

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. 21

[Period from 1 to 31 May 2014]

(June 2014)

Verified by: Fredrick Leong



Position: Independent Environmental Checker

Date: 13 June 2014

MTR Corporation Limited

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Tai Wai to Hung Hom Section and
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Certified by: Richard Kwan 

Position: Environmental Team Leader

Date: 13 June 2014

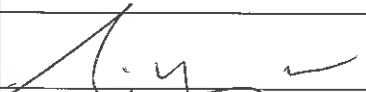

MTR Corporation Limited

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. 21

[Period from 1 to 31 May 2014]

| | Name | Signature |
|----------------------|-------------|--|
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Version: A Date: 13 June 2014

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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/E) was issued by Director of Environmental Protection (DEP) on 4 April 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 (SSHCVJ) | 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 twenty first 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 31 May 2014.

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/E. 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/E |
| 1102 | Hin Keng Station and Approach Structures | EP-438/2012/E |
| 1103 | Hin Keng to Diamond Hill Tunnels | EP-438/2012/E |
| 1106 | Diamond Hill Station | EP-438/2012/E |
| 1107 | Diamond Hill to Kai Tak Tunnels | EP-438/2012/E |
| 1108 | Kai Tak Station and Associated Tunnels | EP-438/2012/E |
| 1108A | Kai Tak Barging Point Facilities | EP-438/2012/E |
| 1109 | Stations and Tunnels of Kowloon City Section | EP-438/2012/E |
| 1111 | Hung Hom North Approach Tunnels | EP-437/2012 & EP-438/2012/E |
| 1112 | Hung Hom Station and Stabling Sidings | EP-437/2012 & EP-438/2012/E |

- 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 | <ul style="list-style-type: none"> • N/A |
| 1102 | Hin Keng Station and Approach Structures | <ul style="list-style-type: none"> • Slope improvement works; • Bored piling; • Pre-bored H-pile; • King Post Piling; • Sheet piling; and • Demolition of retaining wall. |
| 1103 | Diamond Hill Area | <ul style="list-style-type: none"> • Excavation and ELS for launching shaft and machinery assembly. |
| | Hin Keng Area | <ul style="list-style-type: none"> • Pipe piling, mucking out and excavation and ELS. |
| | Fung Tak Area | <ul style="list-style-type: none"> • Platform erection, diaphragm wall and shaft excavation. |
| | Ma Chai Hang Area | <ul style="list-style-type: none"> • Diaphragm wall and shaft excavation. |
| 1106 | Diamond Hill Station Area | <ul style="list-style-type: none"> • D-wall construction; • Interchange Adit – Construct Barrette; • Fissure grouting works; • Pipe pile wall construction; • Capping beam construction works; • Gas main diversion works; • Construction of Pedestrian Underpass at Luen Yee Road; • Pre-bored socket H-piling works; • Modification works at existing bus bay at Lung Cheung Road; • Construction of planter for tree transplantation; • Pre-drilling works; • Bore piling works; and • Construction of construction site office. |
| 1107 | Tunnel section next to Kai Tak Station | <ul style="list-style-type: none"> • Site investigation works; • Investigation and removal of old foundation works; • Hoarding erection; • Sheet piling works; • Shaft excavation; • Site preparation works; • Pipe Pile and grouting works; and • King Post installation work. |
| 1108 | Kai Tak Station | <ul style="list-style-type: none"> • Shotcreting on excavated slope; • Excavation ongoing; • Breaking of existing underground boulder in progress; • Pumps test for Stage 3 excavation at KAT; • Disposal of marine deposit; • Station structure: track slab concreting, track slab rebar fixing, formwork erection; • Shotcreting and excavation to base slab in progress; • Head wall sheet pile for launching shaft; and • Protective grout for FKCP piles. |
| 1108A | Kai Tak Barging Point | <ul style="list-style-type: none"> • Daily operation and maintenance of the |

| Works Contract | Site | Construction Activities |
|----------------|-----------------------------------|---|
| | Facilities | Barging Point Facilities; <ul style="list-style-type: none"> • Loading and disposal of Type 1, Type 1 (dedicated site) and Type 2 excavated sediments; and • Marine transportation and disposal of received spoil including marine sediments to receptor sites or designated dumping facilities. |
| 1109 | Ma Tau Wai (MTW) Works Area | <ul style="list-style-type: none"> • TKW – Operation of bentonite plant and Pier 15 underpinning works; • Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction and trial pits for location of utilities and sheet piling; and • Tam Kung Road – Site establishment and pipe piling. |
| | To Kwa Wan (TKW) Works Area | <ul style="list-style-type: none"> • Olympic Garden – Pre-bored H piling and underpinning of KNEC Piers; • TKW Station – Archaeological survey cum excavation, construction of grout curtain, water main diversion, box culvert diversion and pre-bored H piling; shaft excavation; TBM and STP setup and gantry crane setup; and • Nam Kok Road – Installation of pipe pile and construction of grout curtain. |
| 1111 | Mong Kok Freight Terminal | <ul style="list-style-type: none"> • Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works. |
| | Hung Hom Area | <ul style="list-style-type: none"> • Excavation work, site clearance, site formation, slope work, slope cutting, cable duct work, cable detection; • Construction of man hole, drainage, reinforced concrete structure, emergency vehicular access, temporary pedestrian walkway, haul road; • Trial pit, trial trench, pre-drilling, piling works, post-grouting, abutment works; • Erection of hoarding, steel platform and deck, temporary bridge, scaffolding platform; • Demolition of STA building, overhead line equipment shelter; • Trimming of retaining wall; • Tie back installation; and • Architectural Builders Works and Finishes (ABWF) & Electrical and Mechanical (E&M) works. |
| 1112 | Hong Hom (HUH and HHS) Works Area | <ul style="list-style-type: none"> • 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; • Setting up of Material Receiving Hopper at Hung Hom Freight Pier; and • Marine transportation and disposal of spoil to designated dumping ground(s). |

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. No continuous noise monitoring was required according to the Continuous Noise Monitoring Plan (CNMP) in the reporting period. The air quality and construction noise monitoring results for this reporting month are summarised in **Tables 2.2** and **2.3**. 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 The monitoring results indicated that no exceedance of the Action/Limit Levels of 24-hr TSP, and construction noise.
- 2.1.6 Water quality monitoring was not carried out during this reporting period since no dredging activity was conducted in the reporting month.
- 2.1.7 No environmental complaints, notification of summons and successful prosecutions were received in the reporting period. Cumulative log for environmental complaints, notification of summons and successful prosecutions is provided in **Table 2.4**.
- 2.1.8 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 ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) | 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 | 14.9 – 36.5 | 148.7 | 260 | No |
| Works Contract 1103 | | | | | |
| DMS-2 | Price Memorial Catholic Primary School | 13.5 – 53.2 | 167.4 | 260 | No |
| Works Contracts 1103 and 1106 | | | | | |
| DMS-3 | Hong Kong S.K.H Nursing Home ⁽¹⁾ | 18.4 – 58.8 | 159.1 | 260 | No |
| Works Contract 1106 and 1107 | | | | | |
| DMS-4 | Block 1, Rhythm Garden | 21.3 – 59.9 | 160.4 | 260 | No |
| Works Contract 1108⁽⁵⁾ | | | | | |
| Works Contract 1108A⁽⁵⁾ | | | | | |
| Works Contract 1109 | | | | | |
| DMS-6 | Katherine Building ⁽²⁾ | 56 – 113 | 156.8 | 260 | No |
| DMS-7 | Parc 22 ⁽³⁾ | 42 – 89 | 166.7 | 260 | No |
| DMS-8 | SKH Good Shepherd Primary School | 52 – 78 | 152.2 | 260 | No |
| DMS-9 | No. 26 Kowloon City Road ⁽⁴⁾ | (9) | 160.9 | 260 | No |
| DMS-10 | Chat Ma Mansion | 54 – 85 | 170.4 | 260 | No |
| Works Contract 1111 | | | | | |
| AM1 ⁽⁶⁾ | No. 234 – 238 Chatham Road North ⁽⁷⁾ | 25.5 – 53.5 | 183.9 | 260 | No |
| Works Contract 1112 | | | | | |
| AM2 | Site Boundary of Finger Pier adjacent to Harbourfront Horizon ⁽⁸⁾ | 10.9 – 62.2 | 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 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 will be tentatively resumed in 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 | 58.0 – 59.1 | 57.0 | 51.1 – 54.9 | 70 (65 during examination period) | No |
| Works Contract 1103 | | | | | | |
| NMS-CA-2 | Price Memorial Catholic Primary School | 67.8 – 69.4 | 66.0 | 63.1 – 66.7 | 70 (65 during examination period) | No |
| Works Contracts 1103 and 1106 | | | | | | |
| NMS-CA-3 | Hong Kong S.K.H Nursing Home ⁽¹⁾ | 67.1 – 68.5 | 73.0 | < baseline | 70 | No |
| Works Contract 1106 and 1107 | | | | | | |
| NMS-CA-4 | Block 1, Rhythm Garden (north-eastern façade) | 68.8 – 74.3 | 71.0 | < baseline – 71.6 | 75 | No |
| NMS-CA-5 | Block 1, Rhythm Garden (northern façade) ⁽²⁾ | 71.9 – 74.5 | 74.0 | < baseline – 64.9 | 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⁾ | 63.5 – 64.0 | 76.1 | < baseline | 75 | No |
| NMS-CA-7 | Skytower Tower 2 | 66.3 – 67.3 | 70.0 | < baseline | 75 | No |
| NMS-CA-8 | SKH Good Shepherd Primary School | 74.1 – 75.9 | 75.4 | < baseline – 66.3 | 70 (65 during examination period) (79 during the period of conducting the continuous noise monitoring) ⁽⁸⁾ | No |
| NMS-CA-9 | Kong Yiu Mansion ⁽⁴⁾ | 73.7 – 75.2 | 69.2 | 71.8 – 73.9 | 75 | No |
| NMS-CA-10 | Chat Ma Mansion | 76.3 – 76.9 | 76.6 | < baseline – 65.1 | 75 | No |
| Works Contract 1111 | | | | | | |

| 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⁾ | | |
| NM1 | Carmel Secondary School (South Block) | 68.5 – 69.2 | 68.0 | 58.9 – 63.0 | 70 (65 during examination period) (68 during the period of conducting the continuous noise monitoring) ⁽⁹⁾ | No |
| NM2 | No. 234 – 238 Chatham Road North ⁽⁵⁾ | 71.7 – 74.4 | 79.0 | < baseline | 75 | 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.

Table 2.4 Cumulative Log for Environmental Complaints, Notification of Summons and Successful Prosecutions

| Works Contract | Environmental Complaints | | Notification of Summons | | Successful Prosecutions | |
|----------------|--------------------------|-------------------|-------------------------|-------------------|-------------------------|-------------------|
| | Reporting Month | Cumulative Number | Reporting Month | Cumulative Number | Reporting Month | Cumulative Number |
| 1101 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1102 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1103 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1106 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1107 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1108 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1108A | 0 | 0 | 0 | 0 | 0 | 0 |
| 1109 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1111 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1112 | 0 | 0 | 0 | 0 | 0 | 0 |

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/E and EP-437/2012). The status of required submissions under the EPs as of the reporting period are summarised in **Table 3.1** and **3.2**.

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

| EP Condition (EP-438/2012/E) | 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 (1 st submission) 31 Aug 2012 (2 nd submission) 30 Nov 2012 (3 rd submission) |
| Condition 2.7 | Management Organisation of Main Construction Companies | 27 Jul 2012 (1 st submission) 21 Aug 2012 (2 nd submission) 19 Dec 2012 (3 rd submission) 22 Jan 2013 (4 th submission) 30 Apr 2013 (5 th submission) 21 May 2013 (6 th 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 (1 st submission) 28 Sep 2012 (2 nd submission) 30 Nov 2012 (3 rd submission) 11 Jan 2013 (4 th submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5 th submission) 26 Apr 2013 (6 th submission) 11 Jun 2013 (7 th submission) 12 July 2013 (Approved) 26 July 2013 (8 th submission) 22 Aug 2013 (Approved) 23 Aug 2013 (9 th submission) 13 Sept 2013 (Approved) 20 Jan 2014 (10 th submission) 26 Feb 2014 (Approved) |
| Condition 2.10 | Continuous Noise Monitoring Plan (CNMP) | 1 Aug 2012 (1 st submission) 28 Sep 2012 (2 nd submission) 30 Nov 2012 (3 rd submission) 11 Jan 2013 (4 th submission) 8 Feb 2013 (Approved for Contracts 1109, 1111 and 1103) 8 Feb 2013 (5 th submission) 26 Apr 2013 (6 th submission) 11 Jun 2013 (7 th submission) 12 July 2013 (Approved) 26 July 2013 (8 th submission) 22 Aug 2013 (Approved) 23 Aug 2013 (9 th submission) 13 Sept 2013 (Approved) 20 Jan 2014 (10 th submission) 26 Feb 2014 (Approved) |
| Condition 2.11 | Construction and Demolition Materials Management Plan (C&DMMP) | 6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 10 Oct 2012 (Approved) |
| Condition 2.12 | Sediment Management Plan | 6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 5 Oct 2012 (3 rd submission) 10 Oct 2012 (Approved) 4 Mar 2013 (4 th submission) |

| EP Condition (EP-438/2012/E) | Submission | Submission date |
|------------------------------|---|---|
| | | 9 May 2013 (5 th submission) 24 July 2013 (6 th submission) 26 July 2013 (Approved) |
| Condition 2.13 | Visual, Landscape, Tree Planting & Tree Protection Plan | 6 Jul 2012 (1 st submission) 30 Aug 2012 (2 nd submission) 3 Oct 2012 (3 rd submission) 13 Nov 2013 (Approved for Contracts 1101, 1106 and 1109) 14 Nov 2012 (4 th submission) 8 Feb 2013 (5 th submission) 18 Mar 2013 (6 th submission) 18 June 2013 (7 th submission) 12 July 2013 (Approved) |
| Condition 2.14 | Transplantation Proposal for Plant Species of Conservation Importance | 22 Aug 2012 (1 st submission) 5 Oct 2012 (2 nd submission) 26 Nov 2012 (3 rd submission) 4 Dec 2012 (Approved) |
| Condition 2.15 | Conservation Plan | 31 Jan 2013 (1 st submission) 18 Mar 2013 (2 nd submission) 24 Apr 2013 (Approved) |
| Condition 2.16 | Archaeological Action Plan(s) (AAP(s)) for Works Contract 1109 | 10 Aug 2012 (1 st submission) 3 Sep 2012 (2 nd submission) 21 Sep 2012 (Approved) 11 Oct 2013 (3 rd submission) 1 Nov 2013 (Approved) |
| Condition 2.16 | Archaeological Action Plan(s) (AAP(s)) for Works Contract 1106 | 29 Jan 2013 (1 st submission) 19 Mar 2013 (2 nd 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 Report No. 1 Monthly EM&A Report No. 2 Monthly EM&A Report No. 3 Monthly EM&A Report No. 4 Monthly EM&A Report No. 5 Monthly EM&A Report No. 6 Monthly EM&A Report No. 7 Monthly EM&A Report No. 8 Monthly EM&A Report No. 9 Monthly EM&A Report No. 10 Monthly EM&A Report No. 11 Monthly EM&A Report No. 12 Monthly EM&A Report No. 13 Monthly EM&A Report No. 14 Monthly EM&A Report No. 15 Monthly EM&A Report No. 16 Monthly EM&A Report No. 17 Monthly EM&A Report No. 18 Monthly EM&A Report No. 19 Monthly EM&A Report No. 20 | 12 Oct 2012 14 Nov 2012 13 Dec 2012 14 Jan 2013 14 Feb 2013 14 Mar 2013 12 Apr 2013 14 May 2013 14 Jun 2013 12 Jul 2013 15 Aug 2013 13 Sept 2013 15 Oct 2013 14 Nov 2013 13 Dec 2013 14 Jan 2014 14 Feb 2014 14 Mar 2014 14 Apr 2014 14 May 2014 |

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 (1 st submission) 30 Apr 2013 (2 nd 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 (1 st submission) 8 Feb 2013 (Approved for Contract 1111) 26 Apr 2013 (2 nd submission) 11 Jun 2013 (3 rd submission) 27 Aug 2013 (Approved) 20 Jan 2014 (4 th submission) |
| Condition 2.8 | Continuous Noise Monitoring Plan (CNMP) | 30 Nov 2012 (1 st submission) 11 Jan 2013 (2 nd submission) 8 Feb 2013 (Approved for Contract 1111) 20 Jan 2014 (3 rd submission) |
| Condition 2.9 | Construction and Demolition Materials Management Plan (C&DMMP) | 6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 15 Oct 2012 (Approved) |
| Condition 2.10 | Sediment Management Plan | 6 Jul 2012 (1 st submission) 12 Sep 2012 (2 nd submission) 5 Oct 2012 (3 rd submission) 15 Oct 2012 (Approved) |
| Condition 2.11 | Visual, Landscape, Tree Planting & Tree Protection Plan | 14 Nov 2012 (1 st submission) 8 Feb 2013 (2 nd 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 Report No. 5 Monthly EM&A Report No. 6 Monthly EM&A Report No. 7 Monthly EM&A Report No. 8 Monthly EM&A Report No. 9 Monthly EM&A Report No. 10 Monthly EM&A Report No. 11 Monthly EM&A Report No. 12 Monthly EM&A Report No. 13 Monthly EM&A Report No. 14 Monthly EM&A Report No. 15 Monthly EM&A Report No. 16 Monthly EM&A Report No. 17 Monthly EM&A Report No. 18 Monthly EM&A Report No. 19 Monthly EM&A Report No. 20 | 14 Feb 2013 14 Mar 2013 12 Apr 2013 14 May 2013 14 Jun 2013 12 Jul 2013 15 Aug 2013 13 Sept 2013 15 Oct 2013 14 Nov 2013 13 Dec 2013 14 Jan 2014 14 Feb 2014 14 Mar 2014 14 Apr 2014 14 May 2014 |

Appendix A

**21st 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.21

[Period from 1 to 31 May 2014]

Works Contract 1108A – Kai Tak Barging Point
Facilities

(June 2014)

Certified by: 
_____ Dr. Priscilla Choy

Position: Environmental Team Leader


Date: 12th June 2014

Concentric – Hong Kong River Joint Venture

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

**Monthly Environmental
Monitoring and Audit Report
for May 2014**

(Version 2.3)

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 21st 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 May 2014.

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;
 - Loading and disposal of Type 1, Type 1 (dedicated site) and Type 2 excavated sediments; and
 - Marine transportation and disposal of received spoil including marine sediments to receptor sites or designated dumping facilities

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 were generated, and 5m³ of 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;
- Loading and disposal of Type 1 excavated sediments.
- Marine transportation and disposal of received spoil including marine sediments to receptor sites or designated dumping facilities.

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 21st EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 May to 31 May 2014.

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. 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**.

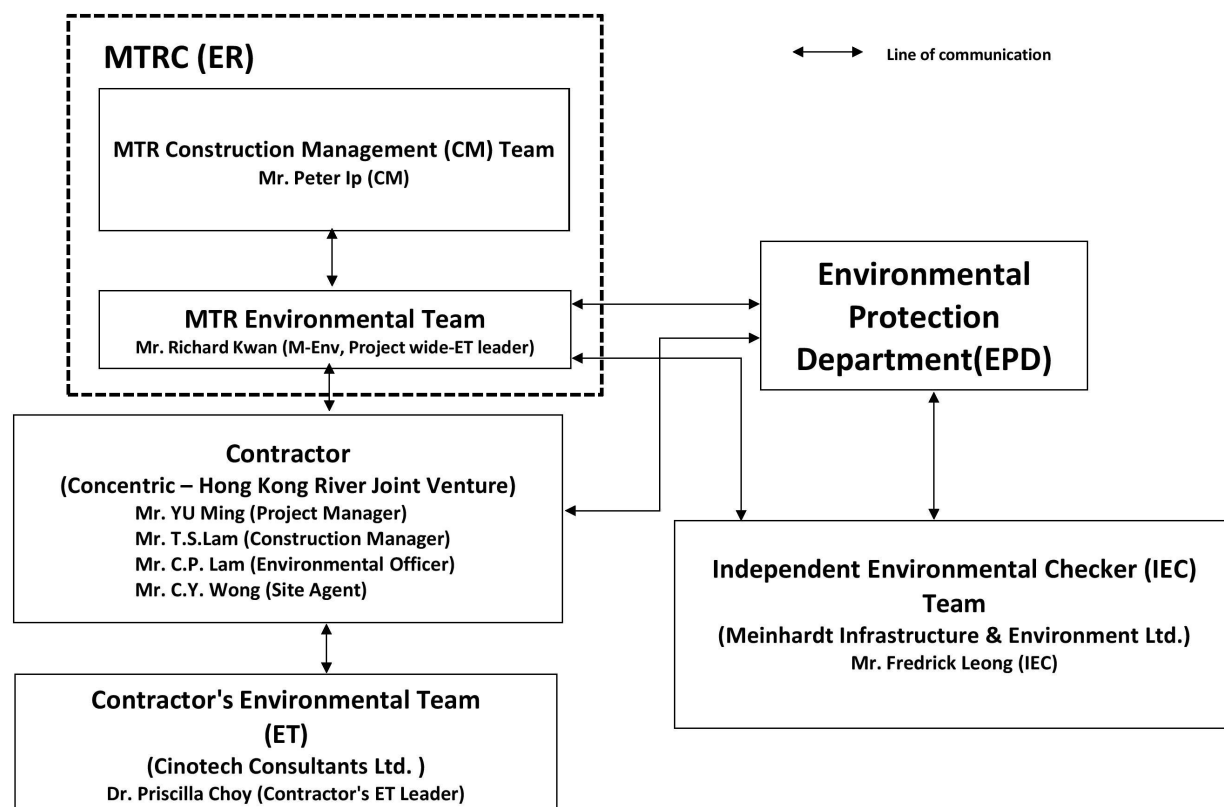
Construction Programme and Activities

- 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;
 - Loading and disposal of Type 1, Type 1 (dedicated site) and Type 2 excavated sediments; and
 - Marine transportation and disposal of received spoil including marine sediments to receptor sites or designated dumping facilities

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. Peter IP | 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/E) was granted on 4th April 2014.
- 2.10 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 | 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 | 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 |
| EP/MD/15-003 | 25/04/2014 | 24/05/2014 | Expired |
| EP/MD/15-021 | 27/05/2014 | 26/11/2014 | Valid |
| 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 | | | |

| Permit / License No. | Valid Period | | Status |
|---|--------------|------------|--------|
| | From | To | |
| 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

- 2.11 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.
- 2.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 2.13 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 (April 2014) | Submitted to EPD on 14 th May 2014 (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 |
| May 2014 | 0 m ³ | 5 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 8, 16, 20, and 27 May 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 16 May 2014. 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 |
|----------------------|-----------------------------|--|--|
| <i>Water Quality</i> | 29 April 2014 | <u>Reminder:</u> Clear the mud deposited at the seawall area near floating jetty 4. | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 29 April 2014 8 May 2014 | <u>Reminder:</u> Clear the sand, silt and construction material at the seawall near floating jetty no.3. | The observation was observed to be improved/rectified by the Contractor during the audit session on 16 May 2014. |
| | 29 April 2014 8 May 2014 | <u>Reminder:</u> Properly de-silt the water of the wheel washing bay. <u>Reminder:</u> Properly de-silt the water of wheel washing bay and facility. | The observation was observed to be improved/rectified by the Contractor during the audit session on 20 May 2014. |
| | 16 May 2014 | <u>Observation:</u> The water of wheel washing bay and facility should be de-silted properly. | |
| | 16 May 2014 | <u>Observation:</u> Muddy water was observed leaking to the sea through barging facility and seawall after the heavy rainstorm near the floating jetty no.4. Proper mitigation measure should be provided to prevent muddy surface run-off from entering into the seawater. | The observation was observed to be improved/rectified by the Contractor during the audit session on 20 May 2014. |
| | 20 May 2014 | <u>Observation:</u> Silt and mud was observed to fall into the sea. The Contractor was reminded | The observation was observed to be improved/rectified by the Contractor during the audit |

| Parameters | Date | Observations and Recommendations | Follow-up |
|--|---|--|--|
| | | to take proper action for prevention | session on 27 May 2014. |
| | 20 May 2014 | <u>Reminder:</u> To properly clear the silt and mud accumulated in the catch pit near floating jetty no.4. | The observation was observed to be improved/rectified by the Contractor during the audit session on 27 May 2014. |
| | 20 May 2014 27 May 2014 | <u>Reminder:</u> To provide a water pump at another pit of the U-channel at floating jetty no.4 to prevent silty water overflow in case of rainstorm. | Follow up action will be reported in next reporting period. |
| | 27 May 2014 | <u>Reminder:</u> The bar for guiding the surface run-off to the U-channel near floating jetty no.4 was observed broken. The Contractor was reminded to repair it. | Follow up action will be reported in next reporting period. |
| <i>Noise</i> | N/A | N/A | N/A |
| <i>Ecology/ Landscape and Visual</i> | N/A | N/A | N/A |
| <i>Air Quality</i> | 23 April 2014 29 April 2014 8 May 2014 16 May 2014 20 May 2014 27 May 2014 | <u>Observation:</u> Tipping hall for floating jetty no.3 was observed damaged. The Contractor was reminded to properly repair it. <u>Reminder:</u> The tipping hall of floating jetty no.3 was observed damaged, while no unloading process was conducting during the inspection. The Contractor was reminded to repair the holes and cracks. | Follow up action will be reported in next reporting period. |

| Parameters | Date | Observations and Recommendations | Follow-up |
|------------------------------------|---|--|--|
| | 29 April 2014 8 May 2014 16 May 2014 20 May 2014 | <p><u>Observation:</u> The dust curtain at tipping hall of floating jetty no.3 was damaged. The Contractor was reminded to repair it, as it is required under the EP.</p> | Follow up action will be reported in next reporting period. |
| | 27 May 2014 | <p><u>Reminder:</u> The dust curtain of tipping hall of floating jetty no.3 was damaged, while no unloading process was conducting during the inspection. The Contractor was reminded to repair it as soon as possible.</p> | |
| | 29 April 2014 | <p><u>Observation:</u> Dust generation observed at haul road near the weighbridge. The Contractor is reminded to provide water spray to the haul road.</p> | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 29 April 2014 | <p><u>Reminder:</u> Clear the sand and silt on the ground near conveyor belt 1 and 2.</p> | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 8 May 2014 | <p><u>Observation:</u> Water spray system at tipping hall of floating jetty no.3 was observed damaged. The Contractor was reminded to properly repair it.</p> | The observation was observed to be improved/rectified by the Contractor during the audit session on 16 May 2014. |
| Waste / Chemical Management | 29 April 2014 | <p><u>Reminder:</u> Provide a plug to drip tray of the chemical storage area.</p> | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 16 May 2014 | <p><u>Reminder:</u> An empty chemical container was found to be placed within the storage area of construction material and without drip tray. The Contractor was reminded to place it into the chemical waste storage area with proper label.</p> | The observation was observed to be improved/rectified by the Contractor during the audit session on 20 May 2014. |
| 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.
- Potential splashing of spoils into the surrounding seawater arising from handling/unloading of the spoil at the discharge points.

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.
- Loading and disposal of Type 1 excavated sediments
- Marine transportation and disposal of received spoil including marine sediments to receptor sites or designated dumping facilities

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 May 2014 to 31 May 2014 in accordance with EM&A Manual and the requirement under EP-438/2012/E.
- 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

- Regularly remove silt and mud in the wheel washing facilities including car washing bay to ensure the efficiency of facilities.
- Provide adequate measures to avoid any splashing of spoils into the surrounding seawater when handling/unloading the spoil at the discharge points.
- Provide adequate measures to remove the silt and mud in the catch pit and keep the drainage system well maintained.
- Proper mitigation measure should be provided to prevent muddy surface run-off from entering into the seawater.

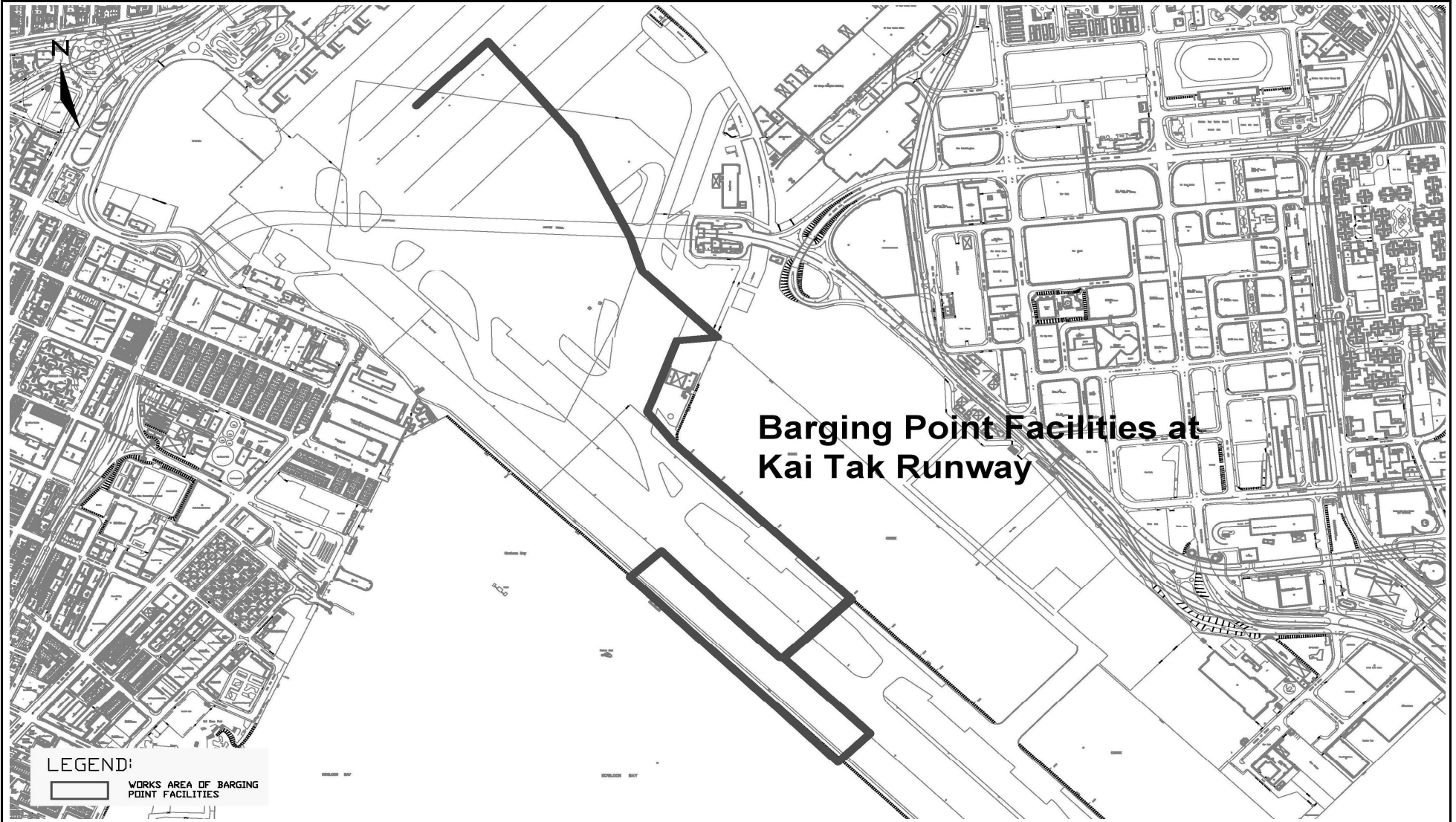
Air Quality

- The dust curtain, tipping hall and the water spray system of floating jetty should be properly maintained.
- Provide adequate measures to remove the silt and mud in the catch pit and keep the drainage system well-maintained.

Waste/Chemical Management

- Empty chemical container and chemical waste should be labeled and stored properly in the chemical waste storage area.

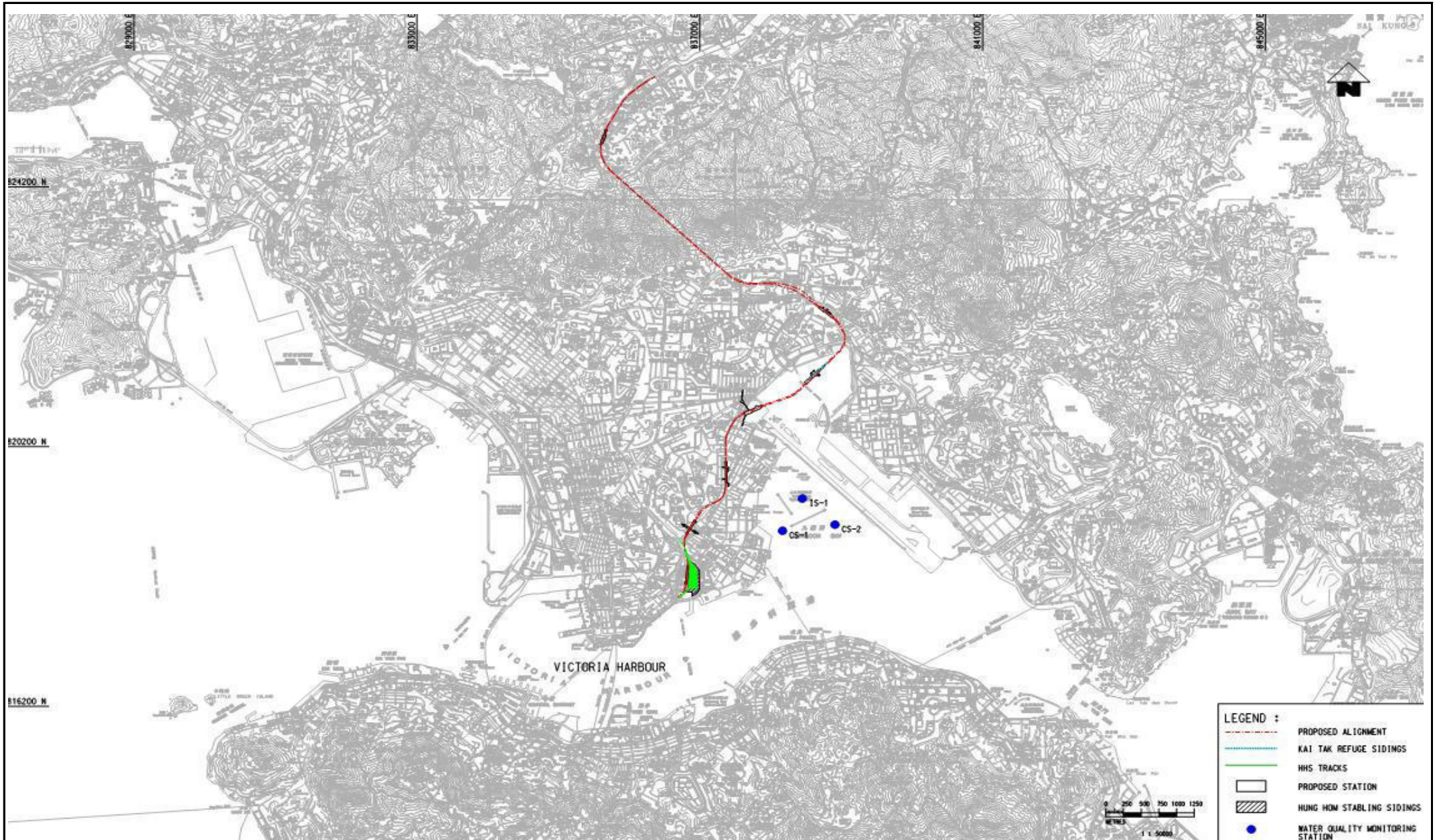
FIGURES



LEGEND:

WORKS AREA OF BARGING POINT FACILITIES

| | | | |
|--|---|---|--|
| Title <p style="text-align: center;">SCL Contract 1108A The Shatin to Central Link - Kai Tak Barging Point Facilities Site Layout Plan</p> | Scale <p style="text-align: center;">N.T.S</p> | Project No. <p style="text-align: center;">MA12028</p> | |
| | Date <p style="text-align: center;">Apr-14</p> | Figure <p style="text-align: center;">1</p> | |



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

Propose

No. MA12028

Figure

2



**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 | <u>Surface & Middle:</u> 4.6 (5 percentile of baseline data) <u>Bottom:</u> 3.9 (5 percentile of baseline data) | <u>Surface & Middle:</u> 4 <u>Bottom:</u> 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

APPENDIX B – SUMMARY OF EXCEEDANCE

Reporting Month: May 2014

a) Exceedance Report for Water Quality Monitoring (NIL)

APPENDIX C
SITE AUDIT SUMMARY

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|-----------------------|
| Checklist Reference Number | 140508 |
| Date | 8 May 2014 (Thursday) |
| Time | 14:30 - 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|--------------------------|---|------------------|
| 140508-R04 140508-R05 | <p>Part B - Water Quality</p> <ul style="list-style-type: none"> • Clear the sand, silt and construction material at the seawall near floating jetty no.3. • Properly de-silt the water of wheel washing bay and facility. | B 27 B 14iii |
| | <p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. | |
| 140508-O01 | <p>Part D - Air Quality</p> <ul style="list-style-type: none"> • Dust curtain at tipping hall of floating jetty no.3 was observed damaged. The Contractor was reminded to properly repair it. | D 18 |
| 140508-O02 | <ul style="list-style-type: none"> • Tipping hall of floating jetty no.3 was observed damaged. The Contractor was reminder to repair the holes and cracks of tipping hall. | D 18 |
| 140508-O03 | <ul style="list-style-type: none"> • Water spray system at tipping hall of floating jetty no.3 was observed damaged. The Contractor was reminded to properly repair it. | D19 |
| | <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. | |
| | <p>Part F - Waste/Chemical Management</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. | |
| | <p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> • No environmental deficiency was identified during the site inspection. | |
| | <p>Others</p> <ul style="list-style-type: none"> • Follow-up on previous audit section (Ref. No.:140429), item 140429-O01, 140429-O02, 140429-R07 and 140429-R08 was remarked as 140508-O01, 140508-O02, 140508-R04, 140508-R05 and should be reviewed during next site inspection. | |

| | Name | Signature | Date |
|-------------|--------------------|--|------------|
| Recorded by | Kevin Lam |  | 8 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 8 May 2014 |

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|----------------------|
| Checklist Reference Number | 140516 |
| Date | 16 May 2014 (Friday) |
| Time | 14:00 - 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| 140516-001 | Part B - Water Quality <ul style="list-style-type: none"> Muddy water was observed leaking to the sea through barging facility and seawall after the heavy rainstorm near the floating jetty no.4. Proper mitigation measure should be provided to prevent muddy surface run-off from entering into the seawater. | B 15i |
| 140516-002 | <ul style="list-style-type: none"> The water of wheel washing bay and facility should be de-silted properly. | B 14iii |
| | Part C - Ecology/Others <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| 140516-003 | Part D - Air Quality <ul style="list-style-type: none"> The dust curtain at tipping hall of floating jetty no.3 was damaged. The Contractor was reminded to repair it, as it is required under the EP. | D 18 |
| 140516-004 | <ul style="list-style-type: none"> The tipping hall of floating jetty no.3 was damaged. The Contractor was reminded to repair it properly to ensure it complies with the EP requirement of the 3-sided screen with top tipping hall. | D 18 |
| | Part E - Construction Noise Impact <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| 140516-R05 | Part F - Waste/Chemical Management <ul style="list-style-type: none"> An empty chemical container was found to be placed within the storage area of construction material and without drip tray. The Contractor was reminded to place it into the chemical waste storage area with proper label. | F 2i, F9 |
| | Part G - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | Others <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140508), items 140508-O01, 140508-O02 and 140508-R05 were remarked as 140516-O03, 140516-O04, 140516-O02 and should be reviewed during next site inspection. | |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Harris Wong |  | 16 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 16 May 2014 |

Shatin to Central Link -

Contract 1108A Kai Tak Barging Point Facilities

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|----------------------|
| Checklist Reference Number | 140520 |
| Date | 20 May 2014 (Friday) |
| Time | 14:00 - 15:00 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140520-O03 | <p>Part B - Water Quality</p> <ul style="list-style-type: none"> Silt and mud was observed to fall into the sea. The Contractor was reminded to take proper action for prevention. | B 22 |
| 140520-R04 | <ul style="list-style-type: none"> To properly clear the silt and mud accumulated in the catch pit near floating jetty no.4. | B 7 |
| 140520-R05 | <ul style="list-style-type: none"> To provide a water pump at another pit of the U-channel at floating jetty no.4 to prevent silty water overflow in case of rainstorm. | B 15i |
| | <p>Part C - Ecology/Others</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Part D - Air Quality</p> | |
| 140520-O01 | <ul style="list-style-type: none"> Dust curtain of the tipping hall for floating jetty no.3 was observed damaged. The Contractor was reminded to repair the holes and cracks of the tipping hall. | D 18 |
| 140520-O02 | <ul style="list-style-type: none"> Tipping hall for floating jetty no.3 was observed damaged. The Contractor was reminded to properly repair it. | D 18 |
| | <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Part F - Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Part G - Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140516), items 140516-O03 and 140516-O04 were remarked as 140520-O01, 140520-O02 and should be reviewed during next site inspection. | |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Kevin Lam |  | 20 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 20 May 2014 |

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|----------------------|
| Checklist Reference Number | 140527 |
| Date | 27 May 2014 (Friday) |
| Time | 14:00 - 15:00 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140527-R03 | Part B - Water Quality <ul style="list-style-type: none"> The bar for guiding the surface run-off to the U-channel near floating jetty no.4 was observed broken. The Contractor was reminded to repair it. | B 7 |
| 140527-R04 | <ul style="list-style-type: none"> Water pump should be provided at another catch pit of the U-channel at floating jetty no.4 to prevent overflow of site run-off in case of rainstorm. | B 15i |
| | Part C - Ecology/Others <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| 140527-R01 | Part D - Air Quality <ul style="list-style-type: none"> The tipping hall of floating jetty no.3 was observed damaged, while no unloading process was conducting during the inspection. The Contractor was reminded to repair the holes and cracks. | D 18 |
| 140527-R02 | <ul style="list-style-type: none"> The dust curtain of tipping hall of floating jetty no.3 was damaged, while no unloading process was conducting during the inspection. The Contractor was reminded to repair it as soon as possible.. | D 18 |
| | Part E - Construction Noise Impact <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | Part F - Waste/Chemical Management <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | Part G - Permit / Licenses <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | Others <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140520), items 140520-O03 and 140520-R04 were improved / rectified by the Contractor. Follow-up actions are required for items 140520-O01, 140520-O02 and 140520-R05, which are remarked as 140527-R02, 140527-R01 and 140520-R04. | |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Harris Wong |  | 27 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 27 May 2014 |

**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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 1. Repeat measurement on next day | <ol style="list-style-type: none"> 1. Discuss with ET , Contractor and | <ol style="list-style-type: none"> 1. Discuss with IEC, ET and | <ol style="list-style-type: none"> 1. Identify source(s) of impact; |

| Event | ET | IEC | ER | Contractor |
|--|---|--|---|---|
| <p>exceeded by one sampling day</p> | <p>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;</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> |
| <p>Limit level being exceeded by more than one consecutive sampling days</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> |

Event and Action Plan for Landscape and Visual during Construction Stage

| Event | ET | IEC | ER | Contractor |
|--------------------------------|--|---|--|--|
| Non-conformity on one occasion | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <p><u>Tree felling and vegetation removal</u></p> <p>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.</p> | 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 | <p><u>Good Site Practices</u></p> <p>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.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> 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 | ^ |

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| | | <ul style="list-style-type: none"> 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> <ul style="list-style-type: none"> Use closed grab in dredging works. Install silt curtain during the dredging. | <ul style="list-style-type: none"> 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> <ul style="list-style-type: none"> 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⁾ |

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| | | <p>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.</p> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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. | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <ul style="list-style-type: none"> 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 | <p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> 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. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006 | <p>^</p> <p>N/A⁽¹⁾</p> |
| Air Quality (Construction Phase) | | | | | | | | |
| / | A1 | <p><u>Emission from Vehicles and Plants</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> APCO To control the air quality to meet HKAQO and TM-EIA criteria | ^ |

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| / | A2 | Open burning shall be prohibited. | Reduce air pollution emission from work site. | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 |
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| S7.6.5 | D3 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 |
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| | | <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A⁽²⁾</p> <p style="text-align: center;">N/A⁽²⁾</p> |

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| | | <p>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;</p> <ul style="list-style-type: none"> • 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, turving, 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. | | | | | | <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> |

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| S7.6.5 | D4 | The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 |
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| Construction Noise (Airborne) | | | | | | | | |
| S8.3.6 | N1 | Implement the following good site practices: <ul style="list-style-type: none"> • 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 | ^ |

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| 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 |
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| Water Quality (Construction Phase) | | | | | | | | |
| S10.7.1 | W1 | <p>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:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water | <p>^</p> <p>^</p> |

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| | | <p>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.</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <p>weather and the reduction of surface sheet flows.</p> <ul style="list-style-type: none"> • 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 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 | | | | | | <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A⁽¹⁾</p> <p style="text-align: center;">^</p> |

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| | | <p>system and storm runoff being directed into foul sewers</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> |

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| | | <p>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.</p> <ul style="list-style-type: none"> • 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. | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">N/A⁽²⁾</p> <p style="text-align: center;">^</p> |
| S10.7.1 | W3 | <p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water | ^ |

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| S10.7.1 | W4 | <p><u>Groundwater from Contaminated Area:</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water TM-EIAO | <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> |

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| | | <p>plant shall meet the requirements as stated in TM-Water and should be discharged into the foul sewers</p> <ul style="list-style-type: none"> 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⁾ |

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| S10.7.1 | W5 | <p><u>Dredging Works</u></p> <p>The following good practice shall apply for the dredging works:</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-EIAO | <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> |
| S10.7.1 | W6 | <p><u>Operation of Barging Facilities</u></p> <p>The following good practice shall apply for the barging facilities operations:</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-EIA | <p>^</p> <p>^</p> |

| 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; <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water • EIA-TM | ^ |
| Waste Management (Construction Waste) | | | | | | | | |
| S11.4.1.1 | WM1 | <p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 |
|----------|--------------|--|--|--------------------------------|--------------------------|---------------------------------|---|---|
| | | <p>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.</p> | | | | | | |
| S11.5.1 | WM2 | <p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> 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. | <p>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</p> | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005 | <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>N/A⁽²⁾</p> <p>^</p> <p>^</p> |

| 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 |
|----------|--------------|--|---|--------------------------------|--------------------------|---------------------------------|--|-----------------------------|
| | | <ul style="list-style-type: none"> 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 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 | <p><u>General Refuse</u></p> <ul style="list-style-type: none"> 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 | <p><u>Land-based and Marine-based Sediment</u></p> <ul style="list-style-type: none"> 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 |
|----------|--------------|---|---|--------------------------------|--------------------------|---------------------------------|---|---|
| | | <p>in the locations other than designated location;</p> <ul style="list-style-type: none"> • 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 | | | | | | <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> |

| 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 |
|----------|--------------|--|---|--------------------------------|--------------------------|---------------------------------|---|---|
| | | <p>tight fittings seals to their bottom openings to prevent leakage of material;</p> <ul style="list-style-type: none"> • 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 750m³ 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. | | | | | | <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> <p>N/A⁽¹⁾</p> |

| 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 | <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | <p>*</p> <p>^</p> <p>^</p> |

| 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 |
|----------|-----------------|---|---|--------------------------------------|-----------------------------|--|--|--------|
| | | <ul style="list-style-type: none"> 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**

**APPENDIX G
COMPLAINT LOG**

Appendix G - Complaint Log

| Log Ref. | Date/Location | Complainant/ Date of Contact | Details of Complaint | Investigation/ Mitigation Action | File Closed |
|----------|---------------|---------------------------------|----------------------|----------------------------------|-------------|
| -- | -- | -- | -- | -- | -- |

**APPENDIX H
TENTATIVE CONSTRUCTION
PROGRAMME**



| Act ID | Description | Orig Dur | Early Start | Early Finish | % | 2014 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------|-------------|--------------|-----|------|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|-----|--|
| | | | | | | APR | | | | | MAY | | | | | JUN | | | | | JUL | | | | | AUG | | | | | SEP | | | | | OCT | |
| | | | | | | 31 | 07 | 14 | 21 | 28 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 | 15 | 22 | 29 | 06 | 13 | 20 | | |
| COMMENCEMENT & COMPLETION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Completion of the Works | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ACD01 | Letter of Acceptance | 0 | 10AUG12 A | | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ACD02 | Commencement of Contract | 0 | 13AUG12 A | | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ACD03A | Completion of Specified Parts of the Works | 0 | | 10FEB13 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ACD03C | Completion of Contract | 0 | | 28AUG16 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ACD04B | Completion of 1st BPF for Operation | 0 | | 10DEC12 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time for Completion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ACD04A | Completion of Specified Parts of the Works | 187 | 13AUG12 A | 15FEB13 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ADC04B | Completion of 1st BPF for Operation | 122 | 13AUG12 A | 10DEC12 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108ADC04C | Completion of The Whole of the Works | 1477 | 13AUG12 A | 28AUG16 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| +Time for Possession of Works Area | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 52 | 13AUG12 A | 03OCT12 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| +Vacation of Works Area | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 605 | 31MAY13 A | 28AUG16 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MILESTONES SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Milestones for Cost Centre A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108AMSA50 | Satisfactory Impl'n of Safety & Env. req'ts. | 0 | | 30MAR14 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Milestones for Cost Centre B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108AMSB50 | Mgt., Maint., & Operation of BPF | 0 | | 29JUN14 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| +EXECUTION OF OPTIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 59 | 13AUG12 A | 10OCT12 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cost Centre A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preliminaries | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108AA5010 | Satisfactory Impl'n of Safety & Env. req'ts. | 598 | 13AUG12 A | 29MAR14 A | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108AA6010 | Satisfactory Impl'n of Risk Mgt. req'ts. | 780 | 13AUG12 A | 27SEP14 | 85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cost Centre B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kai Tak BPF - Mgt., Maintenance & Operation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108AB5010 | Manage, Maintain & Operate the BPF | 182 | 29DEC13 A | 29JUN14 | 84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1108AB6010 | Manage, Maintain & Operate the BPF | 182 | 30JUN14 | 28DEC14 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



Appendix B

**21st 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. 21

[Period from 1 to 31 May 2014]

Works Contract 1109 - Stations and Tunnels of
Kowloon City Section

(12 June 2014)

Certified by: 
_____ Winnie Ko _____

Position: Environmental Team Leader

Date: 12 June 2014

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.21

May 2014

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Works Contract 1109 - Stations and
Tunnels of Kowloon City Section
Monthly EM&A Report No.21

May 2014

Reference 0171181

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:



Position: Partner

Date: 12 June 2014

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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 twenty-first monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 May 2014 to 31 May 2014 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 – Operation of bentonite plant and Pier 15 underpinning works;
 - Along Ma Tau Wai Road – Pre-drilling for D wall, D wall panel construction and trial pits for location of utilities and sheet piling; and
 - Tam Kung Road – Site establishment and pipe piling.
-

Works in To Kwa Wan (TKW)

- Olympic Garden – Pre-bored H piling and underpinning of KNEC Piers;
 - TKW Station – Archaeological survey cum excavation, construction of grout curtain, water main diversion, box culvert diversion and pre-bored H piling; shaft excavation; TBM and STP setup and gantry crane setup; and
 - Nam Kok Road – Installation of pipe pile and construction of grout curtain.
-

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 *6 times*
 - DMS-7 *6 times*
 - DMS-8 *6 times*
 - DMS-9 *0 time*
 - DMS-10 *6 times*

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. However, No. 12 Pau Chung Street, as an alternative monitoring location, was formally approved by EPD on 19 May 2014. Impact dust monitoring will be tentatively resumed in June 2014.

Continuous Noise Monitoring

No continuous noise monitoring was conducted in this reporting month according to the programme in the latest version of CNMP. The next continuous noise monitoring session should commence in August 2014.

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 11, 327 m³ of inert C&D materials were generated from the Project, which were sent to 1108A Kai Tai Barging Facilities during the reporting month. 371 kg of plastics was generated and sent to recyclers for recycling during the reporting period. About 130 m³ 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. No paper/cardboard packaging was generated and sent to recyclers for recycling during the reporting period. There was no 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 5 and 19 May 2014. 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 5, 12, 19 and 26 May 2014. The

representative of the IEC joined the site inspection on 12 May 2014. 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.

No environmental complaint, 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 - Operation of bentonite plant and pier 15 underpinning works;
 - Along Ma Tau Wai Road - Predrilling for D wall, D wall panel construction and trial pits for location of utilities; and
 - Tam Kung Road - Pipe piling.
-

Work in To Kwa Wan (TKW)

- Olympic Garden - Pre-bored H piling, sheet piling and underpinning of KNEC Piers.
 - TKW Station - Archaeological survey cum excavation, construction of grout curtain, water main diversion, TBM and STP site setup, box culvert diversion and pre-bored H piling;;
 - Nam Kok Road - Installation of pipe pile and construction of grout curtain.
-

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 twenty-first EM&A report which summarises the monitoring results and audit findings during the reporting period from 1 May to 31 May 2014.

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**

2.1 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 | |
|---|--|
| <u>Works in Ma Tau Wai (MTW)</u> | |
| • | TKW – Operation of bentonite plant and Pier 15 underpinning works; |
| • | Along Ma Tau Wai Road – Predrilling for D wall, D wall panel construction, trial pits for location of utilities and sheet piling; and |
| • | Tam Kung Road – Site establishment and pipe piling. |
| <u>Works in To Kwa Wan (TKW)</u> | |
| • | Olympic Garden – Pre-bored H pilling and underpinning of KNEC Piers; |
| • | TKW Station – Archaeological survey cum excavation, construction of grout curtain, water main diversion, box culvert diversion and pre-bored H piling; shaft excavation; TBM and STP setup and gantry crane setup; and |
| • | Nam Kok Road – Installation of pipe pile and construction of grout curtain. |

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/E | Throughout the Contract | Permit granted on 4 April 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 | WT00014390-2012 | 30-September-2017 | - |
| Site at MTW | WT00016348-2013 | 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 | | | |
| - Grout Pump and Generator in TKW Garden | GW-RE0096-14 | 21 February 2014 – 19 August 2014 | - |
| - Powered Mechanical Equipment in SUW works area | GW-RE1360-13 | 12 December 2013 – 27 May 2014 | - |
| - Powered Mechanical Equipment along MTW Road Side | GW-RE1370-13 | 16 December 2013 – 15 June 2014 | - |
| - Powered Mechanical Equipment in SUW Olympic Playground | GW-RE0281-14 | 24 March 2014 – 18 September 2014 | - |
| - Powered Mechanical Equipment at Pier 15 | GW-RE0225-14 | 5 March 2014 – 31 August 2014 | - |
| - Powered Mechanical Equipment at Kei Tak New Land | GW-RE0395-14 | 14 April 2014 – 9 October 2014 | - |
| - Powered Mechanical Equipment at MTW Road north bound | GW-RE0440-14 | 28 April 2014 – 16 October 2014 | - |

| Permit/ Licences/ Notification | Reference | Validity Period | Remarks |
|---|------------------|-------------------------------|----------------|
| - <i>Powered Mechanical Equipment on MTW Road between Sheung Heung Road and Lok Shan Road</i> | GW-RE0556-14 | 25 May 2014 – 15 June 2014 | - |
| Licence to Excavate and Search for Antiquities | 363 | Till 21 October 2014 | - |
| Billing Account for Disposal of Construction Waste | 7015758 | Throughout the Contract | - |

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, NMS-CA-7, | Calibrator: NC 73 (Serial No. 10997142) |
| NMS-CA-8, NMS-CA-9 and NMS-CA-10 | Sound Level Meter: NL 18 (Serial No. 00360030) |

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) |

Note:

(a) If works are to be carried out during restricted hours (ie, outside 0700 – 1900 on 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 Location

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(A) | No. 420 Prince Edward Road West |
| MTW-12-3 | Lucky Mansion |
| MTW-12-4 | 352-354 Ma Tau Wai Rd (East Façade) |
| 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 | Jing Ming Building |
| MTW-16-1 | SKH Good Shepherd Primary School |

Note:

(a) The final monitoring locations will be subject to the latest Continuous Noise Monitoring

| Continuous Noise Monitoring Location ^(a) | Description |
|---|-------------|
| Plan (CNMP). | |

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 3.5*. If works are to be carried out during restricted hours (ie, outside 0700 – 1900 on 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.

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 3.5*.

Table 3.5 Action/Limit Levels for Continuous Noise Monitoring ^(a)

| Proposed Continuous Noise Monitoring Stations | Description | Action/ Limit Level ^(a) | Measurement Period ^(a) |
|---|-------------------------------------|------------------------------------|---|
| TKW-3-2(A) | No. 420 Prince Edward Road West | 80 | September 2014 – December 2014 |
| MTW-12-3 | Lucky Mansion | 80 | August 2014 – January 2015, March 2015 – June 2015 |
| MTW-12-4 | 352-354 Ma Tau Wai Rd (East Façade) | 80 | August 2014 – June 2015 |
| MTW-12-4-1(A) | 59 Maidstone Road | 82 | October 2014, December 2014 – June 2015 |

| Proposed Continuous Noise Monitoring Stations | Description | Action/ Limit Level (a) | Measurement Period (a) |
|---|----------------------------------|----------------------------|--|
| 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 | Jing Ming Building | 81 | September 2014 – June 2015 |
| MTW-16-1 | SKH Good Shepherd Primary School | 78 | December 2012 – January 2013; April 2013 – 21 August 2013, |
| | | 79 (b) | 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 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 3.6* and shown in *Annex D*. The proposed locations have been agreed with the ER, EPD and IEC.

Table 3.6 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. 26 Kowloon City Road |
| DMS-10 | Chat Ma Mansion |

| Proposed Construction Dust Monitoring Location | Description |
|--|---|
| 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 has 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 will be tentatively resumed in 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 3.7*. The TSP monitoring was conducted as per the schedule presented in *Annex E*.

Table 3.7 *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 3.8* summarises the equipment that was deployed for the 24-hour averaged monitoring.

Table 3.8 *Construction Dust Monitoring Equipment*

| Monitoring Location | Monitoring Equipment (HVS and Calibrator) |
|---------------------|--|
| DMS-6 | TE-5170 (Serial No. 0107), CM-AIR-43 (Orifice ID 2421) |
| DMS-7 | TE-5170 (Serial No. 3574), CM-AIR-43 (Orifice ID 2421) |
| DMS-8 | TE-5170 (Serial No. 3572), CM-AIR-43 (Orifice ID 2421) |
| DMS-9(a) | -- |
| DMS-10 | TE-5170 (Serial No. 3573), CM-AIR-43 (Orifice ID 2421) |

Note:

| Monitoring Location | Monitoring Equipment (HVS and Calibrator) |
|---------------------|--|
| (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 will be tentatively resumed in 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 $\pm 3^\circ\text{C}$; 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 m³min⁻¹, which was within the range specified in the EM&A Manual (i.e. 0.6 - 1.7 m³min⁻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 3.9*.

Table 3.9 Action and Limit Levels for Dust Monitoring

| Parameters | Dust Monitoring Station | Action Level ($\mu\text{g m}^{-3}$) ^(a) | Limit Level ($\mu\text{g m}^{-3}$) ^(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 will be tentatively resumed in 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*.

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 | Twentieth Monthly EM&A Report | 14 May 2014 |

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. After baseline-level corrected, no exceedance of the limit level was recorded during the whole reporting period at all five monitoring locations.

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

5.2 CONTINUOUS NOISE MONITORING

No continuous noise monitoring was conducted in this reporting month according to the programme in the latest version of CNMP. The next continuous noise monitoring session shall commence again in August 2014.

5.3 CONSTRUCTION DUST MONITORING

A total of 24 sets of 24-hr TSP monitorings were carried out at the designated monitoring stations during normal weekdays of the reporting period. 24-hour averaged dust monitoring has been suspended at DMS-9 (No. 26 Kowloon City Road) since March 2014 due to denied access by the occupant of the premise. 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 | 76 | 56 - 113 | 156.8 | 260 |
| DMS-7 | 70 | 42 - 89 | 166.7 | 260 |
| DMS-8 | 68 | 52 - 78 | 152.2 | 260 |
| DMS-9 (a) | -- | -- | 160.9 | 260 |
| DMS-10 | 70 | 54 - 85 | 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.

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) (b) | Chemical Waste | Non-inert C&D Materials | | | |
| | | | General Refuse/Vegetative Waste | Paper/cardboard | Plastics | Metals |
| May 2014 | 11,327 m ³ | 0 kg | 130 m ³ | 0 kg | 371 kg | 0 kg |

Notes:

- (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil.
- (b) About 11,327 m³ 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 5 and 19 May 2014. Most of the mitigation measures given in *Annex H* have been implemented. Required Actions that were found are listed below:

5 May 2014

- No observation was reported during the site inspection.

19 May 2014

- 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 5, 12, 19 and 26 May 2014. The representative of the IEC joined the site inspection on 12 May 2014. No non-compliance was recorded during the site inspections.

Follow up actions for the observations on 28 April 2014 had been taken. As observed in the site inspection on 5 May 2014, chemical containers placed on hard paved ground outside the SUW site office had been removed. Furthermore, the Contractor had provided sufficient drip trays for chemical containers next to the wastewater treatment facility in TKW works area. Meanwhile, the Contractor had provided sufficient cover for stockpiled materials in TKW works area.

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

5 May 2014

- The Contractor was reminded to provide sufficient noise mitigation measures for the newly set-up power pack in Area W3 of TKW works area. As observed in subsequent site inspection on 12 May 2014, the Contractor had provided sufficient noise mitigation measures for the power pack of the trench-cutter for noise suppression during operation.

12 May 2014

- There is no major observation during the site inspection.

19 May 2014

- There is no major observation during the site inspection.

26 May 2014

- There is 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 and confirmed in the following weekly site inspection conducted 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.

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*.

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*.

8.1 *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 |
|--|
| <i>Work in Ma Tau Wai (MTW)</i> |
| <ul style="list-style-type: none"> • TKW - Operation of bentonite plant and pier 15 underpinning works; • Along Ma Tau Wai Road - Predrilling for D wall, D wall panel construction; trial pits for location of utilities; and • Tam Kung Road - Pipe piling.. |
| <i>Work in To Kwa Wan (TKW)</i> |
| <ul style="list-style-type: none"> • Olympic Garden - Pre-bored H pilling, sheet piling and underpinning of KNEC Piers. • TKW Station - Archaeological survey cum excavation, construction of grout curtain, water main diversion, TBM & STP site setup, box culvert diversion, pre-bored H piling; and • Nam Kok Road - Installation of pipe pile and construction of grout curtain. |

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

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*.

This 21st monthly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from 1 May 2014 to 31 May 2014 in accordance with the EM&A Manual and the requirement under EP-438/2012/E.

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.

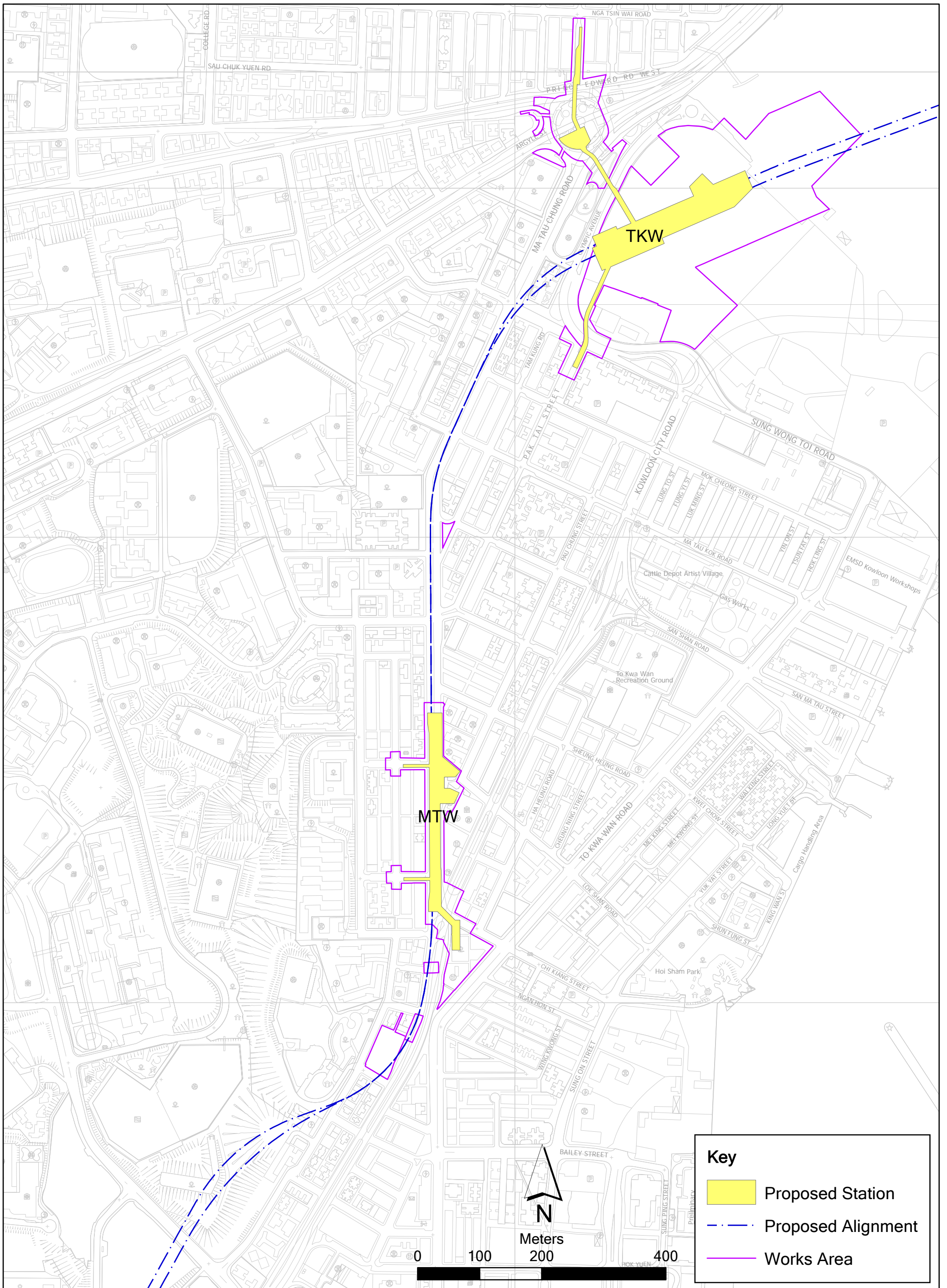
No continuous noise monitoring was conducted during the reporting period according to the programme in the latest version of CNMP.

No complaint and summon/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



Annex A

Alignment, Stations and Works Area of SCL Works Contract 1109

Name: 0171181_Works_Area_Annex.mxd
Date: 10-Oct-12

**Environmental
Resources
Management**



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.

SAMSUNG - HSIN CHONG JOINT VENTURE

THREE MONTH ROLLING PROGRAMME - MAY 2014

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | |
|--|---|---------------------|-------------|-------------|------|-----|-----|-----|
| | | | | | May | Jun | Jul | Aug |
| 1109 - SUW & TKW Stations and Tunnels MAY 14 (UWP R5) | | | | | | | | |
| PROJECT DATES | | | | | | | | |
| Works Areas | | | | | | | | |
| Return Dates | | | | | | | | |
| 01109.RDA3a | Vacation date for Works Area 1109.A3a (Wk22/14;1Jun14) | 0% | | 01-Jun-14* | | | | |
| 01109.RDA3b | Vacation date for Works Area 1109.A3b (Wk22/14;1Jun14) | 0% | | 01-Jun-14* | | | | |
| Specified Milestone Dates | | | | | | | | |
| CC-C Milestones | | | | | | | | |
| 01109.MSC03i | C3(i)-50% by plan length of permanent diaphragm wall complete.(Wk24/13;16Jun13) | 100% | | 23-May-14 A | | | | |
| CC-D Milestones | | | | | | | | |
| 01109.MSD05i | D5(i)-Manufacturing of pre-cast tunnel lining segments 20% by number complete | 0% | | 31-May-14* | | | | |
| CC-E Milestones | | | | | | | | |
| 01109.MSE02i | E2(i) - Shop dwg & Mtrl Sub for all hard & soft landscaping wks, ext drainage, ext svc and E&M Approved (24/14;15Jun14) | 0% | | 31-May-14* | | | | |
| CC-A - PRELIMINARIES AND GENERAL REQUIREMENTS | | | | | | | | |
| Design and Approvals | | | | | | | | |
| Temporary Traffic Arrangements | | | | | | | | |
| SUW Station, Entrances and Adits | | | | | | | | |
| TTMS Design & Approval | | | | | | | | |
| 01109.PDA1340 | SUW - Sung Wong Toi & Pak Tai St - TTM Stage 1 - Design & Approval by SLG | 35% | 04-Dec-13 A | 02-Jul-14 | | | | |
| 01109.PDA1350 | SUW - Nam Kok Rd - TTM Stage 1 Phase 2 - Design & Approval by SLG | 100% | 26-Apr-14 A | 20-May-14 A | | | | |
| 01109.PDA1320 | SUW - TTM for Kln City Interchange - Design & Approval by SLG | 20% | 26-Apr-14 A | 28-Aug-14 | | | | |
| TTMS Gazette Notice | | | | | | | | |
| 01109.PDA1440 | SUW - Nam Kok Rd - TTM Stage 1 Phase 2 - Gazette Notice | 100% | 26-Apr-14 A | 20-May-14 A | | | | |
| Procurement | | | | | | | | |
| Concrete Construction Materials | | | | | | | | |
| Precast supplies | | | | | | | | |
| 01109.PDA3970A | Submission and Approval for revised detailed design to tunnel lining (EI 000053) | 61% | 28-Nov-13 A | 30-Jul-14 | | | | |
| 01109.PDA4020 | Precast concrete segment manufacture (2nd and subsequent batches) | 7% | 25-Jan-14 A | 27-Jan-16 | | | | |
| 01109.PDA4010 | Precast concrete segment delivery & arrival on site (1st batch) | 100% | 10-Mar-14 A | 28-Apr-14 A | | | | |
| CC-B - SUW STATION, ENTRANCES AND ADITS | | | | | | | | |
| Implementation of TTA at SUW | | | | | | | | |



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Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | |
|---|--|---------------------|-------------|-------------|------|-----|-----|-----|
| | | | | | May | Jun | Jul | Aug |
| 01109.PDB1561 | SUW - Nam Kok Rd - Implement TTM Stage 1 (Phase 2) | 0% | 26-May-14 | 09-Jun-14 | | | | |
| 01109.PDB1601 | SUW - Sung Wong Toi & Pak Tai St - Implement TTM Stage 1 | 0% | 03-Jul-14* | 16-Jul-14 | | | | |
| SUW Station Construction Works | | | 19-Apr-13 A | 30-Aug-14 | | | | |
| Site Preparation | | | 20-Dec-13 A | 31-Jul-14 | | | | |
| Archaeological Survey | | | 20-Dec-13 A | 31-Jul-14 | | | | |
| 01109.PDB14381A | AWB Within Launching Shaft (Additional Work) | 62% | 20-Dec-13 A | 31-Jul-14 | | | | |
| Station - Excavation and Foundation | | | 19-Apr-13 A | 30-Aug-14 | | | | |
| Pre-bored H- Piling for Permanent Works | | | 19-Apr-13 A | 15-Jul-14 | | | | |
| Part 2B (GL 7.5 - 12) | | | 19-Apr-13 A | 30-Apr-14 A | | | | |
| 01109.PDB2350 | Rig 7 - H- Piling - 71Nr - (BD approved drawings 07 Mar 13) | 100% | 19-Apr-13 A | 30-Apr-14 A | | | | |
| 01109.PDB2130A | H- Piling; (GL 7.5 - 12) - Complete | 100% | | 30-Apr-14 A | | | | |
| Part 3 (GL 12 - 18) | | | 14-Oct-13 A | 15-Jul-14 | | | | |
| 01109.PDB2180 | Rig 6 - H- Piling - 110Nr - (BD approved drawings 07 Mar 13) | 95% | 14-Oct-13 A | 09-Jun-14 | | | | |
| 01109.PDB2210 | Rig 1 - H- Piling - 35Nr - (BD approved drawings 07 Mar 13) | 75% | 02-Jan-14 A | 23-Jun-14 | | | | |
| 01109.PDB2271A | Rig A - H-Piling - 43 Nr - Piles with founding level >75m) | 34% | 16-Apr-14 A | 15-Jul-14 | | | | |
| 01109.PDB2130A10 | H- Piling; (GL12 - 18) - Complete | 0% | | 15-Jul-14 | | | | |
| Part 4 (GL 18 - 23) | | | 17-Jan-14 A | 10-Jun-14 | | | | |
| 01109.PDB2360 | Rig 2 - H- Piling - 30Nr - (BD approved drawings 07 Mar 13) | 90% | 17-Jan-14 A | 10-Jun-14 | | | | |
| 01109.PDB2130A20 | H- Piling; (GL18 - 23) - Complete | 0% | | 10-Jun-14 | | | | |
| TBM Launch Shaft Works | | | 03-Jan-14 A | 30-Aug-14 | | | | |
| Excavation TBM Shaft Area | | | 03-Jan-14 A | 30-Aug-14 | | | | |
| Excavation and lateral Support - TBM Shaft | | | 03-Jan-14 A | 30-Aug-14 | | | | |
| 01109.PDB3100 | TBM Launch shaft - Install Temporary Shoring - EGL to +5.0mPD | 91% | 03-Jan-14 A | 07-Aug-14 | | | | |
| 01109.PDB19260 | TBM Launch shaft - Install Temporary Shoring - +5mPD to 0.0mPD | 31% | 03-Feb-14 A | 23-Aug-14 | | | | |
| 01109.PDB3090 | TBM Launch shaft - Excavate +5mPD to 0.0mPD | 61% | 03-Feb-14 A | 15-Aug-14 | | | | |
| 01109.PDB3110 | TBM Launch shaft - Excavate 0mPD to -5mPD | 3% | 18-Apr-14 A | 30-Aug-14 | | | | |
| Earthworks | | | 11-Apr-14 A | 27-Aug-14 | | | | |
| Curtain Grout Works | | | 11-Apr-14 A | 18-Jun-14 | | | | |
| 01109.PDB3480 | Grout Curtain complete | 0% | | 18-Jun-14 | | | | |
| North of SUW | | | 26-May-14 | 18-Jun-14 | | | | |
| 01109.PDB3430A | Grout Curtain; Part 2- GL 9 to 10 | 0% | 26-May-14 | 06-Jun-14 | | | | |
| 01109.PDB3240A | Grout Curtain; Part 3- GL 10 to 11 | 0% | 07-Jun-14 | 18-Jun-14 | | | | |
| 01109.PDB19360B | Grout Curtain completed on North of Station | 0% | | 18-Jun-14 | | | | |
| South of SUW | | | 11-Apr-14 A | 12-Jun-14 | | | | |



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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | |
|--|---|---------------------|-------------|-------------|-----------------------------------|-----|-----|-----|
| | | | | | May | Jun | Jul | Aug |
| GL 7 to GL 12 | | | | | Suspended Activities. Pending AWB | | | |
| 01109.PDB10440 | Excavation & Lateral Support Works; GL C7 to C9 | 65% | 21-Mar-14 A | 25-Aug-14 | | | | |
| 01109.PDB10450 | Excavation & Lateral Support Works; GL C9 to C12 | 58% | 02-Apr-14 A | 27-Aug-14 | | | | |
| Entrance C - Part 2- GL 3 to GL 7 | | | | | | | | |
| Entrance C - Part 2- GL 3 to GL 7; Segment 1 | | | | | | | | |
| Entrance C - Part 2- Seg 1; ELS Works | | | | | | | | |
| Entrance C - Part 2- Seg 1; Traffic & Utility Diversion | | | | | | | | |
| 01109.PDB10700 | Utility relocation / diversion in Ent C Part 2; Segment 1 | 100% | 16-Nov-13 A | 23-May-14 A | | | | |
| Entrance C - Part 2- Seg 1; Sheet Piling & Toe Grouting Works | | | | | | | | |
| 01109.PDB10730 | Sheet Piling & Toe grouting Works; GL C5 to C7; Segment 1; East Side | 0% | 01-Aug-14 | 05-Sep-14 | | | | |
| Entrance B and Associated Adits | | | | | | | | |
| Entrance B - Olympic Avenue and SUW playground Works | | | | | | | | |
| Stage 1 | | | | | Suspended Activities. Pending AWB | | | |
| 01109.PDB11800 | Sheet piling & Toe grouting Works;GL B1 to B5 (2x24m sheetpiles) | 60% | 22-Feb-14 A | 26-Aug-14 | | | | |
| 01109.PDB11790 | Load test according to drawing number 1109/T/302/OAP/C19/201 | 0% | 08-Aug-14 | 26-Aug-14 | | | | |
| Stage 2 | | | | | | | | |
| 01109.PDB11970 | Pumping test (incl. set up) | 100% | 07-Dec-13 A | 10-May-14 A | | | | |
| 01109.PDB11980 | Excavate and Install struts & waling | 25% | 10-May-14 A | 12-Jul-14 | | | | |
| 01109.PDB11990 | Construct the Adit structure | 0% | 12-Jul-14 | 30-Aug-14 | | | | |
| Entrance B - Kowloon City Interchange | | | | | | | | |
| Entrance B - Preparation Works | | | | | | | | |
| 01109.PDB12550 | Implement the TTM Scheme at Kowloon City Interchange on drawing number 1109/T/SUW/SHJ/C21/018 | 0% | 26-May-14* | 26-May-14 | | | | |
| Entrance B - Underpinning of KNEC Piers | | | | | | | | |
| Pier P75 | | | | | | | | |
| 01109.PDB13040 | Install temporary steel support frame and jacks | 80% | 31-Mar-14 A | 31-May-14 | | | | |
| 01109.PDB13050 | Jack up viaduct | 0% | 03-Jun-14 | 03-Jun-14 | | | | |
| 01109.PDB13060 | Breakout concrete from existing pile cap | 0% | 04-Jun-14 | 06-Jun-14 | | | | |
| 01109.PDB13070 | Set up threaded end rebars to connect underpinning beam to pile cap | 0% | 07-Jun-14 | 11-Jun-14 | | | | |
| 01109.PDB13080 | Stitch up and grout underpinning beam and existing cap | 0% | 12-Jun-14 | 13-Jun-14 | | | | |
| 01109.PDB13090 | Dismantle temporary steel frame | 0% | 14-Jun-14 | 20-Jun-14 | | | | |
| 01109.PDB13100 | Backfill & remove cofferdam wall | 0% | 21-Jun-14 | 03-Jul-14 | | | | |
| Pier P76 | | | | | | | | |
| 01109.PDB13200 | Install temporary steel support frame and jacks | 80% | 07-Apr-14 A | 31-May-14 | | | | |
| 01109.PDB13210 | Jack up viaduct | 0% | 31-May-14 | 03-Jun-14 | | | | |



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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | |
|---|---|---------------------|-------------|-------------|------|-----|-----|-----|
| | | | | | May | Jun | Jul | Aug |
| 01109.PDB13220 | Breakout concrete from existing pile cap | 0% | 03-Jun-14 | 06-Jun-14 | | | | |
| 01109.PDB13230 | Set up threaded end rebars to connect underpinning beam to pile cap | 0% | 06-Jun-14 | 11-Jun-14 | | | | |
| 01109.PDB13240 | Stitch up and grout underpinning beam and existing cap | 0% | 11-Jun-14 | 13-Jun-14 | | | | |
| 01109.PDB13250 | Dismantle temporary steel frame | 0% | 13-Jun-14 | 20-Jun-14 | | | | |
| 01109.PDB13260 | Backfill & remove cofferdam wall | 0% | 20-Jun-14 | 03-Jul-14 | | | | |
| Pier P74 | | | 07-Apr-14 A | 03-Jul-14 | | | | |
| 01109.PDB12880 | Install temporary steel support frame and jacks | 80% | 07-Apr-14 A | 31-May-14 | | | | |
| 01109.PDB12890 | Jack up viaduct | 0% | 03-Jun-14 | 03-Jun-14 | | | | |
| 01109.PDB12900 | Breakout concrete from existing pile cap | 0% | 04-Jun-14 | 06-Jun-14 | | | | |
| 01109.PDB12910 | Set up threaded end rebars to connect underpinning beam to pile cap | 0% | 07-Jun-14 | 11-Jun-14 | | | | |
| 01109.PDB12920 | Stitch up and grout underpinning beam and existing cap | 0% | 12-Jun-14 | 13-Jun-14 | | | | |
| 01109.PDB12930 | Dismantle temporary steel frame | 0% | 14-Jun-14 | 20-Jun-14 | | | | |
| 01109.PDB12940 | Backfill & remove cofferdam wall | 0% | 21-Jun-14 | 03-Jul-14 | | | | |
| Entrance B - Pipe Piling & Toe Grouting Works | | | 16-Apr-14 A | 21-Oct-14 | | | | |
| 01109.PDB12580 | Pipe piling & Grout Curtain Works; GL B17 to B20 (67 Nos - Zone 1) | 10% | 16-Apr-14 A | 22-Jul-14 | | | | |
| 01109.PDB12590 | Pipe piling & Grout Curtain Works; GL B20 to B22 (76 Nos) some under bypass | 0% | 23-Jul-14 | 21-Oct-14 | | | | |
| Entrance B - Nam Kok Road Works - (Detailed Programme) | | | 02-Aug-13 A | 24-Dec-14 | | | | |
| Entrance B - Nam Kok Road Works (Portion 3) | | | 02-Aug-13 A | 24-Dec-14 | | | | |
| Nam Kok Road - TTMS - Stage 1 and 2 | | | 02-Aug-13 A | 24-Dec-14 | | | | |
| TTMS - Stage 1 (Phase 1) | | | 02-Aug-13 A | 24-May-14 A | | | | |
| 01109.PDB14650A | Install 410mm dia pipe pile wall. 88nr (assume 3 piles/2 days). 1PR | 100% | 02-Aug-13 A | 24-May-14 A | | | | |
| TTMS - Stage 1 (Phase 2) | | | 20-May-14 A | 24-Dec-14 | | | | |
| 01109.PDB15100A | Implement the Stage 1 (Phase 2) TTM Scheme on drawing | 100% | 20-May-14 A | 20-May-14 A | | | | |
| 01109.PDB15110A | Relocate car parking spaces (29 numbers in total) | 100% | 20-May-14 A | 20-May-14 A | | | | |
| 01109.PDB15130A | Install 410mm dia pipe pile wall. 105nr (assume 3 piles/2 days). 1PR | 5% | 20-May-14 A | 24-Dec-14 | | | | |
| CC-C - TKW STATION, ENTRANCES AND ADITS | | | 27-Jan-14 A | 03-Mar-15 | | | | |
| Implementation of TTA at TKW | | | 19-May-14 A | 06-Jun-14 | | | | |
| Revised TTMS Schemes | | | 19-May-14 A | 06-Jun-14 | | | | |
| 01109.PDC1714x | Stage 2 - Phase 2 - TTM for Partial Wks Area in W6 & E6 | 100% | 19-May-14 A | 21-May-14 A | | | | |
| 01109.PDC1714x20 | Stage 2 - Phase 3 - Full Wks Area in West (Incl W6) | 0% | 04-Jun-14 | 06-Jun-14 | | | | |
| TKW Station | | | 27-Jan-14 A | 18-Sep-14 | | | | |
| Diaphragm Wall Stage 2 Phase 1 TTMS (Area E6) | | | 03-Mar-14 A | 03-Jun-14 | | | | |
| Area E6 - BC Cutter Nr 1 | | | 02-Apr-14 A | 28-Apr-14 A | | | | |
| 01109.PDC24920 | E6 - Dwall works P75 | 100% | 02-Apr-14 A | 28-Apr-14 A | | | | |



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- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | |
|--|---|---------------------|-------------|-------------|------|-----|-----|-----|
| | | | | | May | Jun | Jul | Aug |
| Area E6 - BC Cutter Nr 5 | | | 12-Apr-14 A | 14-May-14 A | | | | |
| 01109.PDC24870 | E6 - Dwall works P82 | 100% | 12-Apr-14 A | 14-May-14 A | | | | |
| Area E6 - Post Concrete Works | | | 03-Mar-14 A | 03-Jun-14 | | | | |
| 01109.PDC10040 | E6 - Dwall testing | 78% | 03-Mar-14 A | 29-May-14 | | | | |
| 01109.PDC29225 | E6 - Road preparation works for TTM Stage 2 Phase 2 & 3 | 67% | 29-Apr-14 A | 03-Jun-14 | | | | |
| 01109.PDC23130 | E6 - Dwall Toe grouting (P79 & P80) | 100% | 03-May-14 A | 23-May-14 A | | | | |
| 01109.PDC10050 | E6 - Dwall works to Area E6 Complete | 100% | | 14-May-14 A | | | | |
| Diaphragm Wall Stage 2 Phase 1 TTMS (W1-W3 + Ent D) | | | 27-Jan-14 A | 18-Sep-14 | | | | |
| Ent D | | | 10-Apr-14 A | 28-Apr-14 A | | | | |
| Area E1 (Ent D) - BC Cutter No 2 | | | 10-Apr-14 A | 28-Apr-14 A | | | | |
| 01109.PDC23950 | E1 (Ent D) - Dwall works P138 | 100% | 10-Apr-14 A | 28-Apr-14 A | | | | |
| Area W1 | | | 27-Jan-14 A | 02-Sep-14 | | | | |
| Area W1 - Advance Works | | | 27-Jan-14 A | 05-Jun-14 | | | | |
| 01109.PDC10180 | W1 - Trial Pits (P13-P21) / Trench | 82% | 27-Jan-14 A | 28-May-14 | | | | |
| 01109.PDC10980 | W1 - Remove decommissioned Water Pipes SW+FW502 (P22-P26) | 60% | 15-Mar-14 A | 30-May-14 | | | | |
| 01109.PDC29216A | W1 - Excavation and construction of Guide walls (P22-P26) | 40% | 07-Apr-14 A | 04-Jun-14 | | | | |
| 01109.PDC10200 | W1 - Remove decommissioned Water Pipes SW+FW502 (P13-P21) | 33% | 23-Apr-14 A | 05-Jun-14 | | | | |
| 01109.PDC10190 | W1 - Excavation and construction of Guide walls (P13-P21) | 66% | 24-Apr-14 A | 30-May-14 | | | | |
| Area W1 - Founding Level Predrill | | | 14-Feb-14 A | 04-Jun-14 | | | | |
| 01109.PDC10210 | W1 - Founding Level Predrill P14,15,16,17,18,19,20,21 (10nr) 3PR | 80% | 14-Feb-14 A | 26-May-14 | | | | |
| 01109.PDC10290 | W1 - P: 14,21,15,20,17,16,19,18 - GI Report & Confirmation of Founding Levels | 63% | 13-Mar-14 A | 28-May-14 | | | | |
| 01109.PDC11060 | W1 - P: 22,23,24,25,26 - GI Report & Confirmation of Founding Levels | 60% | 21-Mar-14 A | 28-May-14 | | | | |
| 01109.PDC11020 | W1 - Founding Level Predrill for XWall & Mini Piling (3nr) 1PR (P22-P26) | 0% | 26-May-14 | 29-May-14 | | | | |
| 01109.1000A | W1 (MTW Rd) - Trial Pits & Predrill to P13 & Confirmation of Founding Level | 0% | 28-May-14 | 04-Jun-14 | | | | |
| Area W1 - DWall Construction | | | 08-Apr-14 A | 02-Sep-14 | | | | |
| BC Cutter No.2 | | | 30-Apr-14 A | 02-Sep-14 | | | | |
| 01109.PDC25150 | W1 - Dwall works P18 | 100% | 30-Apr-14 A | 20-May-14 A | | | | |
| 01109.PDC25090 | W1 - Dwall works P21 | 100% | 10-May-14 A | 22-May-14 A | | | | |
| 01109.PDC25140 | W1 - Dwall works P19 | 20% | 23-May-14 A | 04-Jun-14 | | | | |
| 01109.PDC25600 | W1 - Dwall works P22 | 0% | 30-May-14 | 11-Jun-14 | | | | |
| 01109.PDC25080 | W1 - Dwall works P14 | 0% | 12-Jun-14 | 23-Jun-14 | | | | |
| 01109.PDC25630 | W1 - Dwall works P25 | 0% | 24-Jun-14 | 05-Jul-14 | | | | |
| 01109.PDC25610 | W1 - Dwall works P26 | 0% | 07-Jul-14 | 19-Jul-14 | | | | |
| 01109.PDC23390 | W1 - Dwall works P13 (P13B) | 0% | 21-Jul-14 | 29-Jul-14 | | | | |



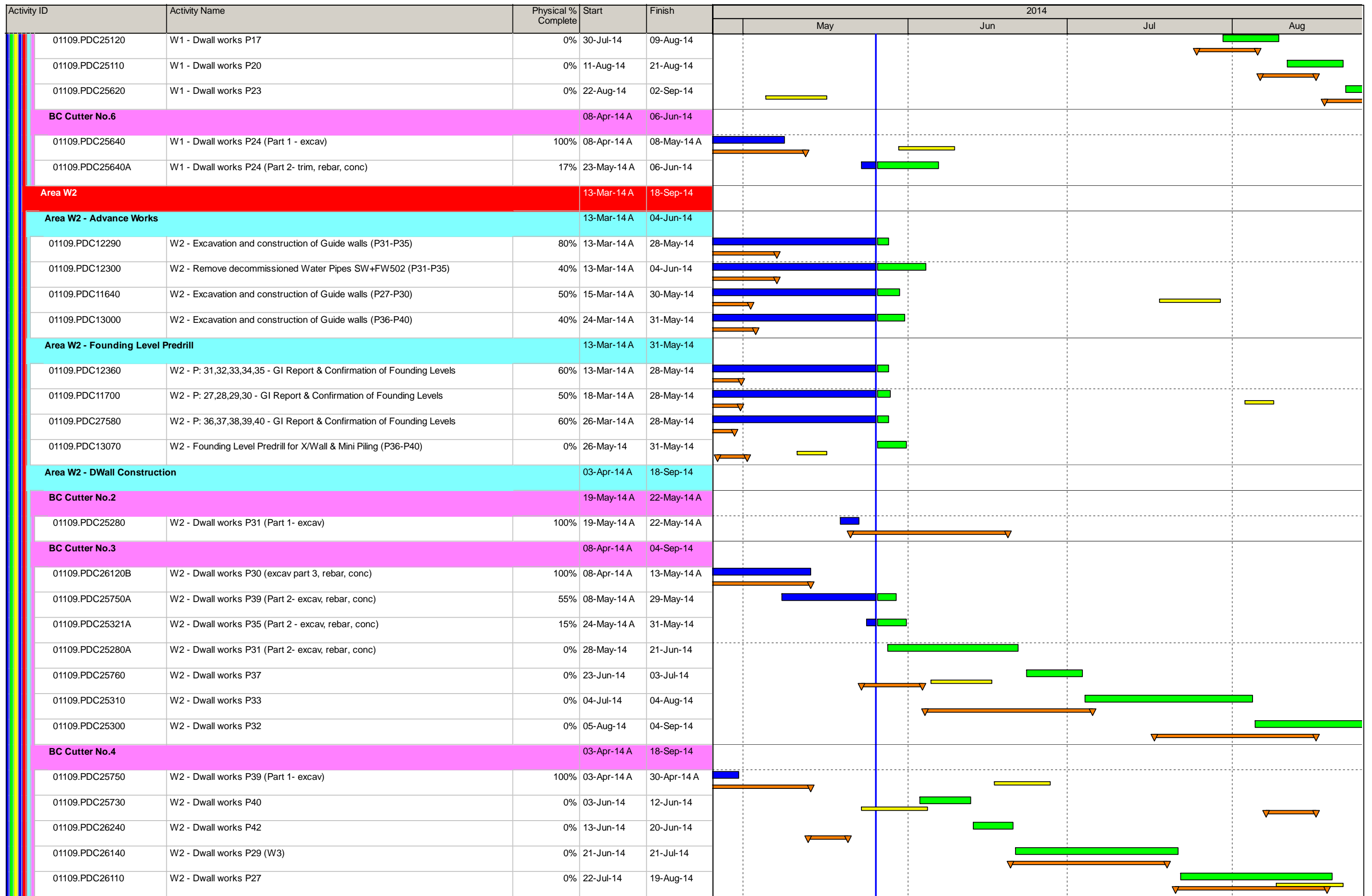
MTR Corporation Limited
Shatin to Central Link Contract 1109

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THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone



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THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | | |
|--|---|---------------------|-------------|-------------|------|-----|-----|-----|--|
| | | | | | May | Jun | Jul | Aug | |
| 01109.PDC26130 | W2 - Dwall works P28 | 0% | 20-Aug-14 | 18-Sep-14 | | | | | |
| BC Cutter No.6 | | | 08-May-14 A | 25-Jun-14 | | | | | |
| 01109.PDC25320 | W2 - Dwall works P35 (Part 1 - excav) | 100% | 08-May-14 A | 22-May-14 A | | | | | |
| 01109.PDC25740 | W2 - Dwall works P36 | 0% | 05-Jun-14 | 14-Jun-14 | | | | | |
| 01109.PDC26220 | W2 - Dwall works P41 | 0% | 16-Jun-14 | 25-Jun-14 | | | | | |
| Area W3 | | | 14-Feb-14 A | 16-Sep-14 | | | | | |
| Area W3 - Advance Works | | | 21-Mar-14 A | 30-May-14 | | | | | |
| 01109.PDC29220A | W3 - Jet Grouting (P45-P50) 44 holes - Additional Work | 96% | 21-Mar-14 A | 26-May-14 | | | | | |
| 01109.PDC14450 | W3 - Excavation and construction of Guide walls (P46-P49) | 50% | 29-Mar-14 A | 30-May-14 | | | | | |
| 01109.PDC13720 | W3 - Remove decommissioned Water Pipes SW+FW502 (P41-P45) | 60% | 12-Apr-14 A | 29-May-14 | | | | | |
| 01109.PDC13710 | W3 - Excavation and construction of Guide walls (P41-P45) | 80% | 14-Apr-14 A | 27-May-14 | | | | | |
| Area W3 - Founding Level Predrill | | | 14-Feb-14 A | 30-May-14 | | | | | |
| 01109.PDC27620 | W3 - Founding Level Predrill & establish founding level P45 1PR | 100% | 14-Feb-14 A | 30-Apr-14 A | | | | | |
| 01109.PDC14510 | W3 - P: 46,47,48,49 - GI Report & Confirmation of Founding Levels | 50% | 13-Mar-14 A | 28-May-14 | | | | | |
| 01109.PDC15710 | W3 - P: 55,56,57 - GI Report & Confirmation of Founding Levels | 50% | 22-Mar-14 A | 28-May-14 | | | | | |
| 01109.PDC13780 | W3 - P: ,42,43,44, - GI Report & Confirmation of Founding Levels | 33% | 01-Apr-14 A | 30-May-14 | | | | | |
| 01109.PDC27630 | W3 - Founding Level Predrill & establish founding level P41 1PR | 50% | 14-Apr-14 A | 28-May-14 | | | | | |
| Area W3 - DWall Construction | | | 02-May-14 A | 25-Aug-14 | | | | | |
| BC Cutter No.4 | | | 02-May-14 A | 05-Jun-14 | | | | | |
| 01109.PDC26210 | W3 - Dwall works P45 | 100% | 02-May-14 A | 17-May-14 A | | | | | |
| 01109.PDC25880 | W3 - Dwall works P50 (Part 2 - excav, rebar, conc) | 100% | 08-May-14 A | 23-May-14 A | | | | | |
| 01109.PDC26230 | W3 - Dwall works P44 | 30% | 21-May-14 A | 05-Jun-14 | | | | | |
| BC Cutter No.1 | | | 05-May-14 A | 30-Jun-14 | | | | | |
| 01109.PDC25880A | W3 - Dwall works P50 (Part 1 - excav) | 100% | 05-May-14 A | 08-May-14 A | | | | | |
| 01109.PDC26360 | W3 - Dwall works P54 | 65% | 09-May-14 A | 29-May-14 | | | | | |
| 01109.PDC25440 | W3 - Dwall works P49 | 0% | 27-May-14 | 07-Jun-14 | | | | | |
| 01109.PDC26390 | W3 - Dwall works P56 | 0% | 09-Jun-14 | 18-Jun-14 | | | | | |
| 01109.PDC25910 | W3 - Dwall works P52 | 0% | 19-Jun-14 | 30-Jun-14 | | | | | |
| BC Cutter No.5 | | | 15-May-14 A | 19-Jun-14 | | | | | |
| 01109.PDC24910A70 | BC Cutter No.5 Cutter Maintenance | 60% | 15-May-14 A | 31-May-14 | | | | | |
| 01109.PDC26380 | W3 - Dwall works P55 | 0% | 03-Jun-14 | 09-Jun-14 | | | | | |
| 01109.PDC25900 | W3 - Dwall works P51 | 0% | 10-Jun-14 | 19-Jun-14 | | | | | |
| BC Cutter No.6 | | | 26-Jun-14 | 25-Aug-14 | | | | | |
| 01109.PDC25430 | W3 - Dwall works P46 | 0% | 26-Jun-14 | 10-Jul-14 | | | | | |



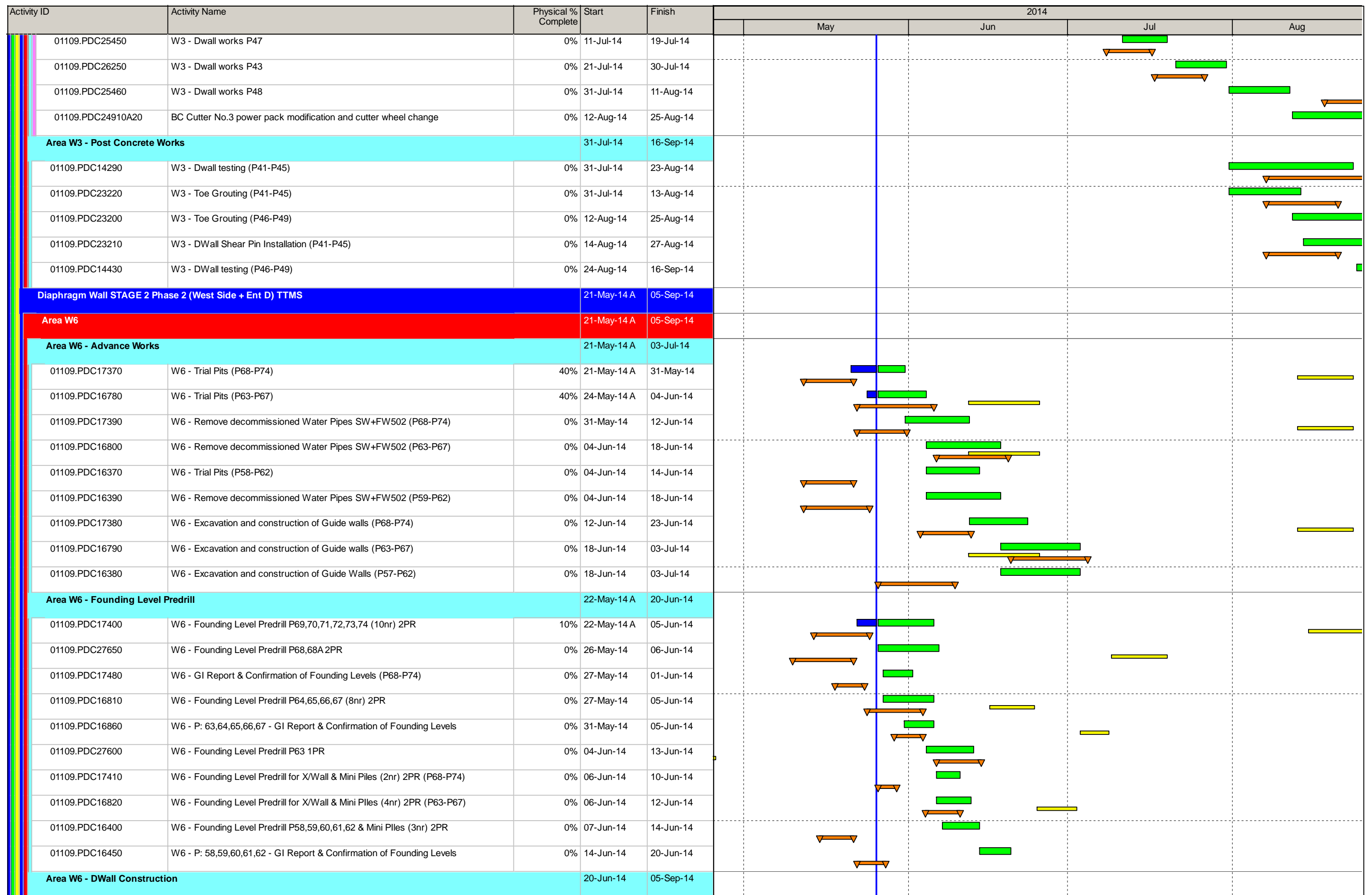
MTR Corporation Limited
Shatin to Central Link Contract 1109

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THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Jun-14

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MTR Corporation Limited
Shatin to Central Link Contract 1109

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THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

| Activity ID | Activity Name | Physical % Complete | Start | Finish | 2014 | | | |
|---|---|---------------------|-------------|-------------|------|-----|-----|-----|
| | | | | | May | Jun | Jul | Aug |
| BC Cutter No. 4 | | | | | | | | |
| 01109.PDC26400 | W6 - Dwall works P58 | 0% | 02-Jul-14 | 28-Aug-14 | | | | |
| 01109.PDC26020 | W6 - Dwall works P67 | 0% | 12-Jul-14 | 31-Jul-14 | | | | |
| 01109.PDC26000 | W6 - Dwall works P63 | 0% | 01-Aug-14 | 20-Aug-14 | | | | |
| 01109.PDC25560 | W6 - Dwall works P59 | 0% | 21-Aug-14 | 28-Aug-14 | | | | |
| BC Cutter No. 5 | | | | | | | | |
| 01109.PDC26370 | W6 - Dwall works P57 | 0% | 20-Jun-14 | 30-Jun-14 | | | | |
| 01109.PDC26540 | W6 - Dwall works P71 | 0% | 02-Jul-14 | 21-Jul-14 | | | | |
| 01109.PDC26530 | W6 - Dwall works P68A | 0% | 22-Jul-14 | 30-Jul-14 | | | | |
| 01109.PDC26550 | W6 - Dwall works P72 | 0% | 31-Jul-14 | 16-Aug-14 | | | | |
| 01109.PDC26510 | W6 - Dwall works P70 | 0% | 18-Aug-14 | 05-Sep-14 | | | | |
| Entrance A & Vent Shaft A | | | | | | | | |
| Vent Shaft A | | | | | | | | |
| Foundation | | | | | | | | |
| 01109.PDC27310 | Vent Shaft A - Trial Pits | 0% | 16-Jul-14* | 30-Jul-14 | | | | |
| 01109.PDC27290 | Vent Shaft A - Founding Level predrill & verify founding levels | 0% | 01-Aug-14 | 16-Aug-14 | | | | |
| 01109.PDC27320 | Vent Shaft A - Install Pipe Piles clockwise from next to P97 to P102 (79nr 2d/pile 1PR) | 0% | 19-Aug-14 | 03-Mar-15 | | | | |
| Entrance A | | | | | | | | |
| Foundation | | | | | | | | |
| 01109.PDC27350 | Ent A - Sheet piling (part 1) | 100% | 19-Mar-14 A | 05-May-14 A | | | | |
| CC-D - BORED TUNNELS FROM SUW STATION TO HOM STATION | | | | | | | | |
| Procurement of Specialised Construction Machinery | | | | | | | | |
| Procurement of Specialised Construction Machinery | | | | | | | | |
| Off-site | | | | | | | | |
| 01109.PDD1050 | TBM Up track SUW to HOM - TBM Manufacture | 82% | 30-Aug-13 A | 17-Jul-14 | | | | |
| 01109.PDD1080 | TBM Up track SUW to HOM - TBM Deliver | 0% | 17-Jul-14 | 15-Sep-14 | | | | |
| Specialised Construction Machinery Site Assembly and Related Establishment | | | | | | | | |
| Specialised Construction Machinery Site Assembly and Related Establishment | | | | | | | | |
| 01109.PDD1140 | SUW - Grout behind Bored Pile Wall | 50% | 21-Mar-14 A | 18-Sep-14 | | | | |
| 01109.PDD1100A | STP - Testing On-site | 58% | 14-Apr-14 A | 03-Jul-14 | | | | |
| Underpinning of EKW Pier 15 and Foundation Removal | | | | | | | | |
| TTA Stage 1: Phase 3 | | | | | | | | |
| Underpinning works | | | | | | | | |
| Cap Construction | | | | | | | | |



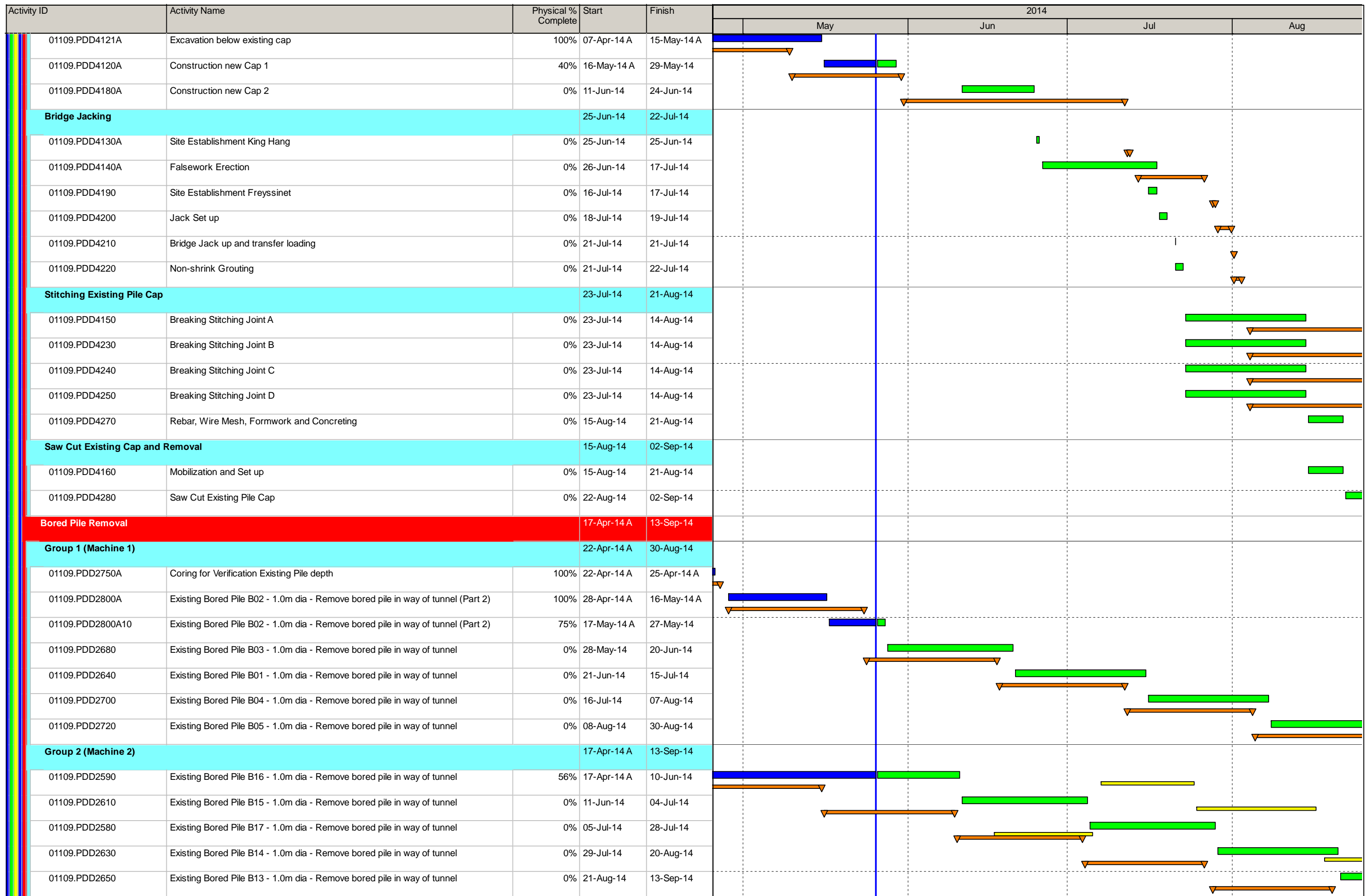
MTR Corporation Limited
Shatin to Central Link Contract 1109

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THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone



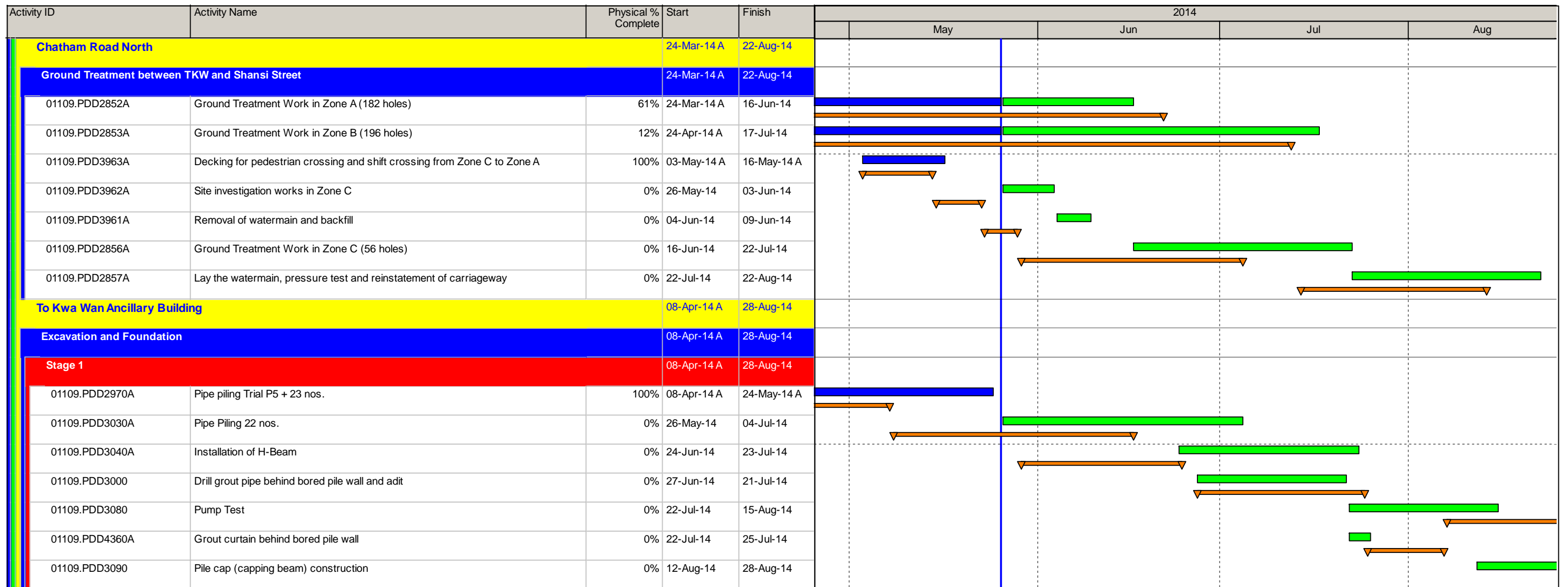
MTR Corporation Limited
Shatin to Central Link Contract 1109

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THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- ▶ Last Month Update (Apr 2014)
- ◆ Milestone
- MP Rev.1 Milestone
- ▼ Apr 2014 Milestone



MTR Corporation Limited
Shatin to Central Link Contract 1109

1109-UWP-5K, Page 12 of 12

THREE MONTH ROLLING PROGRAMME - May 14 TASK filters: 3MRP Dates, MTRC 1109 - 3MRP.

