

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



## 48<sup>th</sup> CONSOLIDATED MONTHLY EM&A REPORT

October 2020

**Client** : Civil Engineering and Development Department, HKSAR

**EP No.** : EP-337/2009 –  
New Distributor Roads Serving the Planned Kai Tak  
Development Area

**Contract No.** : KLN/2016/05 –  
Independent Environmental Checker for  
Contract No. KL/2015/02 Kai Tak Development –  
Stage 5A Infrastructure at Former North Apron Area

**Report No.** : 0087/16/ED/1107

**Prepared by** : Wingo So

**Reviewed by** : Calvin Leung

**Certified by** :   
Colin Yung  
Independent Environmental Checker  
Fugro Technical Services Limited

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



## TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>EXECUTIVE SUMMARY</b>   | <b>I</b>  |
| <b>1. INTRODUCTION</b>   | <b>1</b>  |
| <b>2. ENVIRONMENTAL MONITORING AND AUDIT</b>                         | <b>5</b>  |
| <b>3. SITE INSPECTION</b>  | <b>8</b>  |
| <b>4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE</b>                 | <b>9</b>  |
| <b>5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES</b> | <b>10</b> |
| <b>6. FUTURE KEY ISSUES</b>  | <b>11</b> |
| <b>7. CONCLUSIONS</b>  | <b>14</b> |

## LIST OF APPENDICES

|            |  |
|------------|--|
| Appendix A | Monthly EM&A Report For Contract No. KL/2014/01<br>Kai Tak Development - Stage 2 Infrastructure works for Developments at Southern Part of the Former Runway     |
| Appendix B | Monthly EM&A Report For Contract No. KL/2014/03<br>Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway |
| Appendix C | Monthly EM&A Report For Contract No. KL/2015/02<br>Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area                                      |
| Appendix D | Monthly EM&A Report For Contract No. ED/2018/01<br>Kai Tak Development – Stage 4 infrastructure at the former runway and south apron                             |



**EXECUTIVE SUMMARY**

- i. This is the 48th Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 October and 31 October 2020.
- ii. The construction activities undertaken in the reporting month are summarized as follow:

**Contract No. KL/2014/01:**

- TTA implementation, minor works at Shing Fung Road and Wang Chiu Road / Kai Cheung Road;
- Laying of paving blocks for footpath;
- Erection of noise barrier panels;
- Planting works along footpath and at deck level;
- Architectural features works at landscaped deck and ground floor open space;
- E&M works;
- Remedial Work of Holding Down Bolts of noise barrier; and
- Construction of pedestrian streets.

**Contract No. KL/2014/03:**

- Utility laying
- Construction of road base and road pavement
- Landscape works – irrigation systems, tree and shrub planting
- Laying Cable and Construction for Road Lighting

**Contract No. KL/2015/02:**

- Carry out trial pits at PERE TTA Stage 4-2
- Carry out structural works for subway at SKLR Playground
- Remove the uncharted concrete support underneath the DN750 water main at PERE TTA Stage 3
- Construct retaining wall and backfill underneath traffic Deck of TTA Stage 1
- Install sub-frame of VE panel inside subway
- Modify the brackets of glazing panel at lift LT3
- Construction of Bridge S15
- Drainage works at Road D1
- Road works at Road D1, Road L7 and Slip Road S15
- Underground E&M, lighting and Irrigation works at Road D1
- UU installation at Road D1
- Underground E&M, lighting and Irrigation works at Road L7
- Drill & reinstate the existing anchor bolts at K72
- Fixing rebar & erection of formwork for the extended bridge
- Pouring concrete for the parapet & extended bridge
- Laying of optical fibre

**Contract No. ED/2018/01:**

- Installation of Sheet Pile
- Pumping Test at North Depressed Road Cofferdam and South Depressed Road
- Construction of Bored Pile of Bridge D3 and Landscape Deck
- ELS Installation & Excavation for South Depressed Road
- Construction of base slab, walls and columns for North Approach Ramp
- Permanent Structure Construction for North Depressed Road
- Permanent Structure Construction for Pile Cap of Bridge D3
- Construction of Hoarding

## **FUGRO TECHNICAL SERVICES LIMITED**

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



---

### **Breaches of the Action and Limit Levels**

- iii. Three action Level exceedance for 24-hr TSP were recorded under Contractor No. KL/2014/03 in the reporting month.
- iv. No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- v. A Limit Level exceedance for construction noise were recorded under Contractor No. KL/2014/03 in the reporting month.

### **Complaint, Notification of Summons and Successful Prosecution**

- vi. One complaint was received under Contractor No. ED/2018/01 in the reporting month.
- vii. No notification of summons or prosecution was received in this reporting month.

### **Reporting Changes**

- viii. There was no reporting change in the reporting month.



**Future Key Issues**

ix. The potential environmental impacts for the coming month and the control measures are shown in **Table I**:

Table I Summary of Key Issues for the Coming Month and Control Measures

| Major Impact Prediction   | Control Measures   |
|---|--|
| <b>Contract No. KL/2014/01:</b>   |  |
| Air quality impact (dust)   | <ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>• Watering of any earth moving activities.</li> </ul>   |
| Water quality impact (surface run-off)  | <ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>  |
| Noise Impact  | <ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>• Controlling the number of plants use on site;</li> <li>• Regular maintenance of machines; and</li> <li>• Use of acoustic barriers if necessary.</li> </ul>   |
| Waste/ Chemical Management  | <ul style="list-style-type: none"> <li>• Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>• Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.</li> </ul>   |
| <b>Contract No. KL/2014/03:</b>   |  |
| Construction dust, construction noise, water quality, waste management and landscape and visual impact. | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities;</li> <li>• Limitation of the speed for vehicles on unpaved site roads;</li> <li>• Properly cover or enclosure of the stockpiles and dusty materials;</li> <li>• Good site practices on loading dusty materials;</li> <li>• Providing sufficient vehicles washing facilities at every vehicle exit point;</li> <li>• Good maintenance to the plant and equipment;</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME);</li> <li>• Use of acoustic fabric and noise barrier;</li> <li>• Using the approved Non-road Mobile Machineries (NRMMS);</li> <li>• Proper storage and handling of chemical;</li> <li>• Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge;</li> <li>• Onsite waste sorting and implementation of trip ticket system;</li> <li>• Training of the site personnel in proper waste management and chemical waste handling procedures;</li> <li>• Proper storage of the construction materials;</li> <li>• Erection of decorative screen hoarding;</li> <li>• Strictly following the Environmental Permits and Licenses;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Reports</li> </ul> |
| <b>Contract No. KL/2015/02:</b>   |  |
| Air quality impact (dust)   | <ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with tarpaulin or similar means;</li> </ul>   |



