will register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities will be stored with suitable labels and warnings. • Disposal of chemical wastes will be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	WPCO ProPECC PN1/94 EIAO-TM TM-Water	# ^ ^ *
S8.72 of Ref.2	Regular site inspections should be undertaken to inspect the construction activities and works areas	To ensure the recommended water quality mitigation measures are properly implemented	Contractor	All construction sites	Construction stage	EIAO-TM WPCO ProPECC PN 1/94 TM-DSS WDO	^

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Waste Management (Construction Phase)							
S11.4.1.1 of Ref. 1; S9.80 – 9.83 of Ref. 2; S11.4.1.1 of Ref.3	Onsite sorting of C&D material Geological assessment will be carried out by competent persons onsite during excavation to identify materials which are not suitable to use as aggregate in structural concrete (eg, volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock will be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator will also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities will be submitted by the Contractors for the Engineer to review and agree. In addition, site records will also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) ref: 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc will also be explored.	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	DEVB TC(W) ref. 6/2010	^
S11.5.1 of Ref.1; S9.72 – 9.74 of Ref. 2; S11.5.1 of Ref.3	Construction and demolition material • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement. • Carry out onsite sorting. • Make provisions in the Contract documents to allow and promote • The use of recycled aggregates where appropriate. • Adopt 'selective demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible. • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) ref 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. will be avoided. The contractor will propose the final disposal sites to the Project	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW Ref 19/2005	^ ^ ^ ^ ^ ^ ^

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	Proponent and EPD and get their approval before implementation.						
S11.5.1 of Ref.1; S9.73 of Ref. 2; S11.5.1 of Ref.3	<u>C&D waste</u> • Standard formwork or pre-fabrication will be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works will be considered. Use of wooden hoardings will not be used, as in other projects. Metal hoarding will be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The contractor will recycle as much of the C&D materials as possible onsite. Public fill and C&D waste will be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites will be considered for such segregation and storage.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW Ref 19/2005	^ ^
S11.5.1 of Ref.1; S9.100-9.102 of Ref.2; S11.5.1 of Ref. 3	<u>General refuse</u> • General refuse generated onsite will be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector will be employed by the contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans will be often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit will be provided if feasible. • Office wastes will be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme will be considered by the contractor.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance	^ ^ ^ ^

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S11.5.1 of Ref.1; S9.84 – 9.93 of Ref. 2	Land-based sediment • The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. • The Project Proponent should agree in advance with MFC of CEDD on the site allocation. Subject to the final decision by MFC, Type 1 sediments are typically disposed to South Cheung Chau and/or East of Ninepin as open sea disposal while Type 2 sediments are disposed to East Sha Chau as confined marine disposal. • Sampling and Testing Plan(s) should be prepared in accordance with ETWB TC(W) No. 34/2002. Site investigation, based on the Sediment Sampling and Testing Plan(s), should be carried out in order to confirm the disposal arrangements for the proposed excavated sediments. A Sediment Quality Report (SQR) should then be submitted to EPD for agreement prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal. • The excavated sediments is expected to be loaded onto the dumping trucks and transferred to the barging point where the sediments would be transported via barge to the existing designated disposal sites allocated by the MFC. The excavated sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002. • Requirements of the Air Pollution Ordinance (Construction Dust) Regulation, where relevant, shall be adhered to during excavation, transportation and disposal of sediments. • Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged	To ensure the sediment is handled and disposed of in a least impacted way and in accordance to the statutory	Contractor	All construction sites	Construction stage	ETWB TC(W) NO. 34/2002 Dumping at Sea Ordinance (DASO) APCO WPCO	N/A N/A N/A N/A N/A N/A

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	according to the Water Pollution Control Ordinance (WPCO). • In order to minimize the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments should be wetted during excavation / material handling and should be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. • In order to minimize the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.						N/A N/A N/A
S11.5.1 of Ref.1; S8.94 – 9.97 of Ref. 2; S11.5.1 of Ref. 3	<u>Chemical waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, will be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes will be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450L unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes will be clearly labelled and used solely for the storage of chemical waste; be enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; be covered to prevent rainfall entering; and be arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	Waste Disposal (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^ ^ ^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	• Disposal of chemical waste will be via a licensed waste collector; and be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						^
S9.98 – 9.99 of Ref 2	<u>Asbestos wastes</u> • All storage of asbestos waste should be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. The storage area should bear warning panels to alert people of the presence of asbestos waste. Collection, transportation and disposal of asbestos waste will follow the trip-ticket system. • Licensed asbestos waste collectors will be appointed to collect the asbestos waste and deliver to the designated landfill for disposal. The Project Proponent should notify to EPD in advance for disposal of asbestos waste. After processing the notification, EPD will issue specific instructions and directions for disposal. The waste producer must strictly follow these directions	To ensure the asbestos wastes are handled and disposed of in accordance with the statutory requirements	Contractor	All construction sites	Construction stage	Code of practice on the Handling, Transportation and Disposal of Asbestos Waste	^ N/A

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
Land Contamination							
S10.24 – 10.34 of Ref 2	<u>Precautionary measures</u> • Precautionary measures such as visual inspection are recommended to be undertaken during construction activities that disturb soil. The inspection process should involve a visual observation of excavated soils for discolouration and the presence of oils, together with identifying the presence of odours, which may also indicate soil and/or groundwater contamination. • If soil discolouration or the presence of oil/unnatural odour is noted during visual inspection, sampling and testing should also be undertaken to verify the presence of contamination.	To act as a general precautionary measure to screen soils for the presence contamination during construction	Contractor	All construction sites	Construction stage	"Guidance Note for Contaminated Land Assessment and Remediation" "Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management	^ ^
S10.35 of Ref 2	• Potential remediation of contaminated soil • If land contamination is identified, CAR and RAP detailing the proposed remediation works should be prepared. RR should then be prepared and submitted to EPD to demonstrate that the decontamination work is adequate and has been carried out in accordance with the endorsed CAR and RAP. Information such as soil treatment/disposal records (including trip tickets), confirmatory sampling results and photographs should be included in the RR. No construction work should be carried out prior to endorsement of the RR by EPD. • In order to minimise environmental impacts arising from the handling of potentially contaminated materials, the following environmental precautionary measures are recommended to be utilised during the course of any required site remediation: • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Supply of suitable clean backfill material is needed after excavation; • If proposed remediation methods employ chemical oxidation methods as the contaminant mass reduction technology, chemicals will be securely and separately stored away from	To remediate contaminated soil	Contractor	All construction sites	Construction stage	"Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair /Dismantling Workshop"	N/A N/A N/A N/A N/A N/A

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	sources of ignition or oxidisable items. Handling will be undertaken by personnel with appropriate training and Personal Protective Equipment • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions; • Speed control for the trucks carrying coVehicle wheel and body washing facilities at the site's exit points should be established and used; and contaminated materials should be enforced; • Pollution control measures for air emissions e.g. from biopile blower, noise emissions e.g. from blower, and water discharges e.g. runoff control should be implemented and complied with relevant regulations and guidelines.						N/A N/A N/A N/A
S10.36 of Ref 2	The Occupation Safety and Health Ordinance (OSHO) (Chapter 509) and its subsidiary Regulations should be followed by all site personnel working on the site at all times. In addition, the following basic health and safety measures should be implemented as far as possible: Set up a list of safety measures for site workers. Provide written information and training on safety for site workers. Keep a log-book and plan showing the contaminated zones and clean zones. Maintain a hygienic working environment. Avoid dust generation. Provide face and respiratory protection gear to site workers. Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers. Provide first aid training and materials to site workers.	To minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation.	Contractor	All construction sites	Site remediation and prior to construction phase	"Guidance Note for Contaminated Land Assessment and Remediation" "Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management "Occupation Safety and Health Ordinance (Chapter 509)"	N/A
EM&A Project							
S14.2 – 14.4 of Ref. 1; S13.2 – 13.4 of Ref. 3 1.	• An Environmental Team needs to be employed as per this EM&A Manual. • Prepare a systematic EMP to ensure effective implementation of the mitigation measures. • An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in this	Perform environmental monitoring & auditing	Contractor	All construction sites	Construction stage	EIAO Guidance Note Ref4/2010 EIAO-TM	^

EIA Ref.	Recommended mitigation measures for Works Contract 1112	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for measures to achieve?	Status
	EM&A Manual are fully complied with.						

Remark for Status:

^ Compliance of mitigation measure
+ Non-compliance but rectified by the contractor
N/A Not Applicable
X Non-compliance of mitigation measure
* Recommendation was made during site audit but improved/rectified by the contractor
# Recommendation was made during site audit and improvement/rectification not yet completed by the contractor

Notes:

Ref. 1 – EIA Report for SCL (TAW-HUH)
Ref. 2 – EIA Report for SCL (MKK-HUH)
Ref. 3 – EIA Report for SCL (HHS)

This EMIS contains only those requirements that are relevant to Works Contract 1112 in terms of:

- EM&A required under Works Contract 1112
- Who to implement the measures – the Contractor (Leighton)
- The location of the measures – within and in the vicinity of the Works Contract 1112 Site Boundary
- When to implement the measures – during the design and construction

APPENDIX I

Event and Action Plan

Event and Action Plan for Landscape and Visual Impact Monitoring

Event	ET	IEC	ER	Contractor
Action level				
Non-conformity on one occasion	1. Inform the contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2. Check the contractor's working method 3. Discuss with the ET, ER and the contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures.	1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the contractor 3. Supervise implementation of remedial measures	1. Identify source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify source 2. Inform the contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2. Check the contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the contractor 2. In consultation with the ET and IEC, agree with the contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures.	1. Identify source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Event and Action Plan for Air Quality

Event	ET	IEC	ER	Contractor
Action level				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER 2. Discuss with the Contractor, IEC and ER on the remedial measures required 3. Repeat measurement to confirm findings 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET 2. Check Contractor's working method 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of exceedance in writing	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate
2. Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Repeat measurements to confirm findings 4. Increase monitoring frequency to daily 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor 6. If exceedance stops, cease additional monitoring	2. Check monitoring data submitted by the ET 3. Check Contractor's working method 4. Review and advise the ET and ER on the effectiveness of the proposed remedial measures	1. Confirm receipt of notification of exceedance in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise Implementation of remedial measures	1. Identify source and investigate the causes of exceedance 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification 3. Implement the agreed proposals 4. Amend proposal as appropriate

Event	ET	IEC	ER	Contractor
Limit Level				
1. Exceedance for one sample	1. Inform the IEC, EPD, Contractor and ER 2. Repeat measurement to confirm findings 3. Increase monitoring frequency to daily 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET 2. Check the Contractor's working method 3. Discuss with the ET, ER and Contractor on possible remedial measures 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor 4. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification 4. Implement agreed proposals 5. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Notify IEC, Contractor & EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency to daily 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET 2. Check the Contractor's working method 3. Discuss with ET, ER, and Contractor on the potential remedial measures 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note:
ET – Environmental Team, IEC – Independent Environmental Checker, ER – Engineer's Representative

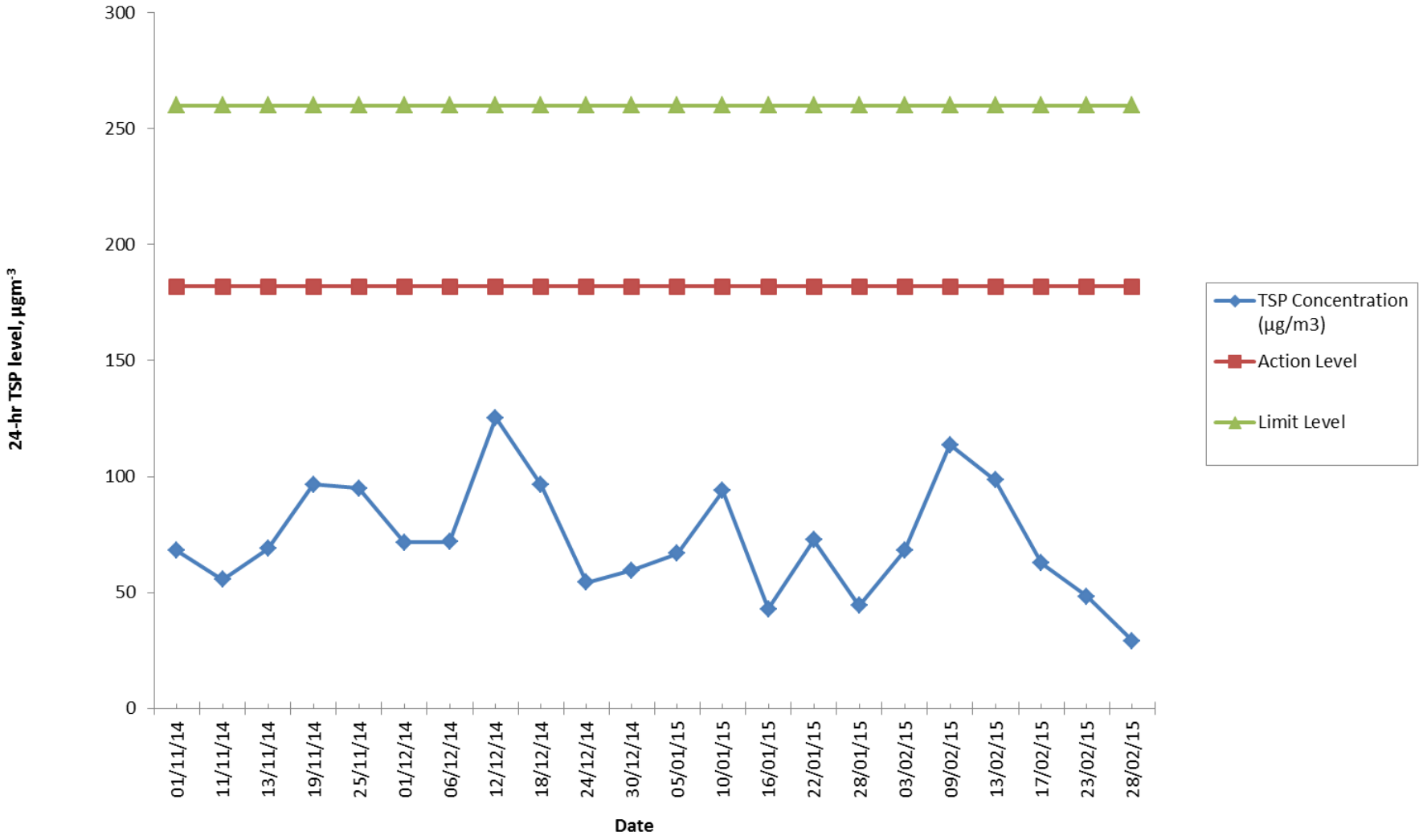
APPENDIX J

Monitoring Results and their Graphical Presentations

Air Quality Monitoring Results for AM2

Sampling Date	Wt. of paper (g)				Elapse Time			Flow Rate (CFM)			Total Volume (m^3)	TSP Concentration (µg/m3)	Weather	Remark
	Paper No.	Initial Wt.	Final Wt.	Wt. of dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate				
03/02/15	B22	2.8097	2.9206	0.1109	12207.30	12231.30	24.00	40	40	40.0	1631.05	67.9930	Sunny	-
09/02/15	B23	2.8010	2.9864	0.1854	12231.30	12255.30	24.00	40	40	40.0	1631.05	113.6691	Hazy	-
13/02/15	B24	2.7948	2.9553	0.1605	12255.30	12279.30	24.00	40	40	40.0	1631.05	98.4029	Sunny	-
17/02/15	B25	2.8152	2.9175	0.1023	12279.30	12303.30	24.00	40	40	40.0	1631.05	62.7203	Fine	-
23/02/15	B26	2.7909	2.8696	0.0787	12303.30	12327.30	24.00	40	40	40.0	1631.05	48.2511	Fine	-
28/02/15	B27	2.7759	2.8234	0.0475	12327.30	12351.30	24.00	40	40	40.0	1631.05	29.1223	Cloudy	-

Construction Dust Monitroing Results for AM2 (Harbourfront Horizon)



APPENDIX K

Waste Flow Table

Waste Flow Table															
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of non-inert C&D Wastes Generated Monthly						
	Generated			Disposed					Recycled				Disposed		
	Imported from SCL1111	Total Quantity Generated	Hard Rock and Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fills at HH Barging Point	Disposed as Public Fills at TKO137	Disposed as Public Fills at TM38	Metals	Paper/ Cardboard Packaging	Asphalt	Plastics	Chemical Waste		General Refuse
Unit	(in '000m^3)								(in '000Kg)				(in '000Kg)	(in '000L)	(in '000Kg)
Jun-13	0	0	0	0	0	0	0	0	137.3	0	0	0	0	-	6.55
Jul-13	0	0.36	0	0	0	0	0	0.36	365.34	0	0	0	0	-	16.87
Aug-13	0	1.68	0	0	0	0.05	0	1.63	69.98	0.25	0	0	0	-	12.67
Sep-13	0	3.39	0	0	0	0.20	0	3.19	131.18	0.22	0	0.46	0	-	16.25
Oct-13	0	4.04	0	0	0	0.78	0	3.26	179.97	0.63	8.28	2.04	0	-	39.87
Nov-13	0	6.09	0	0	0	2.09	0.18	3.82	125.70	0.45	160.35	0	0	-	28.69
Dec-13	0	5.69	0	0	0	1.74	0.01	3.94	72.15	0.39	4.13	0	0	-	18.04
Jan-14	0	4.58	0	0	0	0	0.27	4.31	117.57	0.26	147.67	0.26	0	-	30.09
Feb-14	0	3.80	0	0	0.14 [Note1]	0	0.19	3.46	28.32	0.29	414.67	0	0	-	15.73
Mar-14	0	10.10	0	0	6.18 [Note2]	0	0.29	3.63	96.26	0.25	0	0	0	-	47.76
Apr-14	0	6.67	0	0	4.82 [Note3]	0	0.0053	1.85	75.43	0.23	1,322.39	0	0.2	-	78.63
May-14	0.52	5.77	0	0.43	2.00 [Note4]	0	0.12	3.65	48.86	0.28	501.45	0	0	-	66.03
Jun-14	0.47	4.56	0	0	1.73 [Note5]	0	0.29	2.54	42.95	0.25	0	0	0.4	-	45.97
Jul-14	0.34	8.61	0	0	2.89 [Note6]	0	0.87	4.84	70.99	0	0	0	0	-	40.50
Aug-14	0.20	8.57	0	0	3.56 [Note7]	0	0.44	4.57	227.86	0	0	0	0	-	76.93
Sep-14	0.23	11.11	0	0	5.82 [Note8]	0	0.23	5.06	220.85	0.29	0	0	0	-	43.01
Oct-14	0.54	12.79	0	0	6.04 [Note9]	0	0.06	6.69	174.82	0.71	329.16	0	0	-	97.92
Nov-14	0.93	10.63	0	0	3.78 [Note10]	0	0.15	6.70	163.72	0.56	376.40	0	0	-	81.91
Dec-14	3.72	8.59	0	0	2.97 [Note11]	0	0	5.62	385.80	0.53	166.98	0	5.4	-	130.83

Waste Flow Table															
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of non-inert C&D Wastes Generated Monthly						
	Generated			Disposed					Recycled				Disposed		
	Imported from SCL1111	Total Quantity Generated	Hard Rock and Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fills at HH Barging Point	Disposed as Public Fills at TKO137	Disposed as Public Fills at TM38	Metals	Paper/ Cardboard Packaging	Asphalt	Plastics	Chemical Waste		General Refuse
Unit	(in '000m^3)								(in '000Kg)				(in '000Kg)	(in '000L)	(in '000Kg)
Jan-15	3.72	19.29	0	0	10.03 [Note12]	0	0	9.26	543.40	0.80	179.01	0	0	1.6	318.66
Feb-15	3.03	13.96	0	0	8.41 [Note13]	0	0	5.54	263.10	0.46	168.82	0	0	0	175.70
TOTAL	**13.69**	**150.27**	**0**	**0.43**	**58.36**	**4.85**	**3.12**	**83.93**	**3215.34**	**8.10**	**3779.31**	**2.76**	**6.00**	**1.60**	**1388.61**

Note:

1. 137 m^3 of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904.
2. 267 m^3 of the Inert C&D materials were reused in SIL Project Contract 904;
   3,998 m^3 of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
   1,912 m^3 of the Inert C&D materials were reused in Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) Project Contract HY/2012/08.
3. 1,728 m^3 of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
   3,088 m^3 of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
4. 184 m^3 of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904; and
   1814 m^3 of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
5. 1,021 m^3 of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
   707 m^3 of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
6. 2,894 m3 of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08.
7. 575.5m^3 of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2012/08; and
   2907.6 m^3 of the Inert C&D materials were reused in TM-CLKL and TMWB Project Contract HY/2012/08; and 76.0 m^3 of the Inert C&D materials were reused in Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West Project Contract HK/2009/08.
8. 4,905.4 m^3 of the Inert C&D materials were reused in TM-CLKL and 912.3 m^3 of the Inert C&D materials were reused in SIL Project Contract 904.
9. 5,522.9 m^3 of the Inert C&D materials were reused in TM-CLKL and 515.9 m^3 of the Inert C&D materials were reused in SIL Project Contract 904.
10. 3,774.6 m^3 of the Inert C&D materials were reused in TM-CLKL.
11. 2,968.9 m^3 of the Inert C&D materials were reused in TM-CLKL (HY/2012/08).
12. 9,988.1 m^3 of the Inert C&D materials were reused in WENT (SITA) and 46.34 m^3 of the Inert C&D materials were reused in SIL Project Contract 904.

13. 8,212.8 m^3 of the Inert C&D materials were reused in WENT (SITA) and 200.9 m^3 of the Inert C&D materials were reused in SIL Project Contract 904.

Marine Sediment Flow Table						
Month	Actual Quantities of Marine Dumping Monthly					
	Type 1			Type 2		
	Generated from SCL1111 [Note1]	Generated from SCL1112	Disposed	Generated from SCL1111 [Note2]	Generated from SCL1112	Disposed
Unit	(in '000m^3)			(in '000m^3)		
Jan-15	0	0	0	2.22	0.06	2.28
Feb-15	1.29	0	0.82	0	0	0
TOTAL	1.29	0	0.82	2.22	0.06	2.28

Note:

1. Type 1 Marine Sediment generated from SCL1111 will be delivered to the Barging Point at SCL1112 for disposal.
2. Type 2 Marine Sediment generated from SCL1111 will be delivered to the Barging Point at SCL1112 for disposal.

APPENDIX L

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Reference No.	Subject	Location of Concern	Status
Environmental complaints	7 Feb 2015	Public comment received by EPD, EPD's Ref. No. K01/RE/00003309-15	Complaint of construction dust from the construction site at MTR Hung Hom Building, 8-8 Cheong Wan Road, Tsim Sha Tsui	MTR Hung Hom Station Building, 8-8 Cheong Wan Road	• ET conducted inspection to examine the environmental performance of the site on 10 Feb 2015 • No demolition works carried out inside Hung Hom Station and Freight Operation Building during the complaint period • Watering and dust screen (site enclosed with bamboo scaffold and tarpaulin sheet) were provided for the demolition work at International Mail Centre • Renovation works on-going inside the Hung Hom Station with dust mitigation measures implemented • A joint inspection was then conducted by the Contractor and EPD on 13 Feb 2015 and no adverse comment was provided by EPD • Investigation Report submitted to EPD on 23 Feb 2015

	Date Received	Reference No.	Subject	Location of Concern	Status
	11 Nov 2014	Public comment received by EPD, EPD's Ref. No. K01/RE/00028087-14	Complaint of welding smell and air nuisance other than dark smoke, from construction machine from Hung Hom Station, Tsim Sha Tsui	At footbridge between Hung Hom Station and Hung Hom Region, near Royal Peninsula	• Barrier was erected on the side of footbridge facing the construction site • ET conducted followed-up inspection of the implemented mitigation measures on 20 Nov 2014 and air quality control was found to be satisfactory • Investigation Report submitted to EPD on 3 Dec 2014
	11 Nov 2014	Public comment received by EPD, EPD's Ref. No. K01/RE/00028181-14	Complaint of construction dust from Hung Hom Station, Tsim Sha Tsui	At footbridge between Hung Hom Station and Hung Hom Region, near Royal Peninsula	• Barrier was erected on the side of footbridge facing the construction site • ET conducted followed-up inspection of the implemented mitigation measures on 20 Nov 2014 and air quality control was found to be satisfactory • Investigation Report submitted to EPD on 3 Dec 2014
Notification of summons	-	-	-	-	-
Successful Prosecution	-	-	-	-	-

Appendix I

21st Monthly EM&A Report for Works Contract 1108 – Kai Tak Station and Associated Tunnels

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No. 21

[Period from 1 to 28 February 2015]

Works Contract 1108 – Kai Tak Station and Associated Tunnels

(March 2015)

Certified by: __Goldie Fung_____

Position: _Environmental Team Leader____

Date: _____9_March 2015_____

Kaden – Chun Wo Joint Venture (KCJV)

Shatin to Central Link –

Contract 1108

Kai Tak Station and Associated Tunnels

Monthly Environmental Monitoring & Auditing Report for

February 2015

The Contents of this report have been certified by:

Ms. Goldie Fung
(Environmental Team Leader)

Environmental Pioneers & Solutions Limited
Flat A, 19/F, Chaiwan Industrial Centre,
20 Lee Chung Street, Chai Wan, Hong Kong
Tel: 2556 9172 Fax: 2856 2010

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Executive Summary

This is the twenty first monthly Environmental Monitoring and Audit (EM&A) Report for **MTR Shatin to Central Link (SCL) Works Contract 1108 – Kai Tak Station and Associated Tunnels**. The project commenced on 17th June 2013. This report documents the finding of EM&A Works conducted from 1st February 2015 to 28th February 2015.