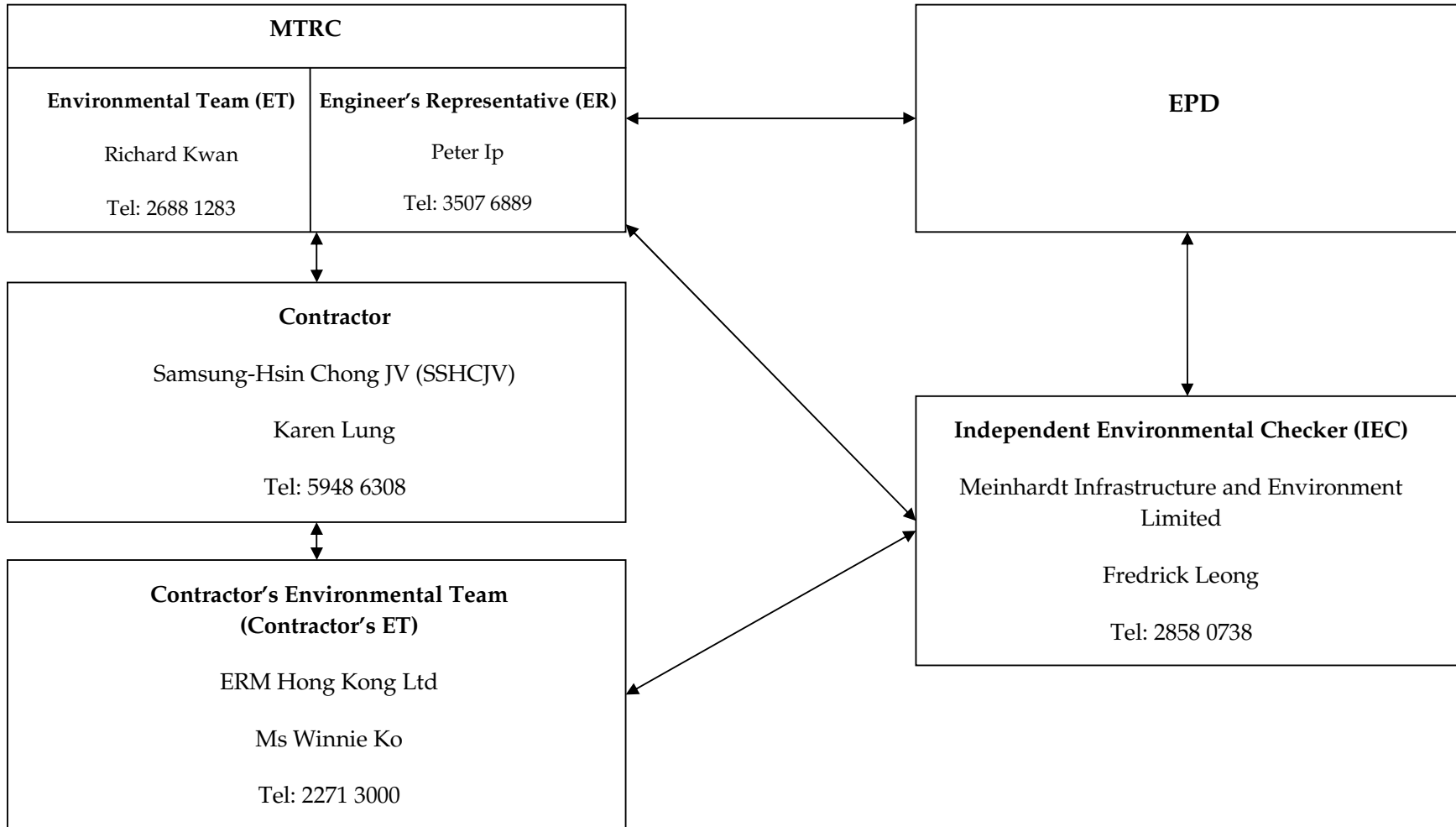
Printed:06-Jun-14

- Actual Work
- Remaining Work
- Master Programme Rev.1
- Last Month Update (Apr 2014)
- Milestone
- MP Rev.1 Milestone
- Apr 2014 Milestone

Annex C

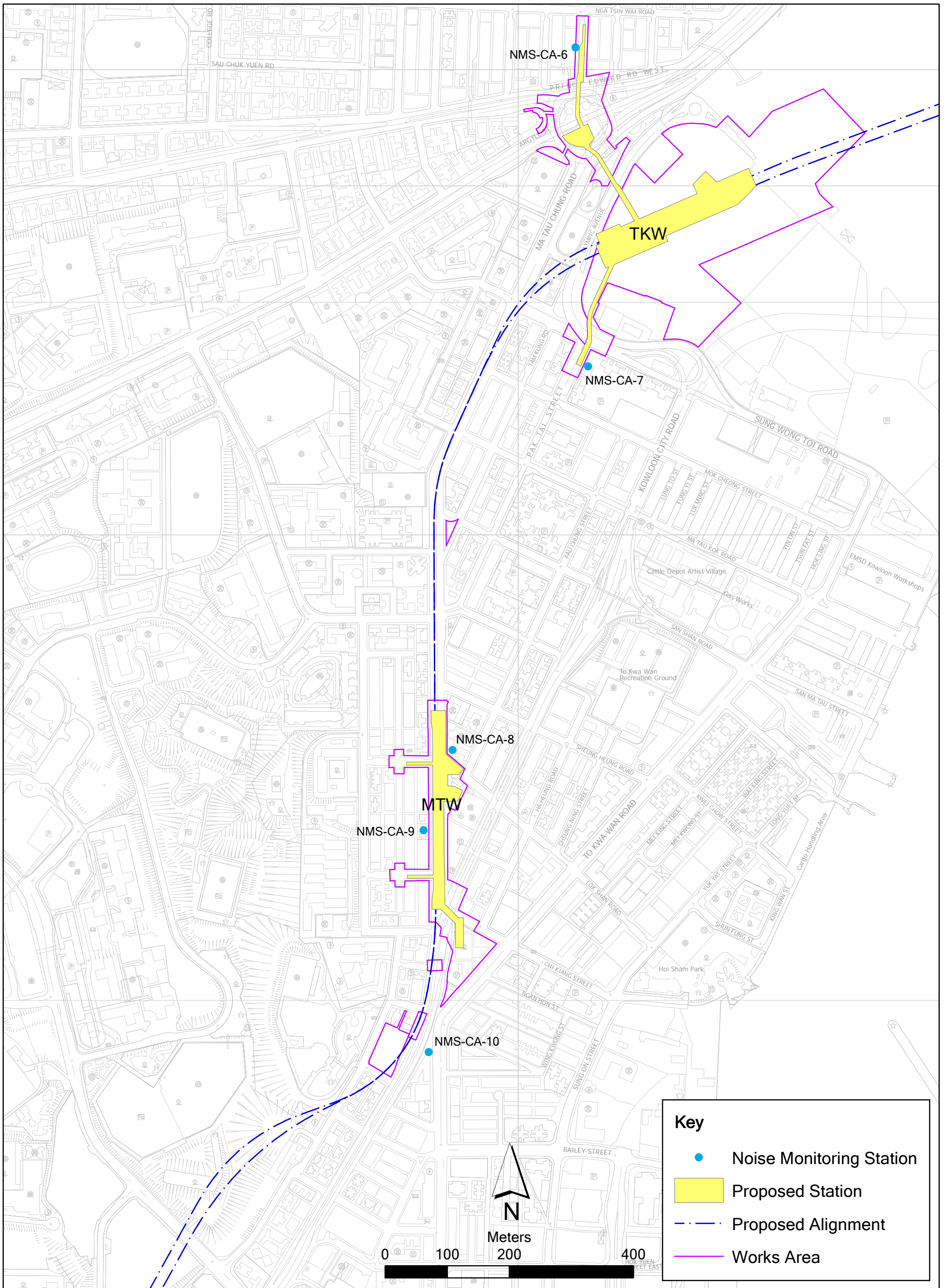
Project Organization Chart and Contact Detail

Annex C Project Organization of SCL Works Contract 1109



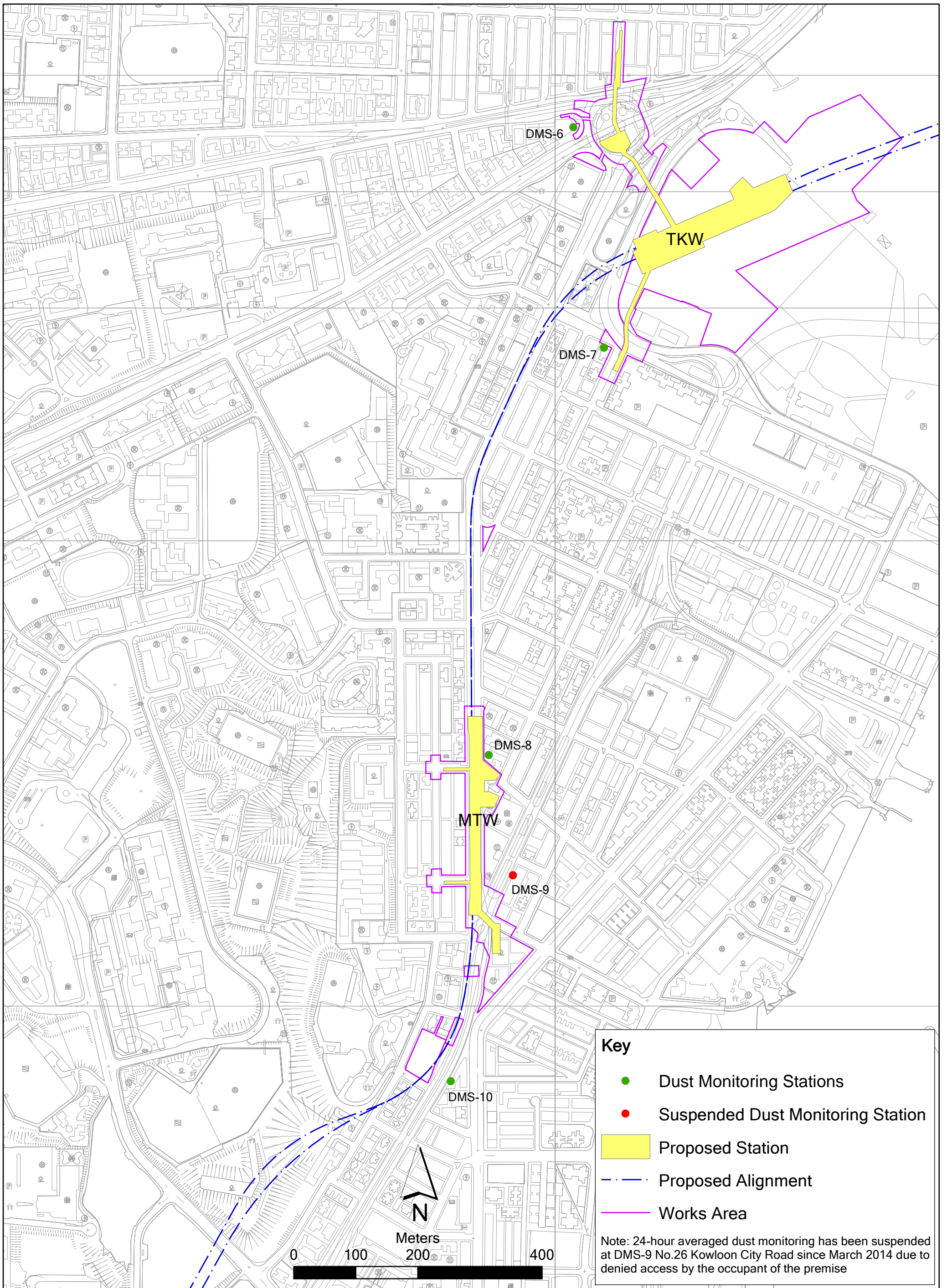
Annex D

Locations of Noise and Dust Monitoring Stations



Annex D1

Location of Regular Construction Noise Monitoring Stations



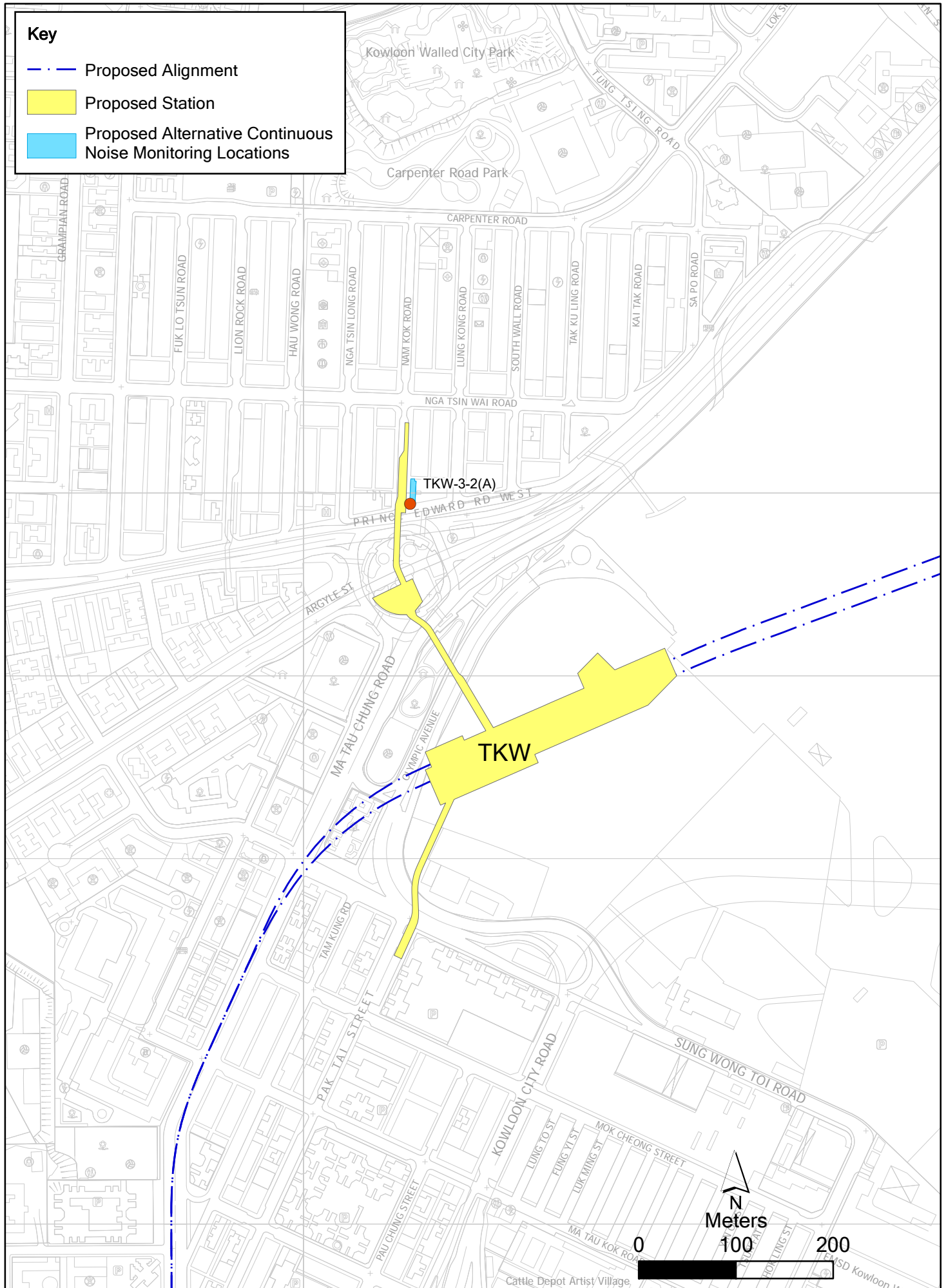
Key

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

Note: 24-hour averaged dust monitoring has been suspended at DMS-9 No.26 Kowloon City Road since March 2014 due to denied access by the occupant of the premise

Key

- Proposed Alignment
- Proposed Station
- Proposed Alternative Continuous Noise Monitoring Locations



Annex D3

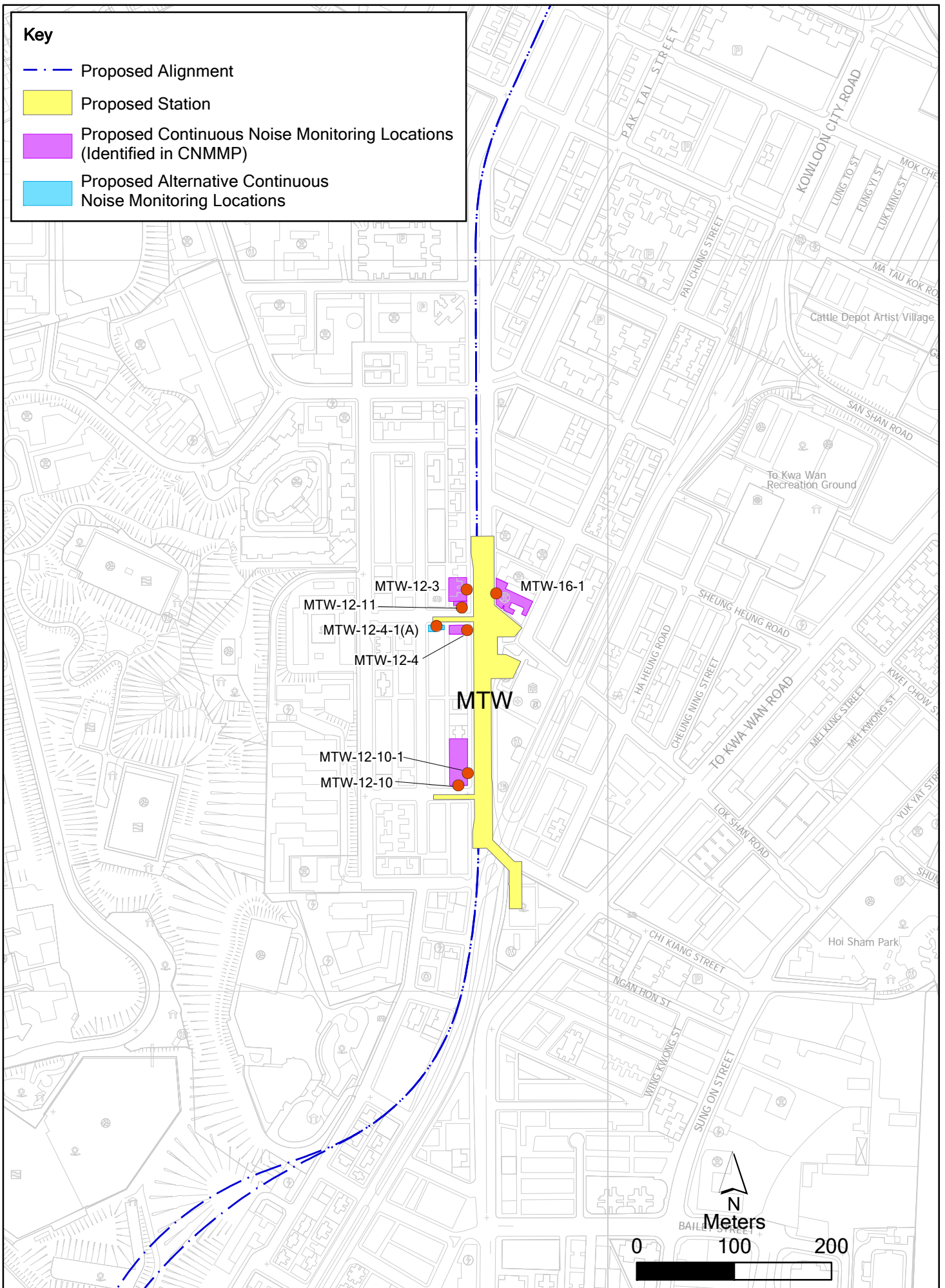
Proposed Continuous Noise Monitoring Locations

Name: 171181_Annex_Continuous
Noise_Monitoring_Locations_TKW.mxd
Date: 10-Oct-12

Environmental Resources Management

Key

- Proposed Alignment
- Proposed Station
- Proposed Continuous Noise Monitoring Locations (Identified in CNMMP)
- Proposed Alternative Continuous Noise Monitoring Locations



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
Construction Air Quality Monitoring Schedule**

**24-hr TSP Monitoring Stations*:
DMS-6, DMS-7, DMS-8 and DMS-10
Monitoring Month : May 2014**

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

*24-hour averaged dust monitoring has been suspended at DMS-9 No. 26 Kowloon City Road since March 2014 due to denied access by the occupant of the premise.

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

**24-hr TSP Monitoring Stations:
DMS-6, DMS-7, DMS-8, DMS-9* and DMS-10
Monitoring Month : June 2014**

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

* 24-hour averaged dust monitoring has been suspended at DMS-9 No. 26 Kowloon City Road 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 will be tentatively resumed in June 2014.

**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 : May 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------|------------------|------------------|------------------|------------------|----------|
| | | | | 01-May | 02-May | 03-May |
| | | | | Public Holiday | | |
| 04-May | 05-May | 06-May | 07-May | 08-May | 09-May | 10-May |
| | | Public Holiday | | | Noise Monitoring | |
| 11-May | 12-May | 13-May | 14-May | 15-May | 16-May | 17-May |
| | | | | Noise Monitoring | | |
| 18-May | 19-May | 20-May | 21-May | 22-May | 23-May | 24-May |
| | | | Noise Monitoring | | | |
| 25-May | 26-May | 27-May | 28-May | 29-May | 30-May | 31-May |
| | | 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 : June 2014**

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

Annex F

Calibration Reports

Annex F Calibration Reports

Dust Monitoring Equipment

| Monitoring Station ID | Location | Monitoring Equipment | | Last Calibration Date | Next Calibration Date |
|------------------------------|----------------------------------|-----------------------------|-------------------------------|------------------------------|------------------------------|
| <i>24-hr TSP</i> | | HVS | Calibrator | | |
| DMS-6 | Katherine Building | TE-5170 (S/N 0107) | CM-AIR-43 (Orifice I.D. 2421) | 6 March 2014 | 6 September 2014 |
| DMS-7 | Parc 22 | TE-5170 (S/N 3574) | CM-AIR-43 (Orifice I.D. 2421) | 6 March 2014 | 6 September 2014 |
| DMS-8 | SHK Good Shepherd Primary School | TE-5170 (S/N 3572) | CM-AIR-43 (Orifice I.D. 2421) | 6 March 2014 | 6 September 2014 |
| DMS-9(a) | No. 26 Kowloon City Road | -- | -- | -- | -- |
| DMS-10 | Chat Ma Mansion | TE-5170 (S/N 3573) | CM-AIR-43 (Orifice I.D. 2421) | 6 March 2014 | 6 September 2014 |

Note
 (a) 24-hour averaged dust monitoring had been suspended since March 2014 at DMS-9 No. 26 Kowloon City Road due to denied access by the occupant of the premise. Since no monitoring was carried out during the reporting month, no dust monitoring equipment was used; therefore further calibration was not conducted.

Noise Monitoring Equipment

| Monitoring Station ID | Monitoring Equipment | Model & Serial No. | Last Calibration Date | Next Calibration Date |
|--|---------------------------------|--|------------------------------|------------------------------|
| NMS-CA-6, NMS-CA-7, NMS-CA-8, NMS-CA-9 and NMS-CA-10 | Calibrator Sound Level Meter | Rion NC-73 (S/N 10997142) Rion NL-18 (S/N 00360030) | 12 July 2013 12 July 2013 | 12 July 2014 12 July 2014 |

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-6(Katherine Building)
Calibrated by : K.T.Ho
Date : 06/03/2014

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2421
Service Date : 27 Jan 2014
Slope (m) : 2.06238
Intercept (b) : -0.02415
Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1017
Ta(K) : 289

| Resistance Plate | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (chart) | Y (corrected) |
|------------------|-----------------------------------|-------|-----------------------------|---------------|------------------|
| 1 18 holes | 12.7 | 3.627 | 1.752 | 54 | 54.94 |
| 2 13 holes | 9.7 | 3.169 | 1.530 | 47 | 47.82 |
| 3 10 holes | 7.5 | 2.786 | 1.344 | 40 | 40.70 |
| 4 7 holes | 4.6 | 2.182 | 1.051 | 30 | 30.52 |
| 5 5 holes | 2.9 | 1.733 | 0.832 | 22 | 22.38 |

Sampler Calibration Relationship (Linear Regression)

Slope(m): 35.532 Intercept(b): -6.991 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan

Date: 10/03/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-7(Parc 22)
 Calibrated by : P.F.Yeung
 Date : 06/03/2014

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2421
 Service Date : 27 Jan 2014
 Slope (m) : 2.06238
 Intercept (b) : -0.02415
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1017
 Ta(K) : 289

| Resistance Plate | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (chart) | Y (corrected) |
|------------------|-----------------------------------|-------|-----------------------------|---------------|------------------|
| 1 18 holes | 12.5 | 3.597 | 1.738 | 62 | 63.08 |
| 2 13 holes | 9.7 | 3.169 | 1.530 | 55 | 55.96 |
| 3 10 holes | 7.7 | 2.823 | 1.362 | 48 | 48.84 |
| 4 7 holes | 4.8 | 2.229 | 1.074 | 38 | 38.66 |
| 5 5 holes | 3.0 | 1.762 | 0.847 | 28 | 28.49 |

Sampler Calibration Relationship (Linear Regression)

Slope(m):38.609 Intercept(b): -3.584 Correlation Coefficient(r): 0.9990

Checked by: Magnum Fan

Date: 10/03/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-8(SKH Good Shepherd Primary School)
 Calibrated by : P.F.Yeung
 Date : 06/03/2014

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2421
 Service Date : 27 Jan 2014
 Slope (m) : 2.06238
 Intercept (b) : -0.02415
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1017
 Ta(K) : 289

| Resistance Plate | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (chart) | Y (corrected) |
|------------------|-----------------------------------|-------|-----------------------------|---------------|------------------|
| 1 18 holes | 12.4 | 3.583 | 1.731 | 63 | 64.10 |
| 2 13 holes | 9.7 | 3.169 | 1.530 | 56 | 56.98 |
| 3 10 holes | 7.6 | 2.805 | 1.353 | 49 | 49.86 |
| 4 7 holes | 5.0 | 2.275 | 1.096 | 38 | 38.66 |
| 5 5 holes | 3.0 | 1.762 | 0.847 | 28 | 28.49 |

Sampler Calibration Relationship (Linear Regression)

Slope(m):40.716 Intercept(b): -5.786 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan

Date: 10/03/2014

High-Volume TSP Sampler
5-Point Calibration Record

Location : DMS-10(Chat Ma Mansion)
 Calibrated by : P.F.Yeung
 Date : 06/03/2014

Sampler

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

Calibration Office and Standard Calibration Relationship

Serial Number : 2421
 Service Date : 27 Jan 2014
 Slope (m) : 2.06238
 Intercept (b) : -0.02415
 Correlation Coefficient(r) : 0.99994

Standard Condition

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

Calibration Condition

Pa (hpa) : 1017
 Ta(K) : 289

| Resistance Plate | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (chart) | Y (corrected) |
|------------------|-----------------------------------|-------|-----------------------------|---------------|------------------|
| 1 18 holes | 11.8 | 3.495 | 1.689 | 62 | 63.08 |
| 2 13 holes | 9.6 | 3.152 | 1.522 | 54 | 54.94 |
| 3 10 holes | 7.5 | 2.786 | 1.344 | 47 | 47.82 |
| 4 7 holes | 4.9 | 2.252 | 1.085 | 36 | 36.63 |
| 5 5 holes | 2.1 | 1.474 | 0.707 | 20 | 20.35 |

Sampler Calibration Relationship (Linear Regression)

Slope(m):43.166 Intercept(b): -10.234 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan

Date: 10/03/14



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELAND, 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 | ORIFICE |
|----------------|-------------------|------------------|------------------|-----------------|--------------|----------------|
| | | | | | DIFF Hg (mm) | 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 | | |

x axis = $\text{SQRT}[\text{H2O}(\text{Pa}/760)(298/\text{Ta})]$

y axis = $\text{SQRT}[\text{H2O}(\text{Ta}/\text{Pa})]$

CALCULATIONS

$V_{std} = \text{Diff. Vol} [(\text{Pa} - \text{Diff. Hg}) / 760] (298 / \text{Ta})$
 $Q_{std} = V_{std} / \text{Time}$

$V_a = \text{Diff Vol} [(\text{Pa} - \text{Diff Hg}) / \text{Pa}]$
 $Q_a = V_a / \text{Time}$

For subsequent flow rate calculations:

$Q_{std} = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$
 $Q_a = 1/m \{ [\text{SQRT} \text{H2O}(\text{Ta}/\text{Pa})] - b \}$

Certificate of Calibration

校正證書

Certificate No. : C134307
證書編號**ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1709)**

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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

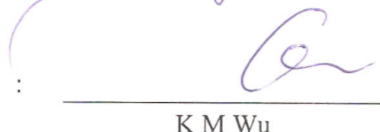
Calibration check

DATE OF TEST / 測試日期 : 12 July 2013**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 LeeCertified By
核證
K M WuDate of Issue
簽發日期

15 July 2013

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Certificate of Calibration

校正證書

Certificate No. : C134307
證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

| Equipment ID | Description | Certificate No. |
|--------------|-----------------------------------|-----------------|
| CL130 | Universal Counter | C133632 |
| CL281 | Multifunction Acoustic Calibrator | DC130171 |
| TST150A | Measuring Amplifier | C120886 |

- Test procedure : MA100N.
- 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 | 0.988 | 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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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 – 校正及檢測實驗室

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. : C134309
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1709)

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 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 12 July 2013

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

Certified By : 
核證 : K M Wu

Date of Issue : 15 July 2013
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C134309
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 from 6.1.2 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 | C130019 |
| 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 60651 Type 1 Spec. (dB) |
|-------------|------|---------------------|----------------|---------------|-------------|------------------|-----------------------------|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 110 | LA | A | Fast | 94.00 | 1 | * 93.1 | ± 0.7 |

* Out of Mfr's Spec.

- 6.1.1.2 After Adjustment

| 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.

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Certificate of Calibration

校正證書

Certificate No. : C134309
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) | 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 |

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 | | 102.4 | -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 | $+1.2 \pm 1.0$ |
| | | | | | 4 kHz | 95.1 | $+1.0 \pm 1.0$ |
| | | | | | 8 kHz | 93.0 | $-1.1 (+1.5 ; -3.0)$ |
| | | | | | 12.5 kHz | 89.8 | $-4.3 (+3.0 ; -6.0)$ |

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C134309

證書編號

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 | 91.0 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.2 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.9 | -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) |

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 | 100.0 | ± 0.5 |
| | | | | | | | | 90 | 90.0 | ± 0.5 |
| | | | | | | | | 80 | 79.5 | ± 1.0 |
| | | | | | | | | 70 | 69.7 | ± 1.0 |
| | | | | | | | | 1/10 ² | | |
| 1/10 ³ | | | | | | | | | | |
| 1/10 ⁴ | | | | | | | | | | |

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.

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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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Confirm receipt of notifications of exceedance in writing; | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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) | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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
- △ 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 | <u>Submit an Archaeological Action Plan</u> 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 | <u>Good Site Practices</u> 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 |
|--|---------------|---|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> • 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 | <p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> • 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. | | | | | |
| | | <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. | | | | | |
| | | <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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 |
|--------------------------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| S6.12 | LV2 | <p>trees in Contractor's works sites.</p> <p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> 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. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> 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). <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> • 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 |
|----------|------------------|--|---|---|--|------------------------------------|--------------------------|
| | | <p>sheeting to ensure that the dusty materials do not leak from the vehicle;</p> <ul style="list-style-type: none"> • 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 |
|----------|------------------|--|---|---|--|------------------------------------|--------------------------|
| | | <p>a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain an entirely wet surface</p> <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>periods or should be throttled down to a minimum;</p> <ul style="list-style-type: none"> • 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> <ul style="list-style-type: none"> 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 |
|----------|---------------|---|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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, 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 |
|----------|---------------|---|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 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 | | | | | |

| 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>silty water to public roads and drains.</p> <ul style="list-style-type: none"> 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 | <p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 | <p><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.</p> | To minimize water quality from sewage effluent | Contractor | All construction sites where practicable | Construction stage | ✓ |
| S10.7.1 | W4 | <p><u>Groundwater from Contaminated Area in case contamination is found:</u></p> <ul style="list-style-type: none"> • 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <ul style="list-style-type: none"> 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 |
|--|---------------|---|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> 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 | <p><u>On-site sorting of C&D (Construction and Demolition) material</u></p> <ul style="list-style-type: none"> 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 | <p><u>Construction and Demolition (C&D) Material</u></p> <ul style="list-style-type: none"> • 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 |
|----------|---------------|--|---|--------------------------------|--|---------------------------------|-----------------------|
| | | <ul style="list-style-type: none"> 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 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> 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 |
|----------|---------------|---|---|--------------------------------|--|---------------------------------|-----------------------|
| S11.5.1 | WM4 | <p>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.</p> <p><u>General Refuse</u></p> <ul style="list-style-type: none"> • 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 |
|----------|---------------|--|--|--------------------------------|--|---------------------------------|-----------------------|
| S11.5.1 | WM7 | <p>should be considered by the Contractor.</p> <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> 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 |
|----------|------------------|---|---|---|--|------------------------------------|--------------------------|
| | | <ul style="list-style-type: none"> 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 |
|-----------|------------|----------|---------|---|---|------------------------------------|---|--------------------------------|------------|------------------|------------------------|-----------------------|
| 09-May-14 | 15:55 | 16:25 | Rainy | 64.0 | 76.1 | -(b) | - | Traffic noise | 22 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 15-May-14 | 11:25 | 11:55 | Fine | 63.5 | 76.1 | -(b) | - | Traffic noise | 29 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 21-May-14 | 11:25 | 11:55 | Rainy | 63.5 | 76.1 | -(b) | - | Traffic noise | 27 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 27-May-14 | 11:17 | 11:47 | Sunny | 63.8 | 76.1 | -(b) | - | Traffic noise | 30 | 0.5 | NL-18 00360030 | NC-73 10997142 |

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 |
|-----------|------------|----------|---------|---|---|------------------------------------|---|--------------------------------|------------|------------------|------------------------|-----------------------|
| 09-May-14 | 15:10 | 15:40 | Rainy | 67.3 | 70.0 | -(b) | - | Traffic noise | 22 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 15-May-14 | 10:28 | 10:58 | Fine | 67.0 | 70.0 | -(b) | - | Traffic noise | 29 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 21-May-14 | 10:30 | 11:00 | Rainy | 66.3 | 70.0 | -(b) | - | Traffic noise | 27 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 27-May-14 | 10:20 | 10:50 | Sunny | 67.0 | 70.0 | -(b) | - | Traffic noise | 30 | 0.5 | NL-18 00360031 | NC-73 10997143 |

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 |
|-----------|------------|----------|---------|---|---|------------------------------------|---|--------------------------------|------------|------------------|------------------------|-----------------------|
| 09-May-14 | 13:00 | 13:30 | Rainy | 74.1 | 75.4 | -(b) | Backhole | Traffic noise | 22 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 15-May-14 | 8:40 | 9:10 | Fine | 75.6 | 75.4 | 62.1 | Crane operation | Traffic noise | 29 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 21-May-14 | 8:40 | 9:10 | Rainy | 74.8 | 75.4 | -(b) | Backhole | Traffic noise | 27 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 27-May-14 | 8:40 | 9:10 | Sunny | 75.9 | 75.4 | 66.3 | Backhole | Traffic noise | 30 | 0.5 | NL-18 00360030 | 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 |
|-----------|------------|----------|---------|---|---|------------------------------------|---|--------------------------------|------------|------------------|------------------------|-----------------------|
| 09-May-14 | 13:40 | 14:10 | Rainy | 74.6 | 69.2 | 73.1 | - | Traffic noise | 22 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 15-May-14 | 8:00 | 8:30 | Fine | 73.7 | 69.2 | 71.8 | Crane operation | Traffic noise | 29 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 21-May-14 | 8:00 | 8:30 | Rainy | 75.0 | 69.2 | 73.7 | Backhole | Traffic noise | 27 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 27-May-14 | 8:00 | 8:30 | Sunny | 75.2 | 69.2 | 73.9 | Crane operation, | Traffic noise | 30 | 0.5 | NL-18 00360030 | NC-73 10997142 |

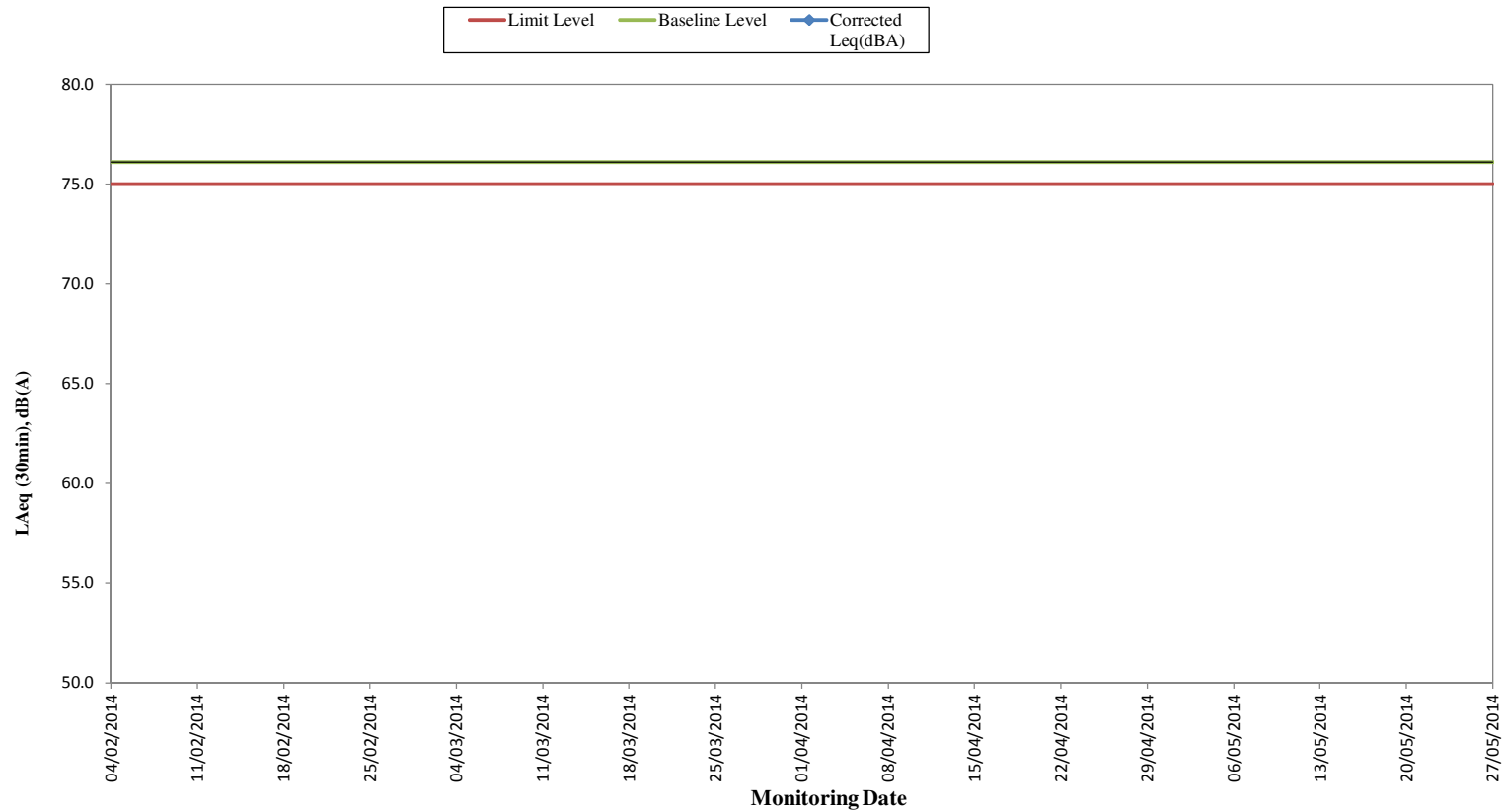
Station NMS-CA-10 Chat Ma Mansion

| 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 |
|-----------|------------|----------|---------|--|---|------------------------------------|---|--------------------------------|------------|------------------|------------------------|-----------------------|
| 09-May-14 | 14:22 | 14:52 | Rainy | 76.3 | 76.6 | -(b) | Backhole | Traffic noise | 22 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 15-May-14 | 9:25 | 9:55 | Fine | 76.7 | 76.6 | 60.3 | - | Traffic noise | 29 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 21-May-14 | 9:28 | 9:58 | Rainy | 76.7 | 76.6 | 60.3 | Backhole | Traffic noise | 27 | 0.5 | NL-18 00360030 | NC-73 10997142 |
| 27-May-14 | 9:23 | 9:53 | Sunny | 76.9 | 76.6 | 65.1 | Backhole | Traffic noise | 30 | 0.5 | NL-18 00360030 | NC-73 10997142 |

Remarks:

- The Measured LAeq is corrected against the corresponding Baseline Level.
- No correction was made as the measured noise levels were equal to or below the baseline noise levels.
- The noise monitoring results of the measurements carried out at NMS-CA-8 and NMS-CA-10 on 9, 15, 21, 27 May 2014 are higher than the daytime construction noise criterion. However, the results are not considered as exceedances as they are below the limit level after deducting the baseline noise level.

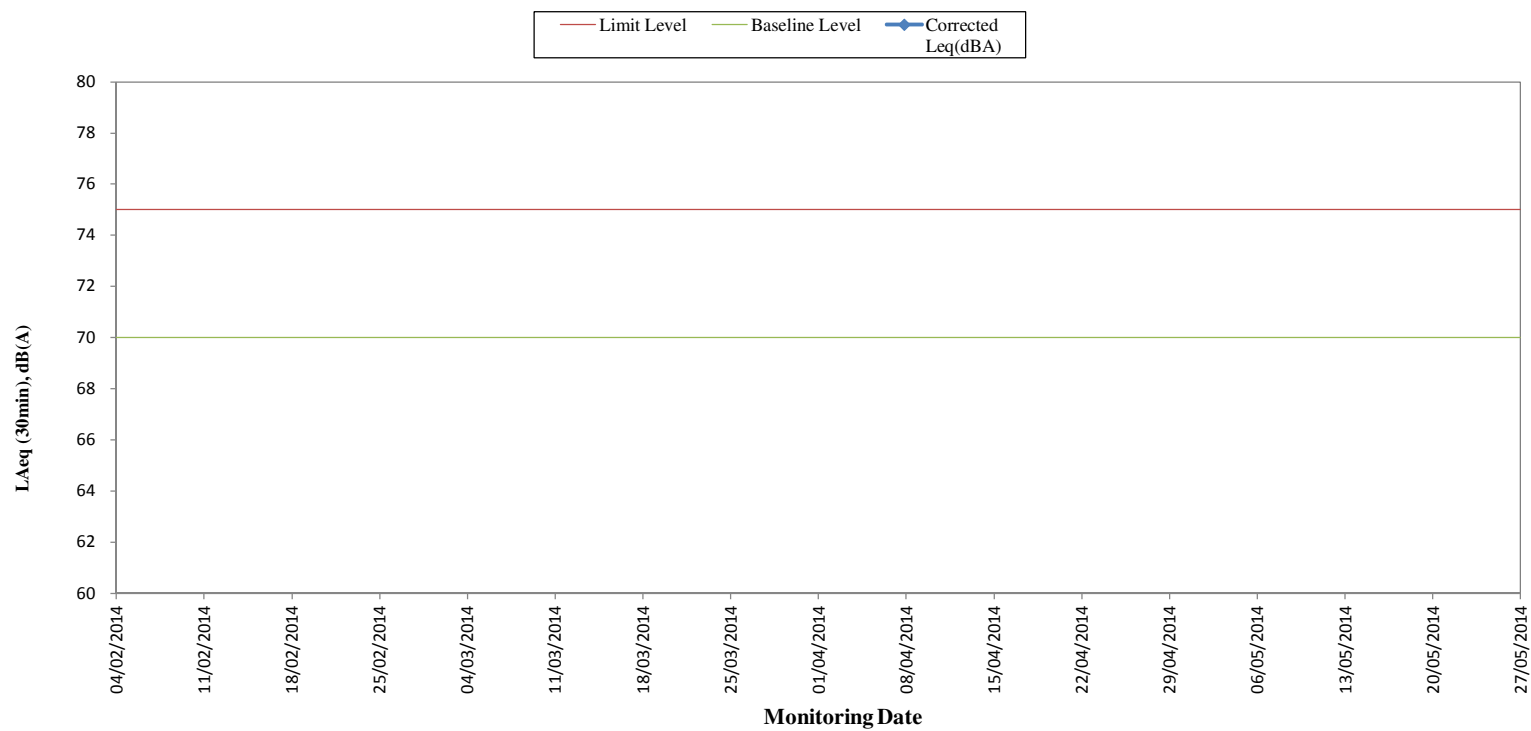
Regular Noise Monitoring Results at NMS-CA-6 (No. 16-23 Nam Kok Road) (LAeq, 30min) for the Past 4 Months



Remarks:

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

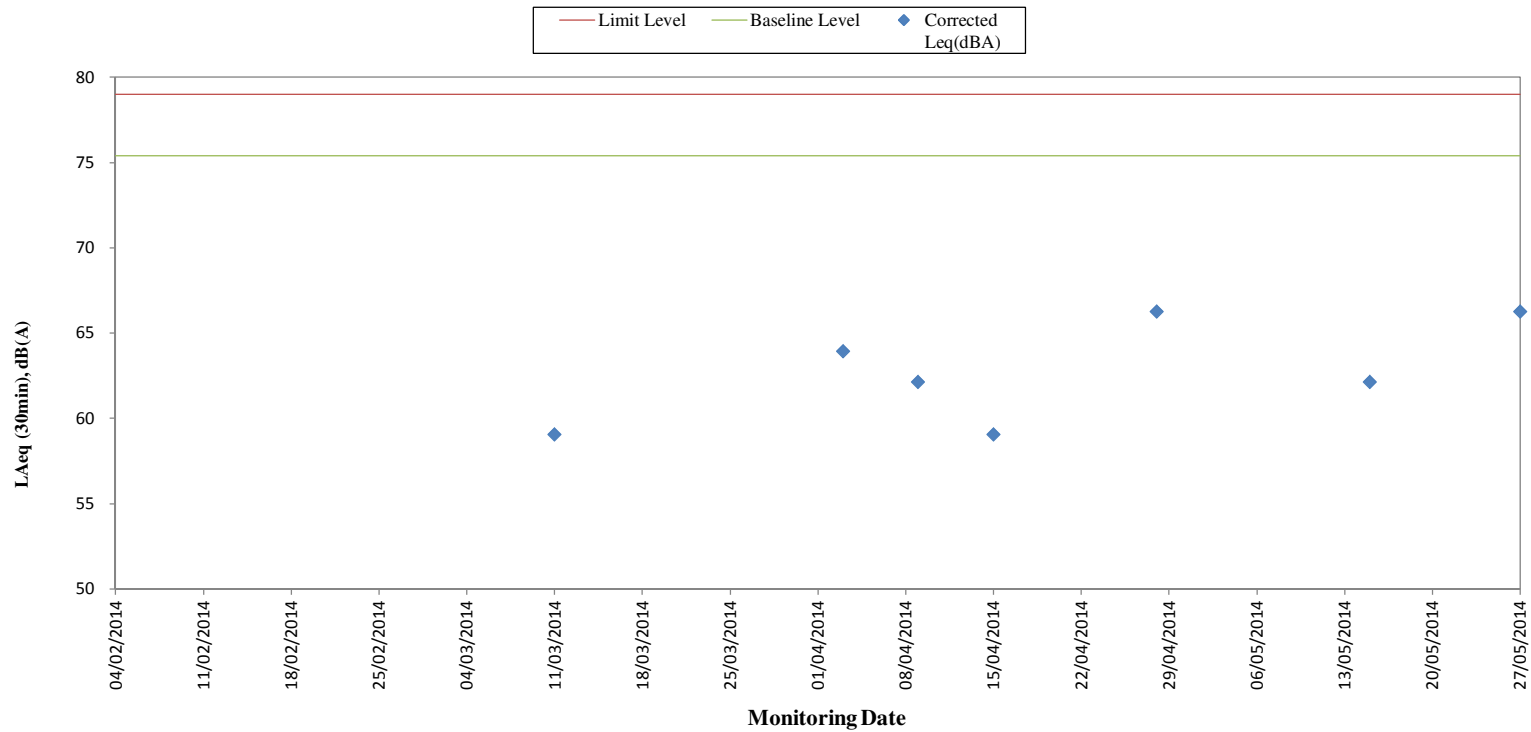
Regular Noise Monitoring Results at NMS-CA-7 (Skytower Tower 2) (LAeq, 30min) for the Past 4 Months



Remarks:

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

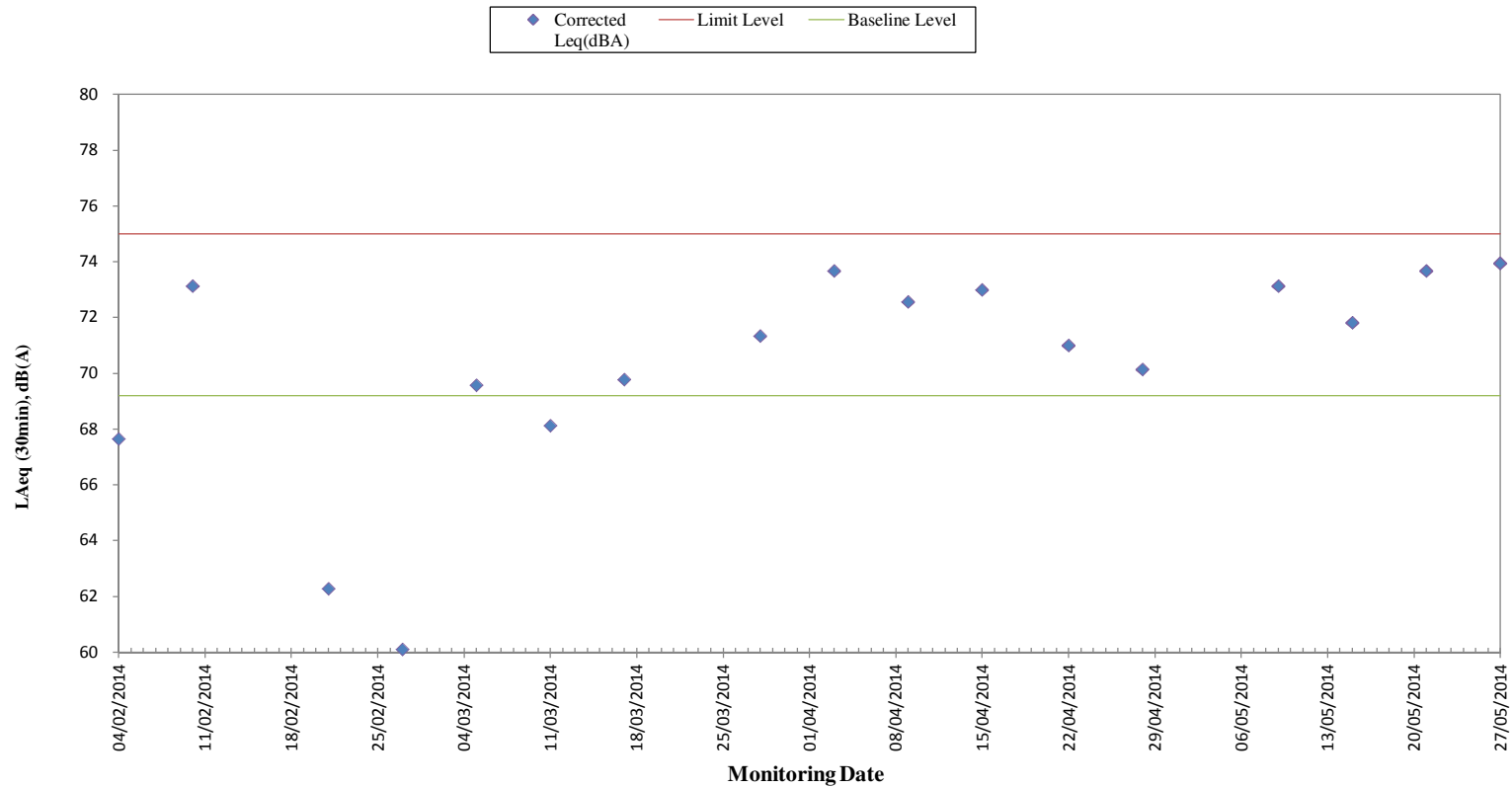
**Regular Noise Monitoring Results at NMS-CA- 8 (SKH Good Shepherd Primary School)
(LAeq, 30min) for the Past 4 Months**



Remarks:

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

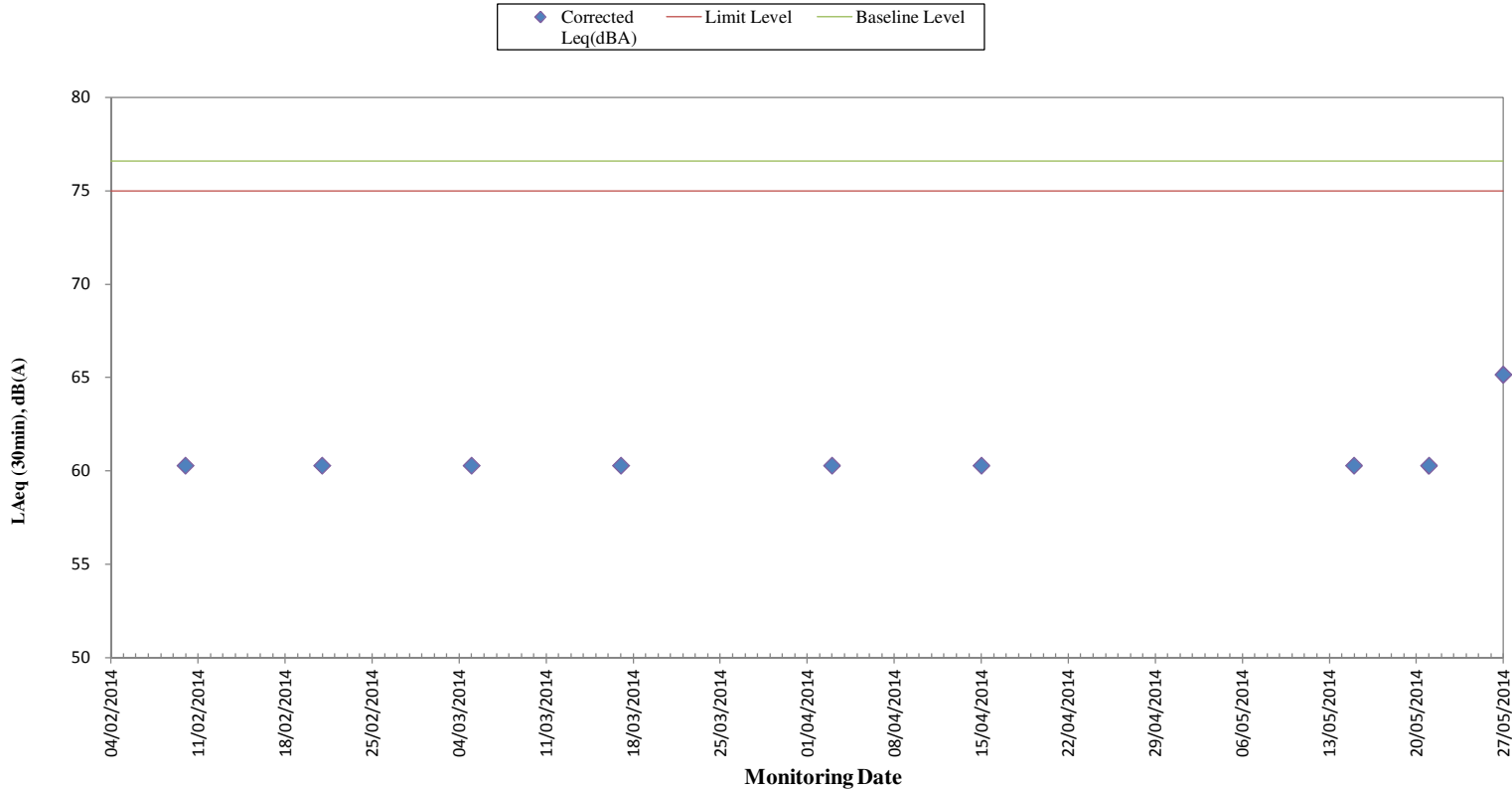
Regular Noise Monitoring Results at NMS-CA-9 (Kong Yiu Mansion) (L_{Aeq}, 30min) for the Past 4 Months



Remarks:

- For those corrected noise levels that are not shown in this graph, the measured noise levels 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 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) | | Average | TSP Conc. | Action Level | Limit Level | Observations / Remarks | Sampler ID | Filter ID |
| Date | Date | | Initial | Final | Initial | Final | (hrs) | Initial | Final | | (µg/m ³) | (µg/m ³) | (µg/m ³) | | | |
| 03-May-14 | 04-May-14 | Cloudy | 2.7957 | 3.0013 | 12632.30 | 12656.30 | 24.00 | 1.26 | 1.26 | 1.26 | 113 | 156.8 | 260 | Construction work in progress | 107 | 3168 |
| 09-May-14 | 10-May-14 | Rainy | 2.7691 | 2.8891 | 12656.30 | 12680.30 | 24.00 | 1.32 | 1.32 | 1.32 | 63 | 156.8 | 260 | Construction work in progress | 107 | 3198 |
| 15-May-14 | 16-May-14 | Fine | 2.8309 | 2.9600 | 12680.30 | 12704.30 | 24.00 | 1.32 | 1.32 | 1.32 | 68 | 156.8 | 260 | Construction work in progress | 107 | 3266 |
| 21-May-14 | 22-May-14 | Rainy | 2.8271 | 2.9339 | 12704.30 | 12728.30 | 24.00 | 1.32 | 1.32 | 1.32 | 56 | 156.8 | 260 | Construction work in progress | 107 | 3284 |
| 27-May-14 | 28-May-14 | Sunny | 2.8162 | 2.9495 | 12728.30 | 12752.30 | 24.00 | 1.32 | 1.32 | 1.32 | 70 | 156.8 | 260 | Construction work in progress | 107 | 3376 |
| 31-May-14 | 01-Jun-14 | Sunny | 2.8023 | 2.9602 | 12752.30 | 12776.30 | 24.00 | 1.31 | 1.31 | 1.31 | 84 | 156.8 | 260 | Construction work in progress | 107 | 3394 |
| | | | | | | | | | | | Minimum | 56 | | | | |
| | | | | | | | | | | | Average | 76 | | | | |
| | | | | | | | | | | | Maximum | 113 | | | | |

| Station | | DMS-7 | | Parc 22 | | | | | | | | | | | | |
|-----------|-----------|---------|-------------------|---------|----------------------|---------|---------------|---------------------------------|-------|---------|----------------------|----------------------|----------------------|-------------------------------|------------|-----------|
| Start | Finish | Weather | Filter Weight (g) | | Elapsed Time Reading | | Sampling Time | Flow Rate (m ³ /min) | | Average | TSP Conc. | Action Level | Limit Level | Observations / Remarks | Sampler ID | Filter ID |
| Date | Date | | Initial | Final | Initial | Final | (hrs) | Initial | Final | | (µg/m ³) | (µg/m ³) | (µg/m ³) | | | |
| 03-May-14 | 04-May-14 | Cloudy | 2.7757 | 2.9334 | 2809.17 | 2833.17 | 24.00 | 1.23 | 1.23 | 1.23 | 89 | 166.7 | 260 | Construction work in progress | 3574 | 3167 |
| 09-May-14 | 10-May-14 | Rainy | 2.7815 | 2.8571 | 2833.17 | 2857.17 | 24.00 | 1.24 | 1.24 | 1.24 | 42 | 166.7 | 260 | Construction work in progress | 3574 | 3197 |
| 15-May-14 | 16-May-14 | Fine | 2.8233 | 2.9579 | 2857.17 | 2881.17 | 24.00 | 1.24 | 1.24 | 1.24 | 75 | 166.7 | 260 | Construction work in progress | 3574 | 3265 |
| 21-May-14 | 22-May-14 | Rainy | 2.8231 | 2.9500 | 2881.17 | 2905.17 | 24.00 | 1.24 | 1.24 | 1.24 | 71 | 166.7 | 260 | Construction work in progress | 3574 | 3283 |
| 27-May-14 | 28-May-14 | Sunny | 2.8286 | 2.9522 | 2905.17 | 2929.17 | 24.00 | 1.24 | 1.24 | 1.24 | 69 | 166.7 | 260 | Construction work in progress | 3574 | 3375 |
| 31-May-14 | 01-Jun-14 | Sunny | 2.8146 | 2.9404 | 2929.17 | 2953.17 | 24.00 | 1.24 | 1.24 | 1.24 | 70 | 166.7 | 260 | Construction work in progress | 3574 | 3393 |
| | | | | | | | | | | | Minimum | 42 | | | | |
| | | | | | | | | | | | Average | 70 | | | | |
| | | | | | | | | | | | Maximum | 89 | | | | |

Station DMS-8 SKH Good Shepherd Primary School

| Start | | Finish | | Weather | Filter Weight (g) | | Elapsed Time Reading | | Sampling Time (hrs) | Flow Rate (m ³ /min) | | Average | TSP Conc. (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) | Observations / Remarks | Sampler ID | Filter ID |
|-----------|------|-----------|------|---------|-------------------|--------|----------------------|---------|---------------------|---------------------------------|-------|---------|--------------------------------|-----------------------------------|----------------------------------|-------------------------------|------------|-----------|
| Date | Time | Date | Time | | Initial | Final | Initial | Final | | Initial | Final | | | | | | | |
| 03-May-14 | 8:18 | 04-May-14 | 8:18 | Cloudy | 2.7820 | 2.9194 | 2779.11 | 2803.11 | 24.00 | 1.22 | 1.22 | 1.22 | 78 | 152.2 | 260 | Construction work in progress | 3572 | 3166 |
| 09-May-14 | 8:45 | 10-May-14 | 8:45 | Rainy | 2.7870 | 2.8809 | 2803.11 | 2827.11 | 24.00 | 1.25 | 1.25 | 1.25 | 52 | 152.2 | 260 | Construction work in progress | 3572 | 3196 |
| 15-May-14 | 8:43 | 16-May-14 | 8:43 | Fine | 2.8314 | 2.9560 | 2827.11 | 2851.11 | 24.00 | 1.25 | 1.25 | 1.25 | 69 | 152.2 | 260 | Construction work in progress | 3572 | 3264 |
| 21-May-14 | 8:43 | 22-May-14 | 8:43 | Rainy | 2.8271 | 2.9315 | 2851.11 | 2875.11 | 24.00 | 1.25 | 1.25 | 1.25 | 58 | 152.2 | 260 | Construction work in progress | 3572 | 3282 |
| 27-May-14 | 8:43 | 28-May-14 | 8:43 | Sunny | 2.8314 | 2.9595 | 2875.11 | 2899.11 | 24.00 | 1.25 | 1.25 | 1.25 | 71 | 152.2 | 260 | Construction work in progress | 3572 | 3374 |
| 31-May-14 | 8:15 | 01-Jun-14 | 8:15 | Sunny | 2.8298 | 2.9700 | 2899.11 | 2923.11 | 24.00 | 1.25 | 1.25 | 1.25 | 78 | 152.2 | 260 | Construction work in progress | 3572 | 3392 |
| | | | | | | | | | | | | | Minimum | 52 | | | | |
| | | | | | | | | | | | | | Average | 68 | | | | |
| | | | | | | | | | | | | | Maximum | 78 | | | | |

Station DMS-9 No. 26 Kowloon City Road

| Start | | Finish | | Weather | Filter Weight (g) | | Elapsed Time Reading | | Sampling Time (hrs) | Flow Rate (m ³ /min) | | Average | TSP Conc. (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) | Observations / Remarks | Sampler ID | Filter ID |
|-----------|------|--------|------|---------|-------------------|-------|----------------------|-------|---------------------|---------------------------------|-------|---------|--------------------------------|-----------------------------------|----------------------------------|------------------------|------------|-----------|
| Date | Time | Date | Time | | Initial | Final | Initial | Final | | Initial | Final | | | | | | | |
| 03-May-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160.9 | 260 | -- | -- | -- |
| 09-May-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160.9 | 260 | -- | -- | -- |
| 15-May-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160.9 | 260 | -- | -- | -- |
| 21-May-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160.9 | 260 | -- | -- | -- |
| 27-May-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160.9 | 260 | -- | -- | -- |
| 31-May-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160.9 | 260 | -- | -- | -- |
| | | | | | | | | | | | | | Minimum | -- | | | | |
| | | | | | | | | | | | | | Average | -- | | | | |
| | | | | | | | | | | | | | Maximum | -- | | | | |

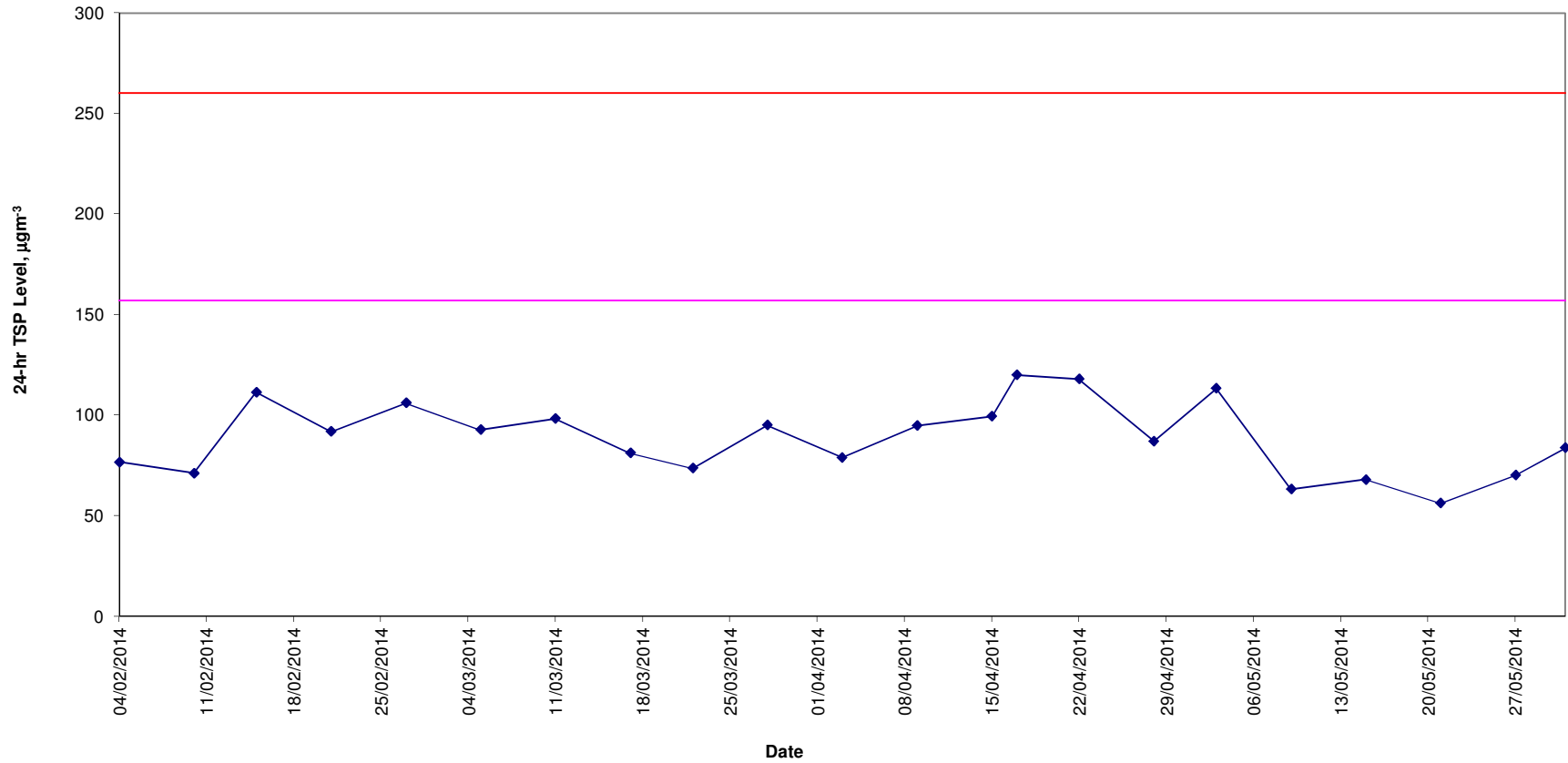
Remarks: 24-hour averaged dust monitoring at DMS-9 No. 26 Kowloon City Road has been suspended since March 2014 due to denied access by the occupant.

Station DMS-10 Chat Ma Mansion

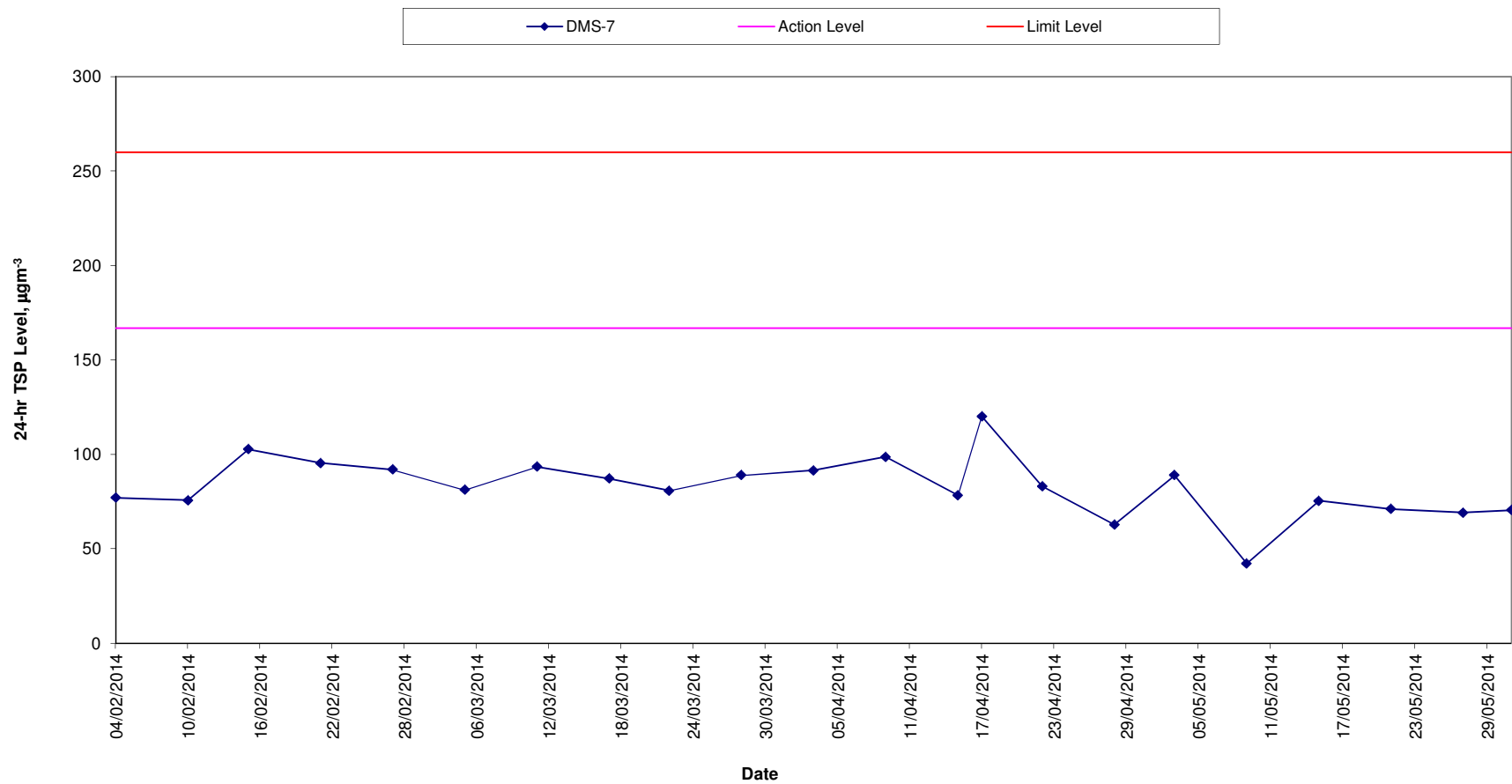
| Start | | Finish | | Weather | Filter Weight (g) | | Elapsed Time Reading | | Sampling Time (hrs) | Flow Rate (m ³ /min) | | Average | TSP Conc. (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) | Observations / Remarks | Sampler ID | Filter ID |
|-----------|------|-----------|------|---------|-------------------|--------|----------------------|---------|---------------------|---------------------------------|-------|---------|--------------------------------|-----------------------------------|----------------------------------|-------------------------------|------------|-----------|
| Date | Time | Date | Time | | Initial | Final | Initial | Final | | Initial | Final | | | | | | | |
| 03-May-14 | 8:00 | 04-May-14 | 8:00 | Cloudy | 2.7716 | 2.9191 | 2797.20 | 2821.20 | 24.00 | 1.21 | 1.21 | 1.21 | 85 | 170.4 | 260 | Construction work in progress | 3573 | 3165 |
| 09-May-14 | 8:30 | 10-May-14 | 8:30 | Rainy | 2.7633 | 2.8562 | 2821.20 | 2845.20 | 24.00 | 1.20 | 1.20 | 1.20 | 54 | 170.4 | 260 | Construction work in progress | 3573 | 3195 |
| 15-May-14 | 9:28 | 16-May-14 | 9:28 | Fine | 2.8301 | 2.9617 | 2845.20 | 2869.20 | 24.00 | 1.20 | 1.20 | 1.20 | 76 | 170.4 | 260 | Construction work in progress | 3573 | 3263 |
| 21-May-14 | 9:30 | 22-May-14 | 9:30 | Rainy | 2.8293 | 2.9411 | 2869.20 | 2893.20 | 24.00 | 1.20 | 1.20 | 1.20 | 65 | 170.4 | 260 | Construction work in progress | 3573 | 3281 |
| 27-May-14 | 9:25 | 28-May-14 | 9:25 | Sunny | 2.8208 | 2.9419 | 2893.20 | 2917.2 | 24.00 | 1.20 | 1.20 | 1.20 | 70 | 170.4 | 260 | Construction work in progress | 3573 | 3373 |
| 31-May-14 | 8:00 | 01-Jun-14 | 8:00 | Sunny | 2.8306 | 2.9511 | 2917.20 | 2941.2 | 24.00 | 1.20 | 1.20 | 1.20 | 70 | 170.4 | 260 | Construction work in progress | 3573 | 3391 |
| | | | | | | | | | | | | | Minimum | 54 | | | | |
| | | | | | | | | | | | | | Average | 70 | | | | |
| | | | | | | | | | | | | | Maximum | 85 | | | | |

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

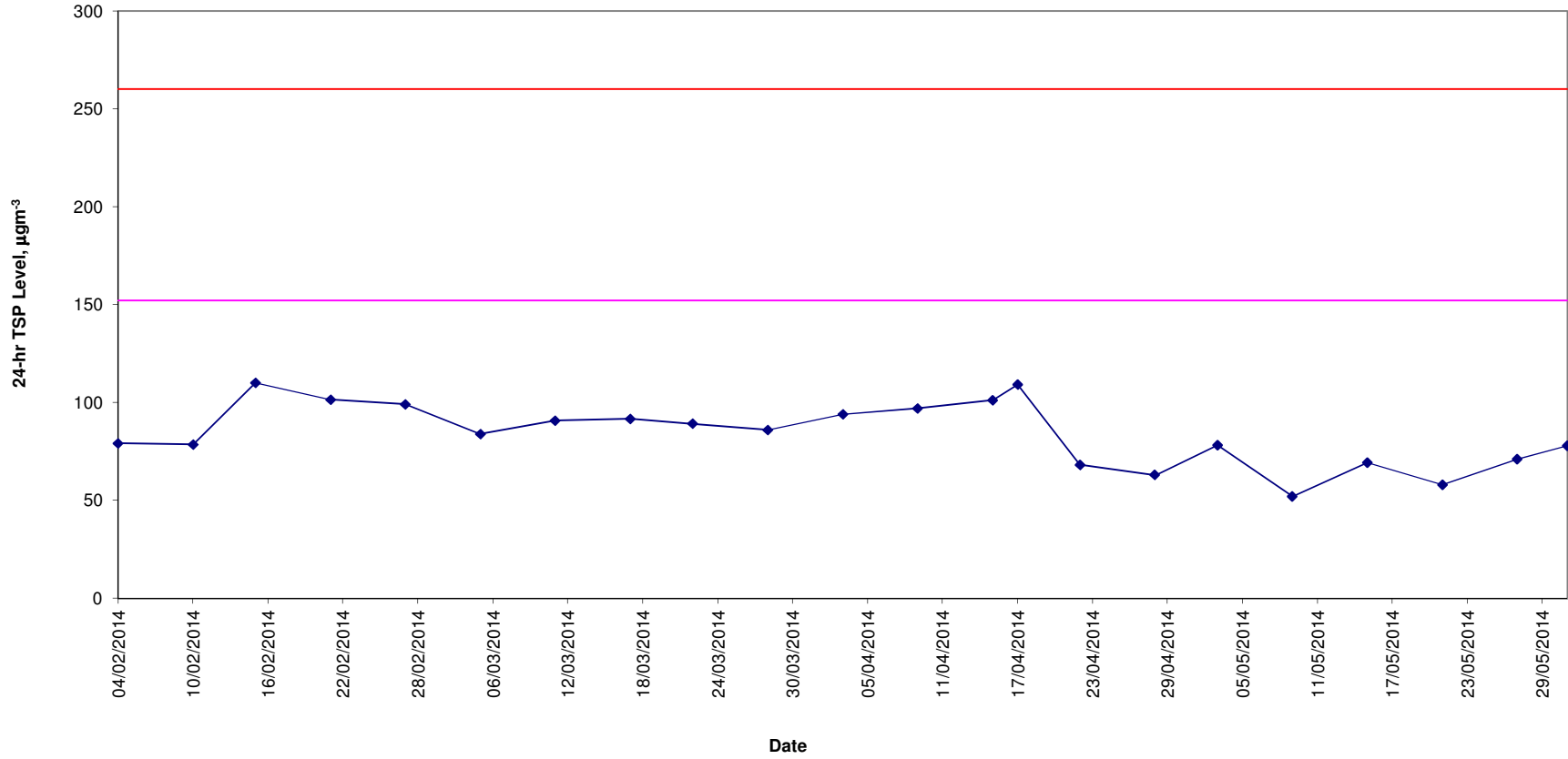
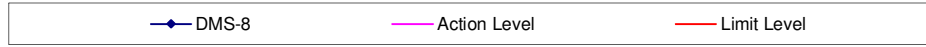
◆ DMS-6 ◆ Action Level ◆ Limit Level



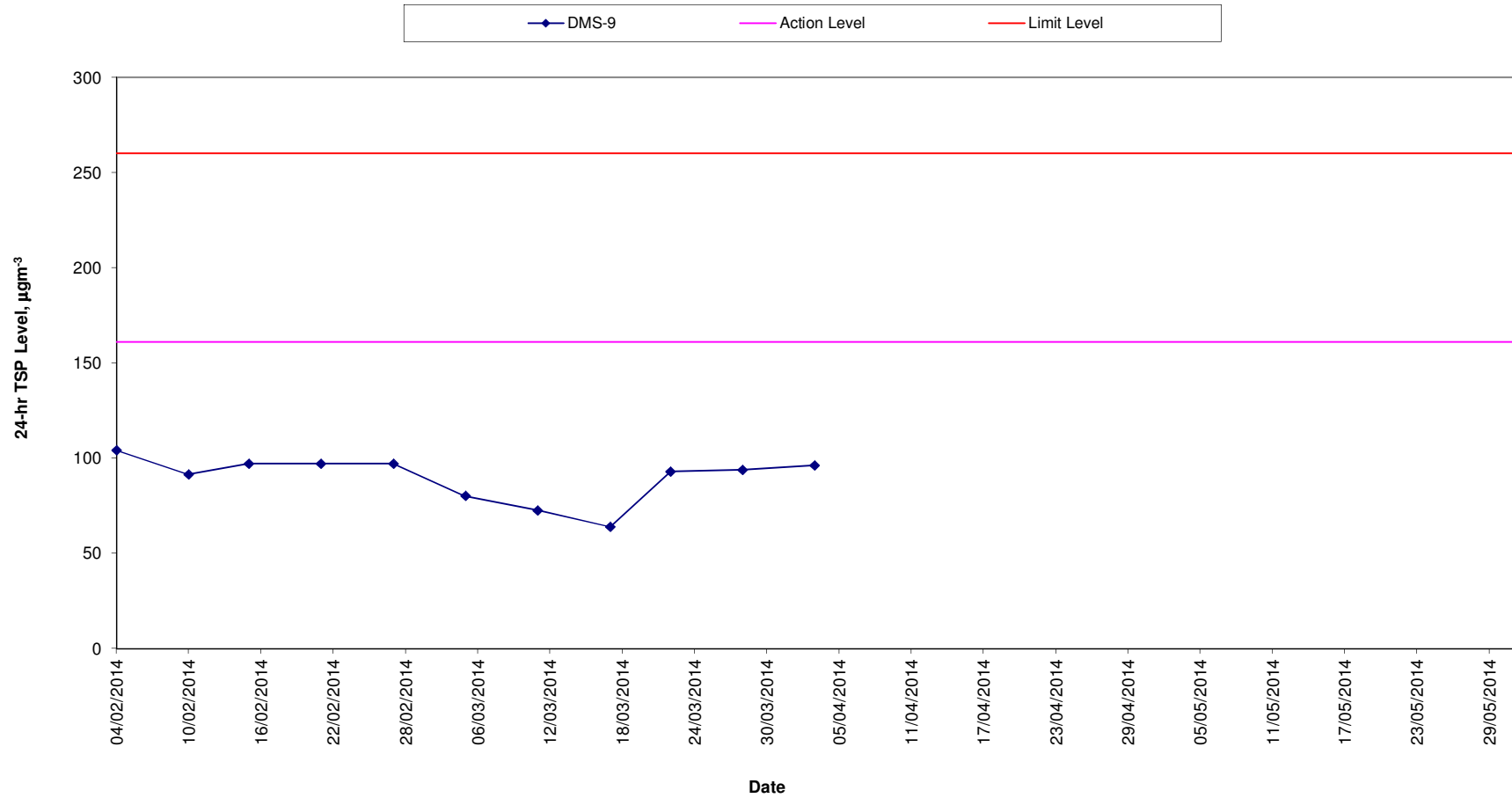
Construction Dust Monitoring Results for the Past 4 Months DMS- 7 (Parc 22)



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

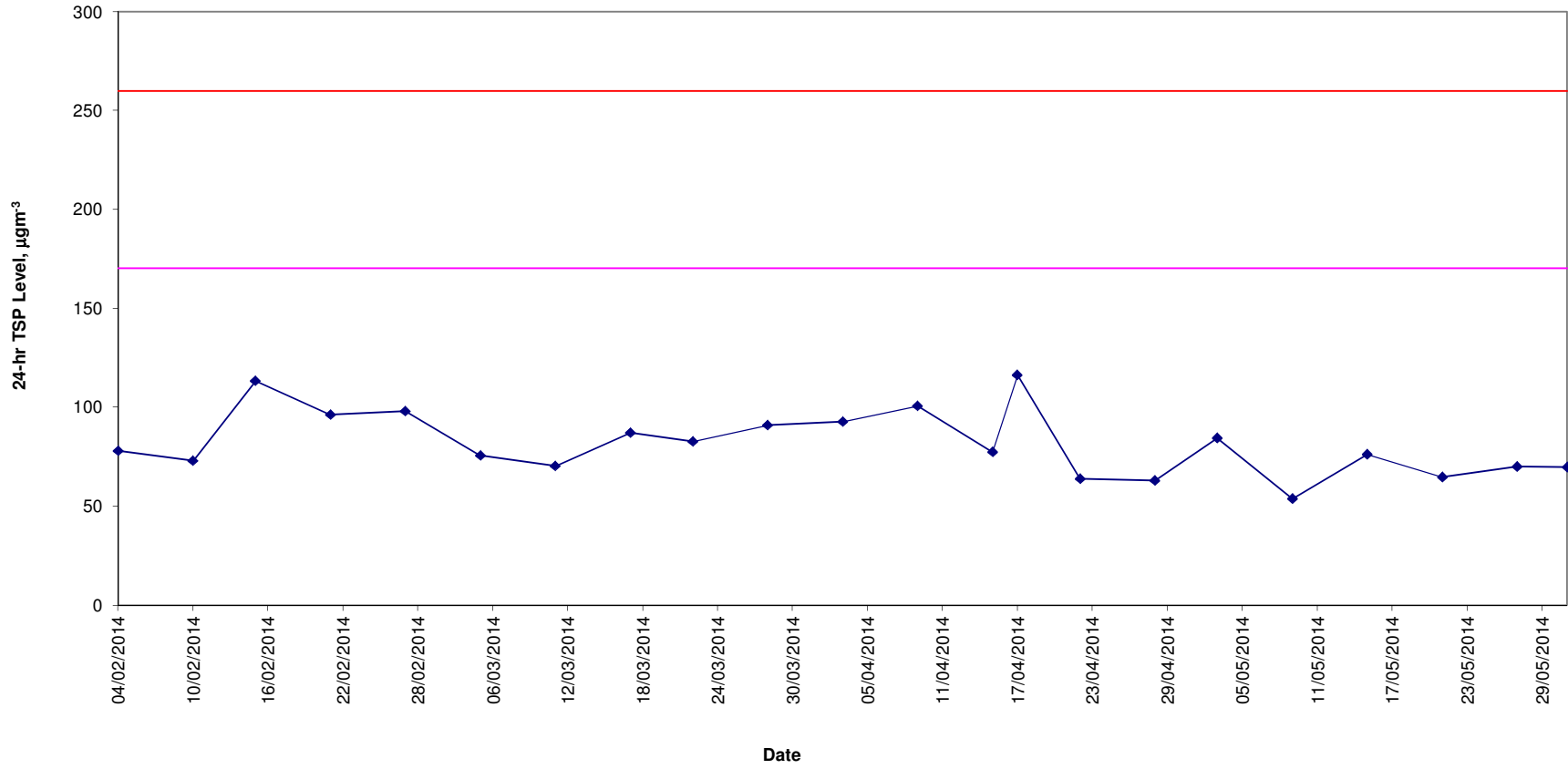


Construction Dust Monitoring Results for the Past 4 Months DMS-9 (No. 26 Kowloon City Road)



Remarks: 24-hour averaged dust monitoring has been suspended since March 2014 due to denied access by the occupant of No. 26 Kowloon City

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

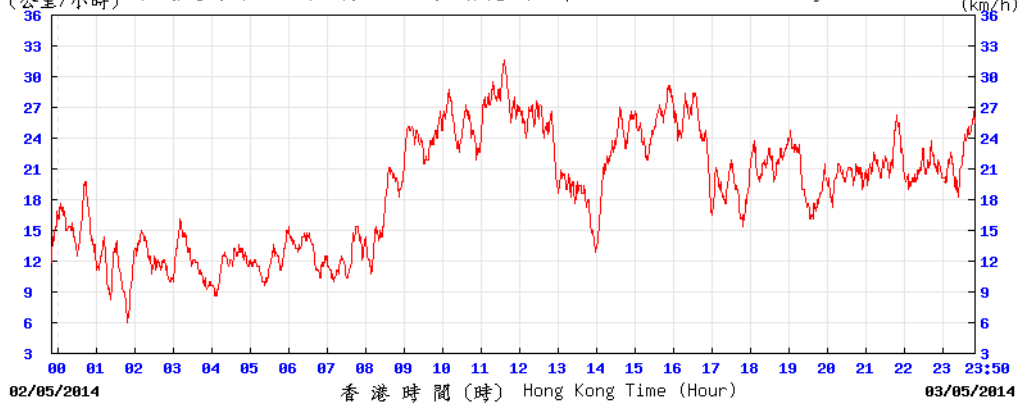


Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

3- 4 May 2014

Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 3 日 23 時 50 分更新) (Updated at 23:50H on 3 May 2014)

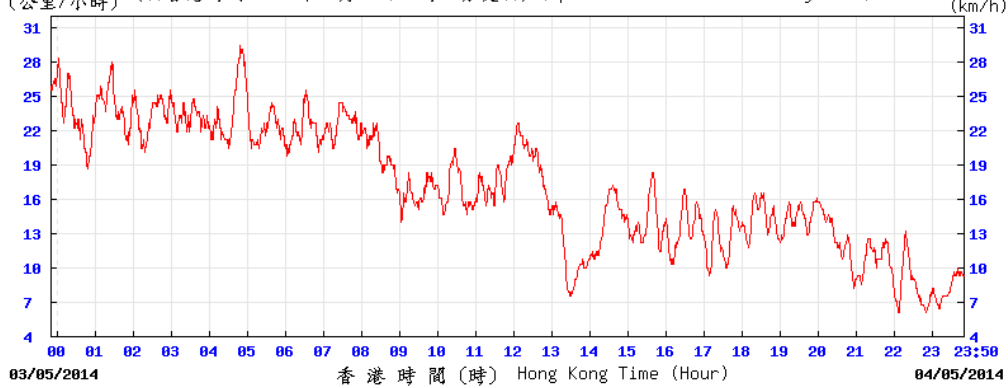


SEC

© 香港天文台 Hong Kong Observatory

Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 4 日 23 時 50 分更新) (Updated at 23:50H on 4 May 2014)



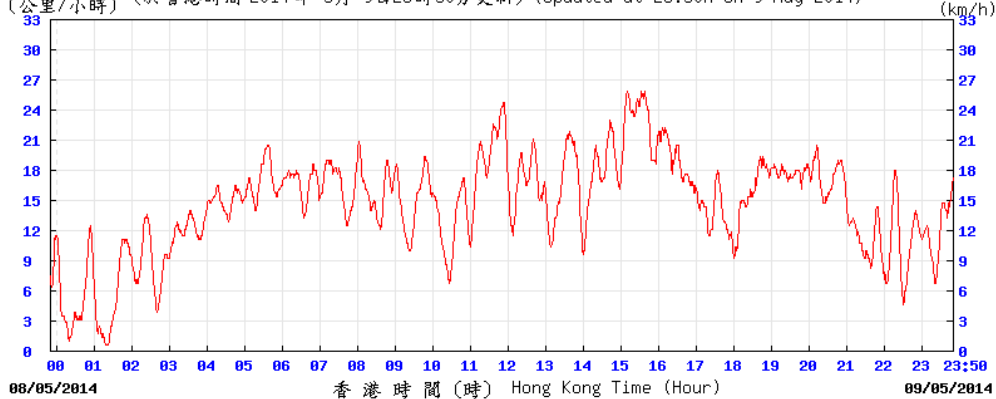
SEC

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9 - 10 May 2014

Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 9 日 23 時 50 分更新) (Updated at 23:50H on 9 May 2014)

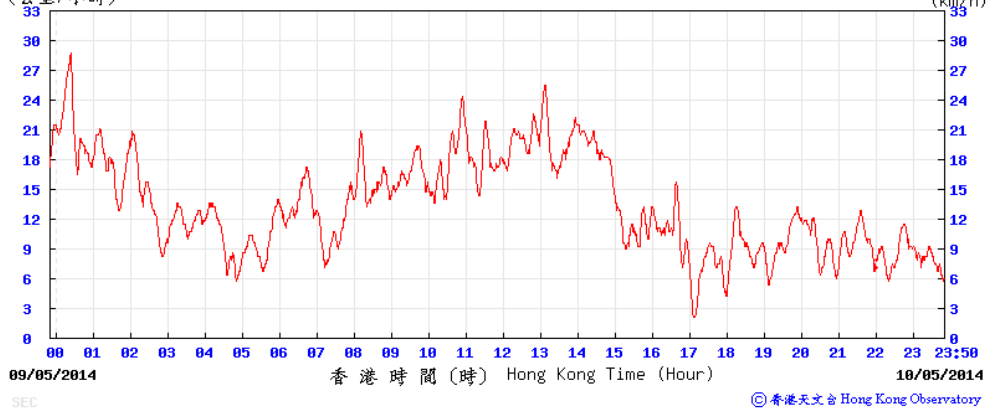


SEC

© 香港天文台 Hong Kong Observatory

Wind Speed:

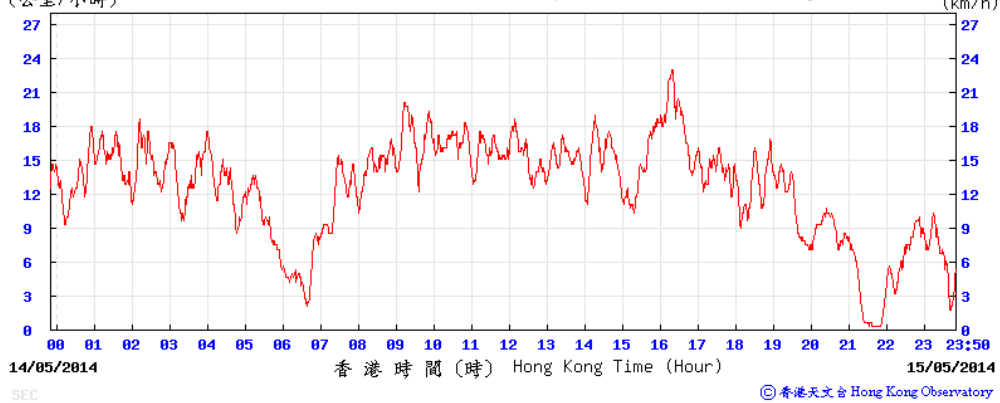
(公里/小時) (於香港時間 2014 年 5 月 10 日 23 時 50 分更新) (Updated at 23:50H on 10 May 2014)



15 – 16 May 2014

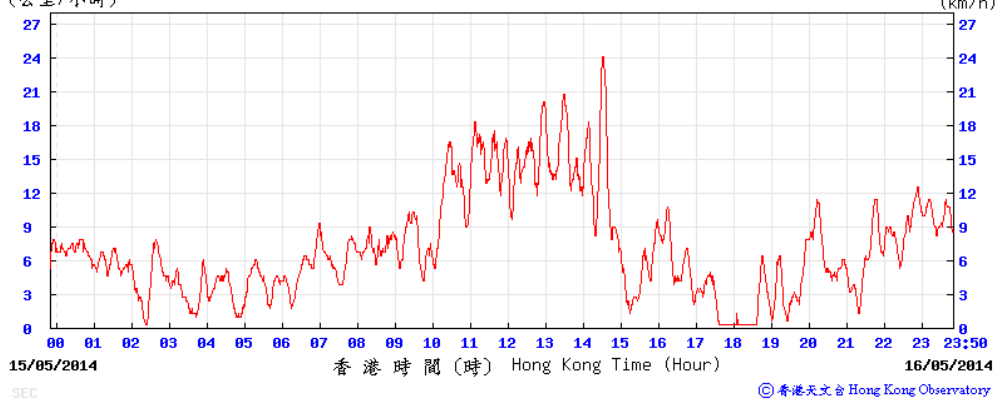
Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 15 日 23 時 50 分更新) (Updated at 23:50H on 15 May 2014)



Wind Speed:

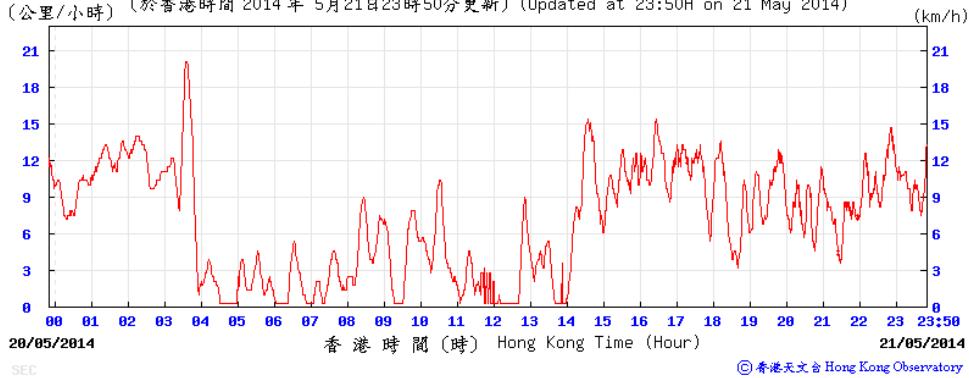
(公里/小時) (於香港時間 2014 年 5 月 16 日 23 時 50 分更新) (Updated at 23:50H on 16 May 2014)



21 – 22 May 2014

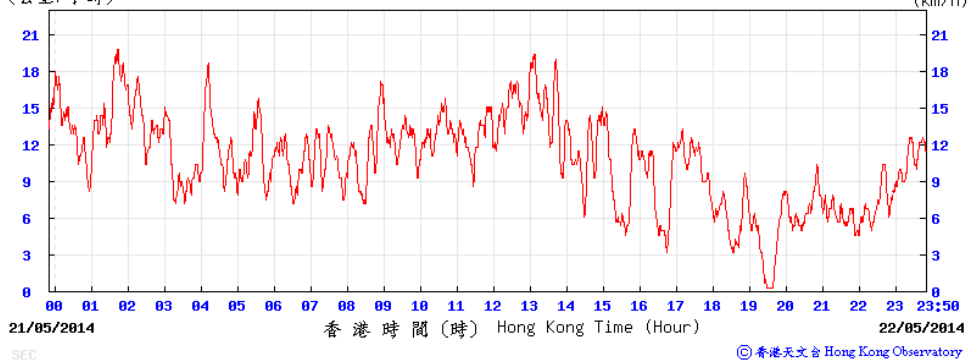
Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 21 日 23 時 50 分更新) (Updated at 23:50H on 21 May 2014)



Wind Speed:

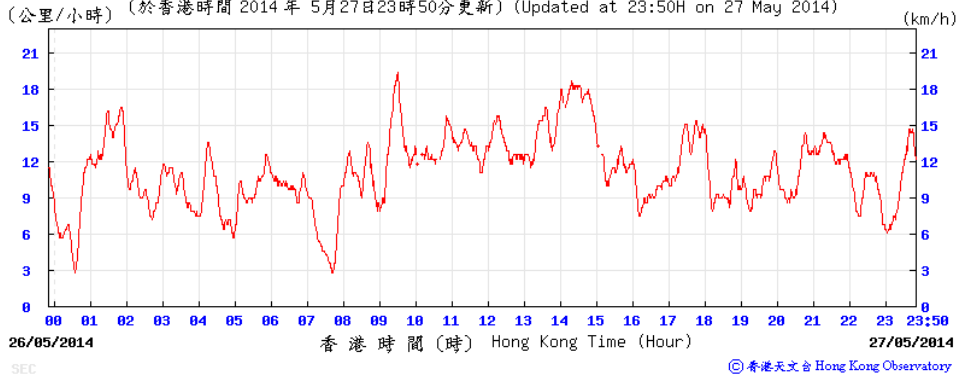
(公里/小時) (於香港時間 2014 年 5 月 22 日 23 時 50 分更新) (Updated at 23:50H on 22 May 2014)



27 – 28 May 2014

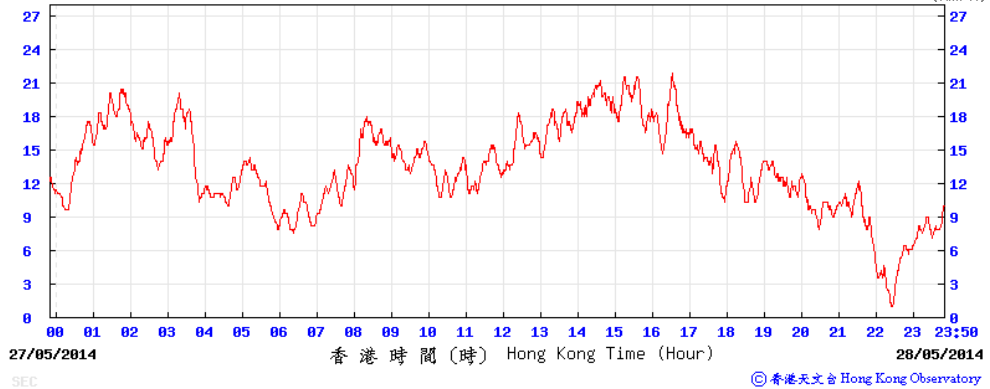
Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 27 日 23 時 50 分更新) (Updated at 23:50H on 27 May 2014)



Wind Speed:

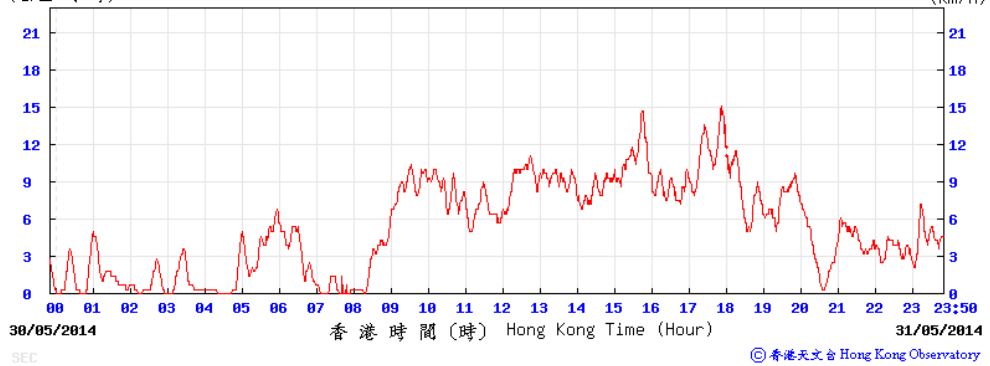
(公里/小時) (於香港時間 2014 年 5 月 28 日 23 時 50 分更新) (Updated at 23:50H on 28 May 2014)



31 May – 1 June 2014

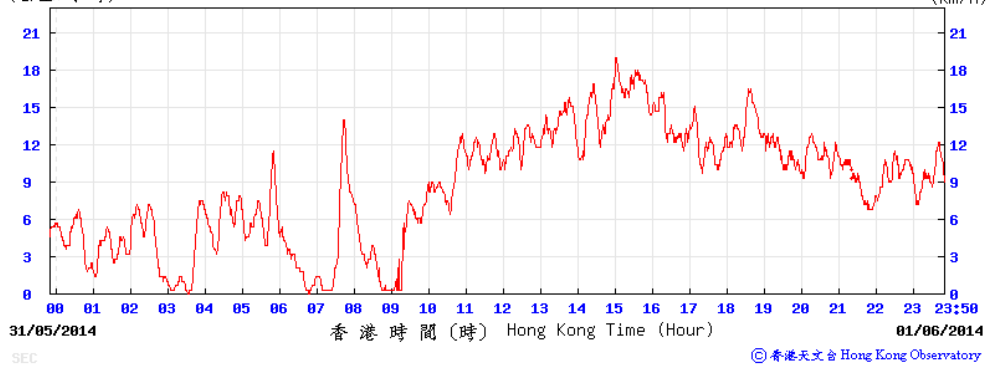
Wind Speed:

(公里/小時) (於香港時間 2014 年 5 月 31 日 23 時 50 分更新) (Updated at 23:50H on 31 May 2014)



Wind Speed:

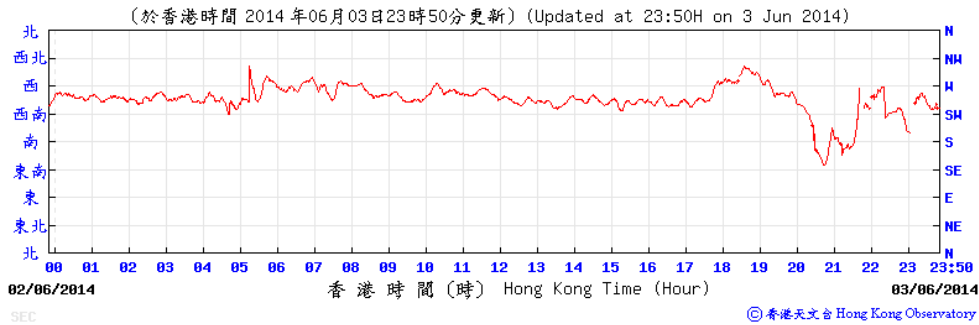
(公里/小時) (於香港時間 2014 年 6 月 1 日 23 時 50 分更新) (Updated at 23:50H on 1 Jun 2014)



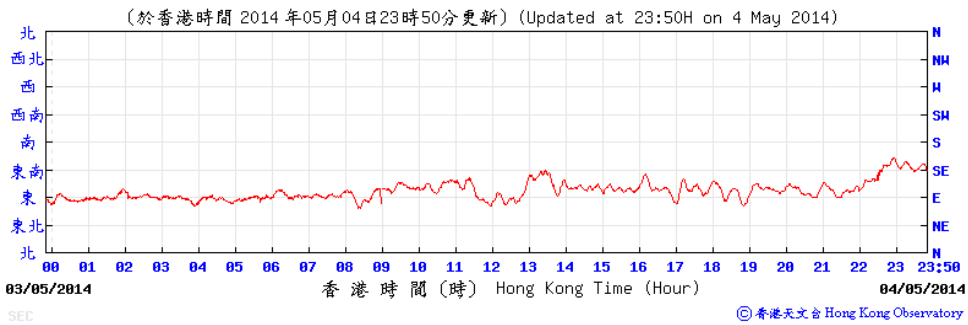
Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

3- 4 May 2014

Wind Direction:

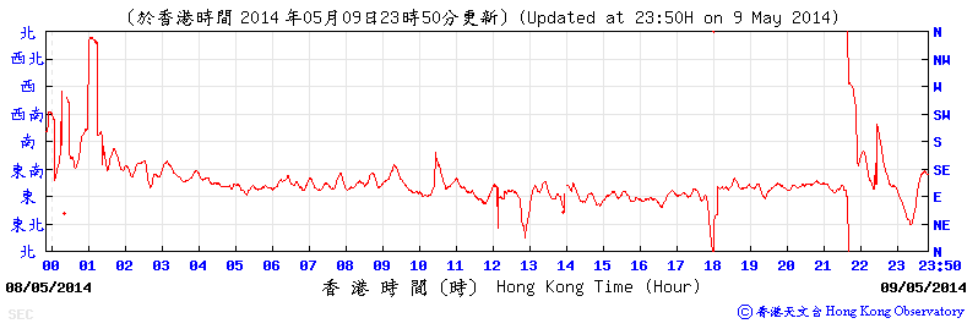


Wind Direction:

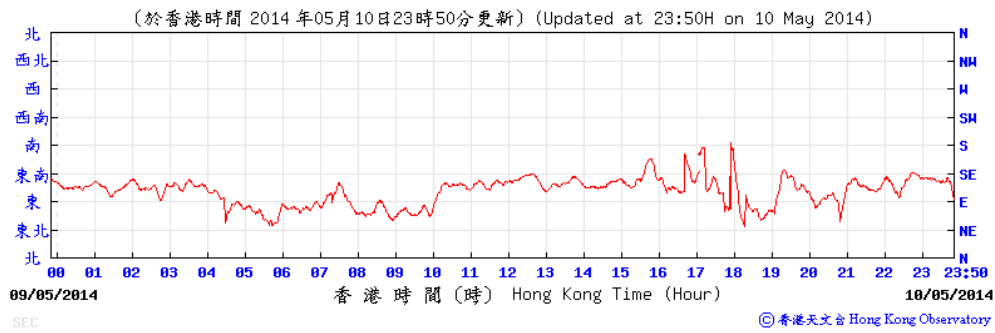


9 - 10 May 2014

Wind Direction:

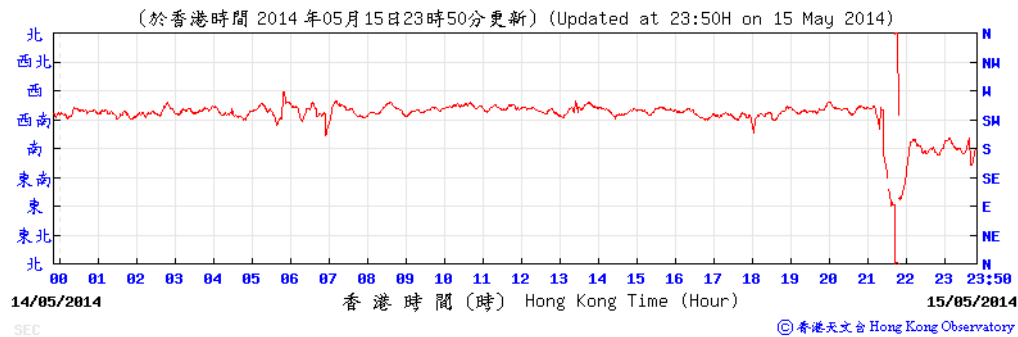


Wind Direction:

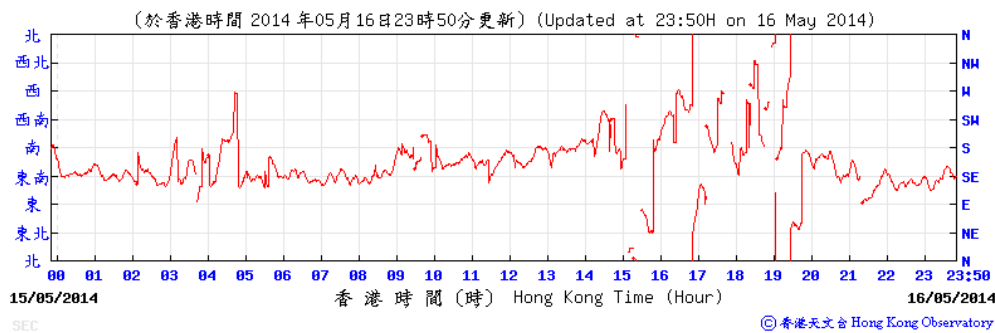


15 – 16 May 2014

Wind Direction:

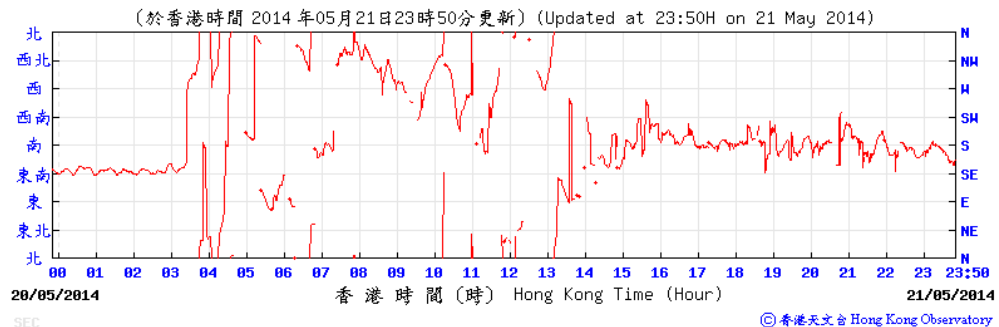


Wind Direction:

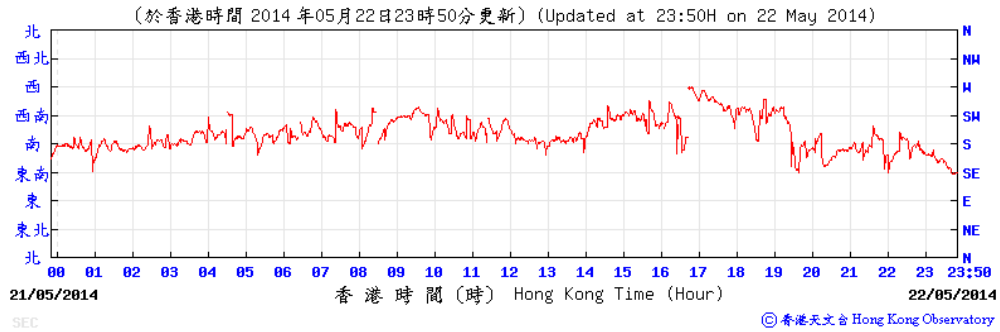


21 – 22 May 2014

Wind Direction:

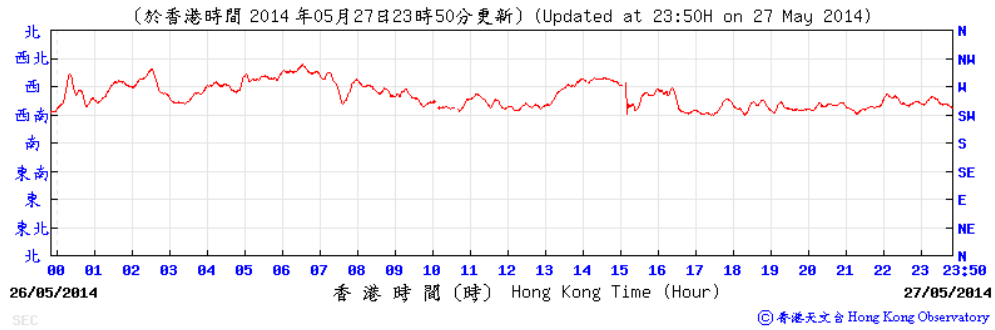


Wind Direction:

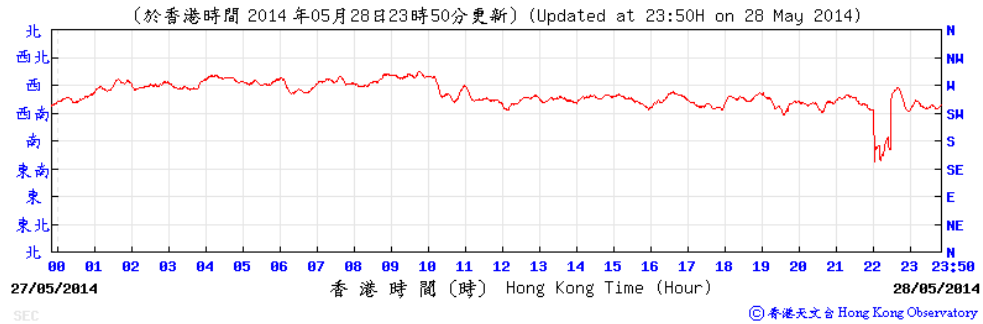


27 – 28 May 2014

Wind Direction:



Wind Direction:



Annex K

Waste Flow Table

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 (in '000m ³) |
|-----------|--|--|--------------------------|--------------------------|---|--|---|----------------------------|--------------------------|---------------------------------|---|---|
| | 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 '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) | |
| 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 |
| Sub-total | 80.786 | 0.000 | 0.000 | 0.000 | 0.000 | 80.786 | 0.000 | 0.255 | 1.701 | 1.015 | 0.496 | 0.000 |
| Total | 216.370 | 0.000 | 0.605 | 0.000 | 0.064 | 215.700 | 12.800 | 1.192 | 12.842 | 1.735 | 4.112 | 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 L

(Not Used)

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 |
| Overall Total | 0 | 0 |

Appendix C

**18th 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

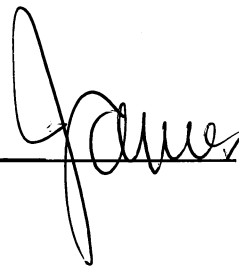
[Period from 1 to 31 May 2014]

Works Contract 1101

Ma On Shan Modification Works

(June 2014)

Certified by: James Choi

A handwritten signature in black ink, appearing to read 'James', written over a horizontal line.

Position: Environmental Team Leader

Date: 13 June 2014

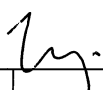

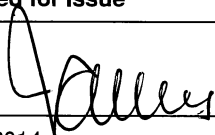
SCL Contract No. 1101

Ma On Shan Line Modification Works

Monthly EM&A Report (SCL) (May 2014)

for

Sun Fook Kong Joint Venture

| Prepared By | Checked By | Approved for Issue |
|--|---|--|
| A Chan  | A Lee  | J Choi  |
| Version | 0 | Date |
| | | 3 June 2014 |

The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable professional skill and judgment, and based upon the information that was available to us. These interpretations and recommendations are not necessarily relevant to any aspect outside the restricted requirements of the brief. This report has been prepared for the sole and specific use of our client and ANewR Consulting Limited accepts no responsibility for its use by others.

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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/E) 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 27 May 2014. 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

No general refuse and inert C&D materials were disposed of in the reporting month. No chemical waste was disposed of 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 (SFJKJV), 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 18th 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 May 2014.

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/E 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 | 32.50 m ³ |
| Inert C&D materials recycled | 0 | 0 |
| Non-inert C&D materials disposed | 0 | 0 |
| Non-inert C&D materials recycled | 0 | 3.00 m ³ |
| General waste disposed of to NENT Landfill | 0 | 224.50 m ³ |
| Chemical waste disposed of to CWTC or collected by licenced collector | 0 | 240.00 kg |

4. SITE INSPECTION

Weekly site inspections were carried out at the sites on 5, 12, 19 and 27 May 2014. The joint site inspection with IEC was carried out on 27 May 2014. 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

| Date | Item | ET's Observations and Recommendations | Follow-up Action |
|-------------|-------------|--|-------------------------|
| 5 May 2014 | -- | No site observation | NA |
| 12 May 2014 | -- | No site observation | NA |
| 19 May 2014 | -- | No site observation | NA |
| 27 May 2014 | -- | No site observation | NA |

Remark:

No construction activity had been carried out at To Shek Storage Yard and Shek Mun Storage Yard.

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

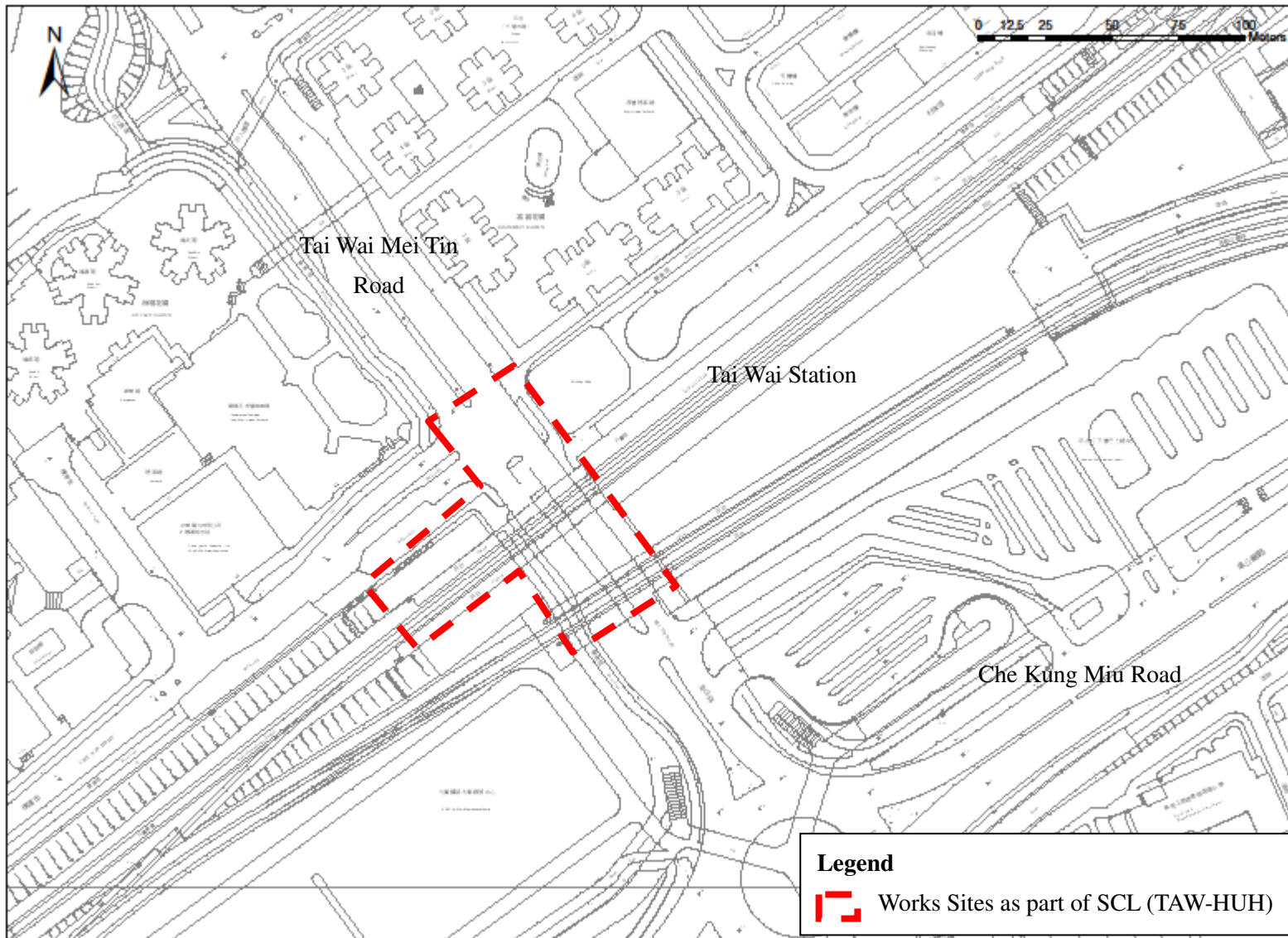
Neither Notification of Summon nor successful prosecution was received by the Contractor during the reporting month.

7. FUTURE KEY ISSUES

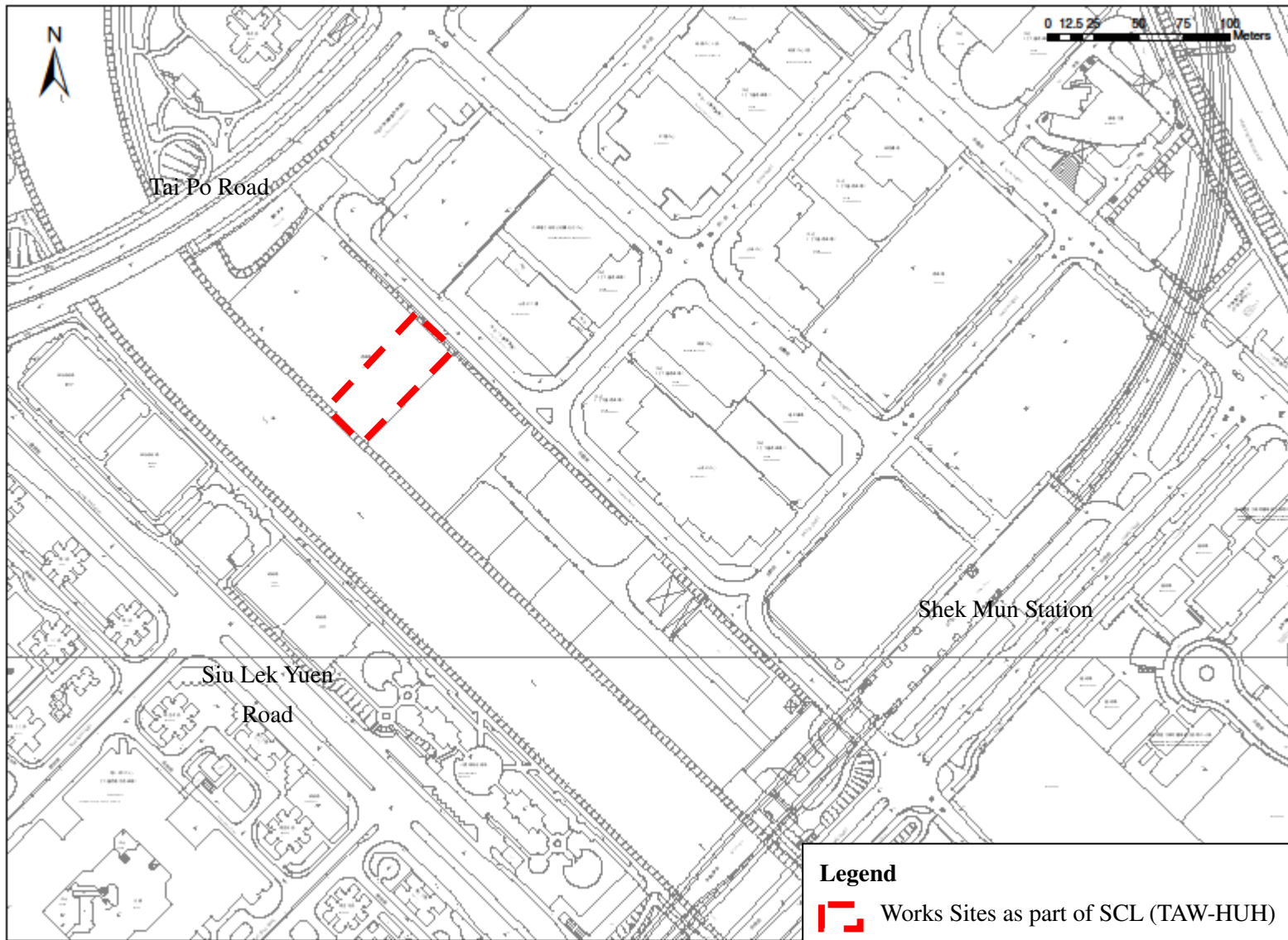
Construction works were completed at Tai Wai Mei Tin Road in September 2013.