| Major Impact Prediction   | Control Measures   |
|---|--|
|   | and <ul style="list-style-type: none"> <li>• Watering of any earth moving activities.</li> </ul>   |
| Water quality impact (surface run-off)  | <ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>  |
| Noise Impact  | <ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>• Controlling the number of plants use on site;</li> <li>• Regular maintenance of machines; and</li> <li>• Use of acoustic barriers if necessary.</li> </ul>   |
| <b>Contract No. ED/2018/01:</b>   |  |
| Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities,</li> <li>• Limitation of the speed for vehicles on unpaved site roads,</li> <li>• Properly cover the stockpiles,</li> <li>• Good maintenance to the plant and equipment,</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME),</li> <li>• Provide movable noise barriers,</li> <li>• Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,</li> <li>• Onsite waste sorting and implementation of trip ticket system,</li> <li>• Good management and control on construction waste reduction,</li> <li>• Erection of decorative screen hoarding,</li> <li>• Strictly following the Environmental Permits and Licenses, and</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Reports.</li> </ul> |

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



## 1. INTRODUCTION

### 1.1 Background

- 1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.1.2 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 March 2009.
- 1.1.3 The EP-337/2009 was issued on 23 April 2009 for the new distributor roads serving the planned Kai Tak Development to the following scale and slope:
- Road D1 – a dual 2-lane carriageway of approximately 1.3 km long.
  - Road D2 – a dual 3-lane carriageway of approximately 1.1 km long.
  - Road D3 – a dual 2-lane carriageway of approximately 2.3 km long.
  - Road D4 – a dual 2-lane carriageway of approximately 0.9 km long.
- 1.1.4 The Civil Engineering and Development Department HKSAR has appointed Fugro Technical Services Limited (FTS) to undertake the role of Independent Environmental Checker (IEC) for the Contract No. KL/2015/02.
- 1.1.5 This is the 48<sup>th</sup> Consolidated Monthly EM&A Report which summaries the EM&A works undertaken by respective contract under EP-337/2009 within the period between 1 October and 31 October 2020.

### 1.2 Summary of relevant Contract Information of Key Personnel

| Party                             | Position          | Name             | Telephone | Fax       |
|-----------------------------------|-------------------|------------------|-----------|-----------|
| <b>Contract No. KL/2014/01:</b>   |                   |                  |           |           |
| Project Proponent (CEDD)          | Senior Engineer   | Mr. Keith Chu    | 3579 2450 | 3579 4516 |
|                                   | Engineer          | Ms. Adonia Yung  | 3579 2124 |           |
| Engineer's Representative (AECOM) | CRE               | Mr. Clive Cheng  | 3746 1801 | 2798 0783 |
| IEC (KSMC)                        | IEC               | Dr. C. F. Ng     | 2618 2166 | 2120 7752 |
| ET (Cinotech)                     | ET Leader         | Mr. K.S Lee      | 2151 2091 | 3107 1388 |
|                                   | Audit Team Leader | Ms. Betty Choi   | 2151 2072 |           |
| Main Contractor (CCJV)            | EO                | Mr. Jack Lai     | 2960 1398 | 2960 1399 |
| <b>Contract No. KL/2014/03:</b>   |                   |                  |           |           |
| Project Proponent (CEDD)          | Engineer          | Mr. Simon Kwok   | 3842 7140 | 2739 0076 |
| Engineer's Representative (HMJV)  | SRE               | Mr. Pat Lam      | 3742 3803 | 3742 3899 |
| IEC (Ramboll Hong Kong Limited)   | IEC               | Mr. Manson Yeung | 9700 6767 | 3465 2899 |
| ET (FTS)                          | ET Leader         | Mr. Colin Yung   | 3565 4114 | 3565 4160 |
| Main Contractor (CRBC)            | Site Agent        | Mr. Dickey Yau   | 5699 4503 | 2283 1689 |
|                                   | EO                | Miss. Lila Lui   | 3565 4114 |           |



| Party                             | Position          | Name             | Telephone | Fax       |
|-----------------------------------|-------------------|------------------|-----------|-----------|
| <b>Contract No. KL/2015/02:</b>   |                   |                  |           |           |
| Project Proponent (CEDD)          | Senior Engineer   | Mr. Ricky Chan   | 2116 3753 | 2116 0714 |
| Engineer's Representative (AECOM) | SRE               | Mr. Vincent Lee  | 2798 0771 | 2210 6110 |
| IEC (FTS)                         | IEC               | Mr. Colin Yung   | 3565 4114 | 2450 8032 |
| ET (Cinotech)                     | ET Leader         | Mr. K.S Lee      | 2151 2091 | 3107 1388 |
|                                   | Audit Team Leader | Ms. Betty Choy   | 2151 2072 |           |
| Main Contractor (PWHJV)           | Site Agent        | Mr. W. M. Wong   | 6386 3535 | 2398 8301 |
| <b>Contract No. ED/2018/01:</b>   |                   |                  |           |           |
| Project Proponent (CEDD)          | Senior Engineer   | Mr. Ronald Siu   | 3579 2452 | 2739 0076 |
|                                   | Engineer          | Mr. Edwin Chan   | 3579 2458 | 2739 0076 |
| Engineer's Representative (AECOM) | CRE               | Mr. Clive Cheng  | 3911 4201 | 3911 4288 |
| IEC (Ramboll Hong Kong Limited)   | IEC               | Mr. Manson Yeung | 9700 6767 | 3465 2899 |
| ET (Ka Shing)                     | ET Leader         | Mr. Chan Pang    | 6082 2973 | 2120 7752 |
| Main Contractor (Penta-Ocean)     | EO                | Ms. Juliet Ting  | 9555 8820 | 3465 8898 |

**1.3 Summary of Construction Programme and Activities**

1.3.1 The construction programme of each Contract is summarized in the appendices of the corresponding Monthly EM&A report.

1.3.2 The major construction activities undertaken in the reporting month are summarized as follow:

**Contract No. KL/2014/01:**

- TTA implementation, minor works at Shing Fung Road and Wang Chiu Road / Kai Cheung Road;
- Laying of paving blocks for footpath;
- Erection of noise barrier panels;
- Planting works along footpath and at deck level;
- Architectural features works at landscaped deck and ground floor open space;
- E&M works;
- Remedial Work of Holding Down Bolts of noise barrier; and
- Construction of pedestrian streets.