Summary of the Construction Works undertaken during the Reporting Month

The major site activities in this reporting period were including:

- Open Cut Tunnel: shotcreting to excavated slope down to formation level, excavation and boulder breaking, wall and roof waterproofing
- Cut and Cover Tunnel: wall formwork erection, excavation for package 4.5 tunnel
- Station structure: wall concreting, backfilling on both seaside and landside, excavation for entrance B tunnel
- Launching Shaft: HPP
- Receiving Shaft: shoring installation

Variation in Construction Method

Based on recent engineering information and having considered the high construction risk for tunnel excavation, the tunnel with mining method is required to be shortened and the associated at-grade construction works within the buffer zone above the Former Kowloon City Pier (FKCP) is therefore proposed to minimize the potential impact on FKCP. The application for variation of an Environmental Permit with Environmental Review Report has been submitted to EPD on 19th March 2014 and the amended Environmental Permit (EP-438/2012/E) was issued to MTRC on 4th April 2014.

Environmental Monitoring and Audit Progress

Culture Heritage

Inspection of the Former Kowloon City Pier was conducted during the weekly environmental site inspection. Details of the inspection findings are presented in Section 6.

Landscape and Visual

The implementation of landscape and visual mitigation measures was inspected during the weekly environmental site inspection. Most of the necessary mitigation measures

have been implemented. Details of the audit findings and implementation status are presented in Section 6.

Waste Management

According to Contractor's waste flow data, a total of 32,137 m^3 of inert C&D materials were generated, which 847 m^3 were disposed to the receiving facility of Contract 1108A and 31,290 m^3 were reused in the contract. 136.2 m^3 of general refuse were generated and disposed at landfill site. 6kg of plastics, 60 kg of paper and 15,590 kg of metal were sent to recyclers for recycling.

Environmental Site Inspection

Joint weekly inspections were conducted by representatives of the Contractor, Engineer and ET on 3rd, 10th, 17th and 24th February 2015. The representative of the IEC joined the site inspection on 17th February 2015. No inspection was conducted by EPD in this reporting month. Details of the audit findings and implementation status are presented in Section 6.

Environmental Exceedance / Non-conformance / Compliant / Summons and Successful Prosecution

Two environmental complaints received in 7th and 20th January 2015 were referred by EPD on 2nd February 2015 regarding the issues of sand and mud brought to the road surface by construction vehicles left Gate 1 of the construction sites. Investigations had been carried out by ET as per EM&A programme.

No breaches of Action and Limits levels, non-compliance event, notification of summons and successful prosecution against the Project were received in this reporting month.

Future Key Issues

The major construction works to be undertaken in the next reporting month include:

- Open cut tunnel: shotcreting, excavation and boulder breaking, roof and wall dismantling formwork, excavation
- Cut and cover tunnel: wall formwork erection, wall concreting, excavation for package 4.5 tunnel, extract of sheet piles
- Station: concreting, backfilling, excavation for Entrance B tunnel
- Mined tunnel: HPP, strut installation, excavation, boulder removal

1 Introduction

The Environmental Team (ET), Environmental Pioneers & Solutions Limited (EPSL), was appointed by Kaden – Chun Wo Joint Venture (KCJV) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL) Works Contract 1108 – Kai Tak Station and Associated Tunnels (the Project). The project commenced on 17th June 2013.

1.1 Purpose of the Report

This is the twenty first monthly EM&A Report which summarises the audit findings for the EM&A programme during the reporting period from 1st February 2015 to 28th February 2015.

1.2 Structure of the Report

The structure of the report is as follow:

Section 1: Introduction – details the scope and structure of the report.

Section 2: Project Information – summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: Environmental Monitoring Requirement – summarises the monitoring requirements and environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: Implementation Status on Environmental Mitigation Measures – summarises the implementation of environmental protection measures during the reporting period.

Section 5: Monitoring Results – summarises the monitoring results obtained in the reporting period.

Section 6: Environmental Site Inspection – summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: Environmental Non-conformance – summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: Future Key Issues – summarises the impact forecast and monitoring schedule for the next three months.

Section 9: Conclusions and Recommendations

2 Project Information

2.1 Background

The Shatin to Central Link – Tai Wai to Hung Hom Section (SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic East-West rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

The construction of the SCL (TAW-HUH) and SCL (HHS) have been divided into a series of civil construction works contracts. This Works Contract 1108 covers the construction of Kai Tak Station (KAT) and the section of tunnel between KAT and Sung Wong Toi Station (SUW) plus a short section of tunnel from KAT towards Diamond Hill Station (DIH). This construction contract was awarded to Kaden – Chun Wo Joint Venture (KCJV) in April 2013.

2.2 General Site Description

The works area includes work sites in the Kai Tak New Development Area. The construction of tunnel will employ cut & cover method. The alignment and works area for the Project is shown in **Appendix A**.

2.3 Construction Programme and Activities

A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix B**.

- Open Cut Tunnel: shotcreting to excavated slope down to formation level, excavation and boulder breaking, wall and roof waterproofing
- Cut and Cover Tunnel: wall formwork erection, excavation for package 4.5 tunnel
- Station structure: wall concreting, backfilling on both seaside and landside, excavation for entrance B tunnel
- Launching Shaft: HPP
- Receiving Shaft: shoring installation

2.4 Project Organization

The project organization chart and contact details are shown in **Appendix C.**

2.5 Status of Environmental Licences, Notification and Permits

A summary of the relevant permits, licences, and notifications on environmental protection for this Project is presented in Table 2.1.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status	Remark
	From	To		
Environmental Permit (EP)				
EP-438/2012/H	10/09/2014	N/A	Valid	/
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
Ref. Number 359540	16/05/2013	N/A	Valid	/
Construction Noise Permit for the Carrying Out of Percussive Piling				
PP-RE0050-14	01/09/2014	28/02/2015	Valid	/
Construction Noise Permit for General Works				
GW-RE0863-14	14/08/2014	13/02/2015	Valid	/
GW-RE0899-14	15/08/2014	14/02/2015	Valid	/
GW-RE1016-14	14/09/2014	13/03/2015	Valid	/
GW-RE1035-14	16/09/2014	10/03/2015	Valid	/
GW-RE1145-14	14/10/2014	09/04/2015	Valid	/
GW-RE1175-14	21/10/2014	15/04/2015	Valid	/
GW-RE1181-14	27/10/2014	26/04/2015	Valid	/
GW-RE1219-14	29/10/2014	23/04/2015	Valid	/
GW-RE1300-14	21/11/2014	20/05/2015	Valid	/
GW-RE0029-15	16/01/2015	14/07/2015	Valid	
GW-RE0136-15	14/02/2015	13/08/2015	Valid	Renewal of permit GW-RE0863-14
GW-RE0146-15	16/02/2015	14/08/2015	Valid	Renewal of permit GW-RE0899-14
Effluent Discharge License				
WT00020520-2014	07/01/2015	31/08/2018	Valid	/
Waste Disposal (Charges for Disposal of Construction Waste) Regulation				
Billing Account No. 7017544	07/06/2013	N/A	Valid	/
Registration of Chemical Waste Producer				
WPN 5213-286-K3069-01	09/07/2013	N/A	Valid	/

2.6 Summary of EM&A Requirements

The EM&A programme under Works Contract 1108 require regular environmental site audits. The EM&A requirements are described in the following sections, including:

- Weekly inspection for Cultural Heritage;
- Weekly inspection for Landscape and Visual;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

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

3 Environmental Monitoring Requirements

3.1 Culture Heritage

In accordance with the Environmental Permit and EM&A Manual, a buffer zone shall be maintained between both Lung Tsun Stone Bridge and Former Kowloon City Pier and SCL (TAW-HUH) works sites during the tunneling work. For Lung Tsun Stone Bridge, a horizontal distance of 25m between the bridge and the buffer boundary shall be maintained. For Former Kowloon City Pier, a vertical buffer distance of 1.8 – 2.2m from the top of the tunnel shall be maintained. The layout of the buffer zone was attached in **Appendix D**. No at-grade construction activities shall be allowed within the buffer zone. Audit shall be conducted on a weekly basis throughout the construction period for the mined tunnel section under Former Kowloon City Pier.

3.2 Landscape and Visual

In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted every week throughout the construction period. The implementation status is given in **Appendix G**.

The event/action plan for Landscape and Visual during Construction Stage is attached in **Appendix E**.

4 Implementation Status on Environmental Protection Requirements

The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix G**. Status of required submissions under the Environmental Permit (EP) as of the reporting period is presented in Table 4.1.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
Condition 3.4	Twentieth Monthly EM&A Report	13th February 2015

5 Monitoring Results

5.1 Cultural Heritage

Inspection of the Former Kowloon City Pier was conducted during the weekly environmental site inspection. Details of the inspection findings are presented in Section 6.

5.2 Landscape and Visual

Inspections of the implementation of landscape and visual mitigation measures were conducted on weekly basis. The observations and recommendations made during the audit sessions are summarized in Table 6.1.

5.3 Waste Management

With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in Table 5.1. Inert C&D materials were disposed to the receiving facility of Contract 1108A or reused in the Contract. General refuse was disposed to designated landfill site. Plastics, paper and metal were sent to recycler for recycling. Detail of waste management data is presented in **Appendix F**.

Table 5.1 Quantities of Waste Disposed from the Project

Reporting Month	Quantity					
	C&D Materials (inert) [(a)]	C&D Materials (non-inert) [(b)]				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/cardboard	Plastics	Metals
February 2015	32,137 m^3	136.2 m^3	0 kg	60 kg	6 kg	15,590 kg

Notes:

(a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.

(b) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel metal generated from the Project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

6 Environmental Site Inspection

6.1 Site Audit

Site audit was carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

Joint weekly inspections were conducted by representatives of the Contractor, Engineer and ET on 3rd, 10th, 17th and 24th February 2015. The representative of the IEC joined the site inspection on 17th February 2015. The details of observations during site audit can refer to Table 6.1.

No inspection was conducted by EPD in this reporting month.

6.2 Implementation Status of Environmental Mitigation Measures

According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. Updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix G**.

During site inspections in the reporting month, no non-conformance was identified. The observations, reminders and recommendations made during the audit sessions are summarized in Table 6.1.

Table 6.1 Summary results of site inspections findings

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
Noise	N/A	N/A	N/A	N/A	N/A	/
Air Quality	3 Feb 15	Although water trucks were applied for water spraying of haul road, the exposed surface of Area 3 was dry.	Contractor was reminded to maintain the exposed surface of works site wet to avoid dust generation.	Water truck was assigned for water spraying of the exposed surface of Area 3. The exposed area was wet.	10 Feb 15	/
	3 Feb 15	Insufficient dust prevention measure was observed for the stockpile at Area 3. Similar observation was still be noted during the inspection on 10 Feb 15.	Contractor was reminded to carry out the transfer of soil in phase and cover the non-working area with tarpaulin for dust prevention.	Contractor reported that the stockpiles at Area 3 are being removed. The side of non-working part of the stockpile was covered with tarpaulin for dust prevention	17 Feb 15	/

Parameters	Date	Findings	Advice from ET	Action taken	Closing date	Remarks
	10 Feb 15	The stockpiles at Area 1 were not fully covered.	Contractor was reminded to carry out the transfer of soil in phase and cover the non-working part of the stockpile with tarpaulin for dust prevention.	The stockpiles at Area 1 were covered as far as practicable. Water Spraying was provided when necessary	24 Feb 15	/
	17 Feb 15	Deposited soil was observed on the haul road at Gate 1. Similar observation was still be noted during the inspection on 24 Feb 15.	Contractor was advised to thoroughly wash the wheel and body of the construction vehicles before the vehicles leave the site to avoid dropping of soil.	It was noted that improvement work for the wheel washing bay at Gate 1 will be carried out. The progress and effectiveness of rectification works and runoff control will be inspected next week.	N/A	/
Water Quality	20 Jan 15	Soil water was observed on the haul road of Gate 1 and Concorde Road for the inspection on 20 Jan 15. The runoff control measure at Gate 1 was still insufficient for the inspection on 27 Jan 15.	Contractor was advised to provide proper measure to collect the runoff generated from haul road washing and wetting to avoid flowing of soil water onto the public road.	Contractor reported on 3 Feb 15 that further instruction to the frontline staff was made to only wash the haul road within the site to avoid seeping of runoff to Concorde Road. Contractor also reported that improvement work for the wheel washing bay at Gate 1 will be carried out. The progress and effectiveness of rectification works will be inspected next reporting month.	N/A	/
Waste / Chemical Management	27 Jan 15	General refuse was observed without proper storage on Area 3.	Contractor was reminded to remove the waste to maintain proper site cleanliness.	The general refuse on Area 3 was removed.	3 Feb 15	/
Cultural Heritage	N/A	N/A	N/A	N/A	N/A	/
Landscape and Visual	N/A	N/A	N/A	N/A	N/A	/
Permits/ Licenses	N/A	N/A	N/A	N/A	N/A	/

7 Environmental Non-Conformance

7.1 Summary of Environmental Exceedances

No breaches of Action and Limit levels was recorded in the reporting month.

7.2 Summary of Environmental Non-Compliance

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

7.3 Summary of Environmental Complaint

Two environmental complaints received in 7th and 20th January 2015 were referred by EPD on 2nd February 2015 regarding the issues of sand and mud brought to the road surface by construction vehicles left Gate 1 of the construction sites. Investigations had been carried out by ET as per EM&A programme. The updated statistical summary of complaint is presented in Table 7.1. The updated complaint logs for the Project in the reporting month is shown in Appendix L.

Table 7.1 Summary of Complaints

Reporting Period	Complaint Statistics		Area of Concern	Status
	Number	Cumulative		
01/02/15 – 28/02/15	2	5	Gate 1	Closed

7.4 Summary of Environmental Summon and Successful Prosecution

There was no successful environmental prosecution or notification of summons received since the Project commencement.

The cumulative log for environmental exceedance, non-compliance, complaint and summon and successful prosecution since the commencement of the Project is presented in **Appendix H**.

8 Future Key Issues

The major construction activities in the coming month will include:

- Open cut tunnel: shotcreting, excavation and boulder breaking, roof and wall dismantling formwork, excavation
- Cut and cover tunnel: wall formwork erection, wall concreting, excavation for package 4.5 tunnel, extract of sheet piles
- Station: concreting, backfilling, excavation for Entrance B tunnel
- Mined tunnel: HPP, strut installation, excavation, boulder removal

Potential environmental impacts arising from the above construction activities are mainly associated with dust, construction noise, water quality and waste management. The Contractor has been reminded to properly implement dust, construction noise and water quality control measures as well as proper waste management in order to minimize the potential environmental impacts due to the construction works of the Project.

9 Conclusions and Recommendations

9.1 Conclusions

This is the twenty first monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during 1st February 2015 to 28th February 2015 in accordance with the EM&A Manual and the requirement under EP-438/2012/H.

4 nos. of environmental site inspections were carried out in this reporting month. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

Two environmental complaints received in January 2015 were referred by EPD on 2nd February 2015. Investigations had been carried out by ET as per EM&A programme.

No exceedances, non-compliance event and summons/prosecution was received during the reporting period.

The ET will keep tracking of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all the necessary mitigation measures.

9.2 Recommendations

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

<u>Air Quality Impact</u>

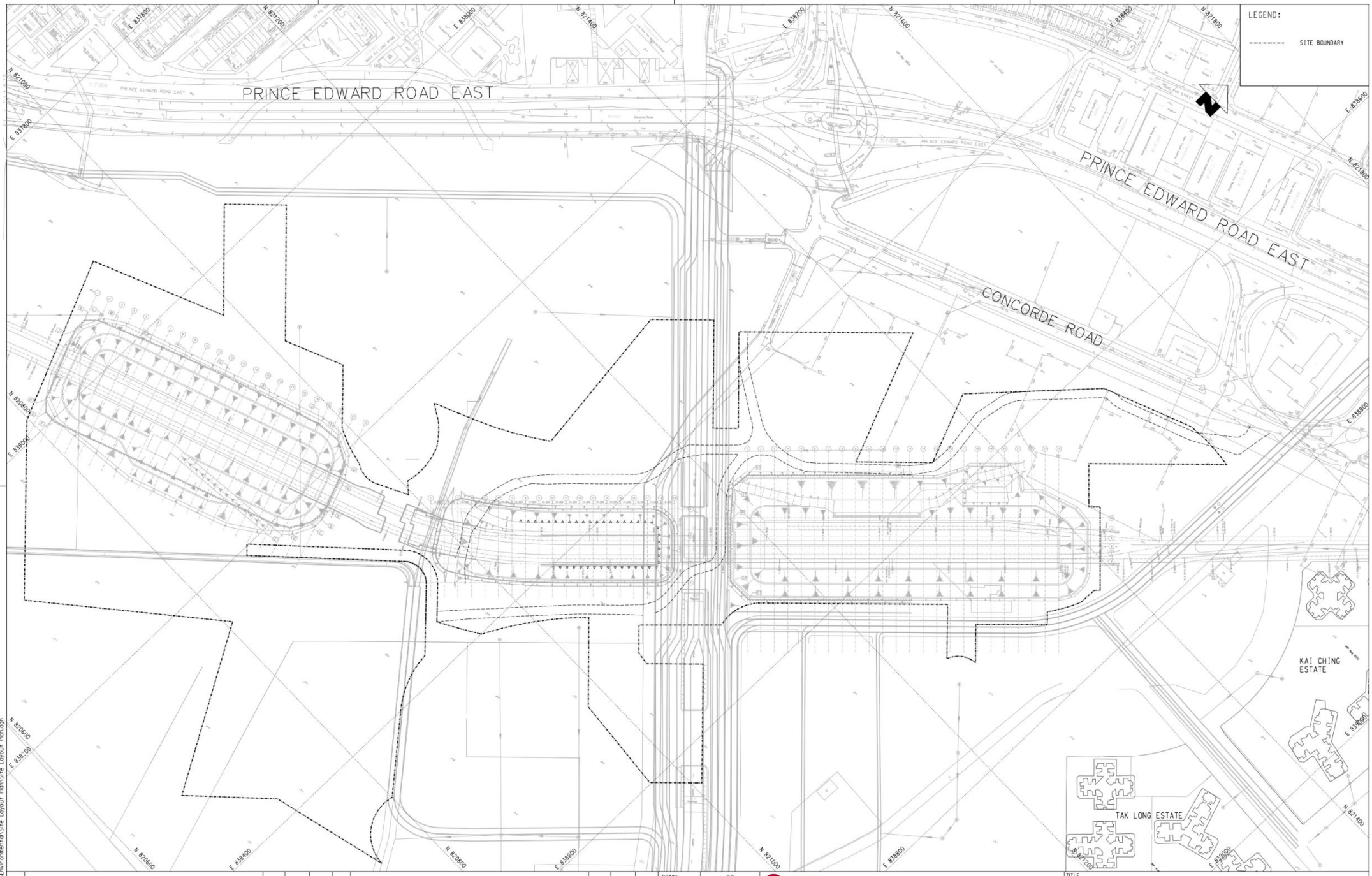
- Provide sufficient watering to maintain exposed surface wet
- Cover dusty stockpile entirely with tarpaulin
- Completely wash the body and wheel of vehicles to remove the soil before leaving the site;

<u>Water Quality Impact</u>

- Provide and maintain runoff control measure (i.e. sandbags, bunding, etc.) to direct site water and runoff to wastewater treatment facilities with sufficient capacity prior to discharge and avoid possible seepage of runoff out of the site and

discharge of untreated wastewater

Appendix A – Site Location Plan



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PRINTED BY: CALVIN.C 8/12/2014 8:53:35 AM

REV	DESCRIPTION	BY	DATE	APPROVED
A	FIRST SUBMISSION	KW	110814	BW

DRAWN	CC
DESIGNED	KW
CHECKED	ET
APPROVED	BW
DATE	11/AUG/2014

MTR

SHATIN TO CENTRAL LINK

ORIGINATOR

Kaden – Chun Wo Joint Venture

CADD REF. Site Layout Plan.dgn

TITLE
CONTRACT 1108
KAI TAK STATION AND ASSOCIATED TUNNELS
SITE LAYOUT PLAN

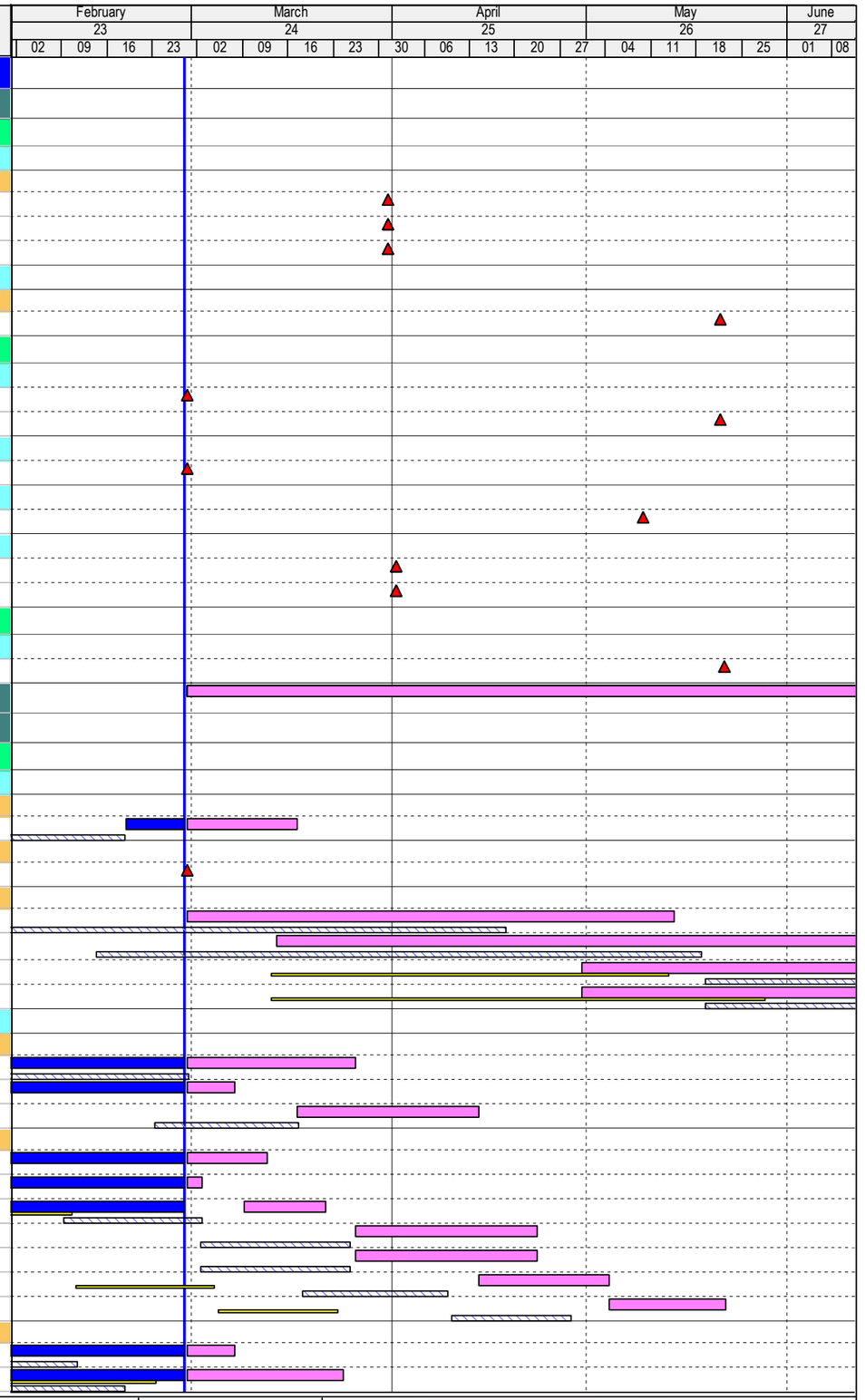
SCALE 1 : 1500 (A1)