APPENDIX A

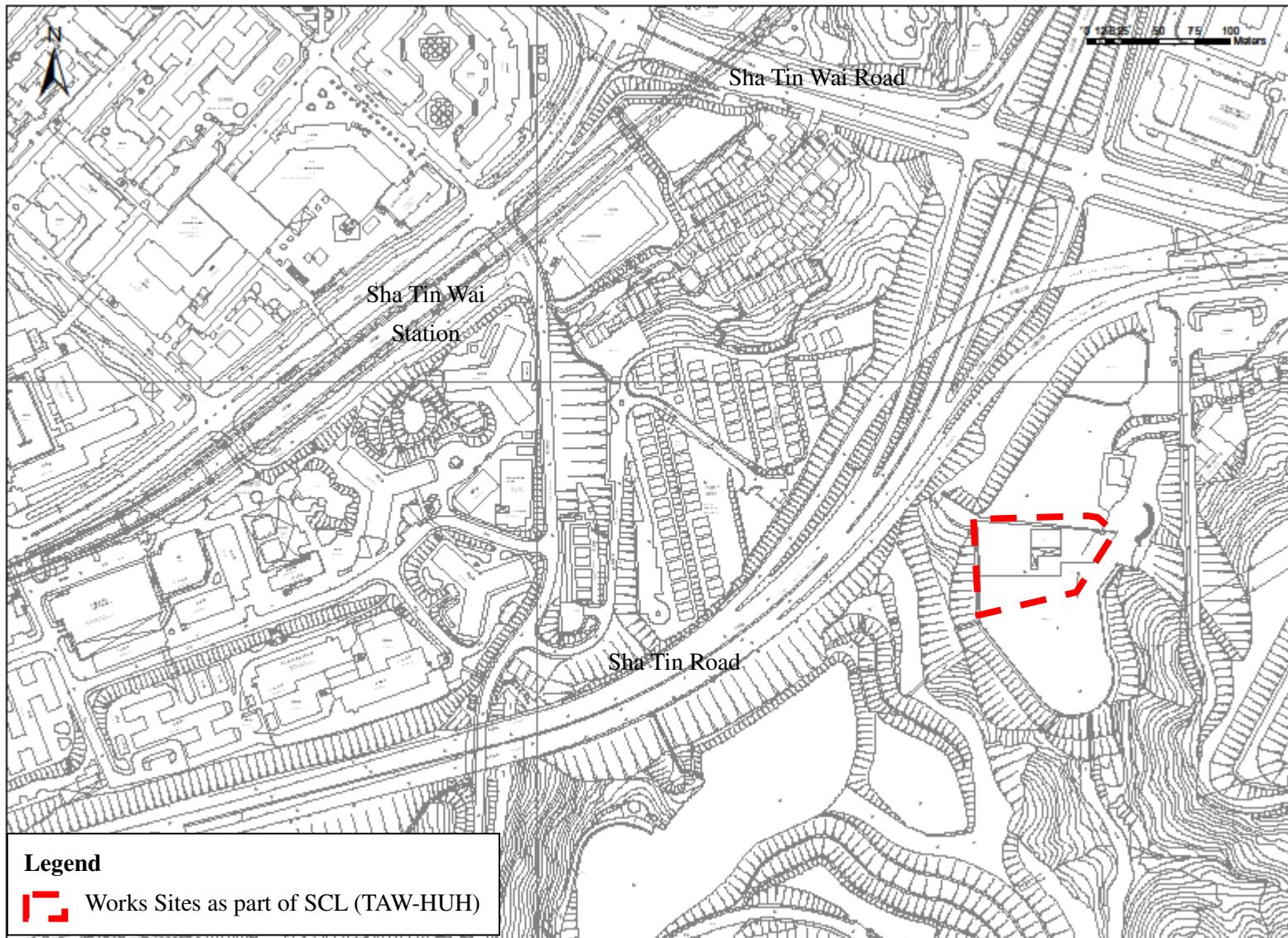
LOCATION PLAN OF WORKS AREA AND STORAGE YARD



| | | | |
|----------------------|-------------------------|-------|-------------|
| SCALE | N.T.S. | DATE | 4 June 2013 |
| CHECK | LYMA | DRAWN | YSWE |
| Ref. | FIGURE NO. | | REV |
| SCL Contract No.1101 | App A (Sheet 1 of 3) | | 1 |



| | | | |
|----------------------|-------------------------|-------|-------------|
| SCALE | N.T.S. | DATE | 4 June 2013 |
| CHECK | LYMA | DRAWN | YSWE |
| Ref. | FIGURE NO. | | REV |
| SCL Contract No.1101 | App A (Sheet 2 of 3) | | 1 |



| | | | |
|----------------------|-------------------------|-------|-------------|
| SCALE | N.T.S. | DATE | 4 June 2013 |
| CHECK | LYMA | DRAWN | YSWE |
| Ref. | FIGURE NO. | | REV |
| SCL Contract No.1101 | App A (Sheet 3 of 3) | | 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 | | | | | | | | | | | | |
| Tai Wai Mei Tin Road | Noise Barrier Installation Work | | | I | I | I | I | I | I | I | I | I | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note:

1. Abbreviation:

I Engineering Possession (2:00 to 4:00)

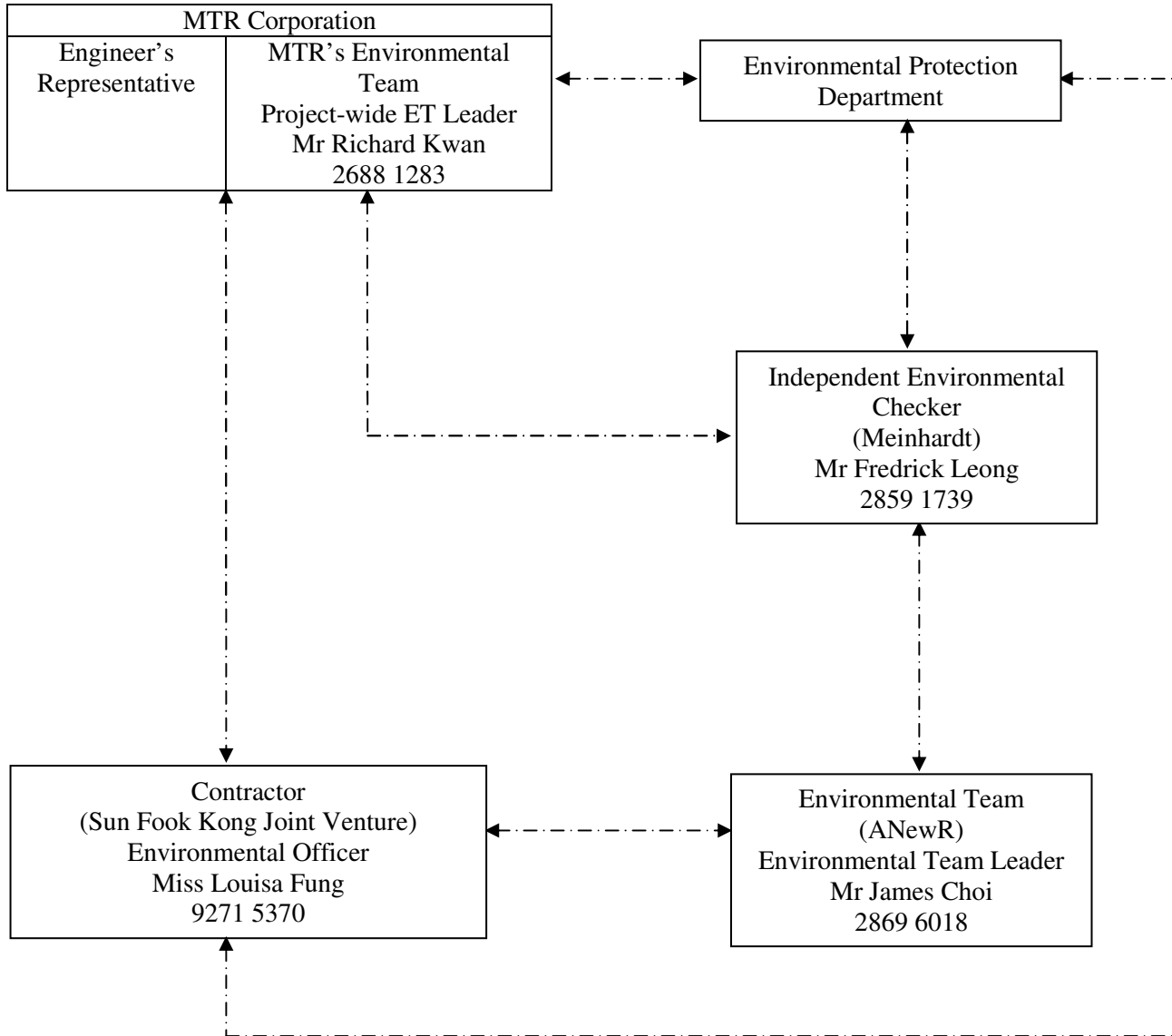
2 No construction activity had been carried out at To Shek Storage Yard and Shek Mun Storage Yard.

APPENDIX C

ORGANISATION CHART OF ENVIRONMENTAL MANAGEMENT

Appendix C Organisation Chart of Environmental Management

Project Organization Chart



----- Line of communication

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/E | 19 March 2014 | 4 April 2014 | 4 April 2014 | N/A |
| Construction Noise Permit | | | | | |
| Tai Wai Station (At Tai Wai Mei Tin Road) | GW-RN0804-13 | 16 December 2013 | 13 January 2014 | 18 February 2014 | 17 August 2014 |
| 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/E

| EP Condition | Submission | Date of Submission |
|---------------------|-------------------------------------|---------------------------|
| Condition 3.4 | Monthly EM&A Report (April 2014) | 14 May 2014 |

APPENDIX E
WASTE FLOW TABLE

Waste Flow Table for 2012 (year) (in cu. meter) for SCL

| Month | Total Quantity Generated | Actual Quantities of Inert C&D Materials Generated Monthly | | | | Actual Quantities of Other C&D Wastes Generated Monthly | | |
|-------------------------|--------------------------|--|------------------------|--------------------------|-------------------------|---|----------------------------------|------------------------|
| | | 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 | | | | | | | | |
| Sub-total | | | | | | | | |
| 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 |
| 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 m³ 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 | Total Quantity Generated | Actual Quantities of Inert C&D Materials Generated Monthly | | | | Actual Quantities of Other C&D Wastes Generated Monthly | | |
|-------------------------|--------------------------|--|------------------------|--------------------------|-------------------------|---|----------------------------------|------------------------|
| | | 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 |
| Sub-total | 13.00 | 0.00 | 0.00 | 0.00 | 13.00 | 3.00 | 107.50 | 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 |
| 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 m³ 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 | Total Quantity Generated | Actual Quantities of Inert C&D Materials Generated Monthly | | | | Actual Quantities of Other C&D Wastes Generated Monthly | | |
|-------------------------|--------------------------|--|------------------------|--------------------------|-------------------------|---|----------------------------------|------------------------|
| | | 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 | | | | | | | | |
| Sub-total | 32.50 | 0.00 | 0.00 | 0.00 | 32.50 | 3.00 | 224.50 | 240.00 |
| July | | | | | | | | |
| August | | | | | | | | |
| September | | | | | | | | |
| October | | | | | | | | |
| November | | | | | | | | |
| December | | | | | | | | |
| Cumulative Total | 32.50 | 0.00 | 0.00 | 0.00 | 32.50 | 3.00 | 224.50 | 240.00 |

- 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 m³ 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 | <p><u>Good Site Practices</u></p> <p>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.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> 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 |
|---|---------------|---|---|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | <ul style="list-style-type: none"> No on-site burning of waste; Waste and refuse in appropriate receptacles. | | | | | | |
| Landscape & Visual (Construction Phase) | | | | | | | | |
| S6.9.3 | LV1 | <p>The following good site practices and measures for minimization and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> 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. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of Retained Trees</u></p> | Minimize visual & landscape impact | Contractor | Within Project Site | Contraction stage | 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 |
|----------|---------------|--|---|--------------------------------|--------------------------|--|---|--------|
| | | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> <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 | ^ |

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

* 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 | <ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria | ^ |
| S7.6.5 | D2 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> 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; When there are open excavation and reinstatement | Minimize dust impact at the nearby sensitive receivers | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIA criteria | ^ |

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

N/A Not Applicable in the reporting month

* 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 |
|----------|---------------|--|---|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | <p>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;</p> <ul style="list-style-type: none"> • 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 enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or by | | | | | | |

Remarks:

^ Implement mitigation measure in the reporting month

x Non-compliance of mitigation measure

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|-------------------------------|---------------|---|---|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | <p>pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</p> <ul style="list-style-type: none"> 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. | | | | | | |
| Construction Noise (Airborne) | | | | | | | | |
| S8.3.6 | N1 | <p>Implement the following good site practices:</p> <ul style="list-style-type: none"> 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 | Control construction airborne noise | Contractor | All construction sites | Construction stage | • Annex 5, TM-EIA | ^ |

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|----------|---------------|---|---|--------------------------------|--|---------------------------------|---|--------|
| | | <p>in intermittent use should be shut down between work periods or should be throttled down to a minimum;</p> <ul style="list-style-type: none"> 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. | | | | | | |
| 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 | ^ |
| 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 | Contractor | All | Construction | • Annex 5, TM-EIA | ^ |

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|------------------------------------|---------------|--|--|--------------------------------|--|---------------------------------|--|--------|
| | | | levels of plant items | | construction sites where practicable | 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 | • 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> <ul style="list-style-type: none"> 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 | To minimize water quality impact from construction site runoff and general construction activities | Contractor | All construction sites where practicable | Construction stage | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water | ^ |

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|----------|---------------|---|---|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | <p>construction.</p> <ul style="list-style-type: none"> 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 0.1m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5m³/s the basin would be 150m³. The detailed design of the sand/silt traps shall be undertaken by the constructor 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 surface should be covered by tarpaulin or other means. The overall slope of the site should be kept to a | | | | | | |

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|----------|---------------|---|---|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 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. | | | | | | |

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| | | <ul style="list-style-type: none"> 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 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 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. | | | | | | |

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|----------|---------------|---|---|--------------------------------|--|---------------------------------|---|--------|
| | | <ul style="list-style-type: none"> 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. Adopt best management practices. | | | | | | |
| S10.7.1 | W3 | <u>Sewage Effluent</u> <ul style="list-style-type: none"> 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 | To minimize water quality from sewage effluent | Contractor | All construction sites where practicable | Construction stage | <ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water | ^ |

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|---------------------------------------|---------------|---|---|--------------------------------|--|---------------------------------|--|--------|
| | | disposal and maintenance. | | | | | | |
| S10.7.1 | W7 | <p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water | ^ |
| Waste Management (Construction Waste) | | | | | | | | |
| S11.4.1.1 | WM1 | <p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> 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 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 | 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 | <ul style="list-style-type: none"> DEVB TC(W) No.6/2010 | ^ |

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|----------|---------------|---|---|--------------------------------|--------------------------|---------------------------------|--|--------|
| | | 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. | | | | | | |
| S11.5.1 | WM2 | <u>Construction and Demolition Material</u> <ul style="list-style-type: none"> 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 | 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 | <ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No.19/2005 | ^ |

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|----------|---------------|---|---|--------------------------------|--------------------------|---------------------------------|--|--------|
| | | <p>to ensure that the disposal of C&D materials are properly documents and verified; and</p> <ul style="list-style-type: none"> 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. | | | | | | |
| S11.5.1 | WM3 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> 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 | 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 | <ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No.19/2005 | ^ |

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|----------|---------------|--|--|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | 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> <ul style="list-style-type: none"> 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 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. | 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 | WM7 | <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> 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 | Control the chemical waste and ensure proper storage, handling and disposal. | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> Waste Disposal (Chemical Waste General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | ^ |

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|--------------|---------------|---|---|--------------------------------|--------------------------|---------------------------------|--|--------|
| | | 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 | <ul style="list-style-type: none"> EIAO Guidance Note No.4/2010 TM-EIAO | ^ |
| S14.2-14.4 | EM2 | <ol style="list-style-type: none"> 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 | <ul style="list-style-type: none"> EIAO Guidance Note No. 4/2010 TM-EIAO | ^ |

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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

**17th EM&A Report for Works Contract 1111 –
Hung Hom North Approach Tunnel**

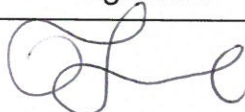

Gammon- Kaden SCL 1111 Joint Venture

**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
May 2014**

June 2014

| | Name | Signature |
|---------------------------------|---|---|
| Prepared & Checked: | Isabella Yeung |  |
| Reviewed, Approved & Certified: | Y T Tang (Contractor's Environmental Team Leader) |  |

Version: 0

Date: 12 June 2014

Disclaimer

This report is prepared for Gammon-Kaden SCL1111 JV and is given for its sole benefit in relation to and pursuant to SCL1111 and may not be disclosed to, quoted to or relied upon by any person other than Gammon-Kaden SCL1111 JV without our prior written consent. No person (other than Gammon-Kaden SCL1111 JV) into whose possession a copy of this report comes may rely on this report without our express written consent and Gammon-Kaden SCL1111 JV may not rely on it for any purpose other than as described above.

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| Appendix K | Monthly Summary Waste Flow Table |

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 31 May 2014. As informed by the Contractor, major activities in the reporting period were:

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, slope cutting, cable duct work, cable detection,
- Construction of man hole, drainage, reinforced concrete structure, emergency vehicular access, temporary pedestrian walkway, haul road,
- Trial pit, trial trench, pre-drilling, piling works, post-grouting, abutment works,
- Erection of hoarding, steel platform and deck, temporary bridge, scaffolding platform,
- Demolition of STA building, overhead line equipment shelter,
- Trimming of retaining wall,
- Tie back installation,
- 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 was received in the reporting month.

No exceedance of Limit Level of noise was recorded in the reporting month.

Continuous Noise Monitoring

As the construction works identified by the Construction Noise Mitigation Measures Plan (CNMMP) to be potentially causing exceedance of noise criteria have not commenced during this reporting month, no continuous noise monitoring was carried out.

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, slope cutting, cable duct work, cable detection, road diversion,
- Construction of man hole, drainage, reinforced concrete structure, emergency vehicular access, temporary pedestrian walkway, haul road,
- Trial pit, trial trench, pre-drilling, pilling works, post-grouting, abutment works,
- Erection of hoarding, steel platform and deck, temporary bridge, scaffolding platform,
- Demolition of STA building, overhead line equipment shelter,
- Trimming of retaining wall,
- Tie back installation,
- 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 seventeenth monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 1 to 31 May 2014.

1.2 Report Structure

1.2.1 This monthly EM&A Report is organised 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/E) was issued by Director of Environmental Protection (DEP) on 13 September 2013.
- 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, slope cutting, cable duct work, cable detection,
- Construction of man hole, drainage, reinforced concrete structure, emergency vehicular access, temporary pedestrian walkway, haul road,
- Trial pit, trial trench, pre-drilling, piling works, post-grouting, abutment works,
- Erection of hoarding, steel platform and deck, temporary bridge, scaffolding platform,
- Demolition of STA building, overhead line equipment shelter,
- Trimming of retaining wall,
- Tie back installation,
- 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 | Mr. Brian Kam | 9456 9541 | |
| 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/E | 4 Apr 2014 | - | Valid | - |
| Construction Noise Permit | | | | |
| GW-RE1243-13 | 17 Nov 2013 | 16 May 2014 | Valid | For E&M Works at PolyU Phase 8 |
| GW-RE1425-13 | 31 Dec 2013 | 30 Jun 2014 | Valid | For OLE Shelter Demolition Work near Homantin Siding |
| GW-RE0090-14 | 30 Jan 2014 | 29 Jul 2014 | Valid | For General and Re-provisioning Works at Hung Hom Station |
| GW-RE0116-14 | 01 Feb 2014 | 31 Jul 2014 | Valid | For E&M Works at Mong Kok East Station Concourse |
| GW-RE0226-14 | 10 Mar 2014 | 09 Sep 2014 | Valid | For Grouting Station Works at EWL8 |
| GW-RE0325-14 | 25 Mar 2014 | 31 May 2014 | Valid | For Plate Load Test at Ho Man Tin Maintenance Siding near Portal 1A |
| GW-RE0403-14 | 12 Apr 2014 | 11 Oct 2014 | Valid | Extension Hour for Works at NSL3-5 |
| GW-RE0408-14 | 11 Apr 2014 | 11 Jun 2014 | Valid until cancellation on 01 May 2014 | For ADMS and Hoarding Installation at NSL3-5 |
| GW-RE0421-14 | 24 Apr 2014 | 21 Jun 2014 | Valid | For 6m Hoarding Works at NSL9 |
| GW-RE0424-14 | 17 Apr 2014 | 14 Jun 2014 | Valid | For 6m Hoarding Erection at Sidetrack near Winslow Street |
| GW-RE0432-14 | 17 Apr 2014 | 16 Oct 2014 | Valid | For Cross Track Duct Installation at Oi Sen Path near Workfronts No. 5&6 |
| GW-RE0467-14 | 29 Apr 2014 | 15 Jun 2014 | Valid | For Steel Decking Erection Works for TB2 at Slip Roads adjoining Hong Chong Road and Chatham Road North |
| GW-RE0468-14 | 30 Apr 2014 | 18 Jun 2014 | Valid until cancellation on 24 May 2014 | For retaining Wall Modification Works and Hoarding Erection at Chatham Road North |
| GW-RE0455-14 | 01 May 2014 | 20 Jun 2014 | Valid | For ADMS and Hoarding Installation at NSL3-5 |
| GW-RE0492-14 | 07 May 2014 | 04 Jul 2014 | Valid | For Cross Track Duct Installation at Homantin Siding |
| GW-RE0495-14 | 13 May 2014 | 12 Jul 2014 | Valid | For Scaffolding and Hoarding Erection at Homantin and Oi Sen Path |
| GW-RE0536-14 | 24 May 2014 | 20 Jul 2014 | Valid | For Retaining Wall Modification Work and Hoarding Erection at Chatham Road North |
| GW-RE0495-14 | 28 May 2014 | 27 Nov 2014 | Valid | For E&M Works at PolyU Phase 8 |

| Permit / License No. / Notification/ Reference No. | Valid Period | | Status | Remarks |
|--|--------------|-------------|----------------|---|
| | From | To | | |
| 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 |
| WT00015606-2013 | 25 Apr 2013 | 30 Apr 2018 | Valid | 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 |
| 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 | - | Valid | 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 $\pm 2.5\%$ 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 $\pm 5\%$. 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 m³/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m³/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.
- (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 May 2014 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 May 2014 is provided in **Appendix F**.

Continuous noise monitoring

Monitoring Requirements

- 3.2.7 According to EP conditions under EP-437/2012 (Condition 2.8) and EP-438/2012/E (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

- 3.2.8 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

- 3.2.9 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 | Rion (Model No. NL-31) |
| Acoustic Calibrator | Rion (Model No. NC-73) |

Monitoring Parameters, Frequency and Duration

- 3.2.10 Continuous noise level will be measured in terms of the A-weighted equivalent continuous sound pressure level for 30 minutes ($L_{eq, 30 \text{ min}}$) 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

- 3.2.11 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

- 3.2.12 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⁾⁽⁴⁾ |
| 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 2013-2014 Calendar of Carmel Secondary School, the examination periods are assumed to be January, February and June.
 (4) The continuous noise monitoring periods will be reviewed and updated based on the latest calendar of Carmel Secondary School.

3.3 Landscape and Visual

- 3.3.1 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/E) | Monthly EM&A Report for April 2014 | 14 May 2014 |

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 ($\mu\text{g}/\text{m}^3$) | Range ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|-----|--------------------------------------|------------------------------------|---|--|
| AM1 | 47.9 | 24.8 – 56.1 | 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), $L_{\text{eq}} (30 \text{ mins})$ | Limit Level, dB(A), $L_{\text{eq}} (30 \text{ mins})$ |
|---------------------|--|--|
| NM 1 ⁽²⁾ | 58.9 – 63.0 | 70 (65) ⁽¹⁾ |
| NM 2 ⁽²⁾ | <Baseline | 75 |

Note:

(1) Daytime noise Limit Level of 70dB(A) applies to education institutions while 65dB(A) applies during school examination period.

(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; 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 As the construction works that have been identified by the CNMMP to be potentially causing exceedance of noise criteria have not commenced during this reporting month, no continuous noise monitoring was carried out.

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, 2,390m³ of inert C&D material was generated. 257m³ and 1,587 m³ was disposed as public fills at TKO137 and TM38 respectively. 516m³ of public fills was delivered to Hung Hom Barging Point and handled by other project. While 110,180kg of general refuse was disposed at NENT landfill in the reporting month. 123kg of paper/cardboard packaging material, 2kg of plastic and no metal was collected by recycling contractor in the reporting month. 30kg of inert C&D materials were reused on site. 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 2, 15 and 29 May 2014. 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, 5 site inspections were carried out on 2, 8, 15, 22 and 29 May 2014. The one held on 15 May 2014 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 | 02 May 2014 | <ul style="list-style-type: none"> Public road on Winslow Street and public drainage at NSL9 were exposed to potential effluent. The Contractor should provide adequate intercepting mechanism to prevent any effluent from entering the public road and drainage. | The item was observed to be rectified on 08 May 2014. |
| | 08 May 2014 | <ul style="list-style-type: none"> Public drainage at NSL3-6 was exposed to potential effluent. The Contractor should provide intercepting mechanism to prevent any potential effluent from entering the public drainage. | The item was observed to be rectified on 15 May 2014. |
| | 15 May 2014 | <ul style="list-style-type: none"> Discharging pipe was observed directing from the excavation pit to the public gully in NSL3-6. Although no effluent was observed discharging to the gully, the Contractor should provide adequate effluent treating measure to the waste water prior to discharge. | The item was observed to be rectified on 22 May 2014. |
| | 22 May 2014 | <ul style="list-style-type: none"> Deposited silt and rain water was observed within the public drainage along the pedestrian path outside NSL8 and within the internal drainage at Oi Sen Path. The Contractor should clear the accumulated silt and water in drainage regularly. | The item was observed to be rectified on 29 May 2014. |
| Air Quality | 08 May 2014 | <ul style="list-style-type: none"> Fugitive dust was observed from ABWF works at Tai Pau Mei. The Contractor should provide adequate dust suppression measures to mitigate dust impacts. | The items were observed to be rectified on 15 May 2014. |
| | | <ul style="list-style-type: none"> Smoke was observed from an air compressor at NSL3-6. The Contractor should provide regular checking to the machineries on site to prevent the emission of dark smoke | |
| | 29 May 2014 | <ul style="list-style-type: none"> Dry condition of open site area was observed at NSL3-6, NSL8 and NSL9. The Contractor should provide regular water spraying as dust suppression measure. | The item was observed to be rectified on 5 Jun 2014. |

| Parameters | Date | Observations and Recommendations | Follow-up |
|----------------------------------|-------------|--|--|
| Noise | N/A | N/A | N/A |
| Waste/ Chemical Management | 02 May 2014 | <ul style="list-style-type: none"> Chemical containers were placed on bare ground without the provision of drip tray at NSL3-6 and NSL9. The Contractor should provide drip trays or equivalent measures to retain leakage, if any. | The items were observed to be rectified on 08 May 2014. |
| | | <ul style="list-style-type: none"> Oil stains were observed on bare ground on Winslow Street and NSL8. The Contractor should clear the oil stains which should be disposed of as chemical wastes. | |
| | | <ul style="list-style-type: none"> Accumulation of stagnant water was observed in the drip trays on Winslow Street. The Contractor should remove the accumulated water in the drip trays regularly. | |
| | 08 May 2014 | <ul style="list-style-type: none"> Accumulation of stagnant water in the chemical waste containers at NSL8 and Hong Chong Street was observed. The Contractor should clear the stagnant water in a timely manner and/or provide effective measures to avoid the accumulation of water. | The items were observed to be rectified on 15 May 2014. |
| | | <ul style="list-style-type: none"> Oil leakage was observed from an excavator when maintenance was carried out at NSL3-6. Moreover, a chemical container was observed without the provision of drip tray at NSL3-6. The Contractor should provide adequate retaining mechanism for machinery maintenance and clear the leaked oil which should be disposed of as chemical waste | |
| | 22 May 2014 | <ul style="list-style-type: none"> Chemical waste containers were not stored at designated area in NSL3-6. The Contractor should store the chemical containers in appropriate/designated area on site | The item was rectified by the Contractor on 28 May 2014. |
| | | <ul style="list-style-type: none"> A chemical container was observed on bare ground without the provision of drip tray. The contractor should provide drip tray or equivalent measure to retain leakage | The item was observed to be rectified on 29 May 2014. |
| | 29 May 2014 | <ul style="list-style-type: none"> General refuse was found in the metal recycling area at Oi Sen Path. The Contractor should properly label the designated recycling area to avoid mixing of waste and recycling material. | The item was observed to be rectified on 5 Jun 2014. |
| 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 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.

7.2 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 Next Month

8.1.1 The major construction works in June and July 2014 will be:

Hung Hom Area

- Excavation work, site clearance, site formation, slope work, slope cutting, cable duct work, cable detection, road diversion,
- Construction of man hole, drainage, reinforced concrete structure, emergency vehicular access, temporary pedestrian walkway, haul road,
- Trial pit, trial trench, pre-drilling, pilling works, post-grouting, abutment works,
- Erection of hoarding, steel platform and deck, temporary bridge, scaffolding platform,
- Demolition of STA building, overhead line equipment shelter,
- Trimming of retaining wall,
- Tie back installation,
- 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 June 2014 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 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 As the construction works that have been identified by the CNMMP to be potentially causing exceedance of noise criteria have not commenced during this reporting month, no continuous noise monitoring was carried out.
- 9.1.6 5 nos. of environmental site inspections were carried out in May 2014. 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.
- Provide proper maintenance to the machineries on site.

Construction Noise Impact

- No specific observation was identified in the reporting month.

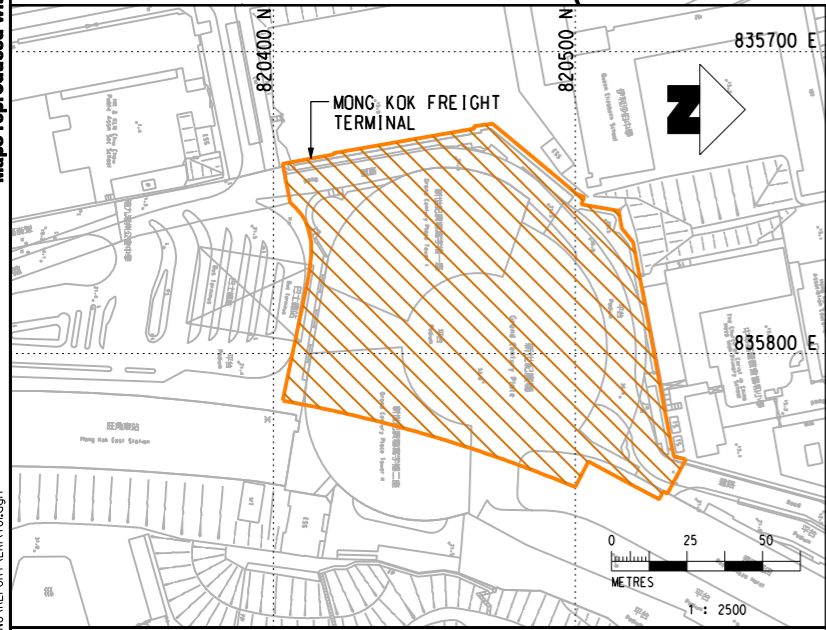
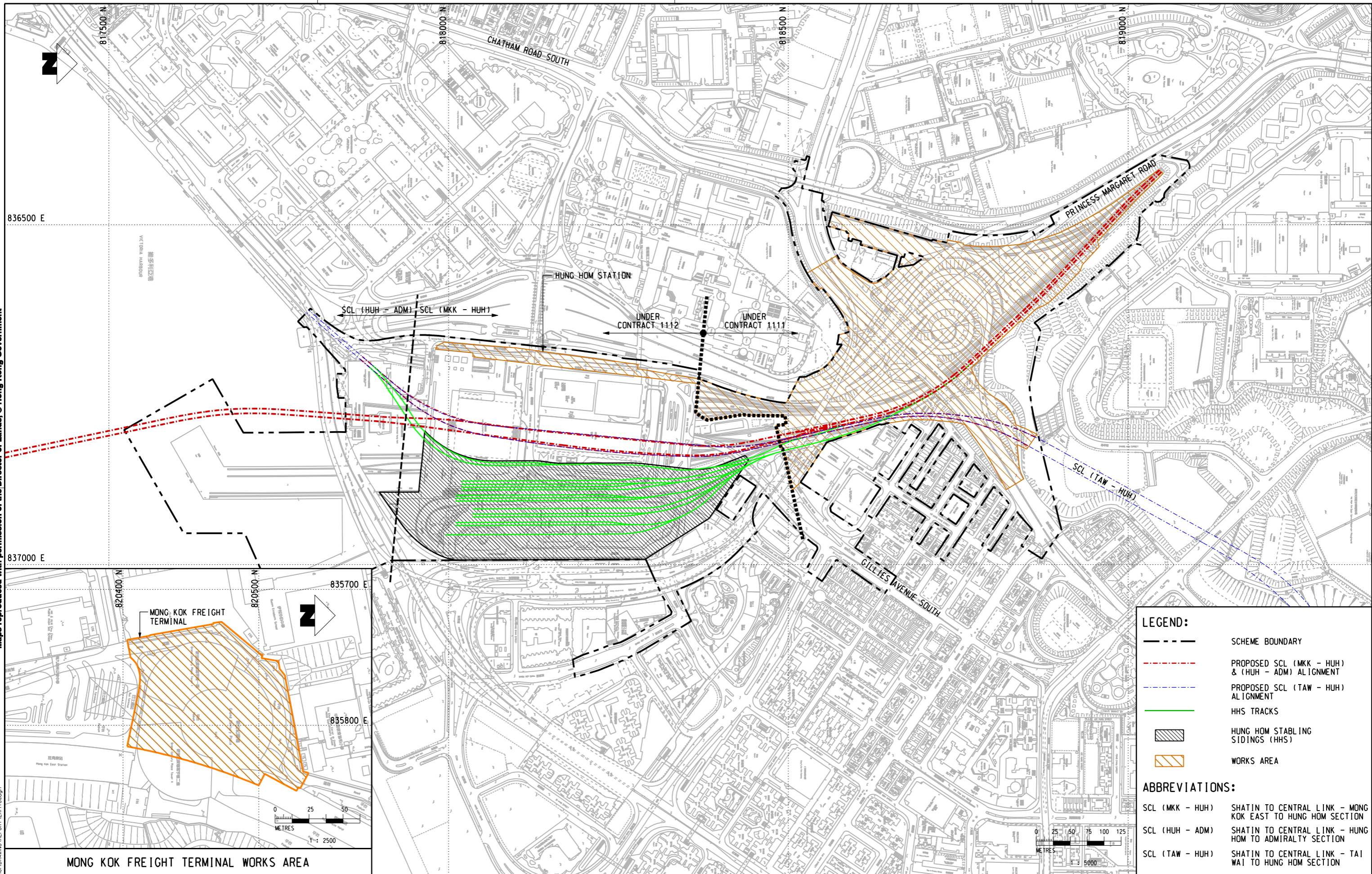
Water Quality Impact

- Implement effective measures to avoid surface runoff into the drainage system.

Chemical and Waste Management

- Provide proper chemical and construction waste management.

FIGURES



LEGEND:

- SCHEME BOUNDARY
- - - - PROPOSED SCL (MCK - HUH) & (HUH - ADM) ALIGNMENT
- - - - PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- ▨ HUNG HOM STABLING SIDINGS (HHS)
- ▨ WORKS AREA

ABBREVIATIONS:

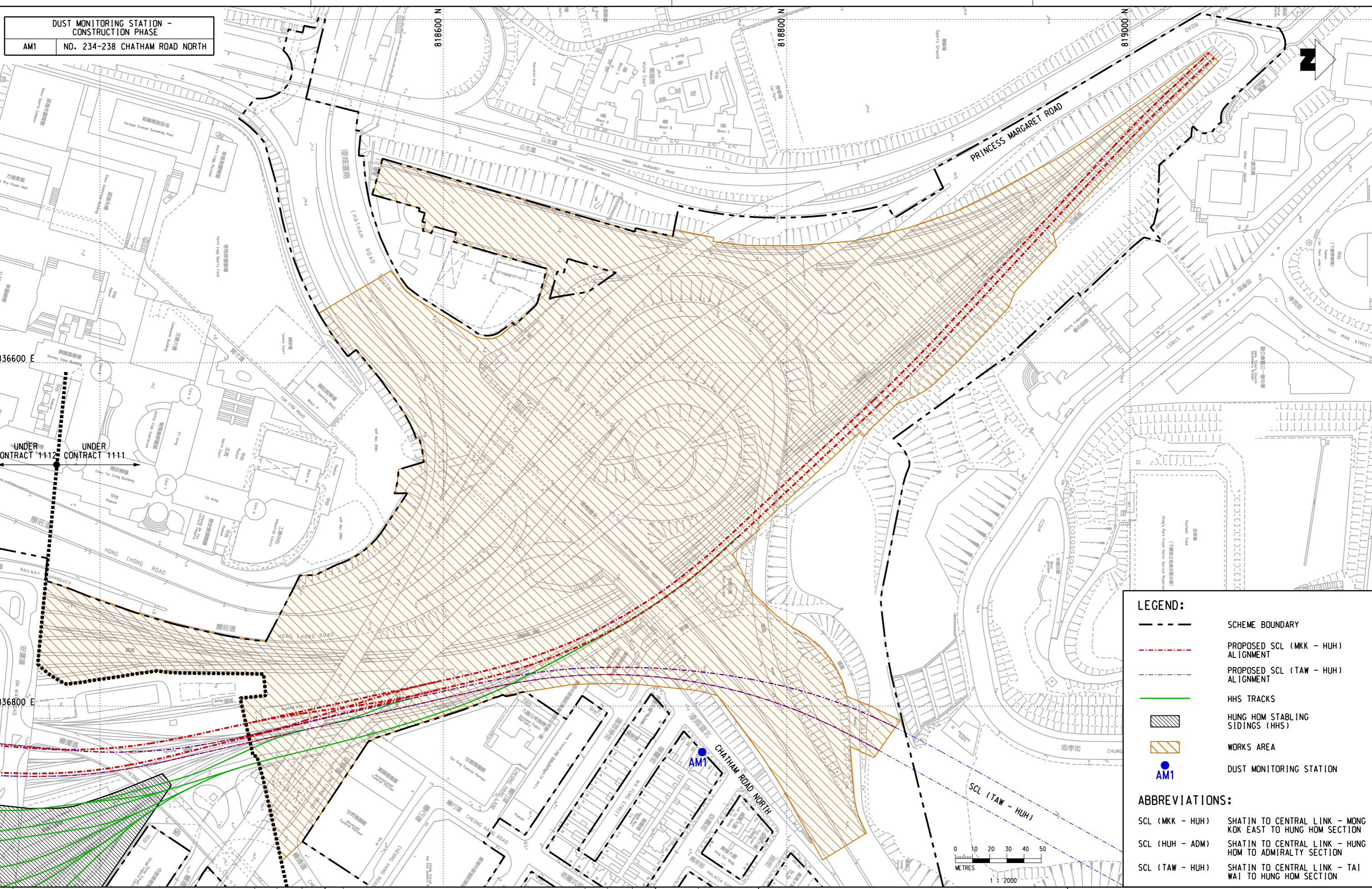
- SCL (MCK - HUH) SHATIN TO CENTRAL LINK - MONG KOK EAST TO HUNG HOM SECTION
- SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION
- SCL (TAW - HUH) SHATIN TO CENTRAL LINK - TAI WAI TO HUNG HOM SECTION

| | | | | | | | | | | | | | |
|----------|--|--|--|-------------|--|--|--|---------------------------------------|--|---|--|--|--|
| DRAWN | | | | HD | | | | | | CONTRACT 1111 HUNG HOM NORTH APPROACH TUNNELS WORKS AREAS OF THE PROJECT | | | |
| DESIGNED | | | | LCLL | | | | | | | | | |
| CHECKED | | | | LCLL | | | | SHATIN TO CENTRAL LINK | | | | | |
| APPROVED | | | | IMW | | | | | | | | | |
| DATE | | | | 08/FEB/2013 | | | | CONTRACTOR | | ORIGINATOR | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | GAMMON - KADEN SCL 1111 Joint Venture | | | | | |
| | | | | | | | | CADD REF. | | 701.dgn | | | |
| | | | | | | | | SCALE | | A3 AS SHOWN | | | |
| | | | | | | | | FIGURE NO. | | FIGURE 1.1 | | | |
| REV | | | | DESCRIPTION | | | | BY | | DATE | | | |
| APPROVED | | | | REVISION | | | | BY | | DATE | | | |

DUST MONITORING STATION -
CONSTRUCTION PHASE
AM1 NO. 234-238 CHATHAM ROAD NORTH

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PLOT DRY: V:\us\msh\1\MTR\PI\DRIVER\WINDOWS\3\COO\016.dgn
MODEL NAME: MTR\PROJECTS\G02640\DRIVING\Figure_3.dgn
FILE NAME: 144248



LEGEND:

- SCHEME BOUNDARY
- - - PROPOSED SCL (Mkk - Huh) ALIGNMENT
- - - PROPOSED SCL (Taw - Huh) ALIGNMENT
- HHS TRACKS
- [Hatched Box] HUNG HOM STABILING SIDINGS (HHS)
- [Orange Hatched Box] WORKS AREA
- AM1 DUST MONITORING STATION

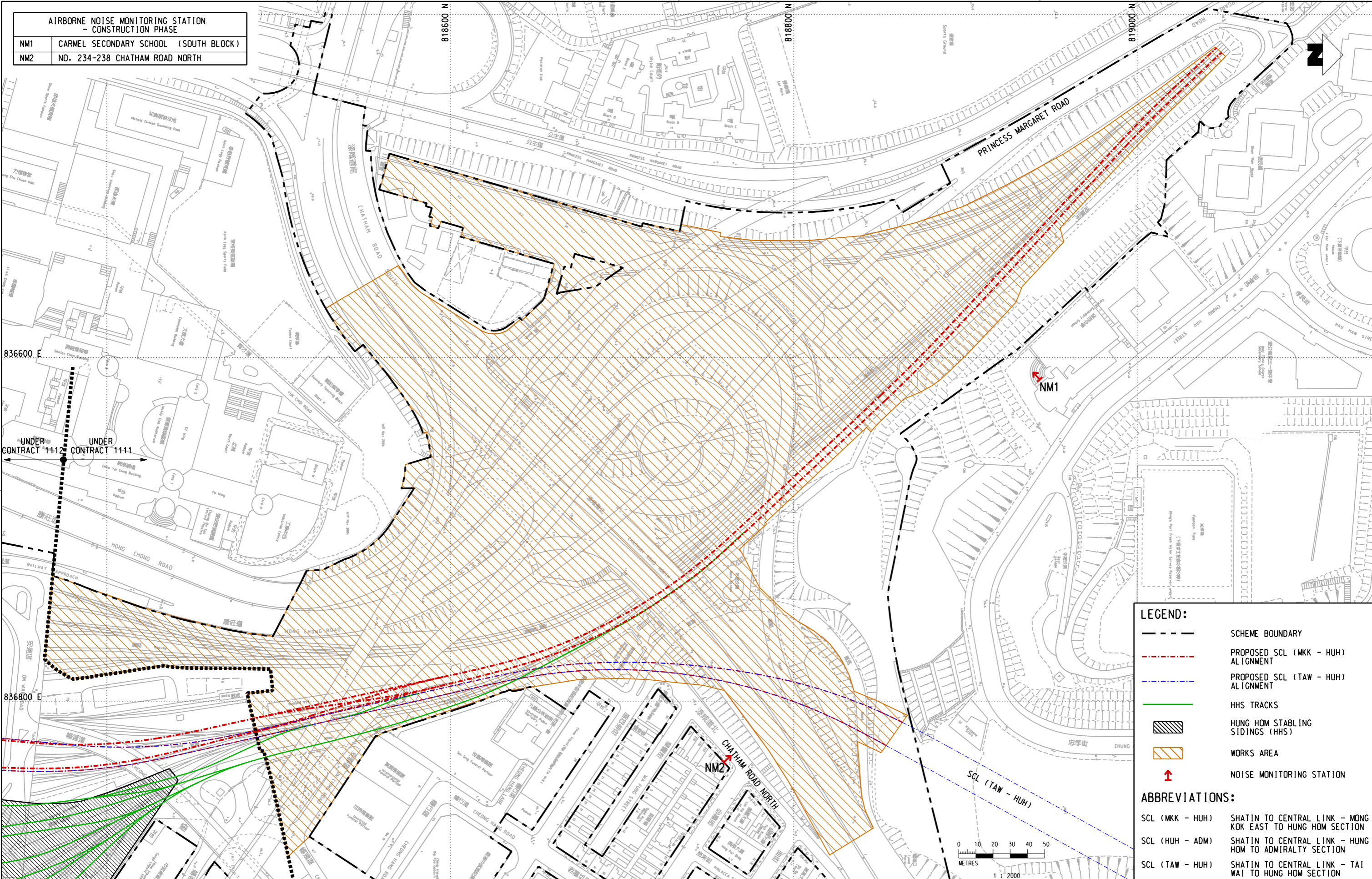
ABBREVIATIONS:

- 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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|--|--|----------------|--|-------------------|--|---|--|------------------------------------|--|--|--|
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| DRAWN: HD | | DESIGNED: LCLL | | CHECKED: LCLL | | APPROVED: IMW | | DATE: 08/JAN/2013 | | SCALE: 1 : 2000 (A3) | |
| CADD REF: Figure 2.1.dgn | | BY: _____ | | DATE: _____ | | APPROVED: _____ | | DESCRIPTION: _____ | | REV: _____ | |

| AIRBORNE NOISE MONITORING STATION - CONSTRUCTION PHASE | |
|--|---------------------------------------|
| NM1 | CARMEL SECONDARY SCHOOL (SOUTH BLOCK) |
| NM2 | NO. 234-238 CHATHAM ROAD NORTH |

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LEGEND:

- SCHEME BOUNDARY
- - - - PROPOSED SCL (MKK - HUH) ALIGNMENT
- - - - PROPOSED SCL (TAW - HUH) ALIGNMENT
- HHS TRACKS
- ▨ HUNG HOM STABILING SIDINGS (HHS)
- ▨ WORKS AREA
- ↑ NOISE MONITORING STATION

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

PLOT DRY: V:\us\mset\mtr\p\p\DRIVER\WINDOWS\13 COC\010\p.dwg
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| 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: 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 | 2013 | | | | | | | | | | | | 2014 | | | | | | | | | | | | 2015 | | | | | | | | | | | | 2016 | | | | | | | | | | | | 2017 | | | | | | | | | | | | | | | | |
|--|-----------|----------|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D | J | F | M | A | M | J | J | A | S | O | N | D | D | J | F | M | A | M | J | J | A | S | O | N | D | D | J | F | M | A | M | J | J | A | S | O | N | D | D | J | F | M | A | M | J | J | A | S | O | N | D | D | J | F | M | A | M | J | J | A | S | O | N | D |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

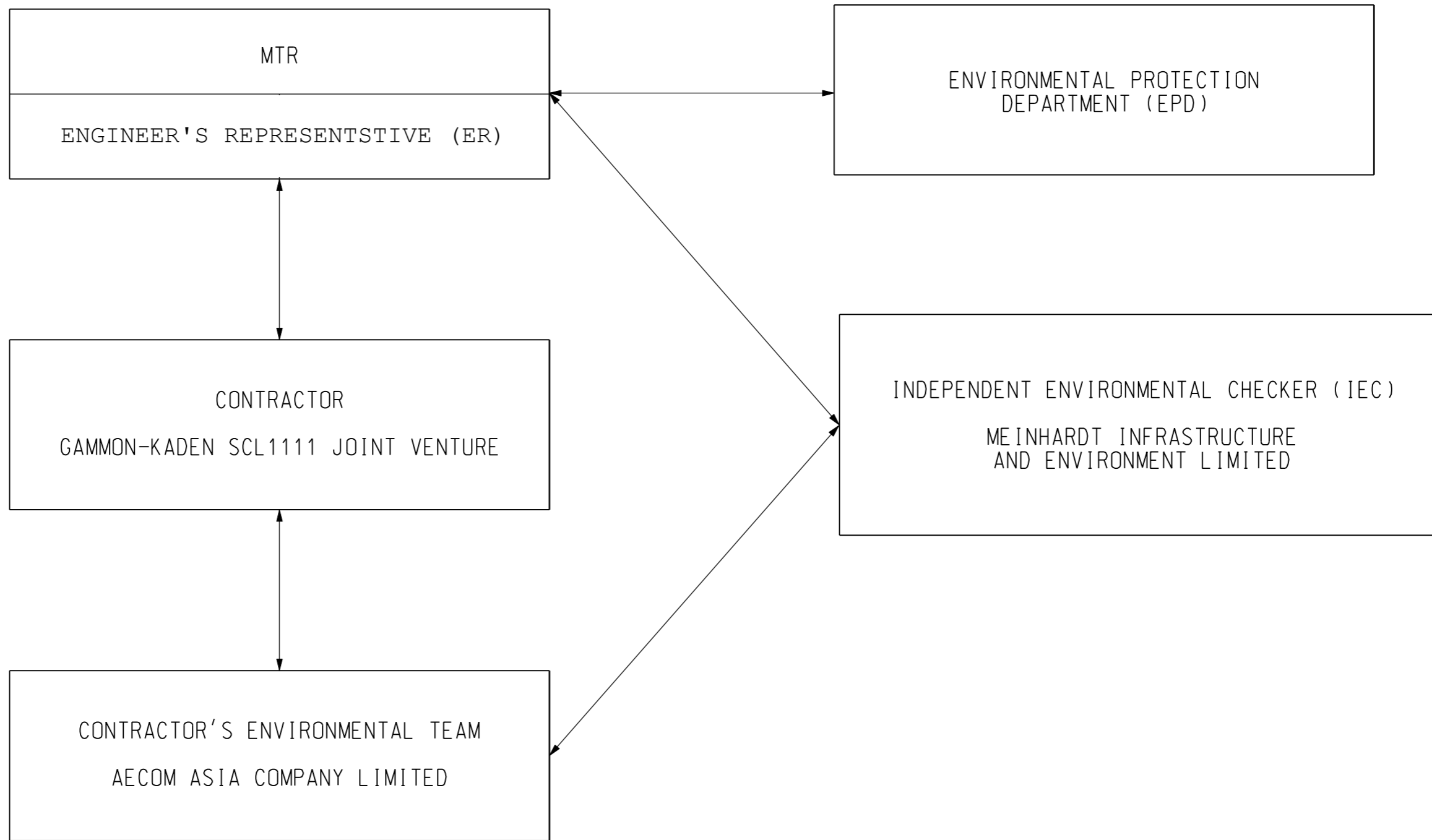
Early Bar
 Progress Bar
 Critical Activity

**SCL 1111
SUMMARY PROGRAMME**

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 19/09/12 | | | |
| | | | |
| | | | |

APPENDIX B

Project Organization Structure



| REV | DESCRIPTION | BY | DATE | APPROVED | REV | DESCRIPTION | BY | DATE | APPROVED |
|-----|-------------|----|------|----------|-----|-------------|----|------|----------|
| | | | | | | | | | |

| | |
|----------|-------------|
| DRAWN | HD |
| DESIGNED | LCLL |
| CHECKED | LCLL |
| APPROVED | IMW |
| DATE | 08/JAN/2013 |

| | |
|---|----------------|
| | |
| SHATIN TO CENTRAL LINK | |
| CONTRACTOR Gammon - Kaden SCL 1111 Joint Venture | ORIGINATOR |
| 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: <ul style="list-style-type: none"> • 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)) | Works areas where required | N/A |

| | | | | |
|--|--|--|-------------------------------|----------|
| | | <ul style="list-style-type: none"> • Concrete Pump Truck (SWL=106dB(A)) • Crane, mobile (SWL=94dB(A)) • Crawler Crane (SWL=102dB(A)) • 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)) | | |
| | | <p>Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs.</p> | <p>All construction sites</p> | <p>V</p> |

| | | | | |
|--|--|--|--|-----|
| | | 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 | @ |
| | | 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 | N/A |
| | 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 | @ |
| | 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 |
| / | 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 | @ |
| | | 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 | @ |
| | | 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 | @ |
| | | 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 | All construction sites | N/A |

| | | | | |
|--|--|--|------------------------|---|
| | | out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. | | |
| | | 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 | All construction sites | V |

| | | | | |
|--|--|---|--|-----|
| | | either be dewatered or mixed with inert fill material for disposal to a public filling area. | | |
| | | A cofferdam wall should be built as necessary to limit groundwater inflow to the excavation works areas. | Excavation works areas | N/A |
| | | 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-H UH), 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 | @ |
| | | 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 | V |
| | | 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 |
| | 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 | @ |
| | 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. | All construction sites | N/A |

| Contaminated Land | | | | |
|----------------------------|--|--|--|-----|
| S10.24– 10.34 (MKK-HUH) | To act as a general precautionary measure to screen soils for the presence of 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 $\mu\text{g}/\text{m}^3$ | 260.0 $\mu\text{g}/\text{m}^3$ |

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. | 65 / 70 dB(A) ⁽¹⁾ |
| NM2 | No. 234 – 238 Chatham Road North | | 75 dB(A) |

Note:

(1) Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

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: 11-Mar-14 Next Due Date: 10-May-14
 Equipment No.: --- Serial No.: 8259

| Ambient Condition | | | |
|---------------------|-------|---------------------|-------|
| Temperature, Ta (K) | 288.3 | Pressure, Pa (mmHg) | 767.0 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------|---|---------|---------------|---------|
| Serial No: | 988 | Slope, mc | 1.99238 | Intercept, bc | 0.02332 |
| Last Calibration Date: | 20-May-13 | $mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 20-May-14 | $Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|----------------------------|---|-----------------------------------|-----------------------------|--|
| Resistance Plate No. | Orifice | | | HVS Flow Recorder | |
| | DH (orifice), in. of water | [DH x (Pa/760) x (298/Ta)] ^{1/2} | Qstd (m ³ /min) X-axis | Flow Recorder Reading (CFM) | Continuous Flow Recorder Reading IC (CFM) Y-axis |
| 18 | 9.0 | 3.06 | 1.53 | 48.0 | 49.03 |
| 13 | 7.2 | 2.74 | 1.36 | 42.0 | 42.90 |
| 10 | 5.5 | 2.40 | 1.19 | 34.0 | 34.73 |
| 7 | 4.4 | 2.14 | 1.06 | 28.0 | 28.60 |
| 5 | 3.0 | 1.77 | 0.88 | 20.0 | 20.43 |

By Linear Regression of Y on X
 Slope, mw = 44.6453 Intercept, bw = -18.6213
 Correlation Coefficient* = 0.9985
 *If Correlation Coefficient < 0.990, check and recalibrate.

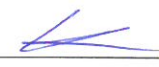
Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/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} = 38.59

Remarks: _____

QC Reviewer: YT leung Signature:  Date: 10-3-14

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: 10-May-14 Next Due Date: 10-Jul-14
 Equipment No.: --- Serial No. 8259

| Ambient Condition | | | |
|---------------------|-----|---------------------|-------|
| Temperature, Ta (K) | 298 | Pressure, Pa (mmHg) | 754.9 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------|---|---------|---------------|---------|
| Serial No: | 988 | Slope, mc | 1.94727 | Intercept, bc | 0.02332 |
| Last Calibration Date: | 20-May-13 | $mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 20-May-14 | $Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|----------------------------|---|-----------------------------------|-----------------------------|--|
| Resistance Plate No. | Orifice | | | HVS Flow Recorder | |
| | DH (orifice), in. of water | [DH x (Pa/760) x (298/Ta)] ^{1/2} | Qstd (m ³ /min) X-axis | Flow Recorder Reading (CFM) | Continuous Flow Recorder Reading IC (CFM) Y-axis |
| 18 | 8.5 | 2.91 | 1.48 | 44.0 | 43.85 |
| 13 | 7.0 | 2.64 | 1.34 | 38.0 | 37.87 |
| 10 | 5.5 | 2.34 | 1.19 | 32.0 | 31.89 |
| 7 | 4.4 | 2.09 | 1.06 | 26.0 | 25.91 |
| 5 | 3.0 | 1.73 | 0.87 | 20.0 | 19.93 |

By Linear Regression of Y on X
 Slope, mw = 39.9374 Intercept, bw = -15.6076
 Correlation Coefficient* = 0.9964
 *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} = <u>36.43</u> |

Remarks: _____

QC Reviewer: Yau Fung Signature: [Signature] Date: 12 May 14



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AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 20, 2013 Rootsometer S/N 0438320 Ta (K) - 297
 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 | 1.3900 | 3.2 | 2.00 |
| 2 | NA | NA | 1.00 | 0.9720 | 6.4 | 4.00 |
| 3 | NA | NA | 1.00 | 0.8670 | 7.9 | 5.00 |
| 4 | NA | NA | 1.00 | 0.8270 | 8.7 | 5.50 |
| 5 | NA | NA | 1.00 | 0.6800 | 12.6 | 8.00 |

DATA TABULATION

| Vstd | (x axis) Qstd | (y axis) | Va | (x axis) Qa | (y axis) |
|------------------------------------|---------------|----------|---------------------------|-------------|----------|
| 0.9884 | 0.7110 | 1.4090 | 0.9957 | 0.7163 | 0.8889 |
| 0.9842 | 1.0125 | 1.9926 | 0.9915 | 1.0201 | 1.2570 |
| 0.9821 | 1.1327 | 2.2278 | 0.9894 | 1.1412 | 1.4054 |
| 0.9811 | 1.1863 | 2.3365 | 0.9884 | 1.1952 | 1.4740 |
| 0.9759 | 1.4352 | 2.8179 | 0.9832 | 1.4459 | 1.7777 |
| Qstd slope (m) = 1.94727 | | | Qa slope (m) = 1.21935 | | |
| intercept (b) = 0.02332 | | | intercept (b) = 0.01471 | | |
| 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}



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: | - | , | - |

N.009.04

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 $\pm 20\%$.
- 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 responses 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:



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.



CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0617 01-01 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.: | 2800927 / N.009.06 | , | 2791211 |
| Adaptors used: | - | , | - |

Item submitted by

Customer Name: AECOM ASIA CO. LTD.
Address of Customer: -
Request No.: -
Date of receipt: 17-Jun-2013

Date of test: 18-Jun-2013

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---------------------------------|----------|------------|--------------|---------------|
| Multi function sound calibrator | B&K 4226 | 2288444 | 22-Jun-2013 | 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

- 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.
- 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%.
- 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 responses 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: 18-Jun-2013

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-01 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: 07-Nov-2013

Date of test: 08-Nov-2013

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 responsiveness 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: 11-Nov-2013

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.



CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-02

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

Customer: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 07-Nov-2013

Date of test: 08-Nov-2013

Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|-------------------------|----------|------------|--------------|---------------|
| Lab standard microphone | B&K 4180 | 2341427 | 17-Apr-2014 | SCL |
| Preamplifier | B&K 2673 | 2239857 | 16-Apr-2014 | CEPREI |
| Measuring amplifier | B&K 2610 | 2346941 | 24-Apr-2014 | CEPREI |
| Signal generator | DS 360 | 61227 | 15-Apr-2014 | CEPREI |
| Digital multi-meter | 34401A | US36087050 | 10-Dec-2013 | CEPREI |
| Audio analyzer | 8903B | GB41300350 | 15-Apr-2014 | CEPREI |
| Universal counter | 53132A | MY40003662 | 15-Apr-2014 | CEPREI |

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 10 hPa

Test specifications

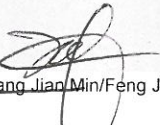
- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 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: 11-Nov-2013

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.

APPENDIX F

EM&A Monitoring Schedules

**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Impact Monitoring Schedule for May 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | 01-May | 02-May | 03-May |
| | | | | | | 24-hour TSP (AM1) |
| 04-May | 05-May | 06-May | 07-May | 08-May | 09-May | 10-May |
| | | | Noise (NM1, NM2) | | 24-hour TSP (AM1) | |
| 11-May | 12-May | 13-May | 14-May | 15-May | 16-May | 17-May |
| | | | | 24-hour TSP (AM1) | Noise (NM1, NM2) | |
| 18-May | 19-May | 20-May | 21-May | 22-May | 23-May | 24-May |
| | | | 24-hour TSP (AM1) | Noise (NM1, NM2) | | |
| 25-May | 26-May | 27-May | 28-May | 29-May | 30-May | 31-May |
| | | 24-hour TSP (AM1) | Noise (NM1, NM2) | | | 24-hour TSP (AM1) |

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

**Shatin to Central Link Contract 1111 - Hung Hom North Approach Tunnels
Tentative Impact Monitoring Schedule for June 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | |
|--------|--|--|-------------------|-------------------|------------------|-------------------|--|
| 01-Jun | 02-Jun | 03-Jun | 04-Jun | 05-Jun | 06-Jun | 07-Jun | |
| | | Continuous noise monitoring (NM1) | | | | 24-hour TSP (AM1) | |
| | | Noise (NM1, NM2) | | | | | |
| 08-Jun | 09-Jun | 10-Jun | 11-Jun | 12-Jun | 13-Jun | 14-Jun | |
| | Continuous noise monitoring (NM1) | | | | | | |
| | | | | 24-hour TSP (AM1) | Noise (NM1, NM2) | | |
| 15-Jun | 16-Jun | 17-Jun | 18-Jun | 19-Jun | 20-Jun | 21-Jun | |
| | | | 24-hour TSP (AM1) | Noise (NM1, NM2) | | | |
| | | | | | | | |
| 22-Jun | 23-Jun | 24-Jun | 25-Jun | 26-Jun | 27-Jun | 28-Jun | |
| | | 24-hour TSP (AM1) | Noise (NM1, NM2) | | | | |
| | | | | | | | |
| 29-Jun | 30-Jun | | | | | | |
| | 24-hour TSP (AM1) | | | | | | |
| | | | | | | | |

APPENDIX G

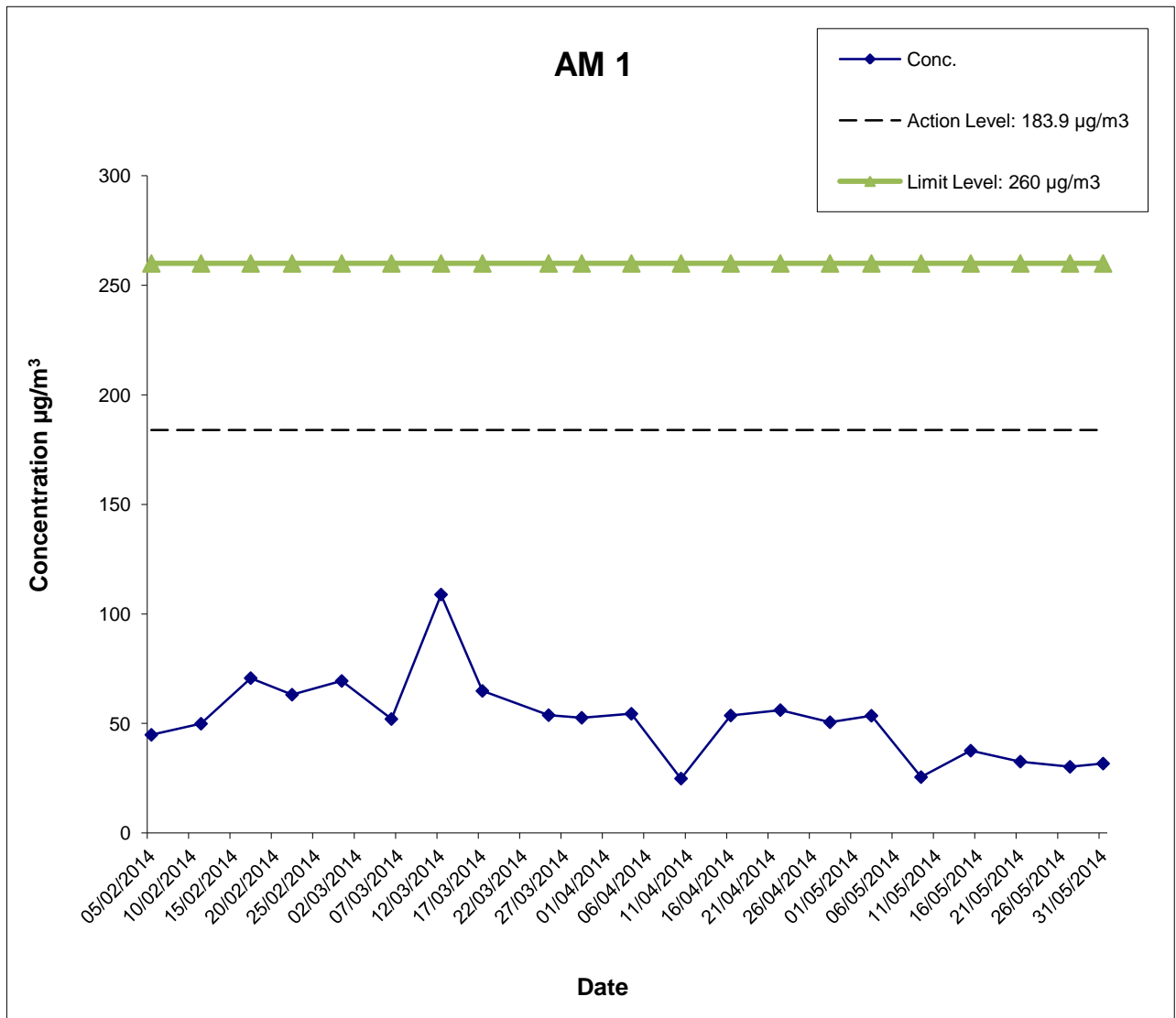
**Air Quality Monitoring Results and
their Graphical Presentations**

**Appendix G
Air Quality Monitoring Results**

24-hour TSP Monitoring Results at Station AM1 (No. 234 – 238 Chatham Road North)

| Start | | End | | Weather Condition | Air Temp. (°C) | Atmospheric Pressure (hPa) | Flow Rate (m ³ /min.) | | Av. flow (m ³ /min) | Total vol. (m ³) | Filter Weight (g) | | Particulate weight(g) | Elapse Time | | Sampling Time(hrs.) | Conc. (µg/m ³) |
|----------------|------|-----------|------|----------------------|-------------------|-------------------------------|----------------------------------|-------|-----------------------------------|---------------------------------|-------------------|--------|--------------------------|-------------|---------|------------------------|-------------------------------|
| Date | Time | Date | Time | | | | Initial | Final | | | Initial | Final | | Initial | Final | | |
| 03-May-14 | 0:00 | 04-May-14 | 0:00 | Fine | 24.6 | 1014.5 | 1.33 | 1.33 | 1.33 | 1916.6 | 2.7108 | 2.8134 | 0.1026 | 8656.06 | 8680.06 | 24.00 | 53.5 |
| 09-May-14 | 0:00 | 10-May-14 | 0:00 | Rainy | 21.7 | 1009.1 | 1.33 | 1.33 | 1.33 | 1916.6 | 2.6818 | 2.7307 | 0.0489 | 8680.06 | 8704.06 | 24.00 | 25.5 |
| 15-May-14 | 0:00 | 16-May-14 | 0:00 | Sunny | 28.9 | 1005.1 | 1.33 | 1.33 | 1.33 | 1916.6 | 2.7322 | 2.8042 | 0.0720 | 8704.06 | 8728.06 | 24.00 | 37.6 |
| 21-May-14 | 0:00 | 22-May-14 | 0:00 | Rainy | 27.1 | 1006.9 | 1.31 | 1.31 | 1.31 | 1890.7 | 2.7305 | 2.7921 | 0.0616 | 8728.06 | 8752.06 | 24.00 | 32.6 |
| 27-May-14 | 0:00 | 28-May-14 | 0:00 | Sunny | 29.7 | 1007.9 | 1.31 | 1.31 | 1.31 | 1890.7 | 2.6429 | 2.7000 | 0.0571 | 8752.06 | 8776.06 | 24.00 | 30.2 |
| 31-May-14 | 0:00 | 01-Jun-14 | 0:00 | Sunny | 30.1 | 1008.0 | 1.31 | 1.31 | 1.31 | 1890.7 | 2.7004 | 2.7603 | 0.0599 | 8776.06 | 8800.06 | 24.00 | 31.7 |
| Average | | | | | | | | | | | | | | | | 35.2 | |
| Minimum | | | | | | | | | | | | | | | | 25.5 | |
| Maximum | | | | | | | | | | | | | | | | 53.5 | |

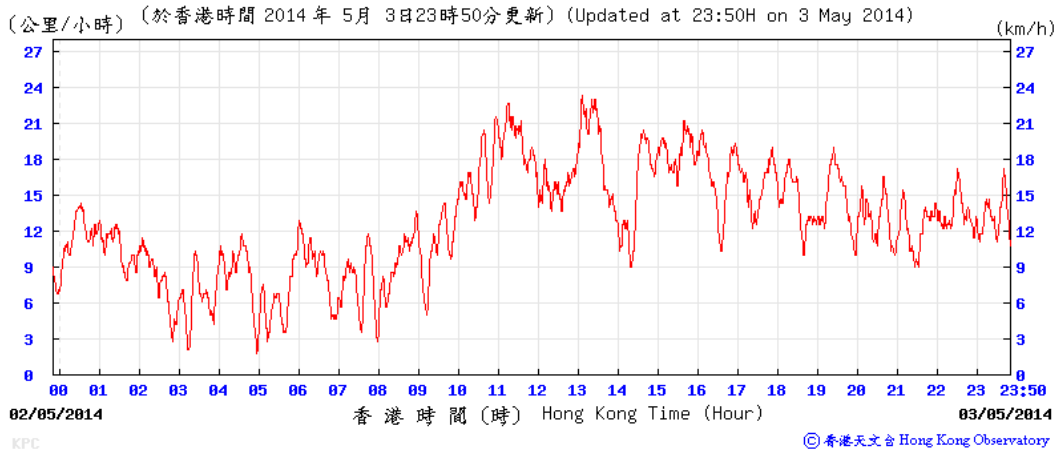
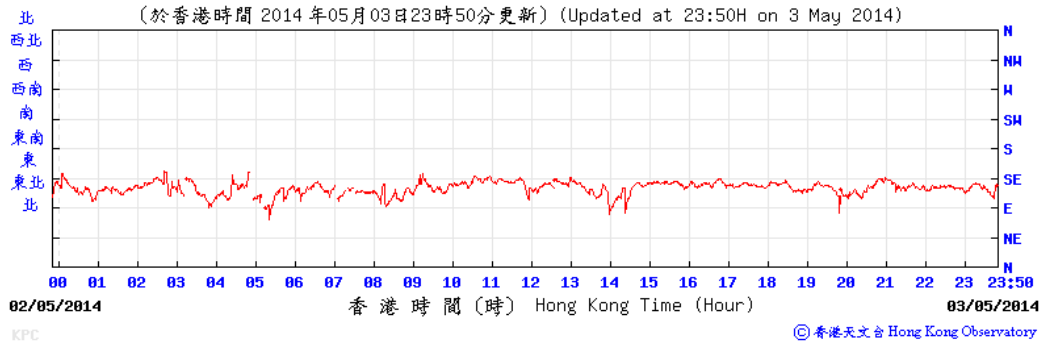
Appendix G Air Quality Monitoring Results



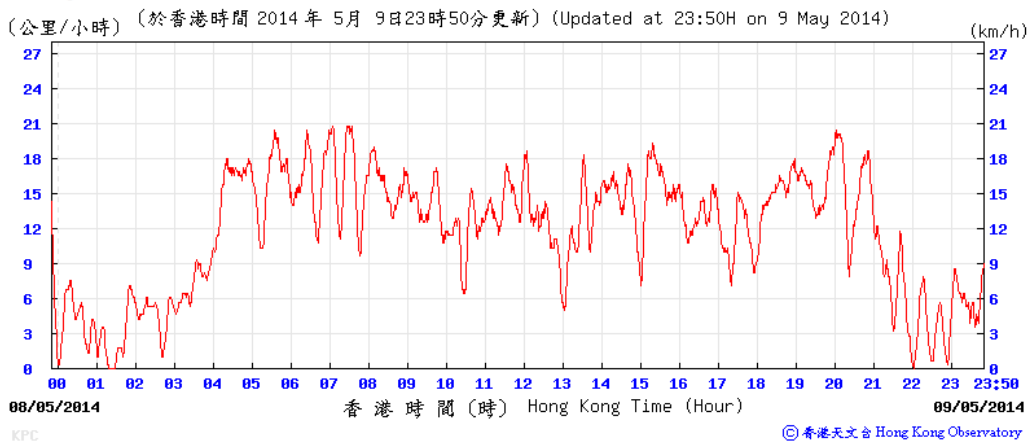
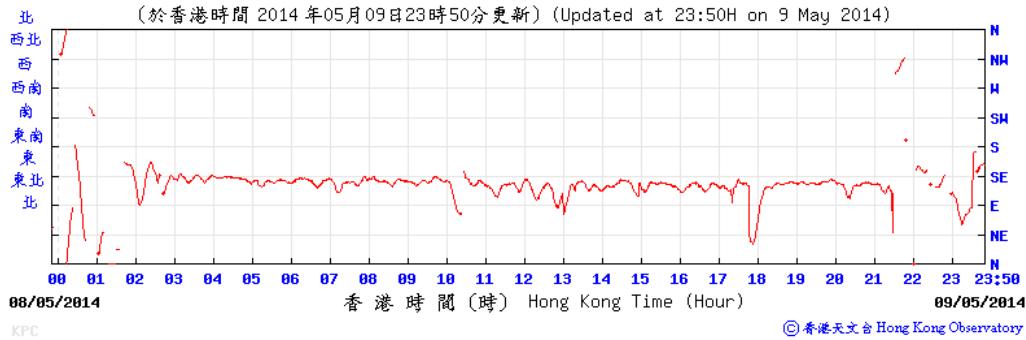
| | | | | | |
|--|--|---------|----------|-------------------|-----------|
| | Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels | SCALE | N.T.S. | DATE | Jun-14 |
| | | CHECK | TYUT | DRAWN | IYYS |
| | Graphical Presentations of Impact 24-hour TSP Monitoring Results | JOB NO. | 60284101 | APPENDIX No. G | Rev. - |

Appendix G – Extract of Meteorological Observations for King's Park* Automatic Weather Station, May 2014

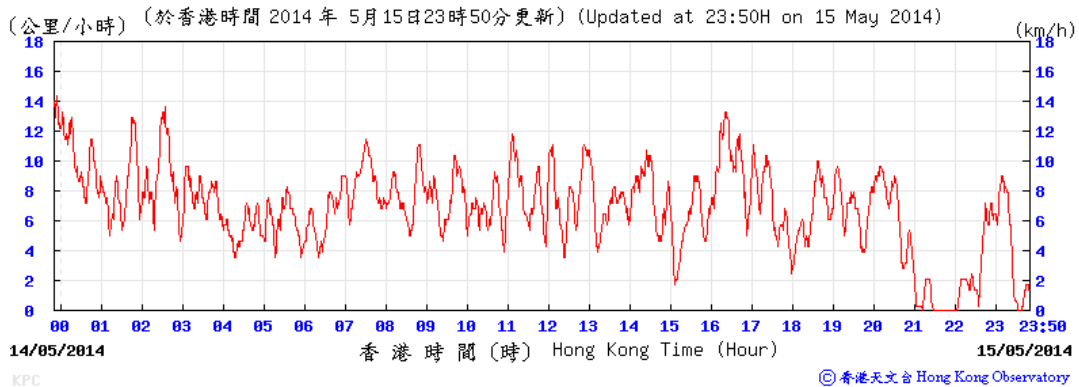
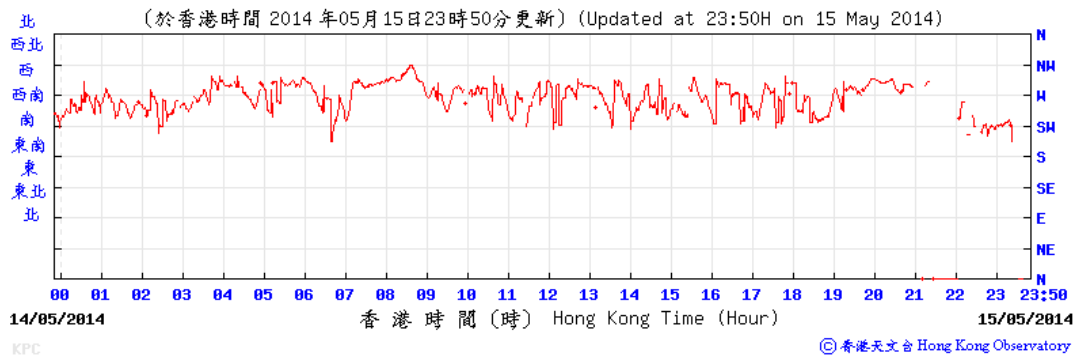
3 May 2014



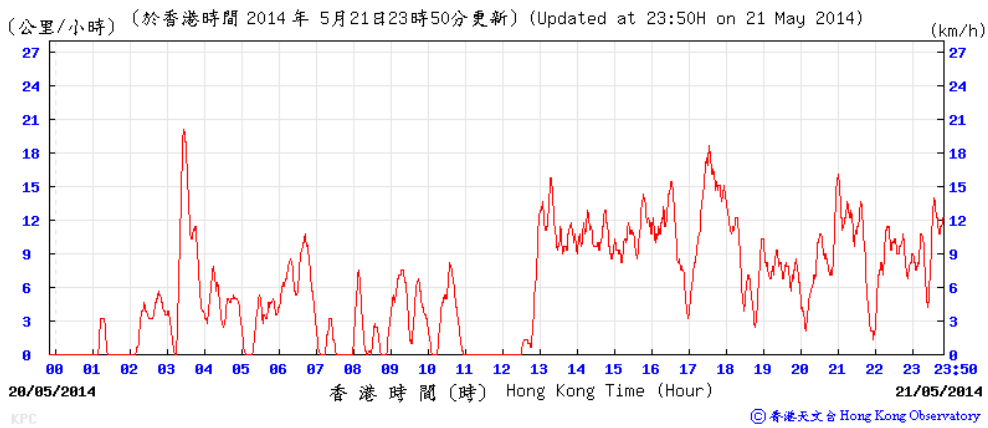
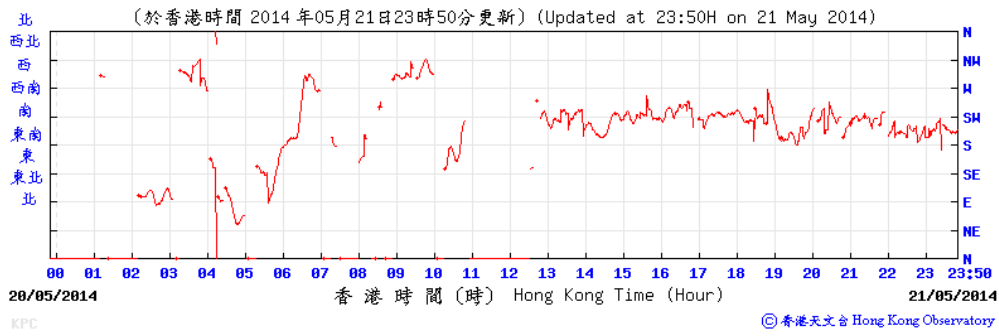
9 May 2014



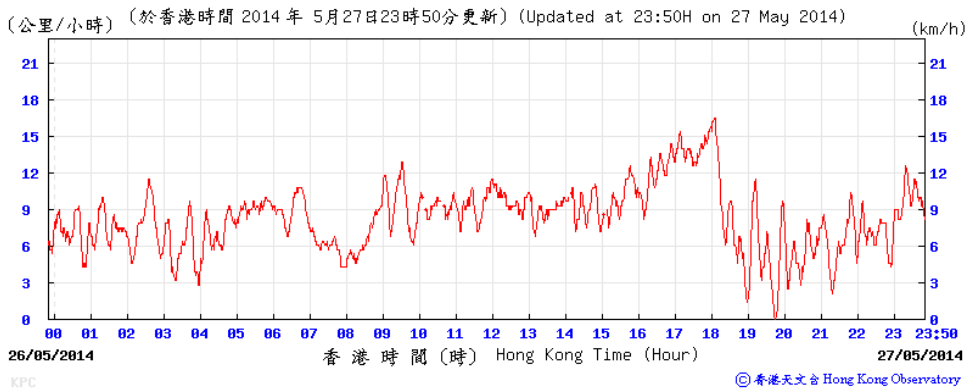
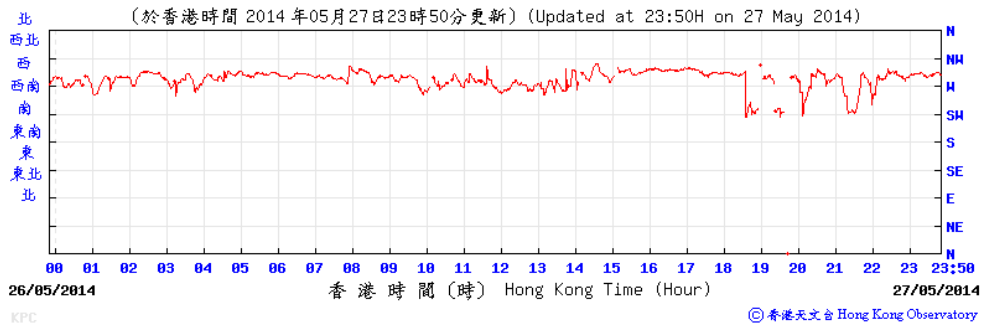
15 May 2014



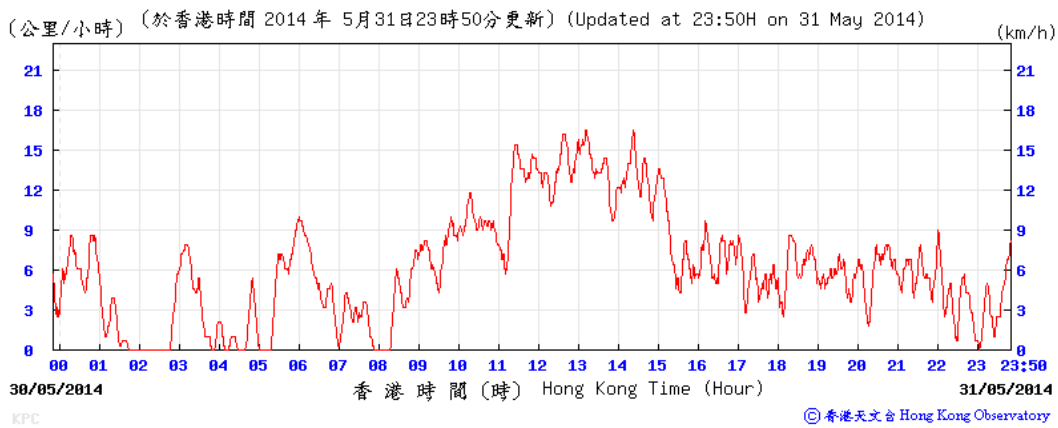
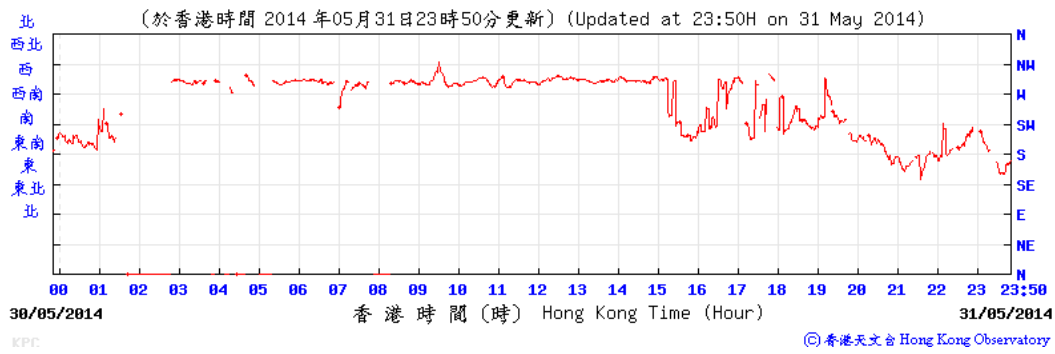
21 May 2014



27 May 2014



31 May 2014



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 | | | | |
| 08-May-14 | Cloudy | 10:25 | 66.6 | 71.0 | 69.2 | 63.0 | 68.0 | 70 | N |
| 16-May-14 | Cloudy | 10:08 | 67.3 | 69.8 | 68.7 | 60.4 | 68.0 | 70 | N |
| 22-May-14 | Fine | 10:03 | 66.0 | 70.0 | 68.5 | 58.9 | 68.0 | 70 | N |
| 28-May-14 | Sunny | 10:10 | 66.6 | 70.5 | 69.0 | 62.1 | 68.0 | 70 | N |

Daytime Noise Monitoring Results at Station NM 2 (No. 234 – 238 Chatham Road North)

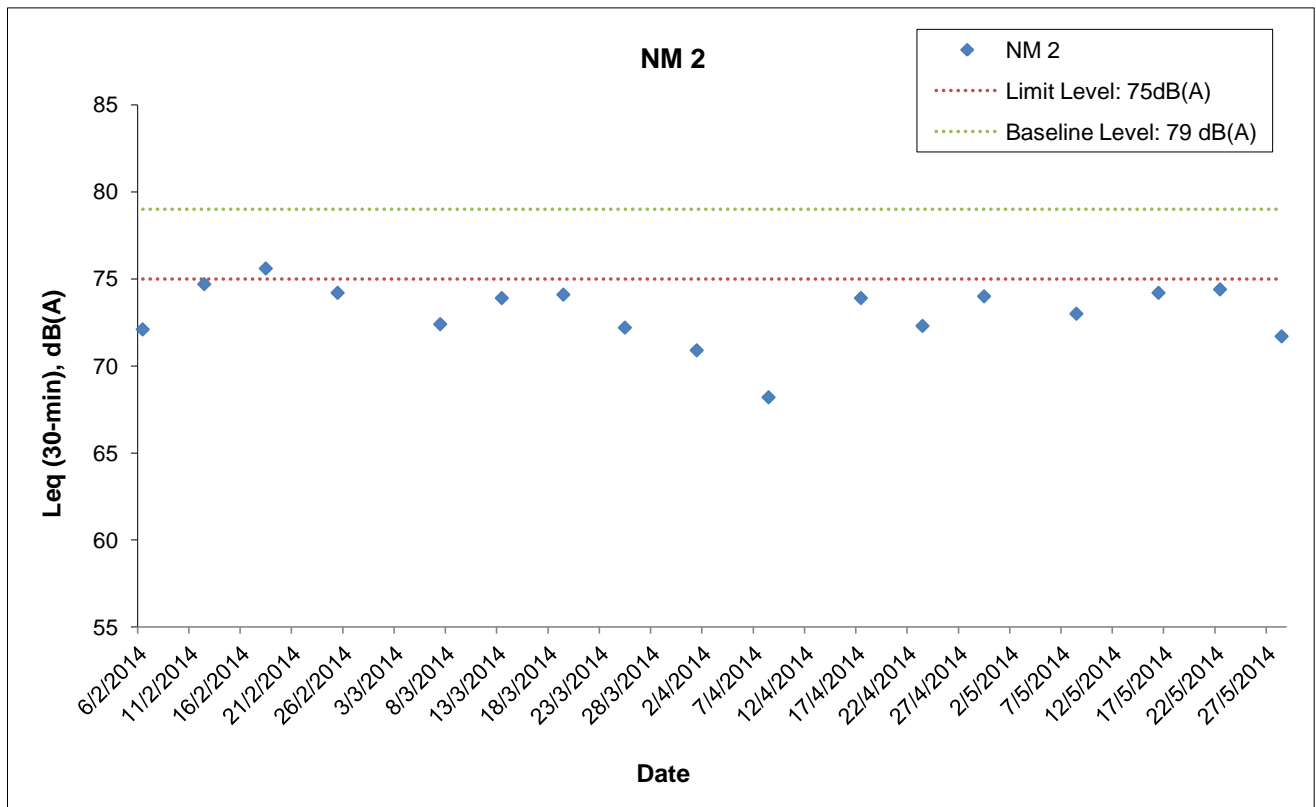
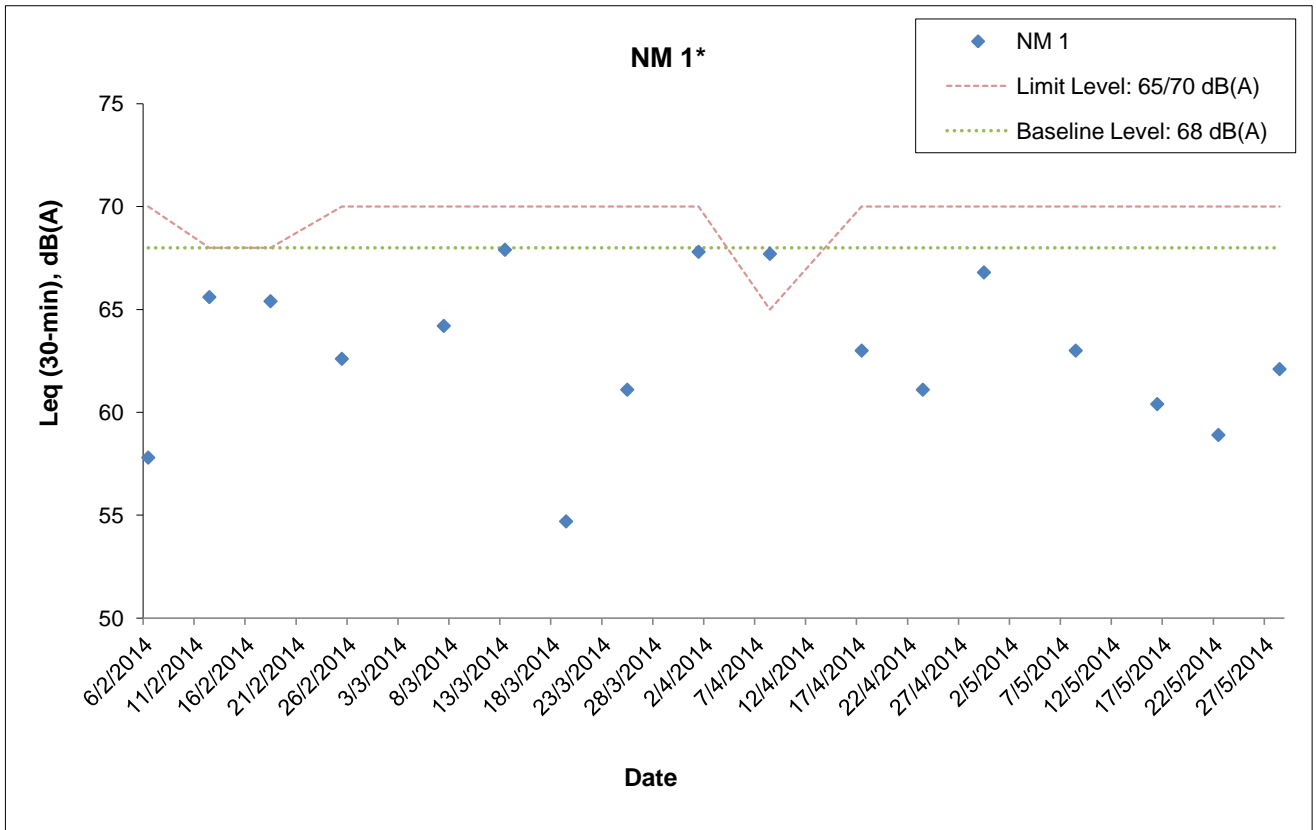
| Date | Weather Condition | Noise Level for 30-min, dB(A) ⁺⁺ | | | | Baseline Corrected Level, dB(A) | Baseline Noise Level, dB(A) | Limit Level ^{***} , dB(A) | Exceedance (Y/N) |
|-----------|-------------------|---|------|------|------|---------------------------------|-----------------------------|------------------------------------|------------------|
| | | Time | L90 | L10 | Leq | | | | |
| 08-May-14 | Cloudy | 11:18 | 71.5 | 75.0 | 73.0 | <Baseline | 79.0 | 75 | N |
| 16-May-14 | Cloudy | 10:53 | 72.0 | 76.1 | 74.2 | <Baseline | 79.0 | 75 | N |
| 22-May-14 | Fine | 10:56 | 71.0 | 76.0 | 74.4 | <Baseline | 79.0 | 75 | N |
| 28-May-14 | Sunny | 9:50 | 70.5 | 73.0 | 71.7 | <Baseline | 79.0 | 75 | N |

⁺ - Façade measurement

⁺⁺ - Free field measurement

^{***} - Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

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.

| | | | | | |
|--|--|---------|----------|----------|--------|
| | Shatin to Central Link Works Contract 1111- Hung Hom North Approach Tunnels | SCALE | N.T.S. | DATE | Jun-14 |
| | Graphical Presentations of Noise Monitoring Results | CHECK | TYUT | DRAWN | IYYS |
| | | JOB NO. | 60284101 | APPENDIX | H |

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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | 0 |
| 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 | | | | | |
|------------------|---|-----------------------|-----------------------|--------------------------|------------------------------------|-----------------------------------|------------------------------------|-------------------------|------------------------|--------------------------|-----------------------|--|--|---------------|-------------------------------------|--------------|----------------|-------------------------|
| | Generated | | | | Disposed | | | | Reused | | | | Recycled | | | Disposed | | |
| | Fill Material | Artificial Material | | Total Quantity Generated | Disposed as Public Fills at TKO137 | Dispose d 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) |
| | | Soil and Rock | Broken Concrete | | | | | | | Asphalt | Tolo | | | | | | | |
| 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) | ('000Kg) | ('000Kg) | ('000Kg) | ('000Kg) | ('000Kg) | |
| Jan | 1.210 | 0.016 | 0.004 | 1.230 | 0.000 | 1.037 | 0.004 | 1.041 | 0.021 | 0.000 | 0.168 | 0.000 | 0.189 | 10.210 | 1.305 | 0.000 | 0.000 | 139.090 |
| Feb | 1.645 | 0.011 | 0.000 | 1.656 | 0.000 | 1.496 | 0.000 | 1.496 | 0.035 | 0.017 | 0.108 | 0.000 | 0.159 | 15.640 | 0.245 | 0.002 | 0.000 | 96.430 |
| Mar | 1.485 | 0.050 | 0.000 | 1.535 | 0.001 | 1.384 | 0.000 | 1.386 | 0.075 | 0.046 | 0.029 | 0.000 | 0.149 | 7.240 | 0.287 | 0.002 | 0.000 | 191.550 |
| Apr | 1.156 | 0.023 | 0.000 | 1.179 | 0.197 | 0.982 | 0.000 | 1.179 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.187 | 0.000 | 0.000 | 107.290 |
| May | 2.370 | 0.020 | 0.000 | 2.390 | 0.257 | 1.587 | 0.000 | 1.844 | 0.030 | 0.000 | 0.000 | 0.516 | 0.546 | 0.000 | 0.123 | 0.002 | 0.000 | 110.180 |
| Jun | | | | | | | | | | | | | | | | | | |
| SUB-TOTAL | 7.865 | 0.120 | 0.004 | 7.989 | 0.455 | 6.487 | 0.004 | 6.946 | 0.161 | 0.062 | 0.304 | 0.516 | 1.043 | 33.090 | 2.147 | 0.006 | 0.000 | 644.540 |
| Jul | | | | | | | | | | | | | | | | | | |
| Aug | | | | | | | | | | | | | | | | | | |
| Sep | | | | | | | | | | | | | | | | | | |
| Oct | | | | | | | | | | | | | | | | | | |
| Nov | | | | | | | | | | | | | | | | | | |
| Dec | | | | | | | | | | | | | | | | | | |
| TOTAL | 7.865 | 0.120 | 0.004 | 7.989 | 0.455 | 6.487 | 0.004 | 6.946 | 0.161 | 0.062 | 0.304 | 0.516 | 1.043 | 33.090 | 2.147 | 0.006 | 0.000 | 644.540 |

Note:

1. Assume the density of fill is 2 ton/m³.

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

**16th 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. 16

[Period from 1 to 31 May 2014]

Works Contract 1103 – Hin Keng to Diamond Hill Tunnels

(June 2014)

Certified by:  Coleman Ng

Position: Environmental Team Leader

Date: 11/06/2014

MTR Corporation Limited

**SCL1103 Hin Keng to Diamond
Hill Tunnels Construction Stage -
Environmental Services**

Monthly Environmental Monitoring
and Audit Report – May 2014

228105-27

May 2014

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 228105-27

Ove Arup & Partners Hong Kong Ltd

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ARUP

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- Appendix C: Environmental Mitigation Implementation Schedule (EMIS)
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Executive Summary

This is the sixteenth 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 May 2014 (1 to 31 May 2014).

In the reporting month, the following activities took place for the Project:

- Excavation and ELS for Launching Shaft and Machinery Assembly at Diamond Hill;
- Pipe Piling, Mucking Out and Excavation and ELS at Hin Keng;
- Platform Erection, Diaphragm Wall and Shaft Excavation at Fung Tak; and
- Diaphragm Wall and Shaft Excavation 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

No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

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.

Waste Disposal

Inert C&D Materials with an actual amount of 5497m³ were generated and disposed of at public fill in TKO137FB and Kai Tak Barging Point Facility (Contract 1108A). 59m³ of general refuse was generated and disposed of at NENT landfill. 1200kg 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 7 May 2014 and the final, an IEC joint site audit, was undertaken on 28 May 2014. No non-conformance to the environmental requirements was identified during the reporting period.

Complaint Log

No complaint in relation to the environmental issues was made against the Project in the reporting period.

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 issues. 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.

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 | Excavation and ELS for Launching Shaft and Machinery Assembly. |
| Hin Keng | Pipe Piling, Mucking Out and Excavation and ELS. |
| Fung Tak | Platform Erection, Diaphragm Wall and Shaft Excavation. |
| Ma Chai Hang | Diaphragm Wall and Shaft Excavation. |

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 SCL Project-wide Environmental Team Leader | Thomas Barrett Richard Kwan | 2163 6181 2688 1283 |
| Independent Environmental Checker: Meinhardt Infrastructure & Environment Ltd. Independent Environmental Checker | Fredrick Leong | 2859 1739 |
| Contractor: VINCI Constructions Grand Projects Project Director IMS Manager | Francois Dudouit L K Mak | 3765 5610 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 | 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-RE1449-13 | Ma Chai Hang | 8 Jan 2014 | 30 Jun 2014 |
| | GW-RE0482-14 | Ma Chai Hang | 12 May 2014 | 11 Nov 2014 |
| | GW-RE0195-14 | Fung Tak | 28-Feb-14 | 27-Aug-2014 |
| | GW-RN0635-13 | Hin Keng | 11 Nov 2013 | 10 May 2014 |
| | GW-RN0154-14 | Hin Keng | 29 Mar 2014 | 29 Jul 2014 |
| | GW-RN0157-14 | Hin Keng | 27 Mar 2014 | 26 Sept 2014 |
| | GW-RN0274-14 | Hin Keng | 10 May 14 | 10 Jul 2014 |
| | GW-RE0486-14 | Diamond Hill | 9 May 2014 | 01 July 2014 |
| | GW-RE0443-14 | Diamond Hill | 29 Apr 2014 | 30 Jun 2014 |

| Types of Permits / Licenses | Reference No. | Site | Valid from | Valid to |
|--|-------------------|--------------|-------------|-------------------------|
| 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 sixteenth 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 31 May 2014.

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 (April 2014) | 14 ^h May 2014 |

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, $\mu\text{g}/\text{m}^3$ | 148.7 | 167.4 | 159.1 |
| Limit Level, $\mu\text{g}/\text{m}^3$ | 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, $\mu\text{g}/\text{m}^3$ | 283.9 | 276.2 | 278.4 |
| Limit Level, $\mu\text{g}/\text{m}^3$ | 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 | GMW-2535 | | 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 cm² (63in²);
- 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

May 2014 was characterised by gloomy and rainy conditions during the first part of the month and persistent hot weather in the latter part. An amber rainstorm warning was in effect between the hours of 0200 and 0345 on the measurement date of 5 May 2014.

3.3.2 Quality Monitoring Results

Monitoring of 24-hour TSP was conducted on 5, 10, 15, 21, 27 and 31 May 2014. 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 ($\mu\text{g}/\text{m}^3$) | | Action Level | Limit Level |
|--------------------|--|-------|--------------|-------------|
| | Average | Range | | |
| DMS-1 | 24.5 | 21.6 | 148.7 | 260 |
| DMS-2 | 31.2 | 39.7 | 167.4 | 260 |
| DMS-3 / DMS-4 | 34.0 | 40.4 | 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 excavation and ELS for launching shaft and machinery Assembly at Diamond Hill; pipe piling, mucking out and excavation and ELS at Hin Keng; and Platform Erection, Diaphragm Wall and Shaft Excavation at Fung Tak.

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 | $L_{eq}(30 \text{ min})$ | 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.

4.2 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. L_{eq} , 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 | 2562763 | 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

The weather condition was mainly fine during the noise monitoring period in the reporting month.

4.3.2 Noise Monitoring Results

Impact Monitoring

Monitoring of the construction noise level was conducted on 2, 7, 16, 22 and 28 May 2014. 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) |
| 2 May 14 | 10:20-10:50 | 58.6 | 57.0 | 53.5 | 70/65 |
| 7 May 14 | 11:15- 11:45 | 58.0 | | 51.1 | |
| 16 May 14 | 09:55-10:25 | 58.4 | | 52.8 | |
| 22 May 14 | 09:50-10:20 | 58.7 | | 53.8 | |
| 28 May 14 | 10:00-10:30 | 59.1 | | 54.9 | |

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) |
| 2 May 14 | 13:00-13:30 | 69.4 | 66.0 | 66.7 | 70/65 |
| 7 May 14 | 13:50-14:20 | 68.7 | | 65.4 | |
| 16 May 14 | 13:10-13:40 | 67.8 | | 63.1 | |
| 22 May 14 | 10:55-11:25 | 68.5 | | 64.9 | |
| 28 May 14 | 14:20-14:50 | 68.8 | | 65.6 | |

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) |
| 2 May 14 | 09:00-09:30 | 67.5 | 73.0 | < Baseline Level | 70/65 |
| 7 May 14 | 09:25-09:55 | 67.1 | | < Baseline Level | |
| 16 May 14 | 11:15-11:45 | 67.2 | | < Baseline Level | |
| 22 May 14 | 14:00-14:30 | 68.0 | | < Baseline Level | |
| 28 May 14 | 13:10-13:40 | 68.5 | | < 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

No Action Level exceedance was recorded since no noise related complaint was received in 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 7 and 21 May 2014. 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 | 5497m ³ | TKO137FB and Kai Tak Barging Point Facility (1108A) |
| Chemical Waste | 1200kg | Disposed of by a licensed collector |
| Paper / cardboard packaging | 0 | - |
| Plastic | 0 | |
| Metal | 0 | |
| General Refuse | 59m ³ | NENT Landfill |

7 Environmental Performance

7.1 Environmental Site Inspection

Environmental site inspections were carried out on a weekly basis, with the IEC joint site inspection being carried out on 28 May 2014, 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 7.1**.

Table 7.1 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 |
|-----------------|--------------|---|---|---|
| Water | | | | |
| 14 May 2014 | Ma Chai Hang | The contractor is reminded to clear on-site standing water after rain events. | Agreed with ET's Advice. | The contractor rectified the issue and cleared all on-site standing water. Closed 21 May 2014. |
| 21 May 2014 | Fung Tak | The contractor is reminded to clear sediment from the U-drain in order to improve the capacity during rain events. | Agreed with ET's Advice. | The contractor rectified the issue and cleared the U-drain. Closed 28 May 2014. |
| 21 May 2014 | Fung Tak | The contractor is reminded to ensure that sufficient sandbags are provided to avoid leakage of water off site during rain events. | Agreed with ET's Advice. | The contractor rectified the issue and increased the provision of sandbags. Closed 28 May 2014. |
| Noise | | | | |
| 30 April 2014 | Hin Keng | The contractor is required to adopt appropriate noise mitigation measures for the air ventilation fan. | Agreed with ET's advice. | The contractor rectified the issue and provided a noise barrier. Closed 7 May 2014. |
| Waste | | | | |
| 7 May 2014 | Fung Tak | The contractor is reminded to ensure that drip trays are regularly emptied after rain | Agreed with ET's Advice. | The contractor rectified the issue and |

| Inspection Date | Works Area | Key Observations and Recommendations | Contractor's Response / Environmental Outcome | Closed Date / Follow up Status |
|-----------------|--------------|---|---|---|
| | | events and that any liquid is treated as chemical waste. | | ensured drip trays were regularly emptied. Closed 14 May 2014. |
| 28 May 2014 | Diamond Hill | The contractor is reminded to ensure that chemical waste stores are sufficiently maintained in order to remain effective. | Agreed with ET's Advice. | The contractor immediately rectified the issue and provided a sufficient chemical waste store. Closed 28 May 2014. |

7.2 Summary of Environmental Complaint

No environmental complaints regarding environmental issue were recorded in the reporting month. The updated statistical summary of complaint is presented in **Table 7.2**. The updated complaint logs, if any, of the Project in the reporting month is shown in **Appendix L**.

Table 7.2 Summary of Complaints

| Reporting Period | Complaint Statistics | | Area of Concern | Validity to the Project | Status |
|-------------------|----------------------|------------|-----------------|-------------------------|--------|
| | Number | Cumulative | | | |
| 01/05/14–31/05/14 | 0 | 0 | N/A | N/A | N/A |

7.3 Summary of Environmental Non-Compliance

There was no non-compliance identified during the reporting month so review of the non-compliance was not required.

7.4 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.

8 Future Key Issues

8.1 Key Issues for the Coming Month

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

Table 8.1 Tentative Programme of Construction Works for the Coming Month

| Locations | Major Works Undertaken |
|--------------|---|
| Diamond Hill | Excavation and ELS for Launching Shaft and Machinery Assembly |
| Hin Keng | Pipe Piling, Mucking Out and Excavation and ELS |
| Fung Tak | Platform Erection, Diaphragm Wall and Shaft Excavation |
| Ma Chai Hang | Diaphragm Wall and Shaft Excavation |

8.2 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**.

8.3 Construction Program for the Coming Month

The construction programme for the coming month is shown in **Appendix A**.

9 Conclusions and Recommendations

9.1 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.

No exceedance of the Action and Limit Levels of 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.

No complaint and 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.

9.2 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.

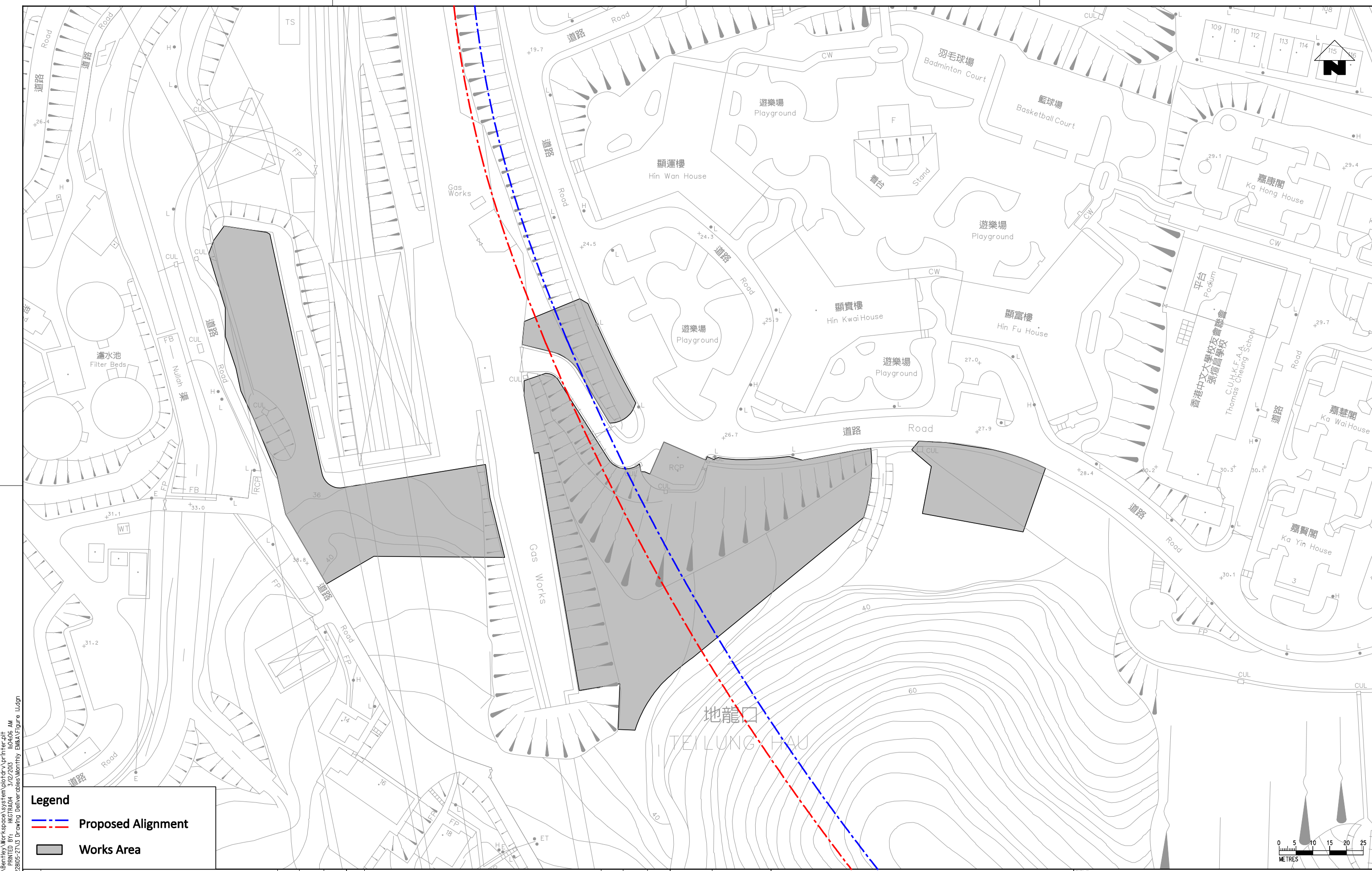
Water Quality impact is also a key environmental issue. The drainage system should be well maintained. All wastewater generated within the site shall be collected and treated prior to discharge.

Construction noise is also a key environmental issues. 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.