**Contract No. KL/2014/03:**

- Utility laying
- Construction of road base and road pavement
- Landscape works – irrigation systems, tree and shrub planting
- Laying Cable and Construction for Road Lighting

**Contract No. KL/2015/02:**

- Carry out trial pits at PERE TTA Stage 4-2
- Carry out structural works for subway at SKLR Playground
- Remove the uncharted concrete support underneath the DN750 water main at PERE TTA Stage 3

## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



- Construct retaining wall and backfill underneath traffic Deck of TTA Stage 1
- Install sub-frame of VE panel inside subway
- Modify the brackets of glazing panel at lift LT3
- Construction of Bridge S15
- Drainage works at Road D1
- Road works at Road D1, Road L7 and Slip Road S15
- Underground E&M, lighting and Irrigation works at Road D1
- UU installation at Road D1
- Underground E&M, lighting and Irrigation works at Road L7
- Drill & reinstate the existing anchor bolts at K72
- Fixing rebar & erection of formwork for the extended bridge
- Pouring concrete for the parapet & extended bridge
- Laying of optical fibre

### **Contract No. ED/2018/01:**

- Installation of Sheet Pile
- Pumping Test at North Depressed Road Cofferdam and South Depressed Road
- Construction of Bored Pile of Bridge D3 and Landscape Deck
- ELS Installation & Excavation for South Depressed Road
- Construction of base slab, walls and columns for North Approach Ramp
- Permanent Structure Construction for North Depressed Road
- Permanent Structure Construction for Pile Cap of Bridge D3
- Construction of Hoarding



**1.4 Summary of Inter-relationship with the environmental protection/ mitigation measures with the construction programme**

1.4.1 The summary of inter-relationship with environmental protection/mitigation measures are presented as follow:

| Major Environmental Impact  | Control Measures   |
|---|--|
| <b>Contract No. KL/2014/01:</b>   |  |
| Noise, dust impact, water quality and waste generation  | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall;</li> <li>• Provide mitigation measure to temporary use of chemicals;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.</li> </ul>  |
| <b>Contract No. KL/2014/03:</b>   |  |
| Air Quality Impact, Construction Noise Impact, Water Quality Impact, Chemical and Waste Management, Landscape and Visual Impact | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities;</li> <li>• Limitation of the speed for vehicles on unpaved site roads;</li> <li>• Properly cover or enclosure of the stockpiles and dusty materials;</li> <li>• Good site practices on loading dusty materials;</li> <li>• Providing sufficient vehicles washing facilities at every vehicle exit point;</li> <li>• Good maintenance to the plant and equipment;</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME);</li> <li>• Use of acoustic fabric and noise barrier;</li> <li>• Using the approved Non-road Mobile Machineries (NRMMs);</li> <li>• Proper storage and handling of chemical;</li> <li>• Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge;</li> <li>• Onsite waste sorting and implementation of trip ticket system;</li> <li>• Training of the site personnel in proper waste management and chemical waste handling procedures;</li> <li>• Proper storage of the construction materials;</li> <li>• Erection of decorative screen hoarding;</li> <li>• Strictly following the Environmental Permits and Licenses;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Reports</li> </ul> |
| <b>Contract No. KL/2015/02:</b>   |  |
| Noise, dust impact, water quality and waste generation  | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site</li> </ul>  |





| Major Environmental Impact   | Control Measures   |
|--|--|
|  | for treatment before discharge;<br>• Use of quiet plant and well-maintained construction plant;<br>• Provide movable noise barrier;<br>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall;<br>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement. |
| <b>Contract No. ED/2018/01:</b>  |  |
| • The Contractor has implemented environmental mitigation measures and requires as stated in the EIA reports, the EP and the EM&A Manuals. |  |

**1.5 Summary Status of Environmental Licences, Notifications and Permits**

1.5.1 Detailed relevant environmental licenses, permits and/or notifications on environmental protection for this EP are presented in the appendices of the corresponding Monthly EM&A report.

**2. ENVIRONMENTAL MONITORING AND AUDIT**

**2.1 Results and Observations**

Air Quality

- 2.1.1 The schedule of air quality monitoring in reporting month is provided in the appendices of the corresponding Monthly EM&A report.
- 2.1.2 The weather conditions during the monitoring are provided in the appendices of the corresponding Monthly EM&A report.
- 2.1.3 The monitoring data of 24-hr TSP and 1 hour TSP are summarized in **Table 2.1**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A report.

**Table 2.1 Summary of 24-hr and 1 hour TSP Monitoring Results**

| Parameter   | Monitoring Station | Average ( $\mu\text{g}/\text{m}^3$ )  | Range ( $\mu\text{g}/\text{m}^3$ ) | Action Level ( $\mu\text{g}/\text{m}^3$ ) | Limit Level ( $\mu\text{g}/\text{m}^3$ ) |
|---|--------------------|---|------------------------------------|---|--|
| <b>Contract No. KL/2014/01:</b>                             |                    |   |                                    |   |  |
| N.A (No air quality monitoring is required for the Project) |                    |   |                                    |   |  |
| <b>Contract No. KL/2014/03:</b>                             |                    |   |                                    |   |  |
| 1-hr TSP  | KTD1               | The monitoring results and observations for KTD1, KTD2c and KER1 are reported in the Monthly EM&A Reports for EP-451/2013 prepared for Contract No. ED/2018/04. |                                    |   |  |
|   | KTD2c              |   |                                    |   |  |
|   | KER1               |   |                                    |   |  |
| 24-hr TSP   | KTD1               |   |                                    |   |  |
|   | KTD2c              |   |                                    |   |  |
|   | KER1               |   |                                    |   |  |
| <b>Contract No. KL/2015/02:</b>                             |                    |   |                                    |   |  |
| 1-hr TSP  | AM2                | 56  | 39 – 70                            | 346                                       | 500                                      |
| 24-hr TSP   | AM2(A)             | 60  | 46 – 68                            | 157                                       | 260                                      |