DRAWING NO. SITE LAYOUT PLAN

REV. A

Appendix B –Construction Programme

Activity ID	Activity Name	Activity % Complete	Start	Finish
Contract 1108 Kai Tak Station and Associated Tunnels				
Contractual Dates and Project Key Dates				
Critical Dates				
Schedule of Options				
Latest Exercising Date				
01108.CDO2a-ED	Option 2a - Roads L9 & L16 & Associated Works, except the works in Options 2b & 2c - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15*	
01108.CDO2c-ED	Option 2c - Establishment works of the landscape softworks in Option 2b - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15*	
01108.CDO2b-ED	Option 2b - Landscape hardwork, irrigation facilities, softworks & pavers - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15*	
Specified Degrees of Completion (General Damages / * Liquidated Damages Applicable)				
Structures				
01108.CD4A1	4A1 - Deg1, KAT Platform level (Week No. 17/15, 26-Apr-15)	0%		21-May-15*
IPS Milestone Dates				
Cost Centre B - Kai Tak Station, Entrances and Adits				
01108.MSB06	B6 - Complete all structural works for Platform Level (Week No. 10/15, 8-Mar-15)	0%		28-Feb-15
01108.MSB07c	B7 - All floor, wall & ceiling finishes to all area on Platform Level completed (Week No. 33/15, 16-Aug-15)	0%		21-May-15
Cost Centre C - South Approach Tunnel				
01108.MSC04	C4 - Complete 50% by plan length of tunnel structures (Week No. 35/14, 31-Aug-14)	0%		28-Feb-15
Cost Centre F - Option 2 - CEDD Works for Roads L9 & L16 and Associated Works				
01108.MSF01	F1 - Contractor's dwgs submission schedule & All permanent works Material Control Schedule approved (WN.33/15,16-A	0%		09-May-15
Cost Centre G - Option 3 - CEDD Entrusted Works for Reconstruction & Upgrading of Kai Tak Nullah				
01108.MSG01a	G1 - Contractor's dwgs submission schedule & All permanent works Material Control Schedule approved (WN.08/15,22-F	0%		01-Apr-15
01108.MSG01b	G1 - Shop drawings & material sub mission sap proved (Week No. 08/15, 22-Feb-15)	0%		01-Apr-15
Schedule of Access Dates for Designated Contractors				
DC 1174 Building Services				
01108.IF1174.1	DC1174 BS for KAT - KAT - Platform Level (Week No. 17/15, 26-Apr-15)	0%	22-May-15*	
A - Preliminaries				
B - Kai Tal Station, Entrances and Adits				
B1 KAT Station				
B1.3 Station - U/G C&S Works (Below Concourse Level Soffit)				
External Wall to Concourse				
01108.STN.EC00-00	GL 00~00 End wall (2 teams in 10m panel, 2 cycles)	10%	19-Feb-15 A	17-Mar-15
Platform Slab and Wall				
01108.MSB06P	B6- Complete all structural works for Platform level (Week No. 10/15, 8-Mar-15) - Programmed	0%		28-Feb-15
Metalworks, BWIC with Services and BS Works				
01108.STN.BM12-24	GL 12~24 Installation of PSD support beam, 16.5 t	0%	28-Feb-15	14-May-15
01108.STN.BW12-24	GL 12~24 BWIC and BS works	0%	14-Mar-15	12-Jun-15
01108.STN.BM04-12	GL 04~12 Installation of PSD support beam, 11 t	0%	30-Apr-15	27-Jun-15
01108.STN.BW04-12	GL 04~12 BWIC and BS works	0%	30-Apr-15	13-Jul-15
B1.4 Station U/G C&S Works (Concourse Level and Above)				
Concourse Level				
01108.STN.CS21-24	GL 21~24 Concourse slab	20%	08-Dec-14 A	26-Mar-15
01108.STN.CS02-04	GL 02~04 Concourse slab	65%	08-Dec-14 A	07-Mar-15
01108.STN.CS00-02	GL 00~02 Concourse slab	0%	17-Mar-15	14-Apr-15
External Wall to Lower Ground				
01108.STN.EG04-06	GL 04~06 External wall (2 teams, 8 cycles)	45%	12-Nov-14 A	12-Mar-15
01108.STN.EG19-21	GL 19~21 External wall (2 teams, 10 cycles)	90%	01-Jan-15 A	02-Mar-15
01108.STN.EG02-04	GL 02~04 External wall (2 teams, 8 cycles)	25%	30-Jan-15 A	21-Mar-15
01108.STN.EG24-24	GL 24~24 External end wall (2 teams in 10 m panel, 2 cycles)	0%	26-Mar-15	23-Apr-15
01108.STN.EG21-24	GL 21~24 External wall (2 teams, 10 cycles)	0%	26-Mar-15	23-Apr-15
01108.STN.EG00-02	GL 00~02 External wall (2 teams, 8 cycles)	0%	14-Apr-15	04-May-15
01108.STN.EG00-00	GL 00-00 External end wall (2 teams in 10m panel, 2 cycles)	0%	04-May-15	22-May-15
Internal Wall to Lower Ground				
01108.STN.IG19-21	GL 19~21 Internal wall & column (261m with 6 teams in 11m panel)	75%	23-Dec-14 A	07-Mar-15
01108.STN.IG02-04	GL 02~04 Internal wall & column (196m with 6 teams in 10m panel)	15%	22-Jan-15 A	24-Mar-15



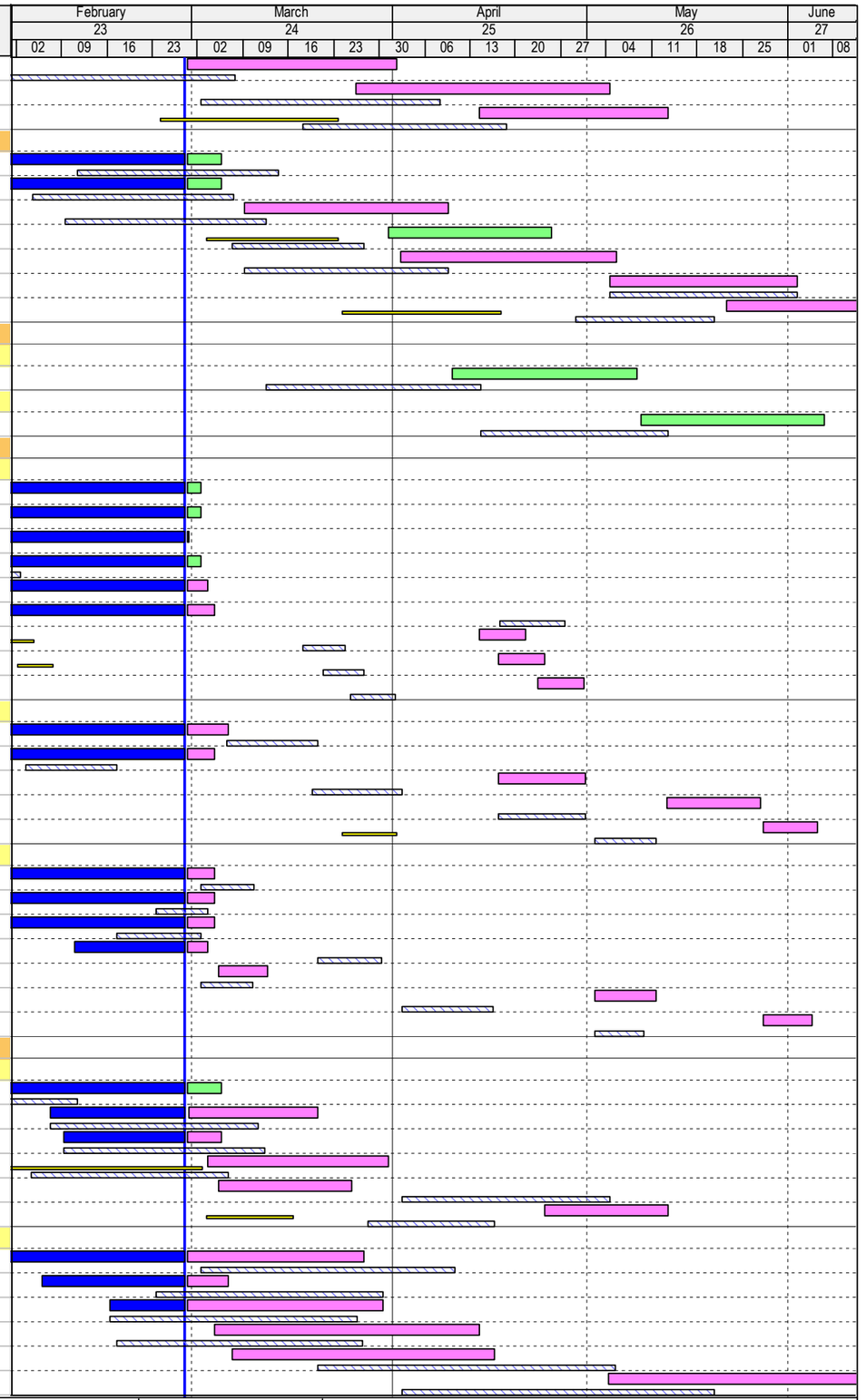
Milestone
Critical Milestone
Critical Remaining Work
Remaining Work
Remaining Level of Effort
PMP Rev C
Last Report
Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels

3-months Rolling Programme (Feb 2015)

Kaden 基利
Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish
01108.STN.IG04-06	GL 04~06 Internal wall & column (196m with 6 teams in 10m panel)	0%	28-Feb-15	01-Apr-15
01108.STN.IG21-24	GL 21~24 Internal wall & column (261m with 8 teams in 13m panel)	0%	26-Mar-15	04-May-15
01108.STN.IG00-02	GL 00~02 Internal wall & column (196m with 6 teams in 10m panel)	0%	14-Apr-15	13-May-15
Lower Ground Slab				
01108.STN.GS06-08	GL 06~08 Lower ground slab	80%	02-Jan-15 A	05-Mar-15
01108.STN.GS16-19	GL 16~19 Lower ground slab	80%	21-Jan-15 A	05-Mar-15
01108.STN.GS19-21	GL 19~21 Lower ground slab	0%	09-Mar-15	09-Apr-15
01108.STN.GS02-04	GL 02~04 Lower ground slab	0%	31-Mar-15	25-Apr-15
01108.STN.GS04-06	GL 04~06 Lower ground slab	0%	02-Apr-15	05-May-15
01108.STN.GS21-24	GL 21~24 Lower ground slab	0%	04-May-15	02-Jun-15
01108.STN.GS00-02	GL 00~02 Lower ground slab	0%	22-May-15	13-Jun-15
Mezzanine Level				
Mezzanine Slab				
01108.STN.MS19-22	GL 19~22/ A1-A & GL 21-22/A1-C Mezzanine slab	0%	10-Apr-15	08-May-15
Mezzanine Internal Wall				
01108.STN.MW19-22	GL 19~22/ A1-A & GL 21-22/A1-C Mezzanine wall	0%	09-May-15	06-Jun-15
Waterproofing				
Waterproofing to Concourse Level				
01108.STN.WP14-16.1	GL 14~16 Waterproofing works to external wall up to concourse slab, 2 x 30mL x 7.66mH (460 m2)	80%	15-Aug-14 A	02-Mar-15
01108.STN.WP16-19.1	GL 16~19 Waterproofing works to external wall up to concourse slab, 2 x 30mL x 7.66mH (460 m2)	75%	25-Aug-14 A	02-Mar-15
01108.STN.WP04-06.1	GL 04~06 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	85%	25-Aug-14 A	28-Feb-15
01108.STN.WP19-21.1	GL 19~21 Waterproofing works to external wall up to concourse slab, 2 x 30mL x 7.66mH (460 m2)	75%	02-Sep-14 A	02-Mar-15
01108.STN.WP02-04.1	GL 02~04 Waterproofing works to external wall up to concourse slab, 2 x 24mL x 7.66mH (368 m2)	60%	02-Sep-14 A	03-Mar-15
01108.STN.WP21-24.1	GL 21~24 Waterproofing works to external wall up to concourse slab, 2 x 34mL x 7.66mH (520 m2)	50%	17-Sep-14 A	04-Mar-15
01108.STN.WP00-02.1	GL 00~02 Waterproofing works to external wall up to concourse slab, 2 x 19.6mL x 7.66mH (300 m2)	0%	14-Apr-15	21-Apr-15
01108.STN.WP00-00.1	GL00~00 Waterproofing works to external end wall up to concourse slab, 35.6mL x 7.66mH (273 m2)	0%	17-Apr-15	24-Apr-15
01108.STN.WP24-24.1	GL 24~24 Waterproofing works to external end wall up to concourse slab, 31.8L x 7.66mH (244 m2)	0%	23-Apr-15	30-Apr-15
Waterproofing to Lower Ground Level				
01108.STN.WP16-19.2	GL 16~19 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	50%	06-Jan-15 A	06-Mar-15
01108.STN.WP14-16.2	GL 14~16 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	70%	22-Jan-15 A	04-Mar-15
01108.STN.WP19-21.2	GL 19~21 Waterproofing works to external wall up to LGL, 2 x 30mL x 5.9mH (354 m2)	0%	17-Apr-15	30-Apr-15
01108.STN.WP04-06.2	GL 04~06 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	13-May-15	27-May-15
01108.STN.WP02-04.2	GL 02~04 Waterproofing works to external wall up to LGL, 2 x 24mL x 5.9mH (283 m2)	0%	28-May-15	05-Jun-15
Waterproofing at Lower Ground Level Slab				
01108.STN.WP06-08.3	GL 06~08 Waterproofing works to roof, 856 m2	50%	20-Jan-15 A	04-Mar-15
01108.STN.WP10-12.3	GL 10~12 Waterproofing works to roof, 856 m2	50%	30-Jan-15 A	04-Mar-15
01108.STN.WP14-16.3	GL 14~16 Waterproofing works to roof, 1070 m2	50%	31-Jan-15 A	04-Mar-15
01108.STN.WP16-19.3	GL 16~19 Waterproofing works to roof, 1070 m2	70%	11-Feb-15 A	03-Mar-15
01108.STN.WP12-14.3	GL 12~14 Waterproofing works to roof, 856 m2	0%	05-Mar-15	12-Mar-15
01108.STN.WP19-21.3	GL 19~21 Waterproofing works to roof, 1070 m2	0%	02-May-15	11-May-15
01108.STN.WP04-06.3	GL 04~06 Waterproofing works to roof, 856 m2	0%	28-May-15	04-Jun-15
Backfilling				
Backfilling to Concourse Level				
01108.STN.BF06-08.1	GL 06~08 Backfill and compaction, 6700 m3	80%	14-Jan-15 A	05-Mar-15
01108.STN.BF04-06.1	GL 04-06 Backfill and compaction, 6770 m3	30%	07-Feb-15 A	20-Mar-15
01108.STN.BF19-21.1	GL 19~21 Backfill and compaction, 7580 m3	80%	09-Feb-15 A	05-Mar-15
01108.STN.BF02-04.1	GL 02~04 Backfill and compaction, 6770 m3	0%	03-Mar-15	31-Mar-15
01108.STN.BF21-24.1	GL 21~24 Backfill and compaction, 6410 m3	0%	05-Mar-15	25-Mar-15
01108.STN.BF00-02.1	GL 00~02 Backfill and compaction, 4420 m3	0%	24-Apr-15	13-May-15
Backfilling to Lower Ground Level				
01108.STN.BF06-08.2	GL 06~08 Backfill and compaction, 8250 m3	20%	13-Jan-15 A	27-Mar-15
01108.STN.BF10-12.2	GL 10~12 Backfill and compaction, 9700 m3	80%	06-Feb-15 A	06-Mar-15
01108.STN.BF12-14.2	GL 12~14 Backfill and compaction, 9710 m3	15%	16-Feb-15 A	30-Mar-15
01108.STN.BF14-16.2	GL 14~16 Backfill and compaction, 9710 m3	0%	04-Mar-15	14-Apr-15
01108.STN.BF16-19.2	GL 16~19 Backfill and compaction, 9710 m3	0%	07-Mar-15	16-Apr-15
01108.STN.BF19-21.2	GL 19~21 Backfill and compaction, 9400 m3	0%	04-May-15	15-Jun-15



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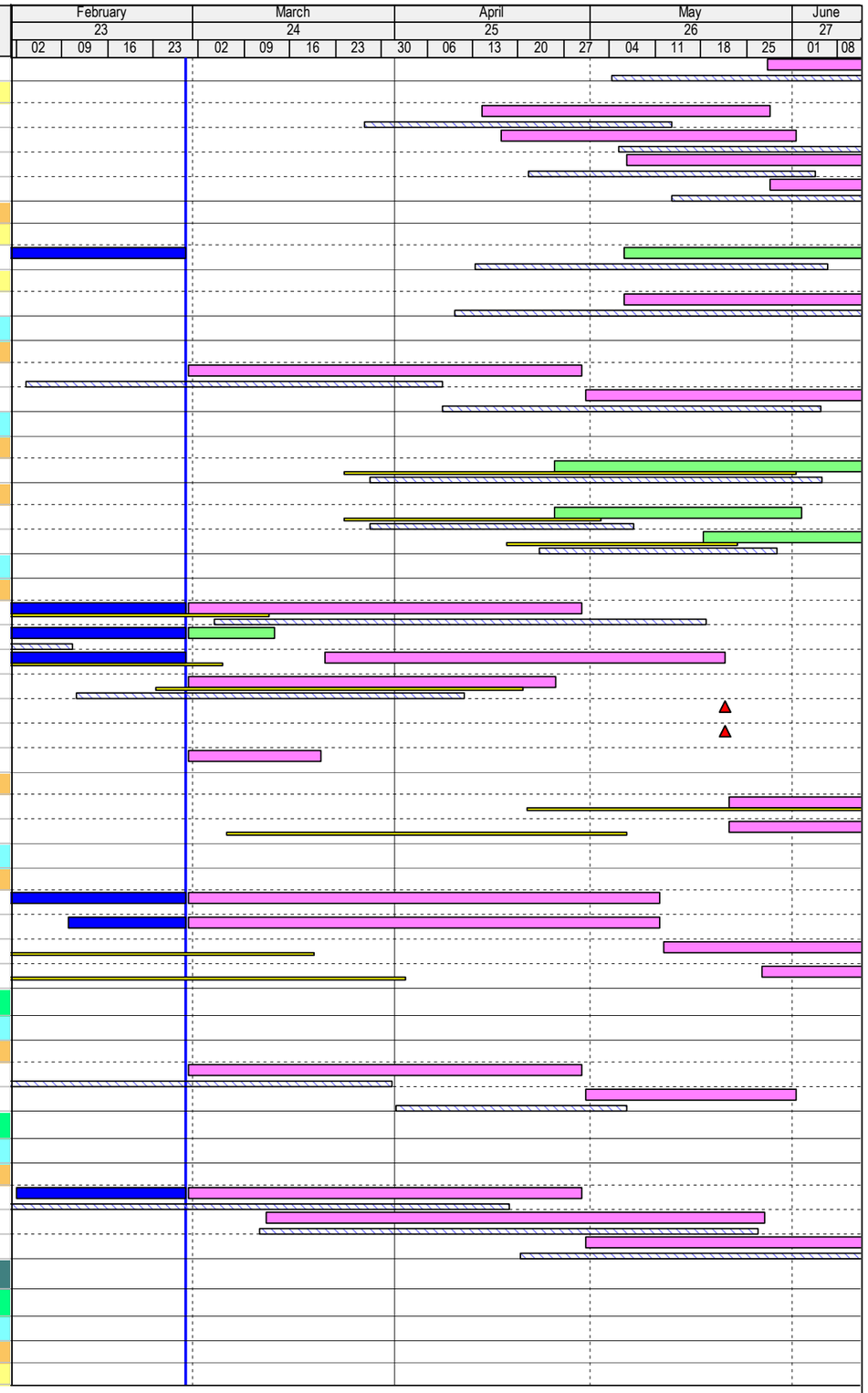
Activity ID	Activity Name	Activity % Complete	Start	Finish
01108.STN.BF04-06.2	GL 04~06 Backfill and compaction, 8410 m3	0%	28-May-15	09-Jul-15
Backfilling to Finish Ground Level				
01108.STN.BF14-16.3	GL 14~16 Backfill and compaction, 8240 m3	0%	14-Apr-15	28-May-15
01108.STN.BF16-19.3	GL 16~19 Backfill and compaction, 8240 m3	0%	17-Apr-15	01-Jun-15
01108.STN.BF12-14.3	GL 12~14 Backfill and compaction, 8240 m3	0%	06-May-15	18-Jun-15
01108.STN.BF10-12.3	GL 10~12 Backfill and compaction, 8240 m3	0%	28-May-15	10-Jul-15
Water Tanks & CLP Transformer Rooms				
Water Tanks				
01108.STN.BSMW020	F.S. Water Tank & Sprinkler Water Tank (GL 20-21/A)	30%	02-Jan-15 A	12-Jun-15
CLP Transformer Rooms				
01108.STN.CP010	CLP Transformer Rooms 3~6 (GL 17-21/B-D) and Dedicated Access 2 (and LV Switch Room) - Walls, etc.	0%	06-May-15	03-Aug-15
B1.5 Station - A/G C&S Works (Vent Shaft)				
Northern Vent Shaft				
01108.STN.NS010	Suspended slabs and beams	0%	28-Feb-15	29-Apr-15
01108.STN.NS020	External walls, columns and walls	0%	30-Apr-15	27-Jun-15
B1.6 Station - Station - A/G C&S Works (Entrance D & DEE)				
Entrance D				
01108.STN.ED010	Suspended slabs and beams	0%	25-Apr-15	02-Jul-15
Designated Emergency Entrance (DEE)				
01108.STN.DE010	Suspended slabs and beams	0%	25-Apr-15	02-Jun-15
01108.STN.DE020	External walls, columns and walls	0%	18-May-15	24-Jun-15
B1.7 Station - ABWF Works (Below Concourse Level Soffit)				
ABWF Works - Degree 1 of Completion				
01108.STN.CD4A1P2b	KAT Platform level - GL 12~4 Degree 1 of completion - E&M opening, finish, staircase, shaft&pit, survey, etc.	20%	15-Oct-14 A	29-Apr-15
01108.STN.CD4A1P2a	KAT Platform level - GL 12~4 Degree 1 of completion - Blockwork, partition wall, plastering, etc.	80%	09-Dec-14 A	13-Mar-15
01108.STN.CD4A1P1b	KAT Platform level - GL 24~12 Degree 1 of completion - E&M opening, finish, staircase, shaft&pit, survey, etc.	20%	15-Dec-14 A	21-May-15
01108.STN.CD4A1P3a	KAT Platform level - GL 4~1 Degree 1 of completion - Blockwork, partition wall, plastering, finish, staircase, etc.	0%	28-Feb-15	25-Apr-15
01108.IF1174	DC1174 BS for KAT - Platform Level (Week No. 22/15, 01-Jun-15) - Programmed	0%		21-May-15
01108.CD4A1P	KAT Platform level - Degree1 ofcompletion (Week No. 17/15, 26-Apr-15) - Programmed	0%		21-May-15
01108.STN.CD4A1P1a	KAT Platform level - GL 24~12 Degree 1 of completion - Blockwork, partition wall, plastering, etc.	70%	15-Dec-15 A	20-Mar-15
ABWF Works - Degree 2 of Completion				
01108.STN.CD4A2P3a	KAT Platform level - GL 4~1 Degree 2 of completeion - Door,wall&ceiling frame/support, strut. steel, finish, fixture,etc	0%	22-May-15	15-Aug-15
01108.STN.CD4A2P1a	KAT Platform level - GL 24~12 Degree 2 of completeion - Door frame, m. staircase, strut .steel, fixture, etc	0%	22-May-15	20-Jul-15
B1.8 Station - ABWF Works (Concourse Level and Above)				
ABWF Works - Degree 1 of Completion				
01108.STN.CD4B1P1a	KAT Concourse level, exclude 4G - GL 24~12 Degree 1 of completion - Blockwork, partition wall, plastering, etc.	5%	10-Feb-14 A	11-May-15
01108.STN.CD4B1P2a	KAT Concourse level, exclude 4G - GL 12~4 Degree 1 of completion - Blockwork, partition wall, plastering, etc.	5%	10-Feb-15 A	11-May-15
01108.STN.CD4B1P1b	KAT Concourse level, exclude 4G - GL 24~12 Degree 1 of completion - E&M opening, finish, staircase, shaft&pit, etc.	0%	12-May-15	23-Jul-15
01108.STN.CD4B1P2b	KAT Concourse level, exclude 4G - GL 12~4 Degree 1 of completion - E&M opening, finish, staircase, shaft&pit, etc.	0%	27-May-15	05-Aug-15
B2 Entrance A, Adit & SEE				
B2.1 Entrance A, Adit & SEE - Excavation				
Temporary Works				
01108.STN.DN04.3.1	Entrance A & SEE - ELS Design, ICE & Submit to MTRC for review	0%	28-Feb-15	29-Apr-15
01108.STN.DN04.3.2	Entrance A & SEE - Design Revision, if required, & Submit to RDO/ BD/ GEO	0%	30-Apr-15	01-Jun-15
B3 Entrance B and Adit				
B3.1 Entrance B and Adit - C&S Works				
Entrance B and Adit				
01108.STN.EB010	Aduit at concourse level	20%	02-Feb-15 A	29-Apr-15
01108.STN.EB020	Aduit at roof level	0%	12-Mar-15	27-May-15
01108.STN.EB030	Suspended slabs and beams	0%	30-Apr-15	13-Jul-15
C - South Approach Tunnel				
C1 Open Cut Tunnels (U=341m; D=340m)				
C1.2 Excavation				
C1.2.2 Temporary Works				
Temporary Works Design & Approval				