10 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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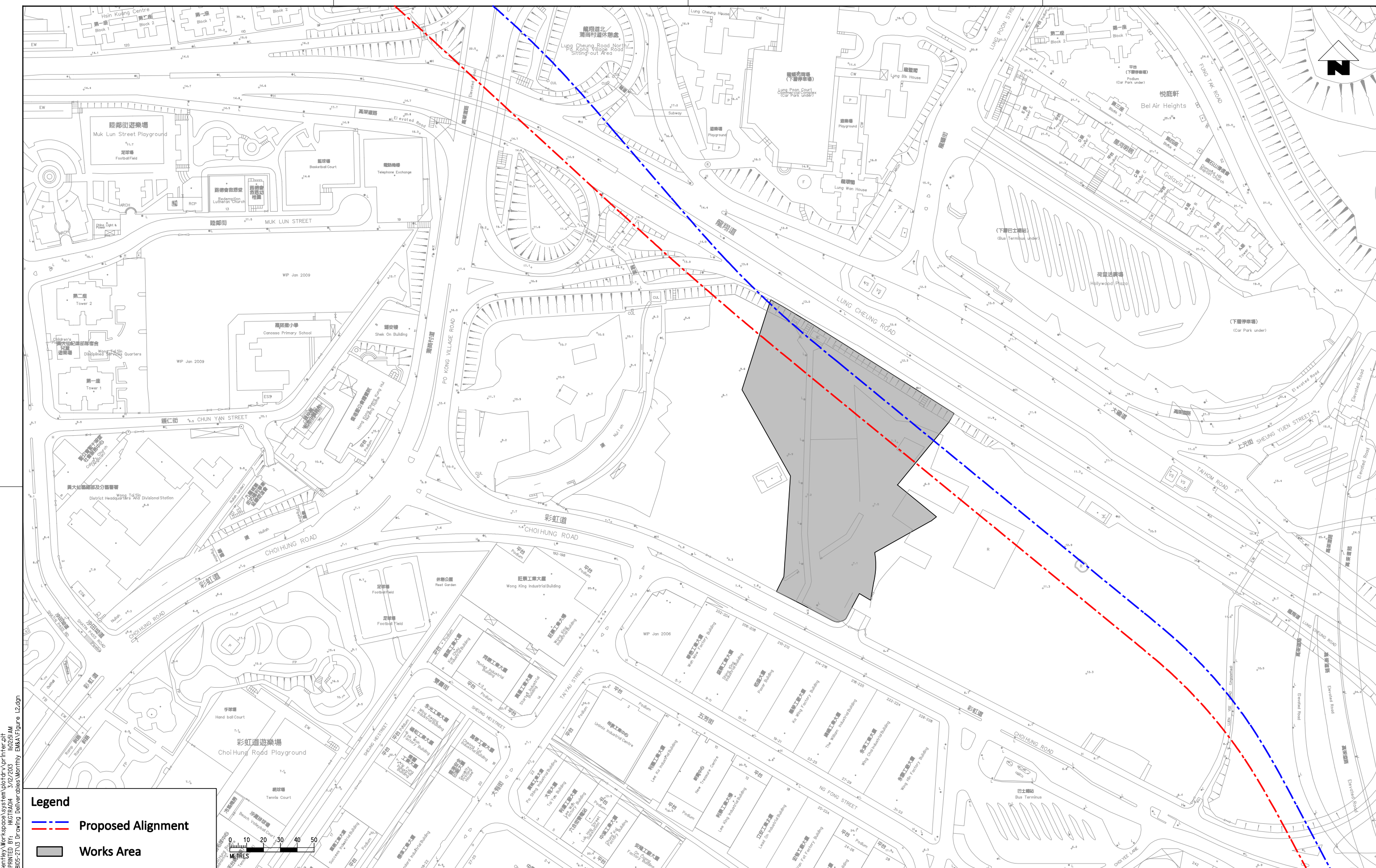
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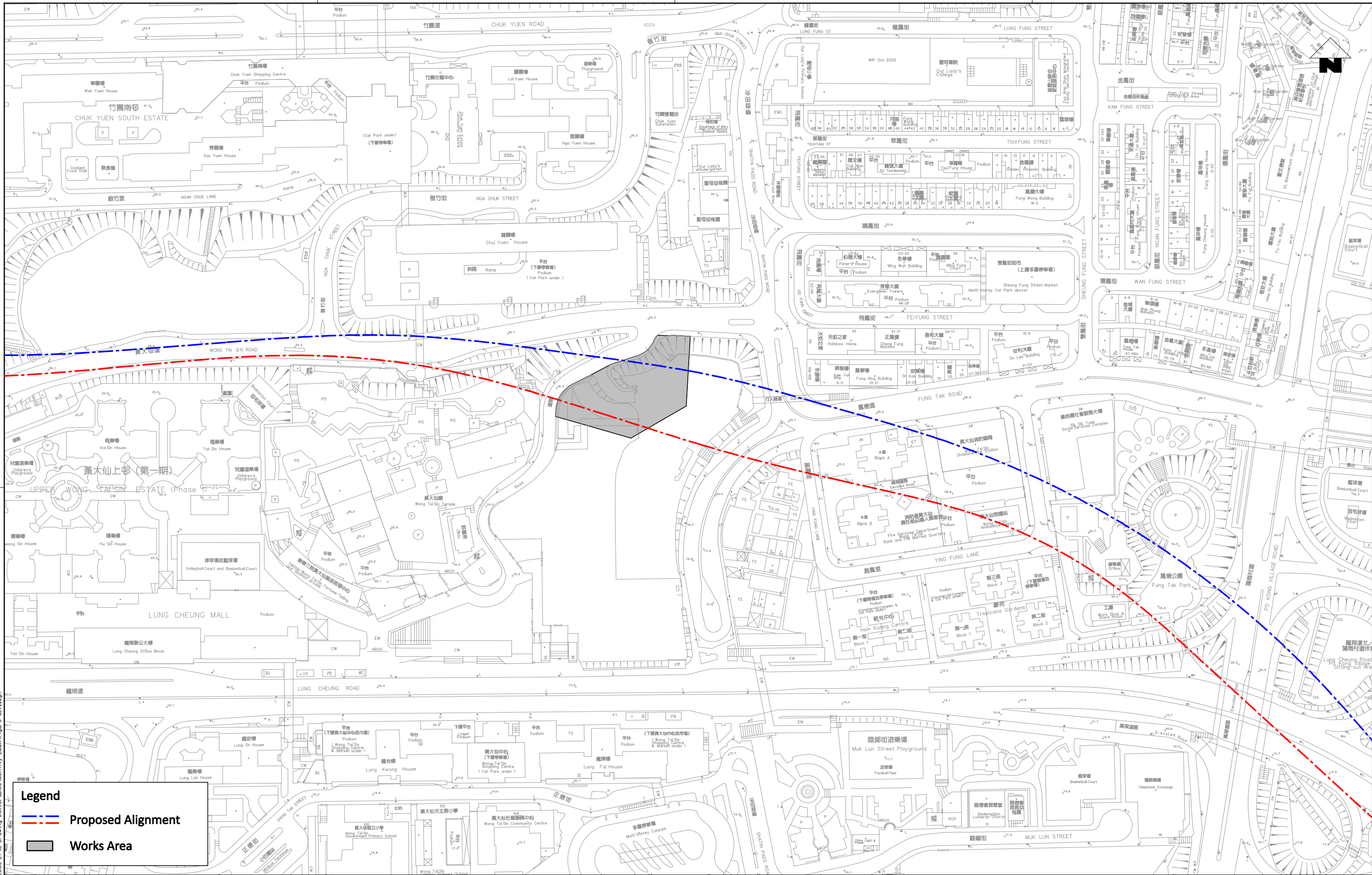
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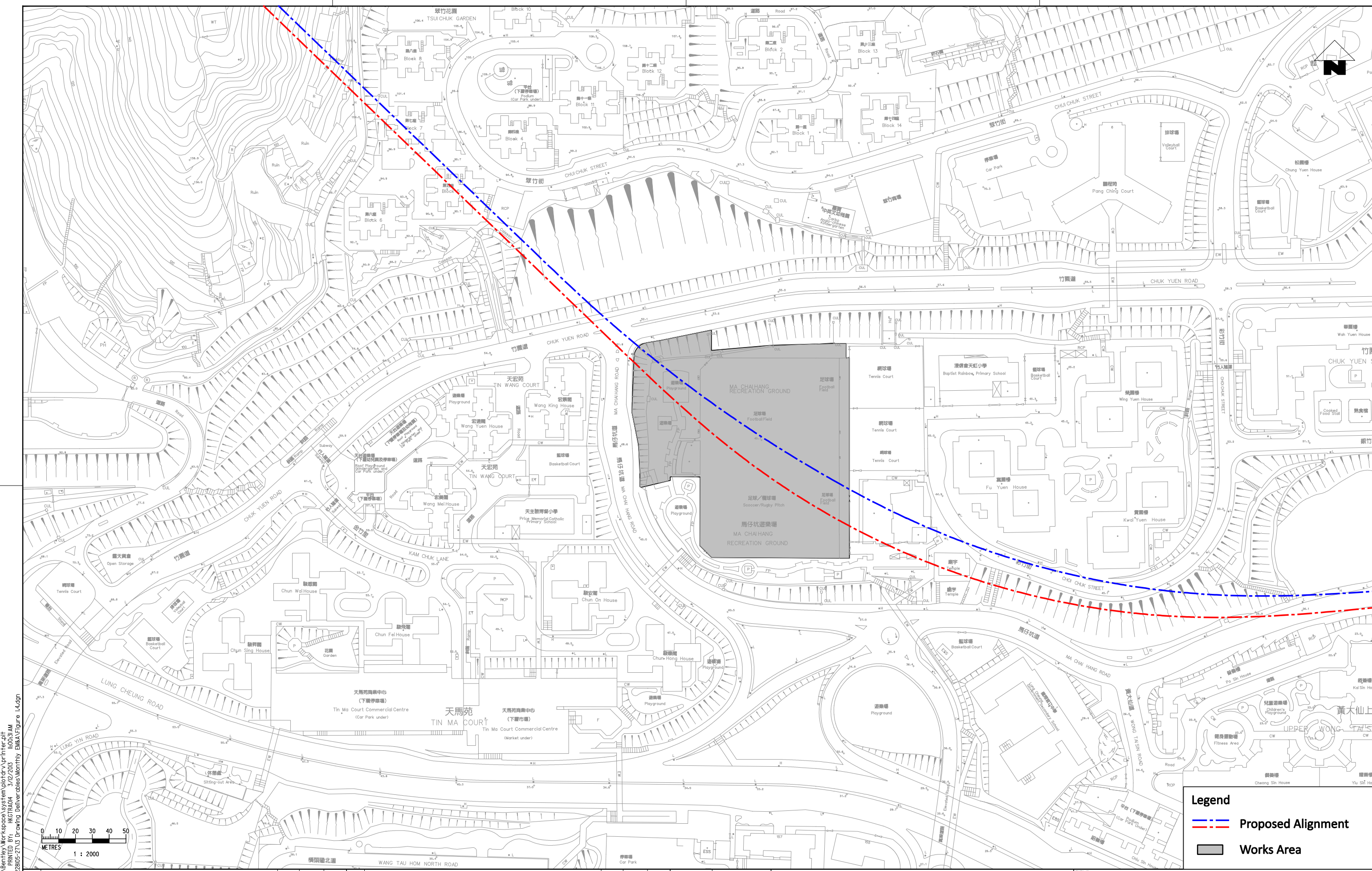
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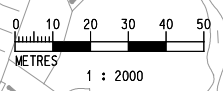
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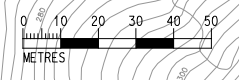
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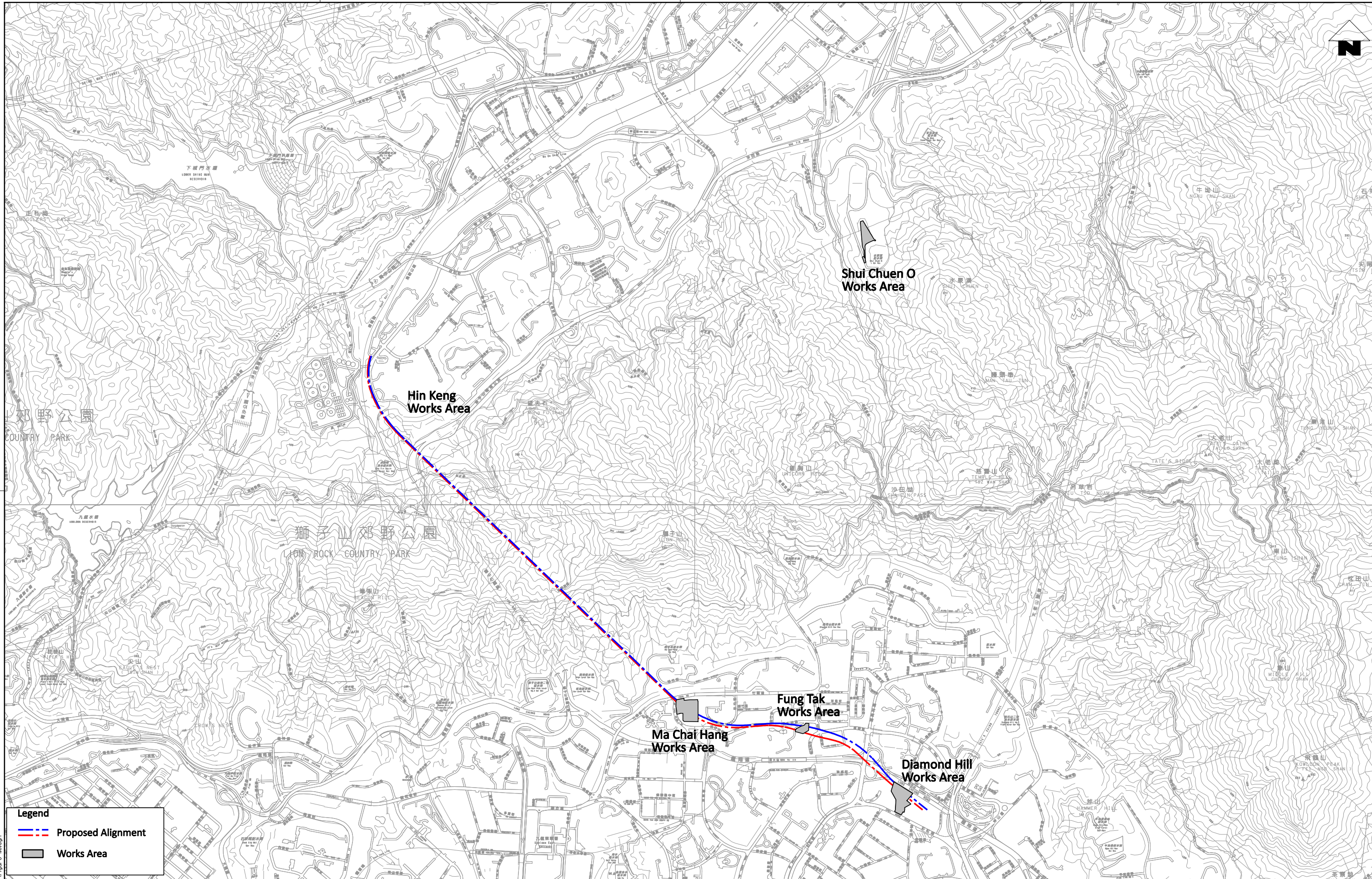
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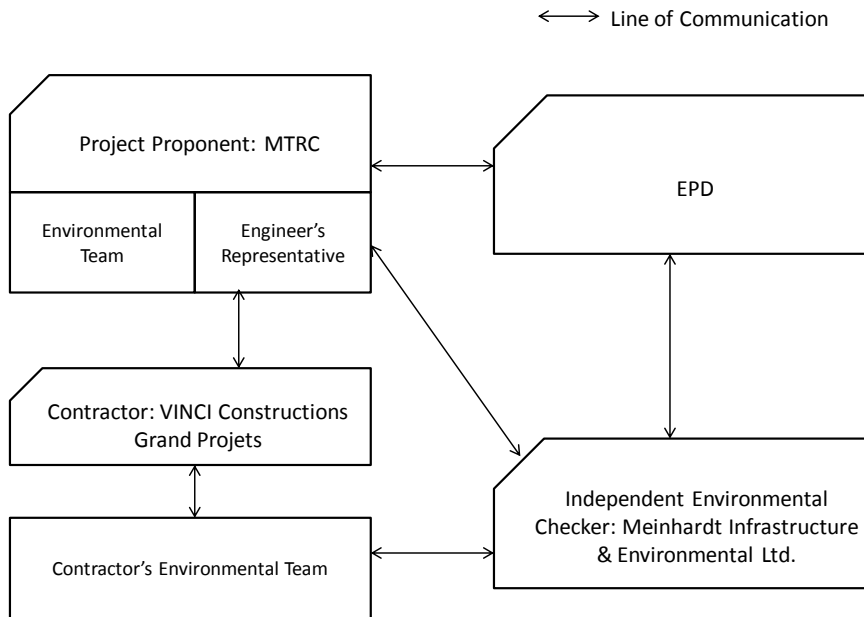
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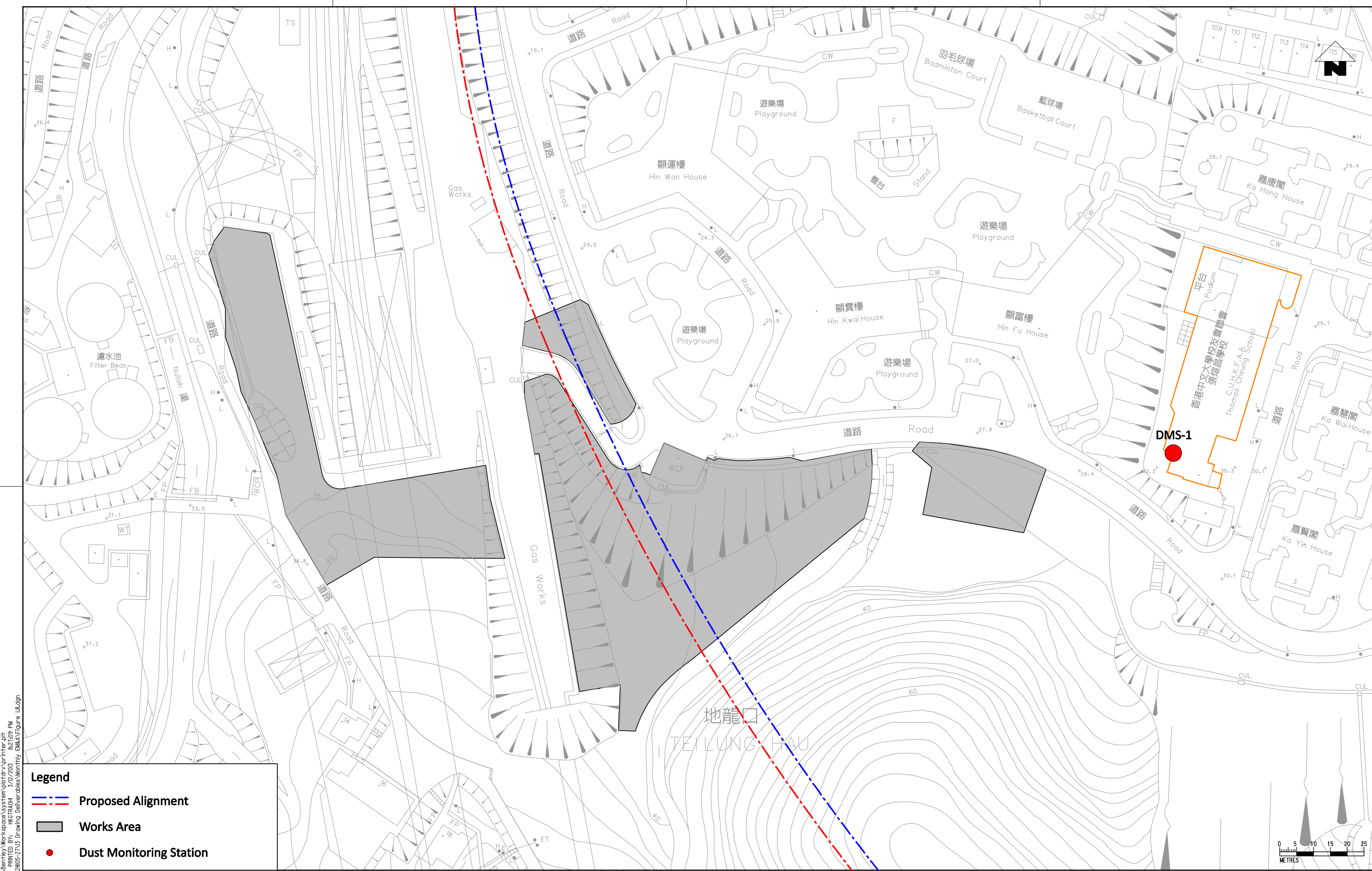
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Figure 1.7 - Project Organisation for Environmental Works

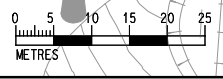




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Legend

- Proposed Alignment
- Works Area
- Dust Monitoring Station



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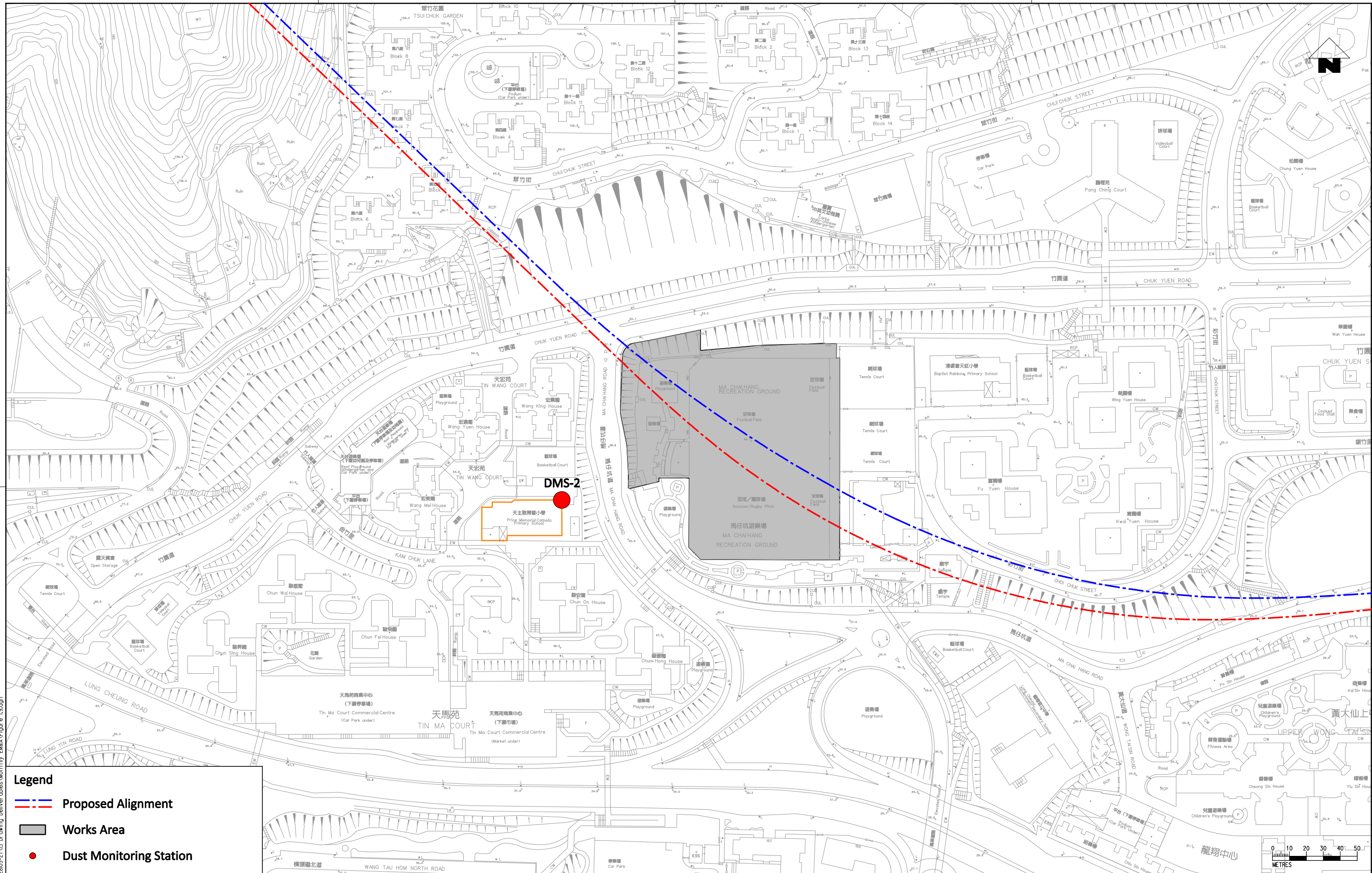
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TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Proposed Dust Monitoring Stations
(Sheet 1 of 3)

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- Legend**
- - - - · - · - Proposed Alignment
 - Works Area
 - Dust Monitoring Station

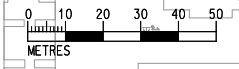
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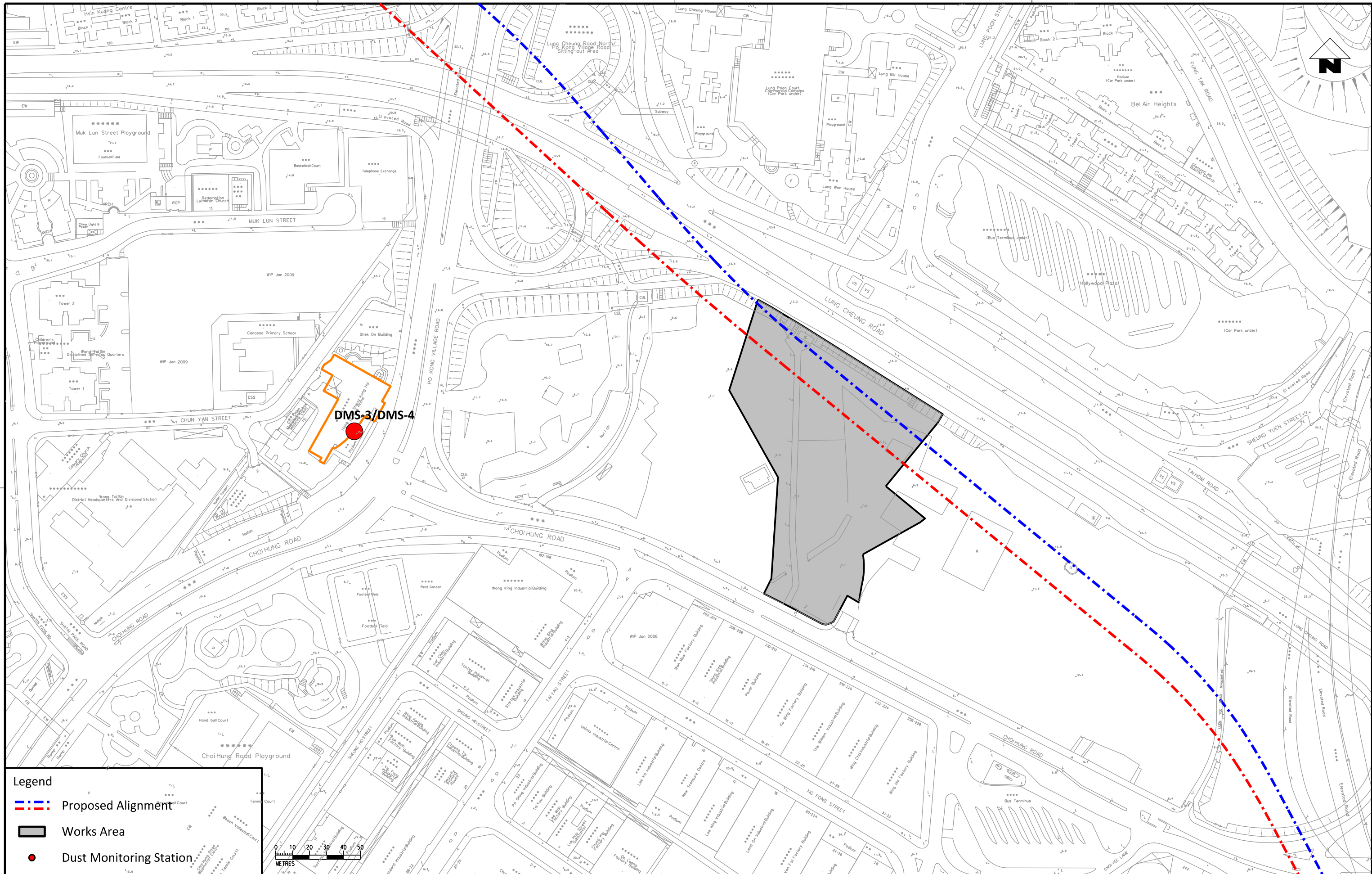
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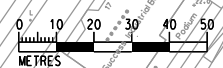
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Legend

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



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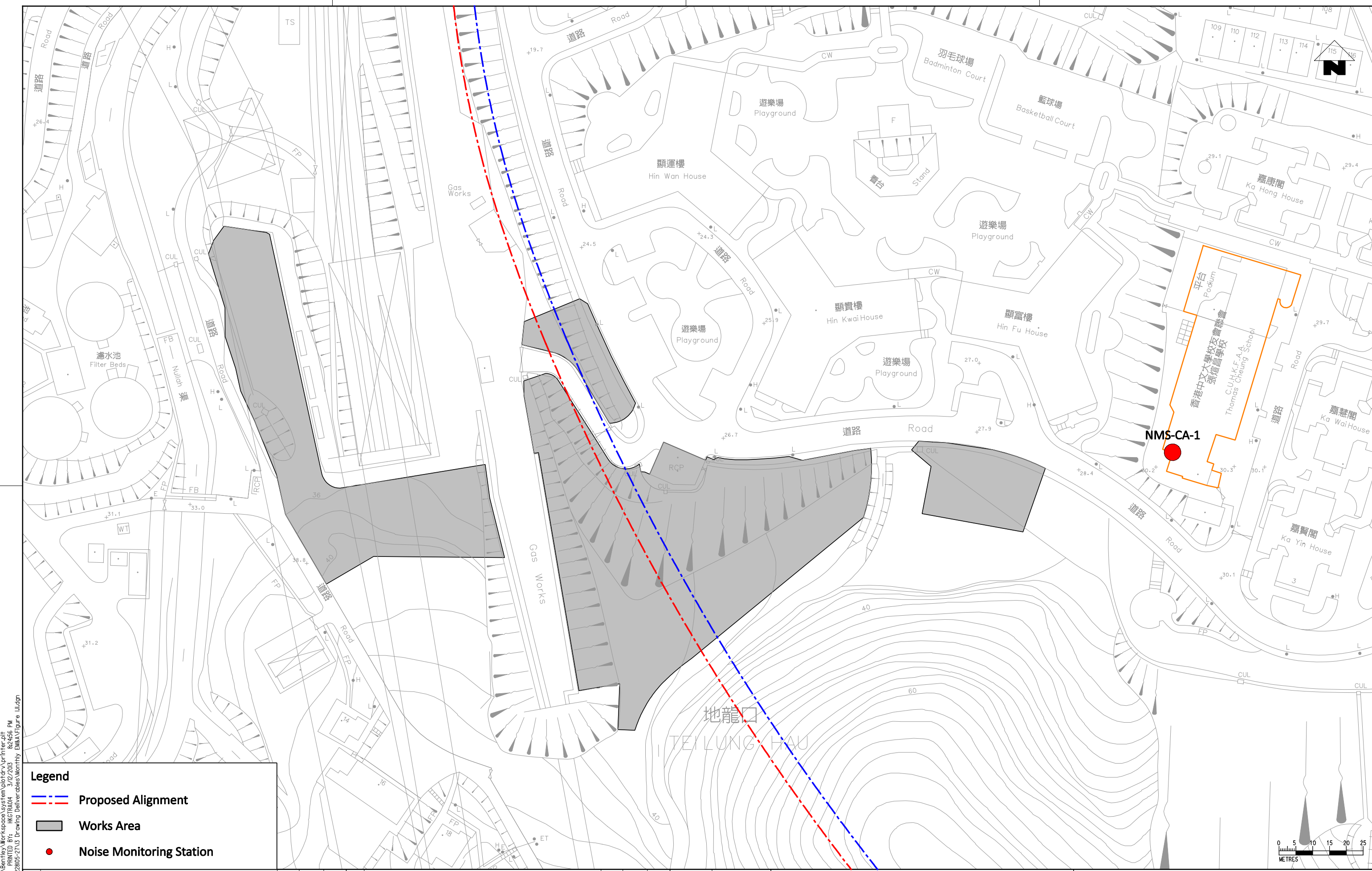
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CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Proposed Dust Monitoring Stations
(Sheet 3 of 3)

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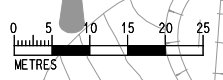
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Legend

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



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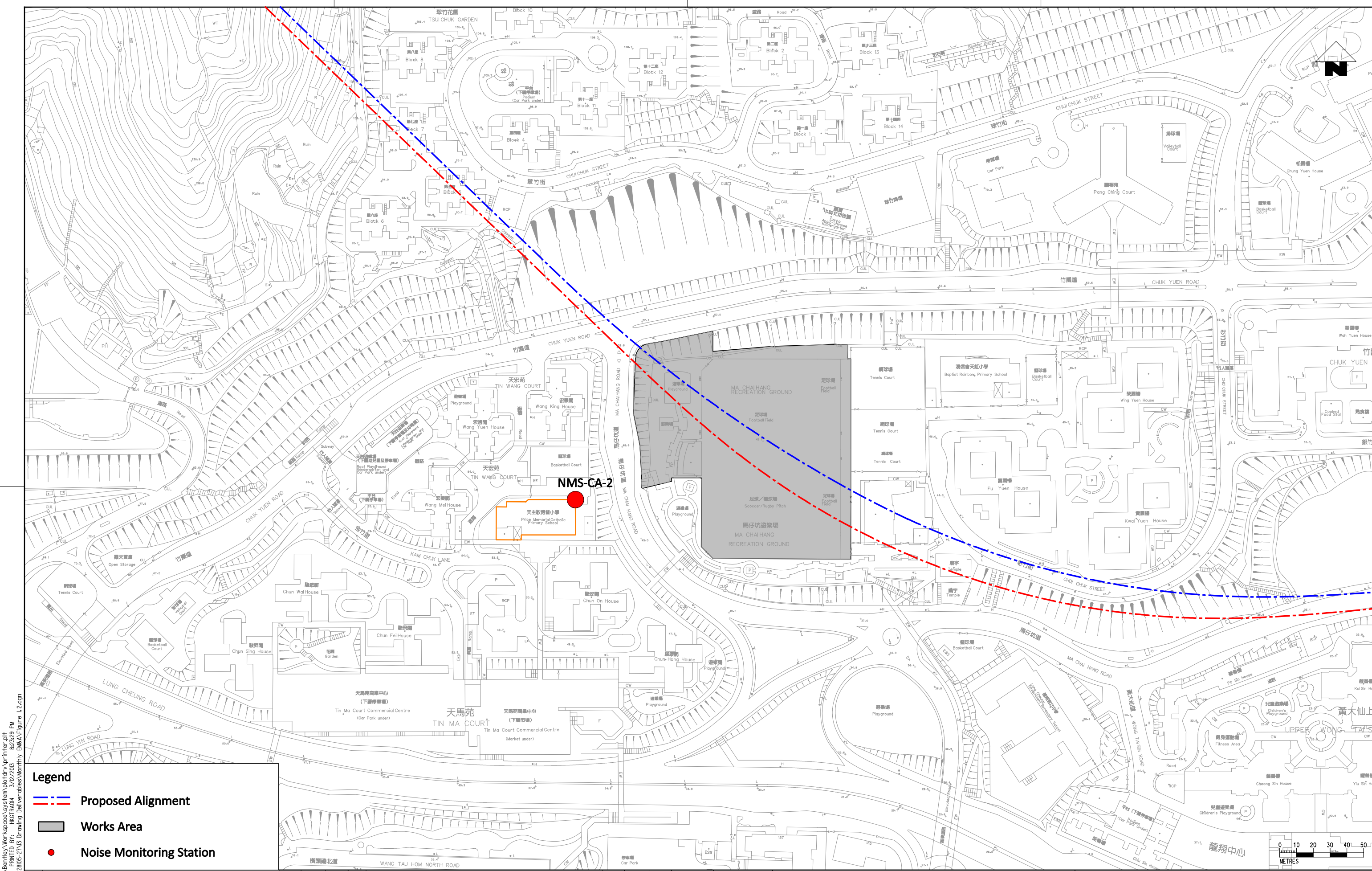
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TITLE

CONTRACT 1103
HIN KENG TO DIAMOND HILL TUNNELS
Locations of Noise Monitoring Stations
(Construction Airborne Noise)
(Sheet 1 of 3)

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

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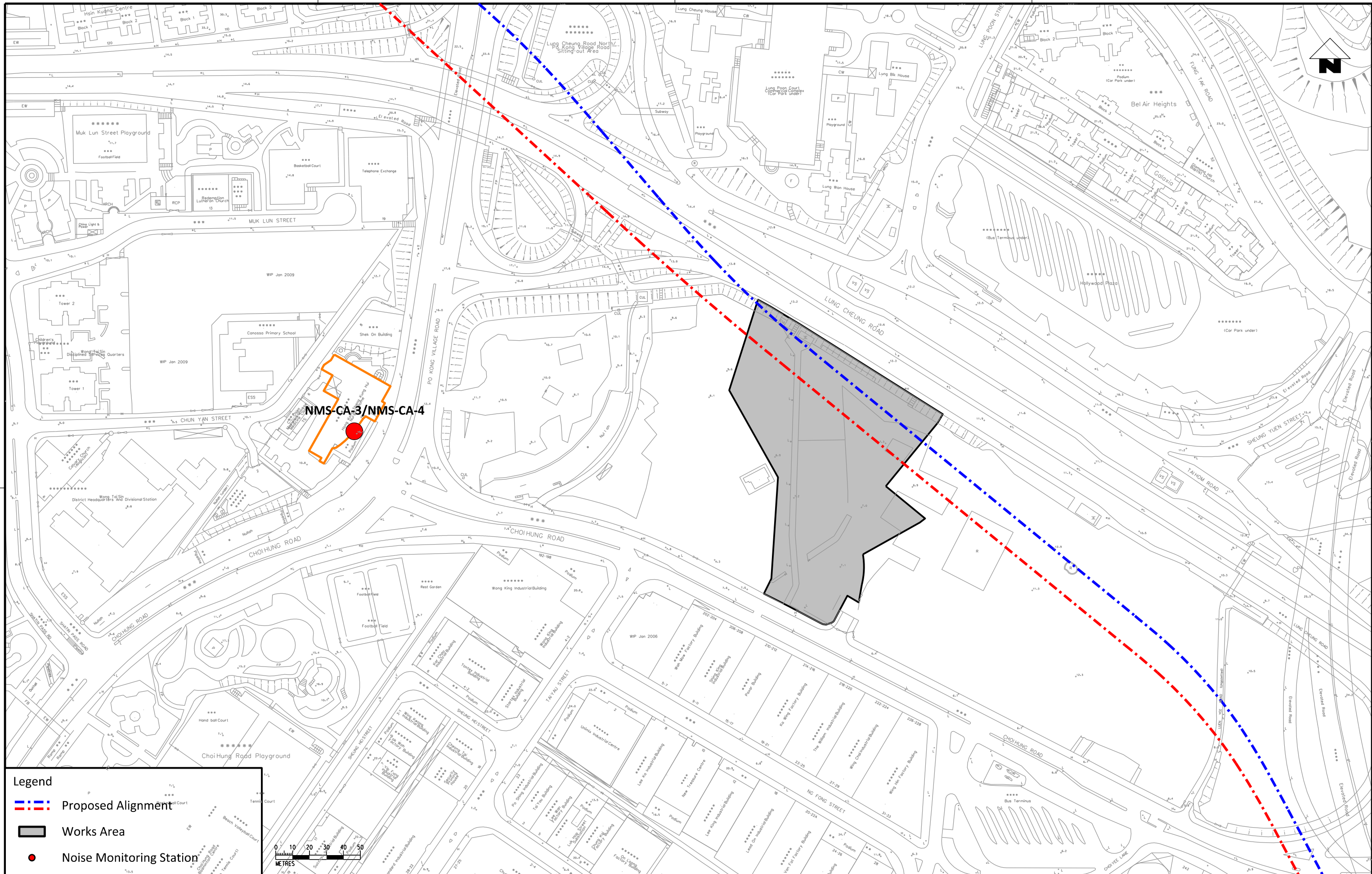
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HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Noise Monitoring Stations
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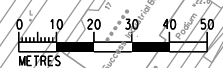
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NMS-CA-3/NMS-CA-4

Legend

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



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 HIN KENG TO DIAMOND HILL TUNNELS
 Locations of Noise Monitoring Stations
 (Construction Airborne Noise)
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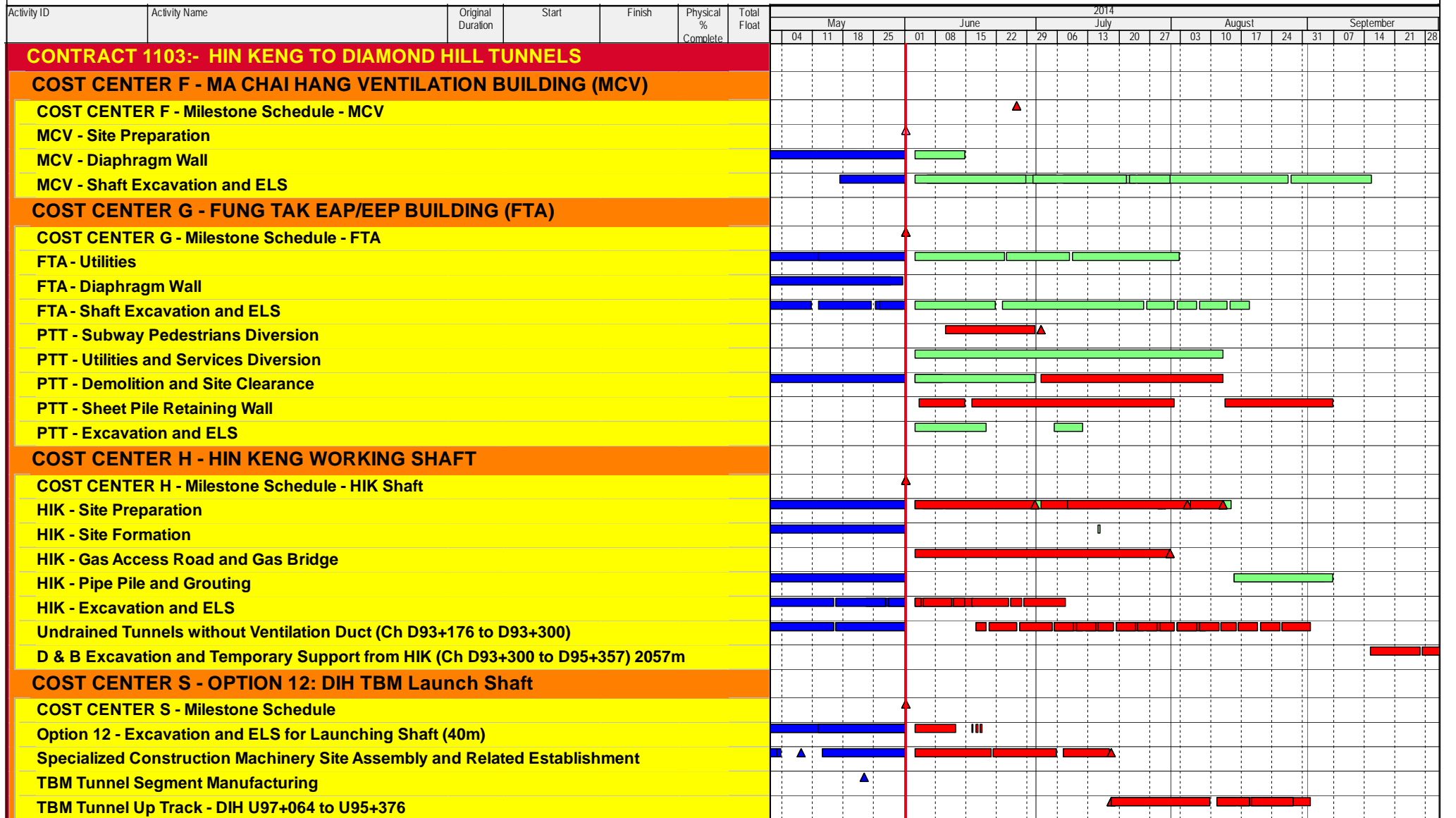
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Appendix A

Construction Programme



GRANDS PROJETS

Three Month Rolling Programme
As of 1-Jun-2014

| Date | Revision | Checked | Approved |
|----------|--------------------------------|---------|----------|
| 05-06-14 | Submission for MTR Information | QT | RD |
| | | | |
| | | | |

Appendix B

Environmental
Monitoring
Programme in
Reporting Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Impact Monitoring Schedule - May 2014**

| Date | Air Quality | Noise | Site Inspection |
|---------------|--------------|---------------------------|-----------------|
| | 24-hours TSP | L _{Aeq} , 30 min | |
| 01-May-14 Thu | | | |
| 02-May-14 Fri | | | |
| 03-May-14 Sat | | | |
| 04-May-14 Sun | | | |
| 05-May-14 Mon | | | |
| 06-May-14 Tue | | | |
| 07-May-14 Wed | | | |
| 08-May-14 Thu | | | |
| 09-May-14 Fri | | | |
| 10-May-14 Sat | | | |
| 11-May-14 Sun | | | |
| 12-May-14 Mon | | | |
| 13-May-14 Tue | | | |
| 14-May-14 Wed | | | |
| 15-May-14 Thu | | | |
| 16-May-14 Fri | | | |
| 17-May-14 Sat | | | |
| 18-May-14 Sun | | | |
| 19-May-14 Mon | | | |
| 20-May-14 Tue | | | |
| 21-May-14 Wed | | | |
| 22-May-14 Thu | | | |
| 23-May-14 Fri | | | |
| 24-May-14 Sat | | | |
| 25-May-14 Sun | | | |
| 26-May-14 Mon | | | |
| 27-May-14 Tue | | | |
| 28-May-14 Wed | | | |
| 29-May-14 Thu | | | |
| 30-May-14 Fri | | | |
| 31-May-14 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 | <ul style="list-style-type: none"> •AFCD's requirements •EIAO •Country Parks Ordinance | ✓ |
| | E2 | <p><u>Habitat Loss</u></p> <p>A detailed vegetation survey should be conducted in the Hin Keng Portal area to locate and enumerate individuals of <i>Aquilaria sinensis</i> which will potentially be affected by construction and operation of the Portal.</p> <p>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.</p> | Minimize ecological impacts on important species | Hin Keng Portal areas | Prior to site clearance | <ul style="list-style-type: none"> •AFCD's requirements | ✓ |
| S5.7 | E3 | <p><u>Tree felling and vegetation removal</u></p> <p>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.</p> | Minimize ecological impacts to breeding bird species of conservation interest | Works sites for DIH | Prior to site clearance | <ul style="list-style-type: none"> •AFCD's requirements | N/A |

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 |
|-------------------------------------|--------------|--|---|--------------------------|---------------------------------|---|---|
| Ecology (Construction Phase) | | | | | | | |
| S5.7 | E5 | <p><u>Good Site Practices</u></p> <p>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.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> • 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 | | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |

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 | <p><u>Water Quality and Hydrology</u></p> <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Avoid indirect water impact to any wetland habitats or wetland fauna Minimize the drawdown of water table | Works area in Hin Keng | Construction stage | <ul style="list-style-type: none"> TCW No. 5/2005 | <p align="center">✓</p> <p align="center">✓</p> |

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 |
|---|--------------|--|---|--------------------------|---------------------------------|---|---|
| <i>Landscape and Visual (Construction Phase)</i> | | | | | | | |
| S6.9.3 | LV1 | <p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> 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. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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 | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |

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 |
|----------|--------------|---|---|--------------------------|--|---|---|
| | | prior to undertaking any works adjacent to all retained trees, including trees in contractor's works sites. | | | | | ✓ |
| S6.12 | LV2 | <ul style="list-style-type: none"> <li>• <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. <li>• <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. <li>• <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 | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |

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 |
|---|--------------|--|---|--------------------------|---------------------------------|--|-----------------------|
| Air Quality (Construction Phase) | | | | | | | |
| - | A1 | Emission from Vehicles and Plants <ul style="list-style-type: none"> • 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 | ✓ |
| S7.6.5 | D2 | <ul style="list-style-type: none"> • 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 | ✓ |

Notes (*): ✓ - Compliance; N/A – Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C – Non Compliance

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 |
|----------|--------------|---|---|--------------------------|---------------------------------|--|---|
| | | maintain an equivalent intensity of no less than 1.8 L/m ² to achieve the dust removal efficiency | | | | | |
| S7.6.5 | D3 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |

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| | | <p>period;</p> <ul style="list-style-type: none"> • 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; | | | | | <p align="center">✓</p> <p align="center">✓</p> <p align="center">N/A</p> <p align="center">✓</p> <p align="center">✓</p> |

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| | | <ul style="list-style-type: none"> • 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, turving, 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. | | | | | <p align="center">✓</p> <p align="center">✓</p> <p align="center">N/A</p> |
| 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 | <p align="center">✓</p> |

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| Construction Noise (Airborne) | | | | | | | |
| S8.3.6 | N1 | Implement the following good site practices: <ul style="list-style-type: none"> • 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 | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |
| 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 | <p align="center">✓</p> |
| 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 | <p align="center">Rdr</p> |

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| | | 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 | ✓ |

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| Water Quality (Construction Phase) | | | | | | | |
| S10.7.1 | W1 | <p>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:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> 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 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 | To minimize water quality impact from construction site runoff and general construction activities | All construction sites where practicable | Construction stage | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water | <p align="center">✓</p> <p align="center">Rdr</p> <p align="center">✓</p> |

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| | | <p>commencement of construction.</p> <ul style="list-style-type: none"> • 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 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 | | | | | <p align="center">✓</p> <p align="center">✓</p> <p align="center">Rdr</p> <p align="center">✓</p> <p align="center">✓</p> |

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| | | <p>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.</p> <ul style="list-style-type: none"> • 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 | | | | | <p align="center">✓</p> <p align="center">Rdr</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |

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| | | <p>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.</p> <ul style="list-style-type: none"> 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 | | | | | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |
| S10.7.1 | W2 | <p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN 1/94 TM-water TM-EIAO | <p align="center">N/A</p> <p align="center">N/A</p> <p align="center">N/A</p> <p align="center">N/A</p> |
| S10.7.1 | W3 | <u>Sewage Effluent</u> | To minimize water quality | All construction sites | Construction | <ul style="list-style-type: none"> Water Pollution | |

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| | | <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> TM-water | ✓ |
| S10.7.1 | W4 | <p><u>Groundwater from Contaminated Area:</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water TM-EIAO | N/A |
| | | | | | | | N/A |
| | | | | | | | N/A |

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| | | <p>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.</p> | | | | | |
| S10.7.1 | W7 | <p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water | <p align="center">Rdr</p> <p align="center">✓</p> <p align="center">✓</p> |

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| Waste Management (Construction Phase) | | | | | | | |
| S11.4.1.1 | WM1 | <p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> DEVB TC(W) No. 6/2010 | ✓ |
| S11.5.1 | WM2 | <p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance | ✓ ✓ |

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| | | <p>promote the use of recycled aggregates where appropriate;</p> <ul style="list-style-type: none"> • 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 | | | | <ul style="list-style-type: none"> • ETWB TCW No. 19/2005 | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |
| S11.5.1 | WM3 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 | <p align="center">✓</p> <p align="center">N/A</p> |

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| | | 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 | <p><u>General Refuse</u></p> <ul style="list-style-type: none"> • 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 | <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> <p align="center">✓</p> |
| S11.5.1 | WM5 | <p><u>Excavated Contaminated Soils</u></p> <p>Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.</p> | 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. | |

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| | | | | | | | |
| S11.5.1 | WM7 | <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | <p align="center">✓</p> <p align="center">✓</p> <p align="center">Rdr</p> <p align="center">✓</p> |

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|--------------|--------------|---|---|--------------------------|---------------------------------|---|----------------------------|
| 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 | <ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • TM-EIAO | ✓ |
| S14.2 – 14.4 | EM2 | <p>1) An Environmental Team needs to be employed as per the EM&A Manual.</p> <p>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</p> <p>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.</p> | Perform environmental monitoring & auditing | All construction sites | Construction stage | <ul style="list-style-type: none"> • EIAO Guidance Note No.4/2010 • TM-EIAO | <p>✓</p> <p>✓</p> <p>✓</p> |

Appendix D

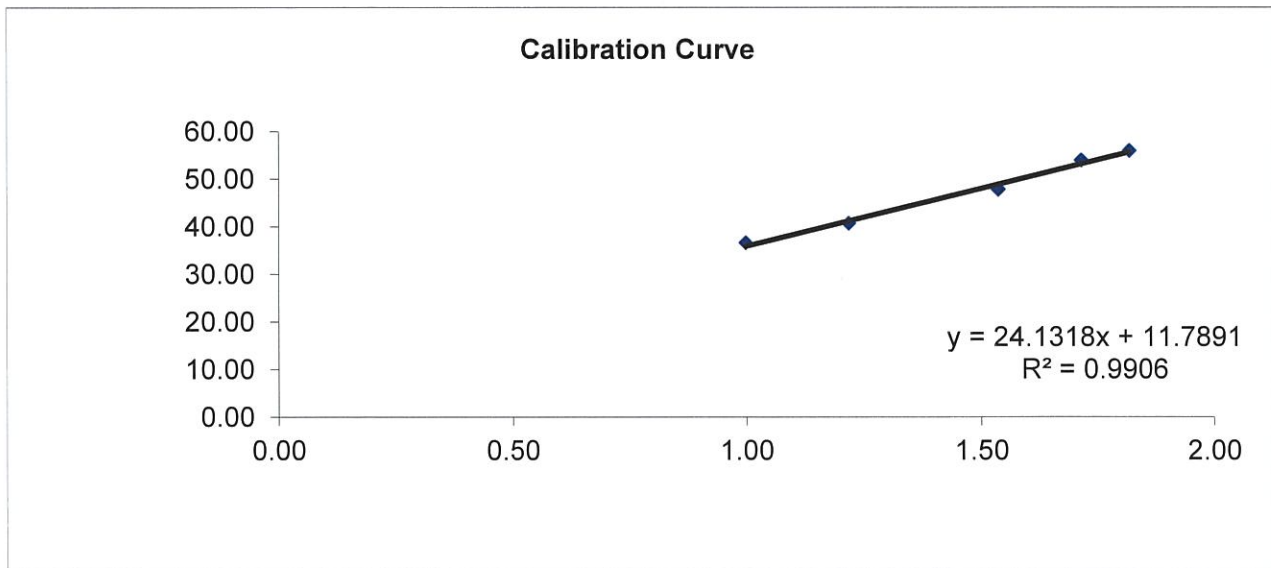
Calibration
Certificates for Air
Monitoring
Equipment

Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

| | | | |
|---|-----------------------------|---------------------|-----------|
| Calibration date | 12-Mar-14 | Barometric pressure | 761 mm Hg |
| Next Calibration date | 11-May-14 | Temperature (°C) | 16 °C |
| Sampler location | DMS1 - Thomas Cheung School | Temperature (K) | 289 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 ₂ O) | Flow Recorder Reading (CFM) | Calculated Q _{std} (m ³ /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|---|-----------------------------|---|---|
| 5 | 3.20 | 36.00 | 1.00 | 36.58 |
| 7 | 5.00 | 40.00 | 1.22 | 40.64 |
| 10 | 8.30 | 47.00 | 1.54 | 47.76 |
| 13 | 10.50 | 53.00 | 1.71 | 53.85 |
| 18 | 11.90 | 55.00 | 1.82 | 55.89 |



Linear Regression

Sampler slope (m) : **24.1318**
 Sampler intercept (b) : **11.7891**
 Correlation coefficient (R²) : **0.9906**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 
 Checked by: 

Date: 12-3-14
 Date: 24-3-14

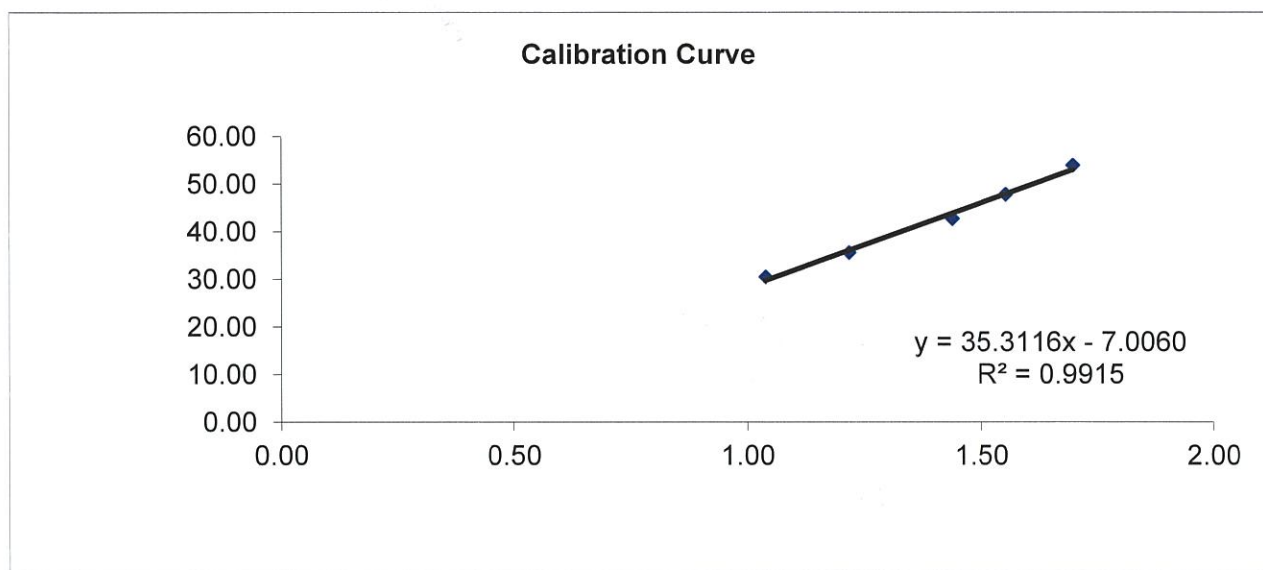
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

| | | | |
|-----------------------|------------------------------------|---------------------|-----------|
| Calibration date | 12-Mar-14 | Barometric pressure | 761 mm Hg |
| Next Calibration date | 11-May-14 | Temperature (°C) | 16 °C |
| Sampler location | DMS3 - Sheng Kung Hui Nursing Home | Temperature (K) | 289 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 ₂ O) | Flow Recorder Reading (CFM) | Calculated Q _{std} (m ³ /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|---|-----------------------------|---|---|
| 5 | 3.50 | 30.00 | 1.04 | 30.48 |
| 7 | 5.00 | 35.00 | 1.22 | 35.56 |
| 10 | 7.20 | 42.00 | 1.44 | 42.68 |
| 13 | 8.50 | 47.00 | 1.55 | 47.76 |
| 18 | 10.30 | 53.00 | 1.70 | 53.85 |



Linear Regression

| | |
|---|----------------|
| Sampler slope (m) : | 35.3116 |
| Sampler intercept (b) : | -7.0060 |
| Correlation coefficient (R ²) : | 0.9915 |

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____

Date: 12-3-14

Checked by: [Signature]

Date: 24-3-14

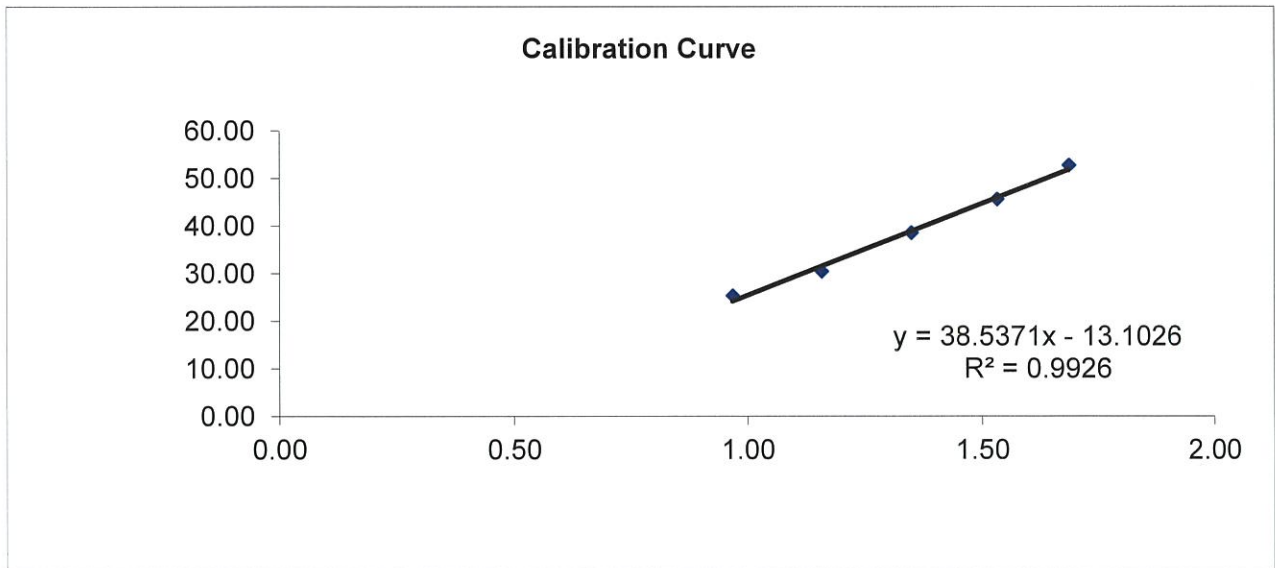
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

| | | | |
|-----------------------|------------------------------------|---------------------|-----------|
| Calibration date | 14-Mar-14 | Barometric pressure | 761 mm Hg |
| Next Calibration date | 13-May-14 | Temperature (°C) | 18 °C |
| Sampler location | DMS2 - Price Memorial Catholic Pri | Temperature (K) | 291 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 ₂ O) | Flow Recorder Reading (CFM) | Calculated Q _{std} (m ³ /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|---|-----------------------------|---|---|
| 5 | 3.00 | 25.00 | 0.97 | 25.32 |
| 7 | 4.50 | 30.00 | 1.16 | 30.38 |
| 10 | 6.30 | 38.00 | 1.35 | 38.48 |
| 13 | 8.30 | 45.00 | 1.53 | 45.57 |
| 18 | 10.20 | 52.00 | 1.69 | 52.66 |




Linear Regression

| | |
|---|----------|
| Sampler slope (m) : | 38.5371 |
| Sampler intercept (b) : | -13.1026 |
| Correlation coefficient (R ²) : | 0.9926 |

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Checked by: 

Date: 14-3-14

Date: 24-3-14

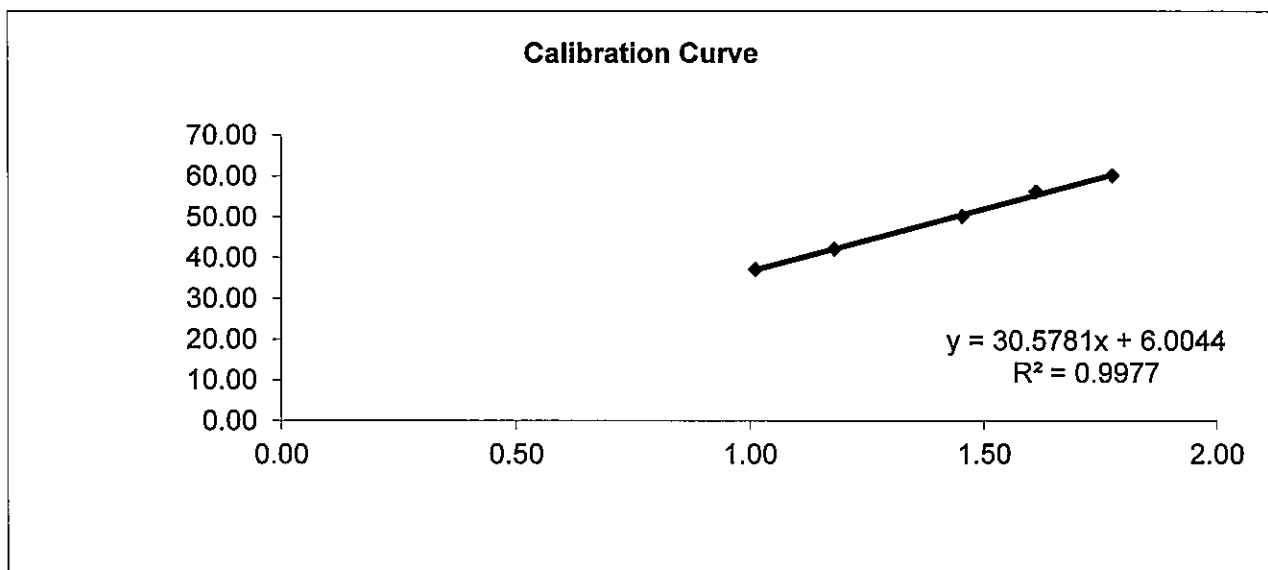
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

| | | | |
|-----------------------|------------------------------------|---------------------|-----------|
| Calibration date | 7-May-14 | Barometric pressure | 756 mm Hg |
| Next Calibration date | 6-Jul-14 | Temperature (°C) | 23 °C |
| Sampler location | DMS3 - Sheng Kung Hui Nursing Home | Temperature (K) | 296 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 |

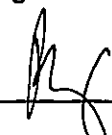
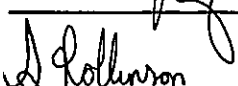
| Resistance Plate No. | Manometer Reading (inch H ₂ O) | Flow Recorder Reading (CFM) | Calculated Q _{std} (m ³ /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|---|-----------------------------|---|---|
| 5 | 3.40 | 37.00 | 1.01 | 37.03 |
| 7 | 4.80 | 42.00 | 1.18 | 42.03 |
| 10 | 7.60 | 50.00 | 1.45 | 50.04 |
| 13 | 9.50 | 56.00 | 1.61 | 56.04 |
| 18 | 11.70 | 60.00 | 1.78 | 60.04 |



Linear Regression

Sampler slope (m) : **30.5781**
 Sampler intercept (b) : **6.0044**
 Correlation coefficient (R²) : **0.9977**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 
 Checked by: 

Date: 7-5-14
 Date: 7-5-14

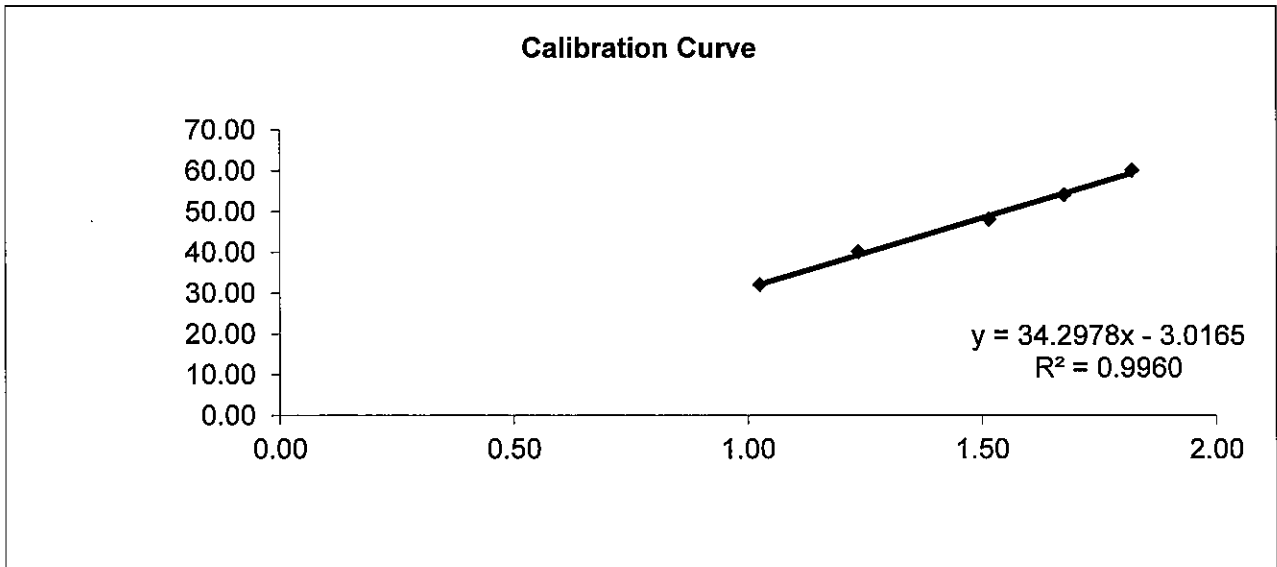
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

| | | | |
|-----------------------|------------------------------------|---------------------|-----------|
| Calibration date | 7-May-14 | Barometric pressure | 756 mm Hg |
| Next Calibration date | 6-Jul-14 | Temperature (°C) | 23 °C |
| Sampler location | DMS2 - Price Memorial Catholic Pri | Temperature (K) | 296 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 |

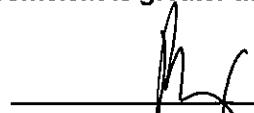
| Resistance Plate No. | Manometer Reading (inch H ₂ O) | Flow Recorder Reading (CFM) | Calculated Q _{std} (m ³ /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|---|-----------------------------|---|---|
| 5 | 3.50 | 32.00 | 1.02 | 32.02 |
| 7 | 5.30 | 40.00 | 1.23 | 40.03 |
| 10 | 8.30 | 48.00 | 1.52 | 48.03 |
| 13 | 10.30 | 54.00 | 1.67 | 54.04 |
| 18 | 12.30 | 60.00 | 1.82 | 60.04 |

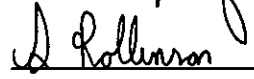


Linear Regression

Sampler slope (m) : **34.2978**
 Sampler intercept (b) : **-3.0165**
 Correlation coefficient (R²) : **0.9960**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Checked by: 

Date: 7.5.14

Date: 7-5-14

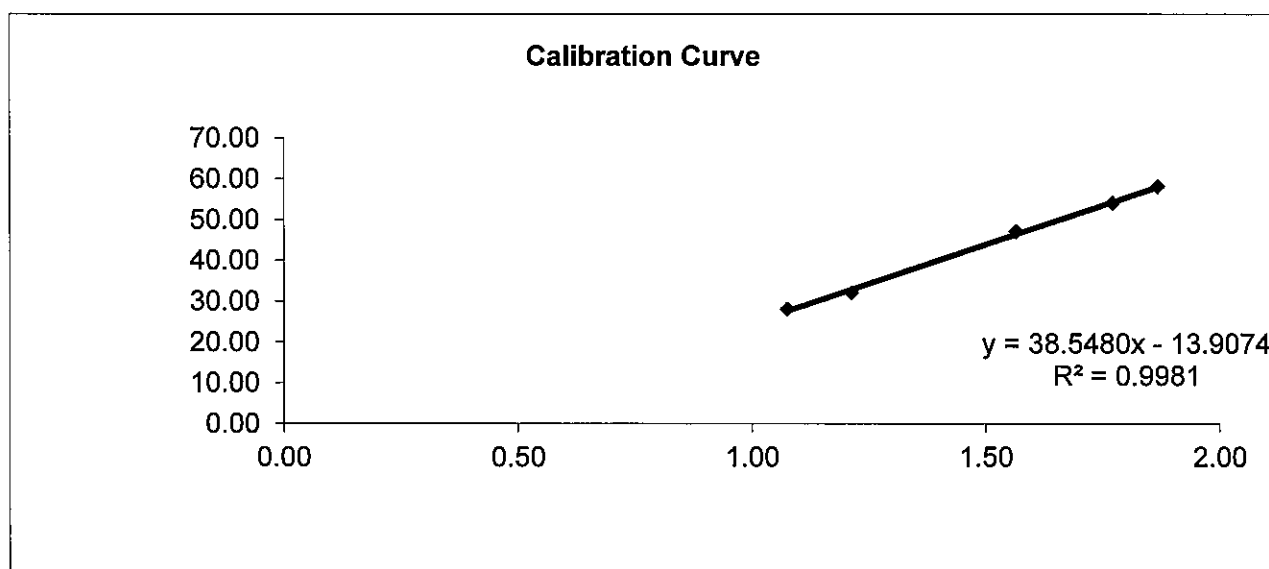
Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

| | | | |
|-----------------------|-----------------------------|---------------------|-----------|
| Calibration date | 7-May-14 | Barometric pressure | 756 mm Hg |
| Next Calibration date | 6-Jul-14 | Temperature (°C) | 23 °C |
| Sampler location | DMS1 - Thomas Cheung School | Temperature (K) | 296 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 ₂ O) | Flow Recorder Reading (CFM) | Calculated Q _{std} (m ³ /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|---|-----------------------------|---|---|
| 5 | 3.90 | 28.00 | 1.08 | 28.02 |
| 7 | 5.10 | 32.00 | 1.21 | 32.02 |
| 10 | 8.90 | 47.00 | 1.56 | 47.03 |
| 13 | 11.60 | 54.00 | 1.77 | 54.04 |
| 18 | 13.00 | 58.00 | 1.87 | 58.04 |



Linear Regression

Sampler slope (m) : **38.5480**
 Sampler intercept (b) : **-13.9074**
 Correlation coefficient (R²) : **0.9981**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____
 Checked by: _____

Date: 7-5-14
 Date: 7-5-14



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE
 VILLAGE OF CLEVELAND, 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 Rootmeter 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 | ORFICE |
|----------------------|-------------------------|------------------------|------------------------|-----------------------|--------------------|----------------------|
| | | | | | DIFF Hg (mm) | 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

$$Vstd = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

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

$$Qa = 1/m \{ [\text{SQRT} H2O(Ta/Pa)] - b \}$$

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 (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) |
|------------|--------|-----------|--------------|--------|--------------|-------------------|------------------|-----------------|-------|------------------|-------|-----------------------------|-------|-------------------|--------|----------------|---------------------------------|--------|---|-------------|---------|-----------------------|------------------------------|--|-----------------------------------|----------------------------------|
| | | | Start | Finish | | | | Initial | Final | Initial | Final | Initial | Final | Initial | Final | | Start | Finish | | | | | | | | |
| 124907 | May-14 | 5-May-14 | 00:00 | 00:00 | DMS1 | Cloudy | Normal Operation | 757.0 | 757.0 | 26.0 | 25.0 | 42.0 | 42.0 | 2.9278 | 2.9815 | 0.0537 | 1.2456 | 1.2485 | 1.2471 | 2016.29 | 2040.29 | 1440.00 | 1795.75 | 29.9 | 148.7 | 260.0 |
| 124910 | May-14 | 10-May-14 | 00:00 | 00:00 | DMS1 | Cloudy | normal Operation | 758.0 | 758.0 | 24.0 | 24.0 | 41.0 | 41.0 | 2.9007 | 2.9755 | 0.0748 | 1.4248 | 1.4248 | 1.4248 | 2040.29 | 2064.29 | 1440.00 | 2051.71 | 36.5 | 148.7 | 260.0 |
| 103055 | May-14 | 15-May-14 | 00:00 | 00:00 | DMS1 | Cloudy | normal Operation | 755.0 | 755.0 | 29.0 | 28.0 | 41.0 | 43.0 | 2.7621 | 2.8141 | 0.0520 | 1.4139 | 1.4670 | 1.4405 | 2064.29 | 2088.29 | 1440.00 | 2074.25 | 25.1 | 148.7 | 260.0 |
| 103056 | May-14 | 21-May-14 | 00:00 | 00:00 | DMS1 | Cloudy | normal Operation | 754.0 | 755.0 | 27.0 | 28.0 | 41.0 | 42.0 | 2.7576 | 2.8038 | 0.0462 | 1.4166 | 1.4413 | 1.4290 | 2088.29 | 2112.29 | 1440.00 | 2057.69 | 22.5 | 148.7 | 260.0 |
| 103059 | May-14 | 27-May-14 | 00:00 | 00:00 | DMS1 | Fine | Normal Operation | 756.0 | 755.0 | 30.0 | 30.0 | 42.0 | 44.0 | 2.7715 | 2.8094 | 0.0379 | 1.4384 | 1.4890 | 1.4637 | 2112.29 | 2136.29 | 1440.00 | 2107.73 | 18.0 | 148.7 | 260.0 |
| 103062 | May-14 | 31-May-14 | 00:00 | 00:00 | DMS1 | Fine | Normal Operation | 756.0 | 755.0 | 30.0 | 30.0 | 41.0 | 41.0 | 2.7629 | 2.7932 | 0.0303 | 1.4128 | 1.4121 | 1.4125 | 2136.29 | 2160.29 | 1440.00 | 2033.93 | 14.9 | 148.7 | 260.0 |

| | |
|-----------------|------|
| Average (µg/m3) | 24.5 |
| Max (µg/m3) | 36.5 |
| Min (µg/m3) | 14.9 |

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 (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) |
|------------|--------|-----------|--------------|--------|--------------|-------------------|------------------|-----------------|-------|------------------|-------|-----------------------------|-------|-------------------|--------|----------------|---------------------------------|--------|---|-------------|---------|-----------------------|------------------------------|--|-----------------------------------|----------------------------------|
| | | | Start | Finish | | | | Initial | Final | Initial | Final | Initial | Final | Initial | Final | | Start | Finish | | | | | | | | |
| 124908 | May-14 | 5-May-14 | 00:00 | 00:00 | DMS2 | Cloudy | Normal Operation | 757.0 | 757.0 | 26.0 | 25.0 | 41.0 | 41.0 | 2.9050 | 2.9806 | 0.0756 | 1.4001 | 1.4018 | 1.4010 | 1512.4 | 1536.4 | 1440.00 | 2017.4 | 37.5 | 167.4 | 260.0 |
| 103051 | May-14 | 10-May-14 | 00:00 | 00:00 | DMS2 | Cloudy | normal Operation | 758.0 | 758.0 | 24.0 | 24.0 | 43.0 | 44.0 | 2.7664 | 2.8433 | 0.0769 | 1.3422 | 1.3713 | 1.3568 | 1536.4 | 1560.4 | 1440.00 | 1953.7 | 39.4 | 167.4 | 260.0 |
| 103054 | May-14 | 15-May-14 | 00:00 | 00:00 | DMS2 | Cloudy | normal Operation | 755.0 | 755.0 | 29.0 | 28.0 | 43.0 | 44.0 | 2.7462 | 2.8010 | 0.0548 | 1.3293 | 1.3602 | 1.3448 | 1560.39 | 1584.39 | 1440.00 | 1936.44 | 28.3 | 167.4 | 260.0 |
| 103057 | May-14 | 21-May-14 | 00:00 | 00:00 | DMS2 | Cloudy | normal Operation | 754.0 | 755.0 | 27.0 | 28.0 | 42.0 | 44.0 | 2.7004 | 2.8025 | 0.1021 | 1.3036 | 1.3602 | 1.3319 | 1584.39 | 1608.39 | 1440.00 | 1917.94 | 53.2 | 167.4 | 260.0 |
| 103060 | May-14 | 27-May-14 | 00:00 | 00:00 | DMS2 | Fine | Normal Operation | 756.0 | 755.0 | 30.0 | 30.0 | 43.0 | 42.0 | 2.7604 | 2.7859 | 0.0255 | 1.3280 | 1.2984 | 1.3132 | 1608.39 | 1632.39 | 1440.00 | 1891.01 | 13.5 | 167.4 | 260.0 |
| 103063 | May-14 | 31-May-14 | 00:00 | 00:00 | DMS2 | Fine | Normal Operation | 756.0 | 755.0 | 30.0 | 30.0 | 40.0 | 41.0 | 2.7431 | 2.7709 | 0.0278 | 1.2415 | 1.2695 | 1.2555 | 1632.39 | 1656.39 | 1440.00 | 1807.92 | 15.4 | 167.4 | 260.0 |

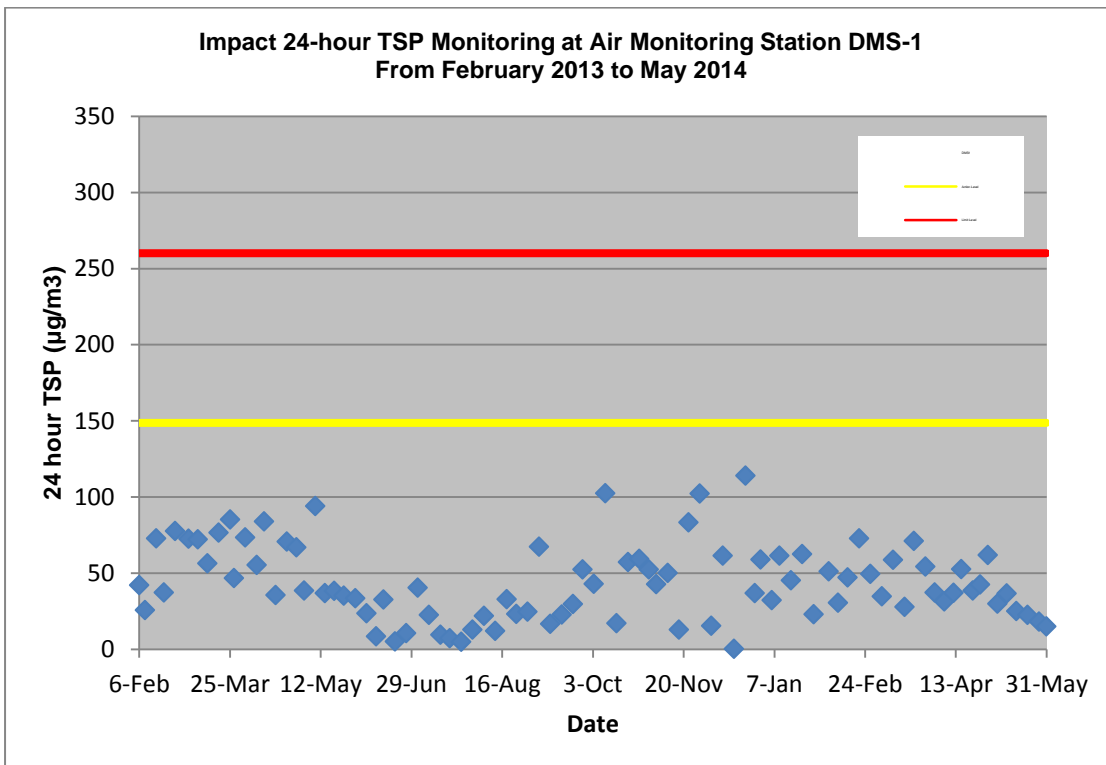
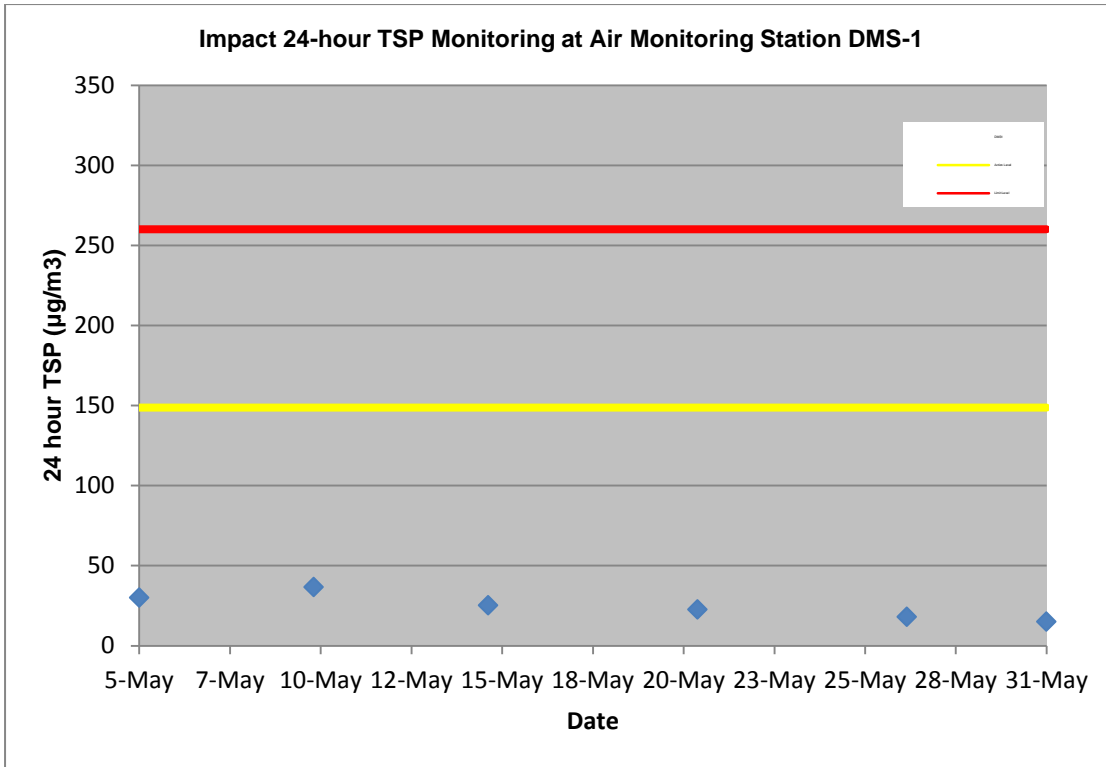
| | |
|-----------------|------|
| Average (µg/m3) | 31.2 |
| Max (µg/m3) | 53.2 |
| Min (µg/m3) | 13.5 |

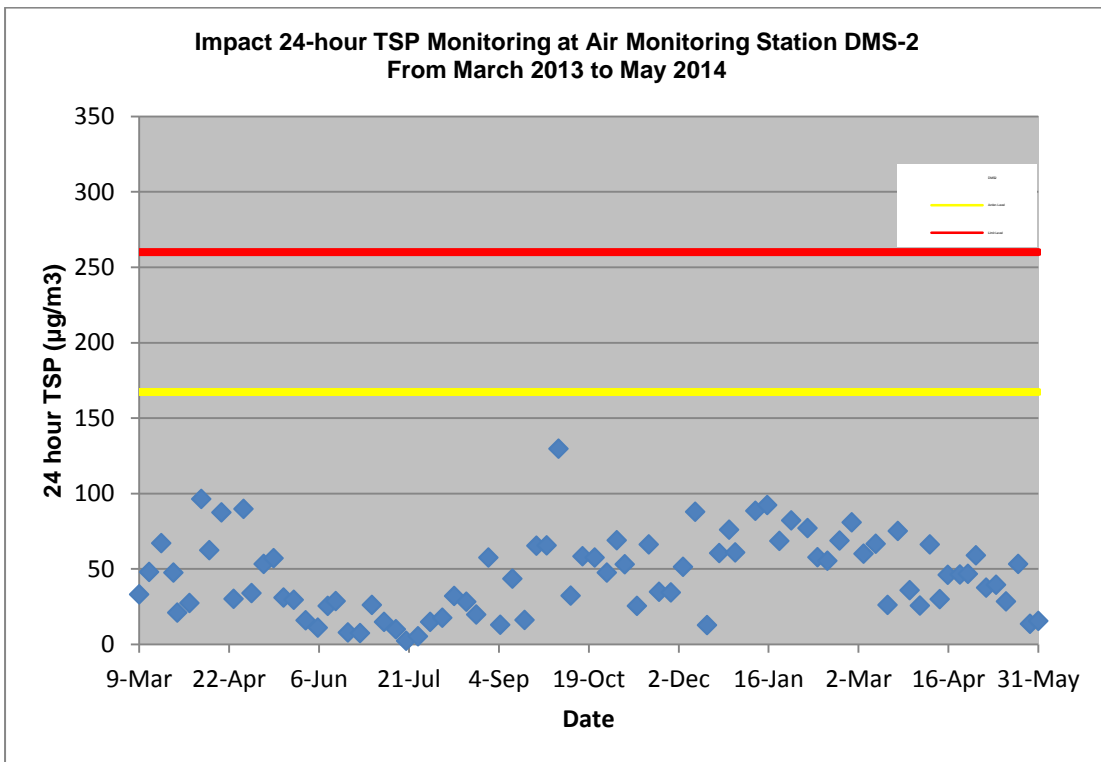
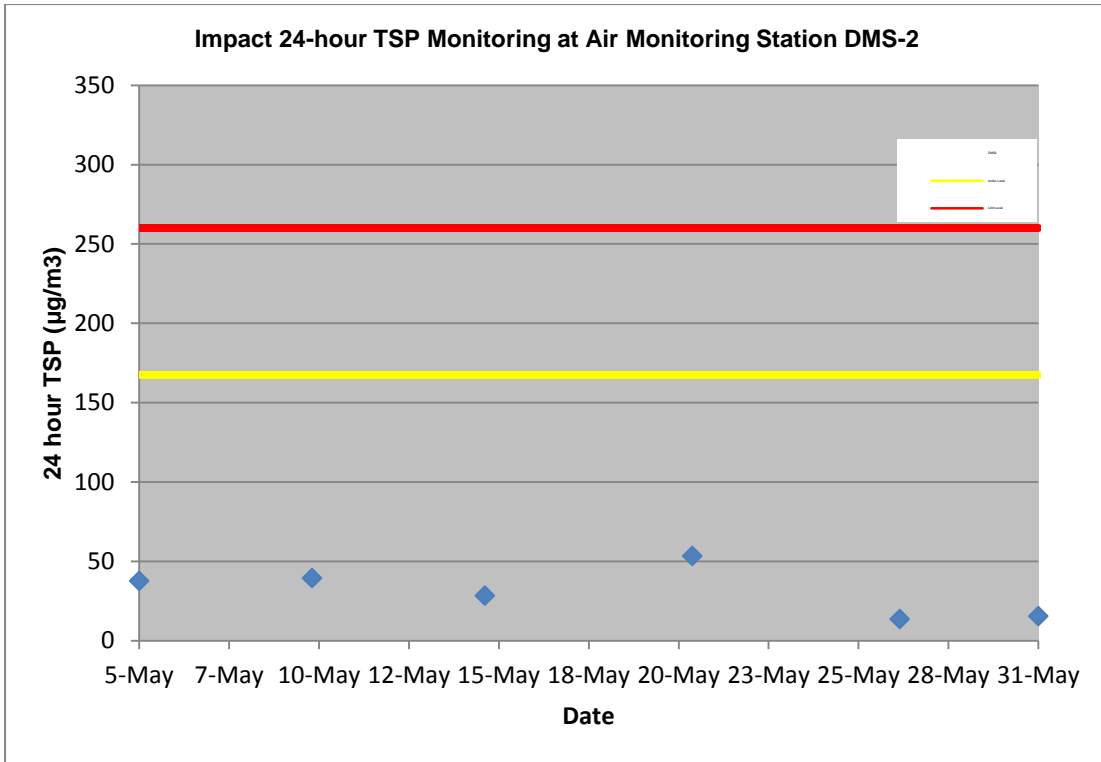
Location: DMS-3/DMS-4 - Hong Kong Sheng Kung Hui Nursing Home

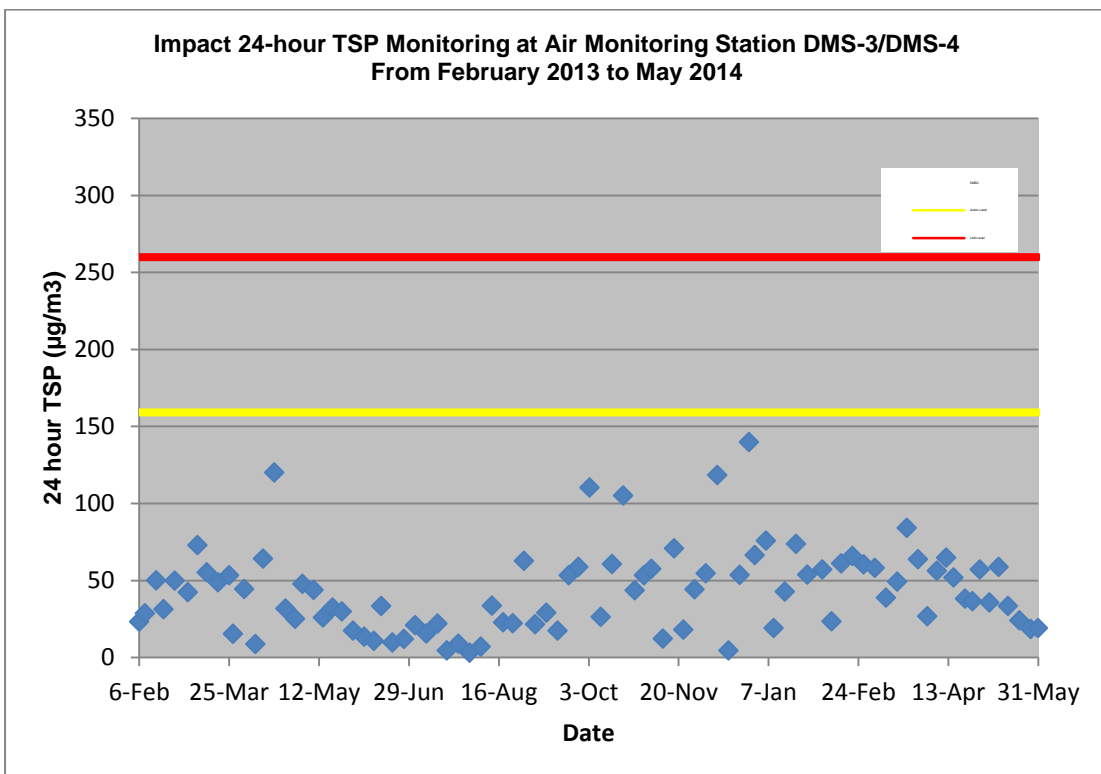
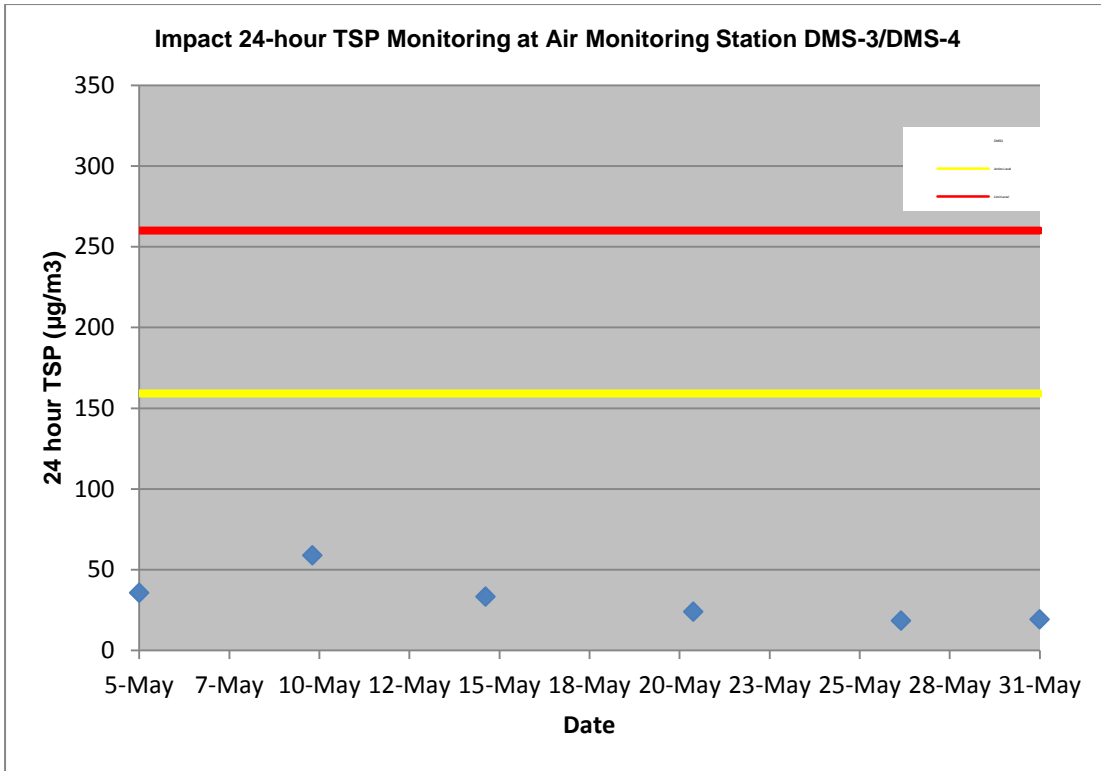
Details of 24-Hour TSP Monitoring

| 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 (µg/m ³) | Action Level (µg/m ³) | Limit Level (µg/m ³) |
|------------|--------|-----------|--------------|--------|--------------|-------------------|------------------|-----------------|-------|------------------|-------|-----------------------------|-------|-------------------|--------|----------------|---------------------------------|--------|---|-------------|---------|-----------------------|------------------------------|--|-----------------------------------|----------------------------------|
| | | | Start | Finish | | | | Initial | Final | Initial | Final | Initial | Final | Initial | Final | | Start | Finish | | | | | | | | |
| 124909 | May-14 | 5-May-14 | 00:00 | 00:00 | DMS3 | Cloudy | Normal Operation | 757.0 | 757.0 | 26.0 | 25.0 | 42.0 | 41.0 | 2.9087 | 2.9792 | 0.0705 | 1.3835 | 1.3572 | 1.3704 | 2064.40 | 2088.40 | 1440.00 | 1973.30 | 35.7 | 159.1 | 260.0 |
| 103052 | May-14 | 10-May-14 | 00:00 | 00:00 | DMS3 | Cloudy | normal Operation | 758.0 | 758.0 | 24.0 | 24.0 | 44.0 | 44.0 | 2.7602 | 2.8655 | 0.1053 | 1.2431 | 1.2431 | 1.2431 | 2088.40 | 2112.40 | 1440.00 | 1790.06 | 58.8 | 159.1 | 260.0 |
| 103053 | May-14 | 15-May-14 | 00:00 | 00:00 | DMS3 | Cloudy | normal Operation | 755.0 | 755.0 | 29.0 | 28.0 | 41.0 | 42.0 | 2.7444 | 2.7995 | 0.0551 | 1.1312 | 1.1658 | 1.1485 | 2112.40 | 2136.40 | 1440.00 | 1653.84 | 33.3 | 159.1 | 260.0 |
| 103058 | May-14 | 21-May-14 | 00:00 | 00:00 | DMS3 | Cloudy | normal Operation | 754.0 | 755.0 | 27.0 | 28.0 | 42.0 | 44.0 | 2.7293 | 2.7708 | 0.0415 | 1.1671 | 1.2306 | 1.1989 | 2136.40 | 2160.40 | 1440.00 | 1726.34 | 24.0 | 159.1 | 260.0 |
| 103061 | May-14 | 27-May-14 | 00:00 | 00:00 | DMS3 | Fine | Normal Operation | 756.0 | 755.0 | 30.0 | 30.0 | 41.0 | 42.0 | 2.7593 | 2.7897 | 0.0304 | 1.1298 | 1.1613 | 1.1456 | 2160.40 | 2184.40 | 1440.00 | 1649.59 | 18.4 | 159.1 | 260.0 |
| 103064 | May-14 | 31-May-14 | 00:00 | 00:00 | DMS3 | Fine | Normal Operation | 756.0 | 755.0 | 30.0 | 30.0 | 41.0 | 41.0 | 2.7466 | 2.7776 | 0.0310 | 1.1298 | 1.1290 | 1.1294 | 2184.40 | 2208.40 | 1440.00 | 1626.34 | 19.1 | 159.1 | 260.0 |

| | |
|-----------------|------|
| Average (µg/m3) | 34.0 |
| Max (µg/m3) | 58.8 |
| Min (µg/m3) | 18.4 |





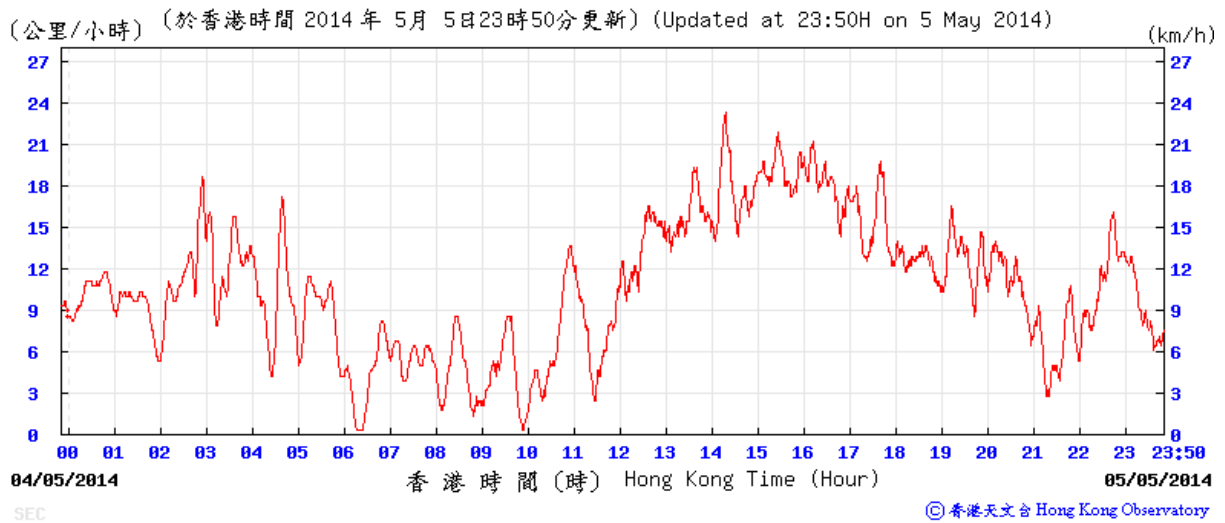


Appendix F

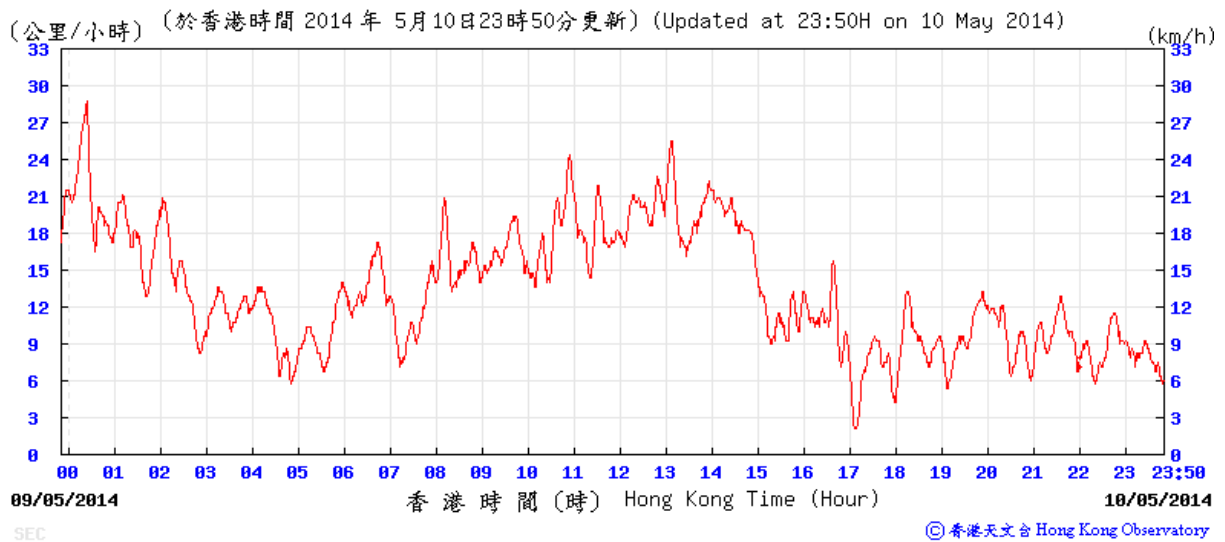
Wind data

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

5 May 2014

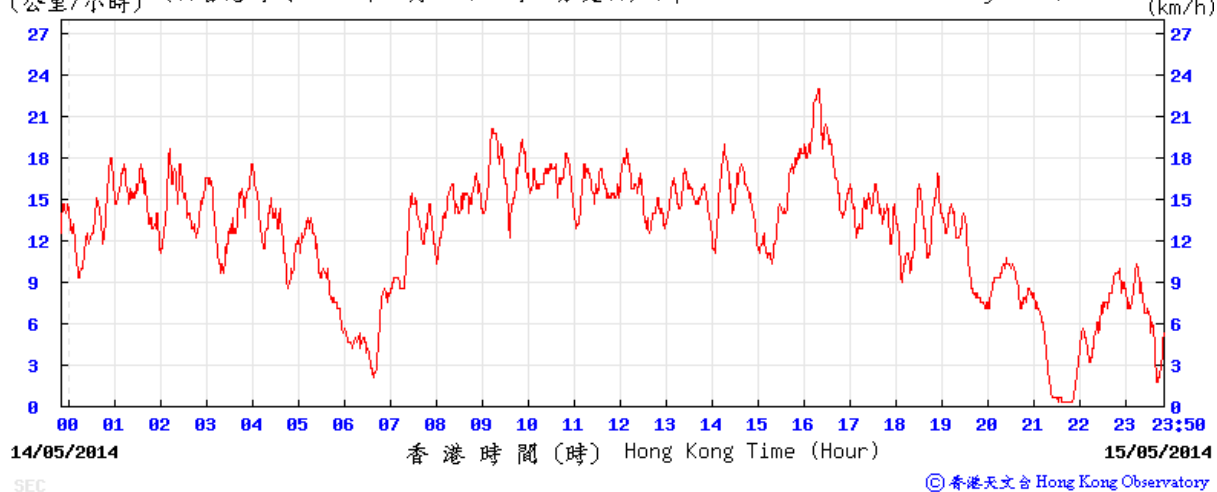


10 May 2014



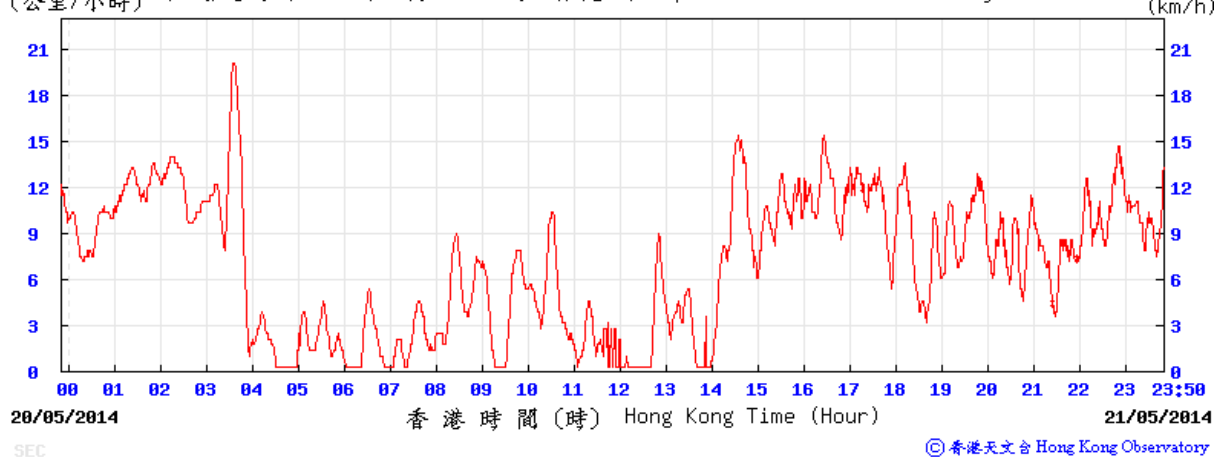
15 May 2014

(公里/小時) (於香港時間 2014 年 5 月 15 日 23 時 50 分更新) (Updated at 23:50H on 15 May 2014)



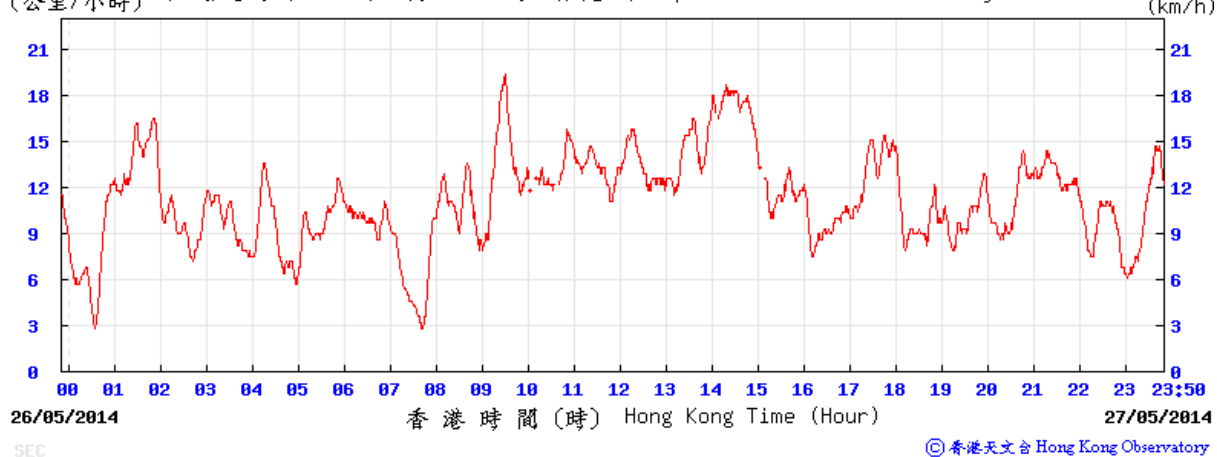
21 May 2014

(公里/小時) (於香港時間 2014 年 5 月 21 日 23 時 50 分更新) (Updated at 23:50H on 21 May 2014)



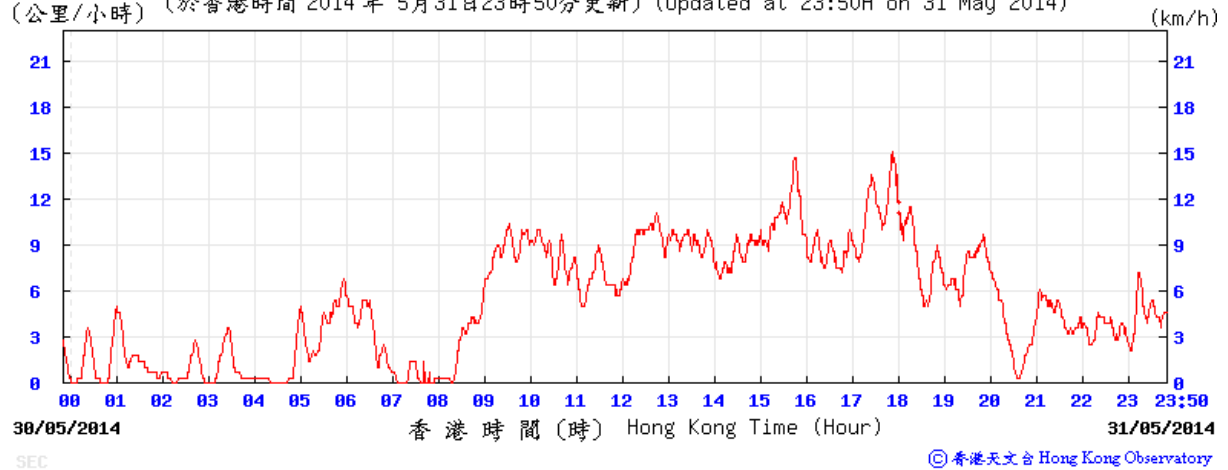
27 May 2014

(公里/小時) (於香港時間 2014 年 5 月 27 日 23 時 50 分更新) (Updated at 23:50H on 27 May 2014)



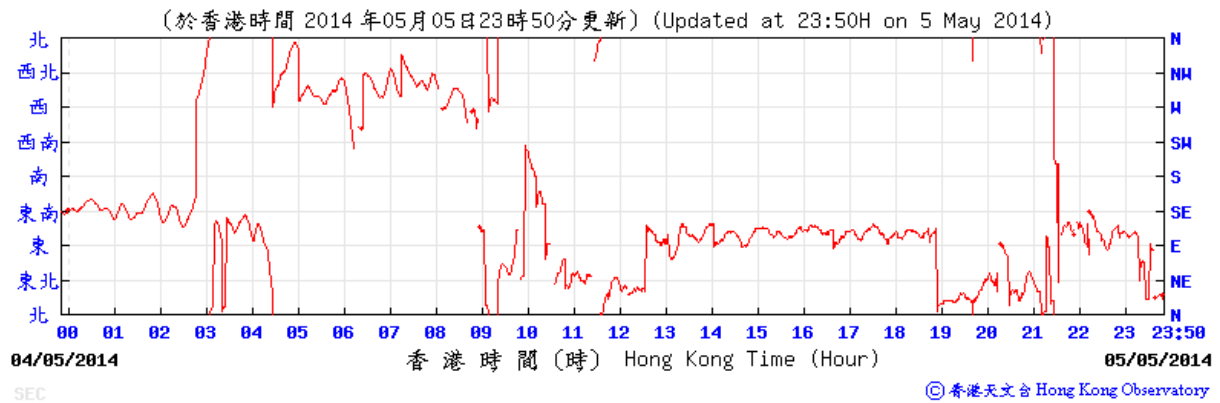
31 May 2014

(公里/小時) (於香港時間 2014 年 5月31日23時50分更新) (Updated at 23:50H on 31 May 2014)

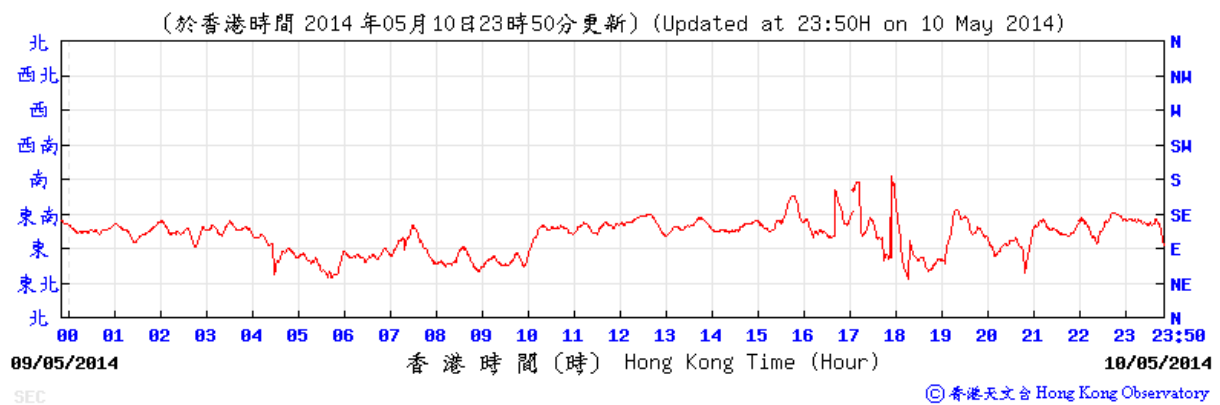


Average wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

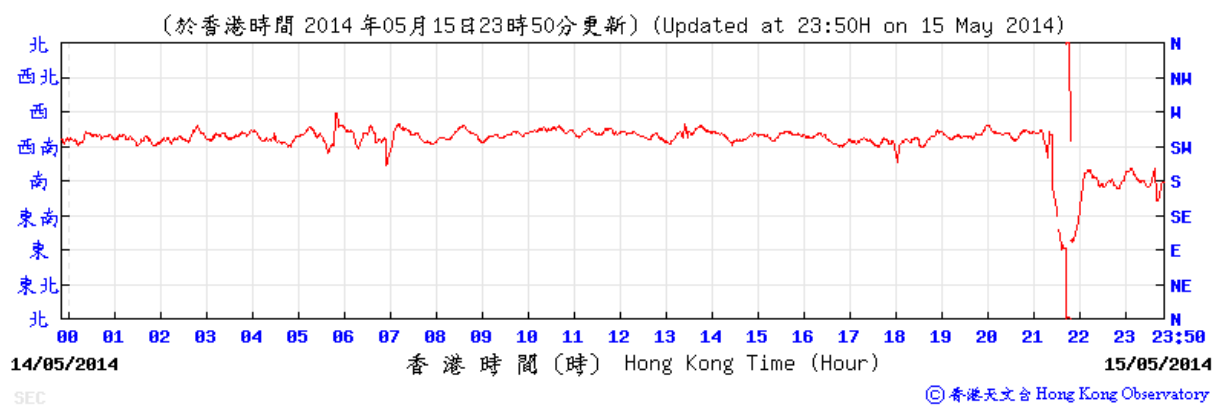
5 May 2014



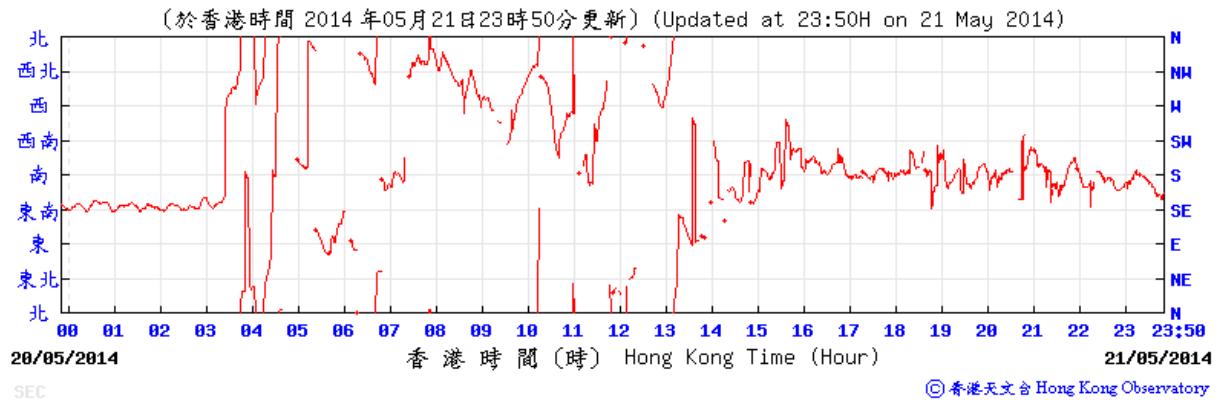
10 May 2014



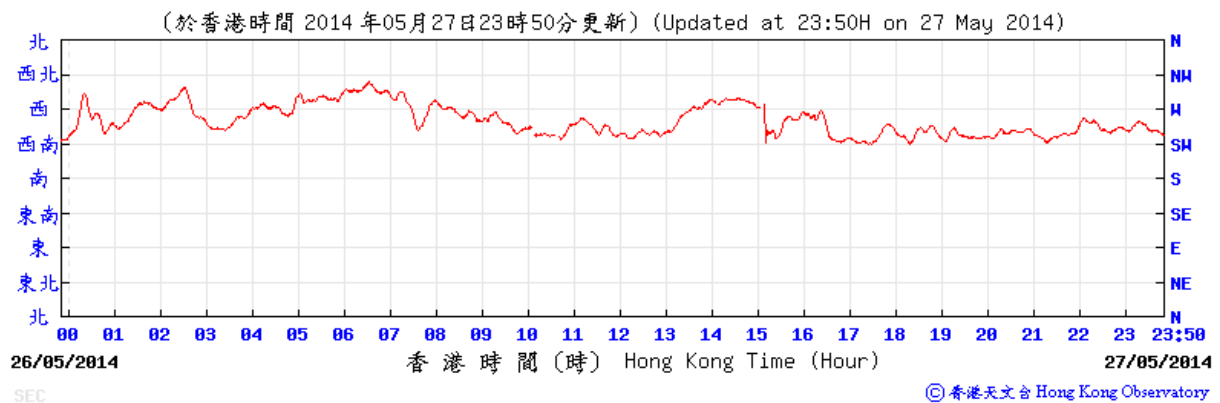
15 May 2014



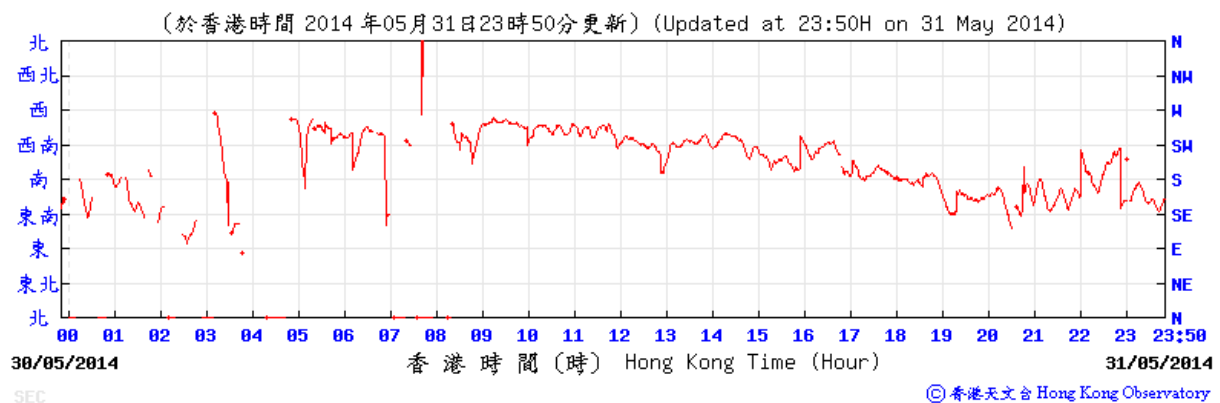
21 May 2014



27 May 2014

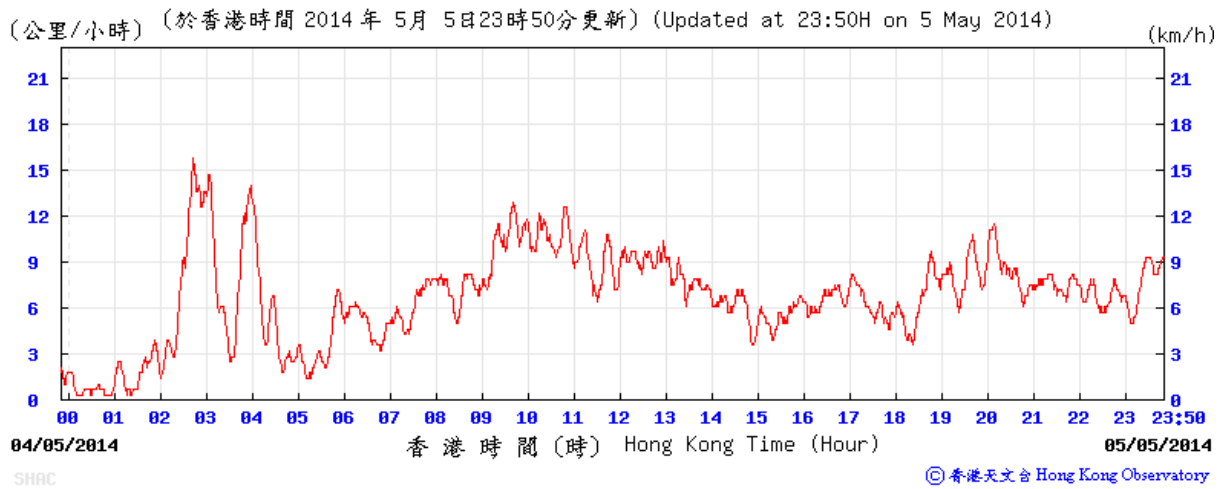


31 May 2014

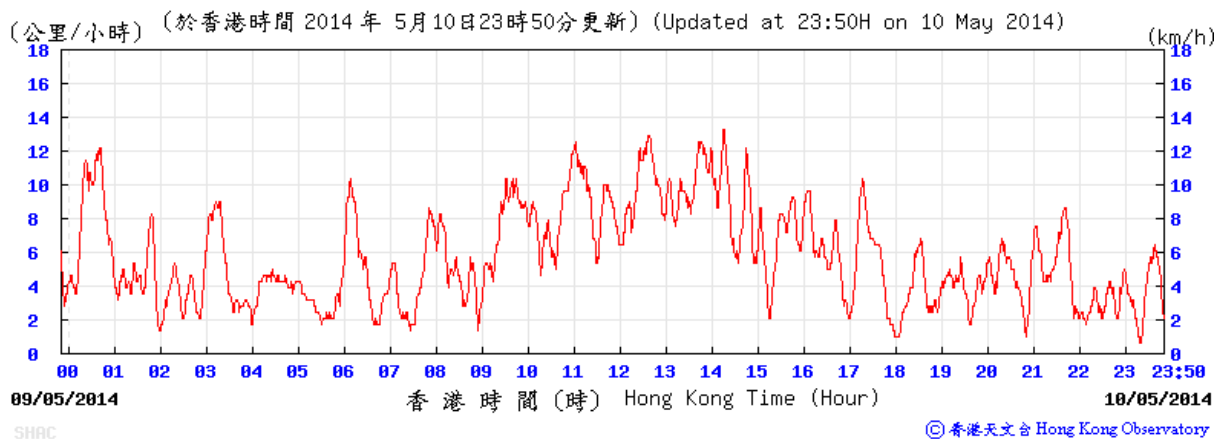


Average wind speed obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

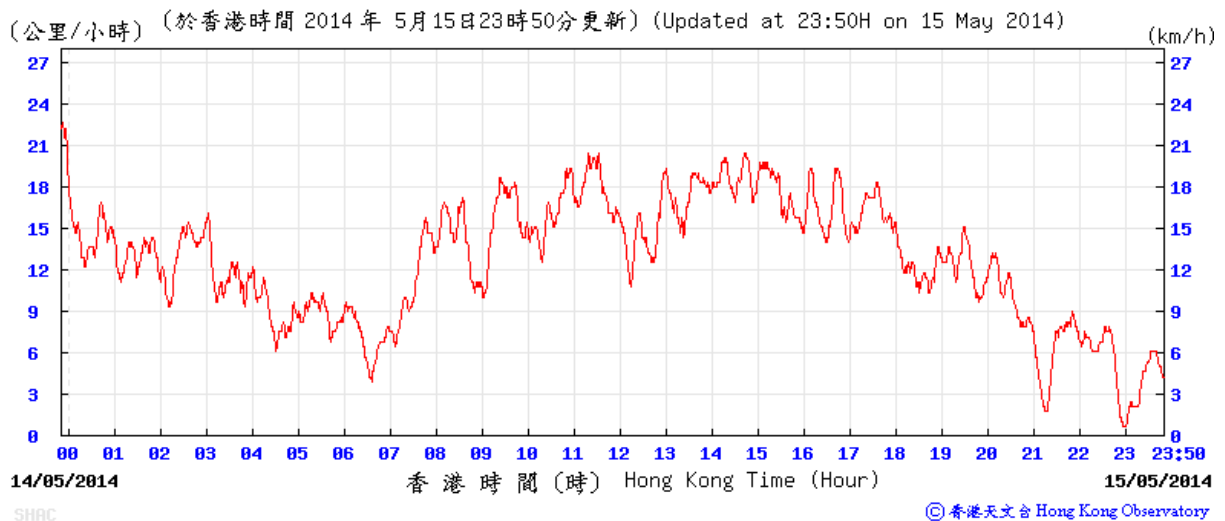
5 May 2014



10 May 2014

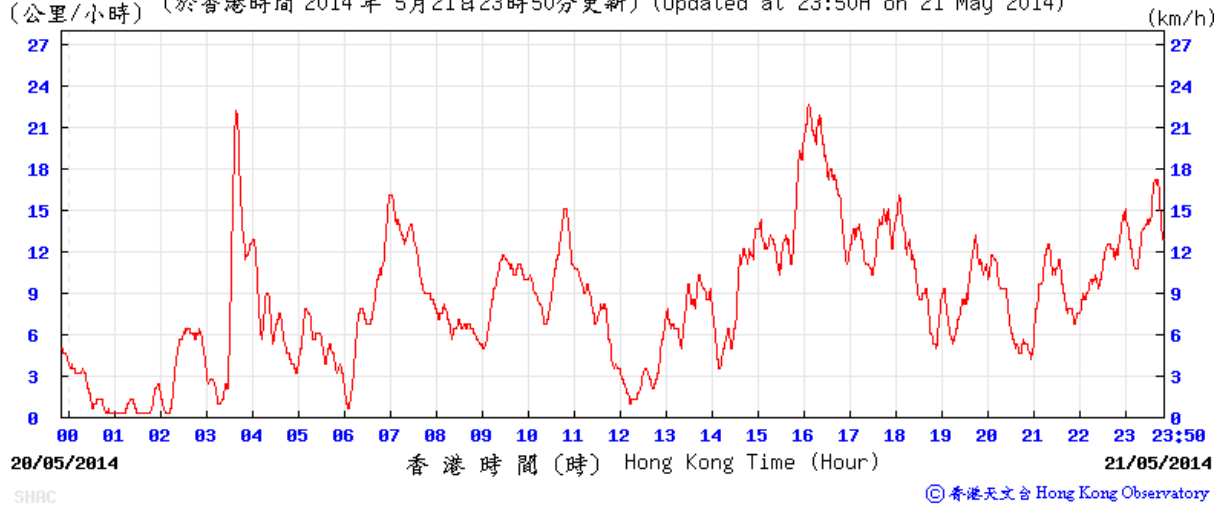


15 May 2014



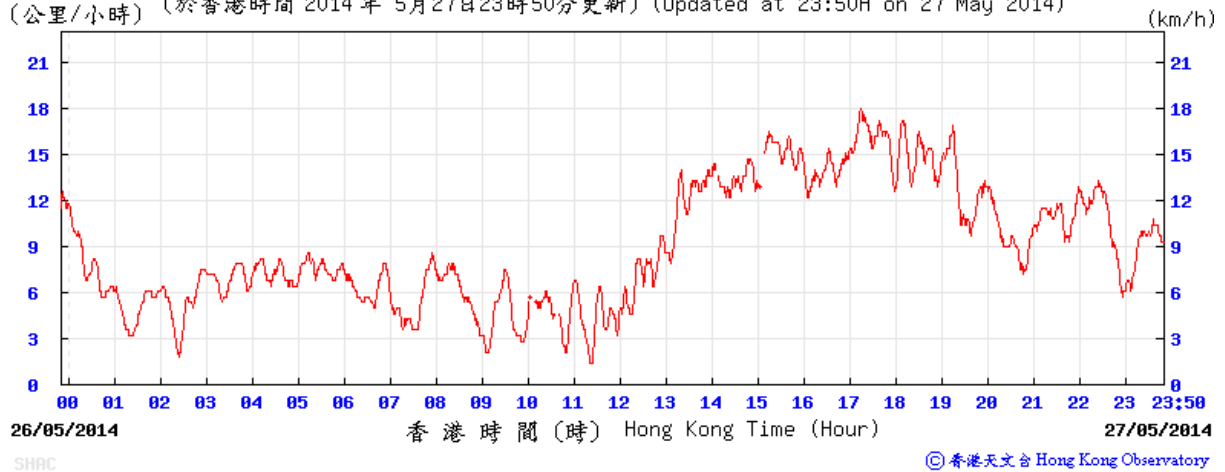
21 May 2014

(公里/小時) (於香港時間 2014 年 5月21日23時50分更新) (Updated at 23:50H on 21 May 2014)