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



| Parameter                       | Monitoring Station | Average ( $\mu\text{g}/\text{m}^3$ ) | Range ( $\mu\text{g}/\text{m}^3$ ) | Action Level ( $\mu\text{g}/\text{m}^3$ ) | Limit Level ( $\mu\text{g}/\text{m}^3$ ) |
|---------------------------------|--------------------|--------------------------------------|------------------------------------|---|--|
| <b>Contract No. ED/2018/01:</b> |                    |                                      |                                    |   |  |
| 24-hr TSP                       | AM3                | 63                                   | 53 – 72                            | 182                                       | 260                                      |
|                                 | AM4(A)             | 60                                   | 39 – 72                            | 187                                       |  |
|                                 | AM7                | 56                                   | 44 – 68                            | 181                                       |  |
| 1-hr TSP                        | AM3                | 84                                   | 70 – 94                            | 297                                       | 500                                      |
|                                 | AM4(A)             | 84                                   | 74 – 95                            | 326                                       |  |
|                                 | AM7                | 86                                   | 67 – 131                           | 315                                       |  |

- 2.1.4 Three action Level exceedance for 24-hr TSP were recorded under Contractor No. KL/2014/03 in the reporting month.
- 2.1.5 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 2.1.6 The monitoring data of 24-hr TSP was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A report.
- 2.1.7 The Event and Action Plan for air quality is given in the appendices of the corresponding Monthly EM&A report.

## Noise

- 2.1.8 The schedule of noise monitoring in reporting month is provided in in the appendices of the corresponding Monthly EM&A report.
- 2.1.9 The noise monitoring data are summarized in **Table 2.2**. Detailed monitoring data are presented in the appendices of the corresponding Monthly EM&A report.



**Table 2.2 Summary of Noise Impact Monitoring Results**

| Monitoring Stations  | Construction Noise Level<br>Leq <sub>(30min)</sub> dB(A)<br>(Range)   | Action Level                              | Limit Level<br>dB (A) |  |
|--|---|---|-----------------------|--|
| <b>Contract No. KL/2014/01:</b>  |   |   |                       |  |
| N.A<br>(No Construction noise monitoring is required for the Project.) |   | When one documented complaint is received | NA                    |  |
| <b>Contract No. KL/2014/03:</b>  |   |   |                       |  |
| KTD1   | The monitoring results and observations for KTD1, KTD2c and KER1 are reported in the Monthly EM&A Reports for EP-451/2013 prepared for Contract No. ED/2018/04. |   | 75                    |  |
| KTD2c  |   |   | 75                    |  |
| KER1   |   |   | 75                    |  |
|  |   |   |                       |  |
| <b>Contract No. KL/2015/02:</b>  |   |   |                       |  |
| M3(A)  | 59 – 75#  |   | 75                    |  |
| M4   | 73 – 77#  |   | 70*                   |  |
| M5(C)  | 61 – 76#  |   | 75                    |  |
| <b>Contract No. ED/2018/01:</b>  |   |   |                       |  |
| M11  | 67.8 – 73.2   |   | 75                    |  |
| M12  | 66.1 – 67.7   |   | 75                    |  |

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

(#) Measured noise level ≤ background / baseline noise level, detailed data refer to the corresponding Monthly EM&A report.

- 2.1.10 The noise monitoring data was compared with the EIA predictions are presented in the appendices of the corresponding Monthly EM&A report.
- 2.1.11 A Limit Level exceedance for construction noise were recorded under Contractor No. KL/2014/03 in the reporting month.
- 2.1.12 The Event and Action Plan for noise is given in in the appendices of the corresponding Monthly EM&A report.

Landscape and Visual

- 2.1.13 Site audits were carried out on a weekly basis to monitor and audit the landscape and visual mitigation measures within the site boundaries of this Project. Detailed of observations are presented in the appendices of the corresponding Monthly EM&A report.

## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



### **3. SITE INSPECTION**

#### **3.1 Site Inspection**

- 3.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project.
- 3.1.2 Detailed of observation, recommendation of site inspections and summary of the mitigation measures implementation schedule is provided in the appendices of the corresponding Monthly EM&A Report.

## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



### 4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

#### 4.1 Complaints, Notification of Summons and Prosecution

4.1.1 The summary of complaints, notification of summons and prosecution in the reporting month are shown as **Table 4.1**.

Table 4.1 Summary of Complaints, Notification of Summons and Prosecution

| Event  | No. of Event This Month | Remark |
|--|-------------------------|--------|
| <b>Contract No. KL/2014/01:</b>                      |                         |        |
| Complaint received                                   | 0                       | NA     |
| Notifications of any summons & prosecutions received | 0                       | NA     |
| <b>Contract No. KL/2014/03:</b>                      |                         |        |
| Complaint received                                   | 0                       | NA     |
| Notifications of any summons & prosecutions received | 0                       | NA     |
| <b>Contract No. KL/2015/02:</b>                      |                         |        |
| Complaint received                                   | 0                       | NA     |
| Notifications of any summons & prosecutions received | 0                       | NA     |
| <b>Contract No. ED/2018/01:</b>                      |                         |        |
| Complaint received                                   | 1                       | NA     |
| Notifications of any summons & prosecutions received | 0                       | NA     |

4.1.2 Detailed records are presented in the appendices of the corresponding Monthly EM&A report.

## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



### **5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES**

#### **5.1 Implementation Status**

5.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month are presented in the appendices of the corresponding Monthly EM&A report.

#### **5.2 Waste Management**

5.2.1 The amount of wastes generated of this Project during the reporting month is shown in the appendices of the corresponding Monthly EM&A report.



## 6. FUTURE KEY ISSUES

### 6.1 Construction Programme for the Next Two Months

6.1.1 The major site activities undertaken for the coming two months are summarized in follow:

#### **Contract No. KL/2014/01:**

- TTA implementation, minor works at Shing Fung Road and Wang Chiu Road / Kai Cheung Road;
- Laying of paving blocks for footpath;
- Erection of noise barrier panels;
- Planting works along footpath and at deck level;
- Architectural features works at landscaped deck and ground floor open space;
- E&M works;
- Remedial Work of Holding Down Bolts of noise barrier; and
- Construction of pedestrian streets.