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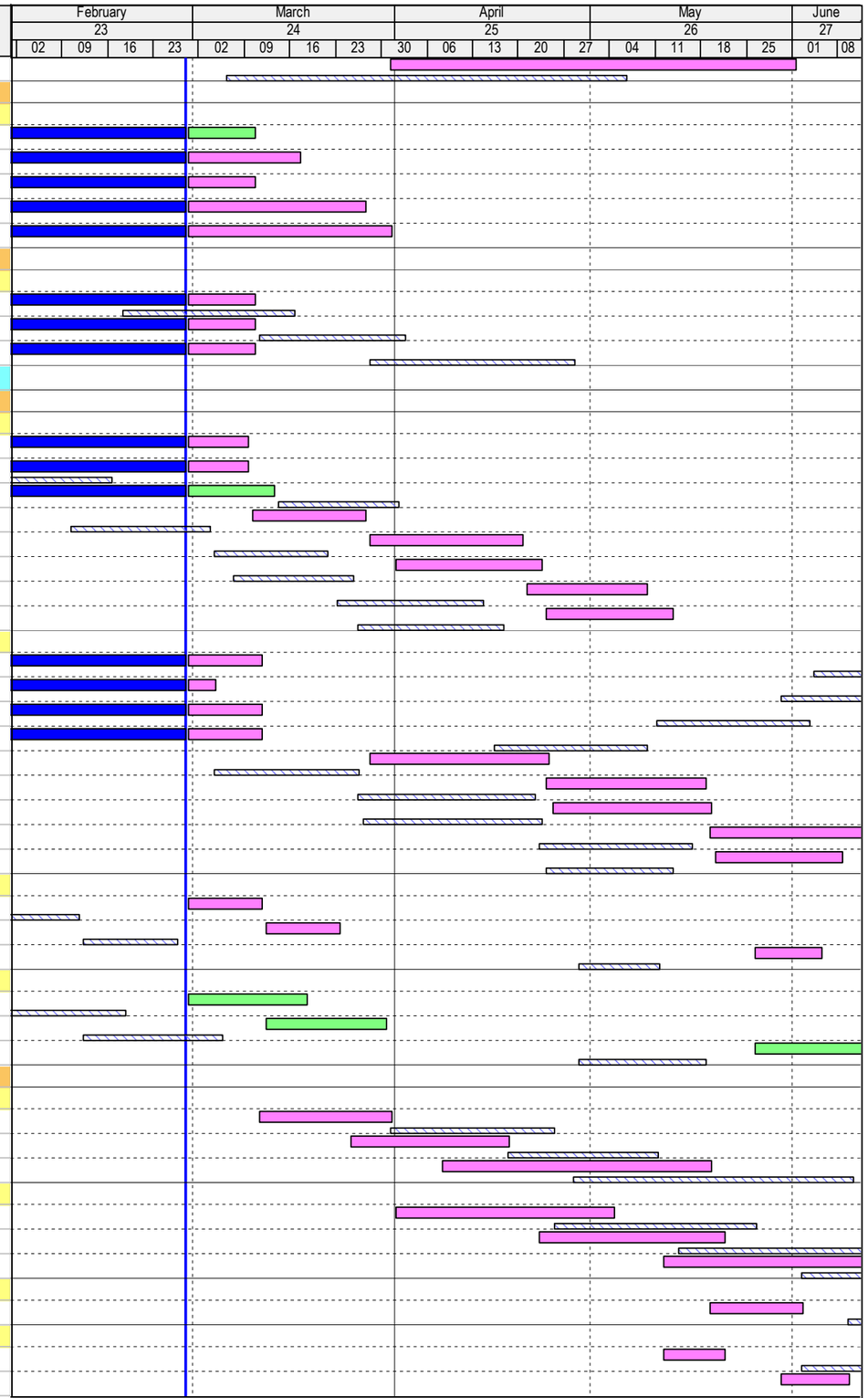
01108.OCT.DN06.2.1	Open Cut (CH 99222 to 99257, Interface with C1109) - Design, ICE & Submit to MTRC for review	0%	31-Mar-15	01-Jun-15
C1.2.3 Excavation CH 98975 to CH 99217				
From Exisitng Ground Level to Formation Level				
01108.OCT.EX9038	CH 99017~99038 Excavation	70%	28-Sep-13 A	10-Mar-15
01108.OCT.EX9206	CH 99185~99206 Excavation	50%	28-Sep-13 A	17-Mar-15
01108.OCT.EX9217	CH 99206~99217 Excavation 10.5mL	70%	28-Sep-13 A	10-Mar-15
01108.OCT.EX9017	CH 98996~99017 Excavation	20%	07-Oct-13 A	27-Mar-15
01108.OCT.EX8996	CH 98975~98996 Excavation	10%	18-Oct-13 A	31-Mar-15
C1.2.3 Excavation CH 98577 to CH 98650				
From Existing Ground Level to Formation Level				
01108.OCT.EX8599	CH 98577~98598 Excavation	55%	08-Dec-14 A	10-Mar-15
01108.OCT.EX8620	CH 98598~98619 Excavation	55%	08-Dec-14 A	10-Mar-15
01108.OCT.EX8636	CH 98619~98650 Excavation, 31mL	55%	08-Dec-14 A	10-Mar-15
C1.3 C&S Works				
Tunnel Construction CH 98975 to CH99217				
Base Slabs				
01108.OCT.TS9164	CH 99143~99164 Base slabs, 2 x 2 x 10.5mL	50%	10-Sep-14 A	09-Mar-15
01108.OCT.TS9059	CH 99038~99059 Base slabs, 2 x 2 x 10.5mL	50%	05-Nov-14 A	09-Mar-15
01108.OCT.TS9038	CH 99017~99038 Base slabs, 2 x 2 x 10.5mL	25%	30-Dec-14 A	13-Mar-15
01108.OCT.TS9185	CH 99164~99185 Base slabs, 2 x 2 x 10.5mL	0%	10-Mar-15	27-Mar-15
01108.OCT.TS9206	CH 99185~99206 Base slabs, 2 x 2 x 10.5mL	0%	28-Mar-15	20-Apr-15
01108.OCT.TS8996	CH 98975~98996 Base slabs, 2 x 2 x 10.5mL	0%	01-Apr-15	23-Apr-15
01108.OCT.TS9217	CH 99206~99217 Base slabs, 2 x 10.5mL	0%	21-Apr-15	09-May-15
01108.OCT.TS9017	CH 98996~99017 Base slabs, 2 x 2 x 10.5mL	0%	24-Apr-15	13-May-15
Walls & Top Slabs				
01108.OCT.TR9080	CH 99059~99080 Wall & top slabs, 2 x 2 x10.5mL	50%	17-Nov-14 A	11-Mar-15
01108.OCT.TR9101	CH 99080~99101 Wall & top slabs, 2 x 2 x10.5mL	80%	01-Dec-14 A	04-Mar-15
01108.OCT.TR9059	CH 99038~99059 Wall & top slabs, 2 x 2 x10.5mL	50%	03-Dec-14 A	11-Mar-15
01108.OCT.TR9038	CH 99017~99038 Wall & top slabs, 2 x 2 x10.5mL	50%	22-Jan-15 A	11-Mar-15
01108.OCT.TR9185	CH 99164~99185 Wall & top slabs, 2 x 2 x10.5mL	0%	28-Mar-15	24-Apr-15
01108.OCT.TR8966	CH 98975~98996 Wall & top slabs, 2 x 2 x10.5mL	0%	24-Apr-15	18-May-15
01108.OCT.TR9206	CH 99185~99206 Wall & top slabs, 2 x 2 x10.5mL	0%	25-Apr-15	19-May-15
01108.OCT.TR9017	CH 98996~99017 Wall & top slabs, 2 x 2 x10.5mL	0%	19-May-15	11-Jun-15
01108.OCT.TR9217	CH 99206~99217 Wall & top slabs, 2 x 10.5mL	0%	20-May-15	08-Jun-15
Internal C&S Works				
01108.OCT.IC9144	CH 99122~99143 Track level concrete works & finishes	0%	28-Feb-15	11-Mar-15
01108.OCT.IC9164	CH 99143~99164 Track level concrete works & finishes	0%	12-Mar-15	23-Mar-15
01108.OCT.IC9185	CH 99164~99185 Track level concrete works & finishes	0%	26-May-15	05-Jun-15
Waterproofing Works				
01108.OCT.WP9143	CH 99122~99143 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	28-Feb-15	18-Mar-15
01108.OCT.WP9164	CH 99143~99164 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	12-Mar-15	30-Mar-15
01108.OCT.WP9185	CH 99164~99185 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	26-May-15	12-Jun-15
Tunnel Construction CH 98577 to CH98650				
Base Slabs				
01108.OCT.TS8599	CH 98577~98598 Base slabs, 2 x 2 x 10.5mL	0%	11-Mar-15	31-Mar-15
01108.OCT.TS8620	CH 98598~98619 Base slabs, 2 x 10.5+8.9mL	0%	25-Mar-15	18-Apr-15
01108.OCT.TS8636	CH 98619~98650 Base slabs, 2 x 2 x 15.5mL	0%	08-Apr-15	19-May-15
Walls & Top Slabs				
01108.OCT.TR8599	CH 98577~98598 Wall & top slabs, 2 x 2 x10.5mL	0%	01-Apr-15	04-May-15
01108.OCT.TR8620	CH 98598~98619 Wall & top slabs, 2 x 10.5+8.9mL	0%	23-Apr-15	21-May-15
01108.OCT.TR8636	CH 98619~98650 Wall & top slabs, 2 x 2 x15.5mL	0%	12-May-15	23-Jun-15
Internal C&S Works				
01108.OCT.IC8599	CH 98577~98598 Track level concrete works & finishes	0%	19-May-15	02-Jun-15
Waterproofing Works				
01108.OCT.WP8599	CH 98577~98598 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	12-May-15	21-May-15
01108.OCT.WP8620	CH 98598~98619 2-coat spray, 75mm screed & 75mm blockworks, 2 x 10.5+8.9mL	0%	30-May-15	09-Jun-15



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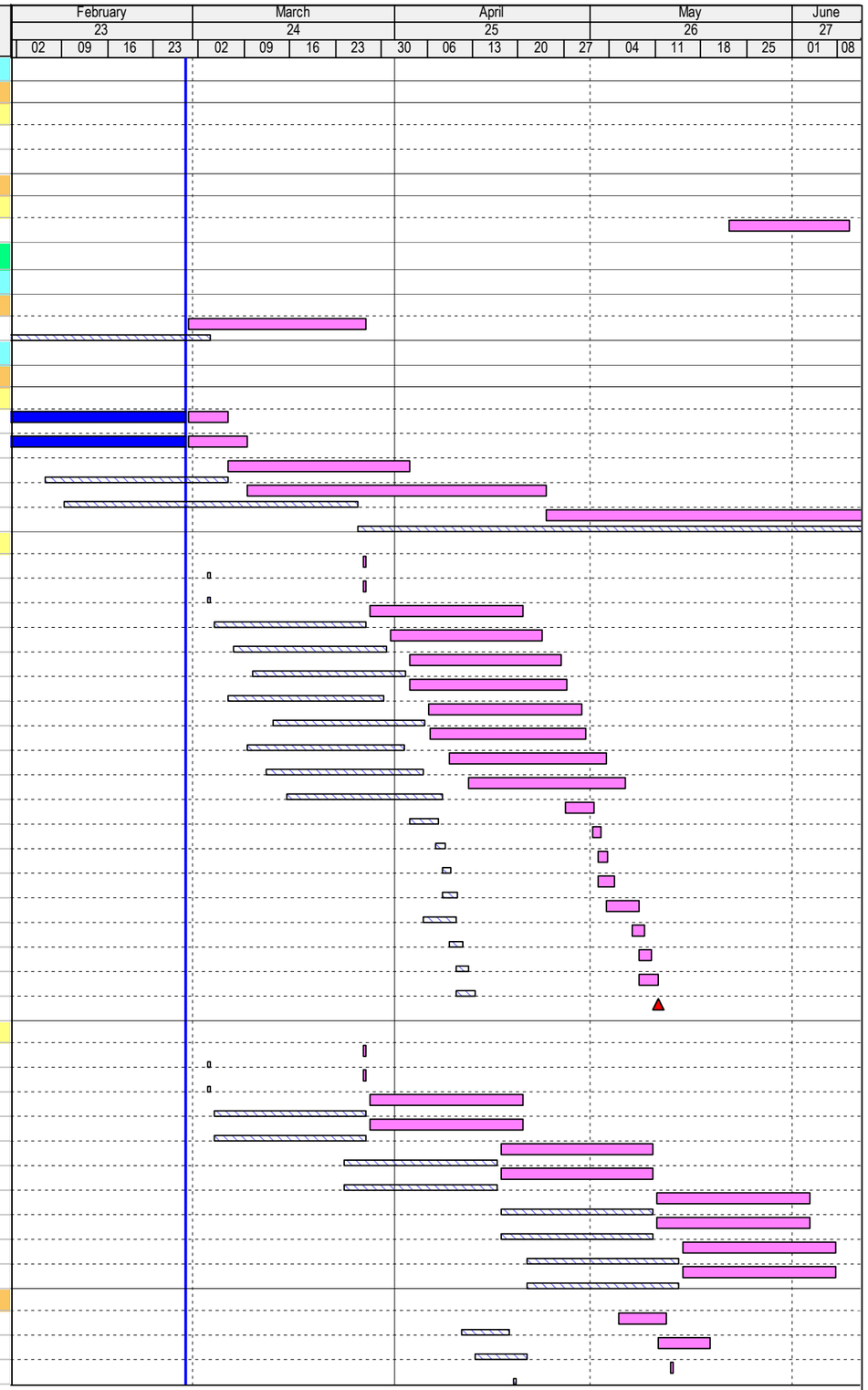
Backfill and Compaction				
Backfill and Compaction Works CH 98975 to CH 99217				
Formation Level to Finish Ground Level				
01108.OCT.BF9164	CH 99143~99164 Backfill and compaction	20%	02-Feb-16 A	17-May-16
01108.OCT.BF9185	CH 99164~99185 Backfill and compaction	10%	02-Feb-16 A	13-Jun-16
Backfill and Compaction Works CH 98578 to CH 98636				
Formation Level to Finish Ground Level				
01108.OCT.BF8599	CH98578~98599 Backfill and compaction	0%	22-May-15	09-Jun-15
C2 Mined Tunnels (U=41m; D=39m)				
Preliminaries				
Ground Inverstigation, Instrumantation & Monitoring				
01108.MT.IM00000	Instrumentation - Install & monitor, GS markers 5 nr; VM, 2 nr; HIN, 2 nr; etc	0%	28-Feb-15	27-Mar-15
C2.1 Excavation				
C2.1.2 Temporary Works and ELS				
Design, Temporary Works Design, Approval, Fabrication & Installation of Tunnel Formwork				
01108.MIT.DN07.2.2	MIT Temporary Support - Revision, if required, & Submit to RDO/ BD/ GEO	70%	04-Oct-13 A	06-Mar-15
01108.MIT.DN07.3.1	Tunnel formwork design - Design, ICE and submission	80%	02-Sep-14 A	09-Mar-15
01108.MIT.DN07.2.3	MIT Temporary Support - No-adverse-comment by RDO/ BD/ GEO	0%	06-Mar-15	03-Apr-15
01108.MIT.DN07.3.3	Tunnel formwork design - No adverse comment	0%	09-Mar-15	24-Apr-15
01108.MIT.GI070	Tunnel formwork - Fabrication	0%	24-Apr-15	25-Jul-15
Temporary Works and ELS from Eastside (2 Workfronts, each 20mL)				
01108.MIT.TW020e	U/T Flame cut holes in sheet piles	0%	27-Mar-15	27-Mar-15
01108.MIT.TW220e	D/T Flame cut holes in sheet piles	0%	27-Mar-15	27-Mar-15
01108.MIT.TW230e10	D/T Drilling full periphery for grouting, 20mL	0%	28-Mar-15	20-Apr-15
01108.MIT.TW240e10	D/T 2mT TAM grouting surrounding extrados of proposed steel tube periphery, 20mL	0%	31-Mar-15	23-Apr-15
01108.MIT.TW250e10	D/T Install steel tube for full periphery	0%	03-Apr-15	26-Apr-15
01108.MIT.TW030e	U/T Drilling full periphery for grouting, 20mL	0%	03-Apr-15	27-Apr-15
01108.MIT.TW260e10	D/T Pressure grouting to fill steel tube and drilled voids around steel tubes	0%	06-Apr-15	29-Apr-15
01108.MIT.TW040e	U/T 2mT TAM grouting surrounding extrados of proposed steel tube periphery, 20mL	0%	06-Apr-15	30-Apr-15
01108.MIT.TW050e	U/T Install steel tube for full periphery	0%	09-Apr-15	03-May-15
01108.MIT.TW060e	U/T Pressure grouting to fill steel tube and drilled voids around steel tubes	0%	12-Apr-15	06-May-15
01108.MIT.TW270e10	D/T Weld steel arch rib in front of sheet pile wall & within steel tube periphery	0%	27-Apr-15	01-May-15
01108.MIT.TW280e10	D/T Remove sheet pile sections and strutting for tunnel heading excavation	0%	01-May-15	02-May-15
01108.MIT.TW290e10	D/T Measure ground water flow and supplementary grouting	0%	02-May-15	03-May-15
01108.MIT.TWe10	D/T Install tempoaray face support works	0%	02-May-15	04-May-15
01108.MIT.TW070e	U/T Weld steel arch rib in front of sheet pile wall & within steel tube periphery	0%	03-May-15	08-May-15
01108.MIT.TW080e	U/T Remove sheet pile sections and strutting for tunnel heading excavation	0%	07-May-15	09-May-15
01108.MIT.TW090e	U/T Measure ground water flow and supplementary grouting	0%	08-May-15	10-May-15
01108.MIT.TW100e	U/T Install tempoaray face support works	0%	08-May-15	11-May-15
01108.MSC02Pe	C2- Complete preparation works for start of mined tunnelworks (Week No. 49/13, 08-Dec-13) - Programmed	0%		11-May-15
Temporary Works and ELS from Westside (2 Workfronts, each 20mL)				
01108.MIT.TW220w	D/T Flame cut holes in sheet piles	0%	27-Mar-15	27-Mar-15
01108.MIT.TW020w	U/T Flame cut holes in sheet piles	0%	27-Mar-15	27-Mar-15
01108.MIT.TW030w	U/T Drilling for grouting, 20mL	0%	28-Mar-15	20-Apr-15
01108.MIT.TW230w	D/T Drilling for grouting, 20mL	0%	28-Mar-15	20-Apr-15
01108.MIT.TW040w	U/T 2mT TAM grouting surrounding extrados of proposed steel tube periphery, 20mL	0%	17-Apr-15	10-May-15
01108.MIT.TW240w	D/T 2mT TAM grouting surrounding extrados of proposed steel tube periphery, 20mL	0%	17-Apr-15	10-May-15
01108.MIT.TW050w	U/T Install steel tube for full periphery	0%	11-May-15	03-Jun-15
01108.MIT.TW250w	D/T Install steel tube for full periphery	0%	11-May-15	03-Jun-15
01108.MIT.TW060w	U/T Pressure grouting to fill steel tube and drilled voids around steel tubes	0%	15-May-15	07-Jun-15
01108.MIT.TW260w	D/T Pressure grouting to fill steel tube and drilled voids around steel tubes	0%	15-May-15	07-Jun-15
C2.1.3 Earthworks				
01108.MIT.EX8917	D/T CH 98870 Excavate 2 workfronts x 3 x 1.3m advance heding, install steel ribes, tie rod and shotcrete side wall	0%	05-May-15	12-May-15
01108.MIT.EX0110	U/T CH 98870 Excavate 2 workfronts x 3 x 1.3m advance heding, install steel ribes, tie rod and shotcrete side wall	0%	11-May-15	19-May-15
01108.MIT.EX8927	D/T Temporary Type S2 fibre-reinforced shotcrete to tunnel face & invert above bench	0%	13-May-15	13-May-15