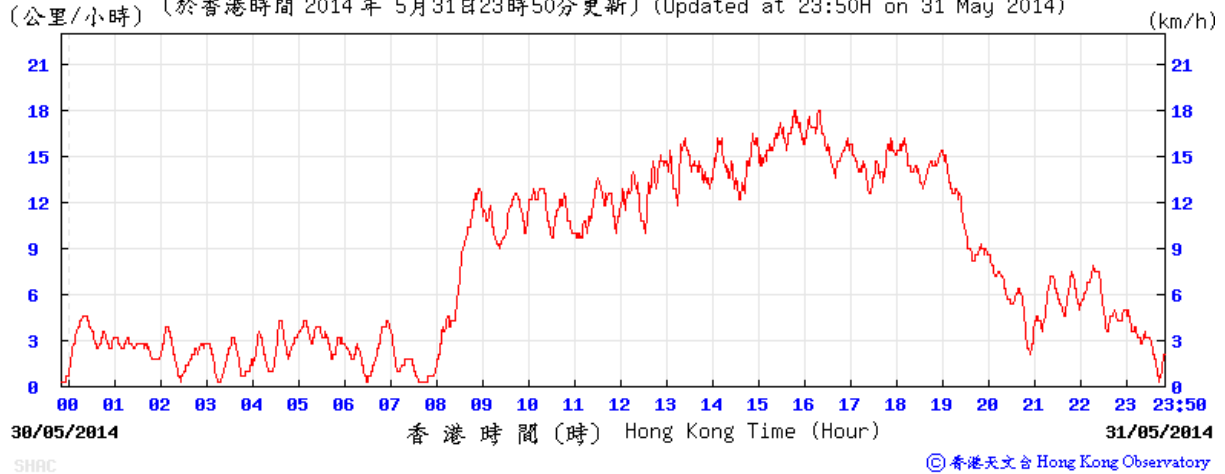
27 May 2014

(公里/小時) (於香港時間 2014 年 5月27日23時50分更新) (Updated at 23:50H on 27 May 2014)



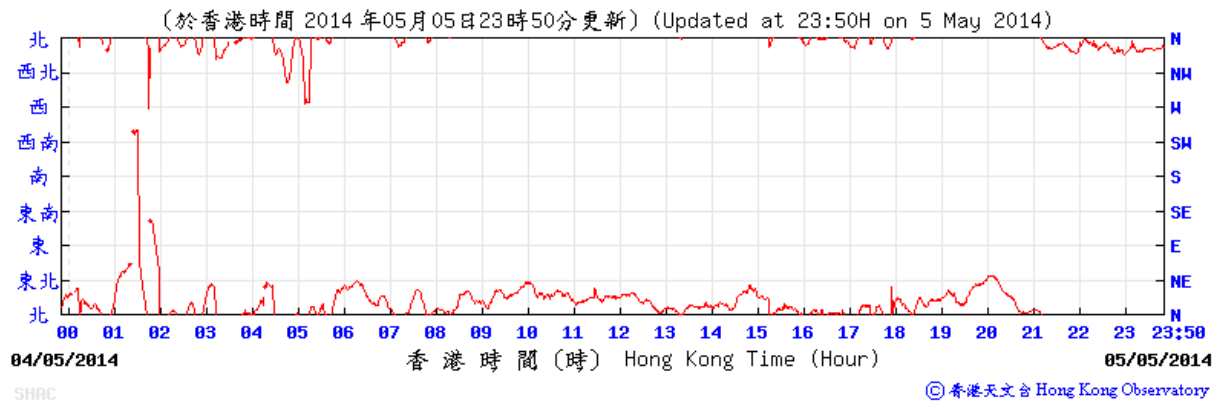
31 May 2014

(公里/小時) (於香港時間 2014 年 5月31日23時50分更新) (Updated at 23:50H on 31 May 2014)

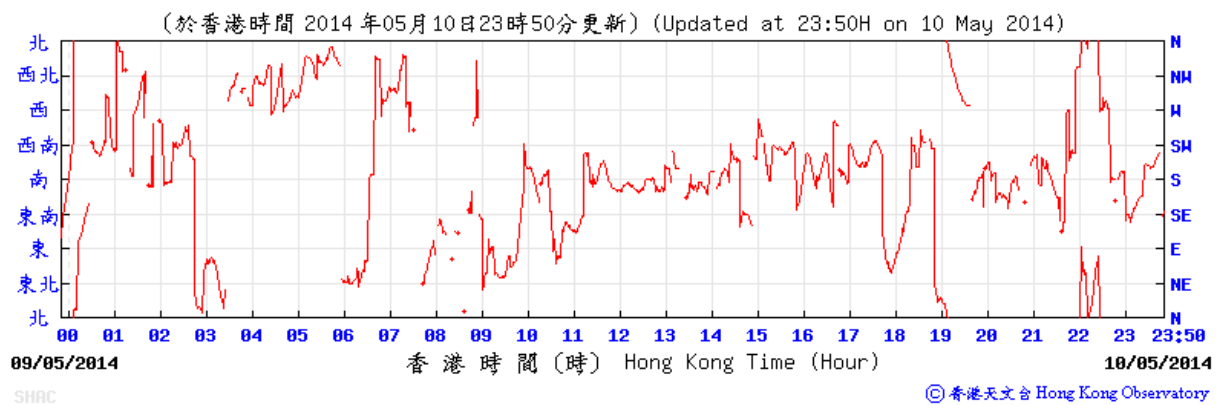


Average wind direction obtained from the meteorological station at Sha Tin from the Hong Kong Observatory (HKO)

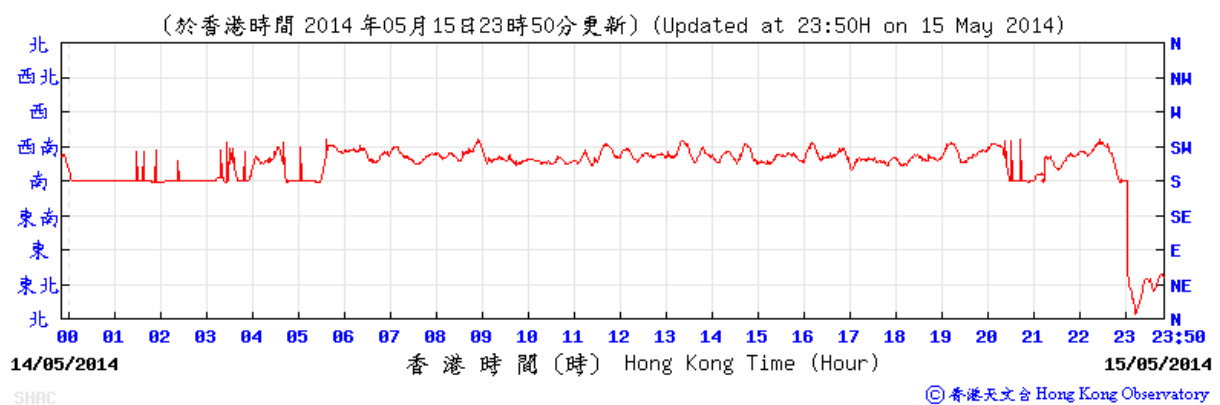
5 May 2014



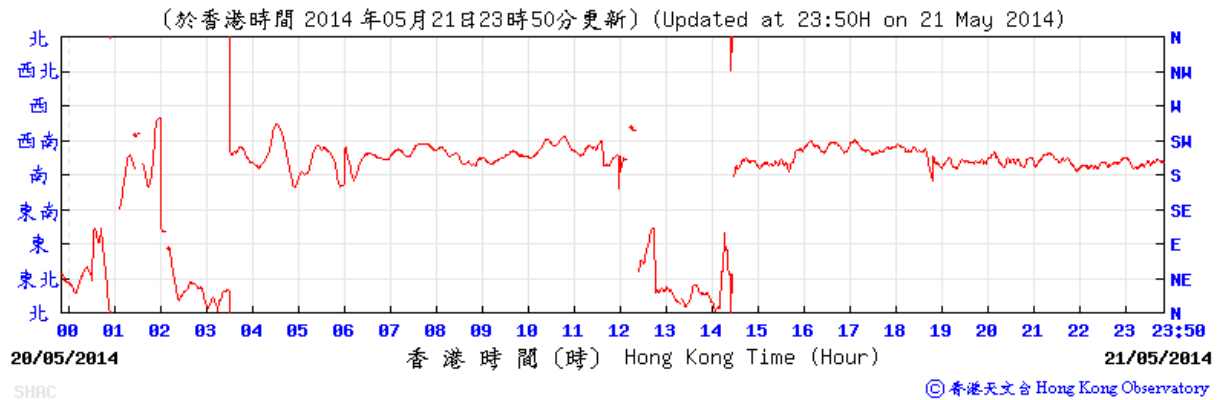
10 May 2014



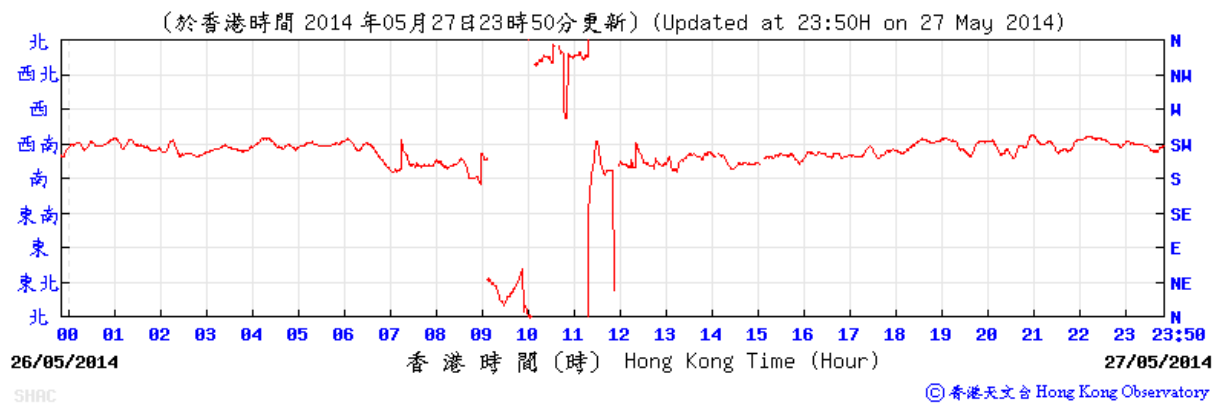
15 May 2014



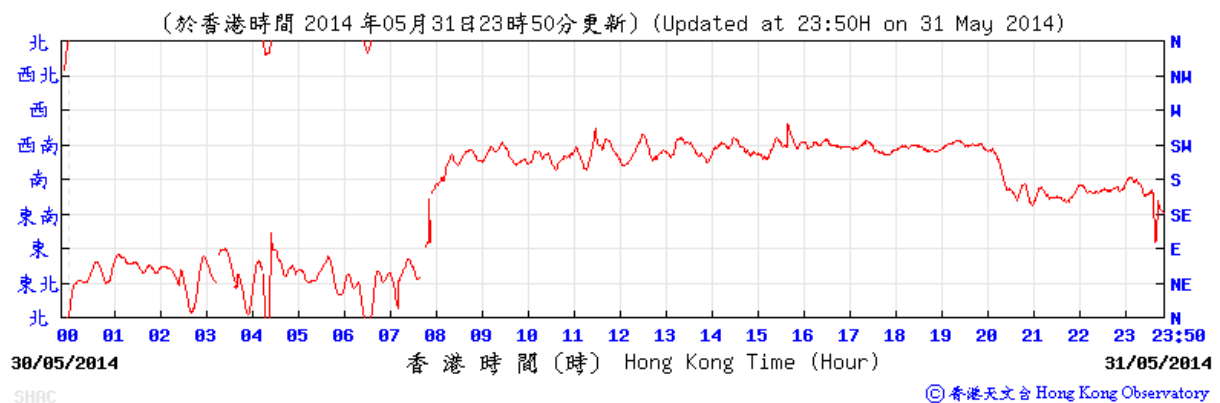
21 May 2014



27 May 2014



31 May 2014



Appendix G

Calibration
Certificates of Noise
Monitoring
Equipment

Certificate of Calibration

校正證書

Certificate No. : C134619
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1856)

Description / 儀器名稱 : Integrating Sound Level Meter
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2562763
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 : $(23 \pm 2)^\circ\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 23 July 2013

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

Certified By
核證

: 
K M Wu

Date of Issue : 24 July 2013
簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C134619

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 :

| <u>Equipment ID</u> | <u>Description</u> | <u>Certificate No.</u> |
|---------------------|-------------------------------------|------------------------|
| CL280 | 40 MHz Arbitrary Waveform Generator | C130019 |
| 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 | 94.4 |

- 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 | 94.1 | ± 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 | 94.1 (Ref.) |
| | | | | 104.00 | | 104.1 |
| | | | | 114.00 | | 114.1 |

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C134619
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 | 94.1 | Ref. |
| | L _{ASP} | | S | | | 94.1 | ± 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. |
| | | | | | 200 ms | 105.0 | -1.0 ± 1.0 |
| | S | | | | Continuous | 106.0 | Ref. |
| | | | L _{AFMax} | | 500 ms | 102.0 | -4.1 ± 1.0 |
| | | | | | L _{ASP} | | |
| | L _{ASMax} | | | | | | |

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 | 54.9 | -39.4 ± 1.5 |
| | | | | | 63 Hz | 68.0 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 77.9 | -16.1 ± 1.0 |
| | | | | | 250 Hz | 85.4 | -8.6 ± 1.0 |
| | | | | | 500 Hz | 90.8 | -3.2 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 95.3 | +1.2 ± 1.0 |
| | | | | | 4 kHz | 95.0 | +1.0 ± 1.0 |
| | | | | | 8 kHz | 92.9 | -1.1 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 89.9 | -4.3 (+3.0 ; -6.0) |

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C134619

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 | 91.2 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.3 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.9 | -0.2 ± 1.0 |
| | | | | | 250 Hz | 94.0 | 0.0 ± 1.0 |
| | | | | | 500 Hz | 94.1 | 0.0 ± 1.0 |
| | | | | | 1 kHz | 94.0 | Ref. |
| | | | | | 2 kHz | 93.9 | -0.2 ± 1.0 |
| | | | | | 4 kHz | 93.2 | -0.8 ± 1.0 |
| | | | | | 8 kHz | 91.0 | -3.0 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 87.9 | -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 |
| | | | 60 sec. | | | | | 90 | 90.1 | ± 0.5 |
| | | | | | | | | 80 | 79.8 | ± 1.0 |
| | | | | | | | | 70 | 69.8 | ± 1.0 |

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2658559

- 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.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C134617

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1856)

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 : $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 : $(55 \pm 20)\%$

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 23 July 2013

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

Certified By
核證


K M Wu

Date of Issue
簽發日期

24 July 2013

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Certificate of Calibration

校正證書

Certificate No. : C134617

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

| <u>Equipment ID</u> | <u>Description</u> | <u>Certificate No.</u> |
|---------------------|-----------------------------------|------------------------|
| CL130 | Universal Counter | C133632 |
| CL281 | Multifunction Acoustic Calibrator | DC130171 |
| TST150A | Measuring Amplifier | C120886 |

- Test procedure : MA100N.

- 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.

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} |
| 02-May-14 | 10:20-10:50 | 58.6 | 70.0 | 60.0 | 54.5 | 57.0 | 53.5 |
| 07-May-14 | 11:15-11:45 | 58.0 | 70.0 | 59.5 | 52.0 | 57.0 | 51.1 |
| 16-May-14 | 09:55-10:25 | 58.4 | 70.0 | 60.0 | 54.5 | 57.0 | 52.8 |
| 22-May-14 | 09:50-10:20 | 58.7 | 70.0 | 60.0 | 56.0 | 57.0 | 53.8 |
| 28-May-14 | 10:00-10:30 | 59.1 | 70.0 | 60.5 | 53.5 | 57.0 | 54.9 |

Notes: (*) : Façade correction is included
 (#): Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

| | |
|---------------------------------------|------|
| Average L _{Aeq,30min} | 58.6 |
| Max L _{Aeq,30min} | 59.1 |
| Min L _{Aeq,30min} | 58.0 |

Location: NMS-CA-2 - Price Memorial Catholic Primary School

| 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} |
| 02-May-14 | 13:00-13:30 | 69.4 | 70.0 | 71.0 | 67.5 | 66.0 | 66.7 |
| 07-May-14 | 13:50-14:20 | 68.7 | 70.0 | 70.0 | 62.5 | 66.0 | 65.4 |
| 16-May-14 | 13:10-13:40 | 67.8 | 70.0 | 69.5 | 65.5 | 66.0 | 63.1 |
| 22-May-14 | 10:55-11:25 | 68.5 | 70.0 | 70.0 | 65.5 | 66.0 | 64.9 |
| 28-May-14 | 14:20-14:50 | 68.8 | 70.0 | 70.0 | 63.5 | 66.0 | 65.6 |

Notes: (*) : Façade correction is included
 (#): Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

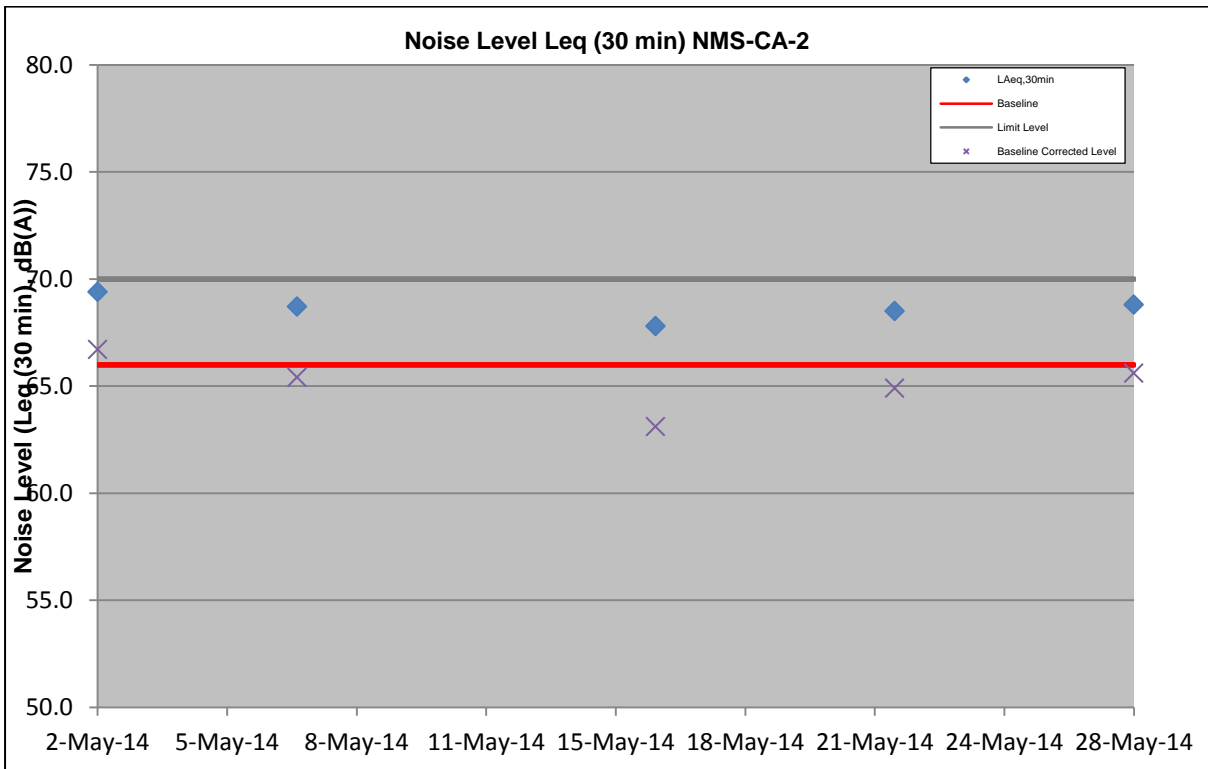
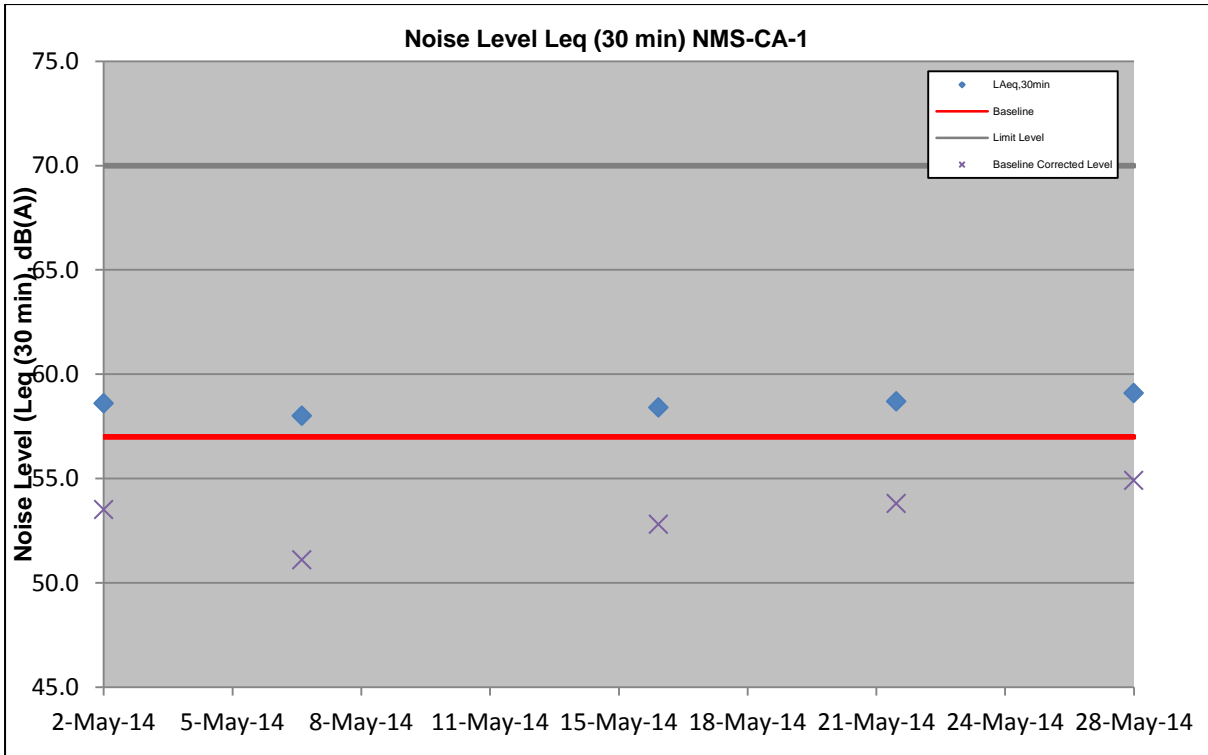
| | |
|---------------------------------------|------|
| Average L _{Aeq,30min} | 68.6 |
| Max L _{Aeq,30min} | 69.4 |
| Min L _{Aeq,30min} | 67.8 |

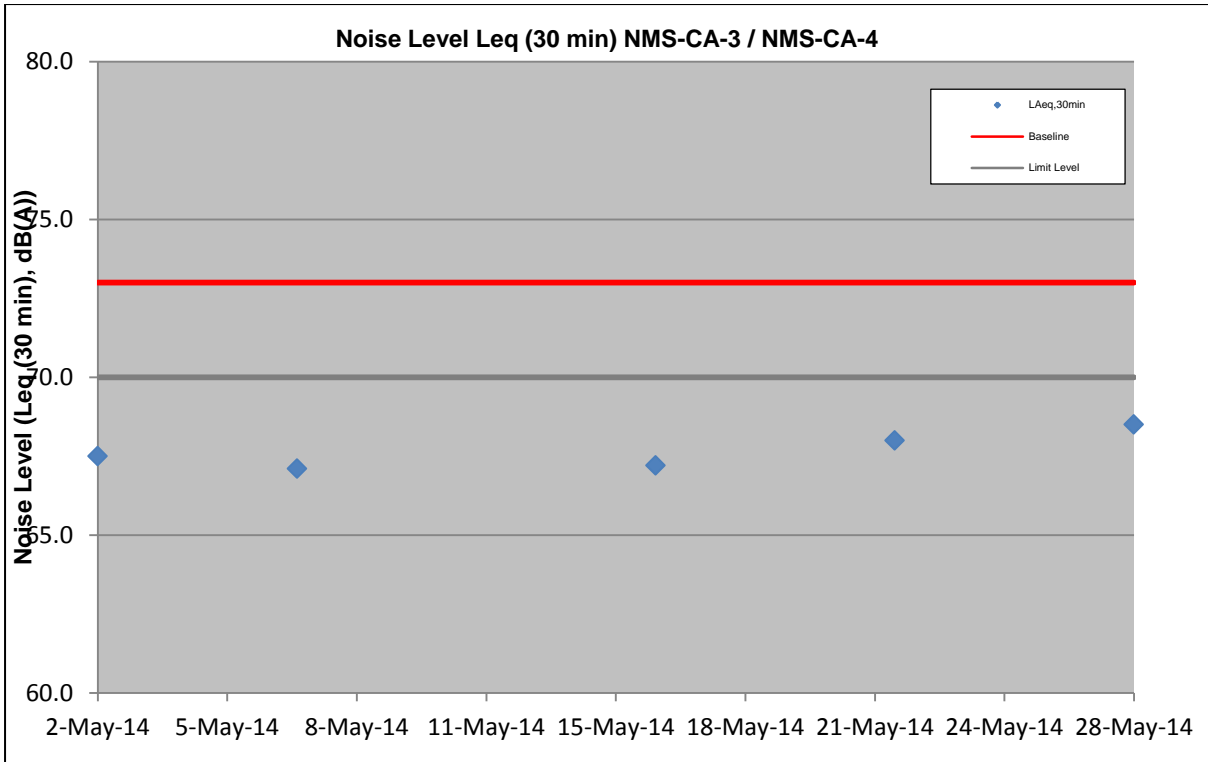
Location: NMS-CA-3 / NMS-CA-4 - Hong Kong Sheng Kung Hui Nursing Home

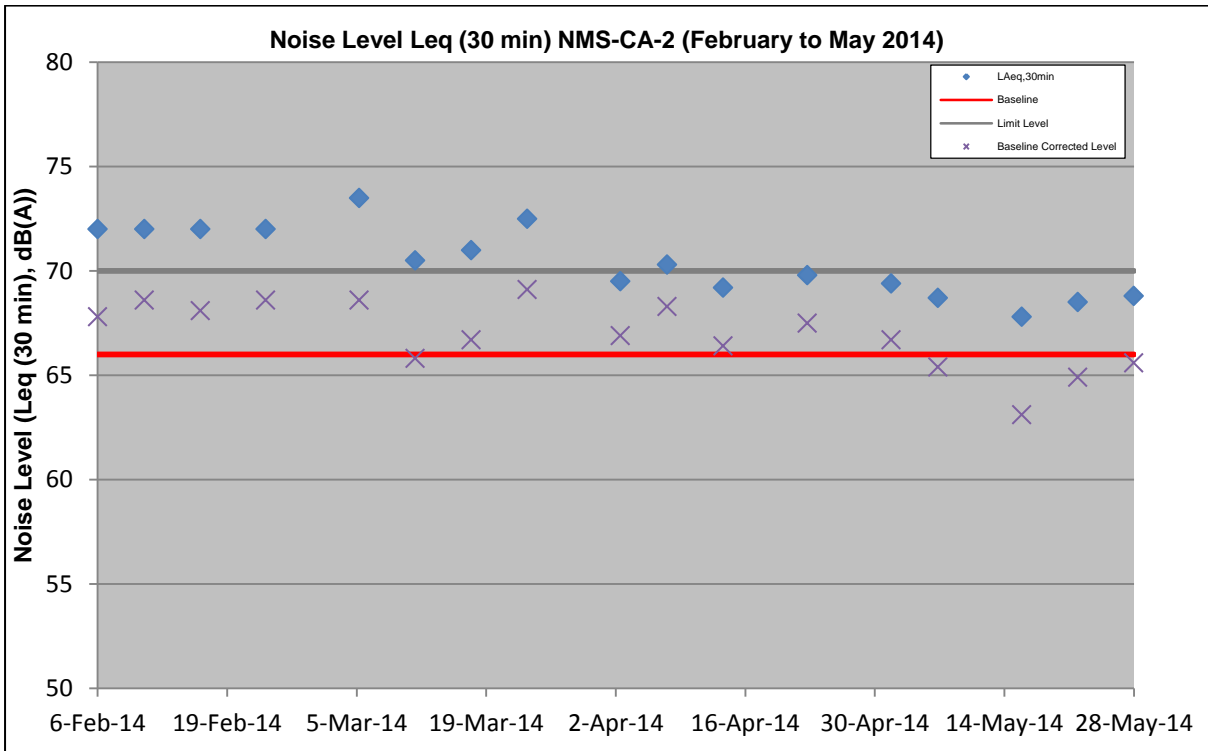
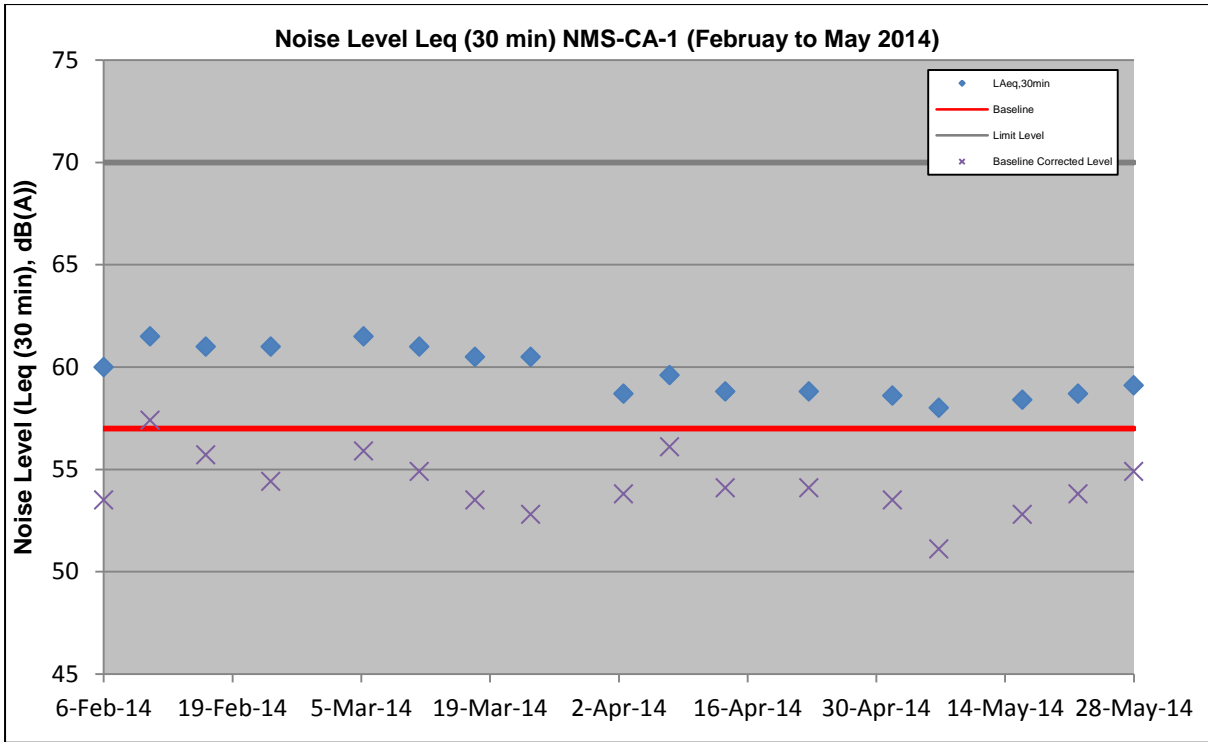
| Date | Time | Measured Noise Level, dB(A) | | | | Baseline Noise Level, dB(A) | Baseline Corrected Level |
|-----------|-------------|-----------------------------|-------|-----------------------|-----------------------|-----------------------------|--------------------------|
| | | L _{Aeq,30min} | Limit | L _{10,30min} | L _{90,30min} | L _{Aeq,30min} | L _{Aeq,30min} |
| 02-May-14 | 09:00-09:30 | 67.5 | 70.0 | 69.0 | 64.5 | 73.0 | < Baseline Level |
| 07-May-14 | 09:25-09:55 | 67.1 | 70.0 | 69.0 | 62.5 | 73.0 | < Baseline Level |
| 16-May-14 | 11:15-11:45 | 67.2 | 70.0 | 68.5 | 62.0 | 73.0 | < Baseline Level |
| 22-May-14 | 14:00-14:30 | 68.0 | 70.0 | 69.5 | 62.5 | 73.0 | < Baseline Level |
| 28-May-14 | 13:10-13:40 | 68.5 | 70.0 | 70.0 | 66.5 | 73.0 | < Baseline Level |

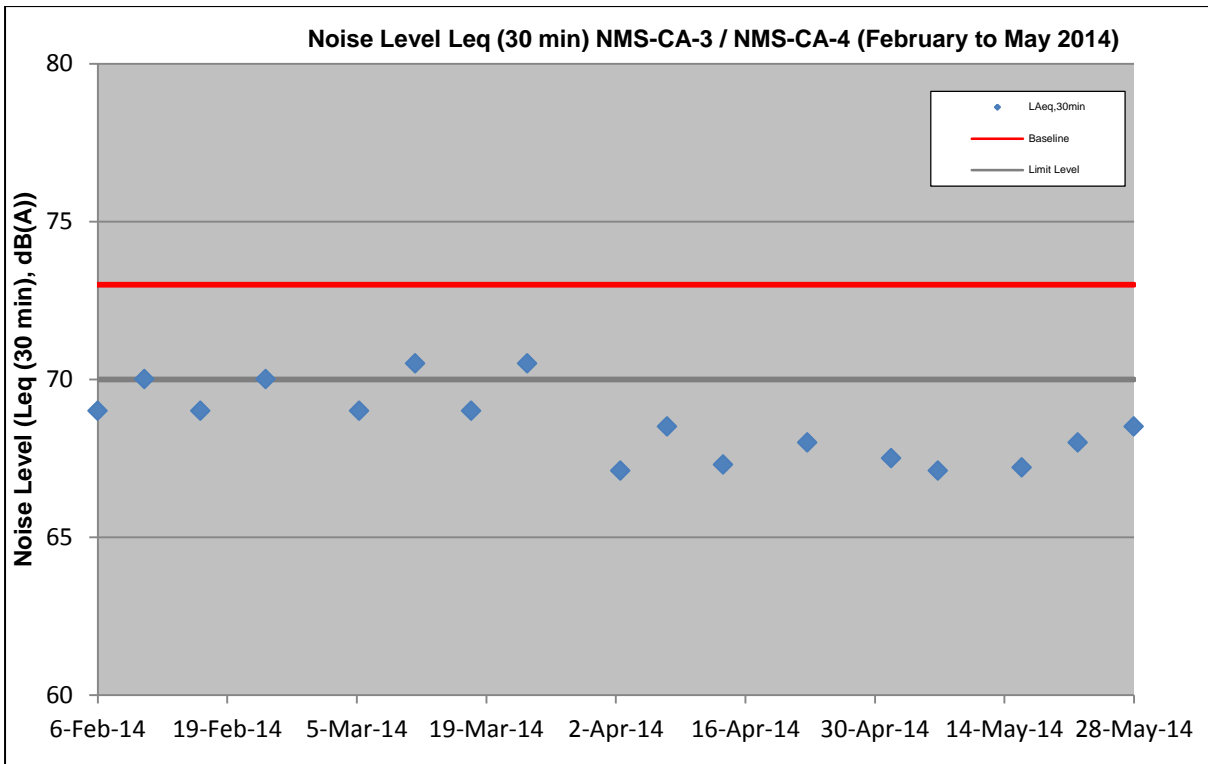
Notes: (*) : Façade correction is included
 (#): Baseline Corrected Level = Measured Noise Level - Baseline Noise Level

| | |
|---------------------------------------|------|
| Average L _{Aeq,30min} | 67.7 |
| Max L _{Aeq,30min} | 68.5 |
| Min L _{Aeq,30min} | 67.1 |









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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 for 2014

| 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 | 17.414 | 0.000 | 0.000 | 10.800 | 6.243 | 0.371 | 0.000 | 0.000 | 0.000 | 1.400 | 0.056 |
| Feb | 8.651 | 0.000 | 0.000 | 5.637 | 2.953 | 0.062 | 0.000 | 0.000 | 0.000 | 0.800 | 0.090 |
| Mar | 13.909 | 0.000 | 0.173 | 7.040 | 5.845 | 0.851 | 0.000 | 0.000 | 0.000 | 0.000 | 0.117 |
| Apr | 7.577 | 0.000 | 0.000 | 2.712 | 4.757 | 0.107 | 0.000 | 0.000 | 0.000 | 2.200 | 0.059 |
| May | 5.497 | 0.000 | 0.045 | 1.201 | 4.251 | 0.000 | 0.000 | 0.000 | 0.000 | 1.200 | 0.059 |
| Jun | | | | | | | | | | | |
| Sub-total | 53.048 | 0.000 | 0.218 | 27.390 | 24.050 | 1.391 | 0.000 | 0.000 | 0.000 | 5.600 | 0.381 |
| July | | | | | | | | | | | |
| August | | | | | | | | | | | |
| September | | | | | | | | | | | |
| October | | | | | | | | | | | |
| November | | | | | | | | | | | |
| December | | | | | | | | | | | |
| Total | 53.048 | 0.000 | 0.218 | 27.390 | 24.050 | 1.391 | 0.000 | 0.000 | 0.000 | 5.600 | 0.381 |

Comment:

- 1) Assumption: The densities of Rock, Soil, Mix 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 May is 26/5/2014 for TKO137FB/TM38FB, NENT landfill and, 23/5/2014 for Kai Tak 1108A.
- 3) The amounts of waste in May are 58.52 tons for NENT Landfill, 8502.42 tons for TKO137FB/TM38 FB, 2401.12 tons for Kai Tak (Contract 1108A).
- 4) The amount of C&D waste reused in the Contract in May is 6 trucks, approximately 90 tons, for cut-off date as 30/5/2014.
- 5) The amount of imported fill in May is 0 tons, for cut-off date as 30/5/2014.
- 6) The amount of chemical waste in May is 1200L for cut-off date as 30/5/2014.

Appendix K

Environmental
Monitoring
Programme for
Coming Month

**SCL Works Contract 1103 - Hin Keng to Diamond Hill Tunnels
Tentative Impact Monitoring Schedule - June 2014**

| Date | Air Quality | Noise | Site Inspection |
|-----------|--------------|---------------------------|-----------------|
| | 24-hours TSP | L _{Aeq} , 30 min | |
| 01-Jun-14 | Sun | | |
| 02-Jun-14 | Mon | | |
| 03-Jun-14 | Tue | | |
| 04-Jun-14 | Wed | | |
| 05-Jun-14 | Thu | | |
| 06-Jun-14 | Fri | | |
| 07-Jun-14 | Sat | | |
| 08-Jun-14 | Sun | | |
| 09-Jun-14 | Mon | | |
| 10-Jun-14 | Tue | | |
| 11-Jun-14 | Wed | | |
| 12-Jun-14 | Thu | | |
| 13-Jun-14 | Fri | | |
| 14-Jun-14 | Sat | | |
| 15-Jun-14 | Sun | | |
| 16-Jun-14 | Mon | | |
| 17-Jun-14 | Tue | | |
| 18-Jun-14 | Wed | | |
| 19-Jun-14 | Thu | | |
| 20-Jun-14 | Fri | | |
| 21-Jun-14 | Sat | | |
| 22-Jun-14 | Sun | | |
| 23-Jun-14 | Mon | | |
| 24-Jun-14 | Tue | | |
| 25-Jun-14 | Wed | | |
| 26-Jun-14 | Thu | | |
| 27-Jun-14 | Fri | | |
| 28-Jun-14 | Sat | | |
| 29-Jun-14 | Sun | | |
| 30-Jun-14 | Mon | | |

| | |
|--|----------------|
| | 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 (May 2014)

| ET's Complaint Log Ref. no. | Incoming Complaint Ref no. | Name of Complainant | Date Complaint Received | Complaint Date/ Period | Complaint Location | Area of Concern | Details of Complaint | Date Complaint Received by ET | ET's Investigation Date | Investigation/Mitigation Measures | Validity to Project | Status |
|-----------------------------|----------------------------|---------------------|-------------------------|------------------------|--------------------|-----------------|----------------------|-------------------------------|-------------------------|-----------------------------------|---------------------|--------|
| - | - | - | - | - | - | - | - | - | - | - | - | - |

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 |
| Total | 0 | 0 | 0 |

Appendix F

**15th 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. 15

[Period from 1 to 31 May 2014]

Works Contract 1106 – Diamond Hill Station

(June 2014)

Certified by: 
_____ Dr. Priscilla Choy

Position: Environmental Team Leader

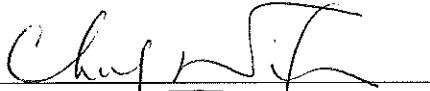
Date: 12th June 2014

Sembawang – Leader Joint Venture

**Shatin to Central Link –
Contract 1106
Diamond Hill Station**

**Monthly Environmental
Monitoring and Audit Report
For May 2014**

(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 15th 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 31 May 2014.

Summary of Construction Works undertaken during the Reporting Month

2. The major site activities undertaken in the reporting month include:
 - D-wall construction;
 - Interchange Adit – Construct Barrette;
 - Fissure grouting works
 - Pipe pile wall construction;
 - Capping beam construction works;
 - Gas main diversion works;
 - Construction of Pedestrian Underpass at Luen Yee Road;
 - Construction of planter for tree transplantation;
 - Pre-drilling works;
 - Bore piling works;
 - Construction of construction site office;
 - Pre-bored socket H-piling works; and
 - Modification works at existing bus bay at Lung Cheung Road.

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) | 5 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) | 6 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.

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. Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. About 4,904 m³ of inert C&D materials were generated from the Project and were sent to SCL1108A and Tuen Mun Area 38 Fill Bank during the reporting month. About 128 m³ of non-recyclable non-inert C&D materials, such as general refuse, were disposed of at NENT Landfill. 2,260 kg chemical waste was collected by licensed collector during the reporting month. No steel material but 2000 kg plastics and 313 kg paper/cardboard packaging was collected by the recycler during this reporting month.

Landscape and Visual

6. Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 8 and 22 May 2014. 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 2, 8, 15, 22 and 29 May 2014. The representative of the IEC joined the site inspection on 22 May 2014. 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 prosecutions were received in this reporting period.

Future Key Issues

11. Major site activities for the coming reporting month will include:
- D-wall construction;
 - Interchange Adit – Construct Barrette;
 - Fissure grouting works
 - Pipe pile wall construction;
 - Capping beam construction works and sheet piling;
 - Gas main diversion works;
 - Construction of Pedestrian Underpass at Luen Yee Road;
 - Drive sheet pile for cofferdam;
 - Construction of planter for tree transplantation;
 - Pre-drilling works;
 - Bore piling works;
 - Excavation and ELS works;
 - Pre-bored socket H-piling works; and
 - Modification works at existing bus bay at Lung Cheung Road.

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 15th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 May 2014.

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**.
- D-wall construction;
 - Interchange Adit – Construct Barrette;
 - Fissure grouting works
 - Pipe pile wall construction;
 - Capping beam construction works;
 - Gas main diversion works;
 - Construction of Pedestrian Underpass at Luen Yee Road;
 - Construction of planter for tree transplantation;
 - Pre-drilling works;
 - Bore piling works;
 - Construction of construction site office;
 - Pre-bored socket H-piling works; and
 - Modification works at existing bus bay at Lung Cheung Road.

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/E | 04/04/2014 | N/A | Valid |
| Notification pursuant to Air Pollution Control (Construction Dust) Regulation | | | |
| No.: 353668 | 19/12/2012 | 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-S3711-01 | 11/01/2013 | 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-RE0060-14 | 22/01/2014 | 27/05/2014 | Expired from 27 May 2014 onwards |
| GW-RE0314-14 | 06/04/2014 | 05/10/2014 | Cancelled by SLJV from 27 May 2014 onwards |
| GW-RE0315-14 | 10/04/2014 | 09/10/2014 | Cancelled by SLJV from 27 May 2014 onwards |
| GW-RE0436-14 | 28/04/2014 | 27/05/2014 | Expired from 27 May 2014 onwards |
| GW-RE0485-14 | 27/05/2014 | 31/07/2014 | Valid |
| GW-RE0517-14 | 27/05/2014 | 26/11/2014 | 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 $L_{eq, 5-min}$ 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**, comply 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.: 14303) SVAN 957 (Serial no.: 21460 and 23853) |
| Calibrator | SV30A (Serial no.: 24803 and 24791) 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 | 1 |

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 $\pm 5\%$. 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 $\text{m}^3/\text{min}.$) 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 $\pm 5\%$. 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.

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 (April 2014) | 14 th May 2014 |

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 7, 12, 22 and 29 May 2014 exceeded the daytime construction noise criterion. However, the results are not considered as exceedance as they were below the baseline noise level (it was below limit level after baseline correction for the result on 7 May 2014) while the noise monitoring results for the rest 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 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 6 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/m ³ | Maximum µg/m ³ | Average µg/m ³ | Action Level, µg/m ³ | Limit Level, µg/m ³ |
|--|------------------------------|------------------------------|------------------------------|------------------------------------|-----------------------------------|
| 24-hr TSP (DMS-3 ⁽¹⁾⁽⁴⁾ / DMS-4 ⁽²⁾⁽⁴⁾) | 18.4 | 58.8 | 34.0 | 159.1 | 260 |
| 24-hr TSP (DMS-4 ⁽¹⁾ / DMS-3 ⁽²⁾) | 21.3 | 59.9 | 38.0 | 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.

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.
- 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**. No steel material but 2000 kg plastics and 313 kg paper/cardboard packaging was collected by the recycler during 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 | | |
| May 2014 | 4,904 m ³ | 128 m ³ | 2,260 kg | 313 kg | 2,000 kg | 0 kg |
| Notes: | | | | | | |
| (a) Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil, which were delivered to SCL 1108A 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 8 and 22 May 2014. 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 2, 8, 15, 22 and 29 May 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 22 May 2014. No site visit was conducted by EPD. 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 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 |
|-----------------------------|-------------|---|--|
| <i>Water Quality</i> | 15 May 2014 | <u>Reminder:</u> To remove the sediment accumulated in the catch-pit for sedimentation tank near the site entrance. | The sediment accumulated in the catch-pit was removed on 22 May 2014. |
| <i>Noise</i> | 2 May 2014 | <u>Reminder:</u> Close the panel for air-compressor at near Lung Cheung Road. | The panel was closed for air compressors operating on site on 8 May 2014. |
| <i>Landscape and Visual</i> | 2 May 2014 | <u>Reminder:</u> Remove the construction material from near the tree at the bar-bending area. | The construction material was removed from the tree at the bar bending area on 8 May 2014. |
| | 8 May 2014 | <u>Reminder:</u> Remove the stagnant water at the pre-drill area to avoid accumulation near the tree root. | The stagnant water near the trees was removed. No accumulation of stagnant water was observed near the tree areas on 15 May 2014. |
| | 29 May 2014 | To remove the construction material near the trees near Lung Cheung Road (Tree DT1907). | Follow up actions will be reported next month. |
| <i>Cultural Heritage</i> | --- | --- | --- |
| <i>Air Quality</i> | 24 Apr 2014 | <u>Reminder:</u> Properly provide enclosure for storage area of dusty material near Lung Cheung Road. | The enclosure for storage area of dusty material was properly repaired on 2 May 2014. |
| | 8 May 2014 | Remove the opened dusty cement bags to avoid dust generation or properly water the cement bags | The opened dusty cement bags were removed on 15 May 2014. |
| | 15 May 2014 | To provide three-side enclosure for grouting plant to avoid dust generation. | Enclosures were provided, but not completely enclosed on three-side for the grouting plant of Falcon on 29 May 2014. Follow up action is needed to be reviewed for the |

| Parameters | Date | Observations and Recommendations | Follow-up |
|------------------------------------|--------------------------|---|---|
| | | | grouting plant of Intrafor. |
| | 22 May 2014 | To properly provide three-side enclosure for the two grouting plants on-site to avoid dust dispersion. | Enclosures were provided, but not completely enclosed on three-side for the grouting plant of Falcon on 29 May 2014. Follow up action is needed to be reviewed for the grouting plant of Intrafor. |
| | 22 May 2014 | Stockpile of cement bags should be covered by impervious material near the grouting plant and near D-wall works area. | Enclosure made of impervious materials is provided to stockpile of cement bags near the grouting plant on 29 May 2014. Cements bags near D-wall works area were removed on 29 May 2014. |
| <i>Waste / Chemical Management</i> | 24 Apr 2014 | Improper handling of chemical containers and air compressors was observed. The Contractor is reminded to provide drip tray to chemical containers placed near the de-sander area and the pipe pile wall area and provide drip tray of adequate size to air compressor near pipe pile wall area. | Drip tray was properly installed for the air compressor near pipe pile wall area on 2 May 2014. The chemical container near the pipe pile wall area was removed on 2 May 2014. Chemical container near the de-sander area was removed on 15 May 2014. |
| | 24 Apr 2014 | <u>Reminder:</u> Properly clear the mixture of chemical oil and stagnant water in the drip tray of air compressor located near Lung Cheung Road. | The mixture of oily water was generally removed on 2 May 2014. |
| | 8 May 2014 | Properly provide drip tray to chemicals near the grouting plant and near tree DT 1885. | Chemical container near tree DT1885 was removed on 15 May 2014. Drip tray was provided to chemical containers near the grouting plant on 22 May 2014. |
| | 15 May 2014 | <u>Reminder:</u> Clear the oil stain on exposed area as “chemical waste” (near pre-drill area). | The oil stain on exposed area was cleared on 22 May 2014. |
| | 15 May 2014 | Properly provide drip tray to chemicals near the grouting plant. | Drip tray was provided to chemical containers near the grouting plant on 22 May 2014. |
| | 22 May 2014 | To provide drip tray to chemical containers on-site at near sedimentation tank, near pipe pile wall and near capping beam area. | Drip tray was provided to chemical containers on-site near sedimentation tank on 29 May 2014. Chemical containers are removed near pipe pile wall and near capping beam area on 29 May 2014. |
| | 29 May 2014 | To properly provide drip tray of adequate size to chemical containers near new AquaSed and near the generator-set near Lung Cheung Road. | Follow up actions will be reported next month. |
| | <i>Permits/ Licenses</i> | --- | --- |

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 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:

- D-wall construction;
- Interchange Adit – Construct Barrette;
- Fissure grouting works
- Pipe pile wall construction;
- Capping beam construction works and sheet piling;
- Gas main diversion works;
- Construction of Pedestrian Underpass at Luen Yee Road;
- Drive sheet pile for cofferdam;
- Construction of planter for tree transplantation;
- Pre-drilling works;
- Bore piling works;
- Excavation and ELS works; and
- Pre-bored socket H-piling works; and
- Modification works at existing bus bay at Lung Cheung Road.

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 bentonite 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 31 May 2014 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 5 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 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.
- It is recommended particular attention should be paid to the control of silty surface runoff.
- Slurry on the haul road should be cleared regularly to reduce the runoff generation.

Construction Noise

- Regular review on the noise mitigation measures and the conditions of the implemented noise mitigation measures shall be properly maintained.
- Idling equipment and plants should be switched off when not in use to reduce noise generation.
- Door of operating engine and other noise generation parts should be closed at all time.

Landscape and Visual

- “No-intrusion zone” should be established and maintained for existing trees as far as practicable. 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.
- The contractor is reminded to keep the materials away from the tree.

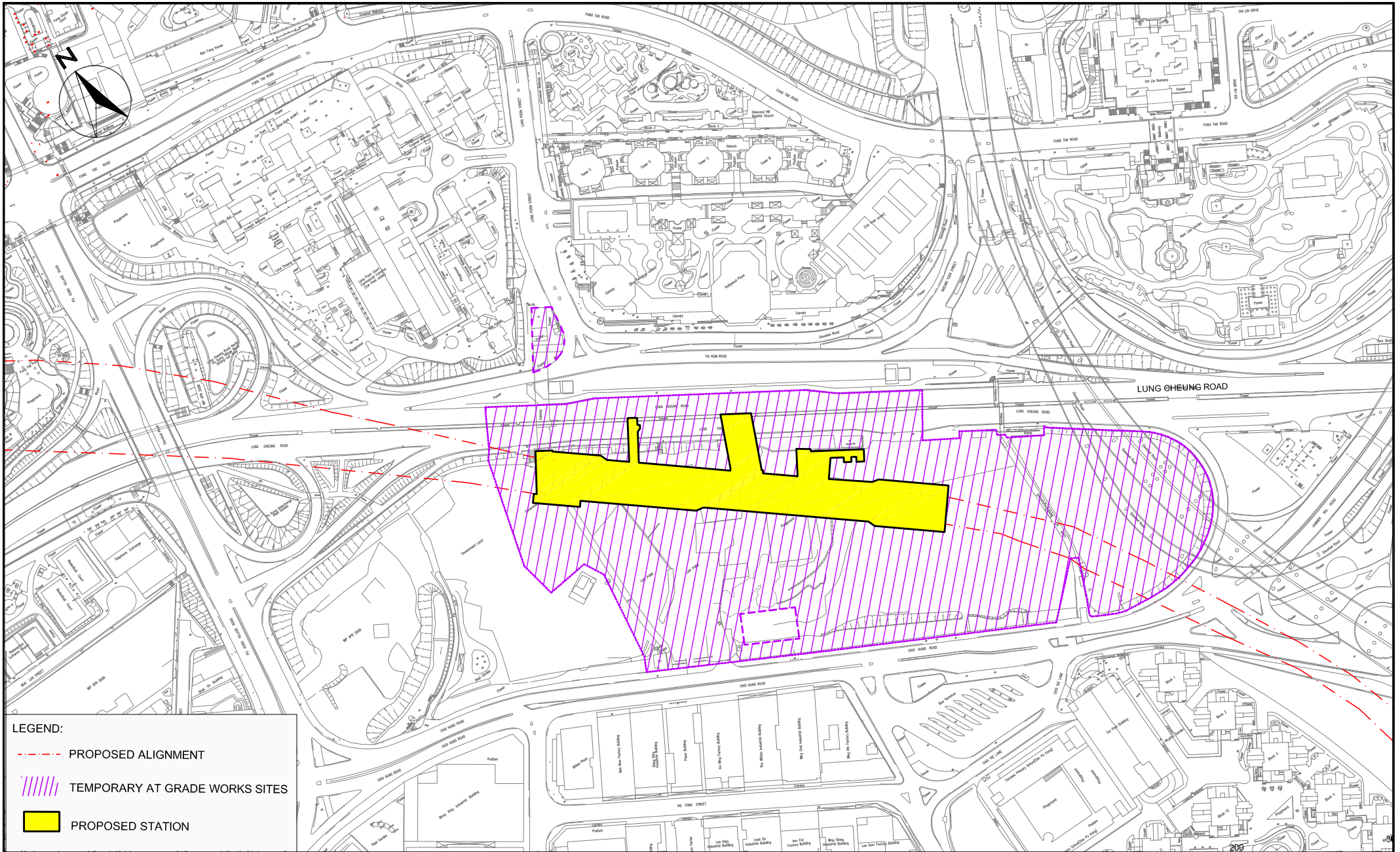
Air Quality

- Regular water spraying on site is reminded to be implemented as per EP requirement.
- 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.
- Regular maintenance should be provided to plants to prevent black smoke emission.
- Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) and the cement grouting stations should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.
- 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.

Waste/Chemical Management

- Good site practice of providing drip trays for temporary use of chemicals shall be sustained. Drip trays should be properly maintained.
- Provision and enhancement of the preventive mitigation measures to avoid oil leakage during oil filling works and from working plants.

FIGURES



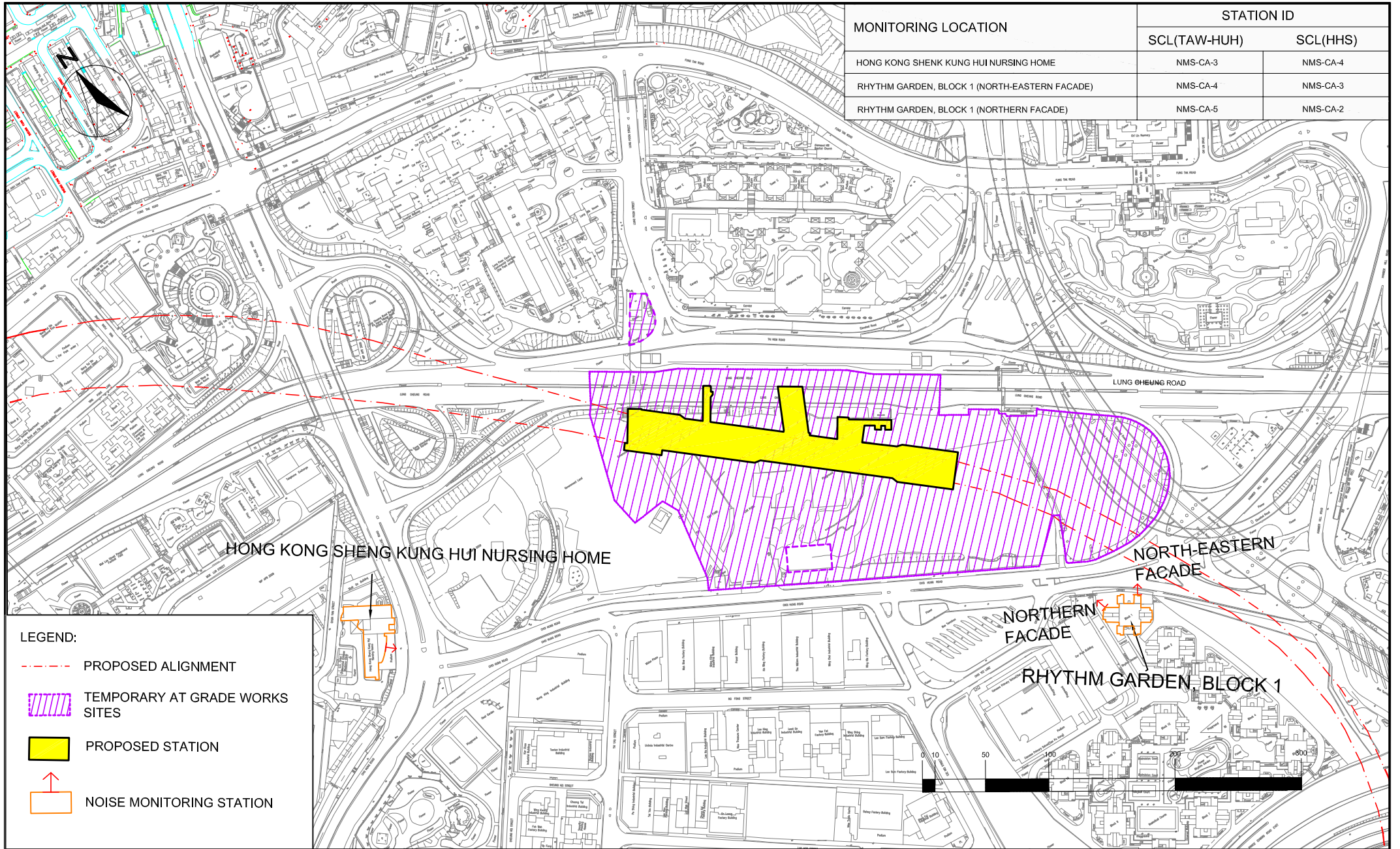
- LEGEND:**
- - - PROPOSED ALIGNMENT
 - //// TEMPORARY AT GRADE WORKS SITES
 - PROPOSED STATION

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 |

LEGEND:

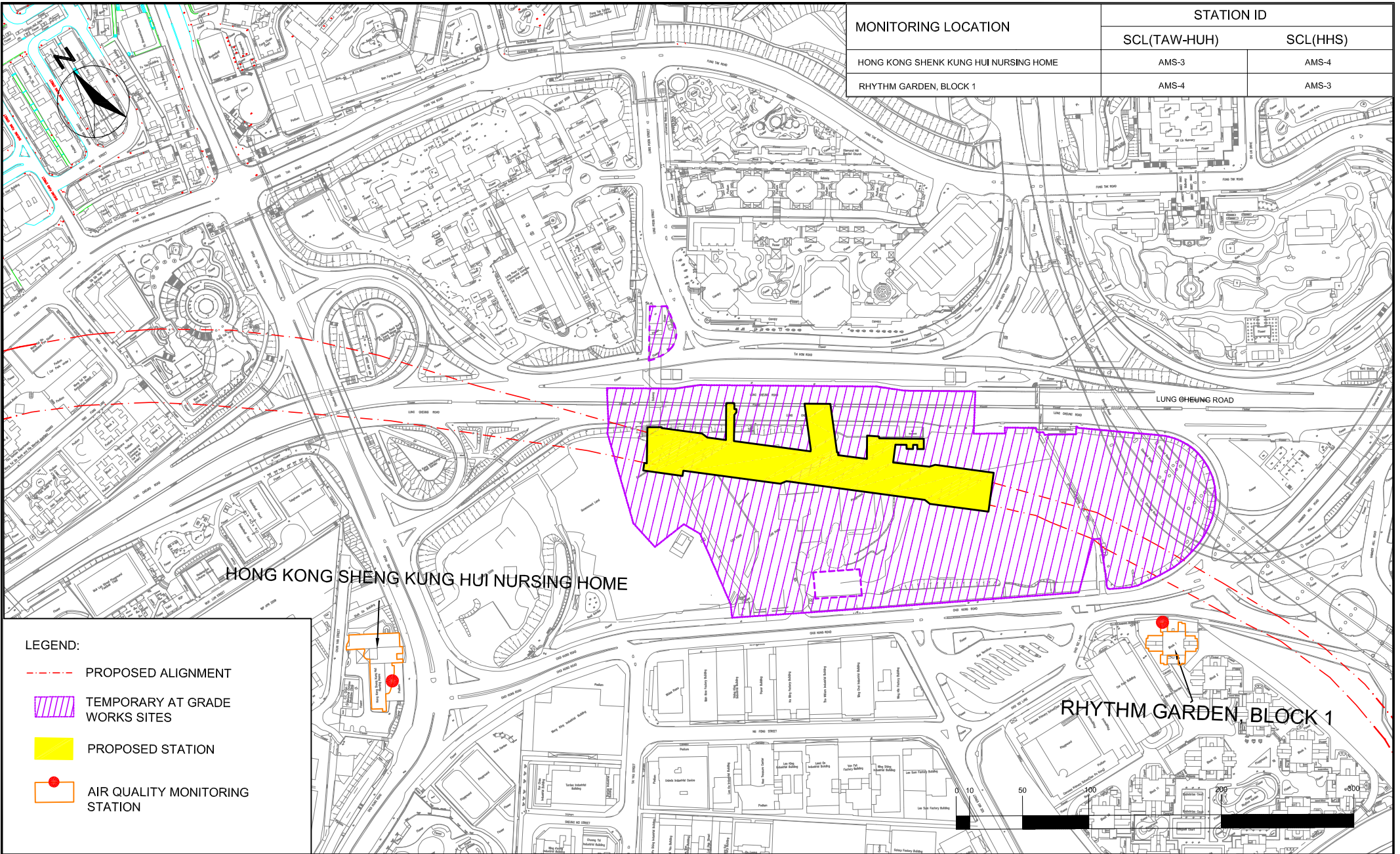
- - - PROPOSED ALIGNMENT
- TEMPORARY AT GRADE WORKS SITES
- PROPOSED STATION
- NOISE MONITORING STATION



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 SHEN KUNG HUI NURSING HOME | AMS-3 | AMS-4 |
| RHYTHM GARDEN, BLOCK 1 | AMS-4 | AMS-3 |

HONG KONG SHEN KUNG HUI NURSING HOME

RHYTHM GARDEN BLOCK 1

LEGEND:

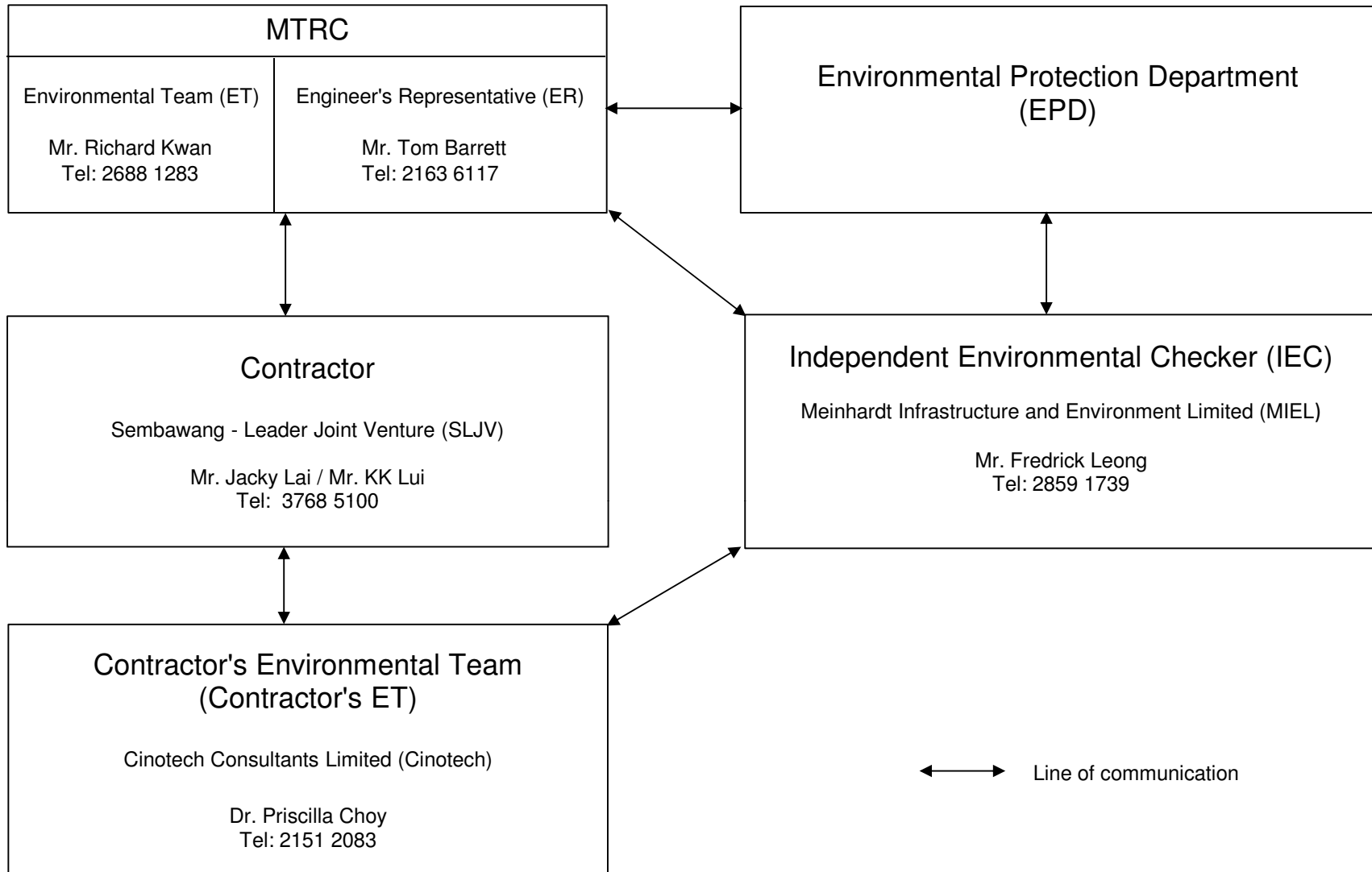
-  PROPOSED ALIGNMENT
-  TEMPORARY AT GRADE WORKS SITES
-  PROPOSED STATION
-  AIR QUALITY MONITORING STATION

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 | - |



↔ Line of communication

| | | | | | | |
|-------|---|-------|--------|--------------|---------|----------|
| Title | MTR SCL Works Contract 1106 Diamond Hill Station | Scale | N.T.S | Proposal No. | MA12051 | CINOTECH |
| | Organisation Chart and Key Contact of the Project | Date | Jun-14 | Figure | 4 | |

**APPENDIX A
TENTATIVE CONSTRUCTION
PROGRAMME**



Contract 1106 - Diamond Hill Station

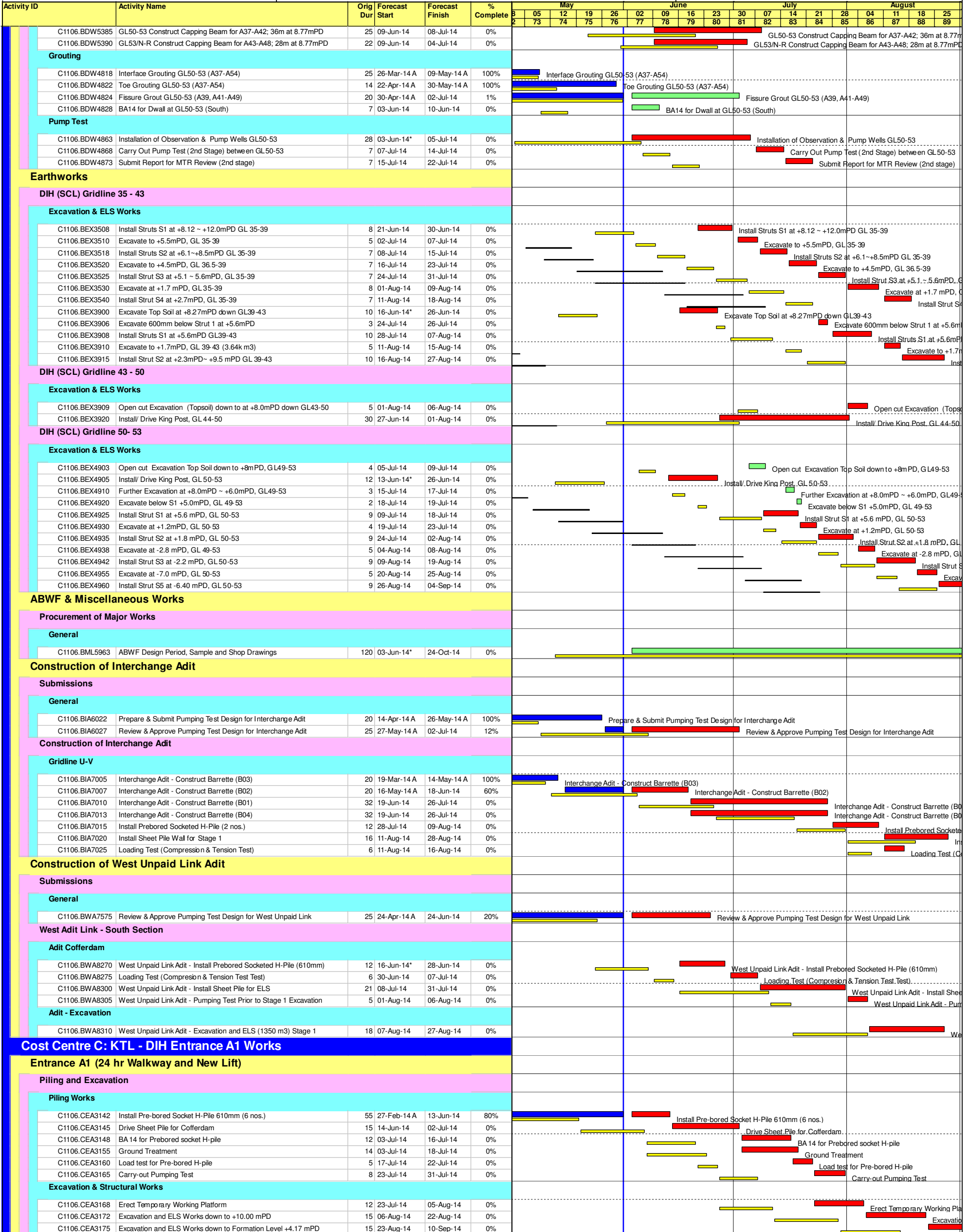


Main Gantt chart table with columns for Activity ID, Activity Name, and dates from May to August. Includes sections for Contract Dates, Milestone Dates, Preliminaries, General Requirements, Submissions, TTMS Implementation, Tree Feeling / Transplanting, Utility Diversions, and Diaphragm Wall & Foundation Works.

Legend table with color-coded boxes: Remaining Work (green), Critical Remaining Work (red), Previous Month (Apr) (yellow), Baseline (PMP) (blue), Actual Work (purple), Baseline Milestone (green diamond), Milestone (black diamond).

1 of 3
MTR Contract 1106 - Diamond Hill Station
Three Month Rolling Programme
As of 31 May 2014

3 Month Rolling Programme table with columns: Date, Revision, Checked, Appr...
03-Jun-14, C-1106-3MRP/ 17, RR, RB



| | |
|---|--|
| Remaining Work | ◆ Baseline Milestone |
| Critical Remaining Work | ◆ Milestone |
| Previous Month (Apr) | |
| Baseline (PMP) | |
| Actual Work | |

2 of 3

MTR Contract 1106 - Diamond Hill Station

Three Month Rolling Programme

As of 31 May 2014

| 3 Month Rolling Programme | | | |
|---------------------------|-----------------|---------|---------|
| Date | Revision | Checked | Appr... |
| 03-Jun-14 | C-1106-3MRP/ 17 | RR | RB |
| | | | |

| Activity ID | Activity Name | Orig Dur | Forecast Start | Forecast Finish | % Complete | May | | | | | June | | | | | July | | | | | August | | | | |
|--|--|----------|----------------|-----------------|------------|-----|----|----|----|----|------|----|----|----|----|------|----|----|----|----|--------|----|----|--|--|
| | | | | | | 03 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | | |
| Pedestrian Underpass at Luen Yee Road | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction of Underpass | | | | | | | | | | | | | | | | | | | | | | | | | |
| General | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1106.DRIW525 | Concrete Curing & Cleaning | 28 | 13-Apr-14 A | 03-Jun-14 | 95% | | | | | | | | | | | | | | | | | | | | |
| C1106.DRIW530 | Complete Pedestrian Underpass & Open for Public | 0 | | 03-Jun-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| Lung Cheung Road | | | | | | | | | | | | | | | | | | | | | | | | | |
| Existing Road Kerb at Bus Bay East End | | | | | | | | | | | | | | | | | | | | | | | | | |
| General | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1106.DRIW532 | Removal of Existing Pavement, Footpath & Street Furniture | 10 | 02-May-14 A | 14-May-14 A | 100% | | | | | | | | | | | | | | | | | | | | |
| C1106.DRIW536 | Construct of Temporary Rigid Pavement | 10 | 15-May-14 A | 24-May-14 A | 100% | | | | | | | | | | | | | | | | | | | | |
| C1106.DRIW538 | Reinstatement of Works (Pavement, Footpath & Street Furniture) | 12 | 26-May-14 A | 09-Jun-14 | 50% | | | | | | | | | | | | | | | | | | | | |
| Cost Centre H - Bored Piles Foundation for DIH CDA Site under STT | | | | | | | | | | | | | | | | | | | | | | | | | |
| Piling Works for CDA | | | | | | | | | | | | | | | | | | | | | | | | | |
| CDA Development Site | | | | | | | | | | | | | | | | | | | | | | | | | |
| General | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA1060 | Predrilling for Bored Pile (2nd Batch) | 35 | 10-Apr-14 A | 24-May-14 A | 100% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA1067 | Construction of Stage 2 Hoarding Modification | 14 | 14-Aug-14 | 29-Aug-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA1070 | Predrilling for Bored Pile (Final Batch) | 10 | 02-Jul-14* | 12-Jul-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| Piling Works | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA1040 | Construct Bored Pile BP7 & BP9 (2 nos) | 20 | 16-Apr-14 A | 24-May-14 A | 100% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2050 | Construct Bored Pile BP8 & BP17 (2 nos) | 36 | 26-May-14 A | 08-Jul-14 | 10% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2060 | Construct Bored Pile BP26 & BP6 (2 nos) | 36 | 03-Jul-14 | 13-Aug-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2065 | Construct Bored Pile BP1 & B2 (2 nos) | 36 | 08-Aug-14 | 19-Sep-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2075 | CDA - Bored Pile BP13 & BP11 (2 nos) | 36 | 21-May-14 A | 03-Jul-14 | 15% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2090 | CDA - Bored Pile BP12 & BP14 | 36 | 27-Jun-14 | 08-Aug-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2110 | CDA - Bored Pile BP25 & BP26 (2 nos) | 32 | 02-Aug-14 | 08-Sep-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2112 | CDA - Bored Pile BP19 & BP21 (2 nos) | 36 | 28-May-14 A | 15-Jul-14 | 5% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2114 | CDA - Bored Pile BP20 & BP23 (2 nos) | 36 | 10-Jul-14 | 20-Aug-14 | 0% | | | | | | | | | | | | | | | | | | | | |
| C1106.CDA2116 | CDA - Bored Pile BP22 & BP2 (2 nos) | 36 | 16-Aug-14 | 27-Sep-14 | 0% | | | | | | | | | | | | | | | | | | | | |

| | | | |
|--|-------------------------|--|--------------------|
| | Remaining Work | | Baseline Milestone |
| | Critical Remaining Work | | Milestone |
| | Previous Month (Apr) | | |
| | Baseline (PMP) | | |
| | Actual Work | | |

3 of 3

MTR Contract 1106 - Diamond Hill Station
Three Month Rolling Programme
As of 31 May 2014

| 3 Month Rolling Programme | | | |
|---------------------------|-----------------|---------|---------|
| Date | Revision | Checked | Appr... |
| 03-Jun-14 | C-1106-3MRP/ 17 | RR | RB |
| | | | |
| | | | |

**APPENDIX B
ACTION AND LIMIT LEVELS**

APPENDIX B – Action and Limit Levels

24-Hour TSP

| Regular Dust Monitoring Location | Description | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|--|---------------------------------------|--|---------------------------------------|
| 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**

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0008

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 2-May-14 Next Due Date: 1-Jul-14
 Equipment No.: A-01-57 Serial No. 2352

| Ambient Condition | | | |
|---------------------|-------|---------------------|-------|
| Temperature, Ta (K) | 296.1 | Pressure, Pa (mmHg) | 764.2 |

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

| Calibration of TSP Sampler | | | | | |
|----------------------------|------------------------------------|--|---------------------|--------------------------|---|
| Calibration Point | Orifice | | | 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 | 3.47 | 59.80 | 7.4 | 2.74 |
| 2 | 8.7 | 2.97 | 51.25 | 5.4 | 2.34 |
| 3 | 7.8 | 2.81 | 48.57 | 4.6 | 2.16 |
| 4 | 4.5 | 2.13 | 37.08 | 2.8 | 1.68 |
| 5 | 3.3 | 1.83 | 31.86 | 2.0 | 1.42 |

By Linear Regression of Y on X

Slope, mw = 0.0465 Intercept, bw = -0.0586
 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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.72

Remarks: _____

Conducted by: Wk Tang Signature: Kwan Date: 2/5/14
 Checked by: Br Signature: _____ Date: 2 May 2014

TEST REPORT

Description Calibration Orifice
Serial No. 0993
Model No. TE-5025A
Date 30 September 2013

Manufacturer TISCH
Temperature, Ta (K) 300.8
Pressure, Pa (mmHg) 759.3
Equipment No.: A-04-04

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

DATA TABULATION

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

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope (m) = 2.07768

Intercept (b) = -0.04613

Coefficient (r) = 0.99997

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

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope (m) = 1.30101

Intercept (b) = -0.02919

Coefficient (r) = 0.99997

CALCULATIONS

$$Vstd = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/760](298/\text{Ta})$$

$$Qstd = Vstd/\text{Time}$$

$$Va = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/\text{Pa}]$$

$$Qa = Va/\text{Time}$$

For subsequent flow rate calculations:

$$Qstd = l/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))] - b\}$$

$$Qa = l/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))] - b\}$$

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

| | |
|------------------|------------|
| Test Report No.: | C/N/140104 |
| Date of Issue: | 2014-01-05 |
| Date Received: | 2014-01-04 |
| Date Tested: | 2014-01-04 |
| Date Completed: | 2014-01-05 |
| Next Due Date: | 2015-01-04 |

ATTN: Mr. W. K. Tang

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 Temperature | : 19 degree Celsius |
| Relative Humidity | : 52% |

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

| | |
|------------------|--------------|
| Test Report No.: | C/N/130830/3 |
| Date of Issue: | 2013-08-31 |
| Date Received: | 2013-08-30 |
| Date Tested: | 2013-08-30 |
| Date Completed: | 2013-08-31 |
| Next Due Date: | 2014-08-30 |

ATTN: Mr. W.K. Tang

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 Temperature | : 21 degree Celsius |
| Relative Humidity | : 69% |

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

| | |
|------------------|--------------|
| Test Report No.: | C/N/131129/1 |
| Date of Issue: | 2013-11-30 |
| Date Received: | 2013-11-29 |
| Date Tested: | 2013-11-29 |
| Date Completed: | 2013-11-30 |
| Next Due Date: | 2014-11-29 |

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

Room Temperature : 19 degree Celsius
Relative Humidity : 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

| | |
|-------------------|---------------------|
| Room Temperature | : 21 degree Celsius |
| Relative Humidity | : 57% |

Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

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 Temperature | : 21 degree Celsius |
| Relative Humidity | : 57% |

Methodology:

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

Results:

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

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Item for calibration:

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

Test conditions:

| | |
|-------------------|---------------------|
| Room Temperature | : 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 May 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---------------|-----------|--------------|-----------|--------------|-----------|----------|
| | | | | 1-May | 2-May | 3-May |
| | | | | | | |
| 4-May | 5-May | 6-May | 7-May | 8-May | 9-May | 10-May |
| | 24 hr TSP | | Noise | | 24 hr TSP | |
| 11-May | 12-May | 13-May | 14-May | 15-May | 16-May | 17-May |
| | Noise | | | 24 hr TSP | | |
| 18-May | 19-May | 20-May | 21-May | 22-May | 23-May | 24-May |
| | | | 24 hr TSP | Noise | | |
| 25-May | 26-May | 27-May | 28-May | 29-May | 30-May | 31-May |
| | | 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 June 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---------------|--------------|-----------|-----------|-----------|-----------|----------|
| 1-Jun | 2-Jun | 3-Jun | 4-Jun | 5-Jun | 6-Jun | 7-Jun |
| | | Noise | | 24 hr TSP | | |
| 8-Jun | 9-Jun | 10-Jun | 11-Jun | 12-Jun | 13-Jun | 14-Jun |
| | | | 24 hr TSP | Noise | | |
| 15-Jun | 16-Jun | 17-Jun | 18-Jun | 19-Jun | 20-Jun | 21-Jun |
| | | 24 hr TSP | Noise | | | |
| 22-Jun | 23-Jun | 24-Jun | 25-Jun | 26-Jun | 27-Jun | 28-Jun |
| | 24 hr TSP | Noise | | | 24 hr TSP | |
| 29-Jun | 30-Jun | | | | | |
| | 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

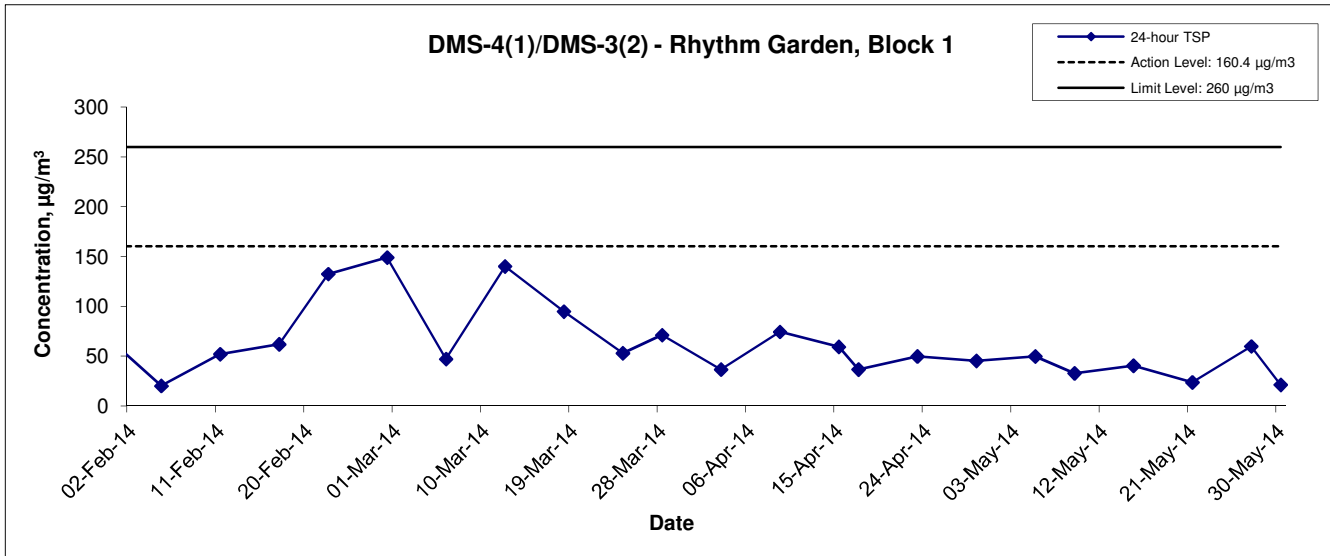
Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

| 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-May-14 | 09:00 | Cloudy | 294.4 | 763.4 | 3.7723 | 3.8595 | 0.0872 | 2599.6 | 2623.6 | 24.0 | 1.22 | 1.22 | 1.22 | 1751.2 | 49.8 |
| 9-May-14 | 09:00 | Cloudy | 294.5 | 760.0 | 3.2307 | 3.2881 | 0.0574 | 2623.6 | 2647.6 | 24.0 | 1.21 | 1.21 | 1.21 | 1747.1 | 32.9 |
| 15-May-14 | 09:00 | Sunny | 301.9 | 756.6 | 3.1859 | 3.2556 | 0.0697 | 2647.6 | 2671.6 | 24.0 | 1.20 | 1.20 | 1.20 | 1722.4 | 40.5 |
| 21-May-14 | 09:00 | Cloudy | 298.1 | 758.6 | 3.2372 | 3.2784 | 0.0412 | 2671.6 | 2695.6 | 24.0 | 1.21 | 1.20 | 1.21 | 1735.2 | 23.7 |
| 27-May-14 | 09:00 | Sunny | 302.5 | 758.7 | 3.2201 | 3.3233 | 0.1032 | 2695.6 | 2719.6 | 24.0 | 1.20 | 1.20 | 1.20 | 1723.2 | 59.9 |
| 30-May-14 | 09:00 | Sunny | 303.2 | 758.3 | 3.2440 | 3.2806 | 0.0366 | 2719.6 | 2743.6 | 24.0 | 1.20 | 1.19 | 1.19 | 1720.7 | 21.3 |
| | | | | | | | | | | | | | | Min | 21.3 |
| | | | | | | | | | | | | | | Max | 59.9 |
| | | | | | | | | | | | | | | Average | 38.0 |

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



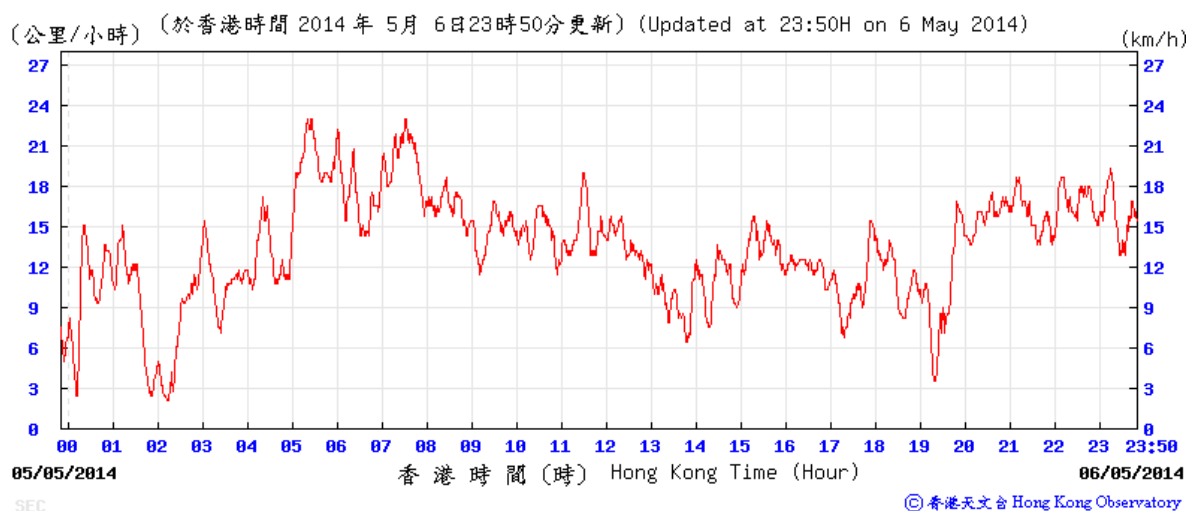
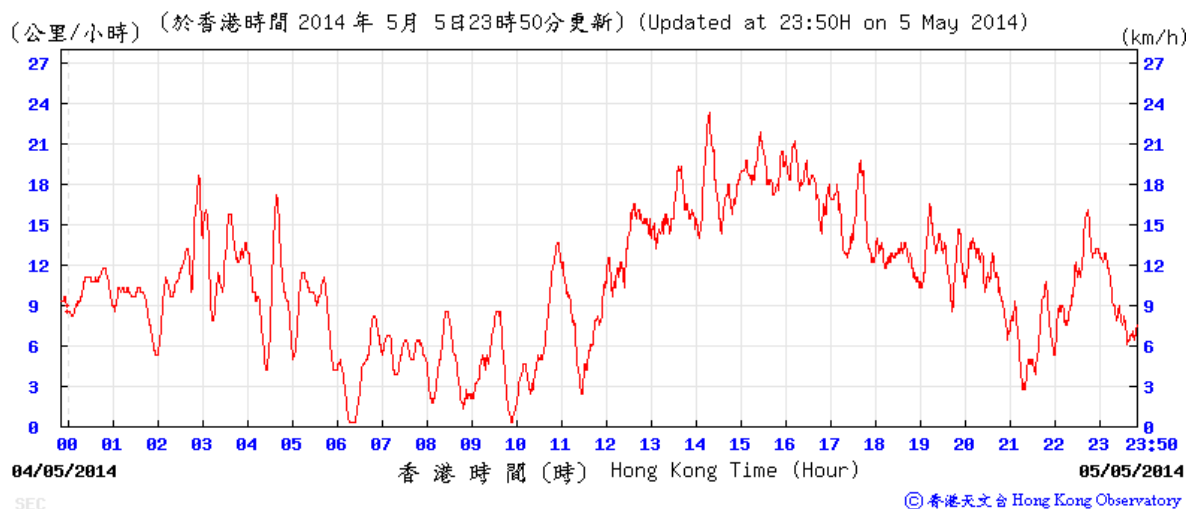
Remarks:

- (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 Shatin to Central Link – Contract 1106 Diamond Hill Station Graphical Presentation of 24-hour TSP Monitoring Results | Scale N.T.S | Project No. MA12051 | CINOTECH |
| | Date Jun 14 | Appendix E | |

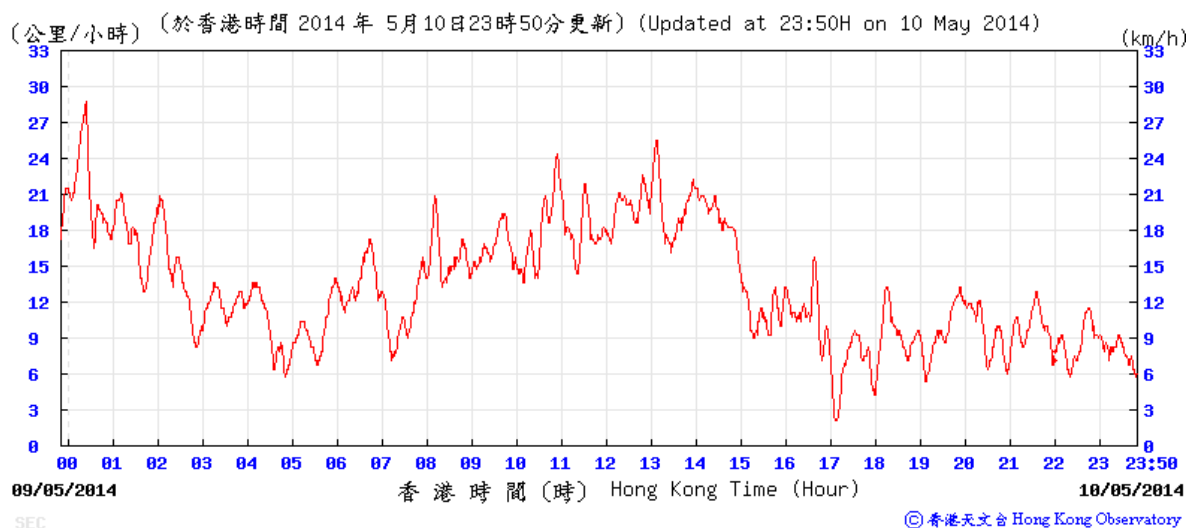
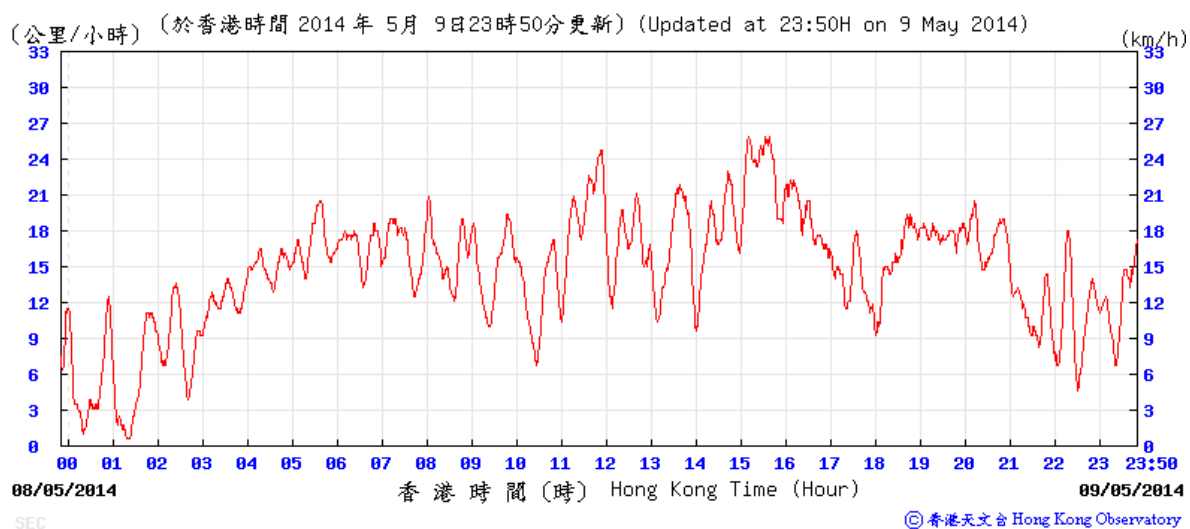
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

5-6 May 2014



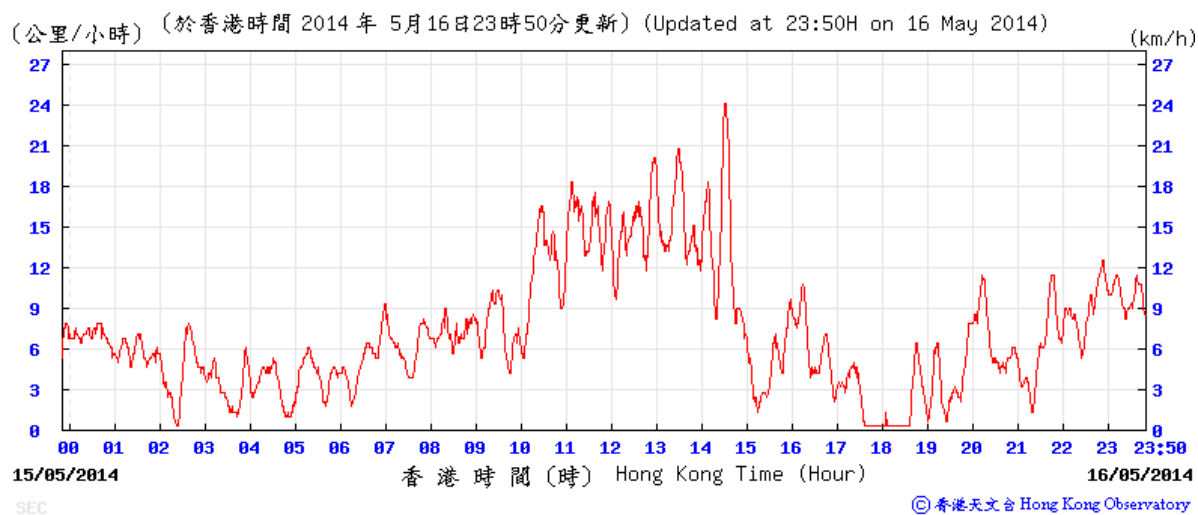
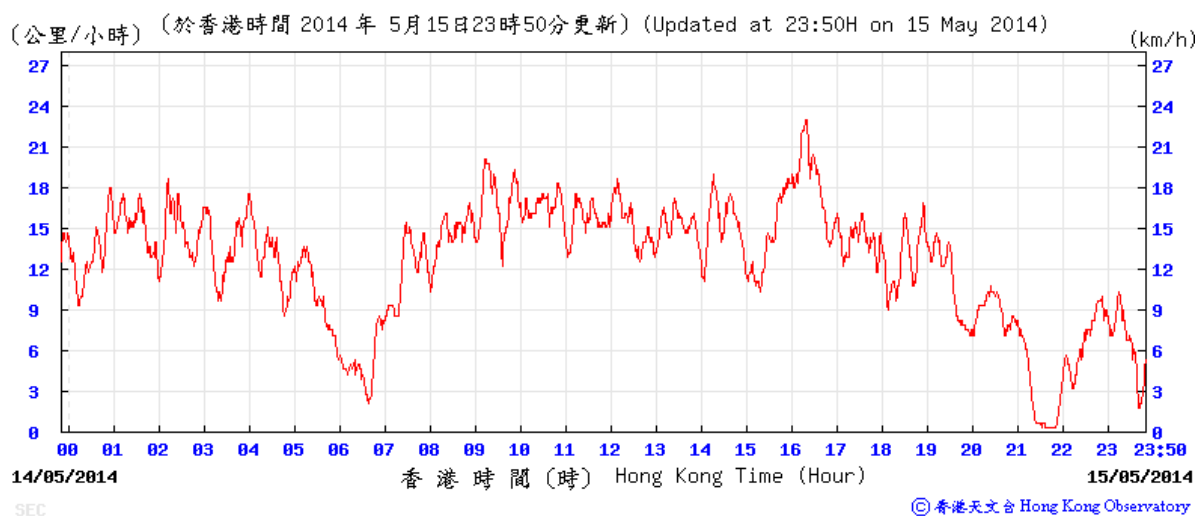
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

9-10 May 2014



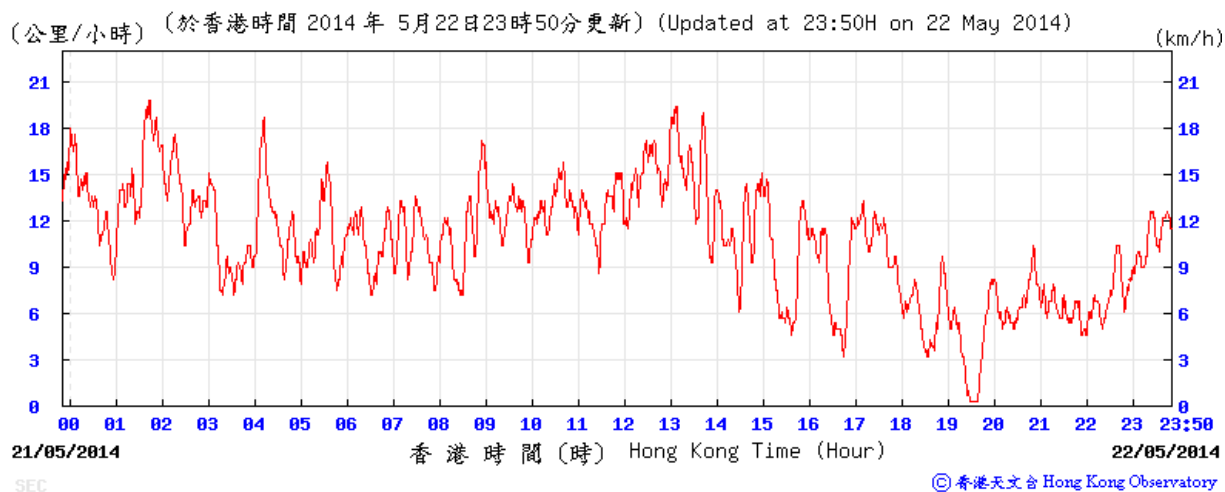
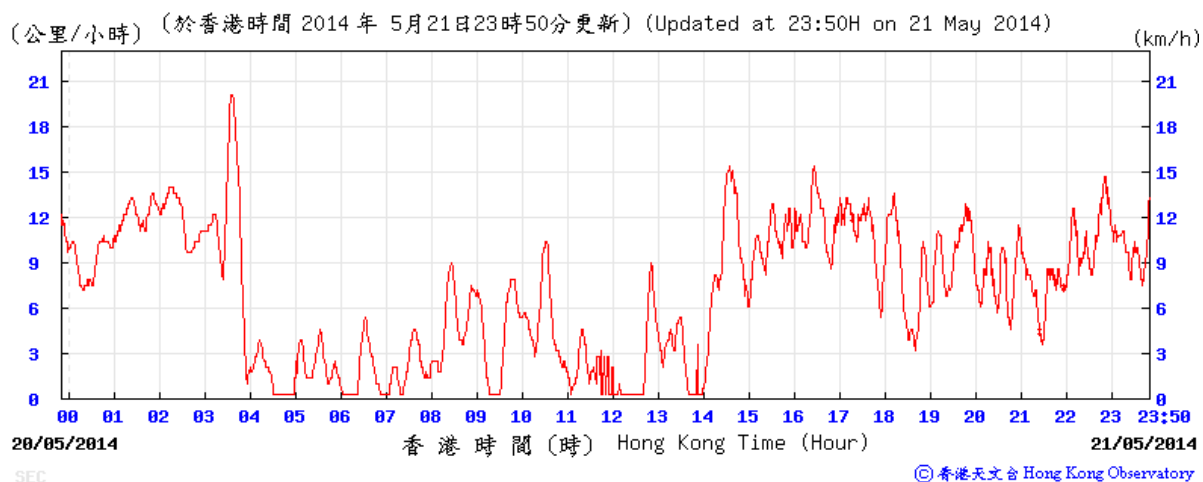
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

15-16 May 2014



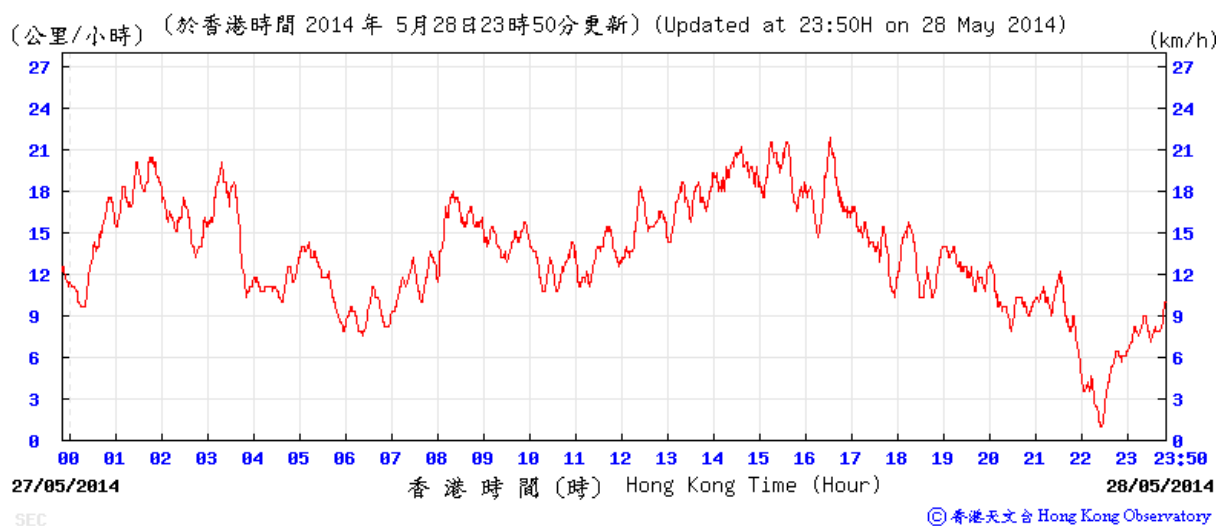
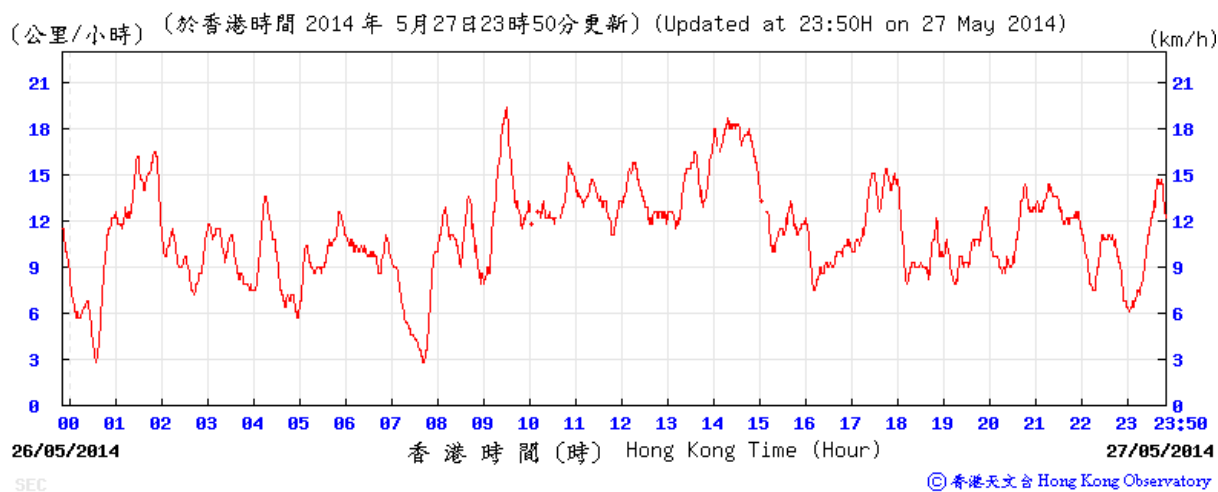
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

21-22 May 2014



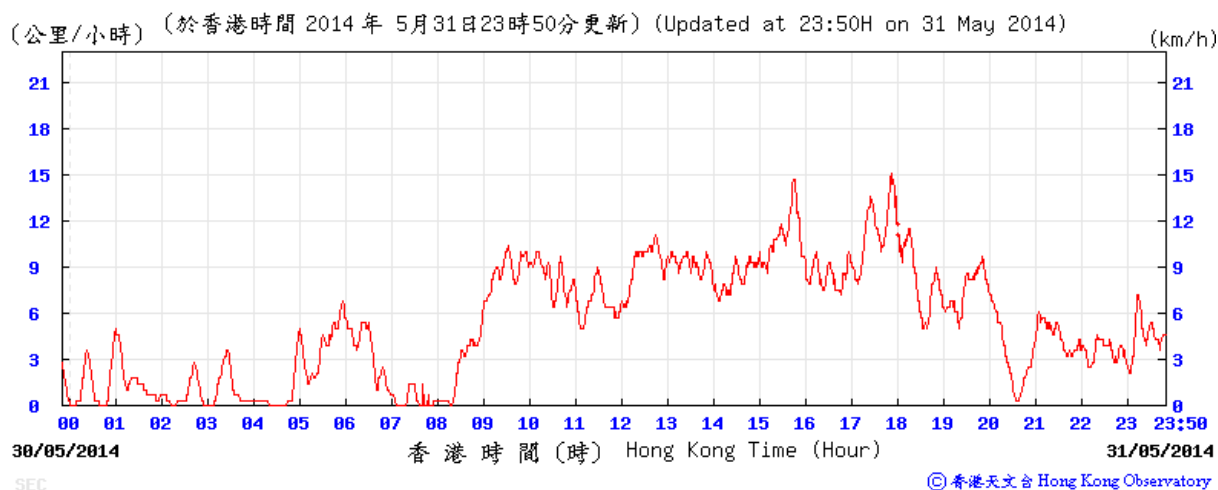
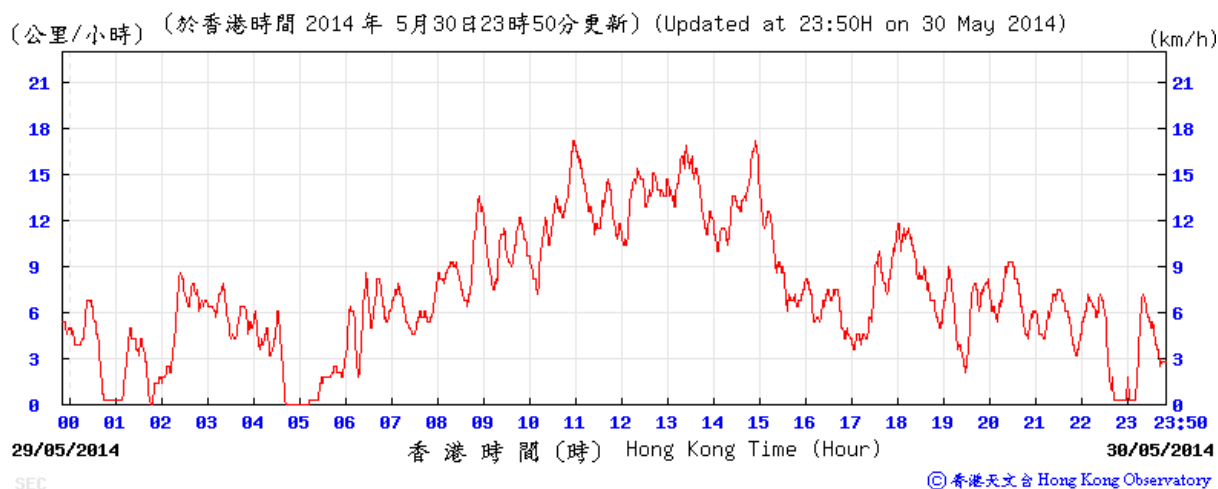
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

27-28 May 2014



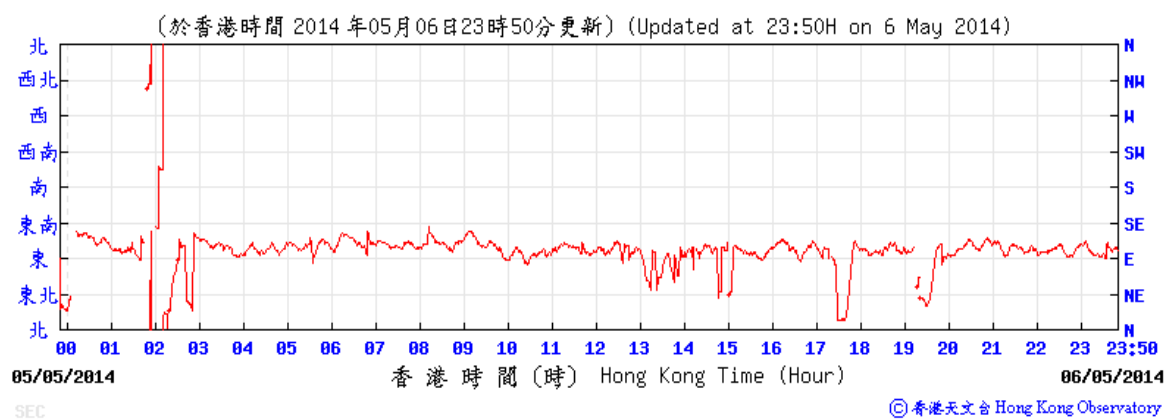
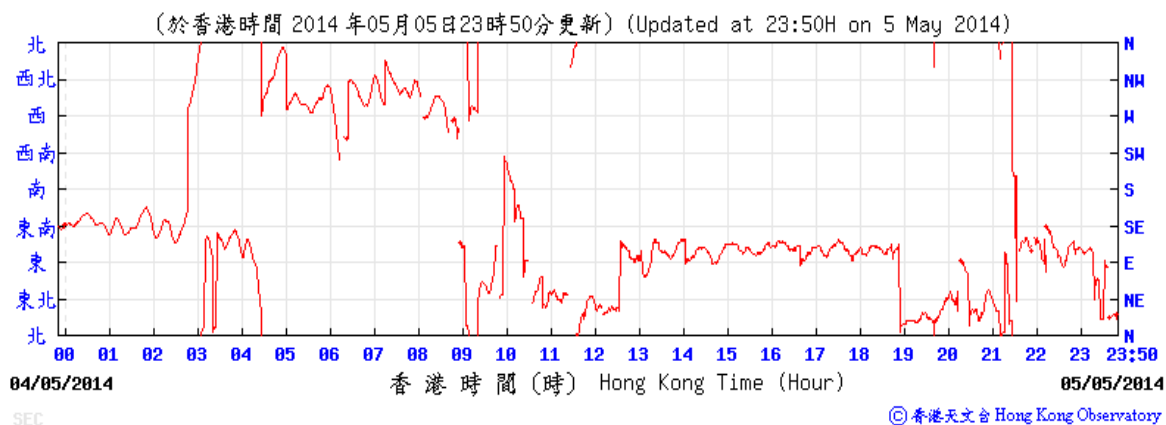
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

30-31 May 2014



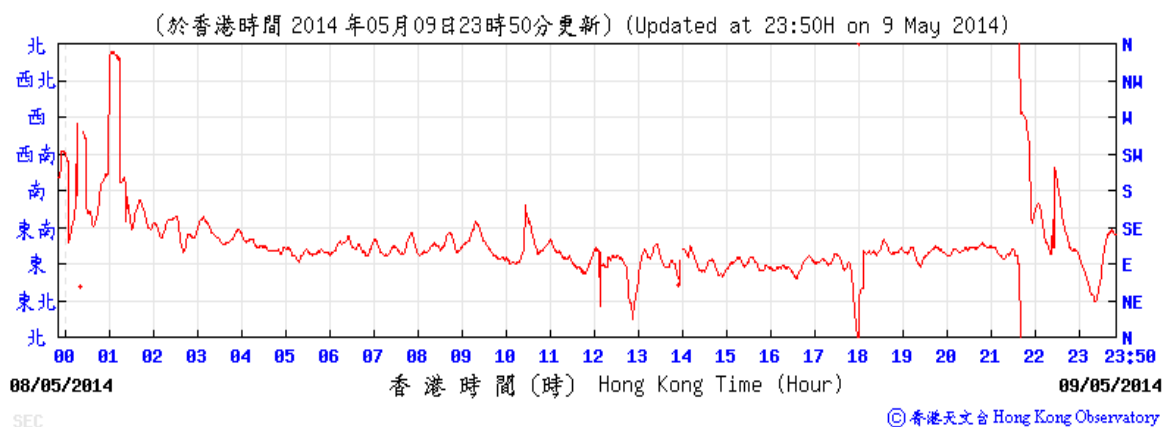
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

5-6 May 2014



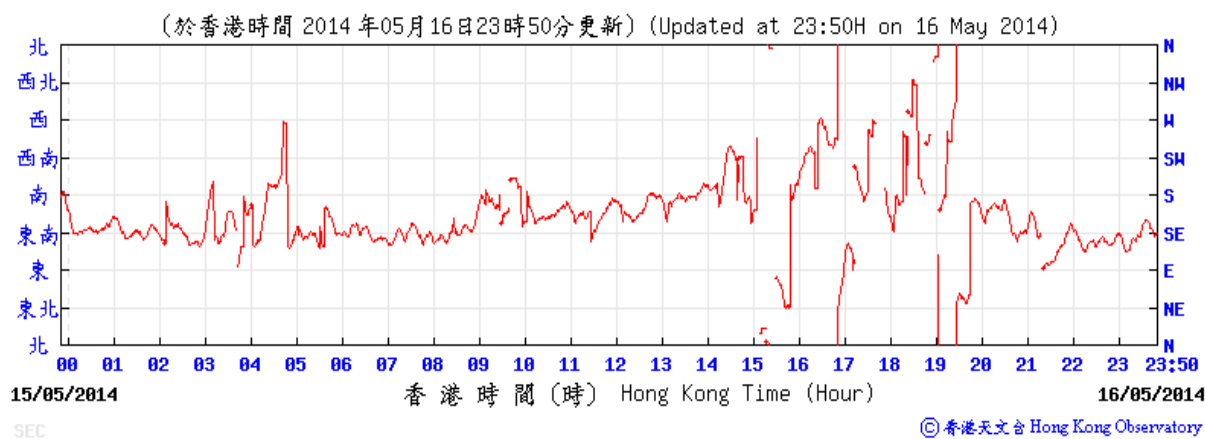
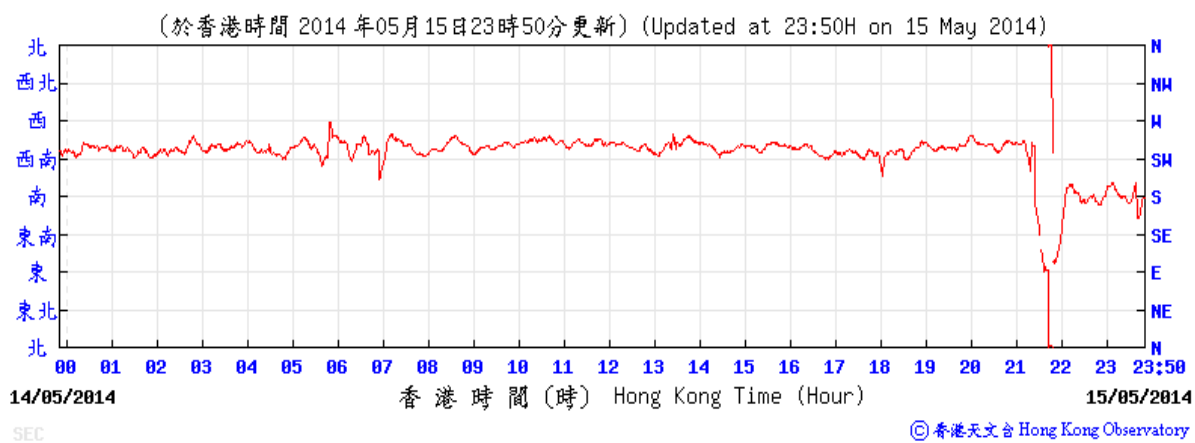
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

9-10 May 2014



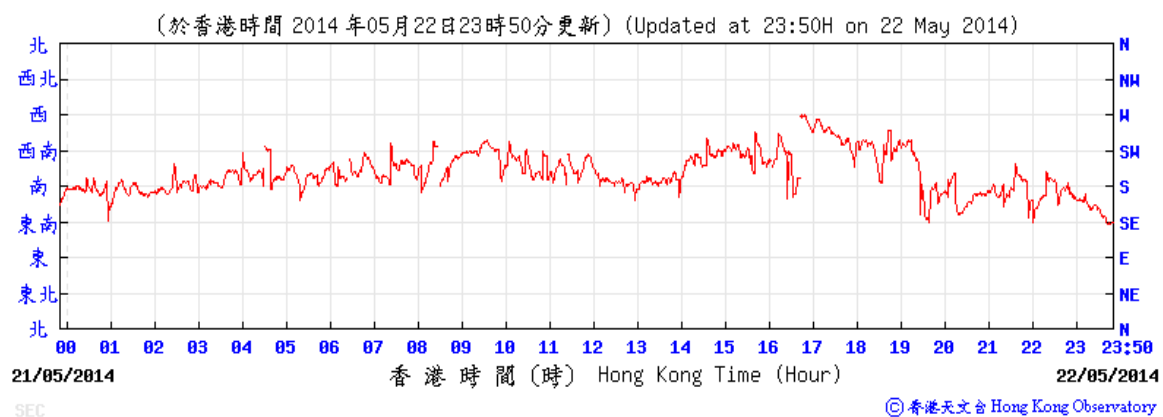
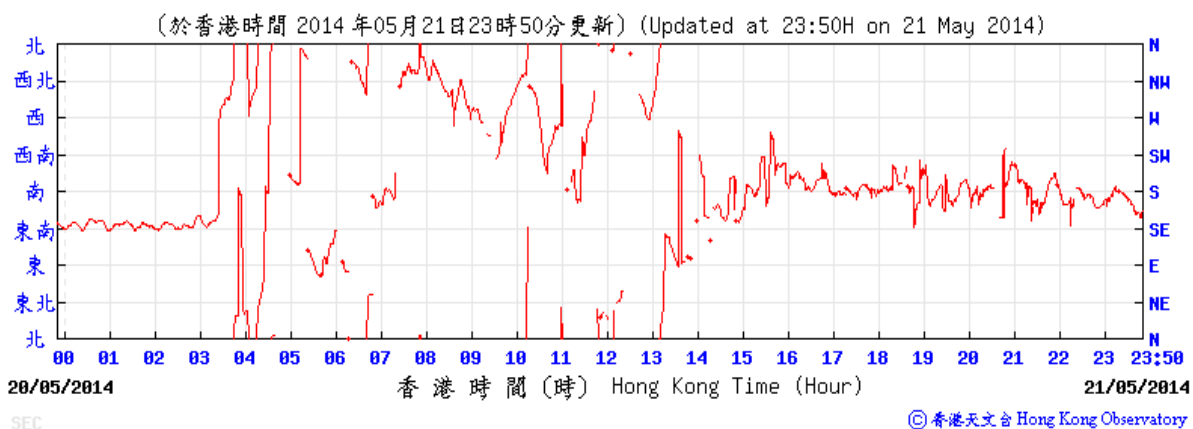
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

15-16 May 2014



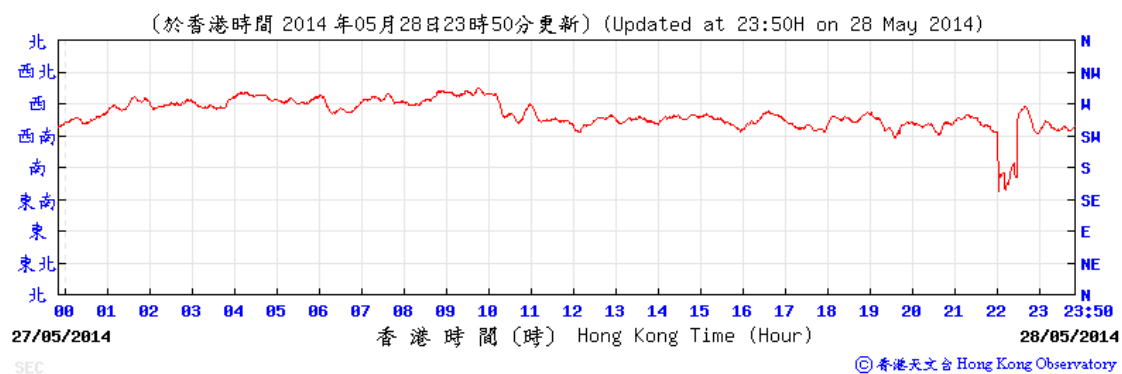
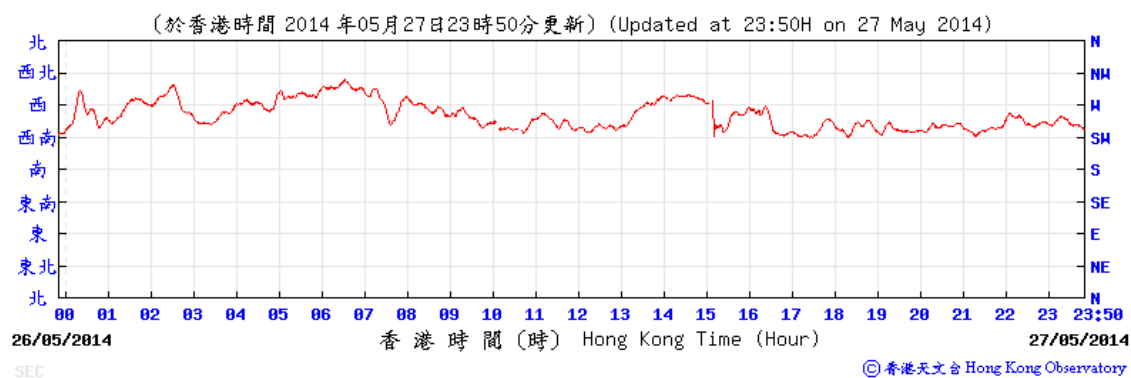
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

21-22 May 2014



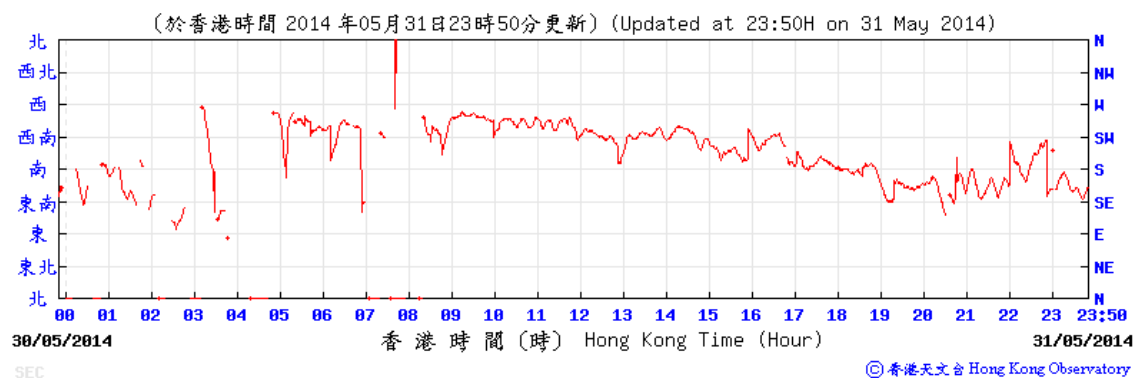
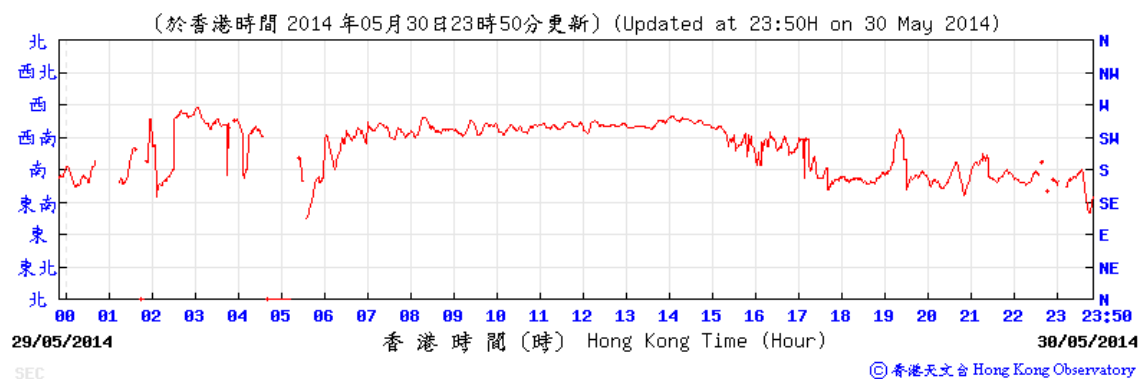
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

27-28 May 2014



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

30-31 May 2014



**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} |
| 7-May-14 | Cloudy | 14:30 | 74.0 | 74.9 | 73.0 | 73.7 | 71 | 70.4 |
| | | 14:35 | 73.7 | 74.9 | 72.4 | | | |
| | | 14:40 | 73.9 | 74.9 | 72.5 | | | |
| | | 14:45 | 73.5 | 74.6 | 72.3 | | | |
| | | 14:50 | 73.0 | 74.6 | 72.3 | | | |
| | | 14:55 | 73.8 | 74.9 | 72.5 | | | |
| 12-May-14 | Cloudy | 13:32 | 73.7 | 74.8 | 72.2 | 74.3 | 71 | 71.6 |
| | | 13:37 | 74.3 | 75.4 | 72.9 | | | |
| | | 13:42 | 74.5 | 75.7 | 72.9 | | | |
| | | 13:47 | 74.4 | 75.5 | 73.0 | | | |
| | | 13:52 | 74.3 | 75.5 | 73.0 | | | |
| | | 13:57 | 74.5 | 75.6 | 73.1 | | | |
| 22-May-14 | Cloudy | 13:20 | 68.8 | 69.7 | 67.5 | 68.8 | 71 | 68.8 Measured ≤ Baseline Level |
| | | 13:25 | 68.7 | 69.8 | 67.6 | | | |
| | | 13:30 | 69.1 | 70.2 | 67.8 | | | |
| | | 13:35 | 69.0 | 69.9 | 68.1 | | | |
| | | 13:40 | 68.5 | 69.6 | 67.3 | | | |
| | | 13:45 | 68.4 | 69.5 | 67.3 | | | |
| 29-May-14 | Sunny | 13:55 | 73.8 | 74.6 | 72.7 | 73.8 | 71 | 70.6 |
| | | 14:00 | 74.0 | 75.1 | 72.8 | | | |
| | | 14:05 | 73.9 | 75.2 | 72.6 | | | |
| | | 14:10 | 73.9 | 75.0 | 72.6 | | | |
| | | 14:15 | 73.9 | 75.2 | 72.8 | | | |
| | | 14:20 | 73.5 | 74.5 | 72.6 | | | |

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).