#### **Contract No. KL/2014/03:**

- Laying Cable and Construction for Road Lighting
- Construction of road base and road pavement
- Landscape works – irrigation systems, tree and shrub planting
- Testing and commissioning of irrigation system

#### **Contract No. KL/2015/02:**

- Demolish the uncharted underground concrete structure and drive sheet pilings/king posts at PERE TTA Stage 4-2
- Carry out structural works for subway at SKLR Playground
- Excavate with ELS installation at PERE TTA Stage 3
- Backfill underneath traffic Deck of TTA Stage 1
- Carry out glazing works and lift installation at Lift LT3
- Install sub-frame of VE panel inside subway
- Construction of Bridge S15
- Drainage works at Road D1
- Road works at Road D1, Road L7 and Slip Road S15
- Underground E&M, lighting and Irrigation works at Road D1
- UU installation at Road D1
- Underground E&M, lighting and Irrigation works at Road L7
- Construction of parapet & slab of extended bridge
- Installation of compressive seal within K72
- Dismantling of portal frame
- Installation of top railing
- Installation of movement joint
- Drill & reinstate anchor bolt
- Connection of water mains in Portion 1

#### **Contract No. ED/2018/01:**

- Installation of Sheet Pile
- Pumping Test at North Depressed Road Cofferdam and South Depressed Road
- Permanent Structure Construction for Pile Cap
- ELS Installation & Excavation for South Depressed Road
- Construction of base slab, walls and columns for North Approach Ramp
- Permanent Structure Construction for North Depressed Road
- Erection of Temporary Working Platform



**6.2 Key Issues for the Coming Month**

6.2.1 The potential environmental impacts arising from the above construction activities and the control measures are shown in **Table 6.1**:

Table 6.1 Summary of Key Issues for the Coming Month and Control Measures

| Major Impact Prediction   | Control Measures   |
|---|--|
| <b>Contract No. KL/2014/01:</b>   |  |
| Air quality impact (dust)   | <ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>• Watering of any earth moving activities.</li> </ul>   |
| Water quality impact (surface run-off)  | <ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>  |
| Noise Impact  | <ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>• Controlling the number of plants use on site;</li> <li>• Regular maintenance of machines; and</li> <li>• Use of acoustic barriers if necessary.</li> </ul>   |
| Waste/ Chemical Management  | <ul style="list-style-type: none"> <li>• Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>• Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.</li> </ul>   |
| <b>Contract No. KL/2014/03:</b>   |  |
| Construction dust, construction noise, water quality, waste management and landscape and visual impact. | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities;</li> <li>• Limitation of the speed for vehicles on unpaved site roads;</li> <li>• Properly cover or enclosure of the stockpiles and dusty materials;</li> <li>• Good site practices on loading dusty materials;</li> <li>• Providing sufficient vehicles washing facilities at every vehicle exit point;</li> <li>• Good maintenance to the plant and equipment;</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME);</li> <li>• Use of acoustic fabric and noise barrier;</li> <li>• Using the approved Non-road Mobile Machineries (NRMMs);</li> <li>• Proper storage and handling of chemical;</li> <li>• Appropriate desilting, oil interceptors or sedimentation devices provided on site for treatment before discharge;</li> <li>• Onsite waste sorting and implementation of trip ticket system;</li> <li>• Training of the site personnel in proper waste management and chemical waste handling procedures;</li> <li>• Proper storage of the construction materials;</li> <li>• Erection of decorative screen hoarding;</li> <li>• Strictly following the Environmental Permits and Licenses;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Reports</li> </ul> |
| <b>Contract No. KL/2015/02:</b>   |  |
| Air quality impact (dust)   | <ul style="list-style-type: none"> <li>• Frequent watering of haul road and unpaved/exposed areas;</li> <li>• Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>• Watering of any earth moving activities.</li> </ul>   |





| Major Impact Prediction   | Control Measures   |
|---|--|
| Water quality impact (surface run-off)  | <ul style="list-style-type: none"> <li>• Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>• Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>• Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>• Provision of measures to prevent discharge into the stream.</li> </ul>  |
| Noise Impact  | <ul style="list-style-type: none"> <li>• Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>• Controlling the number of plants use on site;</li> <li>• Regular maintenance of machines; and</li> <li>• Use of acoustic barriers if necessary.</li> </ul>   |
| <b>Contract No. ED/2018/01:</b>   |  |
| Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with the active dust emitting activities,</li> <li>• Limitation of the speed for vehicles on unpaved site roads,</li> <li>• Properly cover the stockpiles,</li> <li>• Good maintenance to the plant and equipment,</li> <li>• Use of quieter plant and Quality Powered Mechanical Equipment (QPME),</li> <li>• Provide movable noise barriers,</li> <li>• Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,</li> <li>• Onsite waste sorting and implementation of trip ticket system,</li> <li>• Good management and control on construction waste reduction,</li> <li>• Erection of decorative screen hoarding,</li> <li>• Strictly following the Environmental Permits and Licenses, and</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Reports.</li> </ul> |

**6.3 Monitoring Schedules for the Next Three Months**

6.3.1 The tentative schedules for environmental monitoring in the coming three months are provided in in the appendices of the corresponding Monthly EM&A.



### 7. CONCLUSIONS

- 7.1.1 Three action Level exceedance for 24-hr TSP were recorded under Contractor No. KL/2014/03 in the reporting month.
- 7.1.2 No Action / Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting month.
- 7.1.3 A Limit Level exceedance for construction noise were recorded under Contractor No. KL/2014/03 in the reporting month.
- 7.1.4 One complaint was received under Contractor No. ED/2018/01 in the reporting month.
- 7.1.5 No notification of summons or prosecution was received in this reporting month.
- 7.1.6 The potential environmental impacts arising from the coming two months of major construction activities and the control measures are shown in **Table 6.1**.

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



## Appendix A

**Monthly EM&A Report  
For  
Contract No. KL/2014/01  
Kai Tak Development - Stage 2 Infrastructure works for Developments at Southern Part of  
the Former Runway**

# Civil Engineering and Development Department

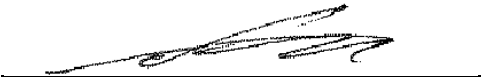
**EP-337/2009 & EP-445/2013/A**

**Contract No. KL/2014/01**

**Kai Tak Development –  
Stage 2 Infrastructure works for Developments at  
Southern Part of the Former Runway**

**Monthly EM&A Report  
October 2020**

(Version 1.0)

|             |  |
|-------------|--|
| Approved By |  |
|             | (Environmental Team Leader)  |

REMARKS:

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

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

## **CINOTECH CONSULTANTS LTD**

Room 1710, Technology Park,  
18 On Lai Street,

Shatin, NT, Hong Kong

Tel: (852) 2151 2083 Fax: (852) 3107 1388

Email: [info@cinotech.com.hk](mailto:info@cinotech.com.hk)



Our ref: 5-11-2020

5-11-2020

By email: [clive.cheng@aecom-ktd.com](mailto:clive.cheng@aecom-ktd.com) and By hand

Supervising Officer Representative  
Aecom Asia Co Ltd.  
8/F Grand Central Plaza Tower 2  
138 Shatin Rural Committee Road  
Sha Tin, N.T. Hong Kong  
(Attn: Mr. Cheng Chi Hung)

Dear Mr. Cheng.