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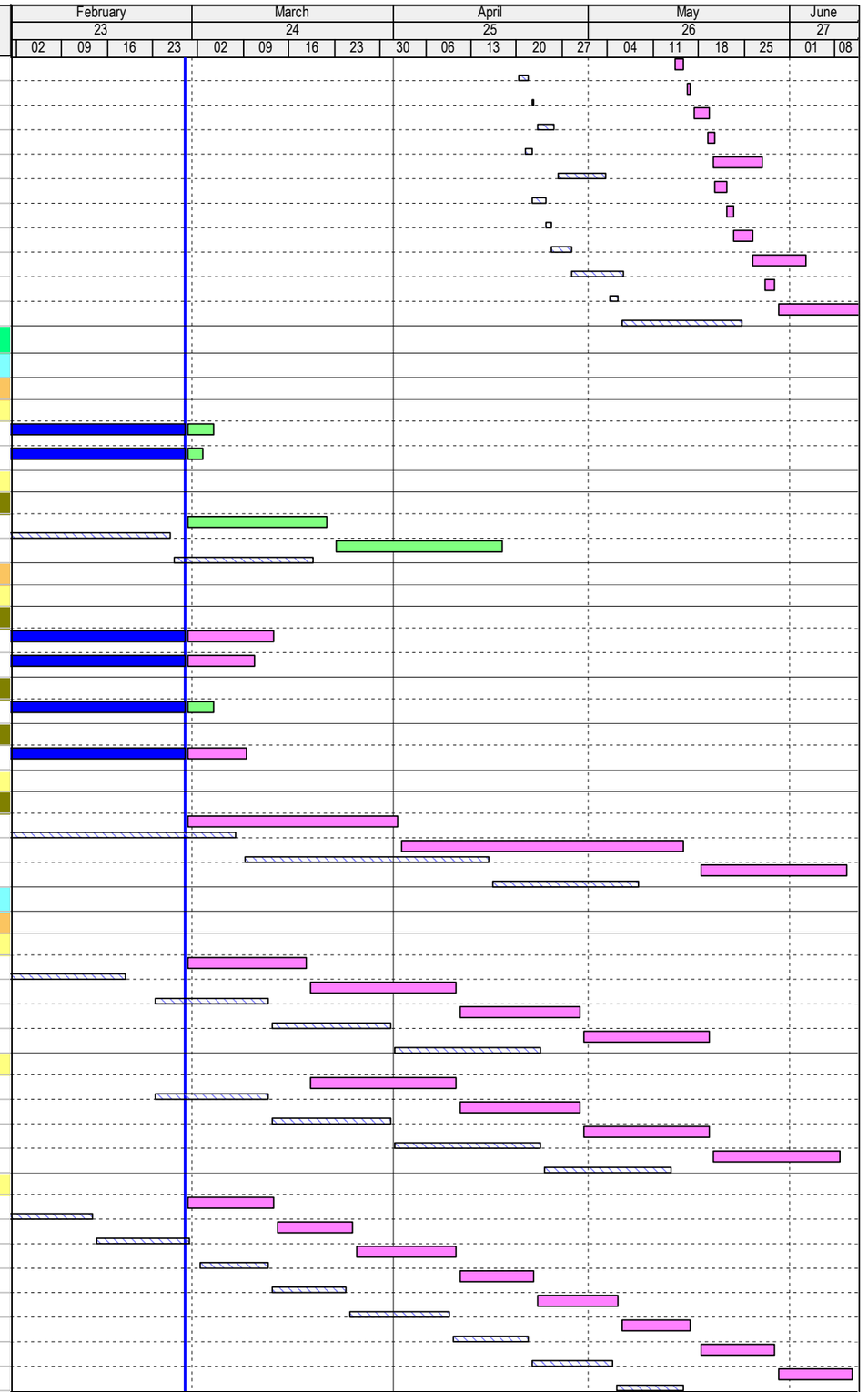
01108.MIT.EX8937	D/T Remove sheet pile sections and strutting for tunnel bench excavation	0%	14-May-15	15-May-15
01108.MIT.EX8947	D/T Measure ground water flow and supplementary grouting	0%	16-May-15	16-May-15
01108.MIT.EX8957	D/T Install tempoaray face support works	0%	17-May-15	19-May-15
01108.MIT.EX0120	U/T Temporary Type S2 fibre-reinforced shotcrete to tunnel face & invert above bench	0%	19-May-15	20-May-15
01108.MIT.EX8967	D/T CH98870 Excavate 2 workfronts x 3 x 1.3 m bench, install steel ribs, tie rod and shotcrete side wall	0%	20-May-15	27-May-15
01108.MIT.EX0130	U/T Remove sheet pile sections and strutting for tunnel bench excavation	0%	20-May-15	22-May-15
01108.MIT.EX0140	U/T Measure ground water flow and supplementary grouting	0%	22-May-15	23-May-15
01108.MIT.EX0150	U/T Install tempoaray face support works	0%	23-May-15	26-May-15
01108.MIT.EX0160	U/T CH98870 Excavate 2 workfronts x 3 x 1.3 m bench, install steel ribs, tie rod and shotcrete side wall	0%	26-May-15	03-Jun-15
01108.MIT.EX8977	D/T Temporary Type S2 fibre-reinforced shotcrete to tunnel bench face	0%	28-May-15	29-May-15
01108.MIT.EX8987	D/T CH 98874 Excavate 2 workfronts x 3 x 1.3m advance heading, bench & install temporary works	0%	30-May-15	17-Jun-15
C3 Cut and Cover Tunnels (U=297m; D=307m)				
C3.2 Excavation CH 98650 to CH 98866 and CH 98907 to CH 98975				
C3.2.2 Temporary Works and ELS				
Temporary Works Design & Approval				
01108.CCT.DN05.1b.3	CCT ELS/ Hydraulic (CH 98650 to 98750) - No-adverse-comment by RDO/ BD/ GEO	90%	20-Aug-13 A	04-Mar-15
01108.CCT.DN05.2.3	CCT ELS (CH 98750 to 98976) - Design No-adverse-comment by RDO/ BD/ GEO	90%	23-Dec-13 A	02-Mar-15
Sheet Piles				
Full Height Cofferdam				
01108.CCT.SP130	Sheet piling, D4'~A4, FSP IV Type D2, D1 : 108nr x 27.2~33.2 m, 3456 m total	0%	28-Feb-15	21-Mar-15
01108.CCT.SP140	Sheet piling, L4'~R4, FSP IV Type D2, D1: 199 nr x 33.2 to 27.2m, 3381m total	0%	23-Mar-15	17-Apr-15
C3.2.3 Earthworks				
Partial Open Cut				
Full Height Cofferdam Adjacent Mined Tunnel				
01108.CCT.EX8985	CH 98840~98866 Excavation & struts, 2 x 10.5+ 5mL (East Shaft)	55%	08-Jul-14 A	13-Mar-15
01108.CCT.EX8995	CH 98906~98928 Excavation & struts, 2 x 10.5mL (West Shaft)	55%	28-Aug-14 A	10-Mar-15
Open Cut from Existing Ground Level to -3.5mPD				
01108.CCT.EX8825c	CH 98818~98840 Excavation to -3.5mPD, 6688 m3	85%	06-Aug-14 A	04-Mar-15
Cofferdam below -3.5mPD				
01108.CCT.EX8825s	CH 98818~98840 Excavation & struts, 6222m3	60%	06-Aug-14 A	09-Mar-15
Full Height Cofferdam				
Excavation & ELS from Existing Groud Level to Formation Level				
01108.CCT.EX8947	CH 98928~98947 Excavation & struts, 2 x 9.5mL	0%	28-Feb-15	01-Apr-15
01108.CCT.EX8966	CH 98947~98966 Excavation & struts, 2 x 9.5mL	0%	02-Apr-15	15-May-15
01108.CCT.EX8975	CH 98967~98975 Excavation & struts, 9.5mL	0%	18-May-15	09-Jun-15
C3.3 C&S Works				
Tunnel Construction CH 98650 to CH 98840				
Base Slabs				
01108.CCT.TB8762	CH98755~98776 Base slabs, 2 x 2 x 10.5mL	0%	28-Feb-15	18-Mar-15
01108.CCT.TB8783	CH98776~987797 Base slabs, 2 x 2 x 10.5mL	0%	19-Mar-15	10-Apr-15
01108.CCT.TB8804	CH98797~98818 Base slabs, 2 x 2 x 10.5mL	0%	11-Apr-15	29-Apr-15
01108.CCT.TB8825	CH98818~98840 Base slabs, 2 x 2 x 10.5mL	0%	30-Apr-15	19-May-15
External Walls and Top Slab				
01108.CCT.TW8762	CH98755~98776 Walls and Top Slab, 2 x 2 x 10.5mL	0%	19-Mar-15	10-Apr-15
01108.CCT.TW8783	CH98776~98797 Walls and Top Slab, 2 x 2 x 10.5mL	0%	11-Apr-15	29-Apr-15
01108.CCT.TW8804	CH98797~98818 Walls and Top Slab, 2 x 2 x 10.5mL	0%	30-Apr-15	19-May-15
01108.CCT.TW8825	CH98818~98840 Walls and Top Slab, 2 x 2 x 10.5mL	0%	20-May-15	08-Jun-15
Internal C&C Works				
01108.CCT.IC8657	CH98650~98671 Track level concrete works & finishes	0%	28-Feb-15	13-Mar-15
01108.CCT.IC8678	CH98671~98692 Track level concrete works & finishes	0%	14-Mar-15	25-Mar-15
01108.CCT.IC8699	CH98692~98713 Track level concrete works & finishes	0%	26-Mar-15	10-Apr-15
01108.CCT.IC8720	CH98713~98734 Track level concrete works & finishes	0%	11-Apr-15	22-Apr-15
01108.CCT.IC8741	CH98734~98755 Track level concrete works & finishes	0%	23-Apr-15	05-May-15
01108.CCT.IC8762	CH98755~98776 Track level concrete works & finishes	0%	06-May-15	16-May-15
01108.CCT.IC8783	CH98776~98797 Track level concrete works & finishes	0%	18-May-15	29-May-15
01108.CCT.IC8804	CH98797~98818 Track level concrete works & finishes	0%	30-May-15	10-Jun-15



Milestone
Critical Milestone
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Remaining Work
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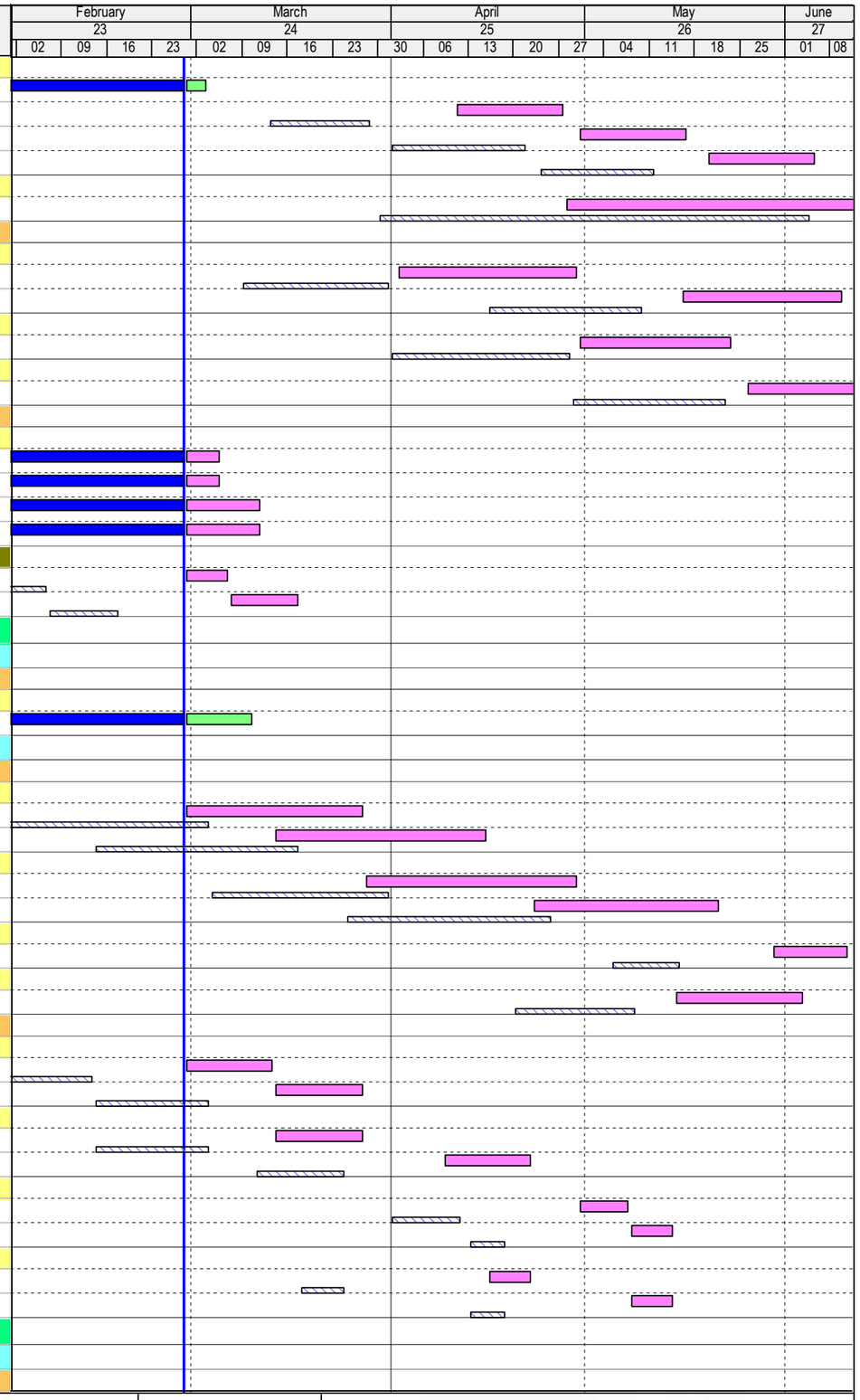
Contract 1108

Kai Tak Station and Associated Tunnels

3-months Rolling Programme (Feb 2015)

Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish
Waterproofing Works				
01108.CCT.WP8741	CH98734~98755 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	85%	11-Sep-14 A	03-Mar-15
01108.CCT.WP8762	CH98755~98776 2-coat spary, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	11-Apr-15	27-Apr-15
01108.CCT.WP8783	CH98776~98797 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	30-Apr-15	16-May-15
01108.CCT.WP8804	CH98797~98818 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL	0%	20-May-15	05-Jun-15
Drainage				
01108.CCT.DR9005	CH98755-~98840 U-channel, pipe laying, catch pits, 210mL	0%	28-Apr-15	30-Jun-15
Tunnel Construction CH 98928 to CH 98975				
Base Slabs				
01108.CCT.TB8947	CH98928~98947 Base slabs, 2 x 2 x 9.5mL	0%	02-Apr-15	29-Apr-15
01108.CCT.TB8966	CH98947~98966 Base slabs, 2 x 2 x 9.5mL	0%	16-May-15	09-Jun-15
External Walls				
01108.CCT.TW8947	CH98928~98947 Walls, 2 x 2 x 9.5mL	0%	30-Apr-15	23-May-15
Top Slabs				
01108.CCT.TR8947	CH98928~98947 Top slabs, 2 x 2 x 9.5mL	0%	26-May-15	17-Jun-15
Backfill and Compaction				
Backfill and Compaction CH 98650 to CH 98840				
01108.CCT.BF8678	CH98671~98692 Backfill, compaction & remove strut, 8470m3	75%	04-Sep-14 A	05-Mar-15
01108.CCT.BF8720	CH98713~98734 Backfill, compaction & remove strut, 8470m3	75%	30-Sep-14 A	05-Mar-15
01108.CCT.BF8657	CH98650~98671 Backfill, compaction & remove strut, 8470m3	45%	30-Sep-14 A	11-Mar-15
01108.CCT.BF8741	CH98734~98755 Backfill, compaction & remove strut, 8470m3	45%	16-Oct-14 A	11-Mar-15
CSMM Backfill CH 98650 to CH 98840				
01108.CCT.BF8720c	CH98707~98720 CSMM backfill, 13mL x 42m2, total 546 m3	0%	28-Feb-15	06-Mar-15
01108.CCT.BF8741c	CH98720~98741 CSMM backfill, 21mL x 42m2, total 882 m3	0%	07-Mar-15	17-Mar-15
C4 Stub Tunnels (U=32m; D=32m; R=33m)				
C4.1 Excavation CH 98255 to CH 98290				
Temporary Works				
Temporary Works Design, Review & Approval				
01108.STT.DN04.2.3	Stub Tunnel Interface with C1107 - Design No-adverse-comment by RDO/ BD/ GEO	50%	27-Jan-14 A	10-Mar-15
C4.2 Stub Tunnels - C&S Works				
Tunnel Construction CH98268 to CH98290 (Up Track & Refuge Track)				
External Walls				
01108.STT.TW8290n	CH98280~98290 Walls, 2 x 11mL (Up & Refuge tracks)	0%	28-Feb-15	27-Mar-15
01108.STT.TW8279n	CH98268~98279 Walls, 1 x 11mL (Up-Refuge tracks)	0%	14-Mar-15	15-Apr-15
Top Slabs				
01108.STT.TR8290n	CH98280~98290 Top slabs, 2 x 11mL (Up & Refuge t racks)	0%	28-Mar-15	29-Apr-15
01108.STT.TR8279n	CH98268~98279 Top slabs, 1 x 11mL (Up-Refuge tracks)	0%	23-Apr-15	21-May-15
Internal C&C Works				
01108.STT.IC8290n	CH98280~98290 Track level concrete works & finishes	0%	30-May-15	10-Jun-15
Waterproofing Works				
01108.STT.WP8290n	CH98280~98290 2-coat spray, 75mm screed & 75mm blockworks, 2 x 11mL (Up & Refuge tracks)	0%	15-May-15	03-Jun-15
Tunnel Construction CH98268 to CH98290 (Down Track)				
External Walls				
01108.STT.TW8290s	CH98280~98290 Walls, 1 x 11mL (Down track)	0%	28-Feb-15	13-Mar-15
01108.STT.TW8279s	CH98268~98279 Walls, 1 x 11mL (Down track)	0%	14-Mar-15	27-Mar-15
Top Slabs				
01108.STT.TR8290s	CH98280~98290 Top slabs, 1 x 11mL (Down track)	0%	14-Mar-15	27-Mar-15
01108.STT.TR8279s	CH98268~98279 Top slabs, 1 x 11mL (Down track)	0%	09-Apr-15	22-Apr-15
Internal C&C Works				
01108.STT.IC8290s	CH98280~98290 Track level concrete works & finishes	0%	30-Apr-15	07-May-15
01108.STT.IC8279s	CH98268~98279 Track level concrete works & finishes	0%	08-May-15	14-May-15
Waterproofing Works				
01108.STT.WP8290s	CH98280~98290 2-coat spray, 75mm screed & 75mm blockworks, 1x 11mL (Down track)	0%	16-Apr-15	22-Apr-15
01108.STT.WP8280s	CH98268~98280 2-coat spray, 75mm screed & 75mm blockworks, 1 x 11mL (Down track)	0%	08-May-15	14-May-15
C5 SUA				
C5.1 SUA - C&S Works				
SUA Access at GL A1/A2				



△ Milestone
▲ Critical Milestone
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Contract 1108

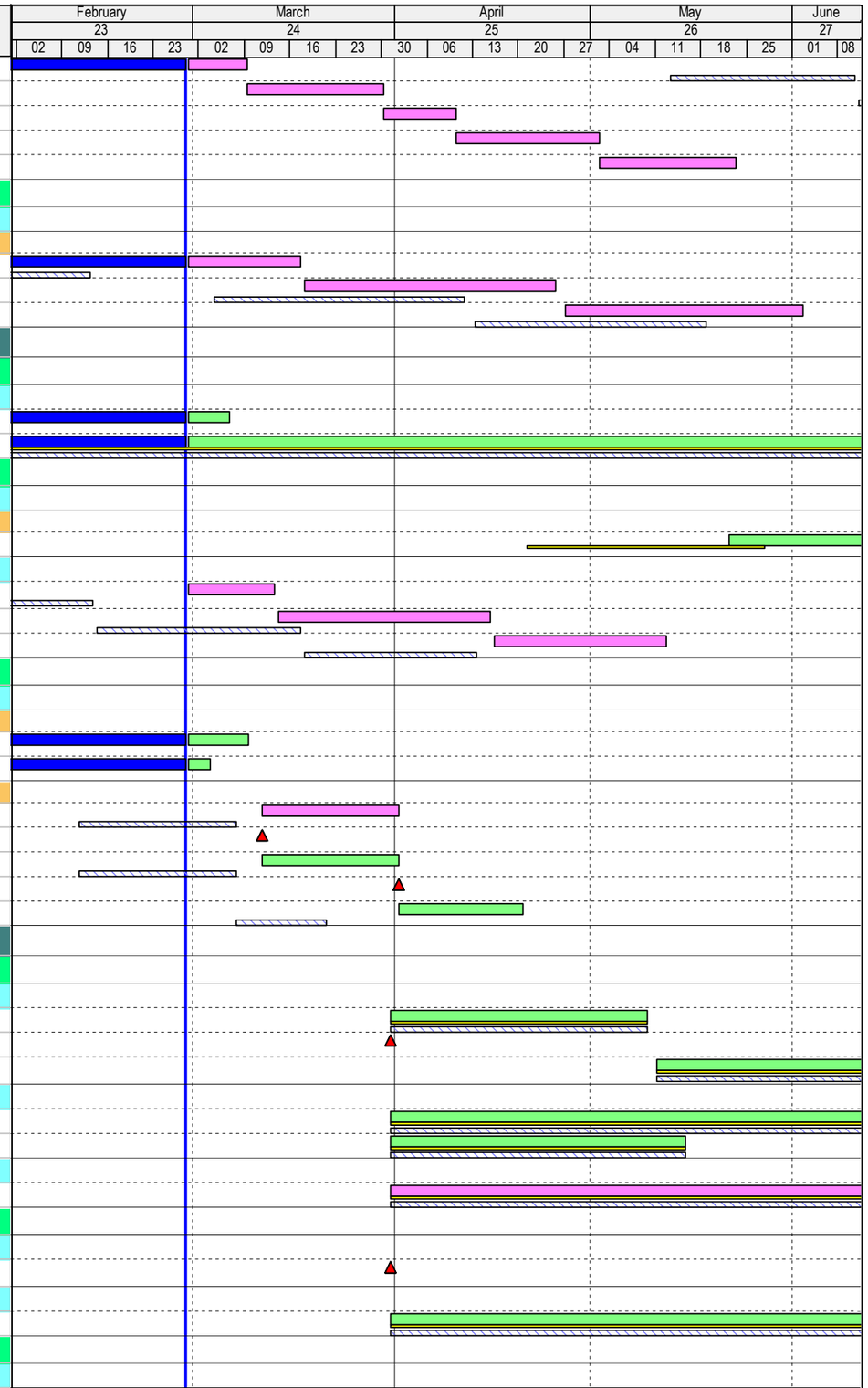
Kai Tak Station and Associated Tunnels

3-months Rolling Programme (Feb 2015)

Kaden 基利

Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish
01108.OCT.SU020	At CH99088/GL A1~A2 SUA - Suspended slabs, beams & walls to -9.482mPD	70%	28-Jan-15 A	09-Mar-15
01108.OCT.SU030	At CH99088/GL A1~A2 SUA - Walls to top slabs	0%	09-Mar-15	30-Mar-15
01108.OCT.SU040	At CH99088/GL A1~A2 SUA - Mass concrete	0%	30-Mar-15	10-Apr-15
01108.OCT.SU050	At CH99088/GL A1~A2 SUA - Stairs & landings	0%	10-Apr-15	02-May-15
01108.OCT.SU060	At CH99088/GL A1~A2 SUA - Top slab	0%	02-May-15	23-May-15
C6 Access Shafts				
C&S Works				
C6.1.1 External Walls				
01108.CCT.AS020	CH98746~98768 Access shaft - Walls B5~B3, W1 to Level C, 2 x 3 x 8.88mLx 9.82mW	50%	09-Jan-15 A	17-Mar-15
01108.CCT.AS030	CH98746~98768 Access shaft - Walls W2, W4, B2 to Level B, 2 x 3 x 8.88mLx 9.82mW x 1~2.1mT	0%	18-Mar-15	25-Apr-15
01108.CCT.AS040	CH98746~98768 Access shaft - Walls W2, W4, B1 to to Level A, 2 x 3 x 8.88mLx 9.82mW	0%	27-Apr-15	02-Jun-15
D - Associated Works				
D3 Instrumentation and Monitoring				
Instrumentation Installation and Monitoring				
01108.AWM.0010	Installation of piezometers, inclinometers, ground/ bldg/ utility settlement markers	90%	02-Jul-13 A	06-Mar-15
01108.AWM.0030	Regular Monitorings and Submit Monitoring Reports (weekly for 50 months)	50%	01-Aug-13 A	09-Feb-17
D4 Landscape				
Hard Landscape				
Design of Irrigation Systems				
01108.AWL.0010	Pop up sprinklers, dripline & water points irrigation system to green roof - Design and submission	0%	22-May-15	27-Jun-15
Site Formation Works for Engineers's Accommodation				
01108.AWS.0010	Site formation for Engineer's accommodation - Design, ICE and submission	0%	28-Feb-15	13-Mar-15
01108.AWS.0020	Site formation for Engineer's accommodation - Approval	0%	14-Mar-15	15-Apr-15
01108.AWS.0030	Filling to formation level for Engineer's accommodation, imported natural material, 3544 m3	0%	16-Apr-15	12-May-15
D5 Utilities Diversion				
Diversion of Existing Nullah				
Temporary Works & Hydraulic Assessment				
01108.AWD.DNA1.3	KTND Hydraulic Assessment - No-adverse-comment by DSD	80%	08-Aug-13 A	09-Mar-15
01108.AWD.DN09.5.3	KTND Temporary Channel - Design - No-adverse-comment by DSD & RDO/ BD/ GEO	90%	16-Jan-14 A	03-Mar-15
Remaining Section				
01108.AWD.1030	Tunnel section: Concrete lining, 60mL x 39.4mW x 0.3mT	0%	11-Mar-15	01-Apr-15
01108.AWD.1010	Completion of backfill after tunnel construction for remaining section of temporary nullah - Programmed	0%	11-Mar-15	
01108.AWD.1020	Tunnel section: Remove cofferdam & open cut excavation, 60mL x 36.4mW x ~4mD, 7540 m3	0%	11-Mar-15	01-Apr-15
01108.CD3Ap	3A/D1- Complete temporary drainage channel for Kai Tak Nullah diversion(Week No.33/14, 17-Aug-14) - Programmed	0%		01-Apr-15*
01108.AWD.1035	Existing Nullah Diversion/Removal	0%	01-Apr-15	20-Apr-15
F Option 2 CEDD Entrusted Works for Roads L9 & L16 & Associated Works				
Option 2a Roads L9 and L16 and Assocaited Works				
Preliminaries				
01108.O2A.PRE.010	Sumbmission of drawings & permanent works material control schedules & Approval	0%	31-Mar-15	09-May-15
01108.CDO2a.EDP	Option 2a CEDD Entrusted Works - Roads L9 & L16 - Latest Exercising Date (31-Mar-15)	0%	31-Mar-15	
01108.O2A.PRE.020	Submission of shop drawings & materials & Approval	0%	11-May-15	15-Jun-15
4. Sewage Works				
01108.O2A.SEW020	FM50_10~DP23/24 Sewer pipe, 300d to 450d, 307mL; 13 nr MH	0%	31-Mar-15	15-Jun-15
01108.O2A.SEW000	Remove disused pipes, 400mL	0%	31-Mar-15	15-May-15
11. Preservation & Protection of Trees				
01108.O2A.PPT010	(Provisional) Preservataion & protection meausres to preserved trees, survey & reporting (30 months)	0%	31-Mar-15	17-Jul-17
Option 2b Landscape Hardworks & Softworks, Irrigation Facilities & Pavers				
Programmed Completion Date				
001108.CDO2b.EDP	Option 2b CEDD Entrusted Works - LS Hardwroks & Softwork & Irrigation System- LED (31-Mar-15)	0%	31-Mar-15	
9. Irrigation Facilities				
01108.O2B.IRR000	Design & Approval of Irrigiation Systems	0%	31-Mar-15	15-Jun-15
Option 2c Establishment Works				
10 Establishment Works				



Milestone
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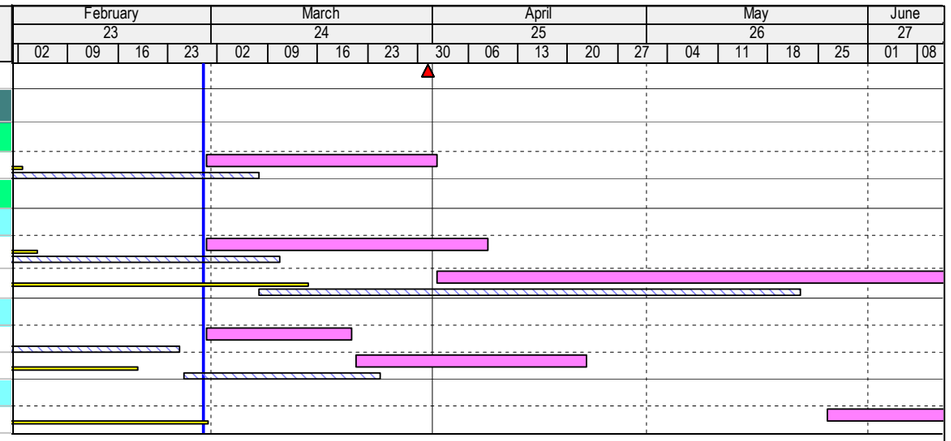
Contract 1108