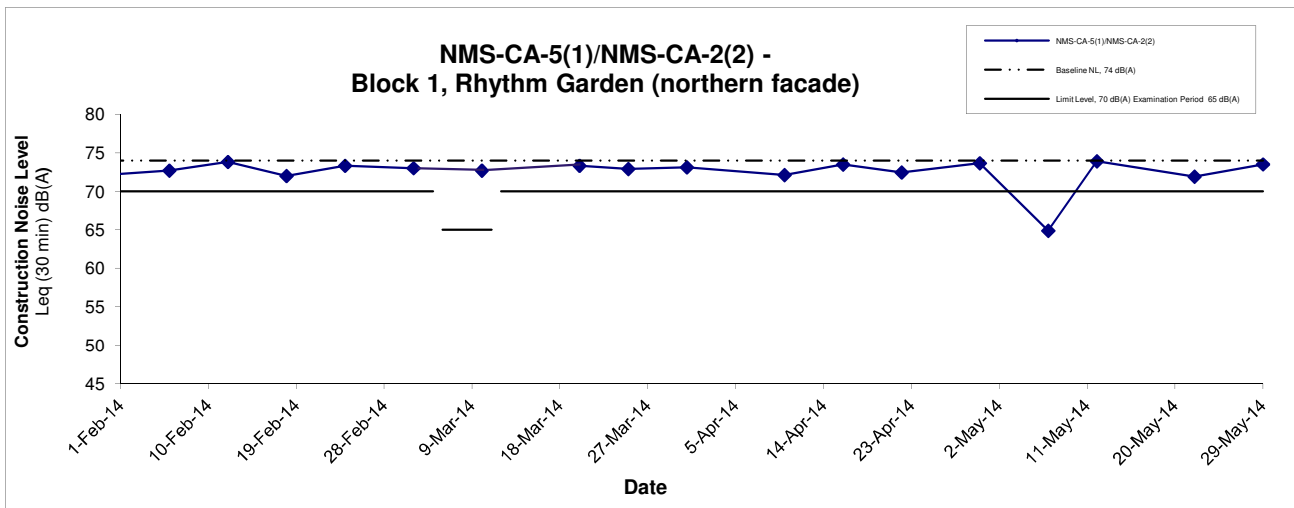
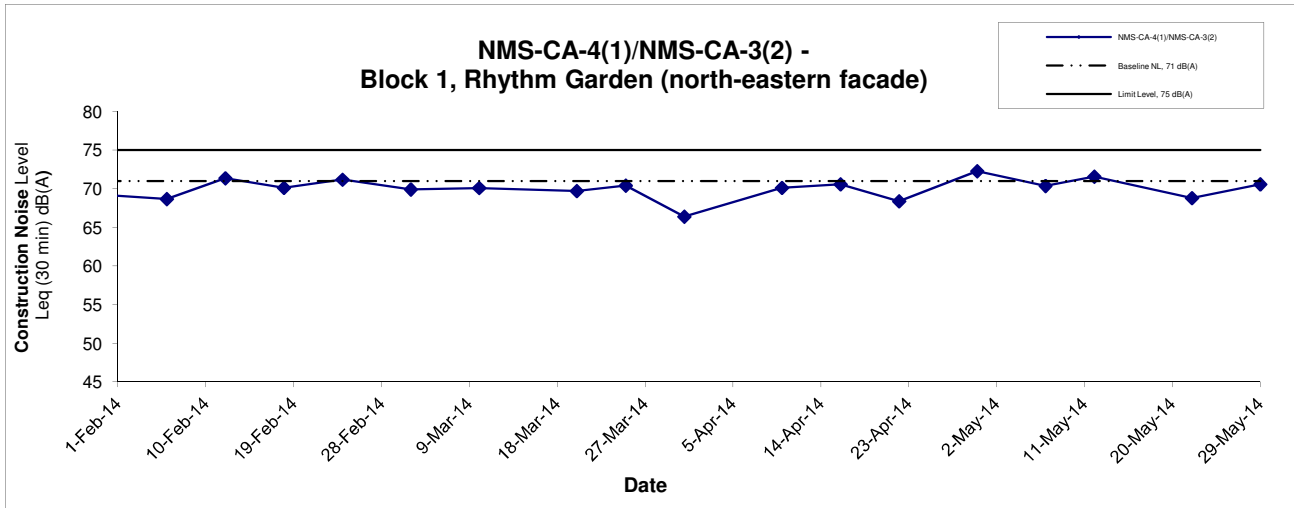
Appendix F - Noise Monitoring Results

| 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} |
| 7-May-14 | Cloudy | 13:57 | 74.5 | 76.3 | 72.6 | 74.5 | 74 | 64.9 |
| | | 14:02 | 74.7 | 76.8 | 72.4 | | | |
| | | 14:07 | 74.9 | 75.8 | 74.0 | | | |
| | | 14:12 | 74.3 | 75.3 | 73.2 | | | |
| | | 14:17 | 74.5 | 75.5 | 73.8 | | | |
| | | 14:22 | 74.0 | 74.9 | 72.9 | | | |
| 12-May-14 | Cloudy | 13:00 | 74.0 | 74.9 | 72.2 | 73.9 | 74 | 73.9 Measured ≤ Baseline Level |
| | | 13:05 | 73.8 | 74.6 | 72.0 | | | |
| | | 13:10 | 74.1 | 76.0 | 72.2 | | | |
| | | 13:15 | 74.4 | 75.7 | 73.0 | | | |
| | | 13:20 | 73.7 | 74.7 | 72.3 | | | |
| | | 13:25 | 73.4 | 74.4 | 71.9 | | | |
| 22-May-14 | Cloudy | 13:20 | 72.1 | 73.3 | 70.9 | 71.9 | 74 | 71.9 Measured ≤ Baseline Level |
| | | 13:25 | 72.4 | 73.6 | 71.2 | | | |
| | | 13:30 | 71.8 | 72.8 | 70.7 | | | |
| | | 13:35 | 71.9 | 72.8 | 70.9 | | | |
| | | 13:40 | 72.0 | 73.1 | 71.0 | | | |
| | | 13:45 | 71.3 | 72.7 | 69.6 | | | |
| 29-May-14 | Sunny | 13:15 | 73.6 | 74.5 | 72.1 | 73.5 | 74 | 73.5 Measured ≤ Baseline Level |
| | | 13:20 | 73.8 | 71.6 | 72.7 | | | |
| | | 13:25 | 74.0 | 75.8 | 72.4 | | | |
| | | 13:30 | 73.4 | 74.4 | 72.4 | | | |
| | | 13:35 | 73.3 | 74.3 | 72.2 | | | |
| | | 13:40 | 73.0 | 74.0 | 71.9 | | | |

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 \leq Baseline Level, only Measured Level is presented on the graphical presentation.

| | | | | |
|-------|---|--------|-------------|-----------------|
| Title | Shatin to Central Link - Contract 1106 - Diamond Hill Station | Scale | Project No. | CINOTECH |
| | Graphical Presentation of Construction Noise Monitoring Results | N.T.S | MA12051 | |
| | | Date | Appendix | |
| | | Jun 14 | F | |

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: May 2014

- a) Exceedance Report for Dust Monitoring (NIL)**
- b) Exceedance Report for Noise Monitoring (NIL)**

APPENDIX H
SITE AUDIT SUMMARY

*Shatin to Central Link -
Contract 1106 Diamond Hill Station*

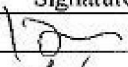

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|---------------------|
| Checklist Reference Number | 140502 |
| Date | 2 May 2014 (Friday) |
| Time | 13:30 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| 140502-R01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> Remove the construction material from near the tree at the bar-bending area. | D 3 |
| 140502-R02 | <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G - Construction Noise Impact</p> <ul style="list-style-type: none"> Close the panel for air-compressor at near Lung Cheung Road. <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140424), follow up actions are needed to be reviewed for item 140424-O01. | G 9 |

| | Name | Signature | Date |
|-------------|-------------|---|------------|
| Recorded by | Johnny Fung |  | 2 May 2014 |
| Checked by | Ivy Tam |  | 2 May 2014 |

*Shatin to Central Link -
Contract 1106 Diamond Hill Station*

Record Summary of Environmental Site Inspection

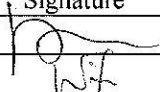
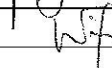
Inspection Information

| | |
|----------------------------|-----------------------|
| Checklist Reference Number | 140508 |
| Date | 8 May 2014 (Thursday) |
| Time | 13:30 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140508-R03 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> Remove the stagnant water at the pre-drill area to avoid accumulation near the tree root. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | D 3 |
| 140508-001 | <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> Properly provide drip tray to chemicals near the grouting plant and near tree DT 1885. | H10 |
| 140508-002 | <ul style="list-style-type: none"> Remove the opened dusty cement bags to avoid dust generation or properly water the cement bags. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140502), all identified environmental deficiencies were observed improved/rectified by the Contractor. | H 4ii |

Remark: item 140424-001 was remarked as 140508-001

| | Name | Signature | Date |
|-------------|--------------------|--|------------|
| Recorded by | Johnny Fung |  | 8 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 8 May 2014 |

*Shatin to Central Link -
Contract 1106 Diamond Hill Station*

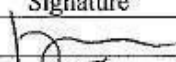
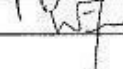
Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|------------------------|
| Checklist Reference Number | 140515 |
| Date | 15 May 2014 (Thursday) |
| Time | 13:30 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|--------------------------|---|------------------|
| 140515-R02 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> To remove the sediment accumulated in the catch-pit for sedimentation tank near the site entrance. | B 6iii |
| 140515-O01 | <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> To provide three-side enclosure for grouting plant to avoid dust generation. | E 11 |
| 140515-R03 140515-Q04 | <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> Clear the oil stain on exposed area as “chemical waste” (near pre-drill area). Properly provide drip tray to chemicals near the grouting plant. <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140508), follow up actions are needed to be reviewed for item 140508-O01 and remarked as 140515-Q04. | H 9 H 10 |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Johnny Fung |  | 15 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 15 May 2014 |

*Shatin to Central Link -
Contract 1106 Diamond Hill Station*

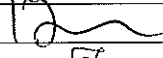

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|------------------------|
| Checklist Reference Number | 140522 |
| Date | 22 May 2014 (Thursday) |
| Time | 13:30 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | - |
| | <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| 140522-001 | <p>Part E – Air Quality</p> <ul style="list-style-type: none"> To provide three-side enclosure for the two grouting plants on site to avoid dust dispersion. | E 11 |
| 140522-003 | <ul style="list-style-type: none"> Stockpile of cement bags should be covered by impervious material near the grouting plant and near D-wall works area. | E 16 |
| | <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Part G – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| 140522-002 | <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> To provide drip tray to chemical containers on-site near sedimentation tank, near pipe pile wall and near capping beam area | H 10 |
| | <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| | <p>Part J – Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140515), follow up actions are needed to be reviewed for item 140515-001. | |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Johnny Fung |  | 22 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 22 May 2014 |

*Shatin to Central Link -
Contract 1106 Diamond Hill Station*

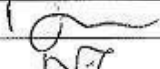
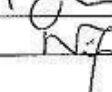
Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|------------------------|
| Checklist Reference Number | 140529 |
| Date | 29 May 2014 (Thursday) |
| Time | 13:30 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140529-002 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> To remove the construction material near the trees near Lung Cheung Road (Tree DT1907). <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Cultural Heritage</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | - D 3 |
| 140529-001 | <p>Part H – Waste/Chemical Management</p> <ul style="list-style-type: none"> To properly provide drip tray of adequate size to chemical containers near new Aquased and near the generator-set near Lung Cheung Road <p>Part I – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part J – Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140522), follow up actions are needed to be reviewed for item 140522-001. | H 10 |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Johnny Fung |  | 3 June 2014 |
| Checked by | Dr. Priscilla Choy |  | 3 June 2014 |

**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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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 | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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**

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| 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 |
|---|--------------|--|---|--------------------------------|-----------------------------|---|---|--------|
| <i>Cultural Heritage Impact (Construction Phase)</i> | | | | | | | | |
| 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • AMO's requirements • Principles for the Conservation of Heritage Sites in China • Burra Charter, the Australia's ICOMOS Charter for Places of Cultural Significance | ^ |
| <i>Ecology (Construction Phase)</i> | | | | | | | | |
| 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 | Minimise ecological impacts | Contractor | All construction sites | During Construction | <ul style="list-style-type: none"> • ProPECC PN 1/94 | ^ |

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| | | <p>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:</p> <ul style="list-style-type: none"> • No on-site burning of waste; • Waste and refuse in appropriate receptacles. | | | | | | ^ ^ |
| <i>Landscape & Visual (Construction Phase)</i> | | | | | | | | |
| S6.12 | LV1 | <p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> • 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. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> • 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 | Minimize visual & landscape impact | Contractor | Within Project Site | Construction stage | •TM-EIAO | ^ * |

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| | | <p>restrict the site working staff from entering the “no-intrusion zone”, even for indirect construction activities and storage of equipment.</p> <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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. | | | | | | <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> |
| Table 6.9 | LV2 | <p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> 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. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> To provide proper management of the facilities on the sites, give control on the height and disposition/ arrangement of all facilities on | Minimize the visual and landscape impact of the Project during construction phase | Contractor | Within Project Site | Detailed design and construction stage | <ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006 | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <p>the works site to minimize visual impact to adjacent VSRs.</p> <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> 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. | | | | | | N/A |
| <i>Construction Dust Impact</i> | | | | | | | | |
| 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 | <ul style="list-style-type: none"> 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 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 | <ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIA criteria | ^ |
| S7.6.6 | D3 | <ul style="list-style-type: none"> Any excavated or stockpile of dusty material should be covered | Minimize dust impact at | Contractor | All Construction | Construction | <ul style="list-style-type: none"> APCO | * |

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| | | <p>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;</p> <ul style="list-style-type: none"> • 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 | <p>the nearby sensitive receivers</p> | | <p>Sites</p> | <p>stage</p> | <ul style="list-style-type: none"> • To control the dust impact to meet HKAQO and TM-EIA criteria | <p>^ ^ ^ ^ ^</p> |

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|----------|--------------------|---|--|---|-----------------------------|---------------------------------------|--|---|
| | | <p>hoardings are properly maintained throughout the construction period;</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">N/A</p> <p style="text-align: right;">^</p> <p style="text-align: right;">*</p> |

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| | | <p>ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</p> <ul style="list-style-type: none"> • 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 | <p>Implement the following good site practices:</p> <ul style="list-style-type: none"> • 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 | * |

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| | | <p>should be serviced regularly during the construction programme;</p> <ul style="list-style-type: none"> • 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 | | | ^ ^ ^ ^ |
| 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 | Screen the noisy plant items to be used at all | Contractor | All Construction Sites | Construction stage | • Annex 5, TM-EIA | ^ |

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| | | 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 | ^ |
| 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 | 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 | ^ |

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| | | <p>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.</p> <ul style="list-style-type: none"> 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. <p>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</p> | | | | | | ^ |

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| | | <p>traps shall be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • 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 | | | | | | <p>^</p> <p>^</p> <p>*</p> <p>N/A</p> |

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| | | <p>sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</p> <ul style="list-style-type: none"> 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 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <p>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.</p> <ul style="list-style-type: none"> • 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 | | | | | | N/A |

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| | | <ul style="list-style-type: none"> 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> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance TM-water | ^ |
| S10.7.1 | W5 | <u>Accidental Spillage</u> In order to prevent accidental spillage of chemicals, the following is recommended: <ul style="list-style-type: none"> 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 | To minimize water quality impact from accidental spillage | Contractor | All construction sites where practicable | Construction stage | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-Water | * * ^ |

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| | | <p>stored with suitable labels and warnings; and</p> <ul style="list-style-type: none"> Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation. | | | | | | * |
| Waste Management (Construction Waste) | | | | | | | | |
| S11.4.1.1 | WM1 | <p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> DEVB TC(W) No. 6/2010 | N/A |

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| | | 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 | <p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> • 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 | 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 | <ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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|----------|--------------|--|--|--------------------------------|--------------------------|---------------------------------|---|----------------------------------|
| | | areas of the sites should be considered for such segregation and storage. | | | | | | |
| S11.5.1 | WM4 | <p><u>General Refuse</u></p> <ul style="list-style-type: none"> 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 | ^ ^ N/A N/A |
| S11.5.1 | WM6 | <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule | Control the chemical waste | Contractor | All Construction Sites | Construction Stage | • Waste Disposal (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 |
|----------|--------------------|--|--|---|-----------------------------|---------------------------------------|--|----------------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 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 | <p>and ensure proper storage, handling and disposal.</p> | | | | <p>(General) Regulation</p> <ul style="list-style-type: none"> • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | <p>^</p> <p>^</p> <p>^</p> |

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 |
|----------|--------------|--|---|--------------------------------|--------------------------|---------------------------------|---|--------|
| | | 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: May,14

Monthly Summary Waste Flow Table for 2014

| 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 | 2.940 | 0.000 | 0.000 | 2.529 | 0.411 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.073 | |
| Feb | 2.869 | 0.000 | 0.000 | 2.348 | 0.521 | 0.000 | 0.000 | 0.225 | 0.000 | 1.600 | 0.090 | |
| Mar | 5.081 | 0.000 | 0.000 | 2.957 | 2.124 | 0.000 | 0.000 | 0.020 | 0.000 | 1.760 | 0.049 | |
| Apr | 4.360 | 0.000 | 0.000 | 1.447 | 2.913 | 1.000 | 0.000 | 0.055 | 1.000 | 3.460 | 0.118 | |
| May | 4.904 | 0.000 | 0.000 | 0.930 | 3.973 | 0.000 | 0.000 | 0.313 | 2.000 | 2.260 | 0.128 | |
| Jun | | | | | | | | | | | | |
| Sub-total | 20.154 | 0.000 | 0.000 | 10.212 | 9.942 | 1.000 | 0.000 | 0.613 | 3.000 | 9.080 | 0.457 | |
| Jul | | | | | | | | | | | | |
| Aug | | | | | | | | | | | | |
| Sept | | | | | | | | | | | | |
| Oct | | | | | | | | | | | | |
| Nov | | | | | | | | | | | | |
| Dec | | | | | | | | | | | | |
| Total | 20.154 | 0.000 | 0.000 | 10.212 | 9.942 | 1.000 | 0.000 | 0.613 | 3.000 | 9.080 | 0.457 | |

Notes:

- 1) Assume the densities of Rock, Soil, Mix Rock and Soil, are Regular Spoil to be 2.0 tonnes/m³. Assumption the densities of general refuse is 1.0 tonnes/m³
- 2) Inert C&D material was delivered to Kai Tak Barging Point Facility (Contract 1108A).
- 3) Chemical waste includes waste diesel oil. It is assumed density of diesel oil to be 0.8kg/L.

**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 |
|----------|---------------|---------------------------------|----------------------|----------------------------------|-------------|
| -- | -- | -- | -- | -- | -- |

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 |
|----------|---------------|---------|--------|--|--|
| -- | -- | -- | -- | -- | -- |

Appendix G

**13th 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.13

[Period from 1 to 31 May 2014]

Works Contract 1107 – Diamond Hill to Kai Tak
Tunnels

(June 2014)

Certified by: 
_____ Dr. Priscilla Choy

Position: Environmental Team Leader

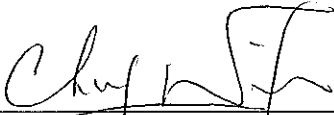
Date: 11th June 2014

Chun Wo – SELI Joint Venture

**Shatin to Central Link –
Contract 1107
Diamond Hill to Kai Tak Tunnels**

**Monthly Environmental
Monitoring and Audit Report
For May 2014**

(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 13th 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 31 May 2014.

Summary of Construction Works undertaken during Reporting Month

2. The major site activities undertaken in the reporting month include:
 - Site investigation works;
 - Investigation and removal of old foundation works;
 - Hoarding erection;
 - Sheet piling works;
 - Shaft excavation;
 - Site preparation works; and
 - Pipe Pile and grouting works; and
 - King Post installation work.

Variation in Construction Method

3. 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/E) was issued by EPD on 4 April 2014.

Environmental Monitoring and Audit Progress

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) | 6 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 2, 16 and 29 May 2014. 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 2, 8, 16, 23 and 29 May 2014. The representative of the IEC joined the site inspection on 8 May 2014. 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/ a successful prosecution was received in this reporting period.

Future Key Issues

11. Major site activities for the coming reporting month will include:
- Site investigation works;
 - Investigation and removal of old foundation works;
 - Sheet piling works;
 - Shaft excavation;
 - Grouting works; and
 - Site preparation works.

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 13th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 May 2014. 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**.
- Site investigation works;
 - Investigation and removal of old foundation works;
 - Hoarding erection;
 - Sheet piling works;
 - Shaft excavation;
 - Site preparation works; and
 - Pipe Pile and grouting works; and
 - King Post installation work.

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**. No new Construction Noise Permit (CNP) was granted by EPD 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/D | 13/09/2013 | 03/04/2014 | Superseded by EP-438/2012/E since 4 April 2014 |
| EP-438/2012/E | 04/04/2014 | 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-RE1423-13 | 07/01/2014 | 30/06/2014 | Valid |
| GW-RE1444-13 | 10/01/2014 | 30/06/2014 | Valid |
| GW-RE0110-14 | 05/02/2014 | 04/08/2014 | Valid |
| GW-RE0371-14 | 22/04/2014 | 17/06/2014 | 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 $L_{eq, 5-min}$ 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**, comply 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 & 957 (Serial no.: 14303, 21460 and 23853) |
| Calibrator | SV30A and B&K 4231 (Serial no.: 24803, 24791 and 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 | 1 |

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 m³/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 (April 2014) | 14 th May 2014 |

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 7, 12, 22 and 29 May 2014 exceeded the daytime construction noise criterion. However, the results are not considered as exceedance as they were below the baseline noise level (after correction for the result on 7 May 2014) while the noise monitoring results for the rest 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 6 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 $\mu\text{g}/\text{m}^3$ | Maximum $\mu\text{g}/\text{m}^3$ | Average $\mu\text{g}/\text{m}^3$ | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|--|-------------------------------------|-------------------------------------|-------------------------------------|---|--|
| 24-hr TSP (DMS-4 ⁽¹⁾⁽³⁾ / DMS-3 ⁽²⁾⁽³⁾) | 21.3 | 59.9 | 38.0 | 160.4 | 260 |

- 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.

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.

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**. No metals or plastics were generated 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 |
| May 2014 | 2,740 m ³ | 40 m ³ | 0 litre | 0 kg | 0kg | 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 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 2, 16 and 29 May 2014. 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**.
- 6.1.1 Site audits were conducted on 2, 8, 16, 23 and 29 May 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 8 May 2014. No site inspection was conducted by EPD during the reporting month. The details of observations during site audit can refer to **Table 6.1**.

Implementation Status of Environmental Mitigation Measures

- 6.2 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**.
- 6.3 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 |
|----------------------|-------------|---|--|
| <i>Water Quality</i> | 2 May 2014 | <u>Reminder:</u> A hole observed on the ground connected to box culvert of Kai Tak Nullah. The Contractor is reminded to properly cover and block the hole to prevent silty runoff to the Nullah. | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| <i>Noise</i> | 25 Apr 2014 | <u>Reminder:</u> Properly display the noise label for air compressor at the storage area. | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 2 May 2014 | <u>Reminder:</u> Properly display the noise label for air compressor at the storage area. | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 16 May 2014 | <u>Reminder:</u> To repair the noise barrier near the air compressor near hoarding of Kai Ching Estate. | The observation was observed to be improved/rectified by the Contractor during the audit session on 29 May 2014. |
| | 23 May 2014 | <u>Reminder:</u> Properly erect the noise barrier at hoarding near Kai Ching Estate. | The observation was observed to be improved/rectified by the Contractor during the audit session on 29 May 2014. |
| | 23 May 2014 | <u>Reminder:</u> Properly display the noise label for air-compressor near the storage area. | The observation was observed to be improved/rectified by the Contractor during the audit session on 29 May 2014. |
| | 29 May 2014 | <u>Reminder:</u> To close the panel of the power-pack to reduce construction noise impact | Follow up action will be reported in next reporting month. |

| Parameters | Date | Observations and Recommendations | Follow-up |
|------------------------------------|-------------|---|--|
| <i>Landscape and Visual</i> | --- | --- | --- |
| <i>Air Quality</i> | 2 May 2014 | <u>Reminder:</u> Cover the stockpile of dusty material by impervious sheet. | The observation was observed to be improved/rectified by the Contractor during the audit session on 8 May 2014. |
| | 29 May 2014 | <u>Reminder:</u> To properly repair the power-pack to avoid black smoke emission. | Follow up action will be reported in next reporting month. |
| | 29 May 2014 | <u>Reminder:</u> Provide Water Spray to exposed area near pipe pile wall (down-track) area. | Follow up action will be reported in next reporting month. |
| <i>Waste / Chemical Management</i> | 25 Apr 2014 | Improper handling of chemical containers was observed. The Contractor is reminded to remove the empty chemical containers as “chemical waste” near hoarding of Kai Ching Estate and provide drip tray to oil drum near Shaft A. | The observation was observed to be improved/rectified by the Contractor during the audit session on 2 May 2014. |
| | 8 May 2014 | Chemical container was observed without drip tray. The Contractor was reminded to provide a drip tray and store the chemical waste properly. | The observation was observed to be improved/rectified by the Contractor during the audit session on 16 May 2014. |
| | 8 May 2014 | <u>Reminder:</u> To clear the stand water accumulated in drip trays of chemical containers and plants. | The observation was observed to be improved/rectified by the Contractor during the audit session on 16 May 2014. |
| | 23 May 2014 | <u>Reminder:</u> To clear the oil stain on exposed area near a generator-set at storage area. | The observation was observed to be improved/rectified by the Contractor during the audit session on 29 May 2014. |
| <i>Permits/ Licenses</i> | -- | -- | -- |

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:

- Site investigation works;
- Investigation and removal of old foundation works;
- Sheet piling works;
- Shaft excavation;
- Grouting works; and
- Site preparation works.

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 D-wall construction;
- 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 31 May 2014 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 5 times of joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Contractor's ET and 3 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

- The Contractor is reminded to properly cover and block the hole to prevent silty runoff to the Nullah.

Landscape and Visual

- N/A

Noise

- The Contractor is reminded to properly erect or repair the noise barriers at hoardings near Kai Ching Estate.
- The Contractor is reminded to properly display noise label for air compressor.
- Door of operating engine and other noise generation parts should be closed at all time.

Air Quality

- The Contractor is reminded to provide water spray to exposed area to avoid dust generation.
- The Contractor is reminded to properly repair the power-pack to avoid black smoke emission.

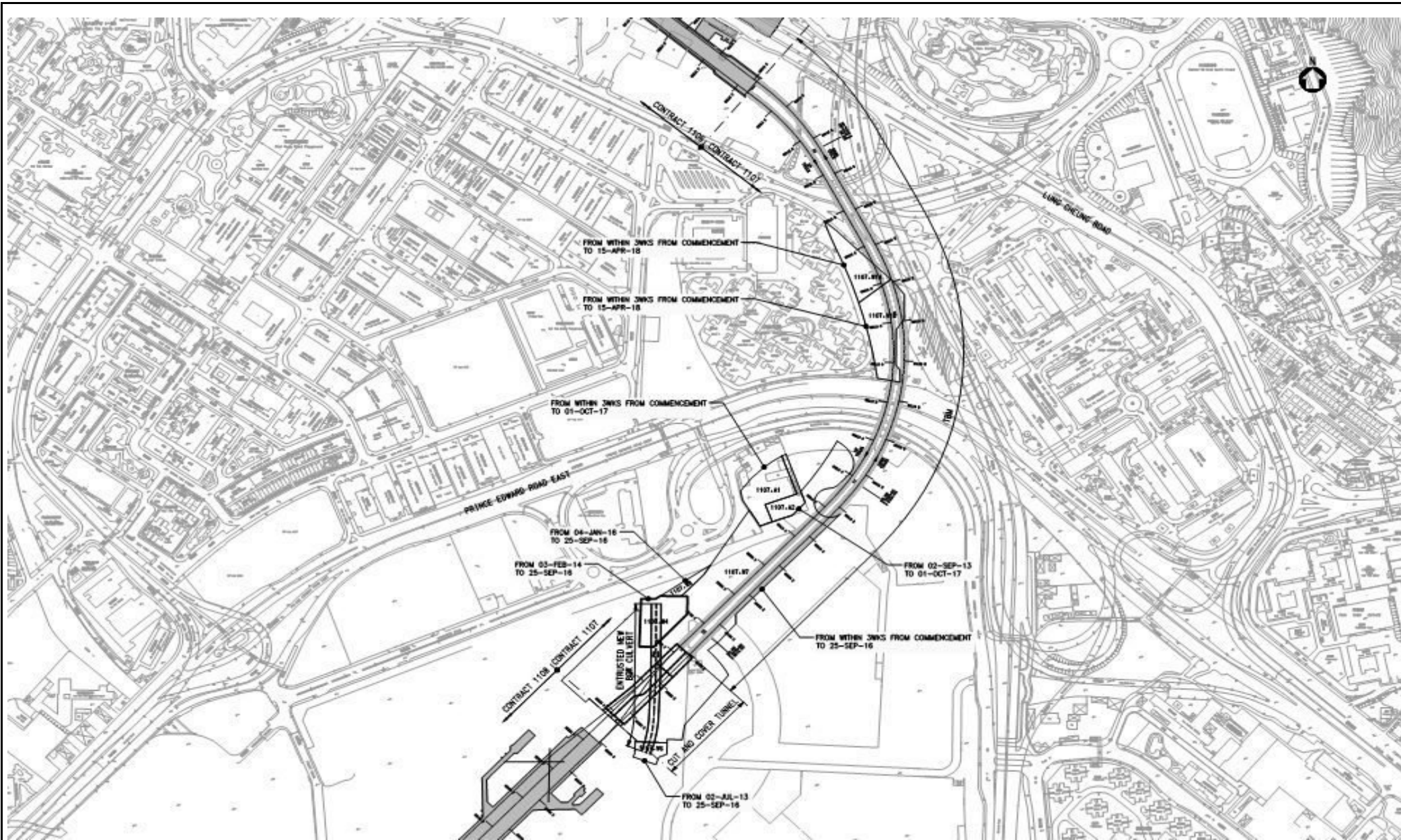
Waste/Chemical Management

- The Contractor was reminded to provide drip tray to chemical containers and store the chemical waste properly.
- The Contractor is reminded to clear the stand water accumulated in drip trays of

chemical containers and plants.

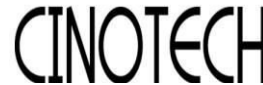
- The Contractor is reminded to clear the oil stain on exposed area.

FIGURES



Title
MTR SCL Works Contract 1107
Diamond Hill to Kai Tak Tunnels
Site Layout Plan

| | | | |
|-------|--------|-------------|---------|
| Scale | N.T.S | Project No. | MA13018 |
| Date | May-13 | Figure | 1 |

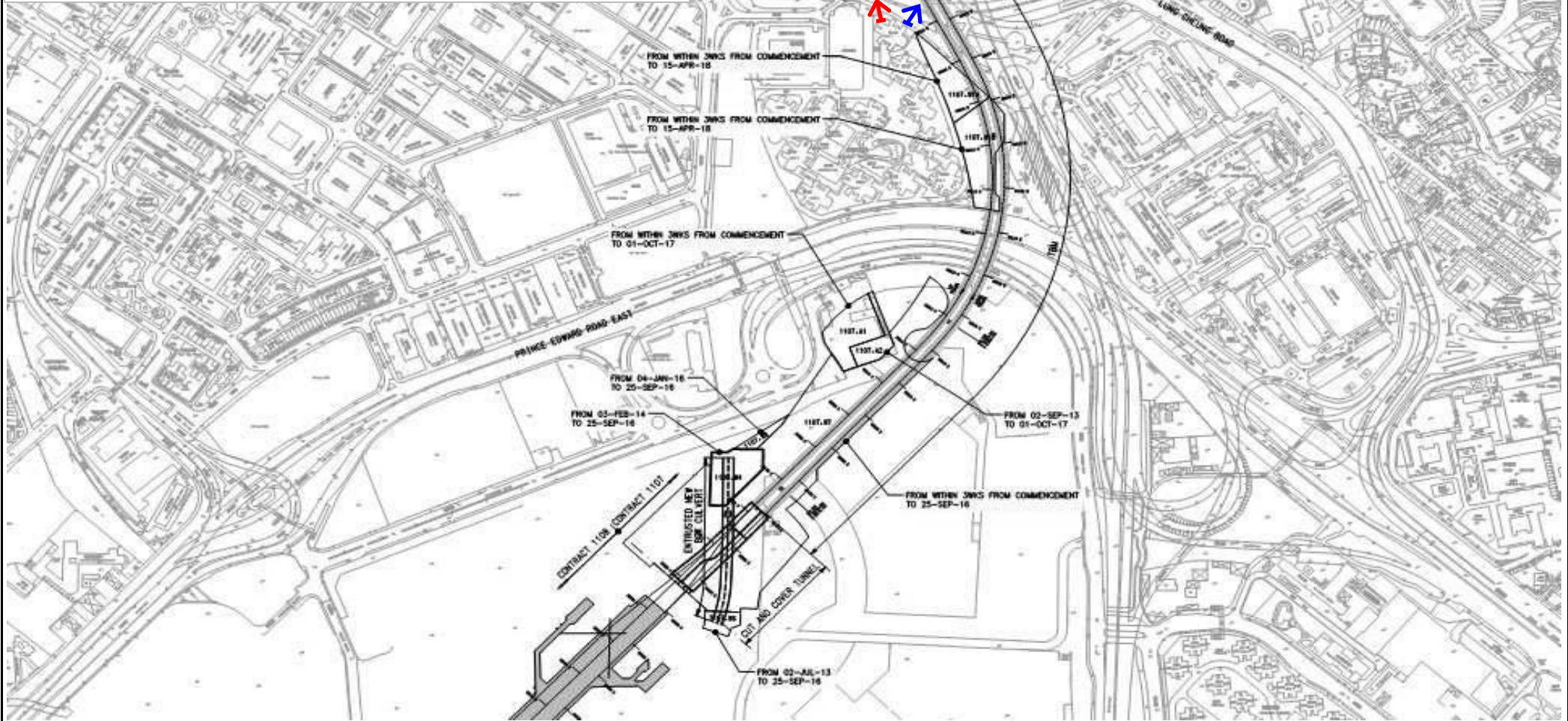


Legend:

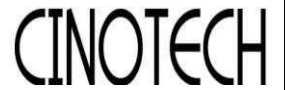
- ➔ NMS-CA-4⁽¹⁾/NMS-CA-3⁽²⁾ Block 1, Rhythm Garden (north-eastern façade)
- ➔ NMS-CA-5⁽¹⁾/NMS-CA-2⁽²⁾ Block 1, Rhythm Garden (northern façade)

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 Constrction Noise Monitoring | | Scale | N.T.S | Project No. | MA13018 |
| | | | Date | May-13 | Figure | 2 |

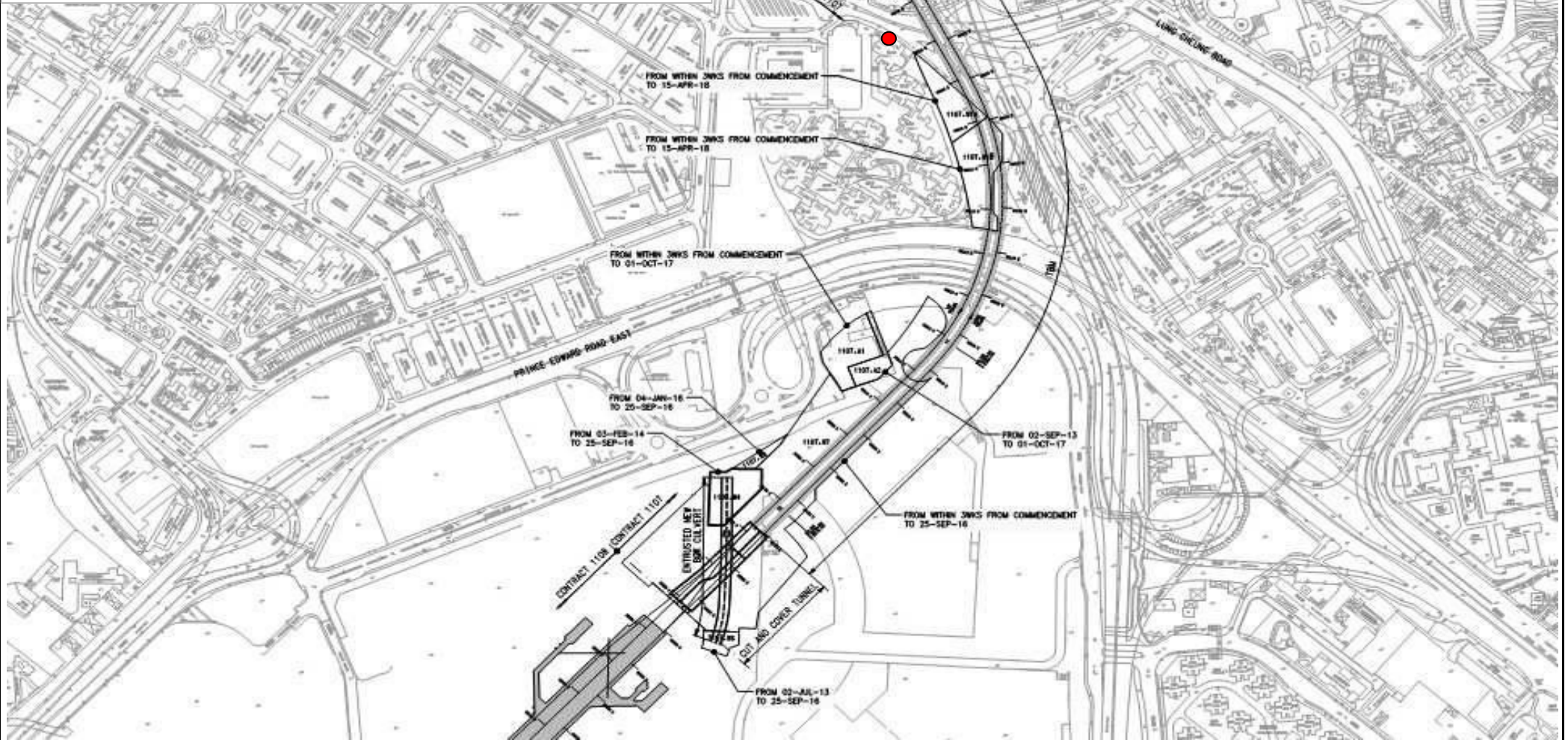


Legend:

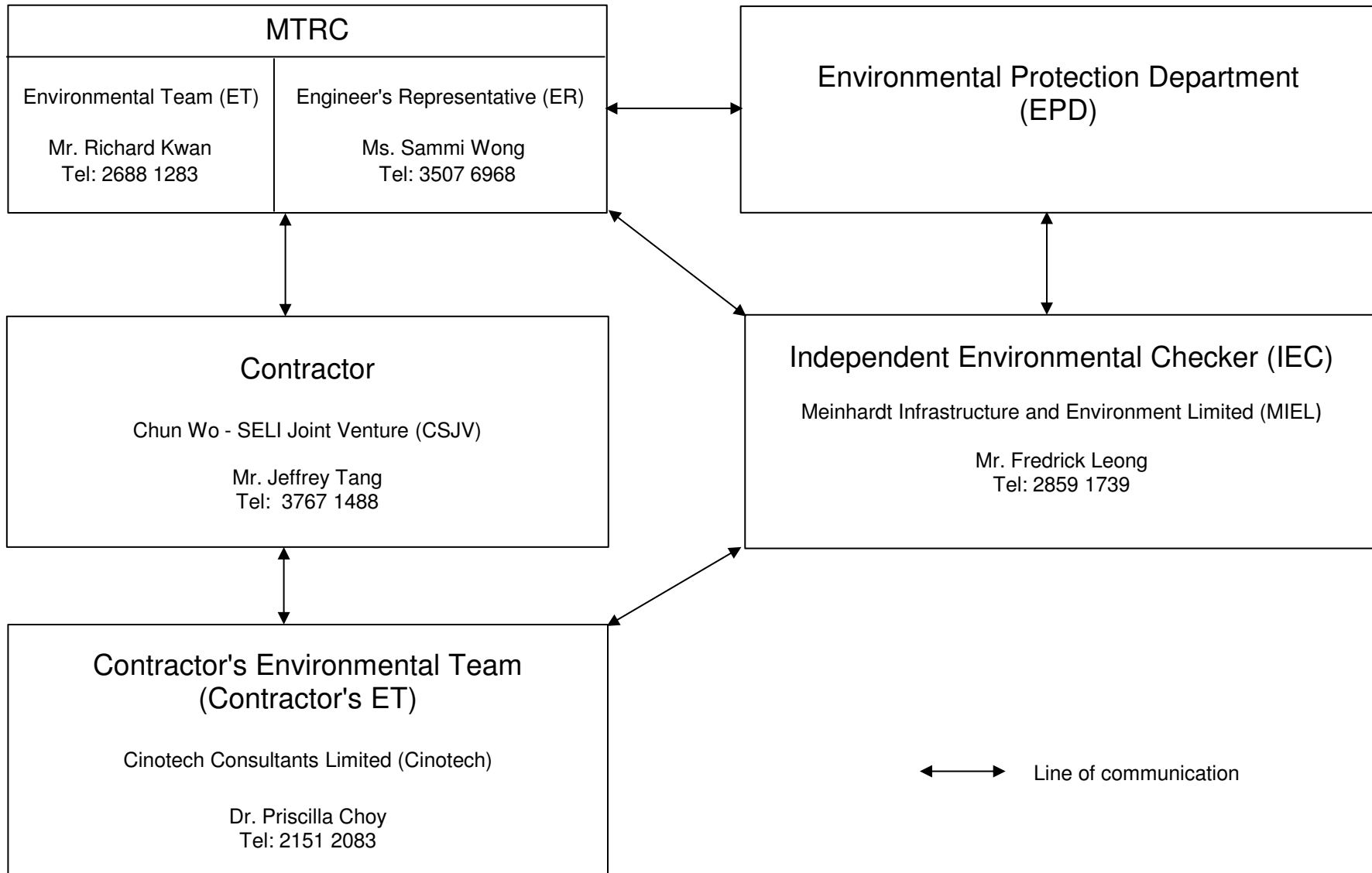
- DMS-4⁽¹⁾/DMS-3⁽²⁾ Block 1, Rhythm Garden

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 | Project No. | MA13018 | CINOTECH |
| | Date | May-13 | Figure | 3 | | | |



Title

MTR SCL Works Contract 1107
Diamond Hill to Kai Tak Tunnels

Organisation Chart and Key Contact of the Project

Scale

N.T.S

Date

Jun-13

Proposal

No.

MA13018

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 | 2014 | | | | |
|---|--|-------|----------|-----------|----------------|-----------------|-------|-------------|------|-----|-----|-----|-----|
| | | | | | | | | | Apr | May | Jun | Jul | Aug |
| MTRC SCL 1107 Diamond Hill to Kai Tak | | | | | | | | | | | | | |
| Schedule of Completion Obligation & Other | | | | | | | | | | | | | |
| Schedule of Milestone Dates - Cost Centre A | | | | | | | | | | | | | |
| 1107.MS10210 | A6 Engr confirm satisfactory implementation of safety & environmental req's in accordance with the Specified Plans | 0 | | 29-Jun-14 | | 29-Jun-14 | | 29-Jun-14* | | | | | |
| Schedule of Milestone Dates - Cost Centre B | | | | | | | | | | | | | |
| 1107.MS10350 | B2 Fabrication and factory tests of the TBM complete and delivery to site 27APR14 | 0 | | 25-Mar-14 | | 09-May-14 | | 24-May-14* | | | | | |
| Schedule of Milestone Dates - Cost Centre C | | | | | | | | | | | | | |
| 1107.MS10410 | C4 Manufacturing of pre-cast tunnel lining segment 10% by number complete and delivery to site 29JUN14 | 0 | | 02-May-14 | | 07-Jul-14 | | 07-Jul-14* | | | | | |
| Schedule of Milestone Dates - Cost Centre D | | | | | | | | | | | | | |
| 1107.MS10590 | D5 Base slab of Kai Tak Box 2A Shaft complete 23FEB14 proposed to be changed to 23MAR14 | 0 | | 12-Mar-14 | | 18-Jun-14 | | 18-Jun-14* | | | | | |
| Schedule of Milestone Dates - Cost Centre G | | | | | | | | | | | | | |
| 1107.MS10710 | G1 Demolition of CEDD existing culvert complete and ready for remaining Dwall panels commencement 27APR14 | 0 | | 14-Apr-14 | | 17-Apr-14 | | 17-Apr-14 A | | | | | |
| Schedule of Milestone Dates - Cost Centre I (for Optio | | | | | | | | | | | | | |
| 1107.MS10780 | I4 Manufacturing of pre-cast tunnel lining segment 10% by number complete and delivery to site 29JUN14 | 0 | | 02-May-14 | | 07-Jul-14 | | 07-Jul-14* | | | | | |
| Programme Data | | | | | | | | | | | | | |
| 1107.ID10980 | 4.0a 1108 complete final excavation level at Intf with 1107 @ KAT station for 1107 to construct stub tunnels (TBC) | 0 | | 25-May-14 | | 25-May-14 | | 25-May-14* | | | | | |
| Cost Centre A - Preliminaries | | | | | | | | | | | | | |
| Contractor Submission Schedule | | | | | | | | | | | | | |
| 1107.12180 | P11.2.5 Preparation & Submission of TBM Contingency/Surveillance Plan | 36 | | 21-Dec-13 | | 06-Feb-14 | | 27-Mar-14 | | | | | |
| 1107.12200 | P14.29 Submission of Designated & Interfacing Contracts Information | 78 | | 07-Oct-14 | | 08-Jan-15 | | 01-Mar-14 | | | | | |
| Project Audit | | | | | | | | | | | | | |
| 1107.12480 | 2nd Audit of safety & environmental plans | 24 | | 26-May-14 | | 23-Jun-14 | | 26-May-14* | | | | | |
| Site Enabling Works | | | | | | | | | | | | | |
| Site Setup | | | | | | | | | | | | | |
| Engineer's Site Accomodation | | | | | | | | | | | | | |
| 1107.12630 | Engr's Site Accomodation- Final Submission of Building Plans | 22 | | 27-May-13 | | 08-Jun-13 | | 01-Apr-14 | | | | | |
| 1107.12640 | Engr's Site Accomodation- Final Approval of Building Plans | 18 | | 10-Jun-13 | | 17-Jun-13 | | 02-May-14 | | | | | |
| 1107.12650 | Engr's Site Accomodation- Construction Works- Footings | 18 | | 18-Jun-13 | | 10-Sep-13 | | 10-May-14 | | | | | |
| 1107.12650a | Engr's Site Accomodation- Construction Works- Structural Works | 18 | | | | | | 31-May-14 | | | | | |
| 1107.12650b | Engr's Site Accomodation- Construction Works- Architectural & E&M works | 18 | | | | | | 23-Jun-14 | | | | | |
| 1107.12650c | Engr's Site Accomodation- Construction Works- Fittings | 18 | | | | | | 15-Jul-14 | | | | | |
| Misc Items | | | | | | | | | | | | | |
| 1107.18990 | Provision of Site General Staff (Drivers, Amahs, etc) - Second Quarter of 2014 | 71 | | 01-Apr-14 | | 30-Jun-14 | | 01-Apr-14 | | | | | |
| 1107.19000 | Provision of Site General Staff (Drivers, Amahs, etc) - Third Quarter of 2014 | 77 | | 02-Jul-14 | | 30-Sep-14 | | 02-Jul-14 | | | | | |
| 1107.19180 | Provision of Site General Labour for Temporary Works - Second Quarter of 2014 | 71 | | 01-Apr-14 | | 30-Jun-14 | | 31-Mar-14 | | | | | |
| 1107.19190 | Provision of Site General Labour for Temporary Works - Third Quarter of 2014 | 77 | | 02-Jul-14 | | 30-Sep-14 | | 29-Sep-14 | | | | | |
| Instrumentation & Monitoring | | | | | | | | | | | | | |



Data Date 01-May-14
Page 1 of 6
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Printed 08-May-14 16:41

**MTRC SCL 1107 Diamond Hill to Kai Tak
Tunnels 3 Month Rolling Programme**
No. 014 DD1/5/14

| | | | |
|-------------|----------|---------|----------|
| 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 | 2014 | | | | | |
|--|---|-------|-----------|-----------|----------------|-----------------|-------------|-------------|------|-----|-----|-----|-----|--|
| | | | | | | | | | Apr | May | Jun | Jul | Aug | |
| 1107.17290 | Tunneling works I&M Installation- Installation of Inclinometers & Settlement Markers | 20 | | | 24-Apr-14 | 19-May-14 | 24-Apr-14 A | 19-May-14 | | | | | | |
| 1107.17300 | Tunneling works I&M Installation- Installation of Extensometers & Tilt Plates | 20 | | | 20-May-14 | 12-Jun-14 | 20-May-14 | 12-Jun-14 | | | | | | |
| Cost Centre B - Procurement of TBM | | 78 | 18-Dec-13 | 27-Apr-14 | 01-Mar-14 | 23-May-14 | 01-Mar-14 A | 07-Jun-14 | | | | | | |
| 1107.12900 | Commence TBM Delivery to Site | 6 | 05-Mar-14 | 08-Mar-14 | 26-Apr-14 | 30-Apr-14 | 12-May-14 | 17-May-14 | | | | | | |
| 1107.12910 | Completion of TBM Delivery | 6 | 10-Mar-14 | 25-Mar-14 | 02-May-14 | 09-May-14 | 19-May-14 | 24-May-14 | | | | | | |
| 1107.12930 | B2 Fabrication and factory tests of the TBM complete and delivery to site | 0 | | 27-Apr-14 | | 09-May-14 | | 24-May-14* | | | | | | |
| Test | | 78 | 18-Dec-13 | 01-Mar-14 | 01-Mar-14 | 23-May-14 | 01-Mar-14 A | 07-Jun-14 | | | | | | |
| 1107.12870 | TBM Acceptance Test | 3 | 18-Dec-13 | 20-Dec-13 | 24-Mar-14 | 26-Mar-14 | 24-Mar-14 A | 16-Apr-14 A | | | | | | |
| 1107.12880 | TBM Disassembly | 20 | 21-Dec-13 | 13-Jan-14 | 27-Mar-14 | 23-Apr-14 | 17-Apr-14 A | 08-May-14 | | | | | | |
| 1107.19390 | Place order for Cutting Tools & Spare Parts | 12 | 24-Jan-14 | 05-Feb-14 | 01-Mar-14 | 14-Mar-14 | 01-Mar-14 A | 14-Mar-14 A | | | | | | |
| 1107.19420 | Manufacture of Cutting Tools and Spare Parts | 48 | 25-Feb-14 | 01-Mar-14 | 15-Mar-14 | 16-May-14 | 15-Mar-14 A | 30-May-14 | | | | | | |
| 1107.19930 | Delivery of Cutting Tools and Spare Parts | 6 | | | 17-May-14 | 23-May-14 | 31-May-14 | 07-Jun-14 | | | | | | |
| Cost Centre C - Tunnel Construction by | | 325 | 25-Aug-13 | 27-Jul-14 | 25-Aug-13 | 27-Sep-14 | 25-Aug-13 A | 27-Sep-14 | | | | | | |
| Site Enabling Works for TBM | | 203 | 16-Sep-13 | 26-Jun-14 | 31-Dec-13 | 13-Aug-14 | 31-Dec-13 A | 05-Sep-14 | | | | | | |
| Ground Treatment | | 190 | 16-Sep-13 | 26-Jun-14 | 31-Dec-13 | 13-Aug-14 | 31-Dec-13 A | 21-Aug-14 | | | | | | |
| Jet Grouting Treatment for KAT TBM Launch Shaft | | 126 | 22-Apr-14 | 22-Apr-14 | 19-Feb-14 | 25-Jul-14 | 19-Feb-14 A | 25-Jul-14 | | | | | | |
| 1107.12990b | Launch Shaft Jet Grouting Stage 1 Next 7m (approx 127nos) | 26 | | | 19-Feb-14 | 20-Mar-14 | 19-Feb-14 A | 23-Apr-14 A | | | | | | |
| 1107.12990b1 | Demobilise | 3 | | | 07-Apr-14 | 09-Apr-14 | 24-Apr-14 A | 25-Apr-14 A | | | | | | |
| 1107.12990b2 | Curing of Grout | 21 | | | 10-Apr-14 | 30-Apr-14 | 23-Apr-14 A | 12-May-14 | | | | | | |
| 1107.13020 | Approx date of TBM Break Through (Up Track) | 0 | 22-Apr-14 | | 25-Jul-14 | | 25-Jul-14* | | | | | | | |
| Jet Grouting Treatment for Cross Passage 3 | | 185 | 17-Dec-13 | 25-Feb-14 | 31-Dec-13 | 13-Aug-14 | 31-Dec-13 A | 15-Aug-14 | | | | | | |
| 1107.13040b | Application of XP | 20 | | | 31-Dec-13 | 23-Jan-14 | 31-Dec-13 A | 12-Apr-14 A | | | | | | |
| 1107.13050 | Install Stage 1 TTMS | 24 | 17-Dec-13 | 23-Dec-13 | 14-Apr-14 | 16-May-14 | 14-Apr-14 A | 16-May-14 | | | | | | |
| 1107.13060 | Site Clearance Plant set up | 3 | 24-Dec-13 | 28-Dec-13 | 14-Apr-14 | 16-Apr-14 | 14-Apr-14 A | 16-Apr-14 A | | | | | | |
| 1107.13070 | Trial pit for Locating Underground Utilities | 6 | 30-Dec-13 | 06-Jan-14 | 17-Apr-14 | 26-Apr-14 | 17-Apr-14 A | 26-Apr-14 A | | | | | | |
| 1107.13081 | Installation Works by CLP | 24 | | | 14-Apr-14 | 16-May-14 | 14-Apr-14 A | 19-May-14 | | | | | | |
| 1107.13090 | Stage 2 TTMS | 12 | 30-Jan-14 | 30-Jan-14 | 17-May-14 | 30-May-14 | 20-May-14 | 03-Jun-14 | | | | | | |
| 1107.13091 | Trial Holes | 6 | | | 17-May-14 | 23-May-14 | 20-May-14 | 26-May-14 | | | | | | |
| 1107.13092 | Construction of Temp Road | 24 | | | 24-May-14 | 21-Jun-14 | 27-May-14 | 24-Jun-14 | | | | | | |
| 1107.13093 | Stage 3 TTMS | 12 | | | 23-Jun-14 | 07-Jul-14 | 25-Jun-14 | 09-Jul-14 | | | | | | |
| 1107.13094 | Trial Holes | 6 | | | 23-Jun-14 | 28-Jun-14 | 25-Jun-14 | 02-Jul-14 | | | | | | |
| 1107.13100 | Jet Grouting (36 nos) (Average 2.25 Columns per day) Stage 1 (Cutterhead Intervention omitted- smaller grout block) | 20 | 31-Jan-14 | 25-Feb-14 | 30-Jun-14 | 23-Jul-14 | 03-Jul-14 | 25-Jul-14 | | | | | | |
| 1107.13101 | Curing of Grout | 21 | | | 24-Jul-14 | 13-Aug-14 | 26-Jul-14 | 15-Aug-14 | | | | | | |
| Jet Grouting Treatment for Cross Passage 2 | | 80 | 26-Mar-14 | 26-Jun-14 | 14-Apr-14 | 15-Jul-14 | 02-May-14 | 06-Aug-14 | | | | | | |
| 1107.13170 | Site Clearance Plant set up | 10 | 26-Mar-14 | 28-Mar-14 | 14-Apr-14 | 16-Apr-14 | 02-May-14* | 14-May-14 | | | | | | |
| 1107.13180 | Trial pit for Locating Underground Utilities | 6 | 29-Mar-14 | 04-Apr-14 | 17-Apr-14 | 26-Apr-14 | 15-May-14 | 21-May-14 | | | | | | |
| 1107.13190 | Jet Grouting (144 nos incl of TBM Intervention) Average 2.25 Grout Columns per day | 64 | 07-Apr-14 | 26-Jun-14 | 28-Apr-14 | 15-Jul-14 | 22-May-14 | 06-Aug-14 | | | | | | |



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MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme
No. 014 DD1/5/14

| | | | |
|-------------|----------|---------|----------|
| Date | Revision | Checked | Approved |
| See 2nd Col | 0 | KCL | KCL |

- Master Prog Baseline Bar
- Last Month Forecast Bar
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- Summary

| Activity ID | Activity Name | O Dur | MP Start | MP Finish | Last Mth Start | Last Mth Finish | Start | Finish | 2014 | | | | | |
|---|--|-------|-----------|-----------|----------------|-----------------|-------------|-------------|------|-----|-----|-----|-----|--|
| | | | | | | | | | Apr | May | Jun | Jul | Aug | |
| Jet Grouting Treatment for Cross Passage 1 | | | | | | | | | | | | | | |
| 1107.13239a | Access to 1106 CP1 Site Area | 55 | 08-Jan-14 | 14-Mar-14 | 02-May-14 | 08-Jul-14 | 16-Jun-14 | 19-Aug-14 | | | | | | |
| 1107.13240 | Site Clearance Plant set up | 3 | 08-Jan-14 | 10-Jan-14 | 02-May-14 | 05-May-14 | 16-Jun-14 | 18-Jun-14 | | | | | | |
| 1107.13250 | Trial pit for Locating Underground Utilities | 6 | 11-Jan-14 | 17-Jan-14 | 07-May-14 | 13-May-14 | 19-Jun-14 | 25-Jun-14 | | | | | | |
| 1107.13260 | Jet Grouting (104 nos) Average 2.25 Grout Columns | 46 | 18-Jan-14 | 14-Mar-14 | 14-May-14 | 08-Jul-14 | 26-Jun-14 | 19-Aug-14 | | | | | | |
| Pressure Grouting Treatment to Pier Z5 Foundation | | | | | | | | | | | | | | |
| 1107.13310 | Site Clearance Plant set up | 12 | 16-Sep-13 | 30-Sep-13 | 17-Feb-14 | 01-Mar-14 | 17-Feb-14 A | 01-Mar-14 A | | | | | | |
| 1107.13320 | Trial pit for Locating Underground Utilities | 6 | 02-Oct-13 | 08-Oct-13 | 03-Mar-14 | 08-Mar-14 | 03-Mar-14 A | 08-Mar-14 A | | | | | | |
| 1107.13330 | Pressure Grouting (148 nos) Average 2 Points per day | 74 | 09-Oct-13 | 07-Jan-14 | 10-Mar-14 | 11-Jun-14 | 10-Mar-14 A | 11-Jun-14 | | | | | | |
| 1107.13334 | F4 Ground treatment and grouting work to Pier Z5 complete | 0 | | 26-Jan-14 | | 11-Jun-14 | | 11-Jun-14* | | | | | | |
| 1107.13340 | Demobilise | 6 | 08-Jan-14 | 14-Jan-14 | 12-Jun-14 | 18-Jun-14 | 12-Jun-14 | 18-Jun-14 | | | | | | |
| 1107.13350 | Curing of Grout | 21 | 08-Jan-14 | 28-Jan-14 | 12-Jun-14 | 02-Jul-14 | 12-Jun-14 | 02-Jul-14 | | | | | | |
| Pressure Grouting Treatment for DIH TBM Retrieval Shaft | | | | | | | | | | | | | | |
| 1107.13390 | 1107 Allowed Access to 1106 Eastern Retrieval Shaft Grout Block Work Area | 57 | 09-Nov-13 | 27-Jan-14 | 01-Apr-14 | 13-Jun-14 | 16-Jun-14 | 21-Aug-14 | | | | | | |
| 1107.13410 | Site Clearance Plant set up | 6 | 09-Nov-13 | 15-Nov-13 | 01-Apr-14 | 08-Apr-14 | 16-Jun-14 | 21-Jun-14 | | | | | | |
| 1107.13420 | Trial pit for Locating Underground Utilities | 6 | 16-Nov-13 | 22-Nov-13 | 09-Apr-14 | 15-Apr-14 | 23-Jun-14 | 28-Jun-14 | | | | | | |
| 1107.13430 | Pressure Grouting UP Track (181 nos) Average 4 Points/day with 2 machines | 45 | 03-Dec-13 | 27-Jan-14 | 16-Apr-14 | 13-Jun-14 | 30-Jun-14 | 21-Aug-14 | | | | | | |
| OPTION 3 - Obstruction Removal | | | | | | | | | | | | | | |
| Removal of Abandoned Airport Admin Bldg Foundations DN Track | | | | | | | | | | | | | | |
| 1107.13560 | Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed) (Portion 1) | 153 | 07-Nov-13 | 11-Feb-14 | 03-Mar-14 | 13-Aug-14 | 03-Mar-14 A | 05-Sep-14 | | | | | | |
| 1107.13560a | Remove Abandoned Airport Admin. Bldg Piles (PROVISIONAL, To be Confirmed) (Portion 1) | 23 | 07-Nov-13 | 11-Feb-14 | 07-Jun-14 | 04-Jul-14 | 02-Jul-14 | 28-Jul-14 | | | | | | |
| 1107.20010 | Jet Grouting JN/97-116, JS/110-137 (48 nos. 2 machines, 2 nos per machine/day) (Portion 2) | 9 | | | 07-Apr-14 | 16-Apr-14 | 07-Apr-14 A | 16-Apr-14 A | | | | | | |
| 1107.20050 | Pipe Piling PS/110-139, PN/01-60 (90nos, 3 machine, 2 nos per machine/day) (Portion 1) | 15 | | | 03-Mar-14 | 19-Mar-14 | 03-Mar-14 A | 19-Mar-14 A | | | | | | |
| 1107.20051 | Pipe Piling PS/140-169, PN/61-120 (90nos, 3 machine, 2 nos per machine/day) (Portion 1) | 15 | | | 20-Mar-14 | 07-Apr-14 | 20-Mar-14 A | 07-Apr-14 A | | | | | | |
| 1107.20052 | Pipe Piling PS/170-203, PN/121-170 (87nos, 3 machine, 2 nos per machine/day) (Portion 2) | 15 | | | 17-Apr-14 | 09-May-14 | 17-Apr-14 A | 29-May-14 | | | | | | |
| 1107.20060 | ELS to Locate Foundations (Portion 1) | 38 | | | 17-Apr-14 | 06-Jun-14 | 16-May-14* | 30-Jun-14 | | | | | | |
| 1107.20062 | ELS to Locate Foundations (Portion 2) | 57 | | | 07-Jun-14 | 13-Aug-14 | 02-Jul-14 | 05-Sep-14 | | | | | | |
| Mobilisation of TBM | | | | | | | | | | | | | | |
| 1107.13850 | Tunnel Facilities Installation at External Yard | 97 | 14-Jan-14 | 08-Apr-14 | 24-Apr-14 | 15-Jul-14 | 24-Apr-14 A | 19-Aug-14 | | | | | | |
| 1107.13860 | Gantry Crane Beams Installation | 30 | 14-Jan-14 | 19-Feb-14 | 24-Apr-14 | 30-May-14 | 24-Apr-14 A | 06-Jun-14 | | | | | | |
| 1107.13870 | Gantry Crane Assembly | 8 | 18-Feb-14 | 20-Feb-14 | 26-May-14 | 28-May-14 | 19-Jun-14 | 27-Jun-14 | | | | | | |
| 1107.13880 | Noise Enclosure - Frame Partial Installation (Dn Track) | 8 | 21-Feb-14 | 24-Feb-14 | 29-May-14 | 31-May-14 | 28-Jun-14 | 08-Jul-14 | | | | | | |
| 1107.13880 | Noise Enclosure - Frame Partial Installation (Dn Track) | 14 | 25-Feb-14 | 12-Mar-14 | 03-Jun-14 | 18-Jun-14 | 09-Jul-14 | 24-Jul-14 | | | | | | |
| 1107.13890 | Noise Enclosure - Panels Partial Installation (Dn Track) | 22 | 13-Mar-14 | 08-Apr-14 | 19-Jun-14 | 15-Jul-14 | 25-Jul-14 | 19-Aug-14 | | | | | | |
| Tunnel Boring Construction - UP Track | | | | | | | | | | | | | | |
| 1107.13920 | Pre-assembly of TBM Back-up Decks at External Yard | 85 | 13-Mar-14 | 27-Jul-14 | 19-Jun-14 | 27-Sep-14 | 19-Jun-14 | 27-Sep-14 | | | | | | |
| 1107.13930 | Assembly of TBM Shield in Shaft | 30 | 13-Mar-14 | 28-Apr-14 | 19-Jun-14 | 31-Jul-14 | 19-Jun-14 | 24-Jul-14 | | | | | | |
| 1107.13940 | Assembly of TBM Shield in Shaft | 24 | 13-Mar-14 | 10-Apr-14 | 19-Jun-14 | 17-Jul-14 | 19-Jun-14 | 17-Jul-14 | | | | | | |
| 1107.13940 | TBM Initial 90m Driving - TBM Fully Embedded | 55 | 22-Apr-14 | 27-Jun-14 | 25-Jul-14 | 27-Sep-14 | 25-Jul-14 | 27-Sep-14 | | | | | | |
| 1107.13951 | B3 Assembly, testing and commissioning of the TBM complete and ready for tunnel driving (UP track) | 0 | | 27-Jul-14 | | 27-Jul-14 | | 27-Jul-14* | | | | | | |




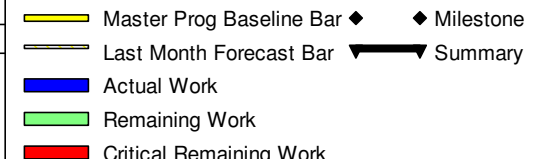
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MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme
No. 014 DD1/5/14

| Date | Revision | Checked | Approved |
|-------------|----------|---------|----------|
| See 2nd Col | 0 | KCL | KCL |

- Master Prog Baseline Bar
- Last Month Forecast Bar
- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Milestone
- ▼ Summary

| Activity ID | Activity Name | O Dur | MP Start | MP Finish | Last Mth Start | Last Mth Finish | Start | Finish | 2014 | | | | |
|--|---|-------|-----------|-----------|----------------|-----------------|-------------|-------------|------|-----|-----|-----|-----|
| | | | | | | | | | Apr | May | Jun | Jul | Aug |
| Production of Pre - Cast Tunnel Lining | | 313 | 25-Aug-13 | 29-Jun-14 | 25-Aug-13 | 13-Sep-14 | 25-Aug-13 A | 13-Sep-14 | | | | | |
| Procurement of SFRC Fibres | | 197 | | | 15-Jan-14 | 13-Sep-14 | 15-Jan-14 A | 13-Sep-14 | | | | | |
| 1107.20110a | RDO Final Approval of Mix Design on Beam Test Trial | 0 | | | | 05-May-14 | | 05-May-14* | | | | | |
| 1107.20110b | Concrete Durability Test | 78 | | | 07-May-14 | 07-Aug-14 | 07-May-14 | 07-Aug-14 | | | | | |
| 1107.20110c | Formal Beam Test Commencement in line of RDO Approval | 51 | | | 07-May-14 | 07-Jul-14 | 07-May-14 | 07-Jul-14 | | | | | |
| 1107.20110d | Fire Test Submission for RDO Approval | 7 | | | 15-Jan-14 | 22-Jan-14 | 15-Jan-14 A | 22-Jan-14 A | | | | | |
| 1107.20110e | RDO Approval of Durability, Full Scale & Fire Tests Proposal | 0 | | | 30-Apr-14 | | 30-Apr-14 A | | | | | | |
| 1107.20120 | Test Specimens Preparation (Fire Test) | 49 | | | 10-Jul-14 | 04-Sep-14 | 10-Jul-14* | 04-Sep-14 | | | | | |
| 1107.20120a | Durability Test- Concrete Cube Casting | 1 | | | | | 20-Feb-14 A | 20-Feb-14 A | | | | | |
| 1107.20120b | Durability Test- Test to BS EN 12390-8-2000 in Materials Lab | 6 | | | | | 25-Mar-14 A | 29-Mar-14 A | | | | | |
| 1107.20120c | Durability Test- Result Presentation | 8 | | | | | 01-Apr-14 A | 09-Apr-14 A | | | | | |
| 1107.20120d | Fibre Dosing Machine delivery to HK | 3 | | | | | 28-Apr-14 A | 30-Apr-14 A | | | | | |
| 1107.20120e | Installation of Fibre Dosing Machine at Redland | 12 | | | | | 02-May-14 | 16-May-14 | | | | | |
| 1107.20120f | Fire Test Samples Mould Preparation | 11 | | | | | 02-May-14 | 15-May-14 | | | | | |
| 1107.20120g | Fire Test Samples Casting | 1 | | | | | 17-May-14 | 17-May-14 | | | | | |
| 1107.20120h | Load Test Specimens Casting | 1 | | | | | 19-May-14 | 19-May-14 | | | | | |
| 1107.20120i | Curing of Specimens at Redland | 32 | | | | | 18-May-14 | 18-Jun-14 | | | | | |
| 1107.20120j | Transport to UST / RED for Full Scale Test & Setup | 7 | | | | | 19-Jun-14 | 26-Jun-14 | | | | | |
| 1107.20120k | Actual RED Fire Test | 1 | | | | | 27-Jun-14 | 27-Jun-14 | | | | | |
| 1107.20120l | Actual Load Test at UST | 2 | | | | | 28-Jun-14 | 30-Jun-14 | | | | | |
| 1107.20120m | Results Presentation | 11 | | | | | 02-Jul-14 | 14-Jul-14 | | | | | |
| 1107.20180 | Plant Trial | 56 | | | 10-Jul-14 | 13-Sep-14 | 10-Jul-14 | 13-Sep-14 | | | | | |
| Production of Segments | | 287 | 25-Aug-13 | 29-Jun-14 | 25-Aug-13 | 13-Aug-14 | 25-Aug-13 A | 13-Aug-14 | | | | | |
| 1107.14700 | Moulds Installation at Precast Yard | 18 | 17-Jan-14 | 22-Feb-14 | 07-Apr-14 | 30-Apr-14 | 07-Apr-14 A | 26-May-14 | | | | | |
| 1107.14710 | First 10% of Segment Production (Cumulative 10%) (RC) | 54 | 24-Feb-14 | 02-May-14 | 02-May-14 | 07-Jul-14 | 14-Apr-14 A | 07-Jul-14 | | | | | |
| 1107.14720 | Next 10% of Segment Production (Cumulative 20%) (RC) | 32 | 03-May-14 | 11-Jun-14 | 08-Jul-14 | 13-Aug-14 | 08-Jul-14 | 13-Aug-14 | | | | | |
| 1107.14760 | C1 Submit design and manuf'g data complete & Engr's 'notice of no objection' obtained for mould manufacture | 0 | | 25-Aug-13 | | 25-Aug-13 | | 25-Aug-13 A | | | | | |
| 1107.14770 | C2 Submt design & manuf'g data complete & Engr's 'Notice of no objection' btained for casting of segments | 0 | | 26-Jan-14 | | 26-Jan-14 | | 26-Jan-14 A | | | | | |
| 1107.14780 | C4 Manufacturing of pre-cast tunnel lining segment 10% by number complete and delivery to site | 0 | | 29-Jun-14 | | 07-Jul-14 | | 07-Jul-14* | | | | | |
| Cost Centre D - KAT Cut & Cover Tunnels | | 131 | 16-Oct-13 | 29-Jul-14 | 01-Mar-14 | 29-Jul-14 | 01-Mar-14 A | 09-Aug-14 | | | | | |
| Diaphragm Walls | | 30 | 16-Oct-13 | 19-Nov-13 | 26-May-14 | 30-Jun-14 | 05-Jun-14 | 10-Jul-14 | | | | | |
| TBM Launch Shafts | | 30 | 16-Oct-13 | 19-Nov-13 | 26-May-14 | 30-Jun-14 | 05-Jun-14 | 10-Jul-14 | | | | | |
| Temporary Muck Pit | | 30 | 16-Oct-13 | 19-Nov-13 | 26-May-14 | 30-Jun-14 | 05-Jun-14 | 10-Jul-14 | | | | | |
| 1107.19440 | Install Strut S1 | 3 | 16-Oct-13 | 18-Oct-13 | 26-May-14 | 28-May-14 | 05-Jun-14 | 07-Jun-14 | | | | | |
| 1107.19450 | Excavate to Strut S2 Level | 5 | 19-Oct-13 | 24-Oct-13 | 29-May-14 | 04-Jun-14 | 09-Jun-14 | 13-Jun-14 | | | | | |
| 1107.19460 | Install Strut S2 | 6 | 25-Oct-13 | 31-Oct-13 | 05-Jun-14 | 11-Jun-14 | 14-Jun-14 | 20-Jun-14 | | | | | |
| 1107.19470 | Excavate to Foundation Level | 5 | 01-Nov-13 | 06-Nov-13 | 12-Jun-14 | 17-Jun-14 | 21-Jun-14 | 26-Jun-14 | | | | | |
| 1107.19480 | Muck Pit Base Slab | 3 | 07-Nov-13 | 09-Nov-13 | 18-Jun-14 | 20-Jun-14 | 27-Jun-14 | 30-Jun-14 | | | | | |
| 1107.19490 | Remove Strut S2 | 2 | 11-Nov-13 | 12-Nov-13 | 21-Jun-14 | 23-Jun-14 | 02-Jul-14 | 03-Jul-14 | | | | | |

| | | | | | | |
|--|-------------------------|---|---|----------|---------|----------|
|  | Data Date 01-May-14 | MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme No. 014 DD1/5/14 | Date | Revision | Checked | Approved |
| | Page 4 of 6 | | See 2nd Col | 0 | KCL | KCL |
| SCL1107 M-3MR-014 | Printed 08-May-14 16:41 | |  | | | |

| Activity ID | Activity Name | O Dur | MP Start | MP Finish | Last Mth Start | Last Mth Finish | Start | Finish | 2014 | | | | | | |
|--|--|-------|-----------|-----------|----------------|-----------------|-------------|-------------|------|-----|-----|-----|-----|--|--|
| | | | | | | | | | Apr | May | Jun | Jul | Aug | | |
| 1107.19500 | Muck Pit Structure | 6 | 13-Nov-13 | 19-Nov-13 | 24-Jun-14 | 30-Jun-14 | 04-Jul-14 | 10-Jul-14 | | | | | | | |
| Sheet Piling | | 66 | 11-Nov-13 | 16-May-14 | 01-Mar-14 | 16-May-14 | 01-Mar-14 A | 24-May-14 | | | | | | | |
| 1107.15880 | Sheet Pile Installation inside Nullah Footprint Strech SC (18m) | 9 | 24-Apr-14 | 16-May-14 | 24-Apr-14 | 16-May-14 | 02-May-14 | 13-May-14 | | | | | | | |
| 1107.15881 | Sheet Pile Installation inside Nullah Footprint Strech NC (18m) | 9 | 24-Apr-14 | 16-May-14 | 24-Apr-14 | 16-May-14 | 14-May-14 | 23-May-14 | | | | | | | |
| 1107.15900 | King Posts Installation for ELS | 48 | 11-Nov-13 | 22-Jan-14 | 01-Mar-14 | 30-Apr-14 | 01-Mar-14 A | 24-May-14 | | | | | | | |
| Pump Tests | | 66 | 23-Jan-14 | 12-Jun-14 | 01-Apr-14 | 12-Jun-14 | 01-Apr-14 A | 24-Jun-14 | | | | | | | |
| C & C Tunnels | | 66 | 23-Jan-14 | 12-Jun-14 | 01-Apr-14 | 12-Jun-14 | 01-Apr-14 A | 24-Jun-14 | | | | | | | |
| 1107.15970 | Install Groundwater pumps 23 nos | 14 | 23-Jan-14 | 17-Feb-14 | 01-Apr-14 | 17-Apr-14 | 01-Apr-14 A | 28-May-14 | | | | | | | |
| 1107.15980 | Install Groundwater Monitoring Points 25 nos | 16 | 18-Feb-14 | 07-Mar-14 | 09-Apr-14 | 30-Apr-14 | 09-Apr-14 A | 20-May-14 | | | | | | | |
| 1107.15990 | Pump Test - First Drawdown | 6 | 17-May-14 | 23-May-14 | 17-May-14 | 23-May-14 | 29-May-14 | 05-Jun-14 | | | | | | | |
| 1107.16000 | Pump Test - Remedial Grouting (if required) | 5 | 24-May-14 | 29-May-14 | 24-May-14 | 29-May-14 | 06-Jun-14 | 11-Jun-14 | | | | | | | |
| 1107.16010 | Pump Test - 2nd Drawdown | 8 | 30-May-14 | 09-Jun-14 | 30-May-14 | 09-Jun-14 | 12-Jun-14 | 20-Jun-14 | | | | | | | |
| 1107.16020 | Pump Test - Analysis & Approval of Report | 3 | 10-Jun-14 | 12-Jun-14 | 10-Jun-14 | 12-Jun-14 | 21-Jun-14 | 24-Jun-14 | | | | | | | |
| Excavation & C&C Tunnel Structure | | 116 | 06-Jan-14 | 29-Jul-14 | 19-Mar-14 | 29-Jul-14 | 19-Mar-14 A | 09-Aug-14 | | | | | | | |
| Launch Shafts - Pre- TBM Works | | 72 | 06-Jan-14 | 12-Mar-14 | 19-Mar-14 | 18-Jun-14 | 19-Mar-14 A | 18-Jun-14 | | | | | | | |
| 1107.16080 | Install Strut S3 | 11 | 06-Jan-14 | 11-Jan-14 | 19-Mar-14 | 31-Mar-14 | 19-Mar-14 A | 15-Apr-14 A | | | | | | | |
| 1107.16090 | Excavate to Strut S4 Level | 12 | 13-Jan-14 | 28-Jan-14 | 22-Apr-14 | 07-May-14 | 16-Apr-14 A | 07-May-14 | | | | | | | |
| 1107.16100 | Install Strut S4 | 9 | 29-Jan-14 | 07-Feb-14 | 08-May-14 | 15-May-14 | 08-May-14 | 17-May-14 | | | | | | | |
| 1107.16110 | Excavate to Formation Level | 4 | 08-Feb-14 | 17-Feb-14 | 16-May-14 | 24-May-14 | 19-May-14 | 22-May-14 | | | | | | | |
| 1107.16120 | Temp TBM Launch Shaft Slab | 7 | 18-Feb-14 | 24-Feb-14 | 26-May-14 | 31-May-14 | 23-May-14 | 30-May-14 | | | | | | | |
| 1107.16130 | Temp TBM Launch Shaft Slab Gains Strength | 5 | 25-Feb-14 | 03-Mar-14 | 03-Jun-14 | 09-Jun-14 | 31-May-14 | 04-Jun-14 | | | | | | | |
| 1107.16140 | Remove Strut S4 | 6 | 04-Mar-14 | 07-Mar-14 | 10-Jun-14 | 13-Jun-14 | 05-Jun-14 | 11-Jun-14 | | | | | | | |
| 1107.16150 | Remove Strut S3, Launch Shaft Up (& Dn) Track Ready for TBM Assembly | 6 | 08-Mar-14 | 12-Mar-14 | 14-Jun-14 | 18-Jun-14 | 12-Jun-14 | 18-Jun-14 | | | | | | | |
| 1107.19560 | Fabrication of ELS- Level S4 | 21 | | | 24-Mar-14 | 17-Apr-14 | 24-Mar-14 A | 08-May-14 | | | | | | | |
| C&C Tunnel Structure (Previously Boxes 2B & 1B) | | 39 | 13-Jun-14 | 29-Jul-14 | 13-Jun-14 | 29-Jul-14 | 25-Jun-14 | 09-Aug-14 | | | | | | | |
| ELS Section 1 & 2 | | 37 | 13-Jun-14 | 26-Jul-14 | 13-Jun-14 | 26-Jul-14 | 25-Jun-14 | 07-Aug-14 | | | | | | | |
| 1107.16400 | Excavate to Strut S1 Section 1 | 10 | 13-Jun-14 | 24-Jun-14 | 13-Jun-14 | 24-Jun-14 | 25-Jun-14 | 07-Jul-14 | | | | | | | |
| 1107.16410 | Excavate to Strut S1 Section 2 | 9 | 25-Jun-14 | 05-Jul-14 | 25-Jun-14 | 05-Jul-14 | 08-Jul-14 | 17-Jul-14 | | | | | | | |
| 1107.16420 | Excavate to Strut S2 Section 1 | 9 | 07-Jul-14 | 16-Jul-14 | 07-Jul-14 | 16-Jul-14 | 18-Jul-14 | 28-Jul-14 | | | | | | | |
| 1107.16430 | Excavate to Strut S2 Section 2 | 9 | 17-Jul-14 | 26-Jul-14 | 17-Jul-14 | 26-Jul-14 | 29-Jul-14 | 07-Aug-14 | | | | | | | |
| 1107.16500 | Install Strut S1 Section 1 | 9 | 25-Jun-14 | 05-Jul-14 | 25-Jun-14 | 05-Jul-14 | 08-Jul-14 | 17-Jul-14 | | | | | | | |
| 1107.16510 | Install Strut S1 Section 2 | 9 | 07-Jul-14 | 16-Jul-14 | 07-Jul-14 | 16-Jul-14 | 18-Jul-14 | 28-Jul-14 | | | | | | | |
| 1107.16520 | Install Strut S2 Section 1 | 9 | 17-Jul-14 | 26-Jul-14 | 17-Jul-14 | 26-Jul-14 | 29-Jul-14 | 07-Aug-14 | | | | | | | |
| ELS Section 3 & 4 | | 20 | 07-Jul-14 | 29-Jul-14 | 07-Jul-14 | 29-Jul-14 | 18-Jul-14 | 09-Aug-14 | | | | | | | |
| 1107.16600 | Excavate to Strut S1 Section 3 | 10 | 07-Jul-14 | 17-Jul-14 | 07-Jul-14 | 17-Jul-14 | 18-Jul-14 | 29-Jul-14 | | | | | | | |
| 1107.16610 | Excavate to Strut S1 Section 4 & Demolition of Cross Wall | 10 | 18-Jul-14 | 29-Jul-14 | 18-Jul-14 | 29-Jul-14 | 30-Jul-14 | 09-Aug-14 | | | | | | | |
| 1107.16700 | Install Strut S1 Section 3 | 9 | 18-Jul-14 | 28-Jul-14 | 18-Jul-14 | 28-Jul-14 | 30-Jul-14 | 08-Aug-14 | | | | | | | |
| Cost Centre F3 - Utilities Protection / Div | | 193 | 29-Jun-14 | 29-Jun-14 | 04-Feb-14 | 27-Sep-14 | 04-Feb-14 A | 26-Sep-14 | | | | | | | |
| Diversion/ Replacement of WaterMains at Choi Hung F | | 193 | 29-Jun-14 | 29-Jun-14 | 04-Feb-14 | 27-Sep-14 | 04-Feb-14 A | 26-Sep-14 | | | | | | | |
| 1107.17680 | F5b Complete road reinstatement of Choi Hung Road (East) | 0 | | 29-Jun-14 | | 29-Jun-14 | | 29-Jun-14* | | | | | | | |



Data Date 01-May-14
Page 5 of 6
SCL1107 M-3MR-014
Printed 08-May-14 16:41

MTRC SCL 1107 Diamond Hill to Kai Tak Tunnels 3 Month Rolling Programme
No. 014 DD1/5/14

| Date | Revision | Checked | Approved |
|-------------|----------|---------|----------|
| See 2nd Col | 0 | KCL | KCL |

- █ Master Prog Baseline Bar
- █ Last Month Forecast Bar
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ▼ Summary

| Activity ID | Activity Name | O Dur | MP Start | MP Finish | Last Mth Start | Last Mth Finish | Start | Finish | 2014 | | | | | | |
|--|--|-------|-----------|-----------|----------------|-----------------|-------------|-------------|------|-----|-----|-----|-----|--|--|
| | | | | | | | | | Apr | May | Jun | Jul | Aug | | |
| 1107.17690 | F5a Complete water main replacement at Choi Hung Road (East) and accepted by WSD and relevant Governments | 0 | | 29-Jun-14 | | 29-Jun-14 | | 29-Jun-14* | | | | | | | |
| Trial Holes and Pipe Installation | | 193 | | | 04-Feb-14 | 27-Sep-14 | 04-Feb-14 A | 26-Sep-14 | | | | | | | |
| 1107.20250 | TP09 Lane 2 (25m - 24hrs) | 37 | | | 04-Feb-14 | 18-Mar-14 | 04-Feb-14 A | 03-May-14 | | | | | | | |
| 1107.20260 | TP08 Lane 2 (21m) | 40 | | | 07-May-14 | 23-Jun-14 | 05-May-14 | 21-Jun-14 | | | | | | | |
| 1107.20270 | TP07 Lane 2 (25m) | 31 | | | 24-Jun-14 | 30-Jul-14 | 23-Jun-14 | 29-Jul-14 | | | | | | | |
| 1107.20271 | TP11 Lane 3 | 50 | | | 31-Jul-14 | 27-Sep-14 | 30-Jul-14 | 26-Sep-14 | | | | | | | |
| Cost Centre G CEDD Entrusted Works | | 142 | 16-Dec-13 | 08-Jul-14 | 22-Feb-14 | 18-Jul-14 | 07-Apr-14 A | 15-Aug-14 | | | | | | | |
| New Reprovisioned Culvert | | 44 | 16-May-14 | 08-Jul-14 | 27-May-14 | 18-Jul-14 | 25-Jun-14 | 15-Aug-14 | | | | | | | |
| North Section of Culvert | | 44 | 16-May-14 | 08-Jul-14 | 27-May-14 | 18-Jul-14 | 25-Jun-14 | 15-Aug-14 | | | | | | | |
| 1107.18290 | Excavation for North Section of New Culvert | 8 | 16-May-14 | 24-May-14 | 27-May-14 | 05-Jun-14 | 25-Jun-14 | 04-Jul-14 | | | | | | | |
| 1107.18300 | Bay 4 Sub base, Blinding & Base Slab | 10 | 26-May-14 | 06-Jun-14 | 06-Jun-14 | 17-Jun-14 | 05-Jul-14 | 16-Jul-14 | | | | | | | |
| 1107.18310 | Bay 4 Walls | 12 | 07-Jun-14 | 20-Jun-14 | 18-Jun-14 | 02-Jul-14 | 17-Jul-14 | 30-Jul-14 | | | | | | | |
| 1107.18320 | Bay 4 Roof Slab | 14 | 21-Jun-14 | 08-Jul-14 | 03-Jul-14 | 18-Jul-14 | 31-Jul-14 | 15-Aug-14 | | | | | | | |
| Demolition & Diversion of Nullah 2 | | 98 | 16-Dec-13 | 15-May-14 | 22-Feb-14 | 26-May-14 | 07-Apr-14 A | 24-Jun-14 | | | | | | | |
| Diversion & Demolition of Existing Nullah 2 | | 98 | 16-Dec-13 | 15-May-14 | 22-Feb-14 | 26-May-14 | 07-Apr-14 A | 24-Jun-14 | | | | | | | |
| 1107.18010 | Plug Existing CEDD Transition Chamber (Diversion Start Functioning) | 1 | 24-Mar-14 | 26-Mar-14 | 07-Apr-14 | 07-Apr-14 | 07-Apr-14 A | 07-Apr-14 A | | | | | | | |
| 1107.18020 | Excavation to Expose Nullah to be Demolished inside DWall Footprint | 6 | 16-Dec-13 | 07-Jan-14 | 22-Feb-14 | 28-Feb-14 | 22-Apr-14 A | 08-May-14 | | | | | | | |
| 1107.18030 | Excavation to Expose Nullah to be Demolished Remaining Areas | 17 | 08-Jan-14 | 27-Jan-14 | 04-Apr-14 | 28-Apr-14 | 09-May-14 | 28-May-14 | | | | | | | |
| 1107.18040 | Advance works for Demolishing of Nullah | 1 | 28-Jan-14 | 12-Feb-14 | 29-Apr-14 | 29-Apr-14 | 29-May-14 | 29-May-14 | | | | | | | |
| 1107.18050 | Demolish Nullah 2 inside C&C Tunnel Footprint | 9 | 27-Mar-14 | 14-Apr-14 | 08-Apr-14 | 17-Apr-14 | 23-Apr-14 A | 12-May-14 | | | | | | | |
| 1107.18060 | Backfill C&C Tunnel Footprint | 2 | 15-Apr-14 | 23-Apr-14 | 22-Apr-14 | 23-Apr-14 | 30-Apr-14 A | 13-May-14 | | | | | | | |
| 1107.18070 | Demolish Nullah 2 Remaining Areas | 15 | 15-Apr-14 | 07-May-14 | 29-Apr-14 | 17-May-14 | 29-May-14 | 16-Jun-14 | | | | | | | |
| 1107.18080 | Backfill Remaining Areas | 7 | 08-May-14 | 15-May-14 | 19-May-14 | 26-May-14 | 17-Jun-14 | 24-Jun-14 | | | | | | | |
| 1107.18090 | G1 Demolition of CEDD existing culvert complete and ready for remaining (Sheetpile Cofferdam) Installation | 0 | | 27-Apr-14 | | 27-Apr-14 | | 27-Apr-14 A | | | | | | | |

**APPENDIX B
ACTION AND LIMIT LEVELS**

APPENDIX B – Action and Limit Levels**24-Hour TSP**

| Regular Dust Monitoring Location | Description | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|--|------------------------|--|---|
| 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**

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

File No. MA12051/57/0008

Station DMS-4 - Rhythm Garden, Block 1 Operator: WK
 Date: 2-May-14 Next Due Date: 1-Jul-14
 Equipment No.: A-01-57 Serial No. 2352

| Ambient Condition | | | |
|---------------------|-------|---------------------|-------|
| Temperature, Ta (K) | 296.1 | Pressure, Pa (mmHg) | 764.2 |

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

| Calibration of TSP Sampler | | | | | |
|----------------------------|------------------------------------|--|---------------------|--------------------------|---|
| Calibration Point | Orifice | | | 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 | 3.47 | 59.80 | 7.4 | 2.74 |
| 2 | 8.7 | 2.97 | 51.25 | 5.4 | 2.34 |
| 3 | 7.8 | 2.81 | 48.57 | 4.6 | 2.16 |
| 4 | 4.5 | 2.13 | 37.08 | 2.8 | 1.68 |
| 5 | 3.3 | 1.83 | 31.86 | 2.0 | 1.42 |

By Linear Regression of Y on X

Slope, mw = 0.0465 Intercept, bw = -0.0586
 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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.72

Remarks: _____

Conducted by: Wk Tang Signature: Kwan Date: 2/5/14
 Checked by: Br Signature: _____ Date: 2 May 2014

TEST REPORT

Description Calibration Orifice
Serial No. 0993
Model No. TE-5025A
Date 30 September 2013

Manufacturer TISCH
Temperature, Ta (K) 300.8
Pressure, Pa (mmHg) 759.3
Equipment No.: A-04-04

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

DATA TABULATION

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

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope (m) = 2.07768

Intercept (b) = -0.04613

Coefficient (r) = 0.99997

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

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope (m) = 1.30101

Intercept (b) = -0.02919

Coefficient (r) = 0.99997

CALCULATIONS

$$V_{\text{std}} = \text{Diff. Vol} \left[\frac{(\text{Pa} - \text{Diff. Hg})}{760} \right] (298/\text{Ta})$$

$$Q_{\text{std}} = V_{\text{std}} / \text{Time}$$

$$V_a = \text{Diff. Vol} \left[\frac{(\text{Pa} - \text{Diff. Hg})}{\text{Pa}} \right]$$

$$Q_a = V_a / \text{Time}$$

For subsequent flow rate calculations:

$$Q_{\text{std}} = l/m \{ [\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$$

$$Q_a = l/m \{ [\text{SQRT}(\text{H}_2\text{O}(\text{Ta}/\text{Pa}))] - b \}$$

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

| | |
|------------------|------------|
| Test Report No.: | C/N/140104 |
| Date of Issue: | 2014-01-05 |
| Date Received: | 2014-01-04 |
| Date Tested: | 2014-01-04 |
| Date Completed: | 2014-01-05 |
| Next Due Date: | 2015-01-04 |

ATTN: Mr. W. K. Tang

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 Temperature : 19 degree Celsius
Relative Humidity : 52%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

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

PREPARED AND CHECKED BY:

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



PATRICK TSE

Laboratory Manager

TEST REPORT

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

| | |
|------------------|--------------|
| Test Report No.: | C/N/130830/3 |
| Date of Issue: | 2013-08-31 |
| Date Received: | 2013-08-30 |
| Date Tested: | 2013-08-30 |
| Date Completed: | 2013-08-31 |
| Next Due Date: | 2014-08-30 |

ATTN: Mr. W.K. Tang

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 Temperature | : 21 degree Celsius |
| Relative Humidity | : 69% |

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

| | |
|------------------|--------------|
| Test Report No.: | C/N/131129/1 |
| Date of Issue: | 2013-11-30 |
| Date Received: | 2013-11-29 |
| Date Tested: | 2013-11-29 |
| Date Completed: | 2013-11-30 |
| Next Due Date: | 2014-11-29 |

ATTN: Mr. W.K. Tang

Page: 1 of 1

Certificate of Calibration

Item for calibration:

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

Test conditions:

| | |
|-------------------|---------------------|
| Room Temperature | : 19 degree Celsius |
| Relative Humidity | : 57% |

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

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

PREPARED AND CHECKED BY:

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Page: 1 of 1

Item for calibration:

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

Test conditions:

| | |
|-------------------|---------------------|
| Room Temperature | : 21 degree Celsius |
| Relative Humidity | : 57% |

Methodology:

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

Results:

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

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


PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

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 Temperature | : 21 degree Celsius |
| Relative Humidity | : 57% |

Methodology:

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

Results:

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

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



PATRICK TSE
Laboratory Manager

TEST REPORT

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

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

ATTN: Mr. W.K. Tang

Item for calibration:

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

Test conditions:

| | |
|-------------------|---------------------|
| Room Temperature | : 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 Contract 1107 Diamond Hill to Kai Tak Tunnels
Impact Air Quality and Noise Monitoring Schedule for May 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---------------|-----------|--------------|-----------|--------------|-----------|----------|
| | | | | 1-May | 2-May | 3-May |
| | | | | | | |
| 4-May | 5-May | 6-May | 7-May | 8-May | 9-May | 10-May |
| | 24 hr TSP | | Noise | | 24 hr TSP | |
| 11-May | 12-May | 13-May | 14-May | 15-May | 16-May | 17-May |
| | Noise | | | 24 hr TSP | | |
| 18-May | 19-May | 20-May | 21-May | 22-May | 23-May | 24-May |
| | | | 24 hr TSP | Noise | | |
| 25-May | 26-May | 27-May | 28-May | 29-May | 30-May | 31-May |
| | | 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 Contract 1107 Diamond Hill to Kai Tak Tunnels
Tentative Impact Air Quality and Noise Monitoring Schedule for June 2014**

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---------------|--------------|-----------|-----------|-----------|-----------|----------|
| 1-Jun | 2-Jun | 3-Jun | 4-Jun | 5-Jun | 6-Jun | 7-Jun |
| | | Noise | | 24 hr TSP | | |
| 8-Jun | 9-Jun | 10-Jun | 11-Jun | 12-Jun | 13-Jun | 14-Jun |
| | | | 24 hr TSP | Noise | | |
| 15-Jun | 16-Jun | 17-Jun | 18-Jun | 19-Jun | 20-Jun | 21-Jun |
| | | 24 hr TSP | Noise | | | |
| 22-Jun | 23-Jun | 24-Jun | 25-Jun | 26-Jun | 27-Jun | 28-Jun |
| | 24 hr TSP | Noise | | | 24 hr TSP | |
| 29-Jun | 30-Jun | | | | | |
| | 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

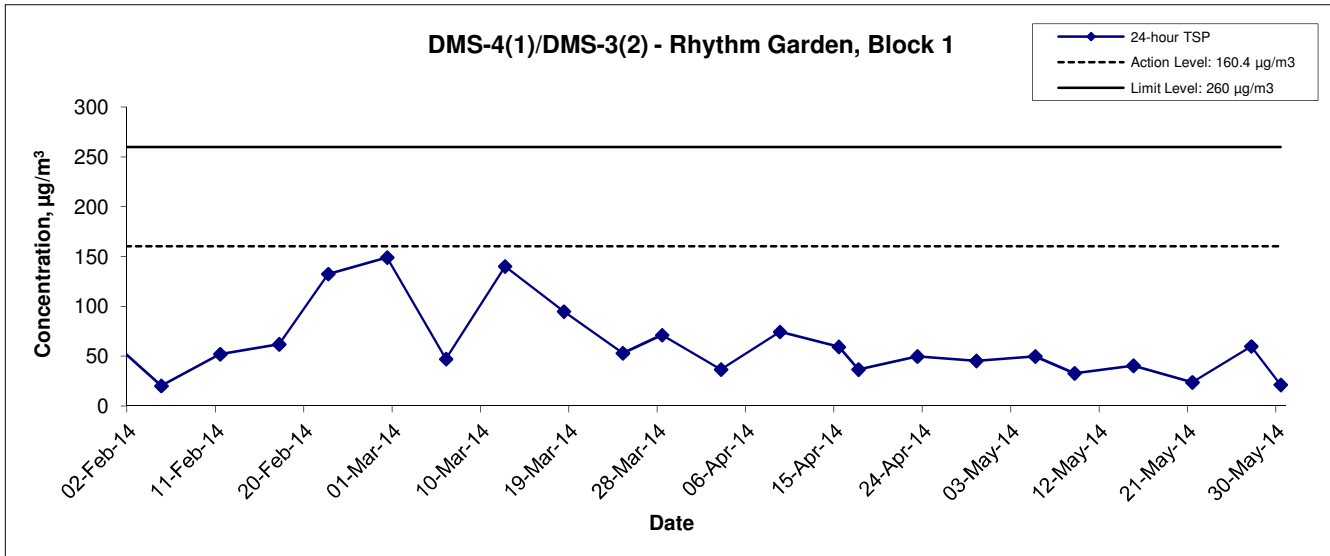
Location DMS-4(1)/DMS-3(2) - Rhythm Garden, Block 1

| 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-May-14 | 09:00 | Cloudy | 294.4 | 763.4 | 3.7723 | 3.8595 | 0.0872 | 2599.6 | 2623.6 | 24.0 | 1.22 | 1.22 | 1.22 | 1751.2 | 49.8 |
| 9-May-14 | 09:00 | Cloudy | 294.5 | 760.0 | 3.2307 | 3.2881 | 0.0574 | 2623.6 | 2647.6 | 24.0 | 1.21 | 1.21 | 1.21 | 1747.1 | 32.9 |
| 15-May-14 | 09:00 | Sunny | 301.9 | 756.6 | 3.1859 | 3.2556 | 0.0697 | 2647.6 | 2671.6 | 24.0 | 1.20 | 1.20 | 1.20 | 1722.4 | 40.5 |
| 21-May-14 | 09:00 | Cloudy | 298.1 | 758.6 | 3.2372 | 3.2784 | 0.0412 | 2671.6 | 2695.6 | 24.0 | 1.21 | 1.20 | 1.21 | 1735.2 | 23.7 |
| 27-May-14 | 09:00 | Sunny | 302.5 | 758.7 | 3.2201 | 3.3233 | 0.1032 | 2695.6 | 2719.6 | 24.0 | 1.20 | 1.20 | 1.20 | 1723.2 | 59.9 |
| 30-May-14 | 09:00 | Sunny | 303.2 | 758.3 | 3.2440 | 3.2806 | 0.0366 | 2719.6 | 2743.6 | 24.0 | 1.20 | 1.19 | 1.19 | 1720.7 | 21.3 |
| | | | | | | | | | | | | | | Min | 21.3 |
| | | | | | | | | | | | | | | Max | 59.9 |
| | | | | | | | | | | | | | | Average | 38.0 |

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



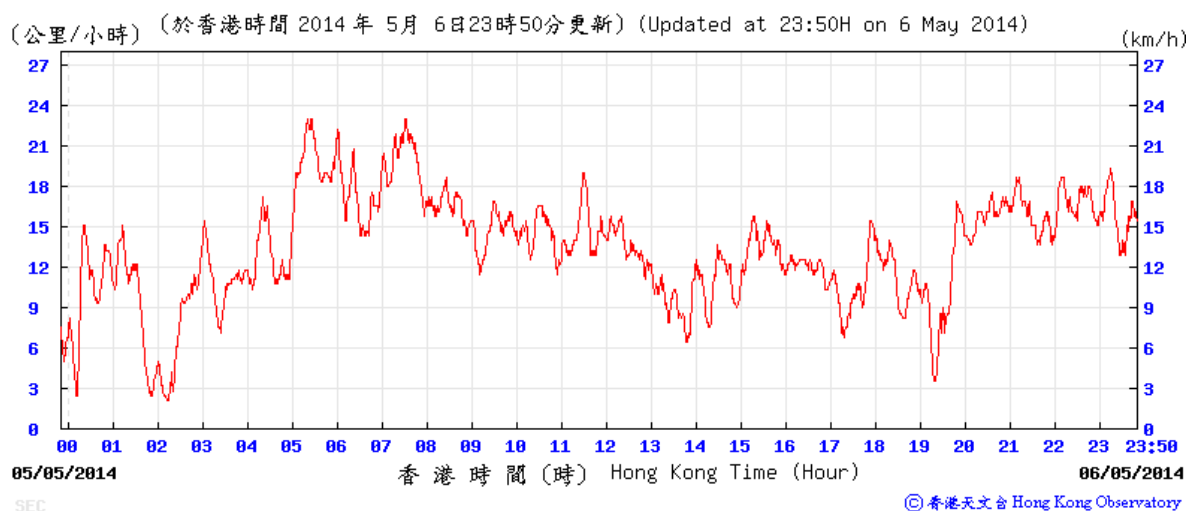
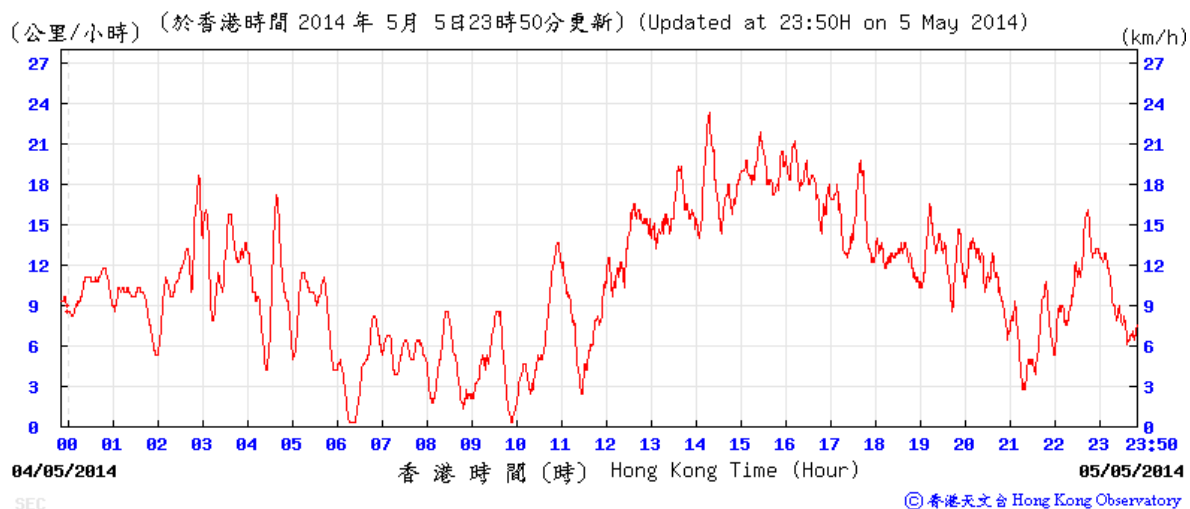
Remarks:

- (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 Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tak Tunnels Graphical Presentation of 24-hour TSP Monitoring Results | Scale N.T.S | Project No. MA13018 | CINOTECH |
| | Date May 14 | Appendix E | |

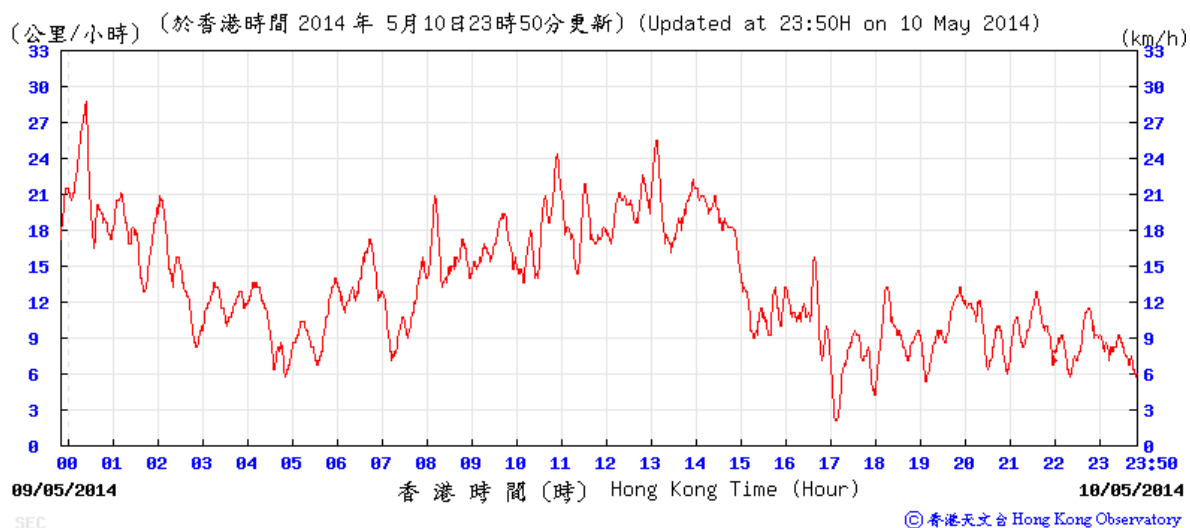
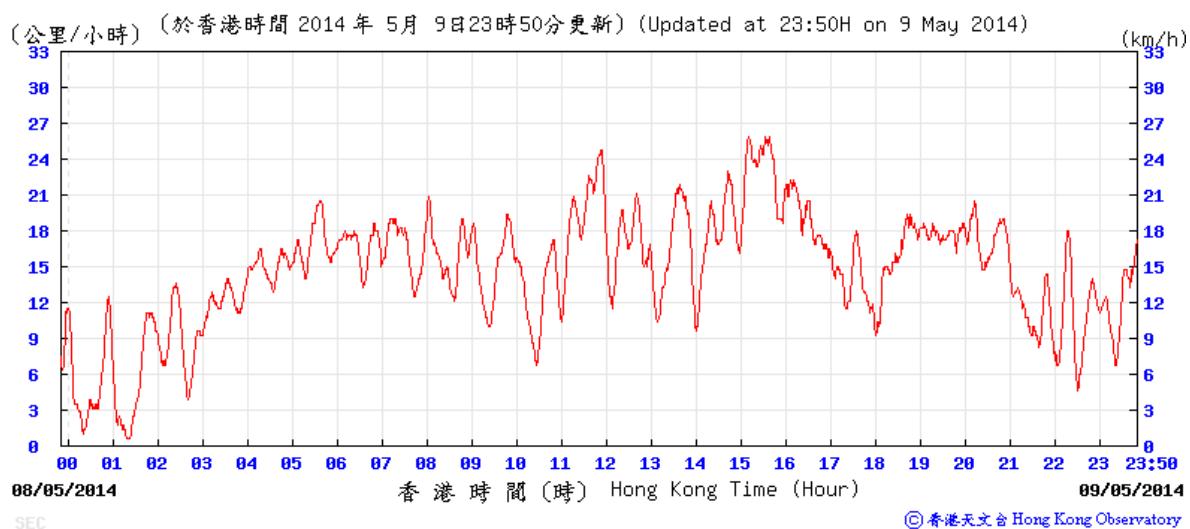
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

5-6 May 2014



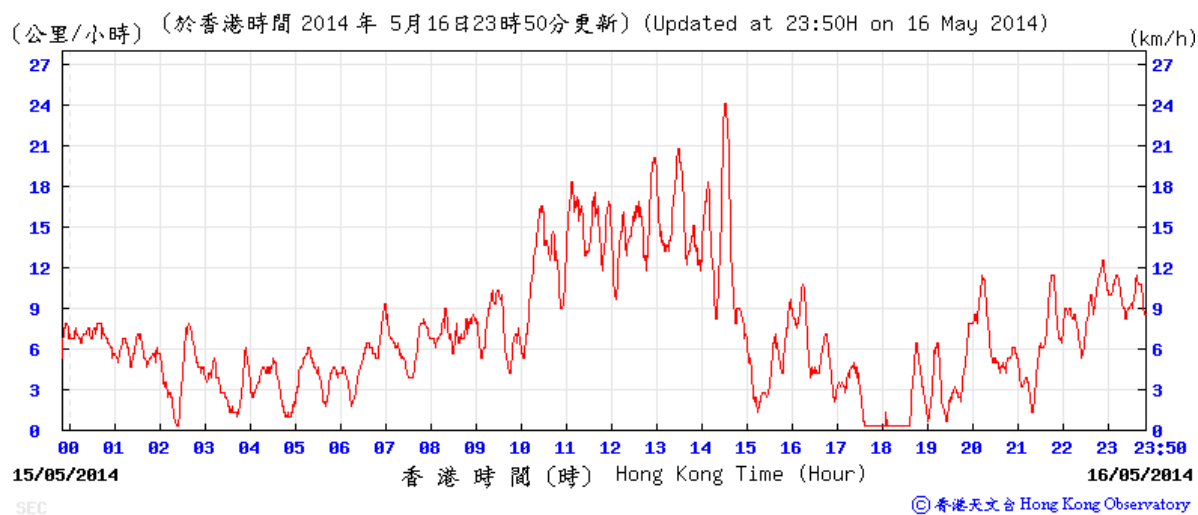
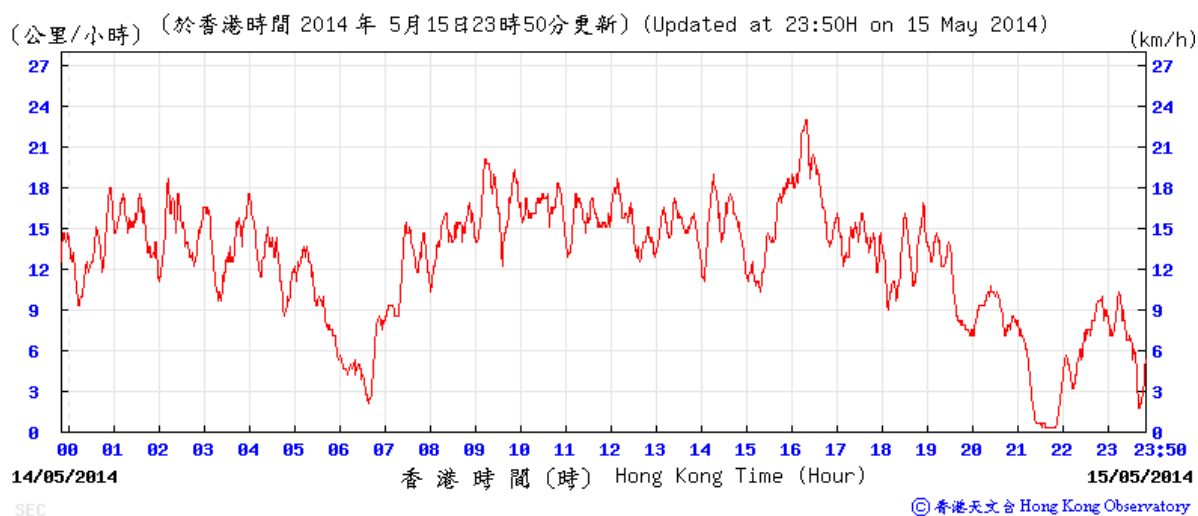
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

9-10 May 2014



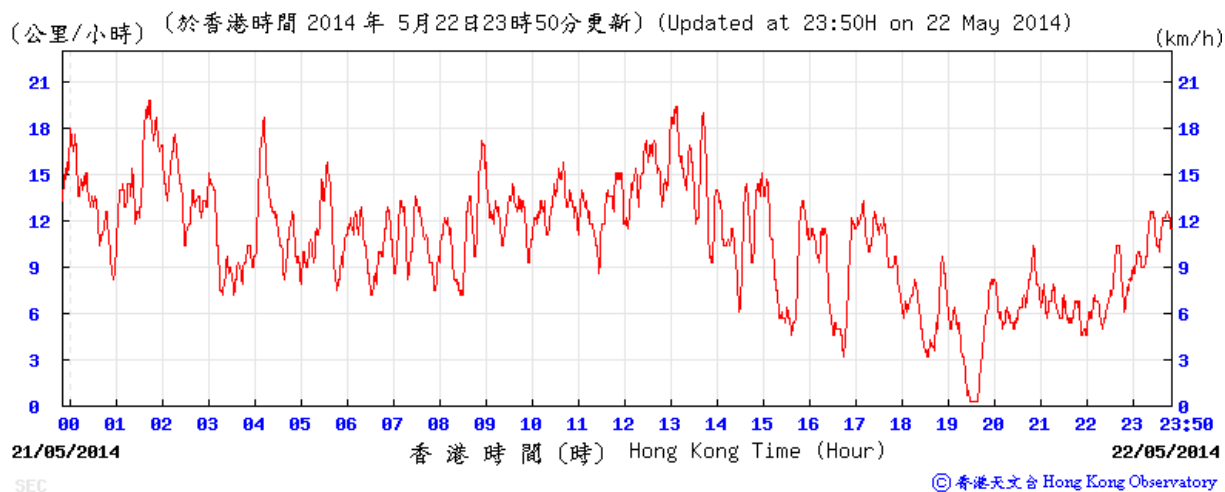
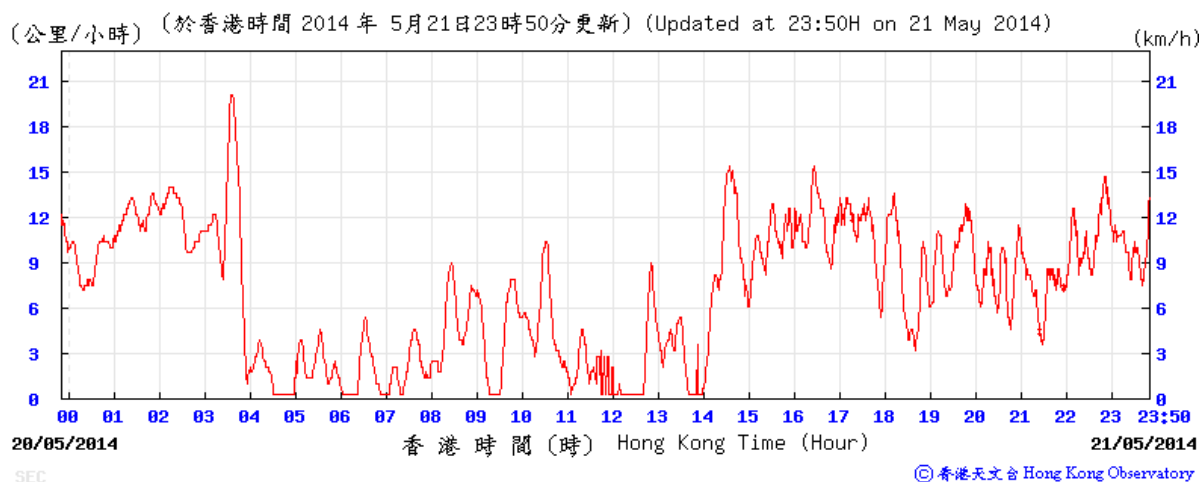
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

15-16 May 2014



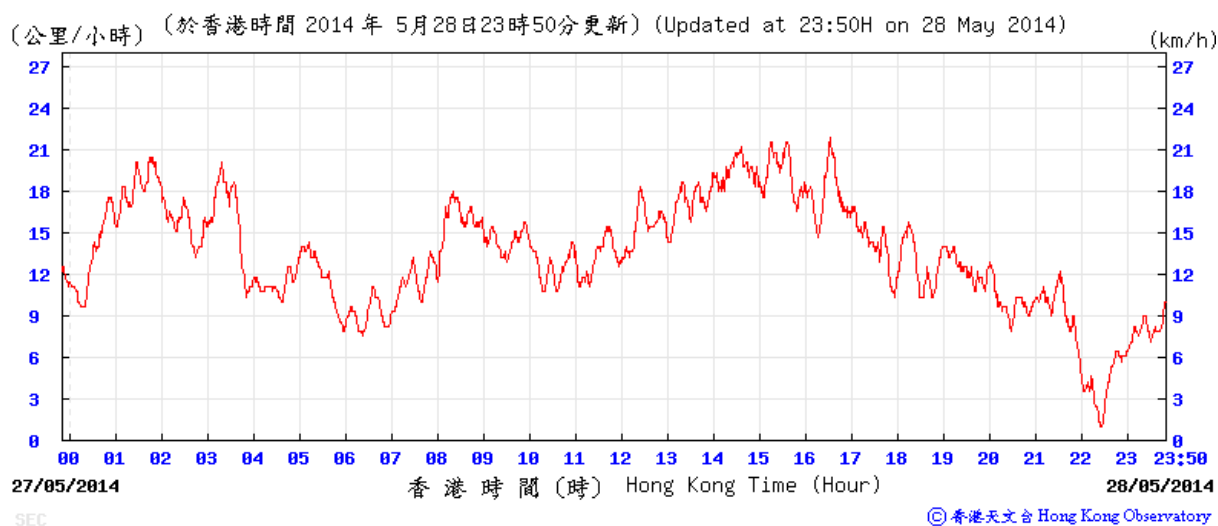
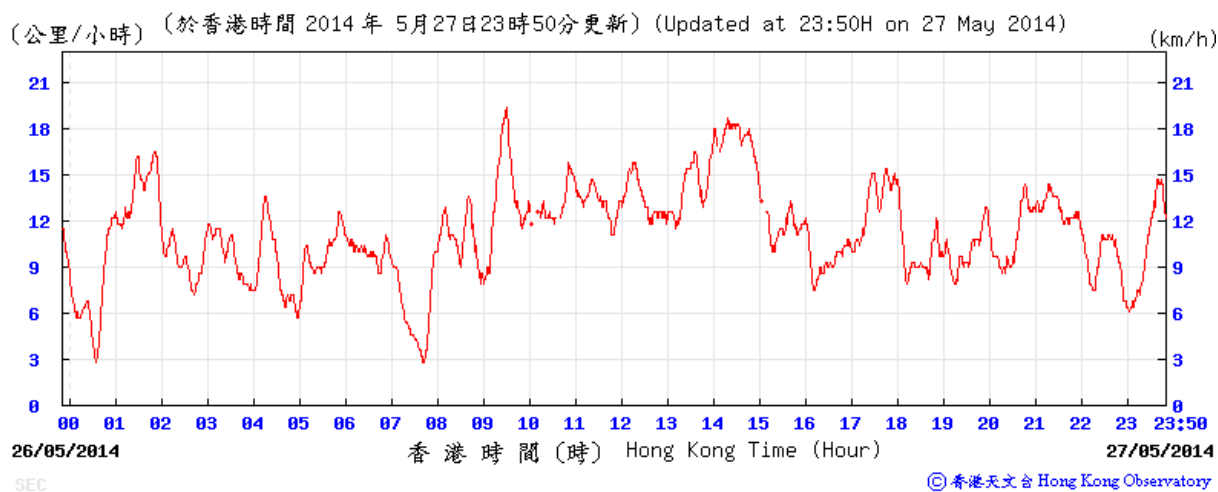
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

21-22 May 2014



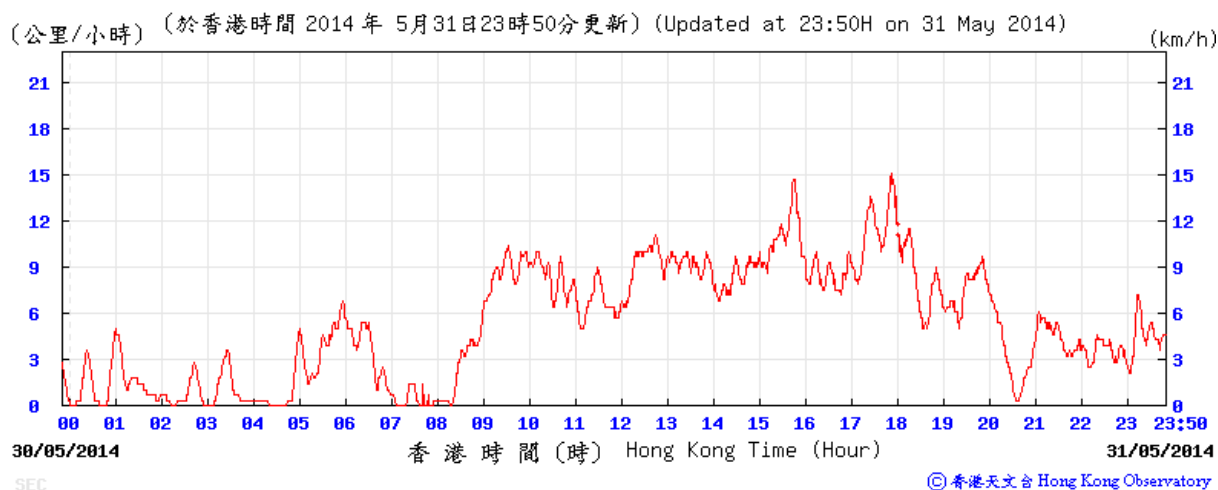
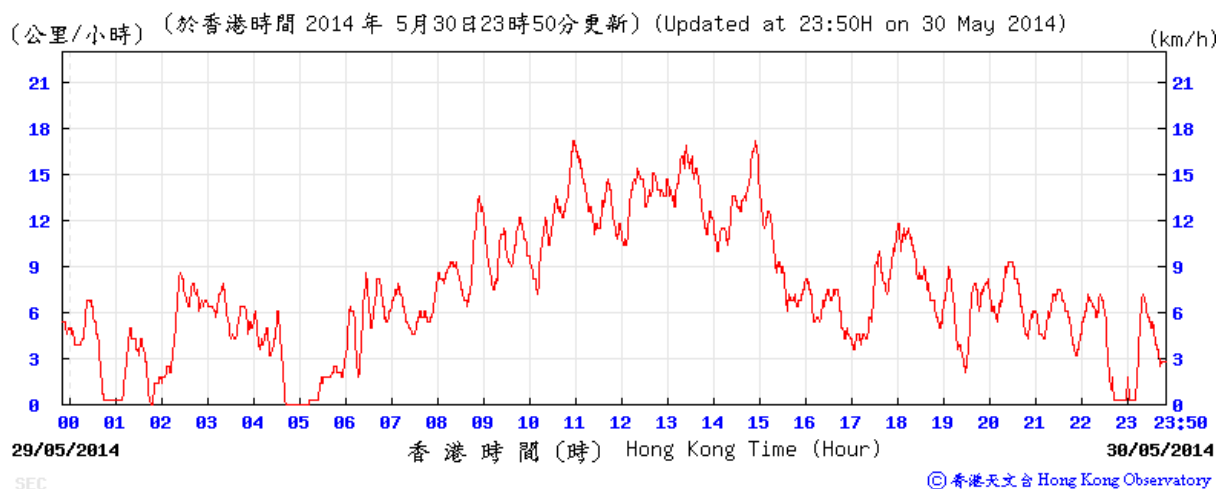
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

27-28 May 2014



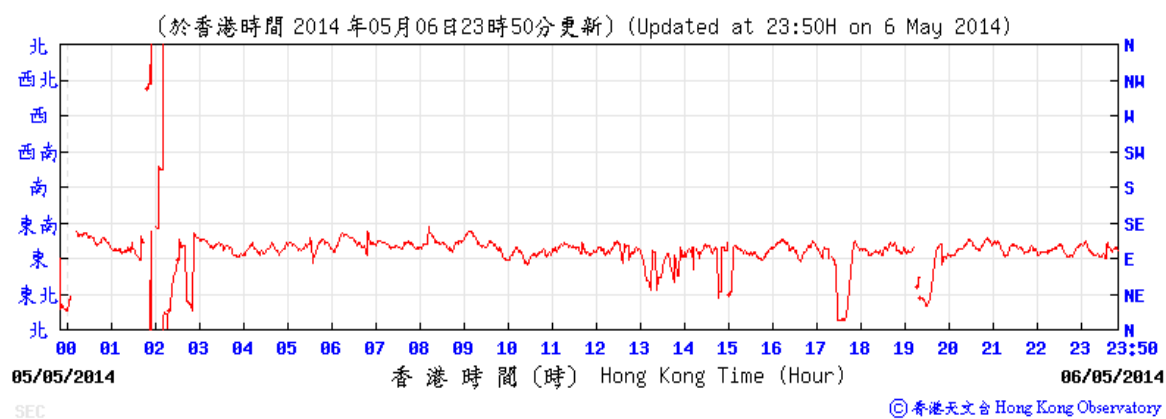
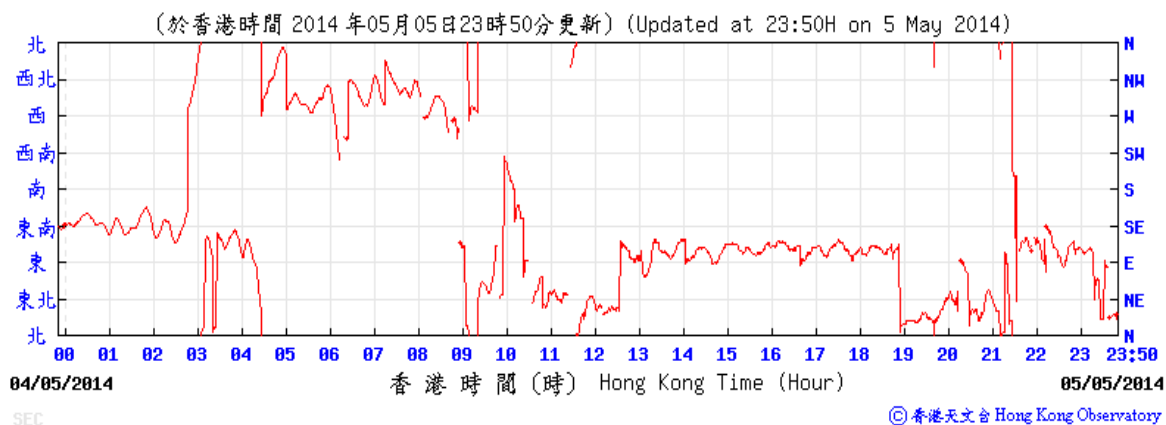
Average wind speed obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

30-31 May 2014



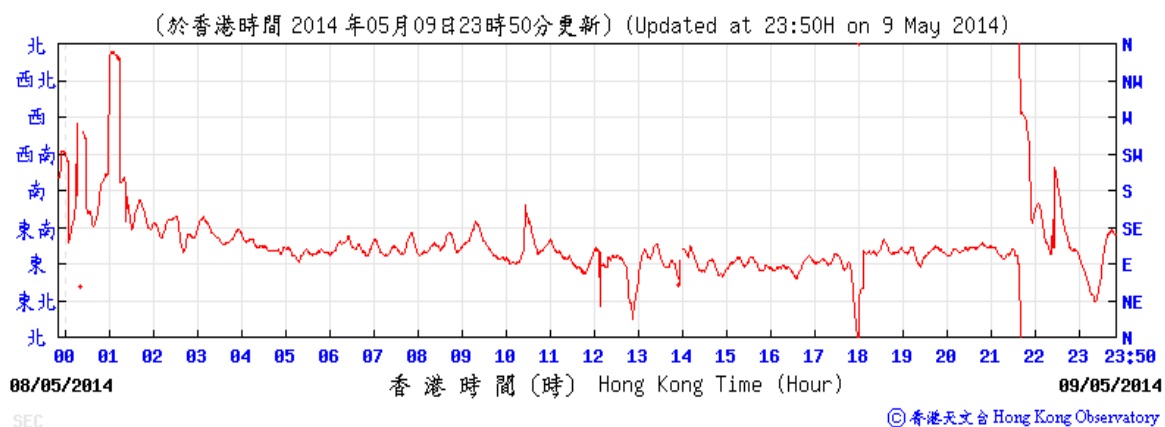
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

5-6 May 2014



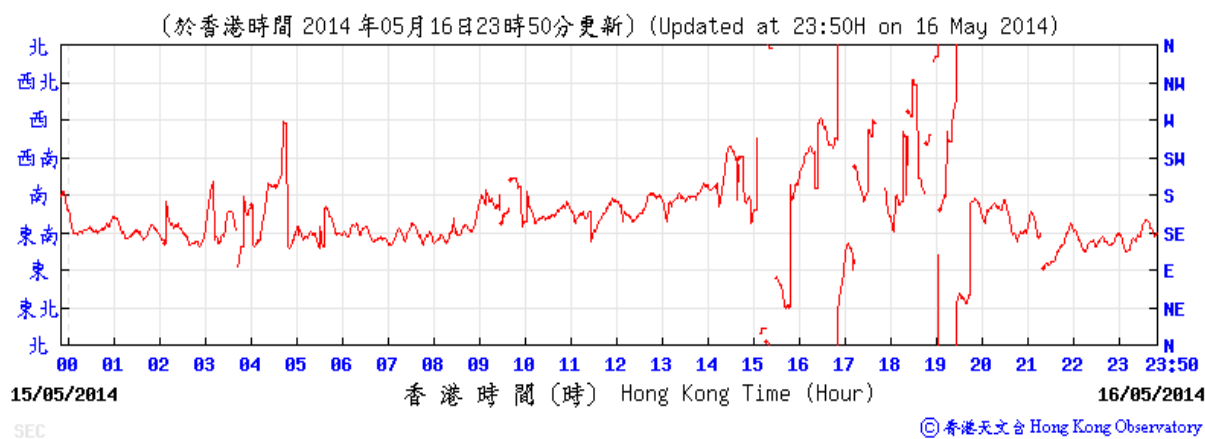
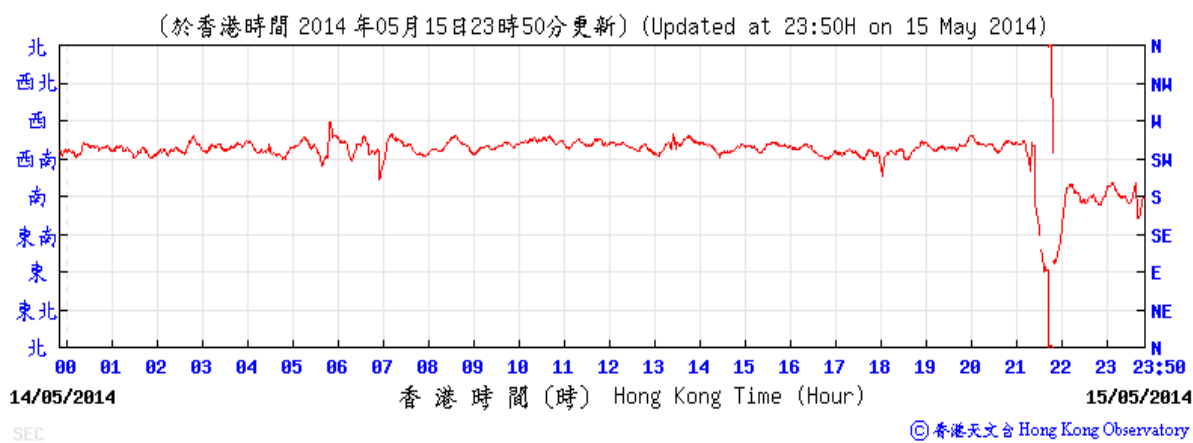
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

9-10 May 2014



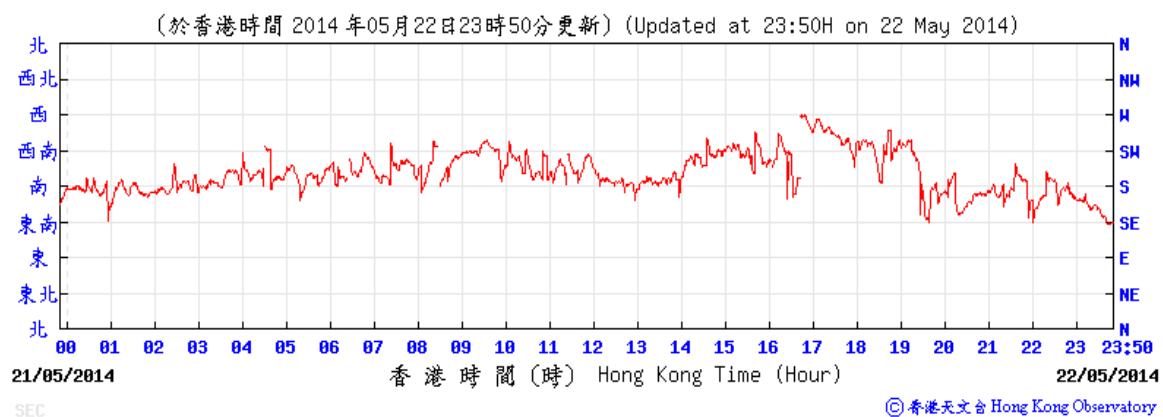
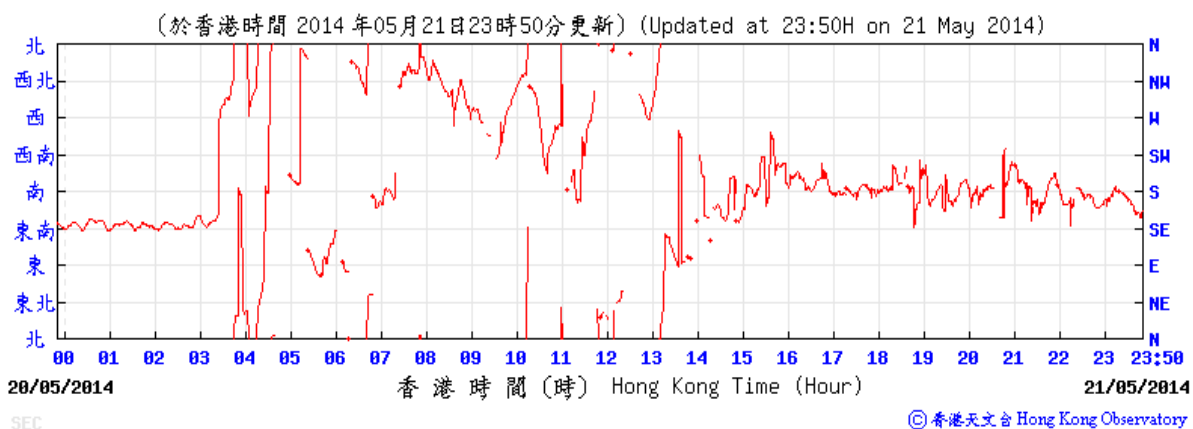
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

15-16 May 2014



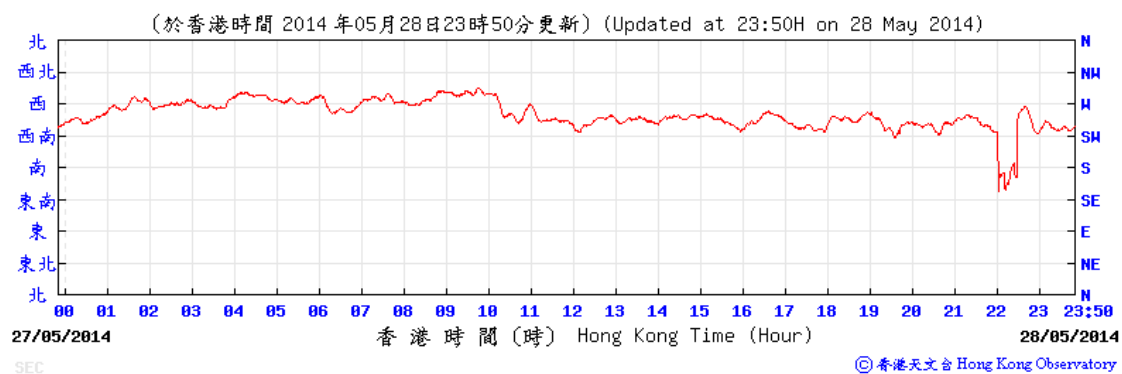
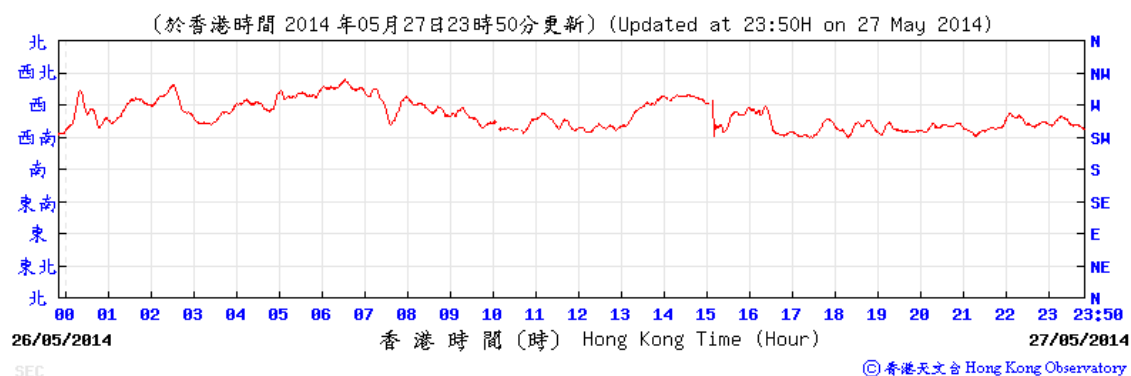
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

21-22 May 2014



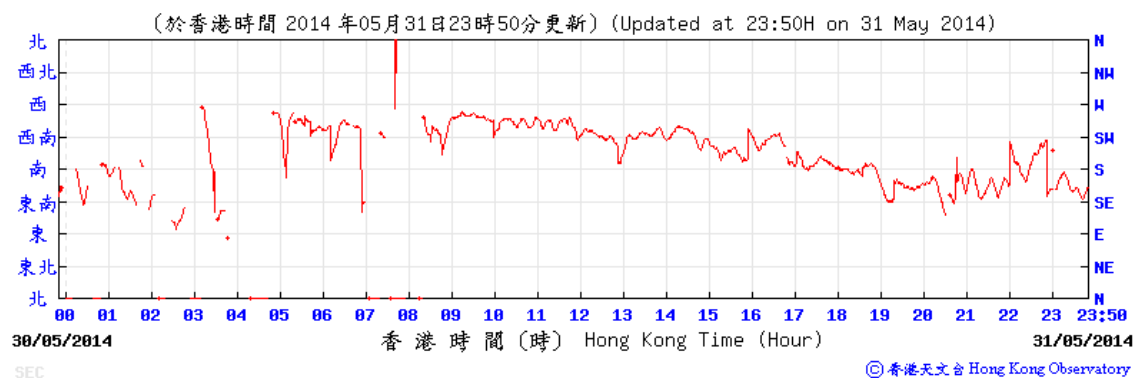
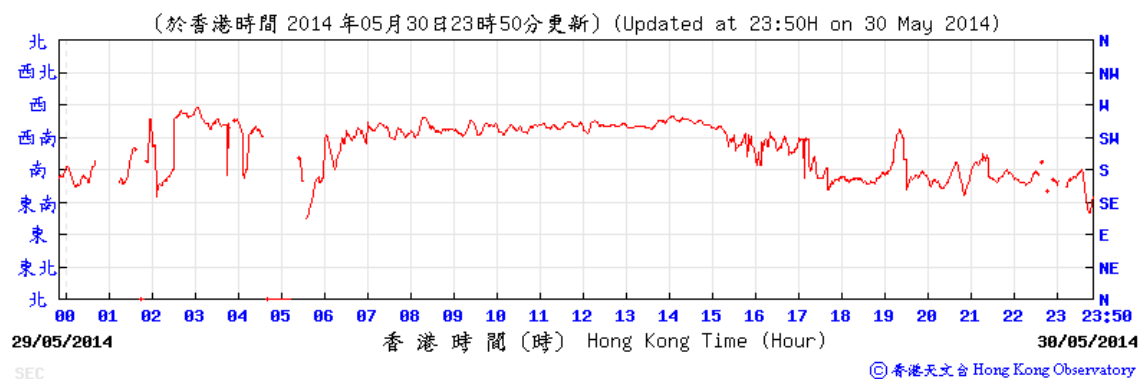
Wind direction obtained from the meteorological station at Kai Tak from the Hong Kong Observatory (HKO)

27-28 May 2014



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

30-31 May 2014



**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} |
| 7-May-14 | Cloudy | 14:30 | 74.0 | 74.9 | 73.0 | 73.7 | 71 | 70.4 |
| | | 14:35 | 73.7 | 74.9 | 72.4 | | | |
| | | 14:40 | 73.9 | 74.9 | 72.5 | | | |
| | | 14:45 | 73.5 | 74.6 | 72.3 | | | |
| | | 14:50 | 73.0 | 74.6 | 72.3 | | | |
| | | 14:55 | 73.8 | 74.9 | 72.5 | | | |
| 12-May-14 | Cloudy | 13:32 | 73.7 | 74.8 | 72.2 | 74.3 | 71 | 71.6 |
| | | 13:37 | 74.3 | 75.4 | 72.9 | | | |
| | | 13:42 | 74.5 | 75.7 | 72.9 | | | |
| | | 13:47 | 74.4 | 75.5 | 73.0 | | | |
| | | 13:52 | 74.3 | 75.5 | 73.0 | | | |
| | | 13:57 | 74.5 | 75.6 | 73.1 | | | |
| 22-May-14 | Cloudy | 13:20 | 68.8 | 69.7 | 67.5 | 68.8 | 71 | 68.8 Measured ≤ Baseline Level |
| | | 13:25 | 68.7 | 69.8 | 67.6 | | | |
| | | 13:30 | 69.1 | 70.2 | 67.8 | | | |
| | | 13:35 | 69.0 | 69.9 | 68.1 | | | |
| | | 13:40 | 68.5 | 69.6 | 67.3 | | | |
| | | 13:45 | 68.4 | 69.5 | 67.3 | | | |
| 29-May-14 | Sunny | 13:55 | 73.8 | 74.6 | 72.7 | 73.8 | 71 | 70.6 |
| | | 14:00 | 74.0 | 75.1 | 72.8 | | | |
| | | 14:05 | 73.9 | 75.2 | 72.6 | | | |
| | | 14:10 | 73.9 | 75.0 | 72.6 | | | |
| | | 14:15 | 73.9 | 75.2 | 72.8 | | | |
| | | 14:20 | 73.5 | 74.5 | 72.6 | | | |

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).

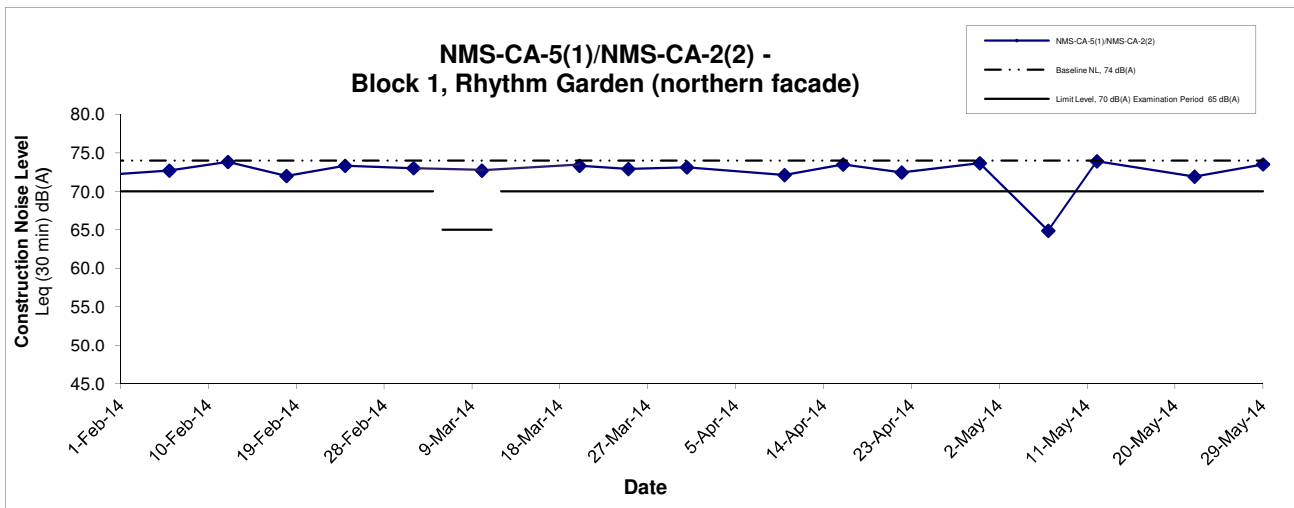
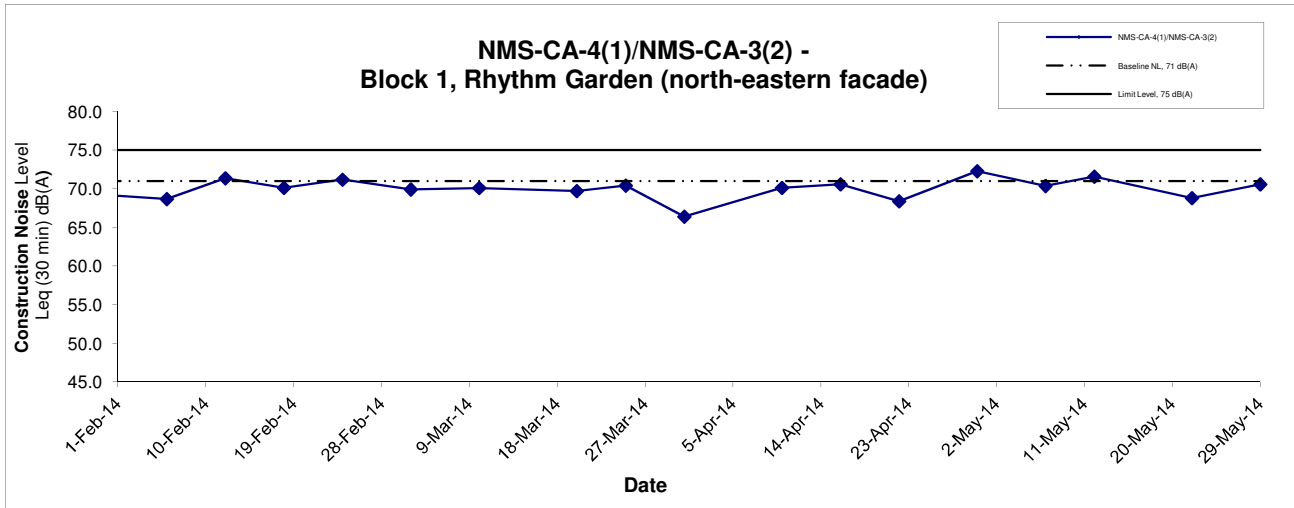
Appendix F - Noise Monitoring Results

| 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} |
| 7-May-14 | Cloudy | 13:57 | 74.5 | 76.3 | 72.6 | 74.5 | 74 | 64.9 |
| | | 14:02 | 74.7 | 76.8 | 72.4 | | | |
| | | 14:07 | 74.9 | 75.8 | 74.0 | | | |
| | | 14:12 | 74.3 | 75.3 | 73.2 | | | |
| | | 14:17 | 74.5 | 75.5 | 73.8 | | | |
| | | 14:22 | 74.0 | 74.9 | 72.9 | | | |
| 12-May-14 | Cloudy | 13:00 | 74.0 | 74.9 | 72.2 | 73.9 | 74 | 73.9 Measured ≤ Baseline Level |
| | | 13:05 | 73.8 | 74.6 | 72.0 | | | |
| | | 13:10 | 74.1 | 76.0 | 72.2 | | | |
| | | 13:15 | 74.4 | 75.7 | 73.0 | | | |
| | | 13:20 | 73.7 | 74.7 | 72.3 | | | |
| | | 13:25 | 73.4 | 74.4 | 71.9 | | | |
| 22-May-14 | Cloudy | 13:20 | 72.1 | 73.3 | 70.9 | 71.9 | 74 | 71.9 Measured ≤ Baseline Level |
| | | 13:25 | 72.4 | 73.6 | 71.2 | | | |
| | | 13:30 | 71.8 | 72.8 | 70.7 | | | |
| | | 13:35 | 71.9 | 72.8 | 70.9 | | | |
| | | 13:40 | 72.0 | 73.1 | 71.0 | | | |
| | | 13:45 | 71.3 | 72.7 | 69.6 | | | |
| 29-May-14 | Sunny | 13:15 | 73.6 | 74.5 | 72.1 | 73.5 | 74 | 73.5 Measured ≤ Baseline Level |
| | | 13:20 | 73.8 | 71.6 | 72.7 | | | |
| | | 13:25 | 74.0 | 75.8 | 72.4 | | | |
| | | 13:30 | 73.4 | 74.4 | 72.4 | | | |
| | | 13:35 | 73.3 | 74.3 | 72.2 | | | |
| | | 13:40 | 73.0 | 74.0 | 71.9 | | | |

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 \leq Baseline Level, only Measured Level is presented on the graphical presentation.

| | | | |
|--|----------------|---------------------------|--|
| Title Shatin to Central Link – Contract 1107 Diamond Hill to Kai Tak Tunnels Graphical Presentation of Construction Noise Monitoring Results | Scale N.T.S | Project No. MA13018 | |
| | Date May 14 | Appendix F | |

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – SUMMARY OF EXCEEDANCE

Reporting Month: May 2014

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX H
SITE AUDIT SUMMARY

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

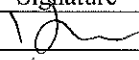

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|---------------------|
| Checklist Reference Number | 140502 |
| Date | 2 May 2014 (Friday) |
| Time | 9:00 – 10:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140502-O01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none">A hole observed on the ground connected to box culvert of Kai Tak Nullah. The Contractor is reminded to properly cover and block the hole to prevent silty runoff to the Nullah. | B 3 |
| 140502-R03 | <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none">Cover the stockpile of dusty material by impervious sheet. | C 6 |
| 140502-R02 | <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none">Properly display the noise label for air compressor at the storage area. <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.:140425), follow up actions are needed to be reviewed for items 140425-R02. | E 8 |

| | Name | Signature | Date |
|-------------|-------------|--|------------|
| Recorded by | Johnny Fung |  | 2 May 2014 |
| Checked by | Ivy Tam |  | 2 May 2014 |

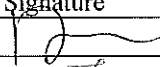

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|-----------------------|
| Checklist Reference Number | 140508 |
| Date | 8 May 2014 (Thursday) |
| Time | 9:00 – 11:00 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|-------------------------|
| 140508-O01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | |
| 140508-R02 | <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> Chemical container was observed without drip tray. The Contractor was reminded to provide a drip tray and store the chemical waste properly. To clear the stand water accumulated in drip trays of chemical containers and plants. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140502), all environmental deficiency was observed improved/rectified by the Contractor. | <p>F 10</p> <p>F 10</p> |

| | Name | Signature | Date |
|-------------|--------------------|--|------------|
| Recorded by | Johnny Fung |  | 8 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 8 May 2014 |

Shatin to Central Link -

Contract 1107 Diamond Hill to Kai Tak Tunnels

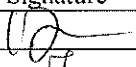

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|----------------------|
| Checklist Reference Number | 140516 |
| Date | 16 May 2014 (Friday) |
| Time | 14:00 – 15:00 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| 140515-R01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none">To repair the noise barrier near the air compressor near hoarding of Kai Ching Estate. <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none">No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none">Follow-up on previous audit section (Ref. No.:140508), all environmental deficiency was observed improved/rectified by the Contractor. | E 7 |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Johnny Fung |  | 16 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 16 May 2014 |

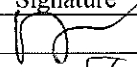

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|----------------------|
| Checklist Reference Number | 140523 |
| Date | 23 May 2014 (Friday) |
| Time | 15:00 – 16:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140523-R01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | E 7 |
| 140523-R02 | <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | E 8 |
| 140523-R03 | <p>Part D – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> Properly erect the noise barrier at hoarding near Kai Ching Estate Properly display the nose label for air-compressor a the storage area <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> To clear the oil stain on exposed area near a generator-set at storage area <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140516), follow up actions are needed to be reviewed for items 140516-R01. | F 9 |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Johnny Fung |  | 26 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 26 May 2014 |

*Shatin to Central Link -
Contract 1107 Diamond Hill to Kai Tak Tunnels*

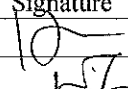

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|------------------------|
| Checklist Reference Number | 140529 |
| Date | 29 May 2014 (Thursday) |
| Time | 10:00 – 11:00 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|--------------------------|--|------------------|
| 140529-R03 140529-R01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part C – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Air Quality</p> <ul style="list-style-type: none"> Provide Water Spray to exposed area near pipe pile wall (down-track) area. To properly repair the power-pack to avoid black smoke emission. | D 5 D 15 |
| 140529-R02 | <p>Part E - Construction Noise Impact</p> <ul style="list-style-type: none"> To close the panel of the power-pack to reduce construction noise impact <p>Part F – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H - Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:140522), all environmental deficiencies were observed improved/rectified by the Contractor. | E 9 |

| | Name | Signature | Date |
|-------------|--------------------|--|-------------|
| Recorded by | Johnny Fung |  | 3 June 2014 |
| Checked by | Dr. Priscilla Choy |  | 3 June 2014 |

**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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 1. Review the investigation results submitted by the contractor; 2. Review and advise the ET and ER on effectiveness of the remedial measures proposed by the Contractor. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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, 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | | | | |
|---|---|--|--|---|
| <p>1.Exceedance for one sample</p> | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. |
| <p>2.Exceedance for two or more consecutive samples</p> | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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

| Ap[ri]A 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 |
|---|--------------------|--|--|---|-----------------------------|---------------------------------------|--|--------|
| <i>Landscape & Visual (Construction Phase)</i> | | | | | | | | |
| S6.12 | LV1 | <p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> 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. <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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 |
| | | | | | | | | ^ |
| | | | | | | | | ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|--|---|---|-----------------------------|--|---|--------|
| | | <p>be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system.</p> <ul style="list-style-type: none"> 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 | <p><u>Decorative Hoarding</u></p> <ul style="list-style-type: none"> 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. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> 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. <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006 | N/A |
| | | | | | | | | N/A |
| | | | | | | | | N/A |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[ri]A 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. | | | | | | |
| <i>Air Quality (Construction Phase)</i> | | | | | | | | |
| / | A1 | Emission from Vehicles and Plants <ul style="list-style-type: none"> • 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 | ^ |
| <i>Construction Dust Impact</i> | | | | | | | | |
| 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 | * |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 | <ul style="list-style-type: none"> 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 | Minimize dust impact at the nearby sensitive receivers | Contractor | All Construction Sites | Construction stage | <ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIA criteria | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|--|--|---|-----------------------------|---------------------------------------|--|---|
| | | <p>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;</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">^</p> <p style="text-align: right;">N/A</p> <p style="text-align: right;">N/A</p> |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|-------------|--------------|---|---|--------------------------------|--------------------------|---------------------------------|---|--|
| | | <ul style="list-style-type: none"> 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. | airborne noise | | Sites where practicable | stage | | * ^ ^ N/A ^ 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 | N/A |
| 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 | Screen the noisy plant items | Contractor | All Construction Sites | Construction stage | • Annex 5, TM-EIA | * |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|---|--------------------|---|--|---|--|---------------------------------------|--|--------|
| | | sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressor, generators and saw. | to be used at all 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), | 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 | ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[ri]A 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 |
|-----------------|--------------------|--|--|---|-----------------------------|---------------------------------------|--|--------|
| | | <p>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.</p> <ul style="list-style-type: none"> 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 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 | | | | | | ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|---|--|---|-----------------------------|---------------------------------------|--|---|
| | | <p>commencement of construction.</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: right;">^</p> <p style="text-align: right;">N/A</p> <p style="text-align: right;">*</p> <p style="text-align: right;">N/A</p> |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|---|--|---|-----------------------------|---------------------------------------|--|------------------------------|
| | | <p>or foundation excavations should be discharged into storm drains via silt removal facilities.</p> <ul style="list-style-type: none"> • 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 • 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 | | | | | | ^ * ^ ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[ri]A 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 |
|-----------------|--------------------|---|--|---|-----------------------------|---------------------------------------|--|---|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 | | | | | | <p>N/A</p> <p>^</p> <p>N/A</p> <p>^</p> |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|---|--|---|-----------------------------|---------------------------------------|---|---------------------------------------|
| | | <p>areas during the wet season (April to September) as far as practicable.</p> <ul style="list-style-type: none"> Adopt best management practices. | | | | | | ^ |
| S10.7.1 | W2 | <p><u>Tunneling Works</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN 1/94 TM-water TM-EIAO | <p>^</p> <p>^</p> <p>^</p> <p>N/A</p> |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[ri]A 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 | W3 | <u>Sewage Effluent</u> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water | ^ |
| S10.7.1 | W5 | <u>Accidental Spillage</u> In order to prevent accidental spillage of chemicals, the following is recommended: <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water | ^ ^ ^ N/A |
| Waste Management (Construction Waste) | | | | | | | | |
| S11.4.1.1 | WM1 | <u>On-site sorting of C&D material</u> | Separation of unsuitable | Contractor | All construction | Construction | • DEVB TC(W) No. | |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|---|--|---|-----------------------------|---------------------------------------|--|--------|
| | | <ul style="list-style-type: none"> 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. | rock from ending up at concrete batching plants and be turned into concrete for structural use | | sites | stage | 6/2010 | ^ |
| S11.5.1 | WM2 | <u>Construction and Demolition Material</u> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material | Good site practice to minimize the waste | Contractor | All construction sites | Construction stage | • Land (Miscellaneous | ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|--|---|---|-----------------------------|---------------------------------------|---|---|
| | | <p>for backfilling and reinstatement;</p> <ul style="list-style-type: none"> • 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 | <p>generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal</p> | | | | <p>Provisions) Ordinance</p> <ul style="list-style-type: none"> • Waste Disposal Ordinance • ETWB TCW No. 19/2005 | <p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> |
| S11.5.1 | WM3 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> • Standard formwork or pre-fabrication should be used as far as | <p>Good site practice to minimize the waste</p> | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> • Land (Miscellaneous | ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|---|---|---|-----------------------------|---------------------------------------|--|------------|
| | | <p>practicable in order to minimise the arising of C&D materials.</p> <p>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.</p> <p>The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</p> <ul style="list-style-type: none"> 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. <p>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.</p> | <p>generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal</p> | | | | <p>Provisions) Ordinance</p> <ul style="list-style-type: none"> Waste Disposal Ordinance ETWB TCW No.19/2005 | ^ |
| S11.5.1 | WM4 | <p><u>General Refuse</u></p> <ul style="list-style-type: none"> 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 | <p>Minimize production of the general refuse and avoid odour, pest and litter impacts</p> | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> Waste Disposal Ordinance | ^ ^ |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|---|--|---|-----------------------------|---------------------------------------|--|---------------------|
| | | <p>odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</p> <ul style="list-style-type: none"> 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. | | | | | | N/A ^ |
| S11.5.1 | WM6 | <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> 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 | Control the chemical waste and ensure proper storage, handling and disposal. | Contractor | All Construction Sites | Construction Stage | <ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | * ^ * |

SCL Works Contract 1107 - Environmental Mitigation Implementation Schedule

| Ap[riA 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 |
|----------------|--------------------|--|--|---|-----------------------------|---------------------------------------|--|--------|
| | | <p>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.</p> <ul style="list-style-type: none"> 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 2014

| 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 2) | | Chemical Waste | | Others, e.g. general refuse | |
| | (a) | | (b) | | (c) | | (d) | | (e=a-b-c-d) | | (in '000kg) | | (in '000kg) | | (in '000kg) | | (in '000kg) | | (in '000m ³) | |
| | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. | Est. | Act. |
| January | 5.500 | 5.330 | 0.000 | 0.000 | 0.000 | 0.000 | 2.500 | 1.840 | 3.000 | 3.49 | 0.000 | 0.000 | 0.100 | 0.158 | 0.100 | 0.810 | 0.000 | 0.108 | 0.100 | 0.040 |
| February | 5.500 | 2.685 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.660 | 5.500 | 2.025 | 1.000 | 2.660 | 0.100 | 0.230 | 1.000 | 0.650 | 0.000 | 0.000 | 0.100 | 0.015 |
| March | 8.400 | 5.945 | 0.000 | 0.000 | 0.000 | 0.000 | 4.000 | 3.145 | 4.400 | 2.800 | 0.000 | 0.000 | 0.100 | 0.135 | 0.000 | 0.000 | 0.000 | 0.000 | 0.100 | 0.025 |
| April | 4.400 | 4.025 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.670 | 4.400 | 1.355 | 5.000 | 5.950 | 0.100 | 0.000 | 0.000 | 0.000 | 0.100 | 0.000 | 0.100 | 0.025 |
| May | 8.400 | 2.740 | 0.000 | 0.000 | 0.000 | 0.000 | 4.000 | 1.810 | 4.400 | 0.930 | 0.000 | 0.000 | 0.100 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.100 | 0.040 |
| June | | | | | | | | | | | | | | | | | | | | |
| July | | | | | | | | | | | | | | | | | | | | |
| August | | | | | | | | | | | | | | | | | | | | |
| September | | | | | | | | | | | | | | | | | | | | |
| October | | | | | | | | | | | | | | | | | | | | |
| November | | | | | | | | | | | | | | | | | | | | |
| December | | | | | | | | | | | | | | | | | | | | |
| Total | 32.200 | 20.725 | 0.000 | 0.000 | 0.000 | 0.000 | 10.500 | 10.125 | 21.700 | 10.600 | 6.000 | 8.610 | 0.500 | 0.523 | 1.100 | 1.460 | 0.100 | 0.108 | 0.500 | 0.145 |

- 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 quantities of C&D Materials, in m³, was calculated by multiply the no. of truck with the volume of truck, which is 5m³.

**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 |
|----------|---------------|---------------------------------|----------------------|----------------------------------|-------------|
| -- | -- | -- | -- | -- | -- |

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 |
|----------|---------------|---------|--------|--|--|
| -- | -- | -- | -- | -- | -- |

Appendix H

**12th Monthly EM&A Report for Works Contract 1112 –
Hung Hom Station and Stabling Sidings**



12th Monthly EM&A Report for May 2014

Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings

June 2014

| | |
|-------------------------|---|
| Project/Deliverable No. | 7076187 D19/01 |
| Project Name | Shatin to Central Link – Works Contract 1112 Hung Hom Station and Stabling Sidings |
| Report Name | 12 th Monthly EM&A Report for May 2014 |
| Report Date | June 2014 |
| Report for | Leighton Contractors (Asia) Limited |

PREPARATION, REVIEW AND AUTHORISATION

| Revision # | Date | Prepared by | Reviewed by | Approved by |
|-------------|-----------|-------------|-------------|--------------|
| 1.0 (Draft) | June 2014 | Winnie MA | Vivian CHAN | Alexi BHANJA |
| 2.0 (Final) | June 2014 | Winnie MA | Vivian CHAN | Alexi BHANJA |
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| 4.0 (Final) | June 2014 | Winnie MA | Vivian CHAN | Alexi BHANJA |

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EXECUTIVE SUMMARY

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 12th monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 31 May 2014 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
- Setting up of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)

Landscape and Visual Monitoring

Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 12 and 22 May 2014. 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, 15, 21, 27 and 31 May 2014. 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

As advised by the Contractor, 66,030 kg of general refuse was generated from the Project and disposed of at NENT landfill. 501,450 kg of asphalt was recycled from the Project. A total of 5,767 m³ inert construction and demolition (C&D) materials were generated from the Project, where 516.5 m³ was imported from SCL 1111, 420.7 m³ was reused in the Contract, 1,998 m³ was reused in other projects, 3,648 m³ was disposed of at TM38 Public Fill, and 121 m³ was disposed of at TKO137 Public Fill. No chemical waste was disposed during the reporting month.

Environmental Auditing

A total of 5 weekly environmental site audits were conducted on 2, 8, 15, 22 and 29 May 2014. The IEC joint site audit was undertaken on 15 May 2014.

Compliant, Notification of Summons and Successful Prosecution

No complaint in relation to the environmental issues was recorded during the reporting period.

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)

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 February 2012. 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/E) was issued by Director of Environmental Protection (DEP) on 4 April 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 12th EM&A report which summarizes the monitoring results and audit findings during the reporting period from 1 to 31 May 2014.

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
- Setting up of Material Receiving Hopper at Hung Hom Freight Pier
- Marine transportation and disposal of spoil to designated dumping ground(s)

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 Patrick CHENG | 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 |
| 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/E | 4 Apr 2014 | - | Valid | EP for SCL (TAW-HUH) |
| Construction Noise Permit | | | | |
| GW-RE1332-13 | 04 Dec 2013 | 30 May 2014 | Valid until cancellation at 30 May 2014 | ADMS installations within rail areas |
| GW-RE1421-13 | 30 Dec 2013 | 29 Jun 2014 | Valid | Relocation of Over Head Line mast A0370 |
| GW-RE0238-14 | 10 Mar 2014 | 09 Sep 2014 | Valid | Generator for Intrafor office in barging point |
| GW-RE0273-14 | 17 Mar 2014 | 15 Jun 2014 | Valid | Installation for diversion of cooling water mains at SAT |
| GW-RE0322-14 | 03 Apr 2014 | 24 May 2014 | Valid until cancellation at 24 May 2014 | Delivery of heavy vehicles |
| GW-RE0326-14 | 06 Apr 2014 | 05 Oct 2014 | Valid | Concrete pouring under the podium |
| GW-RE0334-14 | 28 Mar 2014 | 27 Sept 2014 | Valid | Steel bar cutting, crimping & threading by BOSA |
| GW-RE0414-14 | 16 Apr 2014 | 16 Jul 2014 | Valid | ADMS installation under podium and in concourse level |
| GW-RE0422-14 | 17 Apr 2014 | 15 Jul 2014 | Valid | Pipe welding at SAT area and 24 hours pump |
| GW-RE0465-14 | 03 May 2014 | 03 Sep 2014 | Valid | Water mains connection |
| GW-RE0507-14 | 14 May 2014 | 13 Nov 2014 | Valid | Dewatering at HHS |

| Permit / Licence No. / Notification / Reference No. | Valid Period | | Status | Remark |
|--|--------------|-------------|----------------|--|
| | From | To | | |
| GW-RE0523-14 | 26 May 2014 | 12 Jul 2014 | Valid | Delivery of heavy vehicles |
| GW-RE0548-14 | 27 May 2014 | 10 Jul 2014 | Valid | Erection of 9m protection barrier for bored pile GP1 |
| GW-RE0553-14 | 27 May 2014 | 31 Jul 2014 | 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 | - |

3 ENVIRONMENTAL MONITORING 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) | 1941 |

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 - 1.7m³ 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 406cm²
- 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 m³/min, and complied with the range specified in the EM&A Manual (i.e. 0.6-1.7 m³/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 May 2014 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 | 14 May 2014 | Submitted |
| | EP-438/2012/E | 14 May 2014 | 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 12 and 22 May 2014. 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 ($\mu\text{g}/\text{m}^3$) | Range ($\mu\text{g}/\text{m}^3$) | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|-----|--------------------------------------|------------------------------------|---|--|
| AM2 | 27.9 | 10.9 – 62.2 | 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, 66,030 kg of general refuse was generated from the Project and disposed of at NENT landfill. A total of 5,767 m³ inert construction demolition (C&D) materials was generated from the Project, where 516.5 m³ was imported from SCL 1111, 420.7 m³ was reused in the Contract, 1,998 m³ was reused in other projects, 3,648 m³ was disposed of at TM38 Public Fill, 121 m³ was disposed of at TKO137 Public Fill. 501,450 kg of asphalt was collected by recycling contractor in the reporting month. No chemical waste was disposed and collected by licenced contractor in the reporting period. 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. 5 site audits were carried out on 2, 8, 15, 22 and 29 May 2014 during the reporting month. Representative of the IEC joined the site inspection on 15 May 2014. A summary of the implementation schedule of environmental mitigation measures is provided in *Appendix H*.

6.1.2 No EPD site inspection was conducted during the reporting month.

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 |
|----------------------|---|---------------|------------------|---|
| Landscape and Visual | N/A | N/A | N/A | N/A |
| Air Quality | Smoke emission was observed. The Contractor should ensure all site plant equipment being well maintained to prevent fume generation. | HUH | 17 April 2014 | The item was rectified by the Contractor on 2 May 2014. |
| | Insufficient water spraying system was provided for unloading of excavated material. The Contractor should provide effective measures to prevent dust generation. | Barging Point | 24 April 2014 | The item was rectified by the Contractor on 2 May 2014. |
| | Dry condition of haul road was observed. The Contractor should implement water spraying more frequently to prevent dust generation. | Barging Point | 2 May 2014 | The item was rectified by the Contractor on 8 May 2014. |
| | | SAT | 2 May 2014 | The item was rectified by the Contractor on 8 May 2014. |
| | Stockpile was observed without impervious sheeting cover. The Contractor should cover stockpile properly. | NAT | 29 May 2014 | The item will be followed up in the next reporting month. |
| Noise | The built-in-noise cover for air compressor was not used. The Contractor should close the acoustic cover when the air compressor is in operation | NAT | 29 May 2014 | The item will be followed up in the next reporting month. |

| Parameters | Description | Works Area | Observation Date | Status | |
|-----------------------------------|--|--|------------------|--|---|
| Water Quality | Inadequate runoff control measures were observed. The Contractor should provide effective runoff control measures to ensure no sand/silt entering the drainage system. | Barging Point | 24 April 2014 | The item was rectified by the Contractor on 2 May 2014. | |
| | | NAT | 8 May 2014 | The item was rectified by the Contractor on 15 May 2014. | |
| Waste/ Chemicals Management | Chemical containers or machinery equipment were observed without secondary containment. The Contractor should provide secondary containments to all chemical containers to prevent land contamination. | Barging Point | 24 April 2014 | The item was rectified by the Contractor on 2 May 2014. | |
| | | HUH | 15 May 2014 | The item was rectified by the Contractor on 22 May 2014. | |
| | | HUH beside E&M Worksh op | 15 May 2014 | The item was rectified by the Contractor on 22 May 2014. | |
| | | SAT | 15 May 2014 | The item was rectified by the Contractor on 22 May 2014. | |
| | | HHS | 22 May 2014 | The item was rectified by the Contractor on 29 May 2014. | |
| | | Oil stains were observed on bare ground. The Contractor should provide effective control measures to prevent ground contamination. | NAT | 8 May 2014 | The item was rectified by the Contractor on 15 May 2014. |
| | | Stacking of chemical containers was observed within a drip tray. The Contractor should properly store chemical containers to prevent land contamination. | SAT | 22 May 2014 | The item was rectified by the Contractor on 29 May 2014. |
| | | The drainage hole of drip tray for oil container was unplugged. The Contractor should plug the drainage hole to prevent oil leakage through drainage hole. | Barging Point | 29 May 2014 | The item will be followed up in the next reporting month. |

| Parameters | Description | Works Area | Observation Date | Status |
|---------------------|---|------------|------------------|--|
| Permits/ License | Updated Environmental Permit was not displayed at the entrance. The Contractor should display updated Environmental Permit on all vehicular site entrances/notice boards. | Gate 1 | 15 May 2014 | The item was rectified by the Contractor on 22 May 2014. |

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

6.1.4 Follow-up actions requested by Contractor's ET and IEC during the site inspection were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting period. Inspection for follow-up actions that are outstanding in the reporting month will be carried out in following inspections, until the corresponding action has been undertaken 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 No environmental related complaint was reported during the reporting month.

7.3.2 Cumulative statistics on environmental complaints is provided in *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)

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 June 2014 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 12th monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works carried out during the period from 1 to 31 May 2014.
- 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 There was no environmental complaint, prosecution or notification of summons received.
- 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

- Implement effective dust suppression measures for unloading of excavated material and haul road.
- Provide impervious sheeting to dusty stockpiles.
- Maintain all site plant equipment to function in good condition to prevent fume generation.

Airborne Noise Impact

- Ensure acoustic cover is being fully utilized during plant operation.

Water Quality Impact

- Provide effective mitigation measures to prevent surface runoff entering the drainage system.

Chemical and Waste Management

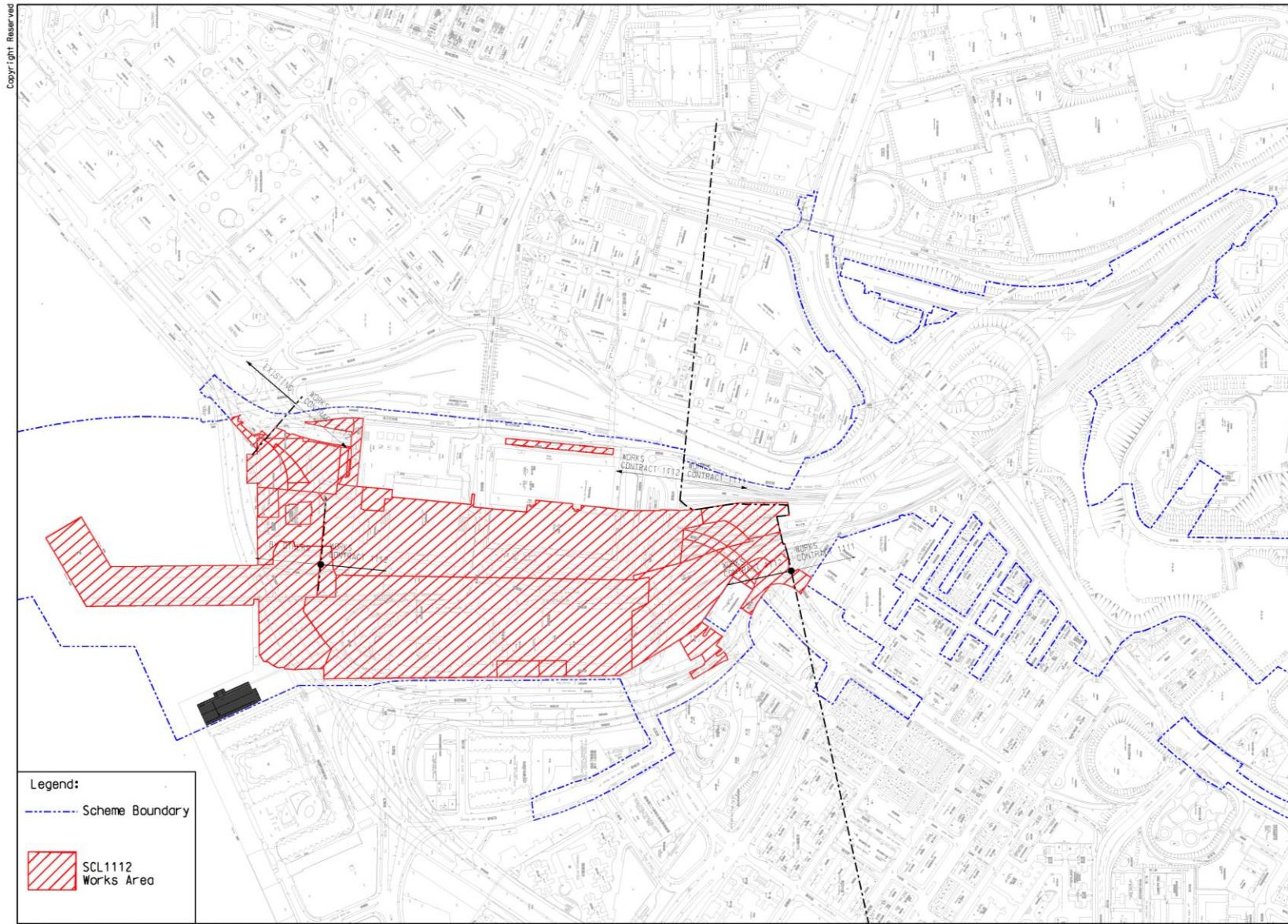
- Provide secondary containment with proper maintenance to prevent any possibility in contaminating the land.
- Enhance training on chemical handling to prevent oil spillage.

Permits/License

- Ensure an updated Environmental Permit is displayed at all vehicular site entrances/notice boards.

APPENDIX A

Project Works Boundary



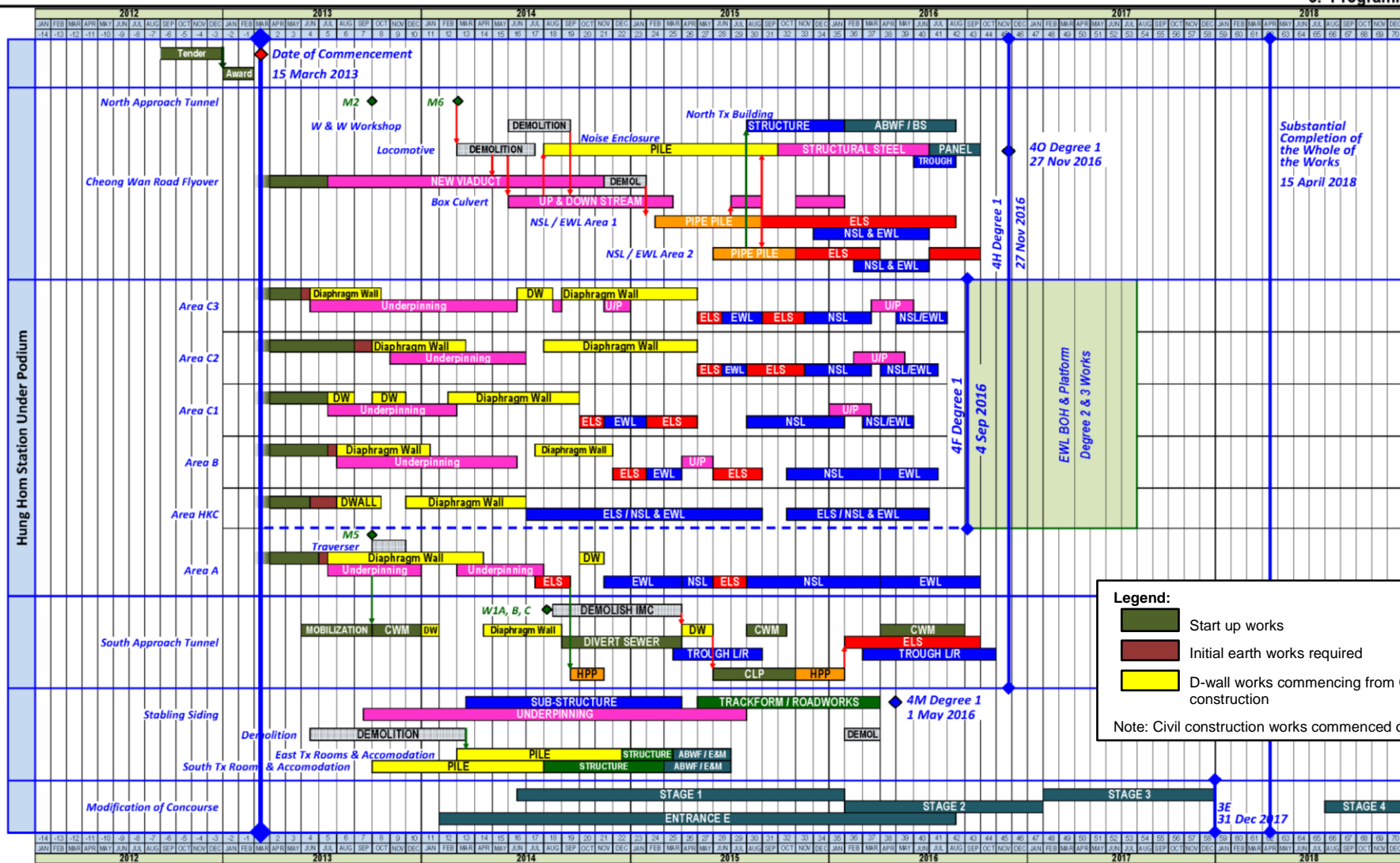
C:\SCL1112\To Albert\Basemap_TATICNP.dgn

03-Jul-13 1:4000(A3) CKL / ALBERT / TAT / HKW / SHEK

APPENDIX B

Construction Programme

3. Programme



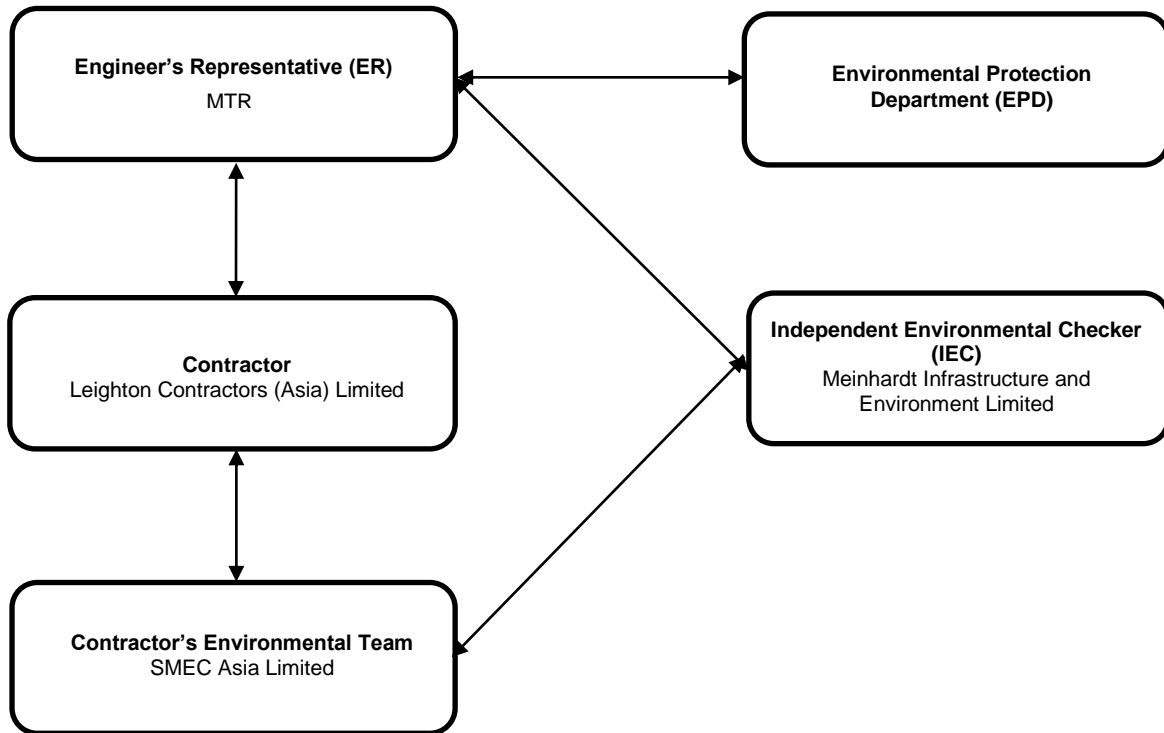
Legend:

- Start up works
- Initial earth works required
- D-wall works commencing from Guide wall construction

Note: Civil construction works commenced on 3 Jun 13

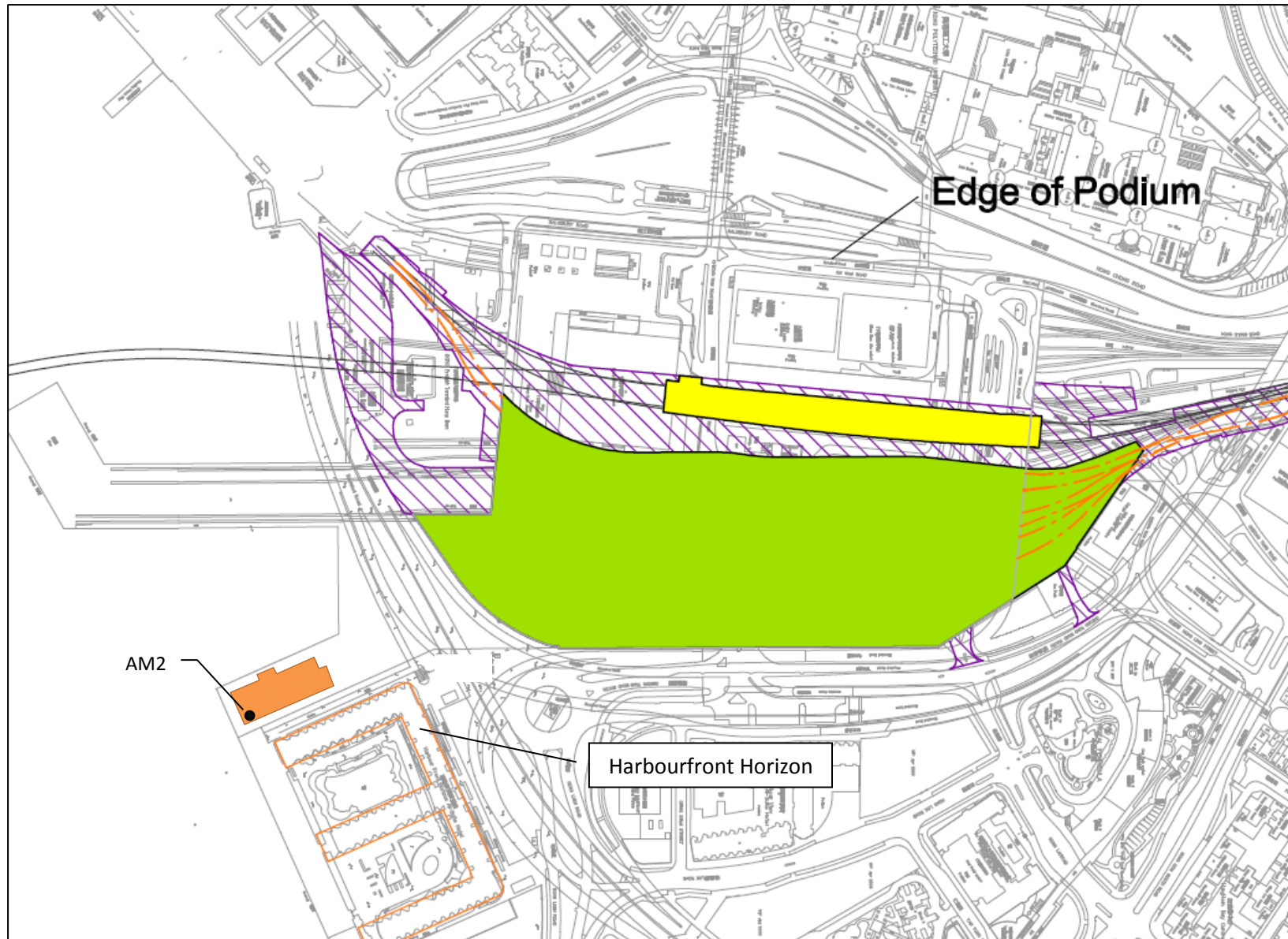
APPENDIX C

Project Organisation for Environmental Works



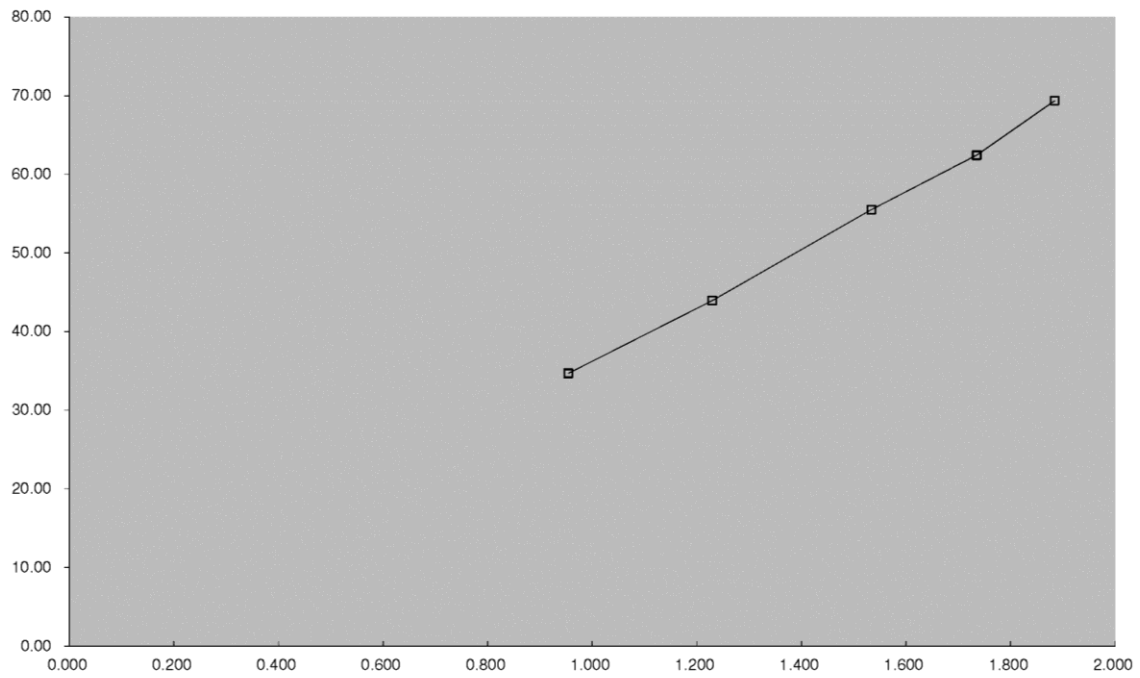
APPENDIX D

Location of Air Quality Monitoring Station



APPENDIX E

Calibration Certificates for Monitoring Equipment





TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 43002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX
 WWW.TISCH-ENV.COM

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

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

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

DATA TABULATION

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

CALCULATIONS

$$Vstd = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

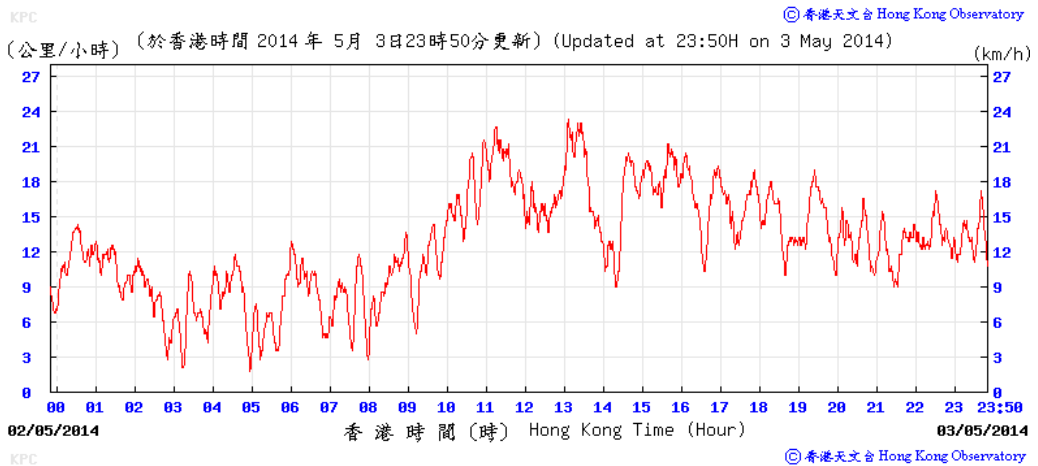
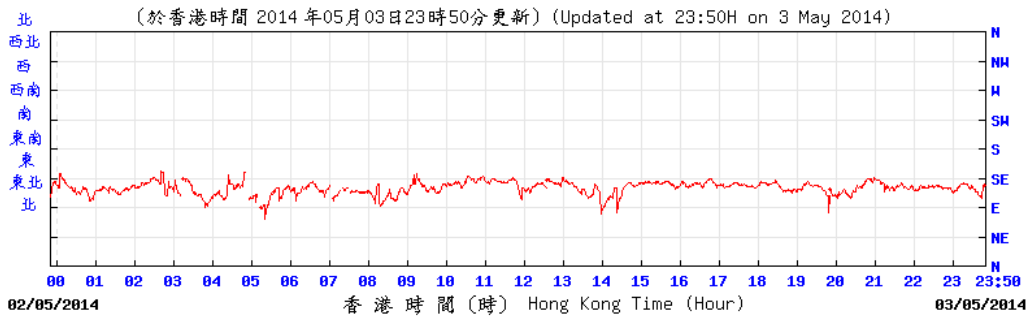
$$Qstd = 1/m \{ [\text{SQRT}(H2O(Pa/760)(298/Ta))] - b \}$$

$$Qa = 1/m \{ [\text{SQRT} H2O(Ta/Pa)] - b \}$$

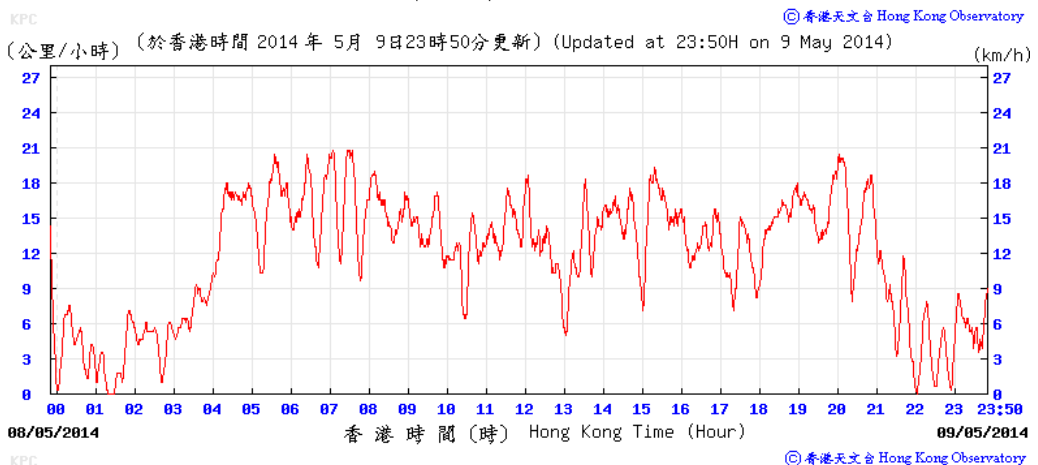
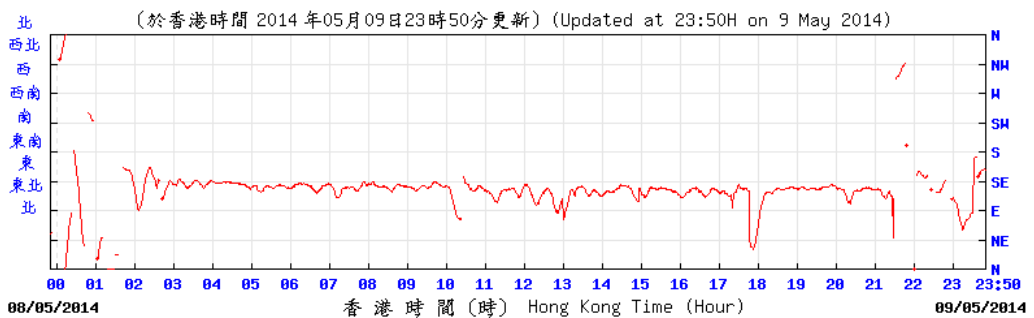
Appendix F

Wind Data

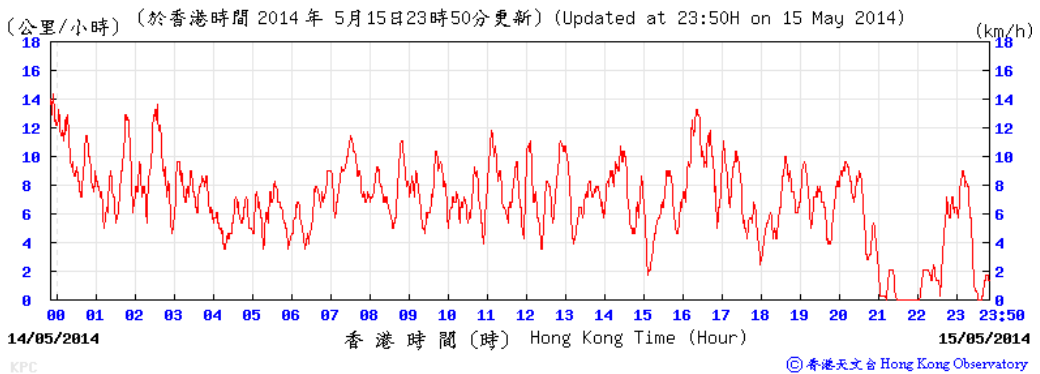
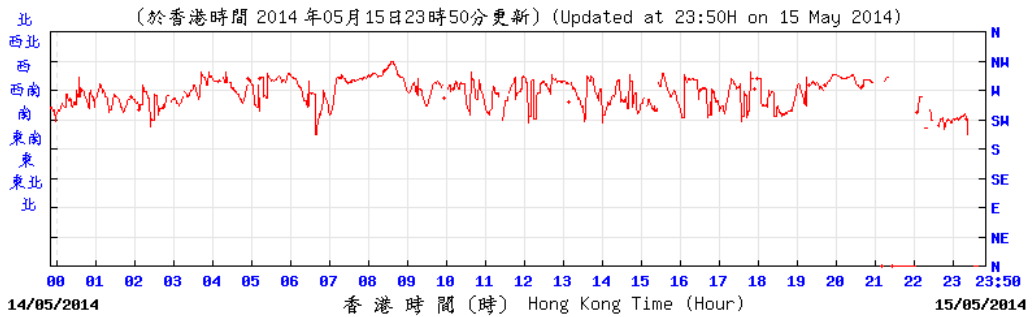
3 May 2014



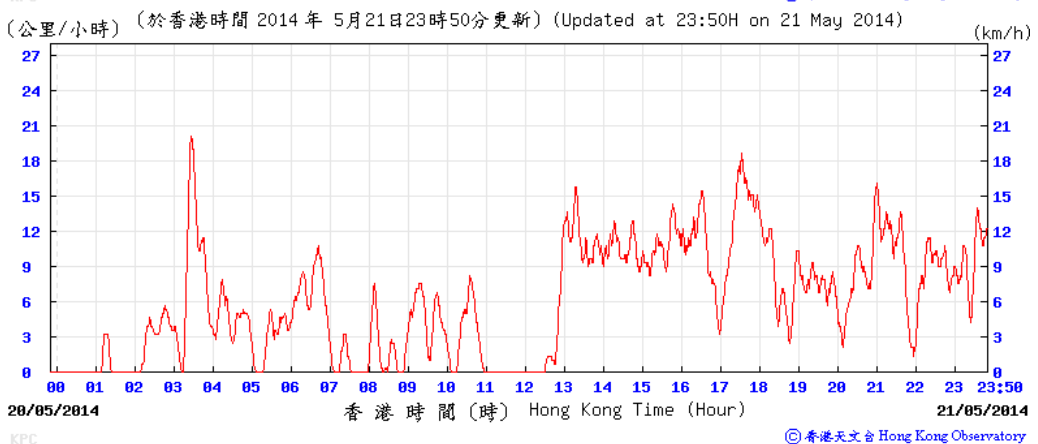
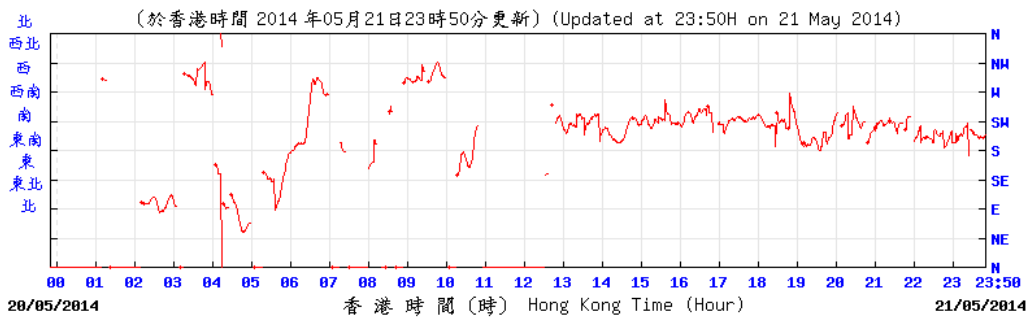
9 May 2014



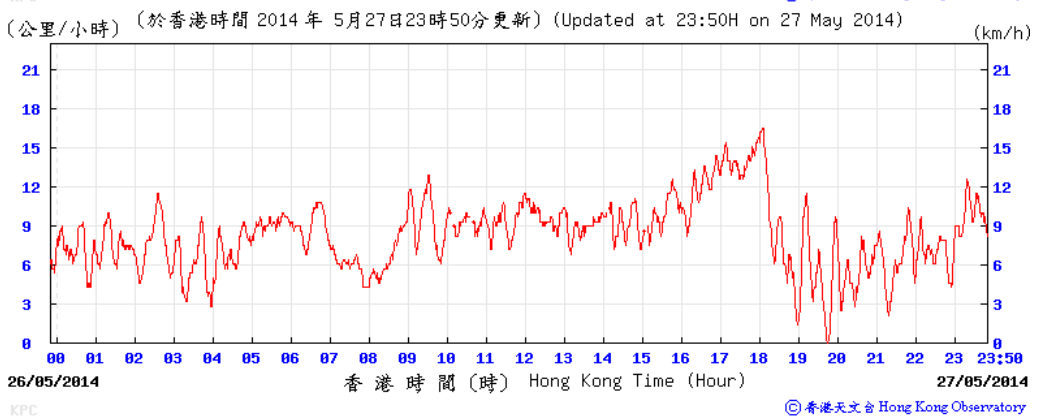
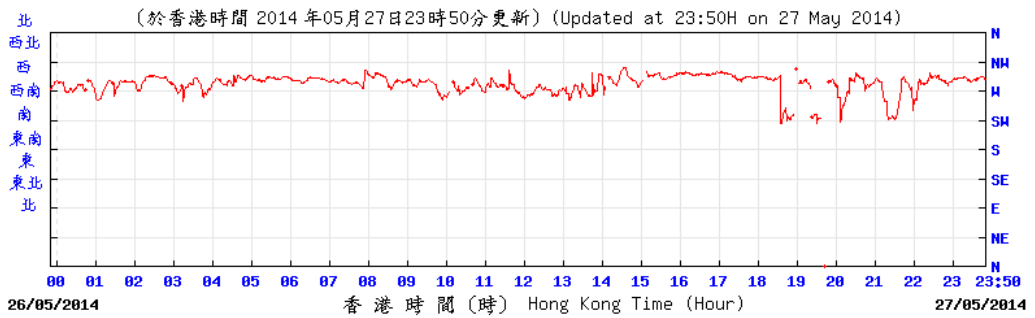
15 May 2014



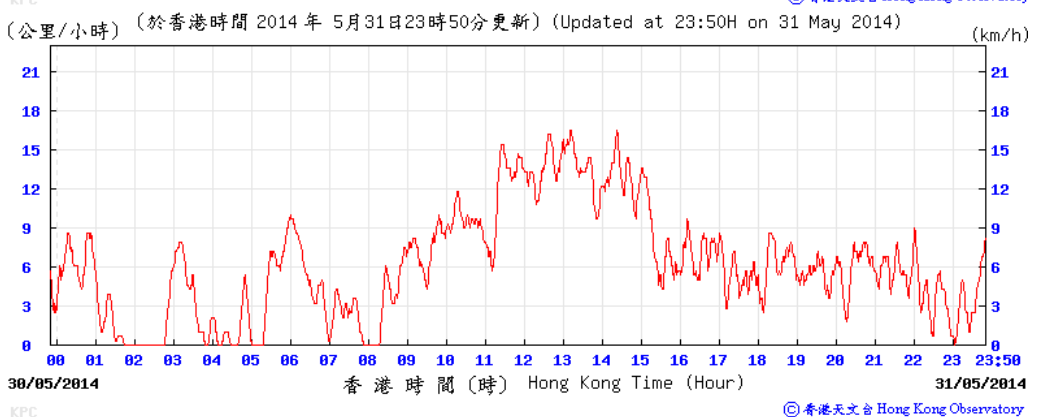
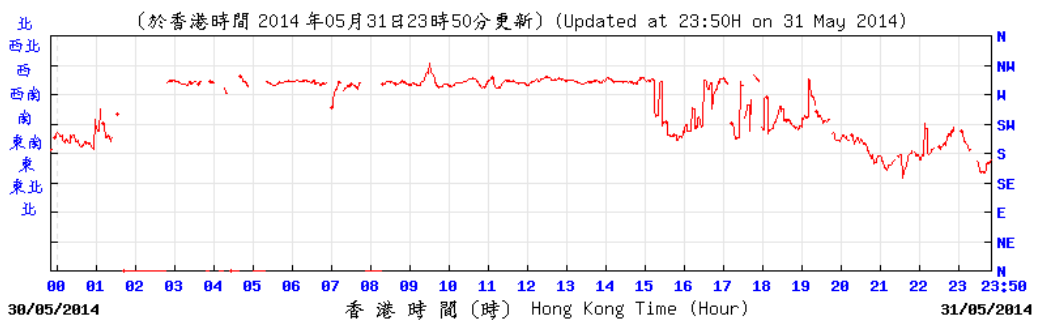
21 May 2014



27 May 2014



31 May 2014



Appendix G

Environmental Monitoring Programme

Environmental Monitoring Schedule for SCL1112 in May 2014

| 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 | 14 | 15 24 hr TSP | 16 | 17 |
| 18 | 19 | 20 | 21 24 hr TSP | 22 | 23 | 24 |
| 25 | 26 | 27 24 hr TSP | 28 | 19 | 30 | 31 24 hr TSP |

Environmental Monitoring Schedule for SCL1112 in June 2014

| 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 | | | | | |

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 | <p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of existing soil</u></p> <ul style="list-style-type: none"> 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. <p><u>No-intrusion zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of retained trees</u></p> <ul style="list-style-type: none"> 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 | <p><u>Decorative hoarding</u></p> <ul style="list-style-type: none"> 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. <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> 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. <p><u>Tree transplanting</u></p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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/m² 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. <ul style="list-style-type: none"> Vehicles leaving the barging facilities – vehicles would be required to pass through the wheel washing facilities to be provided at site exit. | | | | | | N/A |
| 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 | <ul style="list-style-type: none"> 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 |
|---|--|---|--------------------------------|--------------------------|---------------------------------|---|---|
| | <p>cutting, polishing or other mechanical breaking operation takes place will be sprayed with water or a dust suppression chemical continuously.</p> <ul style="list-style-type: none"> 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. | | | | | | <p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p> <p>^</p> |
| 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 | ^ |

| 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 |
|---|---|---|--------------------------------|--|---------------------------------|---|----------------------------|
| 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 | ^ |

| 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 |
|------------------------------------|---|--|--------------------------------|--|---------------------------------------|---|--------|
| | <ul style="list-style-type: none"> • 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 | ^ |



| 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 |
|--|---|--|--------------------------------|--|---------------------------------|--|--|
| 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 Noise 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> <ul style="list-style-type: none"> 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 0.1m³/s a sedimentation basin of 30m³ would be required and for a flow rate of 0.5m³/s the basin would be 150m³. 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 |
|----------|--|---|--------------------------------|--------------------------|---------------------------------|---|--|
| | <p>vegetated areas.</p> <ul style="list-style-type: none"> 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 50m³ 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 | | | | | | <p>^</p> <p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

| 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 |
|--------------------------------------|--|---|--------------------------------|--------------------------|---------------------------------|---|-------------------------------------|
| | <p>the oil interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> 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. | | | | | | <p>^</p> <p>*</p> <p>^</p> <p>^</p> |
| S10.7.1 of Ref. 1; S10.7.1 of Ref. 3 | <p><u>Tunnelling works</u></p> <ul style="list-style-type: none"> 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 | <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

| 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 |
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| S8.68 of Ref. 2; S10.7.1 of Ref. 1 | <p><u>Operation of Barging Facilities</u> The following good practice shall apply for the barging facilities operations:</p> <ul style="list-style-type: none"> 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 <i>construction runoff and site drainage</i> 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 | <p><u>Bentonite Slurries:</u></p> <ul style="list-style-type: none"> 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 | <p><u>Wastewater from Building Construction:</u></p> <ul style="list-style-type: none"> 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 | <p><u>Excavation Activities:</u></p> <ul style="list-style-type: none"> 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 | <p><u>Diaphragm Wall</u></p> <ul style="list-style-type: none"> 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 | <p><u>Sewage effluent</u></p> <p>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.</p> | 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 | <p><u>Groundwater seepage</u></p> <p>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</p> | To minimize groundwater quality impact from contaminated area | Contractor | Excavation areas where contamination is found. | Construction stage | WPCO TM-Water 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 |
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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 | <p><u>Accidental spillage</u> To prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> • 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 | ^ |

| 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 |
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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 | <p><u>Onsite sorting of C&D material</u></p> <p>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.</p> | 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 | <p><u>Construction and demolition material</u></p> <ul style="list-style-type: none"> 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 | ^ ^ ^ ^ ^ ^ ^ |

| 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 |
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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 | <p><u>C&D waste</u></p> <ul style="list-style-type: none"> 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 | <p><u>General refuse</u></p> <ul style="list-style-type: none"> 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 | ^ ^ ^ |

| 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 |
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| S11.5.1 of Ref.1; S9.84 – 9.93 of Ref. 2 | <p><u>Land-based sediment</u></p> <ul style="list-style-type: none"> 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 |

| 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 |
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| | <p>according to the Water Pollution Control Ordinance (WPCO).</p> <ul style="list-style-type: none"> 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. | | | | | | <p>^</p> <p>N/A</p> <p>N/A</p> |
| <p>S11.5.1 of Ref.1; S8.94 – 9.97 of Ref. 2; S11.5.1 of Ref. 3</p> | <p><u>Chemical waste</u></p> <ul style="list-style-type: none"> 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 | <p>Control the chemical waste and ensure proper storage, handling and disposal.</p> | <p>Contractor</p> | <p>All construction sites</p> | <p>Construction stage</p> | <p>Waste Disposal (Chemical Waste) General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</p> | <p>^</p> <p>^</p> <p>^</p> |

| 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 |
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| | <p>arranged so that incompatible materials are adequately separated.</p> <ul style="list-style-type: none"> 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 | <p><u>Asbestos wastes</u></p> <ul style="list-style-type: none"> 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 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 |
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| Land Contamination | | | | | | | |
| S10.24 – 10.34 of Ref 2 | <p><u>Precautionary measures</u></p> <ul style="list-style-type: none"> • 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 of contamination during construction | Contractor | All construction sites | Construction stage | <p>“Guidance Note for Contaminated Land Assessment and Remediation”</p> <p>“Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management”</p> | <p>^</p> <p>^</p> |
| S10.35 of Ref 2 | <ul style="list-style-type: none"> • 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 | <p>“Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair /Dismantling Workshop”</p> | <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> |

| 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 |
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| | <p>sources of ignition or oxidisable items. Handling will be undertaken by personnel with appropriate training and Personal Protective Equipment</p> <ul style="list-style-type: none"> • 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 ^ ^ ^ |
| S10.36 of Ref 2 | <p>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:</p> <p>Set up a list of safety measures for site workers.</p> <p>Provide written information and training on safety for site workers.</p> <p>Keep a log-book and plan showing the contaminated zones and clean zones.</p> <p>Maintain a hygienic working environment.</p> <p>Avoid dust generation.</p> <p>Provide face and respiratory protection gear to site workers.</p> <p>Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers.</p> <p>Provide first aid training and materials to site workers.</p> | 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 | <p>“Guidance Note for Contaminated Land Assessment and Remediation”</p> <p>“Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management</p> <p>“Occupation Safety and Health Ordinance (Chapter 509)”</p> | ^ |
| EM&A Project | | | | | | | |
| S14.2 – 14.4 of Ref. 1; S13.2 – 13.4 | <ul style="list-style-type: none"> • An Environmental Team needs to be employed as per this EM&A Manual. • Prepare a systematic EMP to ensure effective implementation of the | Perform environmental monitoring & auditing | Contractor | All construction sites | Construction stage | EIAO Guidance Note Ref4/2010 | ^ |

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| of Ref. 3 1. | mitigation measures. <ul style="list-style-type: none"> An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in this EM&A Manual are fully complied with. | | | | | EIAO-TM | |

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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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

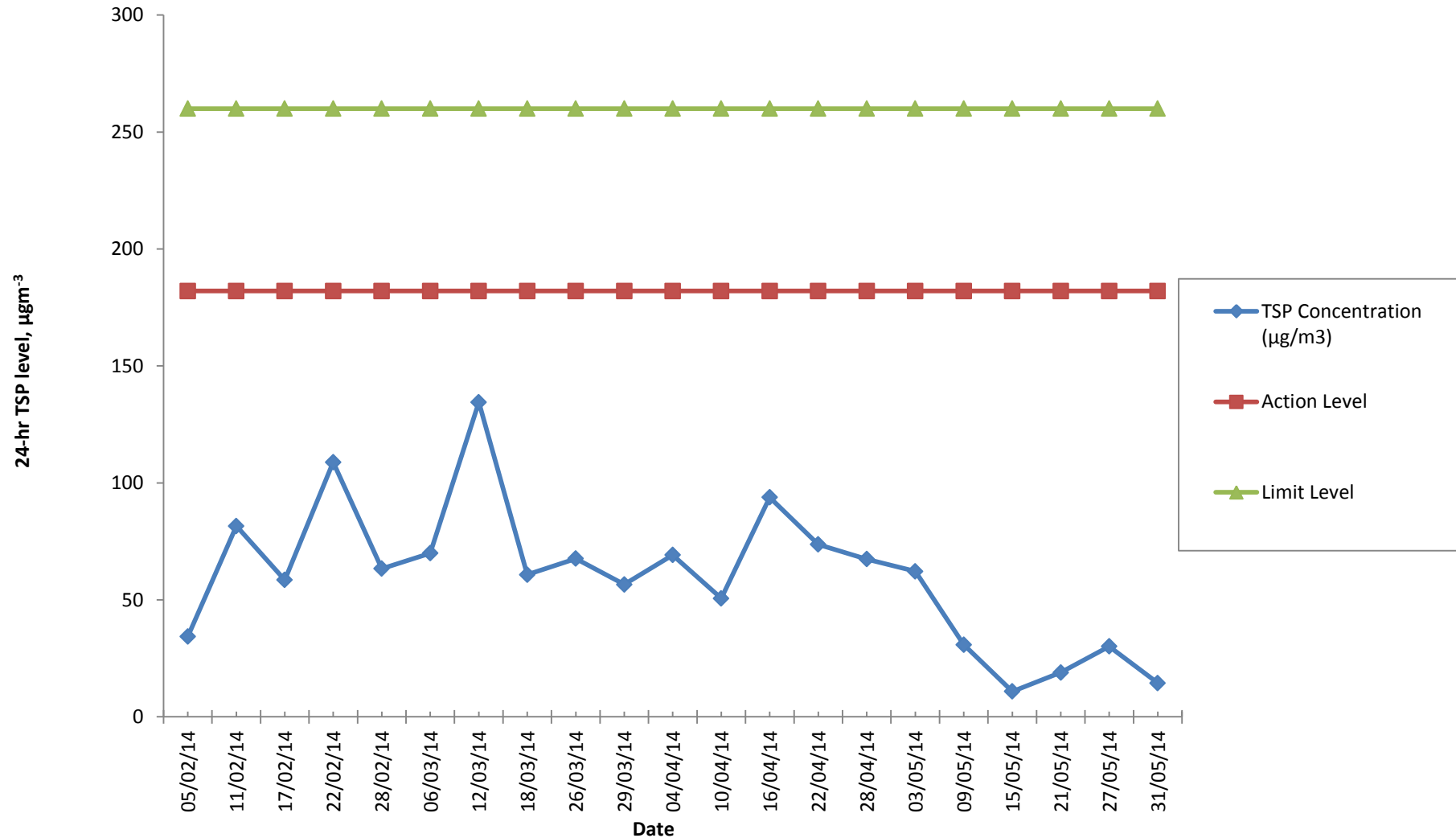
APPENDIX J

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/m ³) | Weather | Reference |
|---------------|------------------|-------------|-----------|-------------|-------------|----------|---------------|-----------------|-------|---------------|--------------------------------|--|---------|-----------|
| | Paper No. | Initial Wt. | Final Wt. | Wt. of dust | Initial | Final | Sampling Hour | Initial | Final | Avg Flow Rate | | | | |
| 03/05/14 | 20 | 2.6960 | 2.7974 | 0.1014 | 11055.30 | 11079.30 | 24.00 | 40 | 40 | 40 | 1631.05 | 62.2 | Cloudy | - |
| 09/05/14 | 25 | 2.6948 | 2.7451 | 0.0503 | 11079.30 | 11103.30 | 24.00 | 40 | 40 | 40 | 1631.05 | 30.8 | Rainy | - |
| 15/05/14 | 26 | 2.7506 | 2.7683 | 0.0177 | 11103.30 | 11127.30 | 24.00 | 40 | 40 | 40 | 1631.05 | 10.9 | Rainy | - |
| 21/05/14 | 27 | 2.7248 | 2.7557 | 0.0309 | 11127.30 | 11151.30 | 24.00 | 40 | 40 | 40 | 1631.05 | 18.9 | Rainy | - |
| 27/05/14 | 20 | 2.6975 | 2.7466 | 0.0491 | 11151.30 | 11175.30 | 24.00 | 40 | 40 | 40 | 1631.05 | 30.1 | Sunny | - |
| 31/05/14 | 29 | 2.6899 | 2.7134 | 0.0235 | 11175.30 | 11199.30 | 24.00 | 40 | 40 | 40 | 1631.05 | 14.4 | Cloudy | - |

Construction Dust Monitoring 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 | |
| | Total Quantity Generated | Hard Rock and Broken Concrete | Imported from other Projects | 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 ^[Note 2] |
| Unit | (in '000m ³) | (in '000m ³) | (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 '000Kg) | (in '000Kg) |
| Jun-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137.3 | 0 | 0 | 0 | 0 | 6.55 |
| Jul-13 | 0.36 | 0 | 0 | 0 | 0 | 0 | 0 | 0.36 | 365.34 | 0 | 0 | 0 | 0 | 16.87 |
| Aug-13 | 1.68 | 0 | 0 | 0 | 0 | 0.05 | 0 | 1.63 | 69.98 | 0.25 | 0 | 0 | 0 | 12.67 |
| Sep-13 | 3.39 | 0 | 0 | 0 | 0 | 0.20 | 0 | 3.19 | 131.18 | 0.22 | 0 | 0.46 | 0 | 16.25 |
| Oct-13 | 4.04 | 0 | 0 | 0 | 0 | 0.78 | 0 | 3.26 | 179.97 | 0.63 | 8.28 | 2.04 | 0 | 39.87 |
| Nov-13 | 6.09 | 0 | 0 | 0 | 0 | 2.09 | 0.18 | 3.82 | 125.70 | 0.45 | 160.35 | 0 | 0 | 28.69 |
| Dec-13 | 5.69 | 0 | 0 | 0 | 0 | 1.74 | 0.01 | 3.94 | 72.15 | 0.39 | 4.13 | 0 | 0 | 18.04 |
| Jan-14 | 4.58 | 0 | 0 | 0 | 0 | 0 | 0.27 | 4.31 | 117.57 | 0.26 | 147.67 | 0.26 | 0 | 30.09 |
| Feb-14 | 3.80 | 0 | 0 | 0 | 0.14 ^[Note3] | 0 | 0.19 | 3.46 | 28.32 | 0.29 | 414.67 | 0 | 0 | 15.73 |
| Mar-14 | 10.10 | 0 | 0 | 0 | 6.18 ^[Note4] | 0 | 0.29 | 3.63 | 46.09 | 0.25 | 0 | 0 | 0 | 47.76 |
| Apr-14 | 6.67 | 0 | 0 | 0 | 4.82 ^[Note5] | 0 | 0.0053 | 1.85 | 0 | 0.23 | 1,322.39 | 0 | 0.2 | 78.63 |
| May-14 | 5.77 | 0 | 0.52 ^[Note7] | 0.42 | 2.00 ^[Note6] | 0 | 0.12 | 3.65 | 0 | 0 | 501.45 | 0 | 0 | 66.03 |
| TOTAL | 52.17 | 0 | 0.52 | 0.42 | 13.13 | 4.85 | 1.07 | 33.11 | 1273.59 | 2.98 | 2558.94 | 2.76 | 0.2 | 377.18 |

Note:

1. Assume the density of fill is 2 ton/m³.
2. Refuses disposed of at NENT landfill.
3. 137 m³ of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904.
4. 267 m³ of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904;
 3,998 m³ 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 m³ 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.
5. 1,728 m³ 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 m³ 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.

6. 184 m³ of the Inert C&D materials were reused in South Island Line (SIL) Project Contract 904; and
1814 m³ 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.
7. 516 m³ of the Inert C&D materials were imported from Shatin to Central Link (SCL) Project Contract 1111.

APPENDIX L

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

| | Date Received | Subject | Status | Total no. received in this month | Total no. recorded since project commencement |
|--------------------------|---------------|---------|--------|----------------------------------|---|
| Environmental complaints | - | - | - | 0 | 0 |
| Notification of summons | - | - | - | 0 | 0 |
| Successful Prosecution | - | - | - | 0 | 0 |

Appendix I

**12th 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. 12

[Period from 1 to 31 May 2014]

Works Contract 1108 – Kai Tak Station and
Associated Tunnels

(June 2014)

Certified by: Goldie Fung 

Position: Environmental Team Leader

Date: 12 June 2014

Kaden – Chun Wo Joint Venture (KCJV)

Shatin to Central Link –

Contract 1108

Kai Tak Station and Associated Tunnels

Monthly Environmental Monitoring & Auditing Report for

May 2014

The Contents of this report have been certified by:



Ms. Goldie Fung
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Executive Summary

This is the twelfth 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 May 2014 to 31st May 2014.