Re: Contract No. KL/2014/01 (Environmental Permit Nos. EP-337/2009 and EP-445/2013/A)  
Kai Tak Development –Stage 2 Infrastructure Works for Developments at Southern Part of the Former Runway  
Monthly EM&A report for October 2020 (version 1.0)

Reference is made to the Environmental Team's submission of the draft Monthly EM&A Report (version 1.0) for October 2020 provided to Independent Environmental Checker (IEC) via email dated on 5-11-2020 for review and comment.

Please be informed that IEC has no adverse comment on the captioned submission. IEC writes to verify the captioned submission in accordance with Specific Condition 2.2 of the Environmental Permit No. 337/2009 and 445/2013/A.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully.

For and on behalf of

Ka Shing Management Consultant Limited

  
Dr. C.F. Ng

Independent Environmental Checker

|      |          |                         |   |
|------|----------|-------------------------|---|
| c.c. | CEDD     | Mr. CHU Chi Hong, Keith | (By email: <a href="mailto:keithchchu@cedd.gov.hk">keithchchu@cedd.gov.hk</a> )                                     |
|      | AECOM    | Mr. Anthony Lok         | (By email: <a href="mailto:anthony.lok@aecom-ktd.com">anthony.lok@aecom-ktd.com</a> )                               |
|      | CEC-CCC  | Mr. Eric Fong           | (By email: <a href="mailto:eric-cs-fong@continental-engineering.com">eric-cs-fong@continental-engineering.com</a> ) |
|      | Cinotech | Mr K.S Lee              | (By email: <a href="mailto:ks.lee@cinotech.com.hk">ks.lee@cinotech.com.hk</a> )                                     |

Unit 2, 13/F Kai Yue Commercial Building, 2C Argyle St, Mong Kok, Kowloon  
九龍旺角亞皆老街 2C 號啟如商業大廈 13 樓 2 室  
Tel: (852) 2618 2166 Fax: (852) 2120 7752 Web Site: [www.ka-shing.net](http://www.ka-shing.net)  
電話: (852) 2618 2166 傳真: (852) 2120 7752 網站: [www.ka-shing.net](http://www.ka-shing.net)



## TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>EXECUTIVE SUMMARY</b> .....   | 1         |
| Introduction.....  | 1         |
| Environmental Monitoring Works.....  | 1         |
| Environmental Licenses and Permits.....  | 2         |
| Key Information in the Reporting Month.....  | 2         |
| Future Key Issues.....   | 2         |
| <b>1. INTRODUCTION</b> .....   | <b>3</b>  |
| Background.....  | 3         |
| Project Organizations.....   | 4         |
| Construction Activities undertaken during the Reporting Month.....                         | 4         |
| Summary of EM&A Requirements.....  | 5         |
| <b>2. AIR QUALITY</b> .....  | <b>6</b>  |
| Monitoring Requirements.....   | 6         |
| Observations.....  | 6         |
| <b>3. NOISE</b> .....  | <b>7</b>  |
| Monitoring Requirements.....   | 7         |
| Observations.....  | 7         |
| <b>4. LANDSCAPE AND VISUAL</b> .....   | <b>8</b>  |
| Monitoring Requirements.....   | 8         |
| Results and Observations.....  | 8         |
| <b>5. ENVIRONMENTAL AUDIT</b> .....  | <b>9</b>  |
| Site Audits.....   | 9         |
| Status of Environmental Licensing and Permitting.....                                      | 10        |
| Status of Waste Management.....  | 11        |
| Implementation Status of Environmental Mitigation Measures.....                            | 11        |
| Summary of Mitigation Measures Implemented.....  | 12        |
| Implementation Status of Event Action Plans.....   | 12        |
| Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution..... | 12        |
| <b>6. FUTURE KEY ISSUES</b> .....  | <b>13</b> |
| <b>7. CONCLUSIONS AND RECOMMENDATIONS</b> .....  | <b>15</b> |
| Conclusions.....   | 15        |
| Recommendations.....   | 15        |

## **LIST OF TABLES**

|           |   |
|-----------|---|
| Table I   | Non-compliance Recorded for the Project in the Reporting Month  |
| Table II  | Summary Table for Key Information in the Reporting Month  |
| Table 1.1 | Key Project Contacts  |
| Table 1.2 | Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures |
| Table 5.1 | Summary of Environmental Licensing and Permit Status  |
| Table 5.2 | Observations and Recommendations of Site Inspections  |

## **LIST OF FIGURES**

|          |                  |
|----------|------------------|
| Figure 1 | Site Layout Plan |
|----------|------------------|

## **LIST OF APPENDICES**

|   |  |
|---|--|
| A | Action and Limit Levels  |
| B | Summary of Exceedance  |
| C | Site Audit Summary   |
| D | Event Action Plans   |
| E | Environmental Mitigation Implementation Schedule (EMIS)  |
| F | Summaries of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution |
| G | Waste Generated Quantity   |

## EXECUTIVE SUMMARY

### Introduction

1. This is the 55<sup>th</sup> Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2014/01 - Kai Tak Development – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway” (Hereafter referred to as “the Project”). This contract work comprises two Schedule 2 designated projects (DP), namely the new distributor road D4 (part) and roads D3A & D4A serving the planned KTD. The DPs are part of the designated projects under Environmental Permits (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) and EP-445/2013/A (“Kai Tak Development – Roads D3A & D4A”) respectively. This report documents the findings of EM&A Works conducted in October 2020.
2. With reference to the same principle of EIA report of the Project, no air quality monitoring station within 500 m and noise monitoring station within 300 m from the boundary of this Project are considered as relevant monitoring locations. In such regard, no relevant air quality and noise monitoring location are required for monitoring under the Project. The monitoring works for recommended monitoring stations in EM&A Manual of the DPs are conducted by Kai Tak Development (KTD) Schedule 3 Project.
3. The major site activities undertaken in the reporting month included:
  - TTA implementation, minor works at Shing Fung Road and Wang Chiu Road / Kai Cheung Road;
  - Laying of paving blocks for footpath;
  - Erection of noise barrier panels;
  - Planting works along footpath and at deck level;
  - Architectural features works at landscaped deck and ground floor open space;
  - E&M works;
  - Remedial Work of Holding Down Bolts of noise barrier; and
  - Construction of pedestrian streets.