Kai Tak Station and Associated Tunnels

3-months Rolling Programme (Feb 2015)

Kaden – Chun Wo Joint Venture

Activity ID	Activity Name	Activity % Complete	Start	Finish
01108.CDO2c.EDP	Option 2c Establishment works of the landscape softworks in Option 2b -Latest Ex.Date (31-Mar-15) - Programmed	0%	31-Mar-15	
G Option 3 CEDD Entrusted Works for Reconstruction of Kai Tak Nullah				
Preliminaries				
01108.O3.PRE.010	Sumbmission of drawings & permanent works material control schedules, shop drawings & material - Approval	0%	28-Feb-15	01-Apr-15
Earthworks				
Demolition of Existing Nullah Structure				
01108.O3.PRE010	Liaison with GEO on demolition of existing slope features, 11NE-A/R45&46 [P11.15.1]	0%	28-Feb-15	08-Apr-15
01108.O3.PRE020	Demolish existing nullah - decking, foundation & associated structures	0%	01-Apr-15	17-Jun-15
Temporary Works				
01108.O3.TMW010	Design, ICE, submission & approval of sheet piles	0%	28-Feb-15	20-Mar-15
01108.O3.TMW020	Sheet pile, Type II, 150 mL, 375nr x 21.7m, 8141m total	0%	21-Mar-15	22-Apr-15
Formation Level				
01108.O3.ERW010	Ch 98578~98599 Formation level of proposed nullah	0%	26-May-15	30-Jun-15



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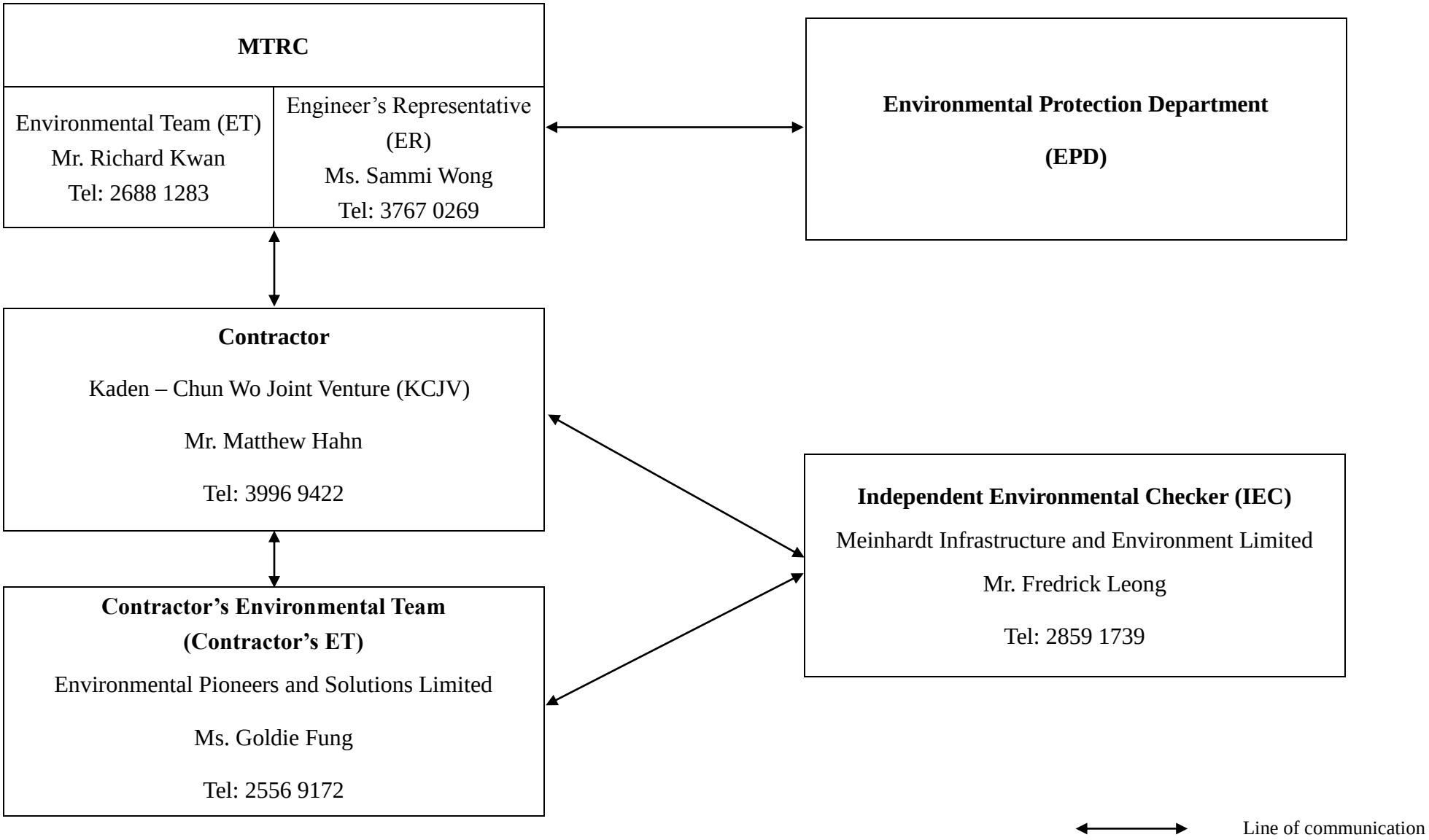
Kai Tak Station and Associated Tunnels

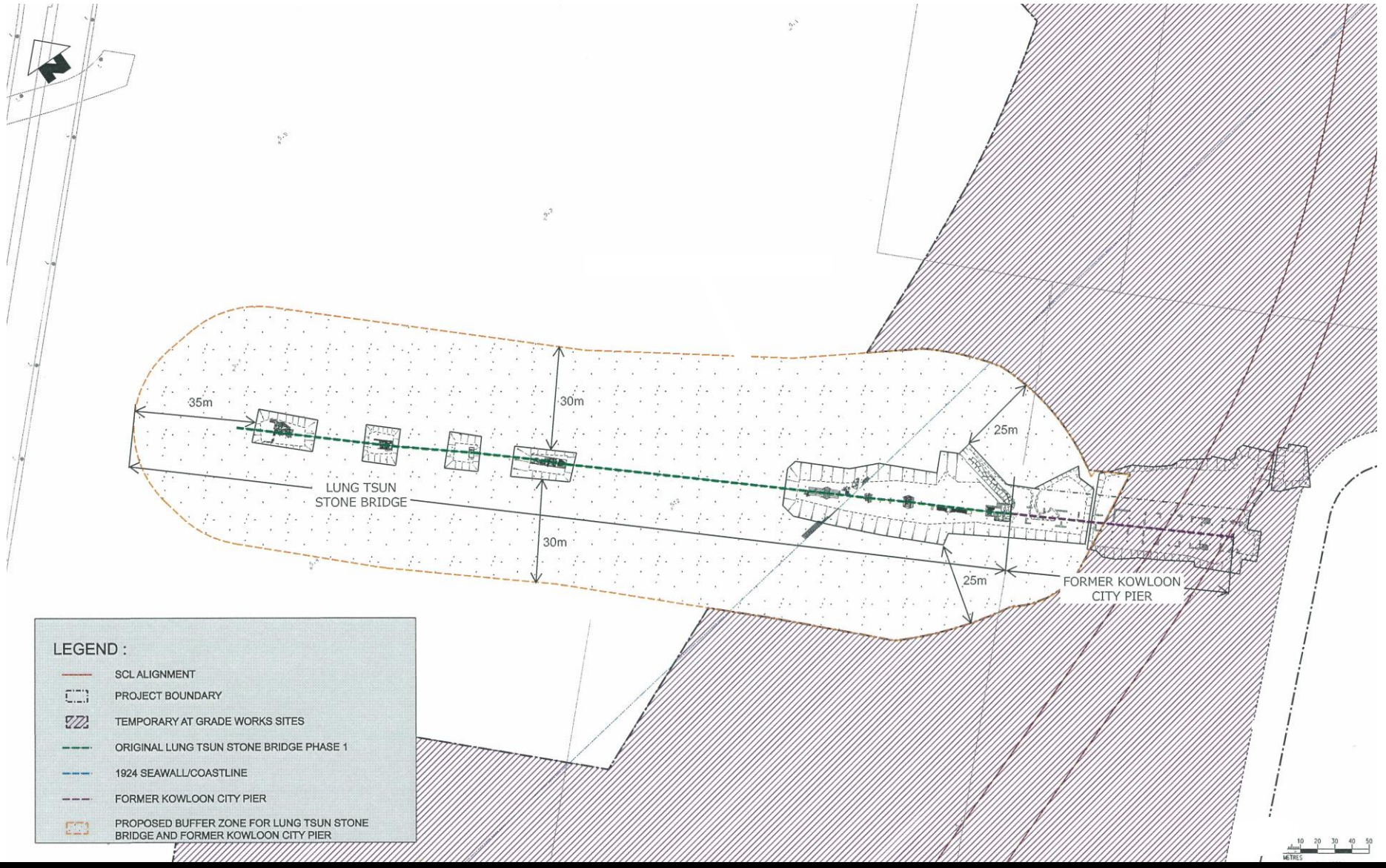
3-months Rolling Programme (Feb 2015)

Kaden – Chun Wo Joint Venture

Appendix C –Project Organization Chart & Contact Details


MTRC
Environmental Team (ET)
Mr. Richard Kwan
Tel: 2688 1283
Engineer's Representative (ER)
Ms. Sammi Wong
Tel: 3767 0269
Environmental Protection Department
(EPD)
Contractor
Kaden – Chun Wo Joint Venture (KCJV)
Mr. Matthew Hahn
Tel: 3996 9422
Independent Environmental Checker (IEC)
Meinhardt Infrastructure and Environment Limited
Mr. Fredrick Leong
Tel: 2859 1739
Contractor's Environmental Team (Contractor's ET)
Environmental Pioneers and Solutions Limited
Ms. Goldie Fung
Tel: 2556 9172
Line of communication

Appendix D – Buffer Zone for Lung Tsun Stone Bridge & Former Kowloon City Pier



Project Title 工程名稱	Shatin to Central Link (SCL) - Tai Wai to Hung Hom Section(TAW-HUH) 沙田至中環綫 - 大圍至紅磡段	Environmental Permit No.: EP-438/2012/H 環境許可證編號：EP-438/2012/H
Figure 6 圖六	Buffer Zone from the Boundary of Lung Tsun Stone Bridge 龍津石橋界線之緩衝區 [This figure was prepared based on the attachment of the Application No.: VEP-432/2014] [本圖是根據申請編號 VEP-432/2014 的附件編制]	

Appendix E – Event/Action Plan for landscape & Visual During Construction Stage

Event / Action Plan for Landscape and Visual during Construction Stage

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	1) Inform the Contractor, the IEC and the ER 2) Discuss remedial actions with the IEC, the ER and the Contractor 3) Monitor remedial actions until rectification has been completed	1) Check inspection report 2) Check the Contractor's working method 3) Discuss with the ET, ER and the Contractor on possible remedial measures 4) Advise the ER on effectiveness of proposed remedial measures.	1) Confirm receipt of notification of non-conformity in writing 2) Review and agree on the remedial measures proposed by the Contractor 3) Supervise implementation of remedial measures	1) Identify Source and investigate the non-conformity 2) Implement remedial measures 3) Amend working methods agreed with the ER as appropriate 4) Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1) Identify Source 2) Inform the Contractor, the IEC and the ER 3) Increase inspection frequency 4) Discuss remedial actions with the IEC, the ER and the Contractor 5) Monitor remedial actions until rectification has been completed 6) If non-conformity stops, cease additional monitoring	1) Check inspection report 2) Check the Contractor's working method 3) Discuss with the ET and the Contractor on possible remedial measures 4) Advise the ER on effectiveness of proposed remedial measures	1) Notify the Contractor 2) In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3) Supervise implementation of remedial measures.	1) Identify Source and investigate the non-conformity 2) Implement remedial measures 3) Amend working methods agreed with the ER as appropriate 4) Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

Appendix F – Waste Flow Table

Monthly Summary Waste Flow Table for _2015__ (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Materials Generated Monthly				
	Total Quantity Generated	Hard Rocks & Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill		Metals	Paper / cardboard packaging	Plastics	Chemical waste	Others (general refuse)
					1108A*	CEDD#					
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	21.421	0.000	21.421	0.000	0.000	0.000	18.530	0.075	0.000	0.640	0.203
Feb	32.137	0.000	31.290	0.000	0.847	0.000	15.590	0.060	0.006	0.000	0.136
Mar											
Apr											
May											
Jun											
Sub-total	53.558	0.000	52.711	0.000	0.847	0.000	34.120	0.135	0.006	0.640	0.339
July											
August											
September											
October											
November											
December											
Total	53.558	0.000	52.711	0.000	0.847		34.120	0.135	0.006	0.640	0.339
Year 2013	144.512	0.000	0.000	0.000	144.512		93.330	0.030	0.000	0.480	2.568
Year 2014	311.876	0.000	39.476	0.000	272.400		103.280	0.855	0.056	1.540	1.484
Grand Total	509.946	0.000	92.187	0.000	417.759		230.730	1.020	0.062	2.660	4.391

Notes: * MTR SCL Contract 1108A barging point.

Government (CEDD) Public Fill Reception Facilities

Appendix G – Updated Environmental Mitigation Implementation Schedule

Environmental Mitigation Implementation Schedule –SCL Contract 1108 (Kai Tak Station and Associated Tunnels)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
Cultural Heritage Impact (Construction and Operational Phase)							
S4.9	CH1	Maintain a buffer distance as shown in **Appendix D**. A 1.8-2.2m vertical separation distance shall be maintained between the top of tunnel and the piles of the Former Kowloon City Pier.	Reserve sufficient area for necessary archaeological conservation and display works for Lung Tsun Stone Bridge in the future. Avoid direct impact on the Lung Tsun Stone Bridge and the Former Kowloon City Pier.	MTR Corporation Contractor	Lung Tsun Stone Bridge & Former Kowloon City Pier.	During the Construction of the tunnel section at Kai Tak	✔
Landscape & Visual (Construction Phase)							
S6.9.3	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary.	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		No-intrusion Zone • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the "no-intrusion zone", even for indirect construction activities and storage of equipment. Protection of Retained Trees • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees,					✔ ✔ ✔
S6.12	LV2	Decorative Hoarding Erection of decorative screen during construction stage to screen	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and	✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context				construction stage	
		<u>Management of facilities on work sites</u> • To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs.					✔
		<u>Tree Transplanting</u> • Trees of high to medium survival rate would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.					N/A
Air Quality (Construction Phase)							
/	A1	<u>Emission from Vehicles and Plants</u> • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		powered by ultra low sulphur diesel fuel (ULSD).					
/	A2	Open burning shall be prohibited.	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	✔
Construction Dust Impact							
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	*
S7.6.5	D2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m^2 to achieve the dust removal efficiency.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	*
S7.6.5	D3	• Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extended beyond the	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	✔ * ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;					✔ * ✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing,					✔ N/A ✔ ✔ N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
Construction Noise (Airborne)							
S8.3.6	N1	Implement the following good site practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise	Contractor	All construction sites	Construction stage	✔ ✔ ✔ ✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	✔
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	✔
S8.3.6	N4	Use "Quiet plants"	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	✔
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	✔
Water Quality (Construction Phase)							
S10.7.1	W1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> • At the start of site establishment (including the barging facilities),	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	*

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m^3/s a sedimentation basin of $30m^3$ would be required and for a flow rate of 0.5 m^3/s the basin would be 150 m^3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of					✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via					✔ ✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than $50m^3$ 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 be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, 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, especially for areas located near steep slopes. • 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 sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and					✔ ✔ ✔ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		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.					
		• Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.					✔
		• Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.					✔
		• All fuel tanks and storage areas should be provided with locks and sited 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 water sensitive receivers nearby.					✔
		• All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as					✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		practicable. • Adopt best management practices					✔
S10.7.1	W2	<u>Tunnelling Works</u> • Cut-&-cover/ open cut tunnelling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge • The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater. • Direct discharge of the bentonite slurry (as a result of D-wall and bored tunnelling construction) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	✔ ✔ ✔ ✔
S10.7.1	W3	<u>Sewage Effluent</u>	To minimize water quality	Contractor	All construction sites	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		• Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	from sewage effluent		where practicable	stage	✔
S10.7.1	W4	<u>Groundwater from Contaminated Area:</u> • No direct discharge of groundwater from contaminated areas should be adopted. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed with reference to the site investigation data in this EIA report for compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-Water) and the existence of prohibited substance should be confirmed. The review results should be submitted to EPD for examination If the review results indicated that the groundwater to be generated from the excavation works would be contaminated; the contaminated groundwater should be either properly treated in compliance with the requirements of the TM-Water or properly recharged into the ground. • If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor /	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found	Construction stage	N/A N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. TPH) to undetectable range. All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers. • If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Section 2.3 of TM-Water. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated					N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		groundwater.					
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	✔ ✔ ✔
Waste Management (Construction Waste)							
S11.4.1.1	WM1	On-site sorting of C&D material • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant operator should	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.					
S11.5.1	WM2	<u>Construction and Demolition Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	✔ ✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		• Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation					✔ ✔ ✔
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.					
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	✔ ✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.5.1	WM6	<u>Land-based and Marine-based Sediment</u> • All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location; • All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the approved locations; • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. • The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers; • The Contractors shall comply with the conditions in the dumping	To control pollution due to marine sediment	Contractor	Within Project Site Area	Construction Stage	✔ N/A N/A N/A N/A ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		licence. • All bottom dumping vessels (Hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material; • The material shall be placed into the disposal pit by bottom dumping; • Contaminated marine mud shall be transported by spit barge of not less than 750m ^{3} capacity and capable of rapid opening and discharge at the disposal site; • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. • For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfil confined mud disposal.					N/A N/A N/A N/A N/A
S11.5.1	WM7	Chemical Waste	Control the chemical waste	Contractor	All construction sites	Construction	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		• Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a	and ensure proper storage, handling and disposal.			stage	✔ ✔ ✔ ✔

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measure	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.					
EM&A Project							
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	MTR Corporation/ Contractor	All construction sites	Construction stage	✔ ✔ ✔

Remarks :

✔ Compliance of mitigation measure

X Non-compliance of mitigation measure

• Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

N/A Not Applicable

Appendix H – Cumulative Log for Environmental Exceedance, Complaints, Notification of Summons and Successful Prosecutions

Environmental Complaint Log (February 2015)

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of complainant	Date of Complaint Received	Complaint Date/Period	Complaint Location	Area of Concern	Details of Complaint	Date of Complaint Received by ET	ET's Investigation Date	Investigation/Mitigation Measueres	Status
KFMD0213 -CL-150107	15-00506	Referred by EPD	7 Jan 15	NA	Gate 1	Dust	Complaint regarding deposited sand and mud on the road surface from the construction vehicles left from Gate 1.	2 Feb 15	3 Feb 15	Measures were conducted for the prevention of dropping of soil, earth deposition and dust generation. No dropping of soil on Concorde Road and generation of fugitive dust were noted during the inspection. Contractor reminded their staff to ensure all vehicles were thoroughly cleaned and the load of dump trucks was properly covered before leaving the site. Improvement work for the wheel washing bay at Gate 1 will be carried out.	Closed

KFMD0213 -CL-50120	15-01573	Referred by EPD	20 Jan 15	NA	Gate 1	Dust	Complaint regarding deposited sand and mud on the road surface from the construction vehicles left from Gate 1.	2 Feb 15	3 Feb 15	Measures were conducted for the prevention of dropping of soil, earth deposition and dust generation. No dropping of soil on Concorde Road and generation of fugitive dust were noted during the inspection. Contractor reminded their staff to ensure all vehicles were thoroughly cleaned and the load of dump trucks was properly covered before leaving the site. Improvement work for the wheel washing bay at Gate 1 will be carried out.	Closed

Cumulative Log for Environmental Exceedance, Complaints, Notification of Summons and Successful Prosecution

Reporting Month	Number of Exceedance	Number of Environmental Complaints	Number of Notification of Summons	Number of Successful Prosecutions
January 2015	0	3	0	0
February 2015	0	2	0	0
Total	0	5	0	0
Year 2013	0	0	0	0
Year 2014	0	0	0	0
Grand Total	0	5	0	0

Appendix J

17th Monthly EM&A Report for Works Contract 1102 – Hin Keng Station and Approach Structures

MTR Corporation Limited

Shatin to Central Link –
Tai Wai to Hung Hom Section

Monthly EM&A Report No. 17

[Period from 1 to 28 February 2015]

Works Contract 1102 –

Hin Keng Station and Approach Structures

(March 2015)

Certified by: Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 11th March 2015

Penta-Ocean Construction Co. Ltd.

Shatin to Central Link –

Contract 1102
Hin Keng Station and Approach Structures

Monthly Environmental Monitoring and Audit Report

(Version 1.0)

February 2015

Approved By _____

(Contractor's 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 17th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for MTR Shatin to Central Link (SCL) Works Contract 1102 – Hin Keng Station and Approach Structures. This report documents the findings of EM&A Works conducted from 1 to 28 February 2015.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:

- Slope Improvement Works;
- Bored Piling;
- Pipe Pile Wall;
- Piling Works of Viaduct;
- Superstructure Construction; and
- Modification of Retaining Wall and Installation of Noise Barrier.

Environmental Monitoring and Audit Progress

3. A summary of the monitoring activities in this reporting period is listed below and the monitoring works were undertaken by Contractor ET of Works Contract SCL 1103:

Regular Construction Noise and Construction Dust Monitoring

- Regular construction noise monitoring during normal working hours
  Noise Monitoring Station ID
  - NMS-CA-1(1) (C.U.H.K.A.A Thomas Cheung School) 4 times

- Construction Dust (24-hour TSP) Monitoring
  Dust Monitoring Station ID
  - DMS-1(1) (C.U.H.K.A.A Thomas Cheung School) 6 times

Remarks:
(1) Station ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

Waste Management

4. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 1,319.9 m^3 of inert C&D materials were generated from the Project and were sent to Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank during the reporting month. No non-recyclable non-inert C&D materials and 87.6 m^3 general refuse were disposed of at NENT Landfill. No chemical wastes, steel material, plastics and paper/cardboard packaging was generated and collected by the recycler during this reporting month.

Landscape and Visual

5. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 10 and 26 February 2015. Most of the necessary mitigation

measures have been implemented and recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in **Section 6**.

Environmental Site Inspection

6. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET on 3, 10, 16 and 26 February 2015.The representative of the IEC joined the site inspection on 16 February 2015. Details of the audit findings and implementation status are presented in **Section 6**.

Environmental Exceedance/Non-conformance/Complaint/Summons and Successful Prosecution

7. No exceedance of the Action and Limit Levels of regular construction noise monitoring and 24-hour TSP monitoring was recorded during the reporting period.

8. No non-compliance event was recorded during the reporting period.

9. No reporting change was recorded during the reporting period.

10. No Project related environmental complaint and notification of summons/ successful prosecutions were received in this reporting period.

Future Key Issues

11. Major site activities for the coming reporting month will include:

- Slope Improvement Works;
- Bored Piling;
- Pipe Pile Wall;
- Piling Works of Viaduct;
- Superstructure Construction; and
- Modification of Retaining Wall and Installation of Noise Barrier.

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Penta-Ocean Construction Co.Ltd. (POC) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the MTR Shatin to Central Link (SCL)Works Contract 1102 – Hin Keng Station and Approach Structures (hereafter referred to as the Project).

Purpose of the Report

1.2 This is the 17th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 28 February 2015.

Structure of the Report

1.3 The structure of the report is as follows:

Section 1: **Introduction -** details the scope and structure of the report.

Section 2: **Project Information** - summarises background and scope of the project, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: **Environmental Monitoring Requirement -** summarises the monitoring parameters, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: **Implementation Status on Environmental Mitigation Measures -** summarises the implementation of environmental protection measures during the reporting period.

Section 5: **Monitoring Results** - summarises the monitoring results obtained in the reporting period.

Section 6: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7: **Environmental Non-conformance -** summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 8: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 9: **Conclusions and Recommendations**

2 PROJECT INFORMATION

Background

2.1 The Shatin to Central Link – Tai Wai to Hung Hom Section (hereafter referred to as SCL (TAW-HUH)) is an approximately 11 km long extension of the Ma On Shan Line and links up with the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

2.2 The construction of the SCL (TAW-HUH) has been divided into a series of civil construction Works Contracts. This Works Contract 1102 covers the construction of SCL Hin Keng Station (HIK Station) and its approach structures. This construction contract was awarded to Penta-Ocean Construction Co. Ltd. (POC) in July 2013 and the EM&A programme was commenced on 1st October 2013.