Summary of the Construction Works undertaken during the Reporting Month

The major site activities in this reporting period were including:

- Shotcreting on excavated slope
- Excavation ongoing
- Breaking of existing underground boulder in progress
- Pumps test for Stage 3 excavation at KAT
- Disposal of marine deposit
- Station structure: track slab concreting, track slab rebar fixing, formwork erection
- Shotcreting and excavation to base slab in progress
- Head wall sheet pile for launching shaft
- Protective grout for FKCP piles

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, 39,284 m³ of type 1 marine mud was generated during this reporting month and were disposed to the receiving facility of Contract 1108A. 26,838.71m³ of inert C&D materials were generated and were disposed to the receiving facility of Contract 1108A. 135.14 m³ of general refuse were generated and disposed at landfill site. 48 kg of paper and 46,620 kg of metals were sent to recyclers for recycling. 260 kg of chemical waste was generated and collected by licensed collector.

Environmental Site Inspection

Joint weekly inspections were conducted by representatives of the Contractor, Engineer and ET on 7th, 16th, 20th, and 27th May 2014. The representative of the IEC jointed the site inspection on 20th May 2014. Details of the audit findings and implementation status are presented in Section 6.

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

No breaches of Action and Limits levels, non-compliance event, environmental complaint, 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:

- Shotcreting at excavated slope
- Excavation down to formation level
- Shoring erection on going
- Station structure: track slab concreting, track slab rebar fixing, formwork erection
- Jet grouting work

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 twelfth monthly EM&A Report which summarises the audit findings for the EM&A programme during the reporting period from 1st May 2014 to 31st May 2014.

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**.

- Shotcreting on excavated slope
- Excavation ongoing
- Breaking of existing underground boulder in progress
- Pumps test for Stage 3 excavation at KAT
- Disposal of marine deposit
- Station structure: track slab concreting, track slab rebar fixing, formwork erection
- Shotcreting and excavation to base slab in progress
- Head wall sheet pile for launching shaft
- Protective grout for FKCP piles

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/E | 04/04/2014 | 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-RE0002-14 | 01/03/2014 | 30/08/2014 | Valid | / |
| Construction Noise Permit for General Works | | | | |
| GW-RE1383-13 | 19/12/2013 | 12/06/2014 | Invalid | / |
| GW-RE0046-14 | 17/01/2014 | 14/07/2014 | Valid | / |
| GW-RE0246-14 | 15/03/2014 | 14/09/2014 | Valid | / |
| GW-RE0308-14 | 22/03/2014 | 20/09/2014 | Valid | / |
| GW-RE0460-14 | 27/04/2014 | 26/10/2014 | Valid | / |
| GW-RE0583-14 | 30/05/2014 | 21/11/2014 | Valid | Supersede the permit (GW-RE1383-13) |
| Effluent Discharge License | | | | |
| WT00018268-2014 | 17/03/2014 | 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 | / |
| Marine Dumping Permit | | | | |
| EP/MD/14-077 | 27/11/2013 | 26/05/2014 | Expired | Permit held by C1108A |
| EP/MD/15-003 | 25/04/2014 | 24/05/2014 | Expired | Permit held by C1108A |
| EP/MD/15-021 | 27/05/2014 | 26/11/2014 | Valid | Permit held by C1108A |

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 | Eleventh Monthly EM&A Report | 14 th May 2014 |

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. 39,284m³ of type 1 marine mud was disposed to the Contract 1108A receiving facility in this reporting month. The inert C&D materials were disposed to the Contract 1108A receiving facility. The general refuse was disposed to designated landfill site. Paper and metals were sent to recycler for recycling. Chemical waste generated was collected by licensed collector. No plastics were recycled during this reporting month. 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 |
| May 2014 | 26,838.71 m ³ | 135.14 m ³ | 260 kg | 48 kg | 0 kg | 46,620 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 7th, 16th, 20th, and 27th May 2014. The representative of the IEC joined the site inspection on 20th May 2014. The details of observations during site audit can refer to Table 6.1.

No inspection was conducted by EPD during 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 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 | 29 Apr 14 | The water spraying was insufficient to covering entire stockpile at Area 2. | Contractor was reminded to provide additional water sprayers to maintain the entire surface of the stockpile wet. | Additional water sprayers were provided for the stockpile to maintain the entire surface of the stockpile wet. | 7 May 14 | / |
| | 29 Apr 14 | The haul road of Area 2 was dry. | Contractor was reminded to provide sufficient watering to the exposed area for dust suppression. | Watering was provided to the exposed area at Area 2 for dust suppression. | 7 May 14 | / |
| | 20 May 14 | Improper enclosures were observed for the cement mixing for Area | Contractor was advised to properly erect the enclosure with impervious sheeting for | The tarpaulins of the enclosures for the cement mixing at Area 1 & 3 | 27 May 14 | / |

| Parameters | Date | Findings | Advice from ET | Action taken | Closing date | Remarks |
|-----------------------------|-----------|---|--|--|--------------|---------|
| | | 1 & 3. | dust screening. | were fixed for dust screening. | | |
| | 27 May 14 | Black smoke was observed to be emitted from a power generator at Area 2 intermittently. | Contractor was reminded to provide regular maintenance for machinery to avoid air pollution. | Follow up actions will be reported in next month. | N/A | / |
| Water Quality | 16 May 14 | Discharge of silty runoff into the nullah was observed. | Contractor was advised to direct the collected runoff to wastewater treatment facility for treatment before discharge. | The runoff collected from Area 3 was directed to sedimentation tank for proper treatment before discharge into the nullah. | 20 May 14 | / |
| | 20 May 14 | The effluent discharged into the nullah from the de-silting tank at Area 2 was silty. | Contractor was advised to provide adequate treatment for site water before discharge and ensure the effluent quality complies with the discharge licence conditions. | Adequate wastewater treatment for site water before discharge was provided. The effluent was de-silted and clean. | 27 May 14 | / |
| Waste / Chemical Management | N/A | N/A | N/A | N/A | N/A | / |
| 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

No environmental project-related complaint was received in the reporting month.

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:

- Shotcreting at excavated slope
- Excavation down to formation level
- Shoring erection on going
- Station structure: track slab concreting, track slab rebar fixing, formwork erection
- Jet grouting work

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 twelfth monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during 1st May 2014 to 31st May 2014 in accordance with the EM&A Manual and the requirement under EP-438/2012/E.

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.

No exceedances, non-compliance event, complaint 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:

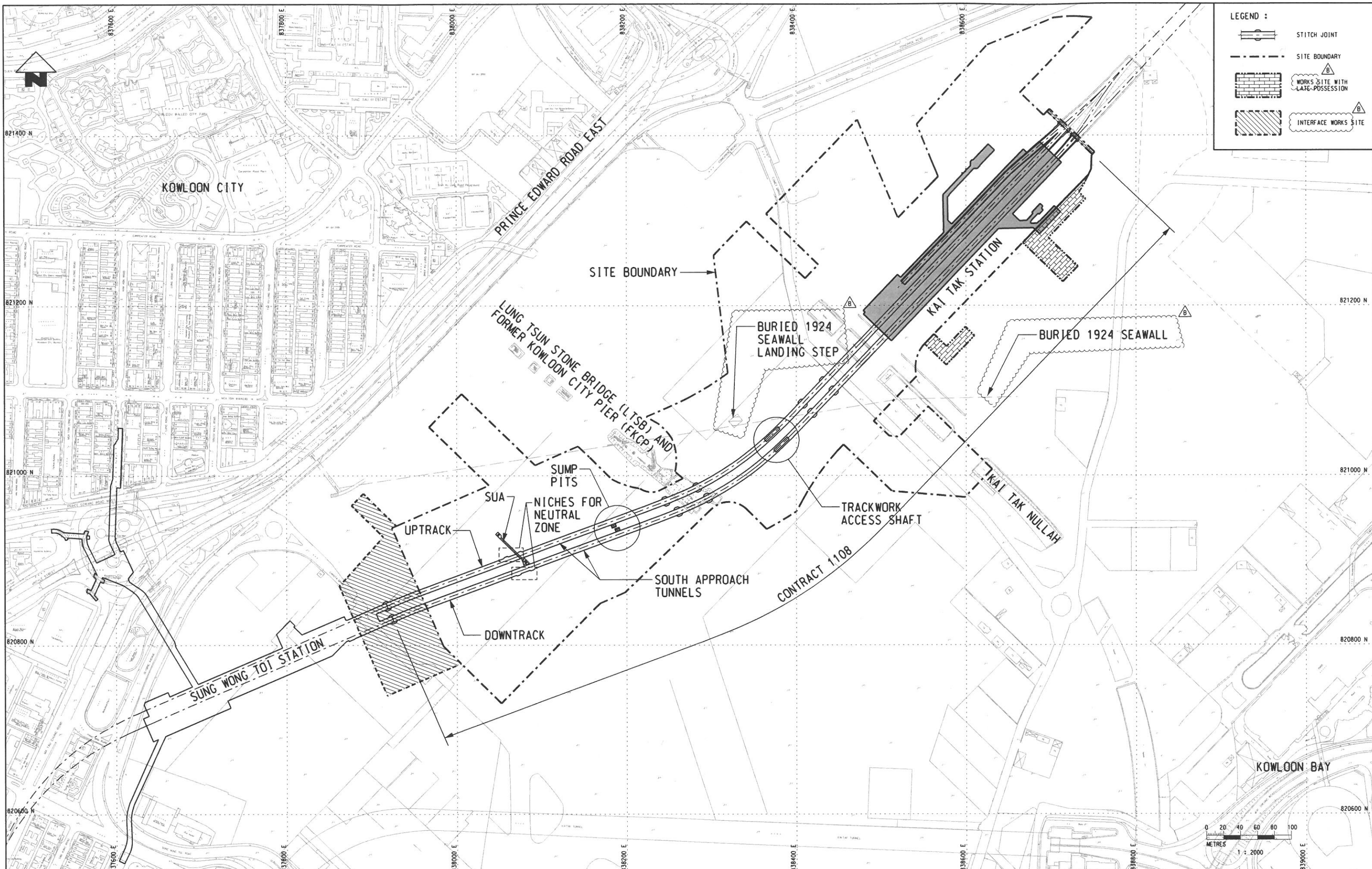
Dust Impact

- Provide proper enclosure for the cement production area for dust screening
- Provide regular maintenance of machinery to avoid emission of dark smoke

Water Quality Impact

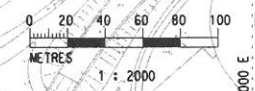
- Direct contaminated site water and runoff to wastewater treatment facilities with sufficient capacity prior to discharge

Appendix A – Site Location Plan



LEGEND :

- STITCH JOINT
- SITE BOUNDARY
- WORKS SITE WITH LATE POSSESSION
- INTERFACE WORKS SITE



| | | | | | | | | | |
|-----|------------------|----|-----------|---|-----|--|----|--|----------|
| | | | | DRAWN TWY DESIGNED CC CHECKED NN APPROVED FK DATE 31 JAN 12 | | | | SHATIN TO CENTRAL LINK CONTRACT 1108 KAI TAK STATION AND ASSOCIATED TUNNELS GENERAL CIVIL WORKS LOCATION PLAN | |
| | | | | ORIGINATOR Meinhardt (Hong Kong) Ltd. Consulting Engineers 邁遜(香港)工程顧問有限公司 | | in association with Aedas, Mott MacDonald, MVA, DLS, Wilkinson Murry, Evans & Peck, AA | | SCALE 1:2000 @ A1 DRAWING NO. 1108/T/340/MHK/C01/201 REV. B | |
| REV | DESCRIPTION | BY | DATE | APPROVED | REV | DESCRIPTION | BY | DATE | APPROVED |
| B | ISSUE FOR TENDER | CC | 31 AUG 12 | FK | CC | 31 JAN 12 | FK | | |
| A | ISSUE FOR TENDER | CC | 31 JAN 12 | FK | | | | | |

CADD REF. 1108_T_340_MHK_C01_2018.dgn

Appendix B – Construction Programme

| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | | June | | | | July | | | | August | | | | September | |
|---|---|---------------------|-------------|-------------|-----|----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|
| | | | | | 14 | | | | | 15 | | | | 16 | | | | 17 | | | | 18 | |
| | | | | | 08 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 |
| Contract 1108 Kai Tak Station and Associated Tunnels | | | | | | | | | | | | | | | | | | | | | | | |
| Contractual Dates and Project Key Dates | | | | | | | | | | | | | | | | | | | | | | | |
| Contractual Dates | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CD1-COMM | Date for Commencement (25-Apr-13) | 100% | 25-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| IPS Milestone Dates | | | | | | | | | | | | | | | | | | | | | | | |
| Cost Centre A - Preliminaries | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.MSA01 | A1 - Complete haul/access road, Access for Interface/Designated/CEDD Contractor to KT Barging Facility (WN.22/13,02-Jun | 100% | 02-Jun-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MSA02 | A2-Approval of Submissions:EMP(G5.1.10),QP(G9.2.1), MC(G12.1.1),SS(G12.11.1),SARMP(P25.3.1),DSCP(AppQ) WN28 | 100% | 14-Jul-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MSA03 | A3 - Approval of Preliminary Master Programme, Time Chainage Programme, Health & Safety Plan, (Wk.No.37/13, 15-Sep | 100% | 17-Oct-13 A | | | | | | | | | | | | | | | | | | | | |
| Cost Centre B - Kai Tak Station, Entrances and Adits | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.MSB01 | B1 - Pump test completed, accepted by Engineer & ready for open cut excavation of KAT station (Week No.36/13, 8-Sep-1 | 100% | 22-Oct-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MSB02 | B2 - Complete 30% of open cut excavation of KAT station (Week No. 45/13, 10-Nov-13) | 100% | 13-Dec-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MSB03 | B3 - Complete 50% of open cut excavation of KAT station (Week No. 11/14, 16-Mar-14) | 100% | 16-Mar-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MSB04 | B4 - Complete excavation down to station formation level (Week No. 48/14, 30-Nov-14) | 0% | 04-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| Cost Centre C - South Approach Tunnel | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.MSC01 | C1 - Pump test completed, accepted by Engineer & ready for open cut excavation (Week No. 38/13, 22-Sep-13) | 100% | 11-Mar-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MSC03a | C3 - Complete 50% excavation by volume to tunnel formation levels (Week No. 15/14, 13-Apr-14) | 0% | 25-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| Programme Data | | | | | | | | | | | | | | | | | | | | | | | |
| Interface with Contract 1107 | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.PD4-IF1107.1 | Contract 1107 Provide access to Contract 1108 at interface area for ELS Works (Week No. 52/13, 29-Dec-13) | 100% | 27-Dec-13 A | | | | | | | | | | | | | | | | | | | | |
| Schedule of Access & Vacate Dates for Works Areas | | | | | | | | | | | | | | | | | | | | | | | |
| Possession Dates | | | | | | | | | | | | | | | | | | | | | | | |
| Works Areas | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.ACWA1 | Works Area 1108.A1 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACWA2 | Works Area 1108.A2 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACWA3 | Works Area 1108.A3 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACWA4 | Works Area 1108.A4 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW01 | Works Area 1108.W1 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW10 | Works Area 1108.W10 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW11 | Works Area 1108.W11 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW12 | Works Area 1108.W12 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW13 | Works Area 1108.W13 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW01a | Works Area 1108.W1a (Week No. 52/13) | 100% | 27-Dec-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW02 | Works Area 1108.W2 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW04 | Works Area 1108.W4 (04-Jan-16) | 100% | 15-Jul-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW07 | Works Area 1108.W7 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW08 | Works Area 1108.W8 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.ACW09 | Works Area 1108.W9 (Within 3 weeks from commencement of works) | 100% | 29-Apr-13 A | | | | | | | | | | | | | | | | | | | | |
| A - Preliminaries | | | | | | | | | | | | | | | | | | | | | | | |
| B - Kai Tak Station, Entrances and Adits | | | | | | | | | | | | | | | | | | | | | | | |
| B1 KAT Station | | | | | | | | | | | | | | | | | | | | | | | |
| Preliminaries | | | | | | | | | | | | | | | | | | | | | | | |
| General Items | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.HR0100 | Demolition of existing abandoned nullah, No.1, ~120m L at GL 1/2~4/5 running northwards | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.STN.HR0010 | Erection of hoarding and haul road | 100% | 15-Jun-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| Ground Investigation, Instrumentation & Monitoring | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.GI13-17 | Ground investigation - Boreholes BH13 to BH17, 5 nr. | 100% | 02-Jul-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IM0000 | Instrumentation - Install & monitor, GS markers 7+6+9nr, 7nr on utilities & 3 nr on structure; VM, 2 nr; PZ, 4 nr; etc. | 100% | 02-Jul-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| B1.2 Station - Excavation | | | | | | | | | | | | | | | | | | | | | | | |
| B1.2.2 Temporary Works | | | | | | | | | | | | | | | | | | | | | | | |
| Temporary Works Design, Review & Approval | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.DN09.2.1 | Advance Open Excavation - Design, ICE & Submit to MTRC for review | 100% | 07-Jun-13 A | 16-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.STN.DN09.2.3 | Advance Open Excavation - No-adverse-comment by RDO/ BD/ GEO | 100% | 08-Aug-13 A | 26-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.STN.DN09.2.2 | Advance Open Excavation - Revision, if required, & Submit to RDO/ BD/ GEO | 100% | 08-Aug-13 A | 21-Aug-13 A | | | | | | | | | | | | | | | | | | | |

▲ Milestone
 ▲ Critical Milestone
 ■ Critical Remaining Work
 ■ Remaining Work
 ■ Remaining Level of Effort

— Primary Baseline
 ■ Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme



| Activity ID | Activity Name | Activity % Complete | Start | Finish | May 14 | | | | | June 15 | | | | July 16 | | | | August 17 | | | | September 18 | | |
|--|---|---------------------|-------------|-------------|-------------|----|----|----|----|---------|----|----|----|---------|----|----|----|-----------|----|----|----|--------------|----|----|
| | | | | | 8 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 |
| | | | | | Gantt Chart | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BL04-05 | Temporary foundation for lifting crane tower at GL 04~05 | 100% | 25-Apr-14 A | 29-Apr-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BL11-12 | Temporary foundation for lifting crane tower at GL 11~12 | 100% | 27-Jan-14 A | 20-Feb-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BL19-20 | Temporary foundation for lifting crane tower at GL 19~20 | 100% | 24-Apr-14 A | 05-May-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BL001 | Temporary foundation for lifting crane tower, 3 nr., Approved | 100% | 25-Oct-13 A | 28-Apr-14 A | | | | | | | | | | | | | | | | | | | | |
| Base Slab | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS0 | Commencement of Structure after excavation & test completed to GL 10~19 | 100% | | 13-Feb-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS00-02 | GL 00~02 Base slab, 19.6mL | 0% | 25-Jul-14 | 21-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS02-04 | GL 02~04 Base slab, 24mL | 0% | 18-Jul-14 | 14-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS04-06 | GL 04~06 Base slab, 24mL | 0% | 05-Jun-14 | 04-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS06-08 | GL 06~08 Base slab, 24mL (Team 2) | 0% | 05-Jun-14 | 04-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS08-10 | GL 08~10 Base slab, 24mL (Team 2) | 100% | 04-Apr-14 A | 07-May-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS10-12 | GL 10~12 Base slab, 24mL (Team 2) | 100% | 01-Mar-14 A | 24-Apr-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS12-14 | GL 12~14 Base slab, 24mL (Team 2) | 100% | 27-Jan-14 A | 27-Mar-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS14-16 | GL 14~16 Base slab, 30mL (Team 1) | 100% | 01-Apr-14 A | 15-Apr-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS16-19 | GL 16~19 Base slab, 30mL (Team 1) | 60% | 15-Apr-14 A | 18-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS19-21 | GL 19~21 Base slab, 30mL (Team 1) | 0% | 07-Jun-14 | 05-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BS21-24 | GL 21~24 Base slab, 34mL (Team 1) | 0% | 22-Jul-14 | 18-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| External Wall to Concourse | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC00-00 | GL 00~00 End wall (2 teams in 10m panel, 2 cycles) | 0% | 21-Aug-14 | 10-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC00-02 | GL 00~02 External wall (2 teams, 8 cycles) | 0% | 21-Aug-14 | 10-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC02-04 | GL 02~04 External wall (2 teams, 8 cycles) | 0% | 14-Aug-14 | 02-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC04-06 | GL 04~06 External wall (2 teams, 8 cycles) | 0% | 04-Jul-14 | 28-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC06-08 | GL 06~08 External wall (2 teams, 8 cycles) | 0% | 04-Jul-14 | 28-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC08-10 | GL 08~10 External wall (2 teams, 8 cycles) | 0% | 03-Jun-14 | 25-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC10-12 | GL 10~12 External wall (2 teams, 8 cycles) | 0% | 03-Jun-14 | 25-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC12-14 | GL 12~14 External wall (2 teams, 8 cycles) | 100% | 17-Apr-14 A | 29-May-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC14-16 | GL 14~16 External wall (2 teams, 10 cycles) | 50% | 04-Apr-14 A | 13-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC16-19 | GL 16~19 External wall (2 teams, 10 cycles) | 0% | 18-Jun-14 | 12-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC19-21 | GL 19~21 External wall (2 teams, 10 cycles) | 0% | 07-Jul-14 | 29-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC21-24 | GL 21~24 External wall (2 teams, 10 cycles) | 0% | 19-Aug-14 | 11-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EC24-24 | GL 24~24 End wall (2 teams in 10m panel, 2 cycles) | 0% | 19-Aug-14 | 11-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| Internal Wall & Column to Concourse | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC00-02 | GL 00~02 Internal wall & column (168m with 6 teams in 10m panel) | 0% | 21-Aug-14 | 15-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC02-04 | GL 02~04 Internal wall & column (168m with 6 teams in 10m panel) | 0% | 14-Aug-14 | 06-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC04-06 | GL 04~06 Internal wall & column (168m with 6 teams in 10m panel) | 0% | 04-Jul-14 | 28-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC06-08 | GL 06~08 Internal wall & column (168m with 6 teams in 12m panel) | 0% | 04-Jul-14 | 28-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC08-10 | GL 08~10 Internal wall & column (168m with 6 teams in 10m panel) | 0% | 03-Jun-14 | 25-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC10-12 | GL 10~12 Internal wall & column (138m with 6 teams in 10m panel) | 0% | 03-Jun-14 | 25-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC12-14 | GL 12~14 Internal wall & column (168m with 6 teams in 10m panel) | 70% | 25-Mar-14 A | 09-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC14-16 | GL 14~16 Internal wall & column (224m with 8 teams in 10m panel) | 37.5% | 04-Apr-14 A | 17-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC16-19 | GL 16~19 Internal wall & column (196m with 6 teams in 10m panel) | 0% | 18-Jun-14 | 12-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC19-21 | GL 19~21 Internal wall & column (224m with 8 teams in 10m panel) | 0% | 07-Jul-14 | 29-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IC21-24 | GL 21~24 Internal wall & column (224m with 8 teams in 13m panel) | 0% | 19-Aug-14 | 11-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| Platform Slab and Wall | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS00-02 | GL 00~02 Platform wall & slab (wall - 2 teams x 2 cycles) | 0% | 21-Aug-14 | 12-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS02-04 | GL 02~04 Platform wall & slab (wall - 2 teams x 2 cycles) | 0% | 14-Aug-14 | 04-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS04-06 | GL 04~06 Platform slab & wall (wall - 2 teams x 2 cycles) | 0% | 04-Jul-14 | 01-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS06-08 | GL 06~08 Platform slab & wall (wall - 2 teams x 2 cycles) | 0% | 04-Jul-14 | 01-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS08-10 | GL 08~10 Platform slab & wall (wall - 2 teams x 2 cycles) | 0% | 03-Jun-14 | 30-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS10-12 | GL 10~12 Platform slab & wall (wall - 2 teams x 2 cycles) | 100% | 24-Apr-14 A | 24-May-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS12-14 | GL 12~14 Platform slab & wall (wall - 2 teams x 2 cycles) | 100% | 02-Apr-14 A | 25-Apr-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS14-16 | GL 14~16 Platform slab & wall (wall - 2 teams x 2 cycles) | 50% | 14-Apr-14 A | 16-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS16-19 | GL 16~19 Platform slab & wall (wall - 2 teams x 2 cycles) | 0% | 18-Jun-14 | 17-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS19-21 | GL 19~21 Platform slab & wall (wall - 2 teams x 2 cycles) | 0% | 07-Jul-14 | 02-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.PS21-24 | GL 21~24 Platform slab & wall (wall - 2 teams x 2 cycles) | 0% | 19-Aug-14 | 16-Sep-14 | | | | | | | | | | | | | | | | | | | | |

| | |
|-----------------------------|------------------|
| ▲ Milestone | Primary Baseline |
| ▲ Critical Milestone | Actual Work |
| █ Critical Remaining Work | |
| █ Remaining Work | |
| █ Remaining Level of Effort | |

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme



| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | | June | | | | July | | | | August | | | | September | |
|---|--|---------------------|-------------|-------------|-----|----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|
| | | | | | 14 | | | | | 15 | | | | 16 | | | | 17 | | | | 18 | |
| | | | | | 08 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 |
| Over Track Exhaust | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT04-08 | GL 04~06 Over Track Exhaust | 0% | 01-Aug-14 | 19-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT06-08 | GL 06~08 Over Track Exhaust | 0% | 01-Aug-14 | 19-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT08-10 | GL 08~10 Over Track Exhaust | 0% | 02-Jul-14 | 18-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT10-12 | GL 10~12 Over Track Exhaust | 0% | 03-Jun-14 | 19-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT12-14 | GL 12~14 Over Track Exhaust | 0% | 03-Jun-14 | 19-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT14-16 | GL 14~16 Over Track Exhaust | 0% | 17-Jun-14 | 08-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT16-19 | GL 16~19 Over Track Exhaust | 0% | 17-Jul-14 | 07-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.OT19-21 | GL 19~21 Over Track Exhaust | 0% | 04-Aug-14 | 23-Aug-14 | | | | | | | | | | | | | | | | | | | |
| Compacted Soil Backfill between Up Track and Refuge Track | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF04-06 | GL 04~06 Backfill and compaction, 1093 m3 | 0% | 28-Jul-14 | 11-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF06-08 | GL 06~08 Backfill and compaction, 1093 m3 | 0% | 28-Jul-14 | 11-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF08-10 | GL 08~10 Backfill and compaction, 1093 m3 | 0% | 26-Jun-14 | 10-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF10-12 | GL 10~12 Backfill and compaction, 1093 m3 | 0% | 26-Jun-14 | 10-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF12-14 | GL 12~14 Backfill and compaction, 1366 m3 | 0% | 10-Jun-14 | 23-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF14-16 | GL 14~16 Backfill and compaction, 1366 m3 | 0% | 17-Jun-14 | 02-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF16-19 | GL 16~19 Backfill and compaction, 1366 m3 | 0% | 14-Jul-14 | 25-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BF19-21 | GL 19~21 Backfill and compaction, 1366 m3 | 0% | 30-Jul-14 | 12-Aug-14 | | | | | | | | | | | | | | | | | | | |
| Metalworks, BWIC with Services and BS Works | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BW12-24 | GL 12~24 BWIC and BS works | 0% | 05-Jul-14 | 27-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.BM12-24 | GL 12~24 Installation of PSD support beam, 16.5 t | 0% | 20-Jun-14 | 29-Aug-14 | | | | | | | | | | | | | | | | | | | |
| B1.4 Station U/G C&S Works (Concourse Level and Above) | | | | | | | | | | | | | | | | | | | | | | | |
| Concourse Level | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS06-08 | GL 06~08 Concourse slab | 0% | 25-Aug-14 | 26-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS08-10 | GL 08~10 Concourse slab | 0% | 13-Aug-14 | 15-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS10-12 | GL 10~12 Concourse slab | 0% | 01-Aug-14 | 02-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS12-14 | GL 12~14 Concourse slab | 0% | 21-Jul-14 | 21-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS14-16 | GL 14~16 Concourse slab | 0% | 09-Jul-14 | 09-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS16-19 | GL 16~19 Concourse slab | 0% | 07-Aug-14 | 10-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CS19-21 | GL 19~21 Concourse slab | 0% | 25-Aug-14 | 26-Sep-14 | | | | | | | | | | | | | | | | | | | |
| External Wall to Lower Ground | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EGO | External wall hanging platform | 0% | 14-Jun-14 | 05-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EG12-14 | GL 12~14 External wall (2 teams, 8 cycles) | 0% | 22-Aug-14 | 15-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.EG14-16 | GL 14~16 External wall (2 teams, 10 cycles) | 0% | 11-Aug-14 | 02-Sep-14 | | | | | | | | | | | | | | | | | | | |
| Internal Wall to Lower Ground | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IG12-14 | GL 12~14 Internal wall & column (196m with 6 teams in 10m panel) | 0% | 22-Aug-14 | 24-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.IG14-16 | GL 14~16 Internal wall & column (261m with 8 teams in 10m panel) | 0% | 11-Aug-14 | 12-Sep-14 | | | | | | | | | | | | | | | | | | | |
| B1.7 Station - ABWF Works (Below Concourse Level Soffit) | | | | | | | | | | | | | | | | | | | | | | | |
| ABWF Works - Degree 1 of Completion | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.CD4A1P2a | KAT Platform level - GL 12~4 Degree 1 of completion - Blockwork, partition wall, plastering, etc. | 0% | 01-Aug-14 | 14-Oct-14 | | | | | | | | | | | | | | | | | | | |
| B2 Entrance A, Adit & SEE | | | | | | | | | | | | | | | | | | | | | | | |
| B2.1 Entrance A, Adit & SEE - Excavation | | | | | | | | | | | | | | | | | | | | | | | |
| Temporary Works | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STN.DN04.3.2 | Entrance A & SEE - Design Revision, if required, & Submit to RDO/BD/GEO | 0% | 29-Aug-14 | 30-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STN.DN04.3.1 | Entrance A & SEE - ELS Design, ICE & Submit to MTRC for review | 0% | 04-Jul-14 | 29-Aug-14 | | | | | | | | | | | | | | | | | | | |
| C - South Approach Tunnel | | | | | | | | | | | | | | | | | | | | | | | |
| C1 Open Cut Tunnels (U=341m; D=340m) | | | | | | | | | | | | | | | | | | | | | | | |
| Preliminaries | | | | | | | | | | | | | | | | | | | | | | | |
| General Items | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.HR0100 | Diversion of ex. AP2 - DN1 200/ DN1 800 drain, ~170mL crossing at ~CH U99187 (near SUA) SE direction | 100% | 30-Apr-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.HR0020 | Haul road, condition survey, incl. utility survey | 100% | 02-Jul-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| Ground Investigation, Instrumentation & Monitoring | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.G08-0010 | Ground investigation - Boreholes BH1 to BH7, 7 nr. | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.IM00000 | Instrumentation - Install & monitor, GS markers 8+12+8nr & 4 nr on utilities; PZ, 8 nr; etc | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| C1.2 Excavation | | | | | | | | | | | | | | | | | | | | | | | |
| C1.2.2 Temporary Works | | | | | | | | | | | | | | | | | | | | | | | |

▲ Milestone
 ▲ Critical Milestone
 ■ Critical Remaining Work
 ■ Remaining Work
 ■ Remaining Level of Effort

— Primary Baseline
 ■ Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme



| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | | June | | | | July | | | | August | | | | September | |
|--|--|---------------------|-------------|-------------|-----|----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|
| | | | | | 14 | | | | | 15 | | | | 16 | | | | 17 | | | | 18 | |
| | | | | | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 |
| Temporary Works Design & Approval | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN09.1.3 | Hydraulic Cut Off - No-adverse-comment by RDO/ BD/ GEO | 100% | 22-Aug-13 A | 19-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN09.1.2 | Hydraulic Cut Off - Revision, if required, & Submit to RDO/ BD/ GEO | 100% | 21-Jun-13 A | 22-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN09.1.1 | Hydraulic Cut Off - Design, ICE & Submit to MTRC for review | 100% | 21-Jun-13 A | 24-Jun-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN06.1.3 | Open Cut (CH 98976 to 99222) - Design - No-adverse-comment by RDO/ BD/ GEO | 100% | 16-Sep-13 A | 27-Feb-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN06.1.2 | Open Cut (CH 98976 to 99222) - Design Revision, if required, & Submit to RDO/ BD/ GEO | 100% | 16-Sep-13 A | 16-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN06.1.1 | Open Cut (CH 98976 to 99222) - Design, ICE & Submit to MTRC for review | 100% | 21-Jun-13 A | 16-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DN06.2.1 | Open Cut (CH 99222 to 99257, Interface with C1109) - Design, ICE & Submit to MTRC for review | 0% | 04-Aug-14 | 30-Sep-14 | | | | | | | | | | | | | | | | | | | |
| Dewatering and Observation Wells | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DW9080t | Ch 98926~99080 Pumping tests | 100% | 27-Feb-14 A | 30-Mar-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DW9185 | Ch 99080~99185 Dewatering wells, 21 nr PW19~PW39; Observation wells, 6 nr OW5~OW10 | 100% | 08-Nov-13 A | 18-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DW9185t | Ch 99080~99217 Pumping tests | 100% | 12-Apr-14 A | 30-Apr-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.DW9080 | To Ch 99080 Dewatering, 22 nr PW40~61; Recharge 10 nr RW1~10; Observation, 8 nr OW11~18; Piezometer, 5 nr (3 Rg: | 100% | 18-Sep-13 A | 18-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| Sheet Piles | | | | | | | | | | | | | | | | | | | | | | | |
| Water Cut-off Wall at NW Side | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9185w | Ch 99080~99185 Sheet piling, 238 nr - 120 x 18.5m, 25 x 20m, 93 x 21.5m (4720m, 312t, total) | 100% | 12-Sep-13 A | 15-Nov-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9258w | Ch 99185~99258 Sheet piling, 382nr - 340 x 12.5m, 42 x 15m (4880m, 323t, total) | 100% | 12-Sep-13 A | 15-Nov-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9080w | Point G to Ch 99080 Sheet piling, 192 nr x 21.5m (4128m, 273t, total) | 100% | 23-Aug-13 A | 27-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9081w | Point J to Point D Sheet piling, 136 nr x 21.5m (2924m, 193t, total) | 100% | 12-Sep-13 A | 21-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| Water Cut-off Wall at SE Side | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9185e | Ch 99080~99185 Sheet piling, 238 nr x 12.5m (2975m, 197t, total) | 100% | 11-Sep-13 A | 24-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9258e | Ch 99185~99258 Sheet piling, 188 nr x 12.5m (2350m, 155t, total) | 100% | 11-Sep-13 A | 24-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.SP9080e | To Ch 99080 Sheet piling, 316 nr - 215 x 12.5, 37 x 15m, 64 x 18.5m (4427m, 293t, total) | 100% | 16-Aug-13 A | 03-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| C1.2.3 Excavation CH 98975 to CH 99217 | | | | | | | | | | | | | | | | | | | | | | | |
| General Site Clearance | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX0010 | Construct drainage protection system | 100% | 10-Feb-14 A | 21-Mar-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX0015 | General clearance & trim existing ground by +3.5mPD | 100% | 05-Aug-13 A | 03-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| From Existing Ground Level to Formation Level | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX8996 | CH 98975~98996 Excavation | 46% | 28-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9017 | CH 98996~99017 Excavation | 46% | 30-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9038 | CH 99017~99038 Excavation | 46% | 28-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9059 | CH 99038~99059 Excavation | 46% | 28-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9080 | CH 99059~99080 Excavation | 46% | 28-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9101 | CH 99080~99101 Excavation | 46% | 28-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9122 | CH 99101~99122 Excavation | 46% | 28-Sep-13 A | 25-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9143 | CH 99122~99143 Excavation | 0% | 25-Jun-14 | 07-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9164 | CH 99143~99164 Excavation | 0% | 17-Jul-14 | 28-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9185 | CH 99164~99185 Excavation | 0% | 07-Aug-14 | 19-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.EX9206 | CH 99185~99206 Excavation | 0% | 28-Aug-14 | 11-Oct-14 | | | | | | | | | | | | | | | | | | | |
| C1.3 C&S Works | | | | | | | | | | | | | | | | | | | | | | | |
| Tunnel Construction CH 98975 to CH99217 | | | | | | | | | | | | | | | | | | | | | | | |
| Base Slabs | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TS8996 | CH 98975~98996 Base slabs, 2 x 2 x 10.5mL | 0% | 25-Jun-14 | 15-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TS9017 | CH 98996~99017 Base slabs, 2 x 2 x 10.5mL | 0% | 15-Jul-14 | 02-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TS9038 | CH 99017~99038 Base slabs, 2 x 2 x 10.5mL | 0% | 02-Aug-14 | 21-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TS9059 | CH 99038~99059 Base slabs, 2 x 2 x 10.5mL | 0% | 21-Aug-14 | 10-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TS9143 | CH 99122~99143 Base slabs, 2 x 2 x 10.5mL | 0% | 07-Aug-14 | 26-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TS9164 | CH 99143~99164 Base slabs, 2 x 2 x 10.5mL | 0% | 28-Aug-14 | 17-Sep-14 | | | | | | | | | | | | | | | | | | | |
| Walls & Top Slabs | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TR8966 | CH 98975~98996 Wall & to pslabs, 2 x 2 x 10.5mL | 0% | 15-Jul-14 | 07-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TR9017 | CH 98996~99017 Wall & to pslabs, 2 x 2 x 10.5mL | 0% | 07-Aug-14 | 30-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TR9038 | CH 99017~99038 Wall & to pslabs, 2 x 2 x 10.5mL | 0% | 30-Aug-14 | 24-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.OCT.TR9143 | CH 99122~99143 Wall & to pslabs, 2 x 2 x 10.5mL | 0% | 26-Aug-14 | 19-Sep-14 | | | | | | | | | | | | | | | | | | | |
| C2 Mined Tunnels (U=41m; D=39m) | | | | | | | | | | | | | | | | | | | | | | | |
| Preliminaries | | | | | | | | | | | | | | | | | | | | | | | |
| Ground Inverstigation, Instrumentation & Monitoring | | | | | | | | | | | | | | | | | | | | | | | |

▲ Milestone
 ▲ Critical Milestone
 ■ Critical Remaining Work
 ■ Remaining Work
 ■ Remaining Level of Effort

Primary Baseline
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme



| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | June | | | | July | | | | August | | | | September | | | |
|--|---|---------------------|-------------|-------------|-----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|----|----|
| | | | | | 14 | | | | 15 | | | | 16 | | | | 17 | | | | 18 | | | |
| | | | | | 8 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 |
| 01108.MT.IM00000 | Instrumentation - Install & monitor, GS markers 5 nr; VM, 2 nr; HIN, 2 nr; etc | 0% | 24-Jun-14 | 23-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| C2.1 Excavation | | | | | | | | | | | | | | | | | | | | | | | | |
| C2.1.2 Temporary Works and ELS | | | | | | | | | | | | | | | | | | | | | | | | |
| Design, Temporary Works Design, Approval, Fabrication & Installation of Tunnel Formwork | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.1.3 | MIT Shaft ELS - Design - No-adverse-comment by RDO/ BD/ GEO | 0% | 05-Jun-14 | 24-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.1.1 | MIT Shaft ELS - Design, ICE & Submit to MTRC for review | 100% | 15-Aug-13 A | 17-Sep-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.1.2 | MIT Shaft ELS - Revision, if required, & Submit to RDO/ BD/ GEO | 80% | 17-Sep-13 A | 05-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.2.1 | MIT Temporary Support - Design & Method statement, ICE & Submit to MTRC for review | 100% | 01-Aug-13 A | 04-Oct-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.2.3 | MIT Temporary Support - No-adverse-comment by RDO/ BD/ GEO | 0% | 09-Jun-14 | 07-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.2.2 | MIT Temporary Support - Revision, if required, & Submit to RDO/ BD/ GEO | 60% | 04-Oct-13 A | 09-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.GI070 | Tunnel formwork - Fabrication | 0% | 27-Aug-14 | 25-Nov-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.3.1 | Tunnel formwork design - Design, ICE and submission | 0% | 03-Jun-14 | 15-Jul-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.DN07.3.3 | Tunnel formwork design - No adverse comment | 0% | 16-Jul-14 | 26-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| Temporary Works and ELS from Eastside (2 Workfronts, each 20mL) | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.TW205e | D/T CH98866 Buffer zone of LTSB & FKCP: Grouted soil blocks (from ground level) | 0% | 23-Jul-14 | 20-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.TW005e | U/T CH98866 Buffer zone of LTSB & FKCP: Grouted soil blocks (from ground level) | 0% | 23-Jul-14 | 20-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| Temporary Works and ELS from Westside (2 Workfronts, each 20mL) | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.TW200w | D/T CH98907 Buffer zone of LTSB & FKCP: Grouted soil blocks (from ground level) | 0% | 23-Jul-14 | 20-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.TW010w | U/T 3mT TAM Grout to 2m-extent from tunnel temporary extrados | 0% | 25-Aug-14 | 18-Sep-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.MIT.TW008w | U/T CH98907 Buffer zone of LTSB & FKCP: Grouted soil blocks (from ground level) | 0% | 23-Jul-14 | 20-Aug-14 | | | | | | | | | | | | | | | | | | | | |
| C3 Cut and Cover Tunnels (U=297m; D=307m) | | | | | | | | | | | | | | | | | | | | | | | | |
| Preliminaries | | | | | | | | | | | | | | | | | | | | | | | | |
| General Items | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.HR0020 | Condition survey, incl. utility survey | 100% | 01-Jul-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.HR0010 | Erection of hoarding and haul road | 100% | 01-Jul-13 A | 30-Jul-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.HR0030 | Relocate existing haul road | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.HR0040 | Trail trench for existing seawall | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| Ground Investigation, Instrumentation & Monitoring | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.G08-00 | Ground investigation - Boreholes BH8, 9, 10, 10a, 10b, 11 & 12, 7 nr. | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.IM0000 | Instrumentation - Install & monitor, GS markers 8+11nr & 3 nr on structure; VM,3 nr; PZ, 8 nr | 100% | 02-Jul-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| 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.DN05.1a.1 | CCT Cofferdam (CH 98650 to 98750) for KTND - Design, ICE & Submit to MTRC for review | 100% | 30-Jul-13 A | 30-Jul-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.1a.3 | CCT Cofferdam (CH 98650 to 98750) for KTND - No-adverse-comment by RDO/ BD/ GEO | 100% | 30-Jul-13 A | 26-Feb-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.1a.2 | CCT Cofferdam (CH 98650 to 98750) for KTND - Revision, if required, & Submit to RDO/ BD/ GEO | 100% | 30-Jul-13 A | 30-Jul-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.2.3 | CCT ELS (CH 98750 to 98976) - Design No-adverse-comment by RDO/ BD/ GEO | 10% | 23-Dec-13 A | 23-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.2.2 | CCT ELS (CH 98750 to 98976) - Design Revision, if required, & Submit to RDO/ BD/ GEO | 100% | 06-Dec-13 A | 23-Dec-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.2.1 | CCT ELS (CH 98750 to 98976) - Design, ICE & Submit to MTRC for review | 100% | 25-Jul-13 A | 06-Dec-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.1b.1 | CCT ELS/ Hydraulic (CH 98650 to 98750) - Design, ICE & Submit to MTRC for review | 100% | 30-Jul-13 A | 30-Jul-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.1b.3 | CCT ELS/ Hydraulic (CH 98650 to 98750) - No-adverse-comment by RDO/ BD/ GEO | 70% | 20-Aug-13 A | 14-Jun-14 | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DN05.1b.2 | CCT ELS/ Hydraulic (CH 98650 to 98750) - Revision, if required, & Submit to RDO/ BD/ GEO | 100% | 30-Jul-13 A | 20-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| Dewatering and Observation Wells | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DW0030 | Install dewatering wells, 51 nos. and observation wells, 10nr (4 Rigs) (CH 98636 to 98846) | 100% | 29-Aug-13 A | 16-Sep-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DW0040 | Pumping tests (CH 98650 to 98750) | 100% | 17-Oct-13 A | 24-Oct-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DW40 | Pumping tests (CH 98750 to 98846) | 100% | 19-Apr-14 A | 12-May-14 A | | | | | | | | | | | | | | | | | | | | |
| Sheet Piles | | | | | | | | | | | | | | | | | | | | | | | | |
| Partial Open Cut | | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP8650 | NW - CH 98650~98750 Sheet piling FSP IV : 293nr x 23m-to-32.2mL, 7148m total, (2 rigs) | 100% | 21-Dec-13 A | 24-Feb-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP8770 | NW - CH 98750~98840 Sheet piling FSP IV : 152nr x 22m-to-23mL, 3391m total | 100% | 24-Feb-14 A | 23-Mar-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP0010a | Pre-bored existing seawall for sheet piling, 2 x ~30m horizontal run | 100% | 02-Jul-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP8650pt | Pumping Tests (Cofferdam Excavation) Stage 1 | 100% | 26-Feb-14 A | 17-Mar-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP8650p | Pumping Tests (Cofferdam Excavation) Stage 2 | 100% | 29-Apr-14 A | 12-May-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP8650e | SE - CH 98650~98750 Sheet piling FSP IV : 293nr x 23m-to-32.2mL, 7148m total, (2 rigs) | 100% | 21-Dec-13 A | 24-Feb-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP8770e | SE - CH 98750~98840 Sheet piling FSP IV : 152nr x 22m-to-23mL, 3391m total | 100% | 24-Feb-14 A | 23-Mar-14 A | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP0020 | Sheet piling as cut-off walls, 2 x 525nr x 12mL, 2 x 6300m total (2 rigs) | 100% | 30-Jul-13 A | 28-Sep-13 A | | | | | | | | | | | | | | | | | | | | |

- ▲ Milestone
- ▲ Critical Milestone
- █ Critical Remaining Work
- █ Remaining Work
- █ Remaining Level of Effort
- Primary Baseline
- █ Actual Work

| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | | June | | | | July | | | | August | | | | September | |
|---|---|---------------------|-------------|-------------|-----|----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|
| | | | | | 14 | | | | | 15 | | | | 16 | | | | 17 | | | | 18 | |
| | | | | | 08 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 |
| Full Height Cofferdam | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.SP020 | N.of FKCP-Sht.piling, M3~G3~F3a, FSP V Type C1- 68nr x 34.2mL (2334m total) & FSP VI Type B- 29nr x 34.2m L (1003 m t | 94% | 20-Jan-14 A | 04-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.SP010 | N.of FKCP-Sht.piling, M3~Q3~Q3a, FSP V Type C1- 51nr x 34.2mL (1733m total) & FSP VI Type B- 42nr x 34.2mL (1434 m t | 94% | 20-Jan-14 A | 03-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.SP110 | S.of FKCP-Sht. piling, H4~F4~D4', FSP V Type C2- 36nr x 33.2m (1191m total) & FSP IV Type D1- 68nr x 33.2m (2241m tot | 22.01% | 15-Mar-14 A | 13-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.SP120 | S.of FKCP-Sht. piling, H4~K4~L4', FSP V Type C2: 39nr x 33.2m (1279m total) & FSP IV Type D1- 93nr x 33.2m (3071m tot | 22% | 15-Mar-14 A | 19-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.SP130 | Sheet piling, D4~A4, FSP IV Type D2, D1: 108nr x 27.2~33.2m, 3456 m total | 0% | 19-Jun-14 | 12-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.SP140 | Sheet piling, L4~R4, FSP IV Type D2, D1: 199nr x 33.2 to 27.2m, 3381m total | 0% | 12-Jul-14 | 04-Aug-14 | | | | | | | | | | █ | | | | | | | | | |
| 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) | 0% | 28-Jul-14 | 02-Sep-14 | | | | | | | | | | █ | | | | █ | | | | | |
| 01108.CCT.EX8995 | CH 98906~98928 Excavation & struts, 2 x 10.5mL (West Shaft) | 0% | 28-Jul-14 | 25-Aug-14 | | | | | | | | | | █ | | | | █ | | | | | |
| 01108.CCT.EX8866 | Pump test (East Shaft) | 0% | 24-Jun-14 | 28-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8928 | Pump test (West Shaft) | 0% | 24-Jun-14 | 28-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| Open Cut from Existing Ground Level to -3.5mPD | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.EX8657c | CH 98650~98671 Excavation to -3.5mPD, 5586 m3 | 90% | 06-Jan-14 A | 03-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8636 | CH 98650~98866 Clearance & trim ground level to +3.5mPD, 18480 m3 | 100% | 30-Oct-13 A | 14-Nov-13 A | █ | | | | | | | | | | | | | | | | | | |
| 01108.CCT.EX8678c | CH 98671~98692 Excavation to -3.5mPD, 5166 m3 + 420 m3 seawall | 90% | 06-Jan-14 A | 03-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8699c | CH 98692~98713 Excavation to -3.5mPD, 3381 m3 + 2205 m3 seawall | 90% | 06-Jan-14 A | 03-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8720c | CH 98713~98734 Excavation to -3.5mPD, 3381 m3 + 2205 m3 seawall | 100% | 06-Jan-14 A | 31-May-14 A | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8741c | CH 98734~98755 Excavation to -3.5mPD, 3381 m3 + 2205 m3 seawall | 100% | 06-Jan-14 A | 31-May-14 A | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8762c | CH 98755~98776 Excavation to -3.5mPD, 3906 m3 + 1680 m3 seawall | 30% | 06-Jan-14 A | 12-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8783c | CH 98776~98797 Excavation to -3.5mPD, 4746 m3 + 840 m3 seawall | 0% | 04-Jun-14 | 23-Jun-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8804c | CH 98797~98818 Excavation to -3.5mPD, 6384 m3 | 0% | 18-Jun-14 | 17-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8825c | CH 98818~98840 Excavation to -3.5mPD, 6688 m3 | 0% | 18-Jul-14 | 15-Aug-14 | | | | | | | | | | █ | | | | | | | | | |
| Cofferdam below -3.5mPD | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.EX8657s | CH 98650~98671 Excavation & struts, 4726 m3 | 80% | 10-Feb-14 A | 06-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8678s | CH 98671~98692 Excavation & struts, 4864 m3 | 80% | 10-Feb-14 A | 06-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8699s | CH 98692~98713 Excavation & struts, 5002 m3 | 100% | 10-Feb-14 A | 03-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8720s | CH 98713~98734 Excavation & struts, 5141 m3 | 100% | 10-Feb-14 A | 31-May-14 A | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8741s | CH 98734~98755 Excavation & struts, 5348 m3 | 100% | 10-Feb-14 A | 31-May-14 A | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8762s | CH 98755~98776 Excavation & struts, 5556 m3 | 0% | 03-Jun-14 | 30-Jun-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8783s | CH 98776~98797 Excavation & struts, 5684 m3 | 0% | 16-Jun-14 | 10-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8804s | CH 98797~98818 Excavation & struts, 5811 m3 | 0% | 18-Jul-14 | 12-Aug-14 | | | | | | | | | | █ | | | | | | | | | |
| 01108.CCT.EX8825s | CH 98818~98840 Excavation & struts, 6222m3 | 0% | 01-Aug-14 | 26-Aug-14 | █ | | | | | | | | | █ | | | | | | | | | |
| Full Height Cofferdam | | | | | | | | | | | | | | | | | | | | | | | |
| Excavation & ELS from Existing Ground Level to Formation Level | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.EX8947 | CH 98928~98947 Excavation & struts, 2 x 9.5mL | 0% | 03-Jun-14 | 11-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.EX8966 | CH 98947~98966 Excavation & struts, 2 x 9.5mL | 0% | 14-Jul-14 | 20-Aug-14 | | | | | | | | | | █ | | | | | | | | | |
| 01108.CCT.EX8975 | CH 98967~98975 Excavation & struts, 9.5mL | 0% | 21-Aug-14 | 12-Sep-14 | | | | | | | | | | █ | | | | █ | | | | | |
| C3.3 C&S Works | | | | | | | | | | | | | | | | | | | | | | | |
| Tunnel Construction CH 98650 to CH 98840 | | | | | | | | | | | | | | | | | | | | | | | |
| Base Slabs | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.TB8657 | CH98650~98671 Base slabs, 2 x 2 x 10.5mL | 0% | 06-Jun-14 | 25-Jun-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TB8678 | CH98671~98692 Base slabs, 2 x 2 x 10.5mL | 0% | 25-Jun-14 | 15-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TB8699 | CH98692~98713 Base slabs, 2 x 2 x 10.5mL | 0% | 15-Jul-14 | 02-Aug-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TB8720 | CH98713~98734 Base slabs, 2 x 2 x 10.5mL | 0% | 03-Jun-14 | 20-Jun-14 | █ | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TB8741 | CH98734~98755 Base slabs, 2 x 2 x 10.5mL | 0% | 21-Jun-14 | 10-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TB8762 | CH98755~98776 Base slabs, 2 x 2 x 10.5mL | 0% | 11-Jul-14 | 29-Jul-14 | | | | | | █ | | | | █ | | | | | | | | | |
| 01108.CCT.TB8783 | CH98776~98797 Base slabs, 2 x 2 x 10.5mL | 0% | 30-Jul-14 | 16-Aug-14 | █ | | | | | | | | | █ | | | | | | | | | |
| External Walls and Top Slab | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.TW8657 | CH98650~98671 Walls and Top Slab, 2 x 2 x 10.5mL | 0% | 25-Jun-14 | 15-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TW8678 | CH98671~98692 Walls and Top Slab, 2 x 2 x 10.5mL | 0% | 15-Jul-14 | 02-Aug-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TW8699 | CH98692~98713 Walls and Top Slab, 2 x 2 x 10.5mL | 0% | 02-Aug-14 | 21-Aug-14 | | | | | | | | | | █ | | | | | | | | | |
| 01108.CCT.TW8720 | CH98713~98734 Walls and Top Slab, 2 x 2 x 10.5mL | 0% | 21-Jun-14 | 10-Jul-14 | | | | | | █ | | | | | | | | | | | | | |
| 01108.CCT.TW8741 | CH98734~98755 Walls and Top Slab, 2 x 2 x 10.5mL | 0% | 11-Jul-14 | 29-Jul-14 | | | | | | | | | | █ | | | | | | | | | |

| | | | |
|--|---------------------------|--|------------------|
| | ▲ Milestone | | Primary Baseline |
| | ▲ Critical Milestone | | Actual Work |
| | Critical Remaining Work | | |
| | Remaining Work | | |
| | Remaining Level of Effort | | |

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme

| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | | June | | | | July | | | | August | | | | September | |
|---|---|---------------------|-------------|-------------|-----|----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|
| | | | | | 14 | | | | | 15 | | | | 16 | | | | 17 | | | | 18 | |
| | | | | | 08 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 |
| 01108.CCT.TW8762 | CH98755~98776 Walls and Top Slab, 2 x 2 x 10.5mL | 0% | 30-Jul-14 | 16-Aug-14 | | | | | | | | | | | | | | | | | | | |
| Internal C&C Works | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.IC8657 | CH98650~98671 Track level concrete works & finishes | 0% | 15-Jul-14 | 29-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.IC8678 | CH98671~98692 Track level concrete works & finishes | 0% | 02-Aug-14 | 14-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.IC8699 | CH98692~98713 Track level concrete works & finishes | 0% | 21-Aug-14 | 02-Sep-14 | | | | | | | | | | | | | | | | | | | |
| Waterproofing Works | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.WP8657 | CH98650~98671 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL | 0% | 15-Jul-14 | 31-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.WP8678 | CH98671~98692 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL | 0% | 02-Aug-14 | 19-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.WP8699 | CH98692~98713 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL | 0% | 21-Aug-14 | 06-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.WP8720 | CH98713~98734 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL | 0% | 11-Jul-14 | 26-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.WP8741 | CH98734~98755 2-coat spray, 75mm screed & 75mm blockworks, 2 x 2 x 10.5mL | 0% | 30-Jul-14 | 14-Aug-14 | | | | | | | | | | | | | | | | | | | |
| Drainage | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.DR8975 | CH98650~98755 U-channel, pipe laying, catch pits, 210mL | 0% | 19-Aug-14 | 22-Oct-14 | | | | | | | | | | | | | | | | | | | |
| Tunnel Construction CH 98928 to CH 98975 | | | | | | | | | | | | | | | | | | | | | | | |
| Base Slabs | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.TB8947 | CH98928~98947 Baseslabs, 2 x 2 x 9.5mL | 0% | 12-Jul-14 | 04-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.TB8966 | CH98947~98966 Baseslabs, 2 x 2 x 9.5mL | 0% | 21-Aug-14 | 13-Sep-14 | | | | | | | | | | | | | | | | | | | |
| External Walls | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.TW8947 | CH98928~98947 Walls, 2 x 2 x 9.5mL | 0% | 05-Aug-14 | 27-Aug-14 | | | | | | | | | | | | | | | | | | | |
| Top Slabs | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.TR8947 | CH98928~98947 Top slabs, 2 x 2 x 9.5mL | 0% | 28-Aug-14 | 20-Sep-14 | | | | | | | | | | | | | | | | | | | |
| Backfill and Compaction | | | | | | | | | | | | | | | | | | | | | | | |
| Backfill and Compaction CH 98650 to CH 98840 | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.BF8657 | CH98650~98671 Backfill, compaction & removestrut, 8470m3 | 0% | 23-Jul-14 | 18-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.BF8678 | CH98671~98692 Backfill, compaction & removestrut, 8470m3 | 0% | 19-Aug-14 | 15-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.BF8720 | CH98713~98734 Backfill, compaction & removestrut, 8470m3 | 0% | 28-Jul-14 | 20-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.BF8741 | CH98734~98755 Backfill, compaction & removestrut, 8470m3 | 0% | 15-Aug-14 | 10-Sep-14 | | | | | | | | | | | | | | | | | | | |
| CSMM Backfill CH 98650 to CH 98840 | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.BF8720c | CH98707~98720 CSMM backfill, 13mL x 42m2, total 546 m3 | 0% | 05-Aug-14 | 12-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.BF8741c | CH98720~98741 CSMM backfill, 21mL x 42m2, total 882 m3 | 0% | 25-Aug-14 | 04-Sep-14 | | | | | | | | | | | | | | | | | | | |
| 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 | 0% | 09-Jun-14 | 28-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STT.DN04.2.2 | Stub Tunnel Interface with C1107 - Design Revision, if required, & Submit to RDO/ BD/ GEO | 50% | 24-Dec-13 A | 09-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STT.DN04.2.1 | Stub Tunnel Interface with C1107 - Design, ICE & Submit to MTRC for review | 100% | 12-Sep-13 A | 24-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| Temporay Works - Sheet Pile & ELS | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.IF1107.1P | Contract 1107 provide access to Contract 1108 at interface area for ELS works | 100% | 27-Dec-13 A | | | | | | | | | | | | | | | | | | | | |
| 01108.STT.SP170 | Pump Test | 100% | 16-Apr-14 A | 25-Apr-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.STT.SP010 | Sheet piling, C1~A1, FSP III Type A1, A2: 102nr, 2587m (77nr x 27.2m & 25nr x 19.7m) | 100% | 08-Jan-14 A | 15-Apr-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.STT.SP050 | Sheet piling, C1~D1, FSP III Type A1: 31nr, 843m (31nr x 27.2m) | 100% | 08-Jan-14 A | 15-Apr-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.STT.SP060 | Sheet piling, E1~E1, FSP III Type A1: 25nr, 680m (25nr x 27.2m) | 100% | 08-Jan-14 A | 15-Apr-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.STT.SP020 | Sheet piling, E1~J1, FSP III Type A1, A2: 139nr, 2299m (78nr x 27.2m & 61nr x 19.7m) | 100% | 08-Jan-14 A | 15-Apr-14 A | | | | | | | | | | | | | | | | | | | |
| Earthworks | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STT.EX8273 | CH98255~98273 Excavation & struts, 10930 m3 | 0% | 03-Jun-14 | 26-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.STT.EX8290 | CH98273~98290 Excavation & struts, 10930 m3 | 25% | 22-May-14 A | 26-Aug-14 | | | | | | | | | | | | | | | | | | | |
| C4.2 Stub Tunnels - C&S Works | | | | | | | | | | | | | | | | | | | | | | | |
| Tunnel Construction CH98268 to CH98290 (Up Track & Refuge Track) | | | | | | | | | | | | | | | | | | | | | | | |
| Base Slabs | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.STT.TB8290n | CH98279~98290 Base slabs, 2 x 11mL (Up & Refuge tracks) | 0% | 27-Aug-14 | 24-Sep-14 | | | | | | | | | | | | | | | | | | | |
| C6 Access Shafts | | | | | | | | | | | | | | | | | | | | | | | |
| C&S Works | | | | | | | | | | | | | | | | | | | | | | | |
| C6.1.1 External Walls | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.CCT.AS010 | CH98746~98768 Access shaft - Base slabs, 2 x 3 x 8.88mLx 9.82mW x 1~2.1mT | 0% | 27-Aug-14 | 03-Oct-14 | | | | | | | | | | | | | | | | | | | |

▲ Milestone
 ▲ Critical Milestone
 Critical Remaining Work
 Remaining Work
 Remaining Level of Effort
 Primary Baseline
 Actual Work

Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme

8 of 9

基利
Kaden – Chun Wo Joint Venture

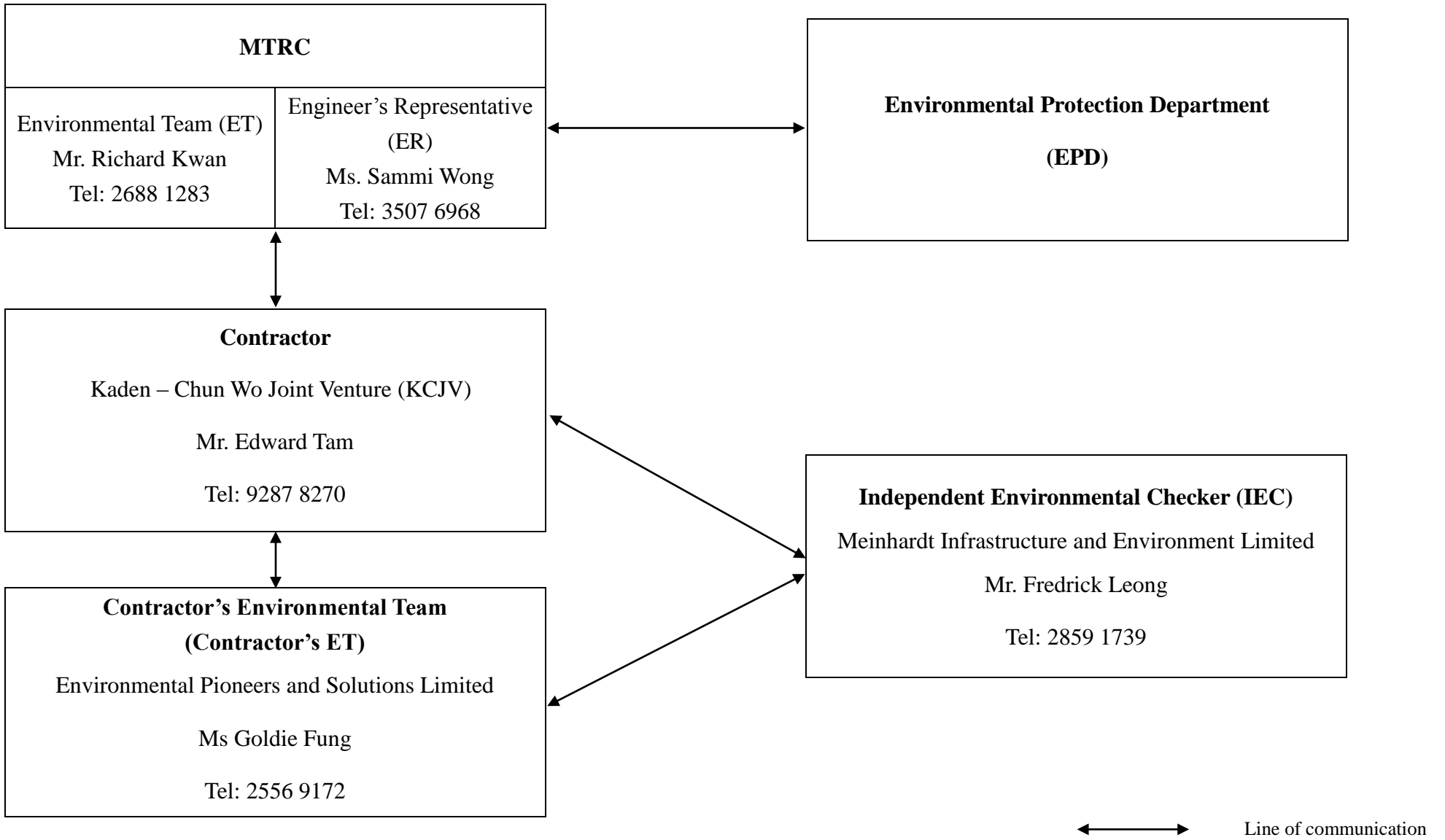
| Activity ID | Activity Name | Activity % Complete | Start | Finish | May | | | | | June | | | | July | | | | August | | | | September | |
|---|---|---------------------|-------------|-------------|-----|----|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|
| | | | | | 14 | | | | | 15 | | | | 16 | | | | 17 | | | | 18 | |
| | | | | | 08 | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 |
| D3 Instrumentation and Monitoring | | | | | | | | | | | | | | | | | | | | | | | |
| Instrumentation Installation and Monitoring | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.AWM.0020 | Baseline Reading | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWM.0010 | Installation of piezometers, inclinometers, ground/ bldg/ utility settlement markers | 0% | 02-Jul-13 A | 12-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWM.0030 | Regular Monitorings and Submit Monitoring Reports (weekly for 50 months) | 50% | 01-Aug-13 A | 15-May-16 | | | | | | | | | | | | | | | | | | | |
| D4 Landscape | | | | | | | | | | | | | | | | | | | | | | | |
| Soft Landscape | | | | | | | | | | | | | | | | | | | | | | | |
| Tree Felling Permit & Tree Felling | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.AWL.2000 | Tree felling permit, ref. P10.21 & P46.1, no longer than 60 days | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWL.2035 | Tree felling, 4 nr. at Proposed Station open cut slope, tree survey nr. T0028, T0029, T0031 & T0032. | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWL.2039 | Tree felling, Girth, rest 32 nr. (with majority at Works Area 1108.A2) | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| Site Formation Works for Engineers's Accommodation | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.AWS.0030 | Filling to formation level for Engineer's accommodation, imported natural material, 3544 m3 | 0% | 16-Jul-14 | 08-Aug-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWS.0020 | Site formation for Engineer's accommodation - Approval | 0% | 17-Jun-14 | 15-Jul-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWS.0010 | Site formation for Engineer's accommodation - Design, ICE and submission | 0% | 03-Jun-14 | 16-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 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 | 11-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DNA1.2 | KTND Hydraulic Assessment - Revision, if required, & Submit to DSD | 100% | 24-Jul-13 A | 28-Nov-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DNA1.1 | KTND Hydraulic Assessment, incl pre-construction CCTV, as-built survey - Design, ICE & TW & Submit to MTRC for review | 100% | 11-Jul-13 A | 28-Nov-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DN09.6.3 | KTND Temp. Support for Demolishing Ex. KTN Decking - Design - No-adverse-comment by DSD & RDO/BD/ GEO | 100% | 26-Sep-13 A | 26-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DN09.6.2 | KTND Temp. Support for Demolishing Ex. KTN Decking - Design Revision, if required, & Submit to DSD & RDO/BD/ GEO | 100% | 04-Sep-13 A | 26-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DN09.6.1 | KTND Temp. Support for Demolishing Ex. KTN Decking - Design, ICE & TW & Submit to MTRC for review | 100% | 15-Aug-13 A | 04-Sep-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DN09.5.3 | KTND Temporary Channel - Design - No-adverse-comment by DSD & RDO/BD/ GEO | 90% | 16-Jan-14 A | 05-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DN09.5.2 | KTND Temporary Channel - Design Revision, if required, & Submit to DSD & RDO/BD/ GEO | 100% | 28-Nov-13 A | 07-Mar-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.DN09.5.1 | KTND Temporary Channel - Design, ICE & TW & Submit to MTRC for review | 100% | 15-Aug-13 A | 16-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| North Section | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0120 | Connection section: North/ upstream - Remove concrete surface | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0124 | Connection section: North/ upstream - Remove saw-cut precast slab and beam, 140 pieces | 100% | 29-Aug-13 A | 10-Oct-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0122 | Connection section: North/ upstream - Saw-cut precast slab and beam, 140 pieces | 100% | 29-Aug-13 A | 10-Oct-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0180 | Connection section: North - Demolish and remove nullah wall | 100% | 14-Jan-14 A | 21-Jan-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0170 | Connection section: North - Place concrete blocks & sealing before demolish nullah wall | 100% | 05-Dec-13 A | 24-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0130 | Connection section: North/ upstream - Demolish and remove partition wall | 100% | 02-Nov-13 A | 16-Nov-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0110 | North section across haul road : Concrete lining with concrete pipes & shotcrete surfaces, 24mL x 36.4mW x 0.4mT | 100% | 25-Feb-14 A | 26-Mar-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0150 | North section: Concrete lining, 205mL x 39.4mW x 0.3mT | 52% | 12-Feb-14 A | 27-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0100 | North section: Open cut excavation, 205mL x 36.4mW x ~4mD, 25750 m3 | 52% | 06-Jan-14 A | 03-Jul-14 | | | | | | | | | | | | | | | | | | | |
| South Section | | | | | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0220 | Connection section: South/ downstream - Remove concrete surface | 100% | 01-Aug-13 A | 30-Aug-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0224 | Connection section: South/ downstream - Remove saw-cut precast slab and beam, 84 pieces | 100% | 14-Sep-13 A | 30-Oct-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0222 | Connection section: South/ downstream - Saw-cut precast slab and beam, 84 pieces | 100% | 14-Sep-13 A | 30-Oct-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0280 | Connection section: South - Demolish and remove nullah wall | 100% | 22-Jan-14 A | 23-Jan-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0270 | Connection section: South - Place concrete blocks & sealing before demolish nullah wall | 100% | 26-Dec-13 A | 09-Jan-14 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0230 | Connection section: South/ downstream - Demolish and remove partition wall | 100% | 22-Nov-13 A | 03-Dec-13 A | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0250 | South section: Concrete lining, 205mL x 39.4mW x 0.3mT | 52% | 16-Apr-14 A | 27-Jun-14 | | | | | | | | | | | | | | | | | | | |
| 01108.AWD.0240 | South section: Open cut excavation, 205mL x 36.4mW x ~4mD, 25750 m3 | 52% | 09-Jan-14 A | 03-Jul-14 | | | | | | | | | | | | | | | | | | | |

| | | | |
|---|---------------------------|---|------------------|
| ▲ | ▲ Milestone | — | Primary Baseline |
| ▲ | ▲ Critical Milestone | ■ | Actual Work |
| ■ | Critical Remaining Work | ■ | Remaining Work |
| ■ | Remaining Level of Effort | | |

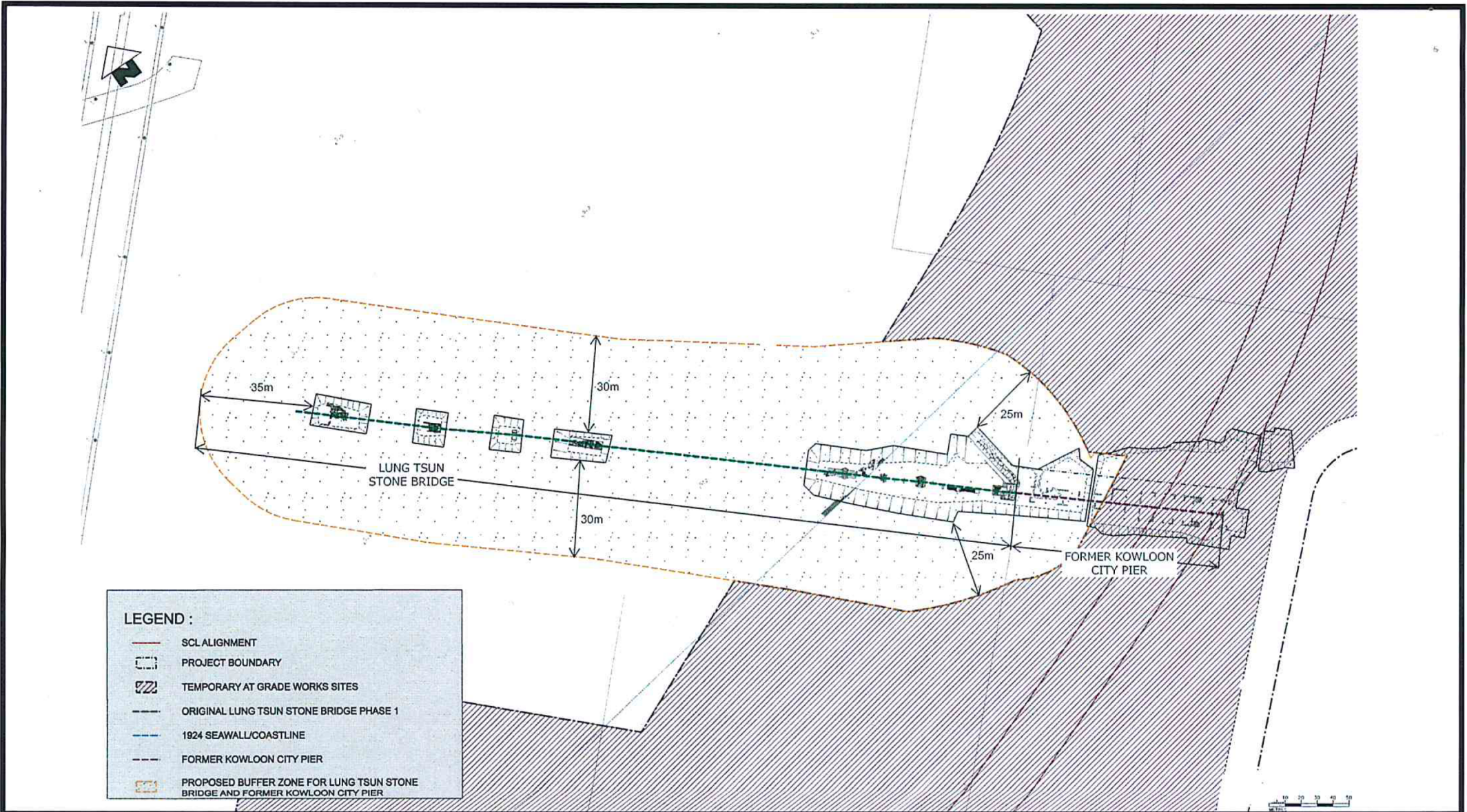
Contract 1108
Kai Tak Station and Associated Tunnels
3-months Rolling Programme



Appendix C –Project Organization Chart & Contact Details



***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/E
環境許可證編號：EP-438/2012/E

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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 2014 (year)

| Month | <u>Actual Quantities of Inert C&D Materials Generated Monthly</u> | | | | | | <u>Actual Quantities of C&D Materials Generated Monthly</u> | | | | |
|-------------|---|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|-----------------------------|-------------|----------------|--------------------------|
| | 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 | 74.526 | 0.000 | 0.000 | 0.000 | 72.007 | 2.519 | 32.340 | 0.110 | 0.000 | 0.000 | 0.059 |
| Feb | 57.988 | 0.000 | 0.000 | 0.000 | 55.963 | 2.025 | 0.000 | 0.160 | 0.007 | 0.640 | 0.123 |
| Mar | 45.732 | 0.000 | 0.000 | 0.000 | 41.405 | 4.327 | 0.000 | 0.096 | 0.000 | 0.000 | 0.146 |
| Apr | 32.976 | 0.000 | 0.000 | 0.000 | 30.126 | 2.850 | 0.000 | 0.034 | 0.000 | 0.000 | 0.060 |
| May | 26.839 | 0.000 | 0.000 | 0.000 | 26.839 | 0.000 | 46.620 | 0.048 | 0.000 | 0.260 | 0.135 |
| Jun | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sub-total | 238.061 | 0.000 | 0.000 | 0.000 | 226.340 | 11.721 | 78.960 | 0.448 | 0.007 | 0.900 | 0.523 |
| July | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| August | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| September | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| October | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| November | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| December | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total | 238.061 | 0.000 | 0.000 | 0.000 | 238.061 | | 78.960 | 0.448 | 0.007 | 0.900 | 0.523 |
| Year 2013 | 144.512 | 0.000 | 0.000 | 0.000 | 144.512 | | 93.330 | 0.030 | 0.000 | 0.480 | 2.568 |
| Grand Total | 382.573 | 0.000 | 0.000 | 0.000 | 382.573 | | 172.290 | 0.478 | 0.007 | 1.380 | 3.091 |

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 |
|--|--------------|--|---|--------------------------------|--|--|-----------------------|
| <i>Cultural Heritage Impact (Construction and Operational Phase)</i> | | | | | | | |
| 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 | ✓ |
| <i>Landscape & Visual (Construction Phase)</i> | | | | | | | |
| 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> <ul style="list-style-type: none"> 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 |
|----------|--------------|--|---|--------------------------------|--------------------------|---------------------------------|-----------------------|
| | | <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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 | <p><u>Decorative Hoarding</u></p> <p>Erection of decorative screen during construction stage to screen</p> | Minimize visual & landscape impact | Contractor | Within Project Site | Detailed design and | ✓ |

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| | | <p>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</p> <p><u>Management of facilities on work sites</u></p> <ul style="list-style-type: none"> 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. <p><u>Tree Transplanting</u></p> <ul style="list-style-type: none"> 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. | | | | construction stage | |
| Air Quality (Construction Phase) | | | | | | | |
| / | A1 | <p><u>Emission from Vehicles and Plants</u></p> <ul style="list-style-type: none"> 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 | * |

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| | | 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 | <ul style="list-style-type: none"> • 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 | Minimize dust impact at the nearby sensitive receivers | Contractor | All construction sites | Construction stage | * |

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| | | <p>pedestrian barriers, fencing or traffic cones.</p> <ul style="list-style-type: none"> • 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; | | | | | |

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| | | <ul style="list-style-type: none"> • 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, | | | | | |

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| | | 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. | | | | | |
| <i>Construction Noise (Airborne)</i> | | | | | | | |
| S8.3.6 | N1 | Implement the following good site practices: <ul style="list-style-type: none"> • 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 | ✓ |
| S8.3.6 | N2 | Install temporary hoarding located on the site boundaries between noisy | Reduce the construction noise | Contractor | All construction sites | Construction | ✓ |

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| | | construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period. | levels at low-level zone of NSRs through partial screening. | | | 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 | <p>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:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> 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 | * |

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| | | <p>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.</p> <ul style="list-style-type: none"> • 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 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. | | | | | |

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| | | <ul style="list-style-type: none"> • 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. | | | | | |

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| | | <ul style="list-style-type: none"> • 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. • 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 | | | | | |

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| | | <p>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.</p> <ul style="list-style-type: none"> • 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. | | | | | |

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| | | <ul style="list-style-type: none"> Adopt best management practices | | | | | |
| S10.7.1 | W2 | <p><u>Tunnelling Works</u></p> <ul style="list-style-type: none"> 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 | N/A |
| S10.7.1 | W3 | <p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks are | To minimize water quality from sewage effluent | Contractor | All construction sites where practicable | Construction stage | ✓ |

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| | | <p>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.</p> | | | | | |
| S10.7.1 | W4 | <p><u>Groundwater from Contaminated Area:</u></p> <ul style="list-style-type: none"> 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 | To minimize groundwater quality impact from contaminated area | Contractor | Excavation areas where contamination is found | Construction stage | N/A |

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| | | <p>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.</p> <ul style="list-style-type: none"> 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. | | | | | |

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| S10.7.1 | W7 | <p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> 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 | <p>On-site sorting of C&D material</p> <ul style="list-style-type: none"> 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 | 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 | ✓ |

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| | | <p>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.</p> | | | | | |
| S11.5.1 | WM2 | <p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> • 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 | <p>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</p> | Contractor | All construction sites | Construction stage | ✓ |

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| | | <p>that the disposal of C&D materials are properly documented and verified; and</p> <ul style="list-style-type: none"> 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 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> 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 | <p>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</p> | Contractor | All construction sites | Construction stage | ✓ |

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| | | <p>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.</p> | | | | | |
| S11.5.1 | WM4 | <p><u>General Refuse</u></p> <ul style="list-style-type: none"> • 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 | ✓ |
| S11.5.1 | WM6 | <u>Land-based and Marine-based Sediment</u> | To control pollution due to | Contractor | Within Project Site | Construction | ✓ |

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| | | <ul style="list-style-type: none"> • 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 licence. | marine sediment | | Area | Stage | |

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| | | <ul style="list-style-type: none"> • 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 750m³ 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. | | | | | |
| S11.5.1 | WM7 | <u>Chemical Waste</u> <ul style="list-style-type: none"> • Chemical waste that is produced, as defined by Schedule 1 of the | Control the chemical waste and ensure proper storage, | 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 |
|----------|--------------|---|---|--------------------------------|--------------------------|---------------------------------|-----------------------|
| | | <p>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.</p> <ul style="list-style-type: none"> • 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 | handling and disposal. | | | | |

| 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 |
|-------------------------|--------------|--|---|--------------------------------|--------------------------|---------------------------------|-----------------------|
| | | storage containers; or be to a reuser of the waste, under approval from the EPD. | | | | | |
| <i>EM&A Project</i> | | | | | | | |
| 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***

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 2014 | 0 | 0 | 0 | 0 |
| February 2014 | 0 | 0 | 0 | 0 |
| March 2014 | 0 | 0 | 0 | 0 |
| April 2014 | 0 | 0 | 0 | 0 |
| May 2014 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 |
| Year 2013 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 |

Appendix J

**8th 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. 8

[Period from 1 to 31 May 2014]

Works Contract 1102 –
Hin Keng Station and Approach Structures

(June 2014)

Certified by: 
Dr. Priscilla Choy

Position: Environmental Team Leader

Date: 12th June 2014

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)

May 2014

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 8th 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 31 May 2014.

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;
 - Pre-bored H-pile;
 - King Post Piling;
 - Sheet piling; and
 - Demolition of retaining wall.

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) 5 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 2,539.9 m³ of inert C&D materials were generated from the Project and were sent to Contract 1108A Kai Tak Barging Point and Tseung Kwan O Area 137 Fill Bank during the reporting month. No non-recyclable non-inert C&D materials and 36.0 m³ 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 8 and 19 May 2014. 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 8, 13, 19 and 27 May 2014. The representative of the IEC joined the site inspection on 19 May 2014. 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;
 - Pre-bored H-pile;
 - King Post Piling;
 - Sheet piling; and
 - Demolition of retaining wall.

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 8th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1 to 31 May 2014.

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;
 - Pre-bored H-pile;
 - King Post Piling;
 - Sheet piling; and
 - Demolition of retaining wall.

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/E | 4/4/2014 | 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 | 3/9/2013 | N/A | Valid |
| Effluent Discharge License under Water Pollution Control Ordinance | | | |
| WT00016803-2013 | 4/9/2013 | 28/4/2014 | Updated by WT00018589-2014 |
| WT00018589-2014 | 29/4/2014 | 30/9/2018 | Valid |
| Construction Noise Permit (CNP) | | | |
| GW-RN0811-13 | 15/1/2014 | 14/6/2014 | 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 (April 2014) | 14 May 2014 |

5 MONITORING RESULTS

Regular Construction Noise Monitoring

- 5.1 A total of 5 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 | 51.1 ⁽²⁾ | 54.9 ⁽²⁾ | When one documented complaint is received | 70/65 ⁽¹⁾ |

Remarks:

- (1) For normal day-time working hours, the noise criteria is 70dB(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 $\mu\text{g}/\text{m}^3$ | Maximum $\mu\text{g}/\text{m}^3$ | Average $\mu\text{g}/\text{m}^3$ | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|-----------|----------------------------------|----------------------------------|----------------------------------|--|---------------------------------------|
| 24-hr TSP | 14.9 | 36.5 | 24.5 | 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 | | |
| May 2014 ^(d) | 2,539.9 m ³ | 36.0 m ³ | 0 kg | 0 kg | 0 kg | 0 kg |

Notes:

- (a) Inert C&D materials include excavated soil and rock, which were delivered to Tseung Kwan O Area 137 Fill Bank during the reporting month.
- (b) In 2,539.9 m³ inert C&D materials, 886.6 m³ of excavated soil was delivered to Contract 1108A Kai Tak Barging Point and would be reused in other project.
- (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 data in reporting month was 29 May 2014.

Landscape and Visual

- 5.10 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted on 8 and 19 May 2014. 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 8, 13, 19 and 27 May 2014 by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 19 May 2014. 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 |
|----------------------|-----------------------------------|--|--|
| <i>Water Quality</i> | 15, 22 and 29 Apr, and 8 May 2014 | <u>Reminder:</u> Wastewater storage pool at Slope FR326 should be maintained to provide enough capacity for retaining wastewater. | Please refer to remark on item for 13 May 2014. |
| | 29 Apr, and 8 and 13 May 2014 | Effluent of sedimentation tank appeared milky. Proper maintenance should be provided to the tank to improve the quality of effluent. | Effluent from sedimentation tank was not observed during the site inspection on 19 May 2014. |
| | 29 Apr 2014 | Additional sand bag should be provided to gullies near site entrance to prevent runoff from entering. | Construction work was observed in identified area and the gullies were removed on 8 May 2014. |
| | 8 May 2014 | Properly cover stockpile of construction materials with tarpaulin during rainstorm. | The stockpiles were removed on 13 May 2014. |
| | 13 May 2014 | Silty water overflow was observed at Slope FR326 and near swimming pool. Pumping should be provided to reduce the overflow. | Silty water near swimming pool was removed. Pumping was provided to sedimentation pit at Slope FR326 on 19 May 2014. |
| | 19 and 27 May 2014 | <u>Reminder:</u> Sediment in effluent discharge point near site entrance should be regularly removed, and ensure all effluent is treated before discharged. | Follow up actions will be reported in the next month. |
| | 27 May 2014 | <u>Reminder:</u> Catch pit at Slope FR326 should be provided with proper capacity for temporary runoff storage. | Follow up actions will be reported in the next month. |

| Parameters | Date | Observations and Recommendations | Follow-up |
|------------------------------------|---------------------------|---|---|
| <i>Noise</i> | 15, 22 and 29 Apr 2014 | <u>Reminder:</u> Noise barrier for air compressors should be properly maintained and enhanced to reduce noise. | The air compressors were removed on 8 May 2014. |
| | 13 May 2014 | <u>Reminder:</u> Noise mitigation measure for sheet piling work should be improved. | Noise barrier was provided to sheet piling work on 19 May 2014. |
| | 27 May 2014 | <u>Reminder:</u> Noise barriers should be replaced for sheet piling work to reduce construction noise. | Follow up actions will be reported in the next month. |
| <i>Landscape and Visual</i> | N/A | There was no observation in the reporting period. | N/A |
| <i>Air Quality</i> | N/A | There was no observation in the reporting period. | N/A |
| <i>Waste / Chemical Management</i> | N/A | There was no observation in the reporting period. | N/A |
| <i>Permits/ Licenses</i> | 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;
- Pre-bored H-pile;
- King Post Piling;
- Sheet piling; and
- Demolition of retaining wall.

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;
- Control of silty surface runoff during wet season;
- Overflow of the sedimentation tanks and desilting facilities; and
- Regular removal of silt, mud and sand along u-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 31 May 2014 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:

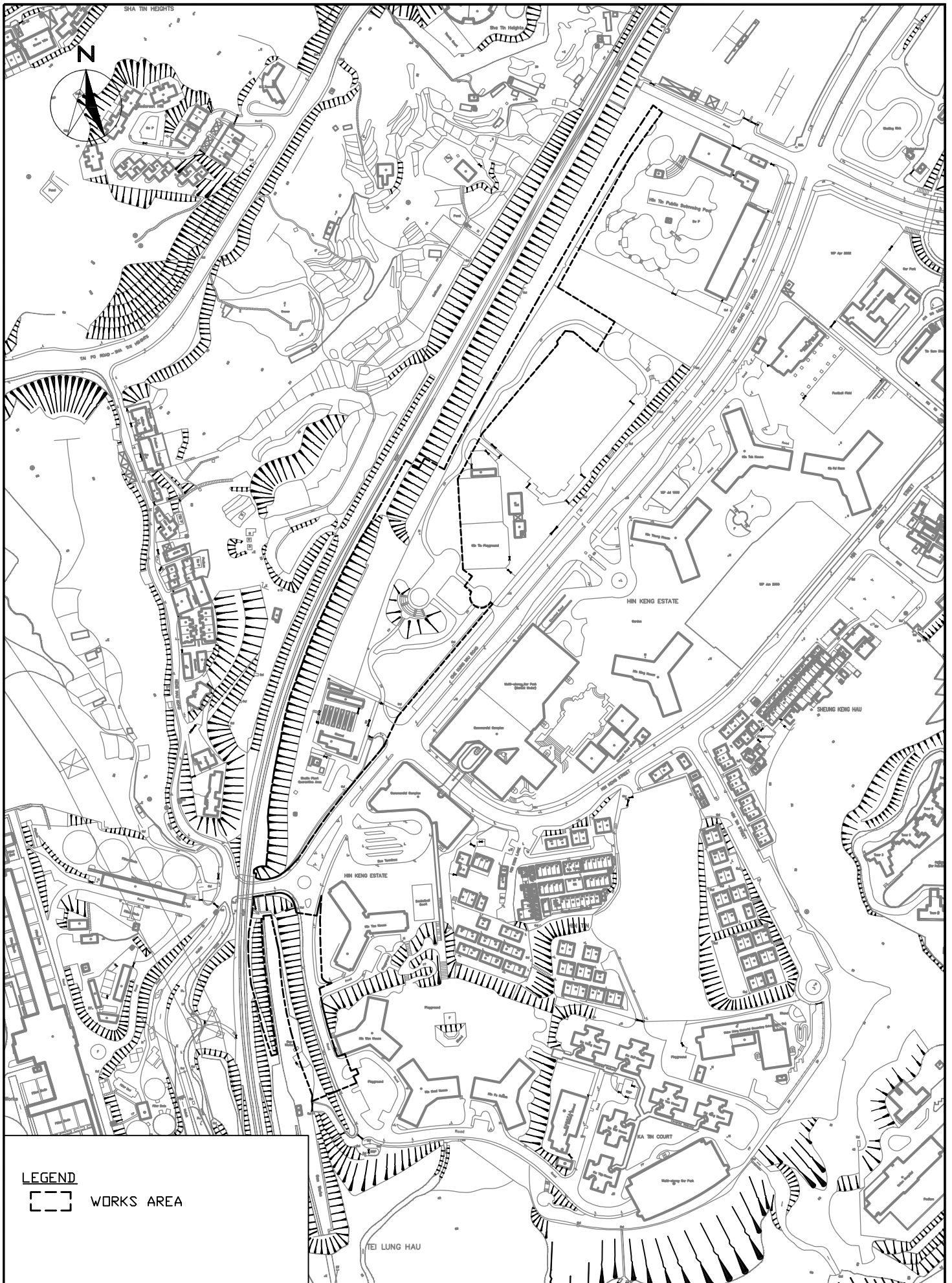
Water Quality

- All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times;
- Stockpile of construction materials should be properly covered by impervious sheet during rainstorm to reduce silty runoff.
- During rainy season, sediment control measures should be inspected and maintained after rain storms. Silty runoff should be directed and treated by desilting facilities before discharged.

Construction Noise

- Regular review on the noise mitigation measures and the conditions of the implemented noise mitigation measures shall be properly maintained.

FIGURES



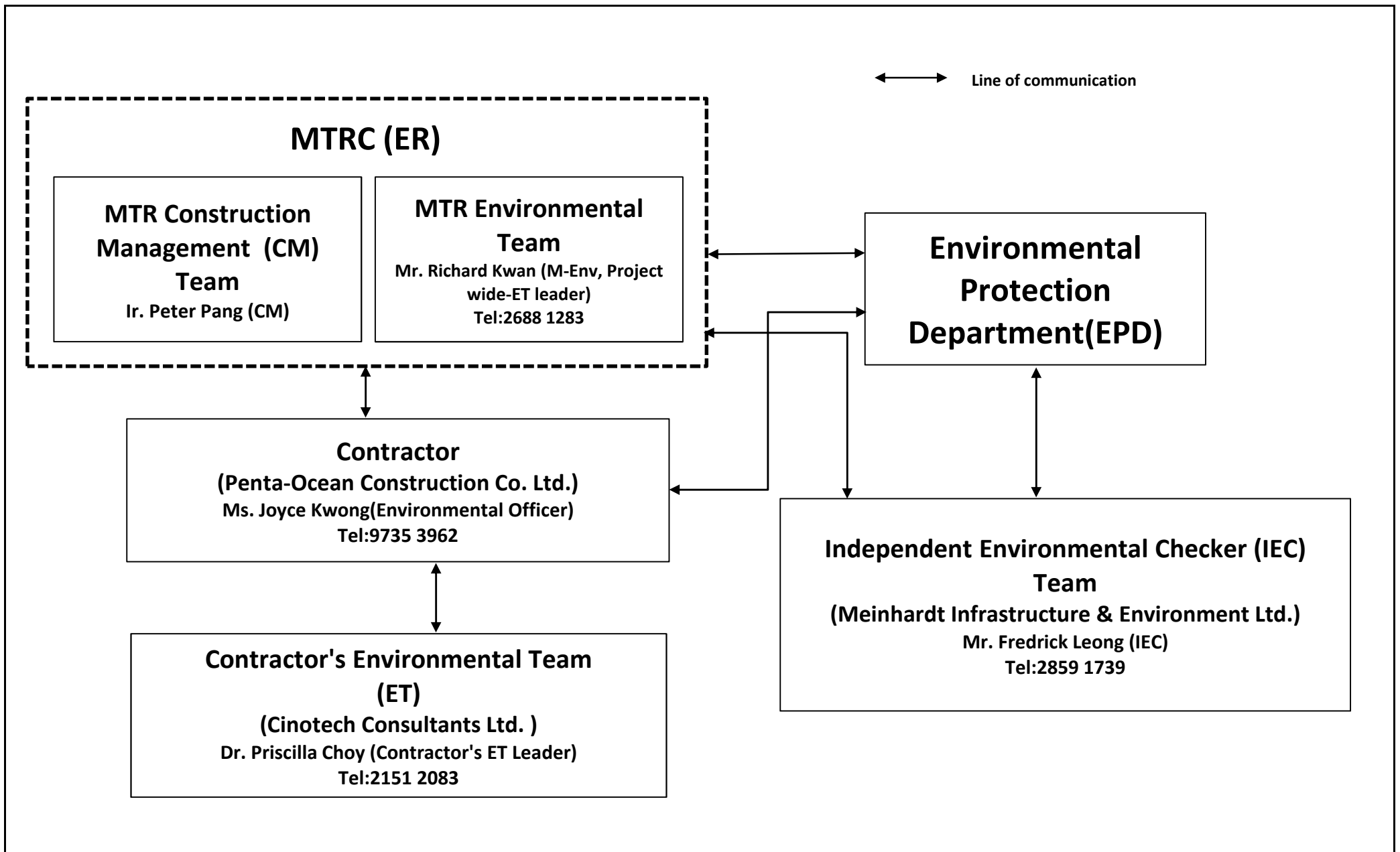
LEGEND

 WORKS AREA



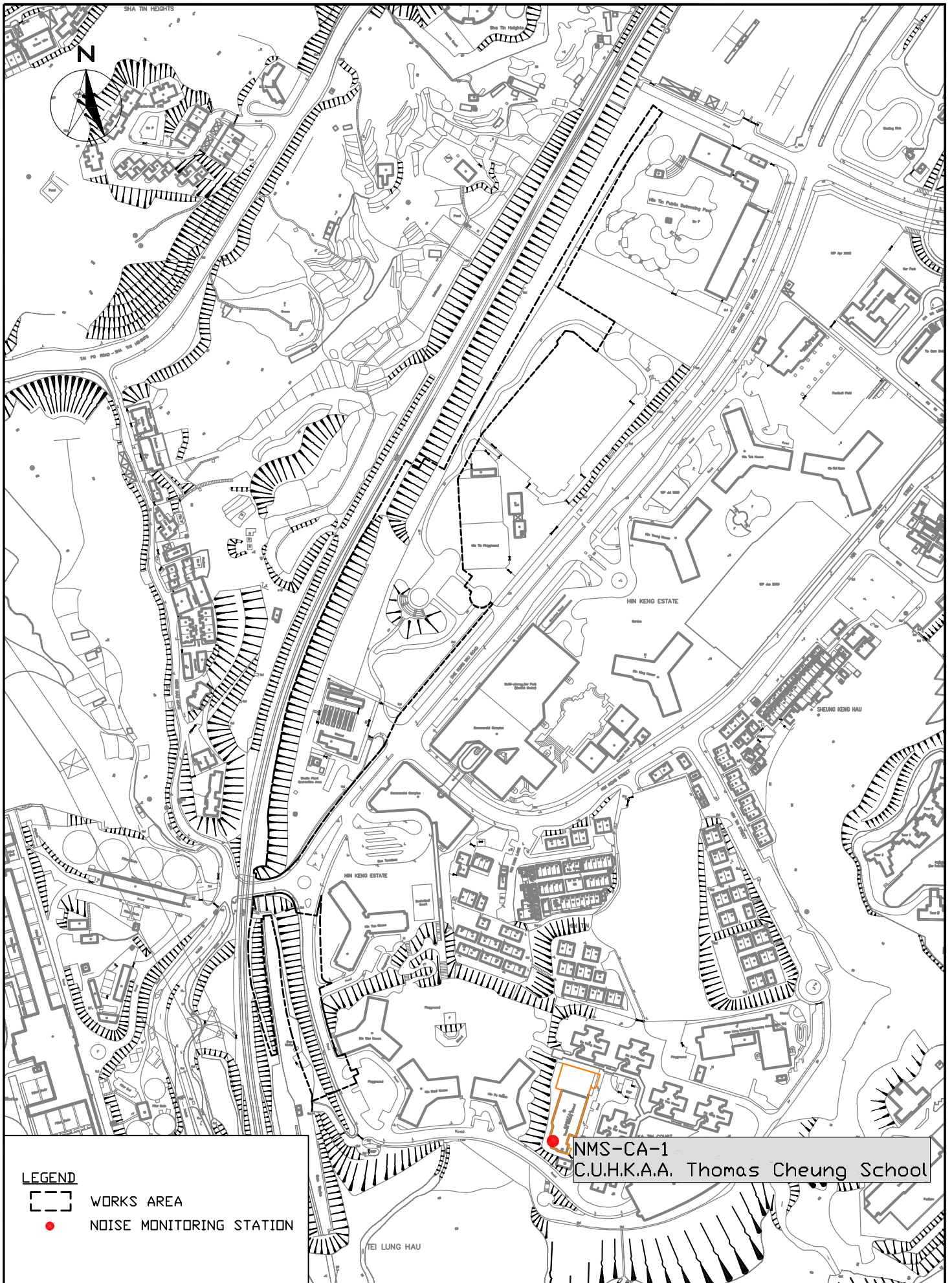
SCL CONTRACT 1102
 THE SHATIN TO CENTRAL LINK -
 HIN KENG STATION AND APPROACH STRUCTURES
**SITE LAYOUT PLAN OF
 WORKS CONTRACT 1102**

| | | | |
|---------|------------|------------|----------|
| 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 | Project No. | MA13040 |
| | Date | Oct-13 | Figure | 2 |





LEGEND

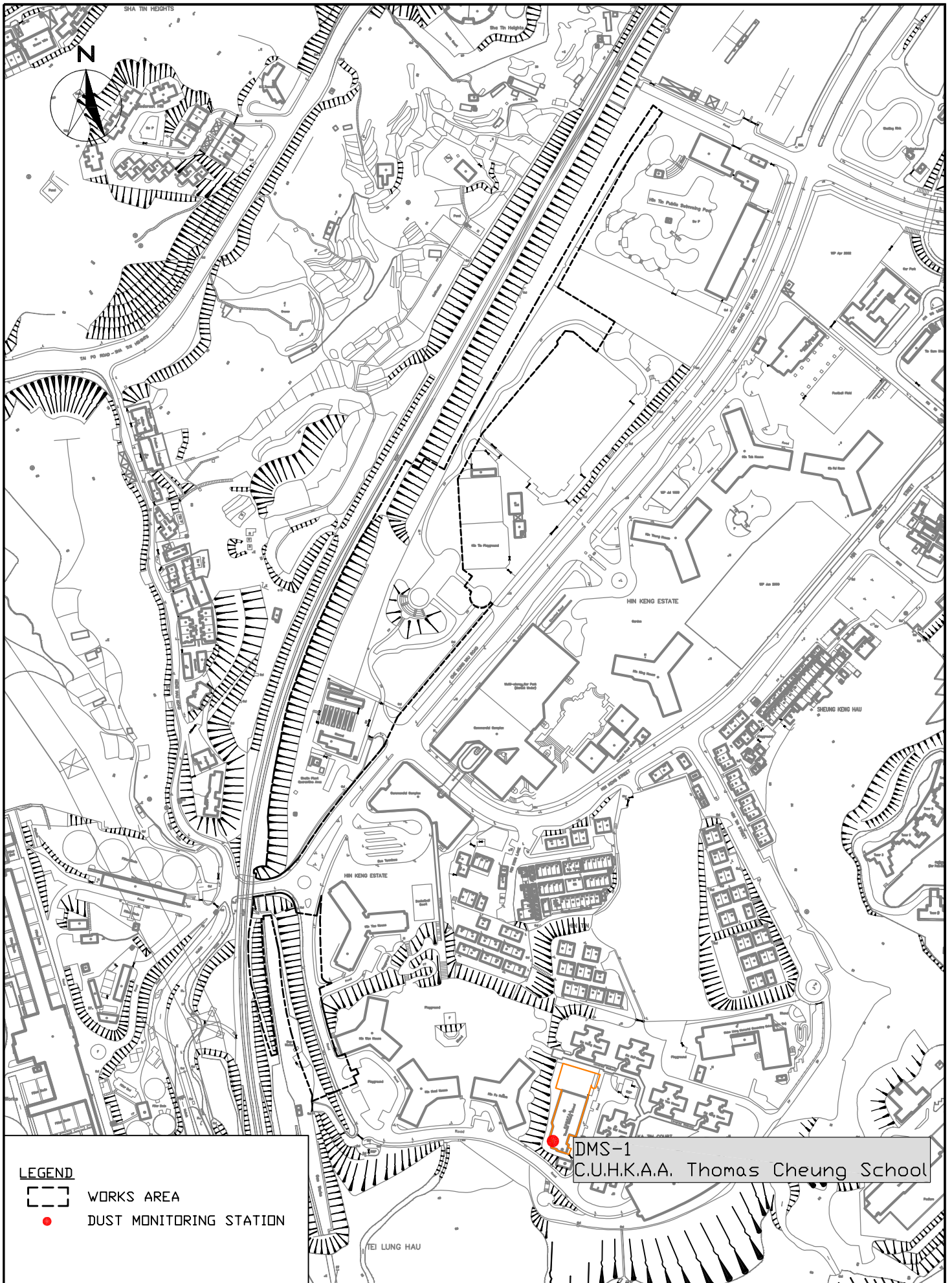
- WORKS AREA
- NOISE MONITORING STATION

NMS-CA-1
C.U.H.K.A.A. Thomas Cheung School





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 | - |



DMS-1
C.U.H.K.A.A. Thomas Cheung School

LEGEND

-  WORKS AREA
-  DUST MONITORING STATION



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 | 2014 | | | |
|---|---------------|-------------------|--------------------|------------|------------|------|-----|-----|-----|
| | | | | | | May | Jun | Jul | Aug |
| 3-month Rolling Programme Summary (June to Aug 2014) | | 910 | 751 | 21-Oct-13A | 17-Dec-16 | | | | |
| Hin Keng Station | | 122 | 76 | 02-Jan-14A | 30-Aug-14 | | | | |
| Foundation | | 104 | 9 | 02-Jan-14A | 12-Jun-14 | | | | |
| Pre-bored H-pile | | 84 | 0 | 02-Jan-14A | 03-May-14A | | | | |
| Proof Drilling | | 28 | 0 | 11-Apr-14A | 26-May-14A | | | | |
| Loading Test | | 61 | 9 | 10-Apr-14A | 12-Jun-14 | | | | |
| ELS | | 54 | 7 | 03-Apr-14A | 10-Jun-14 | | | | |
| External Works | | 46 | 0 | 14-Apr-14A | 29-May-14A | | | | |
| Demolition of RW7 | | 46 | 0 | 14-Apr-14A | 29-May-14A | | | | |
| Sub-structure | | 69 | 69 | 11-Jun-14 | 30-Aug-14 | | | | |
| Cap and Tie Beams | | 69 | 69 | 11-Jun-14 | 30-Aug-14 | | | | |
| Ma On Shan Line & Tail Track | | 910 | 751 | 21-Oct-13A | 17-Dec-16 | | | | |
| Retaining Wall FW7 | | 224 | 84 | 02-Dec-13A | 10-Sep-14 | | | | |
| Initial Work | | 171 | 14 | 02-Dec-13A | 18-Jun-14 | | | | |
| Structural Works | | 70 | 70 | 19-Jun-14 | 10-Sep-14 | | | | |
| R.C. Platform | | 105 | 33 | 28-Feb-14A | 11-Jul-14 | | | | |
| Initial Works | | 105 | 33 | 28-Feb-14A | 11-Jul-14 | | | | |
| Predrilling | | 38 | 0 | 05-Mar-14A | 11-Apr-14A | | | | |
| Noise Barrier Mini-pile | | 316 | 135 | 21-Oct-13A | 11-Nov-14 | | | | |
| Noise Barrier Work | | 768 | 751 | 15-May-14A | 17-Dec-16 | | | | |
| Miscellaneous Items within Operation Area | | 146 | 92 | 28-Mar-14A | 19-Sep-14 | | | | |
| Elevated Evacuation Walkway | | 146 | 92 | 28-Mar-14A | 19-Sep-14 | | | | |
| At-grade Box | | 158 | 81 | 26-Feb-14A | 05-Sep-14 | | | | |
| Haul Road Construction | | 30 | 30 | 03-Jun-14 | 08-Jul-14 | | | | |
| Temporary Piling Platform | | 158 | 81 | 26-Feb-14A | 05-Sep-14 | | | | |
| Bored Pile Construction | | 36 | 36 | 26-Jul-14 | 05-Sep-14 | | | | |
| Hin Keng Viaduct | | 468 | 214 | 21-Oct-13A | 14-Feb-15 | | | | |
| Foundation | | 468 | 214 | 21-Oct-13A | 14-Feb-15 | | | | |
| Pre-drilling | | 300 | 76 | 21-Oct-13A | 30-Aug-14 | | | | |
| Bored Piles Construction & Pile Test | | 414 | 214 | 23-Dec-13A | 14-Feb-15 | | | | |
| Initial Work | | 277 | 0 | 01-Nov-13A | 17-May-14A | | | | |
| Temporary Traffic Management | | 277 | 0 | 01-Nov-13A | 17-May-14A | | | | |
| FR63 Slope | | 168 | 81 | 15-Feb-14A | 05-Sep-14 | | | | |
| Pit by Pit Construction | | 168 | 81 | 15-Feb-14A | 05-Sep-14 | | | | |
| Row 1 | | 128 | 17 | 15-Feb-14A | 21-Jun-14 | | | | |
| Row 2 | | 63 | 63 | 24-Jun-14 | 05-Sep-14 | | | | |
| FR65 Slope | | 221 | 83 | 14-Jan-14A | 09-Sep-14 | | | | |
| Pit by Pit Construction | | 221 | 83 | 14-Jan-14A | 09-Sep-14 | | | | |
| Zone 1 | | 221 | 83 | 14-Jan-14A | 09-Sep-14 | | | | |
| Zone 2 | | 80 | 80 | 03-Jun-14 | 04-Sep-14 | | | | |
| Zone 4 | | 80 | 80 | 03-Jun-14 | 04-Sep-14 | | | | |



- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone

MTRC SCL Project Contract 1102
Hin Keng Station and Approach Structures

3 Months Rolling Programme Summary

(Period - June to August 2014)

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 03-Jun-14 | 0 | | |
| | | | |

**APPENDIX B
ACTION AND LIMIT LEVELS**

APPENDIX B – Action and Limit Levels**24-Hour TSP**

| Regular Dust Monitoring Station | Description | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|--|-----------------------------------|--|---|
| 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**

APPENDIX C – SUMMARY OF EXCEEDANCE

Reporting Month: May 2014

a) Exceedance Report for Dust Monitoring (NIL)

b) Exceedance Report for Noise Monitoring (NIL)

APPENDIX D
SITE AUDIT SUMMARY

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|-----------------------|
| Checklist Reference Number | 140508 |
| Date | 8 May 2014 (Thursday) |
| Time | 14:30 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| 140508-O01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> Properly cover stockpile of construction materials with tarpaulin during rainstorm. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> | B 10 |
| 140508-F02 | <ul style="list-style-type: none"> Proper maintenance should be provided to the sedimentation tank to improve the quality of effluent. | B 7 |
| 140508-F03 | <ul style="list-style-type: none"> Wastewater storage pool at Slope FR326 should be maintained to provide enough capacity for retaining wastewater. | B 7 |

| | Name | Signature | Date |
|-------------|--------------------|---|------------|
| Recorded by | Jason Lai |  | 8 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 8 May 2014 |

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*

Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|------------------------|
| Checklist Reference Number | 140513 |
| Date | 13 May 2014 (Thursday) |
| Time | 09:00 – 11:00 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|---|------------------|
| 140513-O01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> Silty water overflow is observed at Slope FR326 and near swimming pool. Pumping should be provided to reduce the overflow. | B 15ii |
| 140513-R02 | <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> Noise mitigation measure for sheet piling work should be improved | F 7 |
| 140513-F03 | <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> <ul style="list-style-type: none"> Proper maintenance should be provided to the sedimentation tank to improve the quality of effluent. | B 7 |

| | Name | Signature | Date |
|-------------|--------------------|---|-------------|
| Recorded by | Jason Lai |  | 13 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 13 May 2014 |


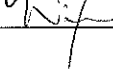
Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|----------------------|
| Checklist Reference Number | 140519 |
| Date | 19 May 2014 (Monday) |
| Time | 14:00 – 15:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| 140519-R01 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> Sediment in effluent discharge point near site entrance should be regularly removed. <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part I – Others</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | B 7 |

| | Name | Signature | Date |
|-------------|--------------------|---|-------------|
| Recorded by | Jason Lai |  | 19 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 19 May 2014 |

*Shatin to Central Link -
Contract 1102 Hin Keng Station and Approach Structures*


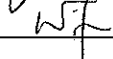
Record Summary of Environmental Site Inspection

Inspection Information

| | |
|----------------------------|-----------------------|
| Checklist Reference Number | 140527 |
| Date | 27 May 2014 (Tuesday) |
| Time | 09:00 – 11:30 |

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

| Ref. No. | Remarks/Observations | Related Item No. |
|------------|--|------------------|
| 140527-R02 | <p>Part B – Water Quality</p> <ul style="list-style-type: none"> Catch pit at slope FR326 should be provided with proper capacity for temporary runoff storage. | B 7 |
| 140527-R01 | <p>Part C – Ecology</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part D – Landscape & Visual</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part E – Air Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part F – Construction Noise Impact</p> <ul style="list-style-type: none"> Noise barriers should be replaced for sheet piling work to reduce construction noise. <p>Part G – Waste/Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. <p>Part H – Permits/Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during the site inspection. | F 7 |
| 140527-F03 | <p>Part I – Others</p> <ul style="list-style-type: none"> Sediment in effluent discharge point near site entrance should be regularly removed, and ensure all effluent treated before discharged. | B 7 |

| | Name | Signature | Date |
|-------------|--------------------|---|-------------|
| Recorded by | Jason Lai |  | 27 May 2014 |
| Checked by | Dr. Priscilla Choy |  | 27 May 2014 |

**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 |
|--|-----------------|---|--|---|--|--|--|--------|
| <i>Ecology (Construction Phase)</i> | | | | | | | | |
| 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 | <ul style="list-style-type: none"> • AFCD's requirements • EIAO • Country Parks Ordinance | ^ |
| S5.7 | E5 | <p><u>Good Site Practices</u></p> <p>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.</p> <p>The following good site practices should also be implemented:</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • ProPECC PN 1/94 | ^ |
| | | | | | | | | N/A |

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 |
|---|-----------------|--|--|---|-----------------------------|---------------------------------------|--|-------------------|
| | | <p>waterbodies in particular the Tei Lung Hau stream;</p> <ul style="list-style-type: none"> • 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 | <p><u>Water Quality and Hydrology</u></p> <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • 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 | ^ |
| <i>Landscape & Visual (Construction Phase)</i> | | | | | | | | |
| S6.9.3 | LV1 | <p>The following good site practices and measures for minimisation and avoidance of potential impacts are recommended:</p> <p><u>Re-use of Existing Soil</u></p> <ul style="list-style-type: none"> • 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 | ^ |

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 |
|----------|-----------------|--|--|---|-----------------------------|---------------------------------------|--|--|
| | | <p>ground, gathering ground and mixing ground may be set up on-site as necessary.</p> <p><u>No-intrusion Zone</u></p> <ul style="list-style-type: none"> 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. <p><u>Protection of Retained Trees</u></p> <ul style="list-style-type: none"> 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, | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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 |
|----------|-----------------|---|--|---|-----------------------------|---|--|---------------------|
| | | including trees in contractor's works sites. | | | | | | |
| S6.12 | LV2 | <ul style="list-style-type: none"> • <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 | 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 |
|--|-----------------|---|--|---|-----------------------------|---------------------------------------|---|---------------------|
| <i>Air Quality (Construction Phase)</i> | | | | | | | | |
| / | A1 | Emission from Vehicles and Plants <ul style="list-style-type: none"> • 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 | ^ |
| <i>Construction Dust Impact</i> | | | | | | | | |
| 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 | ^ |

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| | | <p>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</p> | | | | | | |
| S7.6.5 | D3 | <ul style="list-style-type: none"> • 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 | <p>Minimize dust impact at the nearby sensitive receivers</p> | Contractor | All construction sites | Construction stage | <ul style="list-style-type: none"> • APCO • To control the dust impact to meet HKAQO and TM-EIA criteria | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

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| | | <p>point should be paved with concrete, bituminous materials or hardcores;</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <p>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;</p> <p>Any skip hoist for material transport should be totally enclosed by impervious sheeting;</p> <ul style="list-style-type: none"> • 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; <p>and</p> <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | 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: <ul style="list-style-type: none"> • 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 | ^ ^ ^ ^ ^ |

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| | | 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 | ^ |

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| | | | representative locations | | noise monitoring station | | | |
| Water Quality (Construction Phase) | | | | | | | | |
| S10.7.1 | W1 | <p>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:</p> <p><u>Construction Runoff and Site Drainage</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water | ^ ^ |

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| | | <p>in the permanent drainage channels to enhance deposition rates.</p> <ul style="list-style-type: none"> • 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. | | | | | | <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <ul style="list-style-type: none"> • 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. | | | | | | <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> |

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| | | <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <p>accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> • 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 | | | | | | <p>^</p> <p>^</p> <p>^</p> <p>^</p> |
| S10.7.1 | W3 | <p><u>Sewage Effluent</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-water | ^ |

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| S10.7.1 | W7 | <p>In order to prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-Water | ^ ^ ^ |
| Waste Management (Construction Waste) | | | | | | | | |
| S11.4.1.1 | WM1 | <p><u>On-site sorting of C&D material</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • DEVB TC(W) No. 6/2010 | ^ |

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| | | 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 | <p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 | ^ ^ ^ ^ |

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| | | <ul style="list-style-type: none"> • 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 | | | | | | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |
| S11.5.1 | WM3 | <p><u>C&D Waste</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 | <p style="text-align: center;">^</p> |

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| | | <ul style="list-style-type: none"> 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 | <p><u>General Refuse</u></p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Waste Disposal Ordinance | ^ ^ ^ ^ |

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| | | volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. | | | | | | |
| S11.5.1 | WM7 | <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |

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| | | <ul style="list-style-type: none"> • 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 | | | | | | | | |

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| S12.12 | LC2 | <p><u>Re-sampling at NTSAMC</u></p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • 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 | - | Construction and operation | | ^ |

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| | | | | | | phases | | |
| Chapter 13.13 | A13C.8 | Establishment of emergency response and evacuation plans (cooperation 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 | 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, construction workers 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 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> EIAO Guidance Note No.4/2010 TM-EIAO | ^ |
| S 14.2 – 14.4 | EM2 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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/A Not 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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 | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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. | <ol style="list-style-type: none">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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 2014

| 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) |
| Year 2013 | 4.2424 | 0.0803 | 0 | 0.2980 | 3.8011 | 0.0631 | 0 | 0 | 0 | 0 | 0.1227 |
| Jan-14 | 1.3004 | 0 | 0 | 0.1714 | 1.1265 | 0.0025 | 0 | 0 | 0 | 0 | 0.0442 |
| Feb-14 | 0.1766 | 0 | 0 | 0.1483 | 0.0044 | 0.0238 | 0 | 0 | 0 | 0 | 0.0069 |
| Mar-14 | 2.7538 | 0 | 0 | 0.3543 | 2.3748 | 0.0248 | 0 | 0 | 0 | 0 | 0.0479 |
| Apr-14 | 1.0369 | 0 | 0 | 0.0806 | 0.9444 | 0.0120 | 0 | 0 | 0 | 0 | 0.0215 |
| May-14 (See Note 3) | 2.5399 | 0 | 0 | 0.8866 | 1.6390 | 0.0143 | 0 | 0 | 0 | 0 | 0.0360 |
| Jun-14 | | | | | | | | | | | |
| Sub-total | 12.0500 | 0.0803 | 0 | 1.9392 | 9.8902 | 0.1405 | 0 | 0 | 0 | 0 | 0.2792 |
| Jul-14 | | | | | | | | | | | |
| Aug-14 | | | | | | | | | | | |
| Sep-14 | | | | | | | | | | | |
| Oct-14 | | | | | | | | | | | |
| Nov-14 | | | | | | | | | | | |
| Dec-14 | | | | | | | | | | | |
| Total | 12.0500 | 0.0803 | 0 | 1.9392 | 9.8902 | 0.1405 | 0 | 0 | 0 | 0 | 0.2792 |

Note: (1) Inert C&D materials include excavated soil and rock, which were delivered to Tseung Kwan O Area 137 Fill Bank 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 data in reporting month was 29 May 2014.

**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 |
|----------|---------------|---------------------------------|----------------------|----------------------------------|-------------|
| -- | -- | -- | -- | -- | -- |

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 |
|----------|---------------|---------|--------|---|--|
| -- | -- | -- | -- | -- | -- |