### Environmental Monitoring Works

4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table I**.

**Table I Non-compliance Recorded for the Project in the Reporting Month**

| Parameter | No. of Project-related Exceedance |             | Action Taken |
|-----------|-----------------------------------|-------------|--------------|
|           | Action Level                      | Limit Level |              |
| Noise     | 0                                 | 0           | N/A          |



*Environmental Monitoring for Air Quality and Construction Noise*

6. No monitoring for air quality and construction noise is required. No Action/Limit Level exceedance was recorded.

**Environmental Licenses and Permits**

7. Licenses/Permits granted to the Project include the Environmental Permits (EP) for the Project, EP-337/2009 issued on 23 April 2009 and EP-445/2013 issued on 3 May 2013 (Amended Environmental Permit (No.: EP-445/2013/A) issued on 13 August 2014).
8. Billing Account for Disposal of Construction Waste (A/C No. 7024073)
9. Registration of Chemical Waste Producer (License: 5213-247-C4004-01).
10. Water Discharge License (License: WT00023634-2016).
11. Construction Noise Permits (Permit: GW-RE0442-20 & GW-RE0639-20)

**Key Information in the Reporting Month**

12. Summary of key information in the reporting month is tabulated in **Table II**.

**Table II Summary Table for Key Information in the Reporting Month**

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

**Future Key Issues**

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

## 1. INTRODUCTION

### Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 2 Infrastructure Works for Developments for Southern Part of the Former Runway is one of the construction stages of KTD. It contains two Schedule 2 DPs including new distributor roads serving the planned KTD and KTD Roads D3A & D4A. The general layout of the Project is shown in **Figure 1**.
- 1.2 One Environmental Permit (EP) No.: EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD and one Environmental Permit No.: EP-445/2013 was issued on 3 May 2013 for Kai Tak Development Roads D3A & D4A to Civil Engineering and Development Department (CEDD) as the Permit Holder. Pursuant to Section 13 of the EIAO, the Director of Environmental Protection Department amended the Environmental Permit No.: EP-445/2013 based on the Application No. VEP-449/2014 and the Environmental Permit (No.: EP-445/2013/A) was issued on 13 August 2014.
- 1.3 A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. EIA Reports (Register No. AEIAR-130/2009 and AEIAR-170/2013) were approved by the Environmental Protection Department (EPD) on 4 2009 and 3 May 2013 respectively.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2014/01 – Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway. The construction work under KL/2014/01 comprises the construction of part of the Road D4 under the EP (EP-337/2009) and the construction of Roads D3A & D4A under the EP (EP-445/2013/A).
- 1.5 Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of this Contract is on 13 April 2016. This is the 55<sup>th</sup> Monthly EM&A report summarizing the EM&A works for the Project in October 2020.
- 1.6 All project information since the commencement of work under EPs including Monthly EM&A Reports is made available to the public via internet access at the website: <http://www.kl201401.com/>

## Project Organizations

- 1.7 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD).
  - The Supervising Officer and the Supervising Officer’s Representative (SO) – AECOM Asia Co. Ltd. (AECOM).
  - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
  - Independent Environmental Checker (IEC) – Ka Shing Management Consultant Ltd. (KSMC).
  - Contractor – Continental Engineering Corp. and Chit Cheung Construction Co. Ltd. Joint Venture (CCJV).
- 1.8 The key contacts of the Project are shown in **Table 1.1**.

**Table 1.1 Key Project Contacts**

| Party    | Role                              | Contact Person  | Position                  | Phone No. | Fax No.   |
|----------|-----------------------------------|-----------------|---------------------------|-----------|-----------|
| CEDD     | Project Proponent                 | Mr. Keith Chu   | Senior Engineer           | 3579 2450 | 3579 4516 |
|          |                                   | Ms. Adonia Yung | Engineer                  | 3579 2124 |           |
| AECOM    | Supervising Officer               | Mr. Clive Cheng | CRE                       | 3746 1801 | 2798 0783 |
| Cinotech | Environmental Team                | Mr. K S Lee     | Environmental Team Leader | 2151 2091 | 3107 1388 |
|          |                                   | Ms. Betty Choi  | Audit Team Leader         | 2151 2072 |           |
| KSMC     | Independent Environmental Checker | Dr. C. F. Ng    | IEC                       | 2618 2166 | 2120 7752 |
| CCJV     | Contractor                        | Mr. Jack Lai    | Environmental Officer     | 2960 1398 | 2960 1399 |

## Construction Activities undertaken during the Reporting Month

- 1.9 The site activities undertaken in the reporting month included:
- TTA implementation, minor works at Shing Fung Road and Wang Chiu Road / Kai Cheung Road;
  - Laying of paving blocks for footpath;
  - Erection of noise barrier panels;
  - Planting works along footpath and at deck level;
  - Architectural features works at landscaped deck and ground floor open space;
  - E&M works;
  - Remedial Work of Holding Down Bolts of noise barrier; and
  - Construction of pedestrian streets.

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

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

| Construction Works          | Major Environmental Impact                             | Control Measures   |
|-----------------------------|--|--|
| As mentioned in Section 1.8 | Noise, dust impact, water quality and waste generation | Sufficient watering of the works site with active dust emitting activities;<br>Properly cover the stockpiles;<br>On-site waste sorting and implementation of trip ticket system;<br>Appropriate desilting/sedimentation devices provided on site for treatment before discharge;<br>Use of quiet plant and well-maintained construction plant;<br>Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall;<br>Provide mitigation measure to temporary use of chemicals;<br>Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement. |

### Summary of EM&A Requirements

- 1.11 The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of this report.

## 2. AIR QUALITY

### Monitoring Requirements

- 2.1 With reference to the same principle of EIA report of the Project, air quality monitoring station should be provided at the Air Sensitive Receivers (ASR) within 500 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
- 2.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1a), the corresponding monitoring results for October 2020 should be accessed in the EM&A report for the reporting month. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

### Observations

- 2.3 No monitoring for air quality is required for this report. No Action/Limit Level exceedance at KTD1a was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.
- 2.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of air quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

### 3. NOISE

#### Monitoring Requirements

- 3.1 With reference to the same principle of EIA report of the Project, construction noise monitoring station should be provided at the Noise Sensitive Receivers (NSR) within 300 m from the boundary of this Project. Since the opening of the Centre of Excellence in Paediatrics (Children's Hospital) on 18 December 2018, the hospital is considered as the only relevant monitoring location and therefore the monitoring is required.
- 3.2 As the monitoring works for the hospital is covered by the Contract KL/2014/03 (Kai Tak Development Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway) at the monitoring station (KTD1a), the corresponding monitoring results for October 2020 should be accessed in the EM&A report for the reporting month. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Observations

- 3.3 No monitoring for construction noise is required for this report. No Action/Limit Level exceedance at KTD1a was recorded. The summary of exceedance record in reporting month is shown in **Appendix B**.
- 3.4 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of construction noise mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.