General Site Description

2.3 For Works Contract 1102, the works area for the HIK Station is located next to Hin Keng Estate and Che Kung Miu Road. The alignment and works area for the Works Contract 1102 are shown in **Figure 1**.

Construction Programme and Activities

2.4 A summary of the major construction activities undertaken in this reporting period is shown as follows. The tentative construction programme is presented in **Appendix A**.

- Slope Improvement Works;
- Bored Piling;
- Pipe Pile Wall;
- Piling Works of Viaduct;
- Superstructure Construction; and
- Modification of Retaining Wall and Installation of Noise Barrier.

Project Organization

2.5 The project organization chart and contact details are shown in **Figure 2.**

Status of Environmental Licences, Notification and Permits

2.6 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project since the commencement of the construction works in October 2013 are presented in **Table 2.1**.

Table 2.1 Summary of the Status of Environmental Licences, Notification and Permits

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-438/2012/H	10/9/2014	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
Reference No: 362534	29/7/2013	N/A	Valid
Billing Account for Construction Waste Disposal			
A/C No.: 7017900	02/8/2013	N/A	Valid
Registration of Chemical Waste Producer			
Registration No. 5218-759-P1057-03	03/9/2013	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WT00018589-2014	29/4/2014	30/9/2018	Valid
Construction Noise Permit (CNP)			
GW-RN0708-14	30/12/2014	29/6/2015	Valid

Summary of EM&A Requirements

2.7 The EM&A programme under Works Contract 1102 require regular dust and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

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

2.9 This report presents the monitoring results, observations, locations of the required monitoring parameters, namely construction noise & dust monitoring as well as audit works for the Project in the reporting month.

3 ENVIRONMENTAL MONITORING REQUIREMENTS

Regular Construction Noise Monitoring

3.1 In accordance with the EM&A Manual, monitoring of construction noise impact should be conducted at the designated monitoring station. The construction noise monitoring location is listed in **Table 3.1** and shown in **Figure 3**.

Table 3.1 Regular Construction Noise Monitoring Station

Regular Construction Noise Monitoring Location	Description	Type of Measurement
NMS-CA-1(1)	C.U.H.K.A.A Thomas Cheung School	Façade

Note (1): NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

Monitoring Parameter and Frequency

3.2 Weekly construction noise monitoring was conducted in accordance with the requirements stipulated in the EM&A Manual by the Contractor Environmental Team of Works Contract SCL 1103. If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed. The monitoring schedule for this reporting period could be referred to Appendix K of SCL 1103 monthly EM&A report. The construction noise was monitored at the frequency and duration stated in **Table 3.2**.

Table 3.2 Construction Noise Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring	Throughout the construction period	L_{eq} (30min)	Once per week

3.3 The construction noise levels were measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}) in decibels dB(A). L_{Aeq} (30min) was used as the monitoring metric for the time period between 0700 – 1900 hours on normal weekdays while L_{10} and L_{90} were also recorded as supplementary reference information for data auditing.

Monitoring Equipment, Maintenance, Calibration and Procedures

3.4 The detailed information of monitoring equipment, maintenance, calibration and procedures could be referred to Section 4.2 of SCL 1103 monthly EM&A report.

Action & Limit Level for Construction Noise Monitoring

3.5 The Action and Limit Levels are presented in **Appendix B** and the Event / Action Plan (EAP) for noise monitoring is presented in **Appendix F.**

Continuous Noise Monitoring

3.6 With reference to the latest Continuous Noise Monitoring Plan (CNMP) and Construction Noise Mitigation Measures Plan (CNMMP) prepared and submitted under EP Condition 2.10, it is predicted that no residual air-borne construction noise impacts exceeding the relevant noise criteria will be anticipated. Therefore, no continuous noise monitoring is required during the construction of the SCL (TAW-HUH) under Works Contract 1102.

Regular Construction Dust Monitoring

3.7 The proposed dust monitoring station for the construction phase of the Project, as recommended in the approved EM&A Manual, is listed in **Table 3.3** and shown in **Figure 4**.

Table 3.3 Dust Monitoring Station

Regular Dust Monitoring Location	Description
DMS-1(1)	C.U.H.K.A.A. Thomas Cheung School

Note (1): ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).

Monitoring Parameter and Frequency

3.8 The dust monitoring (in terms of Total Suspended Particulates (TSP)) was conducted at the designated monitoring station in accordance with the requirements stipulated in the EM&A Manual. The monitoring schedule for this reporting period could be referred to Appendix K of SCL 1103 monthly EM&A report. The 24-hour TSP levels were monitored at the frequency and duration stated in **Table 3.4**.

Table 3.4 Dust Monitoring Parameters and Frequency

Monitoring Period	Duration	Parameter	Frequency
Impact Monitoring(1)	Throughout the construction period	24-hour TSP(2)	Once per 6 days

Note:
(1) 1- hour TSP shall be conducted when one documented valid complaint is received.
(2) 24-hour TSP will be conducted when project-related construction activities are being undertaken within a radius of 500m from monitoring stations.

Monitoring Equipment, Maintenance, Calibration and Procedures

3.9 The detailed information of monitoring equipment, maintenance, calibration and procedures could be referred to Section 3.2 of SCL 1103 monthly EM&A report.

Action and Limit Levels for Dust Monitoring

3.10 The Action and Limit levels have been established and are presented in **Appendix B** and the Event / Action Plan (EAP) for dust monitoring is presented in **Appendix F.**

Landscape and Visual

3.11 In accordance with the EM&A Manual, the landscape and visual mitigation measures shall be implemented and a site inspection shall be conducted once every two weeks throughout the construction period. The implementation status is given in **Appendix E**. The Event / Action Plan (EAP) for landscape and visual are presented in **Appendix F.**

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of the environmental mitigation measures of the reporting period is summarized in **Appendix E**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 4.1**.

Table 4.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date
3.4	Monthly Environmental Monitoring & Audit Report (January 2015)	13 February 2015

5 MONITORING RESULTS

Regular Construction Noise Monitoring

5.1 A total of 4 sets of 30-minute construction noise measurements were carried out at the monitoring stations during normal weekdays during the reporting period by ET of SCL 1103. No exceedance of the limit level was recorded at designated monitoring station.

5.2 Based on observation during the on-site monitoring, road traffic nearby is considered as a potential noise source other than construction works of the Project that affects the monitoring results of the reporting month.

5.3 The detailed noise monitoring results together with their graphical presentations are presented in Appendix H of SCL 1103 monthly EM&A report.

Table 5.1 Summary Table of Construction Noise Monitoring Results

Parameter	Minimum Leq(30min), dB(A)	Maximum Leq(30min), dB(A)	Action Level	Limit Level, Leq(30min), dB(A)
Noise	< Baseline Level	53.8	When one documented complaint is received	70/65(1)

Remarks:
(1) For normal day-time working hours, the noise criteria is 70 dB(A) and 65 dB(A) for normal teaching period and examination periods respectively.
(2) The noise monitoring data presented in the table is baseline corrected.

5.4 No exceedance of the Action and Limit Levels of construction noise due to the Project was recorded during the reporting period.

Regular Dust Monitoring

5.5 A total of 6 sets of 24-hour TSP monitoring were carried out at the designated monitoring station of the reporting period by ET of Works Contract SCL 1103. The monitoring results together with their graphical presentations are presented in Appendix E of SCL 1103 monthly EM&A report and a summary of the dust monitoring results in this reporting month is given in **Table 5.2**.

Table 5.2 Summary Table of Dust Monitoring Results

Parameter	Minimum $\mu g/m^3$	Maximum $\mu g/m^3$	Average $\mu g/m^3$	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
24-hr TSP	19.9	126.1	84.5	148.7	260

5.6 Wind monitoring data obtained from Kai Tak Meteorological Station of Hong Kong Observatory is shown in Appendix F of SCL 1103 monthly EM&A report.

5.7 Based on observation during the on-site monitoring, road traffic emission nearby is considered as a potential dust source other than construction works of the Project that affects the monitoring results of the reporting month.

5.8 No exceedance of the Action and Limit Levels of the 24-hour TSP was recorded during the reporting period.

Waste Management

5.9 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes like plastics and paper/cardboard packaging materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in **Table 5.3**. No chemical waste, steel material, plastics, paper/cardboard packaging was generated during this reporting month. Details of waste management data is presented in **Appendix G**.

Table 5.3 Quantities of Waste Generated from the Project

Reporting Month	Quantity					
	C&D Materials (inert) [a][b]	C&D Materials (non-inert) [c]				
		General Refuse	Chemical Waste	Recycled materials		
				Paper/ cardboard	Plastics	Metals
February 2015[d]	1,319.9 m^3	87.6 m^3	0 kg	0 kg	0 kg	0 kg

Notes:
(a) Inert C&D materials include excavated soil and rock. 48.2m^3 and 1,267.4m^3 of inert C&D materials were delivered to Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank respectively during the reporting month.
(b) No excavated soil was delivered to Contract 1108A Kai Tak Barging Point and would be reused in other project in reporting month.
(c) Non-inert C&D materials include steel, paper/cardboard packaging waste, plastics and other wastes such as general refuse and vegetative wastes. Steel materials generated from the project are grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. General refuse was delivered to designated landfill for disposal.
(d) The cut-off date of the waste flow table in reporting month was 26 February 2015.

Landscape and Visual

5.10 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 10 and 26 February 2015. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

6 ENVIRONMENTAL SITE INSPECTION

Site Audits

6.1 Site audits were carried out by ET on 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 D**.

6.2 Site audits were conducted on 3, 10, 16 and 26 February 2015 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 16 February 2015. No EPD site inspection was conducted during the reporting month. The details of observations during site audit carried out by ET can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

6.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix E**.

6.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	20 & 27 Jan, 3 Feb 2015	Sand bag bund for gully at site entrance at At-Grade Box should be enhanced. Sand deposited near gully should be properly removed.	Drainage channel, sand bags and concrete bund were provided to direct site runoff on 10 Feb 2015.
	27 Jan 2015	Reminder: Sediment in discharge point near site entrance of station area should be regularly removed.	Sediment in discharge point was cleared on 3 Feb 2015.
	10 & 16 Feb 2015	Reminder: Sedimentation tank at At-Grade Box should be kept maintenance and enough capacity to prevent overflow.	Overflow was not observed on 26 Feb 2015.
	26 Feb 2015	Sand bag bund at work area near Keng Hau Road should be enhanced to direct untreated wastewater.	Follow up actions will be reported in the next month.
	26 Feb 2015	Reminder: Trap should be provided to drainage channel near haul road at At-Grade Box.	Follow up actions will be reported in the next month.
Noise	16 Feb 2015	Noise mitigation measure should be properly implemented for breaker at work area near Che Kung Miu Road to reduce construction noise.	Acoustic mat coverage was provided to breaker on 26 Feb 2015.
Landscape and Visual	N/A	There was no observation in the reporting period.	N/A
Air Quality	3 Feb 2015	Reminder: Proper dust mitigation measure should be implemented to stockpile near tail track area.	Stockpile near tail track area was not observed on 10 Feb 2015.
	10 Feb 2015	3-side coverage for cement mixing facilities at At-Grade Box should be properly implemented.	The coverages for cement mixing facilities at At-Grade Box were provided with top and 3 sides on 16 Feb 2015.
Waste / Chemical Management	10 Feb 2015	Reminder: Drip tray for chemical containers at site entrance at At-Grade Box should be enlarged.	Chemical containers were placed within the drip tray on 16 Feb 2015.
	16 Feb 2015	Drip tray should be provided to oil drums near Tower Crane T3 and the oil stain on ground should be properly removed as chemical waste.	The oil drums and the oil stain were removed on 26 Feb 2015.
	26 Feb 2015	Reminder: Drip tray for chemical containers at site entrance of At-Grade Box should be enlarged and empty container should be removed.	Follow up actions will be reported in the next month.
Permits/ Licenses	N/A	There was no observation in the reporting period.	N/A

7 ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

7.1 No exceedance of the Action and Limit Levels of the regular construction noise and 24-hour TSP monitoring was recorded during the reporting month. The summary of exceedance is provided in **Appendix C**.

Summary of Environmental Non-Compliance

7.2 No environmental non-compliance was recorded in the reporting month.

Summary of Environmental Complaint

7.3 No environmental Project-related complaint was received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in **Appendix H**.

Summary of Environmental Summon and Successful Prosecution

7.4 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix H**.

8 FUTURE KEY ISSUES

Construction Programme for the Next Month

8.1 A tentative construction programme is provided in **Appendix A**. The major construction activities in the coming month will include:

- Slope Improvement Works;
- Bored Piling;
- Pipe Pile Wall;
- Piling Works of Viaduct;
- Superstructure Construction; and
- Modification of Retaining Wall and Installation of Noise Barrier.

Key Issues in the Next Month

8.2 Key issues to be considered in the coming month include:

- Dust arising from loading, unloading, transfer, handling or storage of bulk cement, excavated materials and soil erosion in dry days;
- Control of silty surface runoff;
- Implementation of mitigation measures for wastewater spillage from construction works.
- Preservation and protection of retained and transplanted trees;
- Implementation of mitigation measures for noise nuisance from construction works; and
- Regular removal of silt, mud and sand along drainage channels and sedimentation tanks.

Monitoring Schedule in the Next Month

8.3 The tentative schedule of regular construction noise monitoring and 24-hour TSP monitoring at in the next reporting period is presented in Appendix K of SCL 1103 monthly EM&A report. The regular construction noise monitoring and 24-hour TSP monitoring will be conducted at the same monitoring locations in the next reporting period.

9 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

9.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 to 28 February 2015 in accordance with EM&A Manual and the requirement under EP.

9.2 No exceedance of the Action and Limit Levels of regular construction noise and 24-hour TSP monitoring was recorded at the designated monitoring stations during the reporting month.

9.3 4 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 2 times of bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted during the reporting period.

9.4 There was no Project related environmental complaint, successful prosecution or notification of summons received during the reporting month.

9.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Water Quality

- All drainage facilities, erosion and sediment control structures and discharge point should be regularly inspected and maintained to ensure proper and efficient operation at all times;
- Sand bag bund should be provided for gullies to prevent site runoff entering before treatment; and
- Proper bund should be provided for earthwork and regularly maintained to prevent spillage of untreated runoff.

Construction Noise

- Regular review on the noise mitigation measures and the conditions of the implemented noise mitigation measures shall be properly maintained.

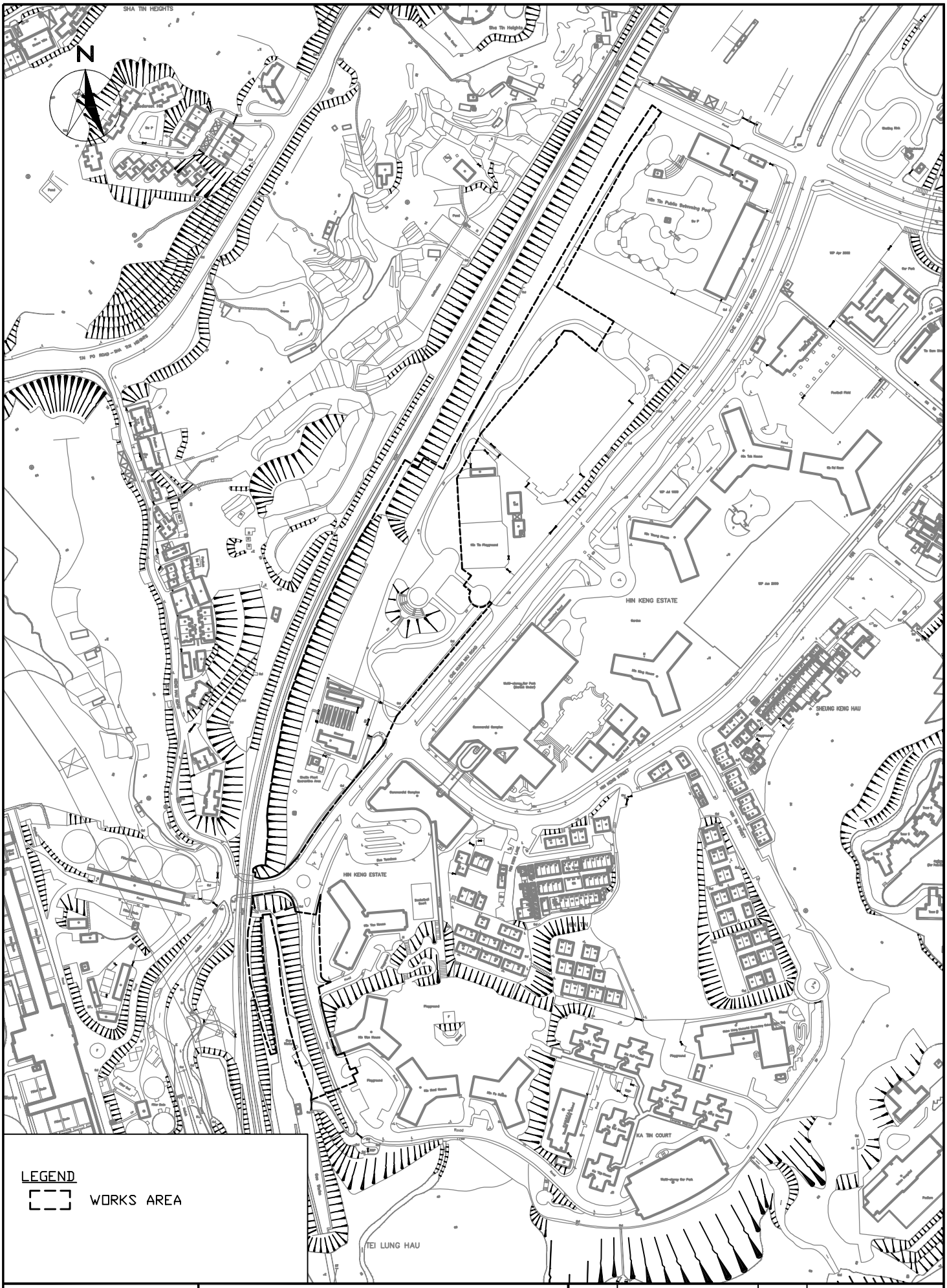
Air Quality

- Water spraying or impervious sheet coverage should be provided to dusty stockpile to reduce dust generation; and
- Stock of cement bags and cement mixing facilities should be covered or sheltered on top and 3 sides..

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals shall be sustained. Drip trays should be properly maintained and ensure enough capacity for the chemical containers; and
- Oil stain on ground should be properly removed as chemical waste.

FIGURES



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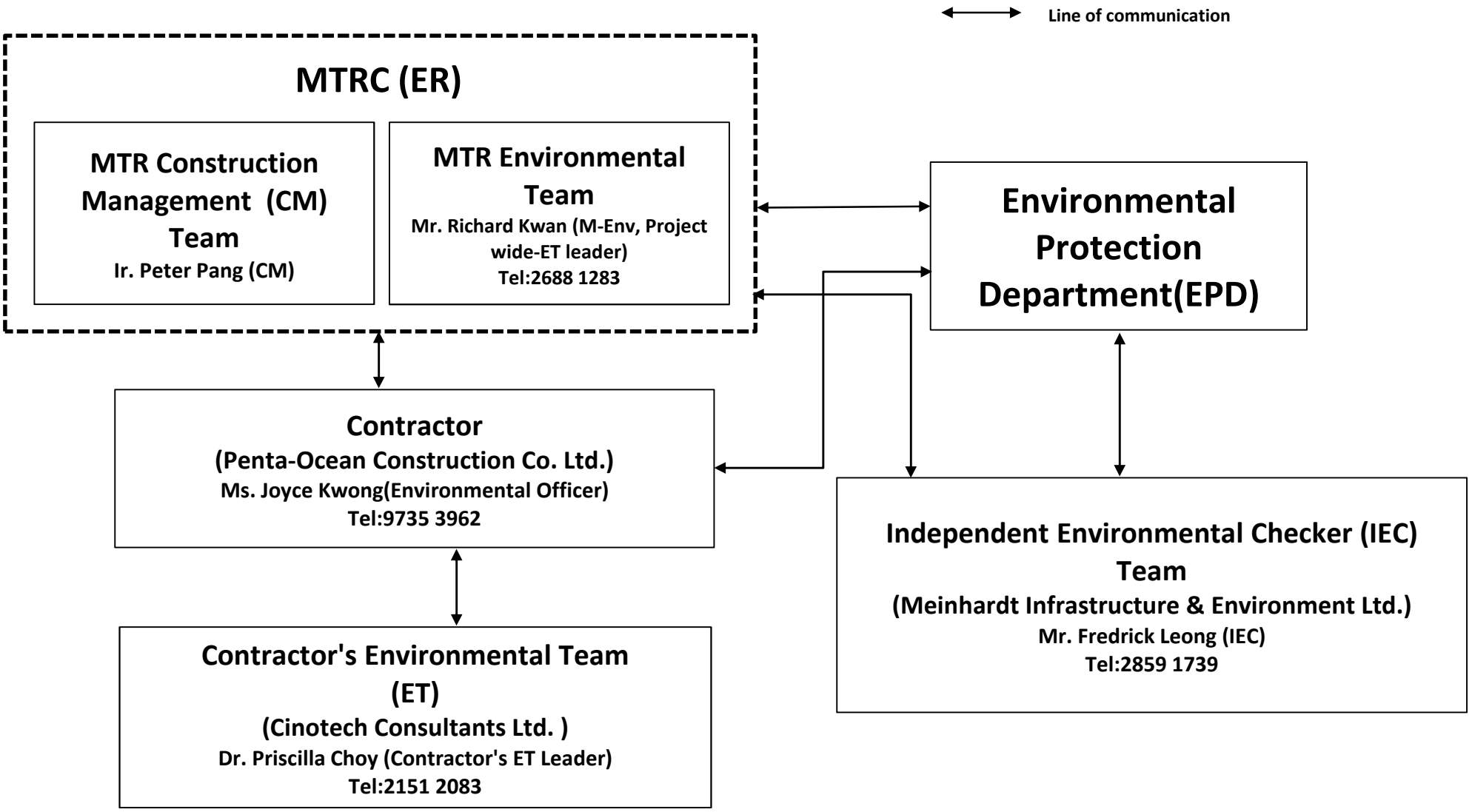
SCL CONTRACT 1102
THE SHATIN TO CENTRAL LINK –
HIN KENG STATION AND APPROACH STRUCTURES

SITE LAYOUT PLAN OF
WORKS CONTRACT 1102

SCALE	1:10000@A4	DATE	NOV 2013
CHECK	GL	DRAWN	JW
JOB No.	MA13040	FIGURE NO.	FIG 1
		REV	–



Title	SCL Contract 1102 The Shatin to Central Link - Hin Keng Station and Approach Structures Organization Chart and Key Contact of the Project	Scale N.T.S Date Oct-13	Project No. MA13040 Figure 2

CINOTECH

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SCL CONTRACT 1102
THE SHATIN TO CENTRAL LINK -
HIN KENG STATION AND APPROACH STRUCTURES

LOCATION OF NOISE MONITORING STATION

SCALE	1:10000@A4	DATE	OCT 2013
CHECK	GL	DRAWN	JW
JOB No.	MA13040	FIGURE NO.	FIG 3
		REV	-

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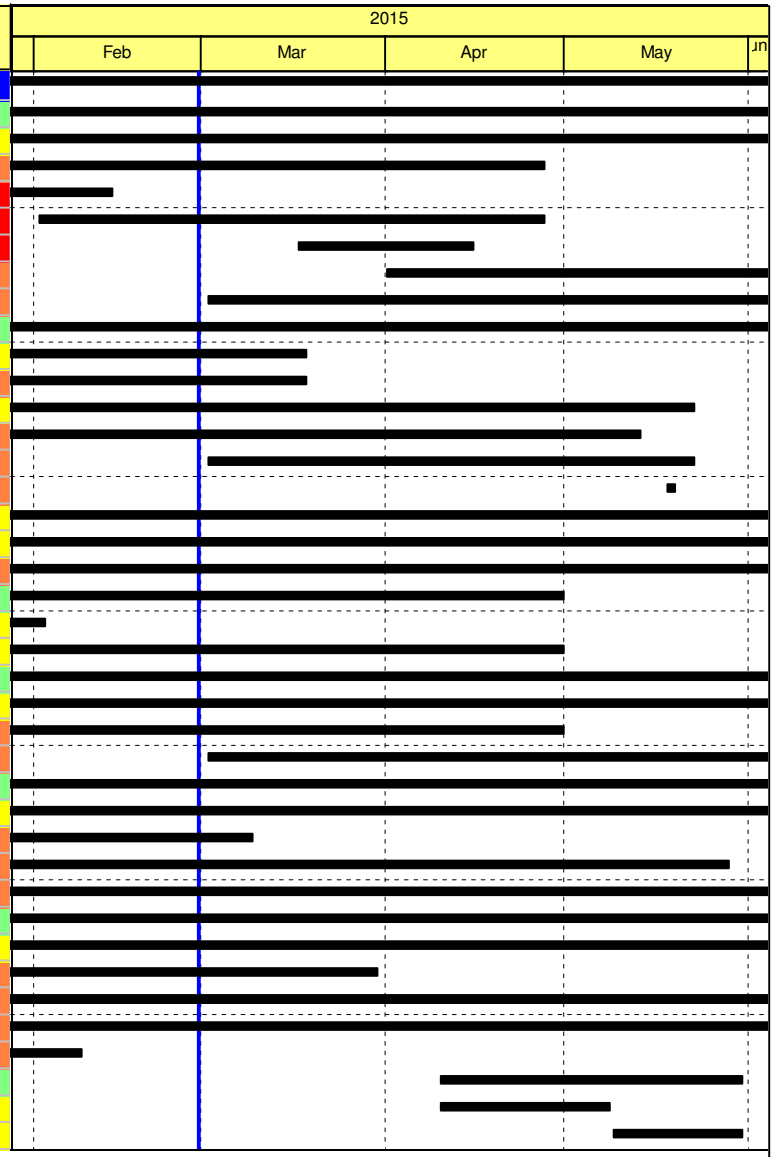
SCL CONTRACT 1102
THE SHATIN TO CENTRAL LINK –
HIN KENG STATION AND APPROACH STRUCTURES

LOCATION OF DUST MONITORING STATION

SCALE	1:10000@A4	DATE	OCT 2013
CHECK	GL	DRAWN	JW
JOB No.	MA13040	FIGURE NO.	FIG 4
		REV	–

APPENDIX A
TENTATIVE CONSTRUCTION PROGRAMME

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish
	3-month Rolling Programme Summary (Mar to May 2015)	724.00	335.00	21-Oct-13 A	22-Apr-16
	Hin Keng Station	333.00	316.00	16-Dec-14 A	30-Mar-16
	Sub-structure	333.00	316.00	16-Dec-14 A	30-Mar-16
	Superstructure	96.00	46.00	16-Dec-14 A	27-Apr-15
	Platform Level	40.00	0.00	16-Dec-14 A	14-Feb-15 A
	Roof Level	96.00	46.00	02-Feb-15 A	27-Apr-15
	Upper Roof Level	23.00	23.00	17-Mar-15	15-Apr-15
	Steel Structure	54.00	54.00	01-Apr-15	08-Jun-15
	ABWF	316.00	316.00	02-Mar-15	30-Mar-16
	Ma On Shan Line & Tail Track	461.00	335.00	21-Oct-13 A	22-Apr-16
	Retaining Wall RW7	113.00	15.00	20-Jun-14 A	18-Mar-15
	Structural Works	113.00	15.00	20-Jun-14 A	18-Mar-15
	R.C. Platform	84.00	67.00	28-Jan-15 A	22-May-15
	Superstructure	76.00	59.00	28-Jan-15 A	13-May-15
	On Grade Slab	67.00	67.00	02-Mar-15	22-May-15
	Footing Type M1	2.00	2.00	18-May-15	19-May-15
	Noise Barrier behind Hin Tin Swimming Pool	378.00	335.00	21-Oct-13 A	22-Apr-16
	Miscellaneous Items within Operation Area	146.00	103.00	28-Mar-14 A	07-Jul-15
	Elevated Evacuation Walkway	146.00	103.00	28-Mar-14 A	07-Jul-15
	At-grade Box	232.00	49.00	03-Jun-14 A	30-Apr-15
	Temporary Piling Platform	77.00	0.00	03-Jun-14 A	03-Feb-15 A
	Bored Pile Construction	179.00	49.00	08-Sep-14 A	30-Apr-15
	Hin Keng Viaduct	522.00	182.00	23-Dec-13 A	09-Oct-15
	Foundation	522.00	182.00	23-Dec-13 A	09-Oct-15
	Bored Piles Construction & Pile Test	414.00	49.00	23-Dec-13 A	30-Apr-15
	Pile Cap Construction	182.00	182.00	02-Mar-15	09-Oct-15
	FR63 Slope	418.00	250.00	24-Jun-14 A	31-Dec-15
	Pit by Pit Construction	418.00	250.00	24-Jun-14 A	31-Dec-15
	Row 2	38.00	7.00	24-Jun-14 A	09-Mar-15
	Row 3	78.00	71.00	20-Aug-14 A	28-May-15
	Row 4	276.00	250.00	11-Dec-14 A	31-Dec-15
	FR65 Slope	598.00	110.00	22-Jan-14 A	15-Jul-15
	Pit by Pit Construction	598.00	110.00	22-Jan-14 A	15-Jul-15
	Zone 1	300.00	25.00	22-Jan-14 A	30-Mar-15
	Zone 2	282.00	80.00	29-Jul-14 A	08-Jun-15
	Zone 3	390.00	110.00	29-Jul-14 A	15-Jul-15
	Zone 4	54.00	0.00	01-Sep-14 A	09-Feb-15 A
	F320 Slope	42.00	42.00	10-Apr-15	30-May-15
	Row 1	24.00	24.00	10-Apr-15	08-May-15
	Row 2	18.00	18.00	09-May-15	30-May-15



PENTA-OCEAN CONSTRUCTION CO.LTD 五洋建設

Actual Work
Remaining Work
Critical Remaining Work
Milestone
% Complete

MTRC SCL Project Contract 1102

Hin Keng Station and Approach Structures

3 Months Rolling Programme

Summary

(Period - Mar to May 2015)

Date	Revisi...	Checked	Approved
02-Mar-15	0		

APPENDIX B
ACTION AND LIMIT LEVELS

APPENDIX B – Action and Limit Levels

24-Hour TSP

Regular Dust Monitoring Station	Description	Action Level, μg/m^3	Limit Level, μg/m^3
DMS-1 (1)(2)	C.U.H.K.A.A. Thomas Cheung School	148.7	260

Note:
(1) ASR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Dust monitoring is carried out by Environmental Team of SCL Works Contract 1103.

Construction Noise

Regular Construction Noise Monitoring Station	Description	Time Period	Action Level	Limit Level
NMS-CA-1 (1)(2)	C.U.H.K.A.A Thomas Cheung School	0700-1900 hrs on normal weekdays	When one documented complaint is received	65 / 70 dB(A) (3)

Note:
(1) NSR ID as identified in approved EM&A Manual / EIA Report for SCL(TAW-HUH).
(2) Construction Noise monitoring is carried out by Environmental Team of SCL Works Contract 1103.
(3) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

APPENDIX C
SUMMARY OF EXCEEDANCE

APPENIDX C – SUMMARY OF EXCEEDANCE

Reporting Month: February 2015

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX D
SITE AUDIT SUMMARY

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150203
Date	3 February 2015 (Tuesday)
Time	09:00 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150203-R01	***Part B – Water Quality*** • No environmental deficiency was identified during the site inspection. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part E – Air Quality*** • Proper dust mitigation measure should be implemented to stockpile near tail track area. ***Part F – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection. ***Part G – Waste/Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Part H – Permits/Licenses*** • No environmental deficiency was identified during the site inspection.	E 6
150203-F02	***Part I – Others*** • Sand bag bund for gully at site entrance at At-Grade Box should be enhanced. Sand deposited near gully should be properly removed.	B 11

	Name	Signature	Date
Recorded by	Jason Lai		3 February 2015
Checked by	Dr. Priscilla Choy		3 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150210
Date	10 February 2015 (Tuesday)
Time	09:00 – 10:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
150210-R03	***Part B – Water Quality*** • Sedimentation tank at At-Grade Box should be kept maintenance and enough capacity to prevent overflow. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection.	B 6ii
150210-O01	***Part E – Air Quality*** • 3-side coverage for cement mixing facilities at At-Grade Box should be properly implemented. ***Part F – Construction Noise Impact*** • No environmental deficiency was identified during the site inspection.	E 16
150210-R02	***Part G – Waste/Chemical Management*** • Drip tray for chemical containers at site entrance at At-Grade Box should be enlarged. ***Part H – Permits/Licenses*** • No environmental deficiency was identified during the site inspection. ***Part I – Others*** • No environmental deficiency was identified during the site inspection.	G 10

	Name	Signature	Date
Recorded by	Jason Lai		10 February 2015
Checked by	Dr. Priscilla Choy		10 February 2015

Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150216
Date	16 February 2015 (Monday)
Time	09:00 – 11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B – Water Quality • No environmental deficiency was identified during the site inspection. ***Part C – Ecology*** • No environmental deficiency was identified during the site inspection. ***Part D – Landscape & Visual*** • No environmental deficiency was identified during the site inspection. ***Part E – Air Quality*** • No environmental deficiency was identified during the site inspection	
150216-O02	***Part F – Construction Noise Impact*** • Noise mitigation measure should be properly implemented for breaker at work area near Che Kung Miu Road to reduce construction noise.	F 5
150216-O01	***Part G – Waste/Chemical Management*** • Drip tray should be provided to oil drums near Tower Crane T3 and the oil stain on ground should be properly removed as chemical waste.	G 9 & G 10
	Part H – Permits/Licenses • No environmental deficiency was identified during the site inspection. ***Part I – Others***	
150216-F03	• Sedimentation tank at At-Grade Box should be kept maintenance and enough capacity to prevent overflow.	B 6ii

	Name	Signature	Date
Recorded by	Jason Lai		16 February 2015
Checked by	Dr. Priscilla Choy		16 February 2015

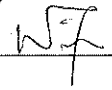
Record Summary of Environmental Site Inspection

Inspection Information

Checklist Reference Number	150226
Date	26 February 2015 (Thursday)
Time	09:00 – 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B – Water Quality	
150226-R02	• Trap should be provided to drainage channel near haul road at At-Grade Box.	B 7
150226-O03	• Sand bag bund at work area near Keng Hau Road should be enhanced to direct untreated wastewater.	B 20
	Part C – Ecology	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Landscape & Visual	
	• No environmental deficiency was identified during the site inspection.	
	Part E – Air Quality	
	• No environmental deficiency was identified during the site inspection	
	Part F – Construction Noise Impact	
	• No environmental deficiency was identified during the site inspection.	
	Part G – Waste/Chemical Management	
150226-R01	• Drip tray for chemical containers at site entrance of At-Grade Box should be enlarged and empty container should be removed.	G 10
	Part H – Permits/Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part I – Others	
	• No environmental deficiency was identified during the site inspection.	

	Name	Signature	Date
Recorded by	Jason Lai		26 February 2015
Checked by	Dr. Priscilla Choy		26 February 2015

APPENDIX E
UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Ecology (Construction Phase)								
S5.4	E1	Engineering works should not encroach into country park boundary, Tei Lung Hau Stream and secondary woodland near the portal at Hin Keng	Minimise ecological impacts	Contractor	Lion Rock Country Park, Tei Lung Hau Stream	Detailed design and construction stage	• AFCD's requirements • EIAO • Country Parks Ordinance	^
S5.7	E5	<u>Good Site Practices</u> Impact to any habitats or local fauna should be avoided by implementing good site practices, including the containment of silt runoff within the site boundary, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value and the provision of sanitary facilities for on-site workers. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. The following good site practices should also be implemented: • Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering watercourses in particular the Tei Lung Hau stream; • Avoidance of soil storage against trees or close to	Minimise ecological impacts	Contractor	All construction sites	During construction	• ProPECC PN 1/94	^ ^ N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		waterbodies in particular the Tei Lung Hau stream; • Delineation of works site by erecting hoardings to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value e.g. Tei Lung Hau Stream and the adjoining secondary woodland, tunnel on hill at top of slope stabilisation works; • No on-site burning of waste; • Waste and refuse in appropriate receptacles.						N/A ^ ^
S5.7	E7	<u>Water Quality and Hydrology</u> • Implement water control measures (ETWB TCW No. 5/2005, Protection of natural streams/ rivers from adverse impacts arising from construction works to avoid direct or indirect impacts on theTei Lung Hau Stream) and good site practices.	• Avoid indirect water impact to any wetland habitats or wetland fauna • Minimize the drawdown of water table	Contractor	Works area in Hin Keng	Construction stage	• TCW No. 5/2005	^
Landscape & Visual (Construction Phase)								
S6.9.3	LV1	The following good site practices and measures for minimisation and avoidance of potential impacts are recommended: <u>Re-use of Existing Soil</u> • For soil conservation, existing topsoil shall be re-used where possible for new planting areas within the project. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage	Minimize visual & landscape impact	Contractor	Within Project Site	Construction stage	TM-EIAO	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		ground, gathering ground and mixing ground may be set up on-site as necessary. <u>No-intrusion Zone</u> • To maximize protection to existing trees, ground vegetation and the associated under storey habitats, construction contracts may designate “No-intrusion Zone” to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should closely monitor and restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment. <u>Protection of Retained Trees</u> • All retained trees should be recorded photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system. • The Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees,						^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		including trees in contractor's works sites.						
S6.12	LV2	• Decorative Hoarding Erection of decorative screen during construction stage to screen off undesirable views of the construction site for visual and landscape sensitive areas. Hoarding should be designed to be compatible with the existing urban context. • Management of facilities on work sites To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs. • Tree Transplanting Trees of high to medium survival rate would be affected by the works shall be transplanted where possible and practicable. Tree transplanting proposal including final location for transplanted trees shall be submitted separately to seek relevant government department's approval, in accordance with ETWB TCW No 3/2006.	Minimize visual & landscape impact	Contractor	Within Project Site	Detailed design and Construction stage	EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006	^ ^ ^

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
Air Quality (Construction Phase)								
/	A1	Emission from Vehicles and Plants • All vehicles shall be shut down in intermittent use. • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. • All diesel fuelled construction plant within the works areas shall be powered by ultra-low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	• APCO	^ ^ ^
/	A2	Open burning shall be prohibited	Reduce air pollution emission from work site	Contractor	All construction sites	Construction stage	• APCO	^
Construction Dust Impact								
S7.6.5	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^
S7.6.5	D2	• Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road in the Kowloon area and once per 1.5hour at those in the Tai Wai area should be conducted to achieve dust removal efficiencies of 91.7%. While the above watering frequencies are to be followed, the extent of watering	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m2 to achieve the dust removal efficiency						
S7.6.5	D3	• Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and TM-EIA criteria	^ * ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained as far as practicable along the site boundary with provision for public crossing; Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building						^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl,bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the						* ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		construction site or part of the construction site where the exposed earth lies.						
S7.6.5	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction stage	• TM-EIA	^
Construction Noise (Airborne)								
S8.3.6	N1	Implement the following good site practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site office and other	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^ ^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.						
S8.3.6	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	*
S8.3.6	N4	Use “Quiet plants”	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIA	^
S8.3.6	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected	Contractor	Selected representative	Construction stage	• TM-EIA	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
			representative locations		noise monitoring station			
Water Quality (Construction Phase)								
S10.7.1	W1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department,1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff and Site Drainage</u> • At the start of site establishment (including the barging facilities),perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earthbunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated	To minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		in the permanent drainage channels 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, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m3/s a sedimentation basin of 30m3 would be required and for a flow rate of 0.5 m3/s the basin would be 150 m3. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means. • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows.						^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 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.						* ^ ^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, 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, especially for areas located near steep slopes. • 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 sited wheel washing facilities should be provided at every construction site exit where practicable. 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. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after						^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited 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 water sensitive receivers nearby. • All the earth works involving should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Adopt best management practices						^ * ^ ^
S10.7.1	W3	<u>Sewage Effluent</u> • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-water	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S10.7.1	W7	In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains. • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. • Disposal of chemical wastes should be conducted in compliancewith the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water	^ ^ ^
Waste Management (Construction Waste)								
S11.4.1.1	WM1	<u>On-site sorting of C&D material</u> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile areas preventing them from delivering to crushing facilities. The crushing plant	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	• DEVB TC(W) No. 6/2010	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		operator should also be reminded to set up measures to prevent unsuitable rock from ended up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractors for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc should also be explored.						
S11.5.1	WM2	Construction and Demolition Material • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promotethe use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation						^ ^ ^
S11.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.						^
S11.5.1	WM4	<u>General Refuse</u> • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						
S11.5.1	WM7	Chemical Waste • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction Stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^ ^ *

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
		• Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.						*
Land Contamination								

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S12.12	LC2	Re-sampling at NTSAMC • The soil re-sampling and analysis of cyanide (free) at Site L1 (NT South Animal Centre) should be conducted after the site is resumed and handed over to the Project Proponent. • Following the completion of re-sampling and lab testing works of this site, a second Supplementary CAR and Supplementary RAP (if contamination is confirmed) shall be prepared and submitted to EPD for agreement. • Supplementary Remediation Report (RR) shall also be prepared and submitted to EPD for endorsement prior to the commencement of any construction/ development works at Site L1 (NT South Animal Centre)	To analyse cyanide (free) at Site L1 (NT South Animal Centre)	Contractor	Site L1 (NT South Animal Centre)	After the site is resumed and handed over to the Project Proponent	• Practice Guide (PG) forInvestigation and Remediation of ContaminatedLand • GN/GM for land contamination • Risk-Based Remediation Goals	^ ^ ^
Hazard to Life								
Chapter 13.13	A13C.8	Installation of on-site gas monitors in all relevant SCL construction/operation areas;	To reduce the risks to the SCL staff, construction workers and passengers	MTRC/ Contractor	Guardhouse next to Site Entrance (Opposite to Hin	Construction and operation		^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
					Keng Street)	phases		
Chapter 13.13	A13C.8	Establishment of emergency response and evacuation plans (cooperation of various parties/departments required. For theoperational phase the emergency plan should also include adequate procedures for controlling the tunnel ventilation system and stopping of the SCL train traffic in order to prevent the trains moving into the affected areas.)	To reduce the risks to the SCL staff, constructionworkers and passengers	MTRC/ Contractor	-	Construction and operation phases		^
Chapter 13.13	A13C.8	Safety/emergency response/evacuation training and drills for all personnel	To reduce the risks to the SCL staff, constructionworkers and passengers	MTRC/ Contractor	-	Construction and operation phases		^
EM&A Project								

SCL Works Contract 1102 - Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?	Status
S 14.2	EM1	• An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	MTR Corporation	All construction sites	Construction stage	• EIAO Guidance Note No.4/2010 • TM-EIAO	^
S 14.2 – 14.4	EM2	• An Environmental Team needs to be employed as per the EM&A Manual • Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. • An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	MTR Corporation/ Contractor	All construction sites	Construction stage	• EIAO Guidance Note No.4/2010 • TM-EIAO	^ ^ ^

Remarks: ^ Compliance of mitigation measure X Non-compliance of mitigation measure

• Non-compliance but rectified by the contractor

* Recommendation was made during site audit but improved/rectified by the contractor.

N/ANot Applicable

APPENDIX F
EVENT AND ACTION PLANS

Appendix F - Event and Action Plan for Air Quality Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1102 ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1. Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Discuss with the Contractor, IEC and ER on the remedial measures required; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing;	1. Identify source(s), investigate the causes of exceedance and propose remedial measures; 2. Implement remedial measures; 3. Amend working methods agreed with the ER as appropriate.
2.Exceedance for two or more consecutive samples	1. Inform the IEC, Contractor and ER; 2. Discuss with the ER, IEC and Contractor on the remedial measures required; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. If exceedance continues, arrange meeting with the IEC, ER and Contractor; 6. If exceedance stops, cease addtional monitoring	1. Check monitoring data submitted by the ET; 2. Check Contractor's working method; 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise Implementation of remedial measures.	1. Identify source and investigate the causes of exceedance; 2. Submit proposals for remedial measures to the ER with a copy to ET and IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal as appropriate.

LIMIT LEVEL				
1.Exceedance for one sample	1. Inform the IEC, Contractor and ER; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Discuss with the ER, IEC and contractor on the remedial measures and assess the effectiveness.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ET, ER and Contractor on possible remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to ER with a copy to ET and IEC within three working days of notification; 4. Implement the agreed proposals; 5. Amend proposal if appropriate.
2.Exceedance for two or more consecutive samples	1. Notify IEC, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency to daily; 4. Carry out analysis of the Contractor's working procedures with the ER to determine possible mitigation to be implemented; 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Review the effectiveness of the Contractor's remedial measures and keep IEC, EPD and ER informed of the results; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with ET, ER, and Contractor on the potential remedial measures; 4. Review and advise the ER and ET on the effectiveness of Contractor's remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify the Contractor, IEC and ET; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source(s) and investigate the causes of exceedance; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial measures to the ER with a copy to the IEC and ET within three working days of notification; 4. Implement the agreed proposals; 5. Revise and resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Noise Monitoring during Construction Phase

EVENT	ACTION			
	Works Contract 1102 ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Notify the IEC, Contractor and ER 2. Discuss with the ER, IEC and Contractor on the remedial measures required 3. Increase monitoring frequency to check mitigation effectiveness	1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor. .	1. Confirm receipt of notification of complaint in writing 2. Notify the Contractor, IEC and ET 3. Review and agree on the remedial measures proposed by the Contractor; 4. Supervise implementation of remedial measures	1. Investigate the complaint and propose remedial measures 2. Report the results of investigation to the IEC, ET and ER 3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement noise mitigation proposals
Limit Level	1. Notify the IEC, Contractor and EPD 2. Repeat measurement to confirm findings 3. Increase monitoring frequency 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Arrange meeting with the IEC, Contractor and ER to discuss the remedial measures to be taken; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances 7. Assess effectiveness of the Contractor's remedial measures and keep IEC, ER and EPD informed of the results	1. Check monitoring data submitted by the ET; 2. Check the Contractor's working method; 3. Discuss with the ER, ET and Contractor on the potential remedial measures 4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.	1. Confirm receipt of notification of exceedance in writing 2. Notify the Contractor, IEC and ET 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 4. Supervise the implementation of remedial measures 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Identify source and investigate the causes of exceedance 2. Take immediate action to avoid further exceedance 3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification. 4. Implement the agreed proposals 5. Revise and resubmit proposals if problem still not under control 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Landscape and Visual during Construction Phase

Action Level	Works Contract 1102 ET	IEC	ER	Contractor
Non-conformity on one occasion	1. Inform the Contractor, the IEC and the ER 2. Discuss remedial actions with the IEC, the ER and the Contractor 3. Monitor remedial actions until rectification has been completed	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET, ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures.	1. Confirm receipt of notification of non-conformity in writing 2. Review and agree on the remedial measures proposed by the Contractor 3. Supervise implementation of remedial measures	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the Contractor, the IEC and the ER 3. Increase inspection frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If non-conformity stops, cease additional monitoring	1. Check inspection report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented 3. Supervise implementation of remedial measures.	1. Identify Source and investigate the non-conformity 2. Implement remedial measures 3. Amend working methods agreed with the ER as appropriate 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by the ER until the non-conformity is abated.

APPENDIX G
WASTE GENERATION IN THE REPORTING MONTH

Name of Contractor: Penta-Ocean Construction Co. Ltd.
Waste Flow Table for Year 2015

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects (See Note 2)	Disposed as Public Fill (See Note 1)	Disposed as Sorting Facility	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan-15	1.5370	0	0	0	1.5277	0.0093	0	0	0	0	0.1224
Feb-15 (See Note 3)	1.3199	0	0	0	1.3156	0.0045	0	0	0	0	0.0876
Mar-15											
Apr-15											
May-15											
Jun-15											
Sub-total	2.8569	0	0	0	2.8433	0.0138	0	0	0	0	0.2100
Jul-15											
Aug-15											
Sep-15											
Oct-15											
Nov-15											
Dec-15											
Total	**2.8569**	**0**	**0**	**0**	**2.8433**	**0.0138**	**0**	**0**	**0**	**0**	**0.2100**

Note: (1) Inert C&D materials include excavated soil and rock. 48.2m^3 and 1,267.4m^3 of inert C&D materials were delivered to Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank respectively during the reporting month.

Note: (2) Excavated soil was disposed of at Contract 1108A Kai Tak Barging Point and would be reused in other Project.

Note: (3) The cut-off date of waste flow table in reporting month was 26 February 2015.

APPENDIX H
CUMULATIVE LOG FOR COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix H - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Log Ref.	Date/Location	Complainant/ Date of Contact	Details of Complaint	Investigation/ Mitigation Action	File Closed
SCL1102-05112014-C1	5 Nov 2014	A resident who lives near Keng Hau Road	The complainant complained about the noise from construction site near Keng Hau Road starting at 6a.m. from Sunday to Friday.	According to the information provided by the Contractor, no construction activity was conducted within the restricted hours. The measured noise levels in September and October 2014 were in full compliance with the construction noise limit level. A surprise check was conducted around 6:30a.m. to ensure no construction activity was conducted within restricted hours. The Contractor had been implementing appropriate noise mitigation measures including installing movable noise barriers for noisy plants and installing noise barrier on temporary hoarding located on the site boundaries between noisy construction activities and NSRs.	Closed

Cumulative Log for Notifications of Summons

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
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Cumulative Log for Successful Prosecutions

Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since the commencement of the project
--	--	--	--	--	--