#### **4. LANDSCAPE AND VISUAL**

##### **Monitoring Requirements**

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

##### **Results and Observations**

- 4.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix C**.
- 4.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 4.4 Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix D** shall be performed.

## 5. ENVIRONMENTAL AUDIT

### Site Audits

- 5.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix C**.
- 5.2 Site audits were conducted by representatives of the Contractor, Supervising Officer and ET on 8, 15, 22 & 28 October 2020 in the reporting month. IEC joint site inspection was conducted on 28 October 2020. No non-compliance was observed during the site audits.



**Status of Environmental Licensing and Permitting**

5.3 All permits/licenses obtained for the Project are summarized in **Table 5.1**.

**Table 5.1 Summary of Environmental Licensing and Permit Status**

| Permit No.                                     | Valid Period |          | Details   | Status |
|--|--------------|----------|---|--------|
|  | From         | To       |   |        |
| <b>Environmental Permit (EP)</b>               |              |          |   |        |
| EP-337/2009                                    | 23/04/09     | N/A      | Construction of new distributor roads serving the planned Kai Tak development.  | Valid  |
| EP-445/2013/A                                  | 13/08/14     | N/A      | Construction of Kai Tak Development roads D3A and D4A   | Valid  |
| <b>Effluent Discharge License</b>              |              |          |   |        |
| WT00023634-2016                                | --           | 31/03/21 | Wastewater from the construction site including effluent treated by screen and sedimentation tank   | Valid  |
| <b>Registration of Chemical Waste Producer</b> |              |          |   |        |
| 5213-247-C4004-01                              | --           | N/A      | Chemical Waste Types: Surplus paint, waste contaminated by paint, diesel, waste contaminated by diesel, spent lubricating oil and waste, soil contaminated by lubricating oil.      | Valid  |
| <b>Construction Noise Permit (CNP)</b>         |              |          |   |        |
| GW-RE0442-20                                   | 14/06/20     | 13/12/20 | Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work other than percussive pilling and performing prescribed construction work. | Valid  |
| GW-RE0639-20                                   | 3/8/20       | 19/1/21  |   | Valid  |

### Status of Waste Management

- 5.4 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix G**.
- 5.5 In respect of the dump truck cover, the Contractor is reminded to take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.

### Implementation Status of Environmental Mitigation Measures

- 5.6 During site inspections in the reporting month, no non-conformance was identified. ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in Table 5.2.

**Table 5.2 Observations and Recommendations of Site Inspections**

| Parameters                                | Date | Observations and Recommendations | Follow-up |
|---|------|----------------------------------|-----------|
| <i>Water Quality</i>                      | --   | --                               | --        |
| <i>Air Quality</i>                        | --   | --                               | --        |
| <i>Noise</i>                              | --   | --                               | --        |
| <i>Waste/<br/>Chemical<br/>Management</i> | --   | --                               | --        |
| <i>Landscape<br/>and Visual</i>           | --   | --                               | --        |
| <i>Permits/<br/>Licenses</i>              |      |                                  |           |

### **Summary of Mitigation Measures Implemented**

- 5.7 An updated summary of the EMIS is provided in **Appendix E**.

### **Implementation Status of Event Action Plans**

- 5.8 The Event Action Plans for noise and landscape and visual are presented in **Appendix D**. No Event Action Plan for air quality is considered necessary.

#### Construction Dust

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

#### Construction Noise

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

#### Landscape and visual

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

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

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

## 6. FUTURE KEY ISSUES

### 6.1 Major site activities undertaken for the coming two months include:

- TTA implementation, minor works at Shing Fung Road and Wang Chiu Road / Kai Cheung Road;
- Laying of paving blocks for footpath;
- Erection of noise barrier panels;
- Planting works along footpath and at deck level;
- Architectural features works at landscaped deck and ground floor open space;
- E&M works;
- Remedial Work of Holding Down Bolts of noise barrier; and
- Construction of pedestrian streets.

### 6.2 Key environmental issues in the coming month include:

- Wastewater and runoff discharge from site;
- Silt, mud and sand along u-channels and sedimentation tanks;
- Review and implementation of temporary drainage system for the surface runoff;
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
- Dust generation from stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Dust generating activity and on haul road;
- Storage of construction materials on site;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of general and construction waste on site

6.3 The tentative program of major site activities and the impact prediction and control measures for the coming two months, i.e. November and December 2020 are summarized as follows:

| <b>Construction Works</b>   | <b>Major Impact Prediction</b>         | <b>Control Measures</b>   |
|-----------------------------|--|---|
| As mentioned in Section 6.1 | Air quality impact (dust)              | <ul style="list-style-type: none"> <li>a) Frequent watering of haul road and unpaved/exposed areas;</li> <li>b) Frequent watering or covering stockpiles with tarpaulin or similar means; and</li> <li>c) Watering of any earth moving activities.</li> </ul>   |
|                             | Water quality impact (surface run-off) | <ul style="list-style-type: none"> <li>a) Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;</li> <li>b) Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;</li> <li>c) Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and</li> <li>d) Provision of measures to prevent discharge into the stream.</li> </ul> |
|                             | Noise Impact                           | <ul style="list-style-type: none"> <li>a) Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;</li> <li>b) Controlling the number of plants use on site;</li> <li>c) Regular maintenance of machines; and</li> <li>d) Use of acoustic barriers if necessary.</li> </ul>  |
|                             | Waste/<br>Chemical Management          | <ul style="list-style-type: none"> <li>a) Maintenance involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.</li> <li>b) Chemical wastes should be hold by suitable containers with clear label and stored at a safe location.</li> </ul>  |

## 7. CONCLUSIONS AND RECOMMENDATIONS

### **Conclusions**

- 7.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken in October 2020.

#### Air Quality and Construction Noise

- 7.2 No regular monitoring air quality and noise monitoring is required for the Project. No Action/Limit Level exceedance was recorded.

#### Landscape and visual

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

#### Complaint and Prosecution

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

- 7.5 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**

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

#### *Waste/ chemical management*

- To avoid the accumulation of general refuse.

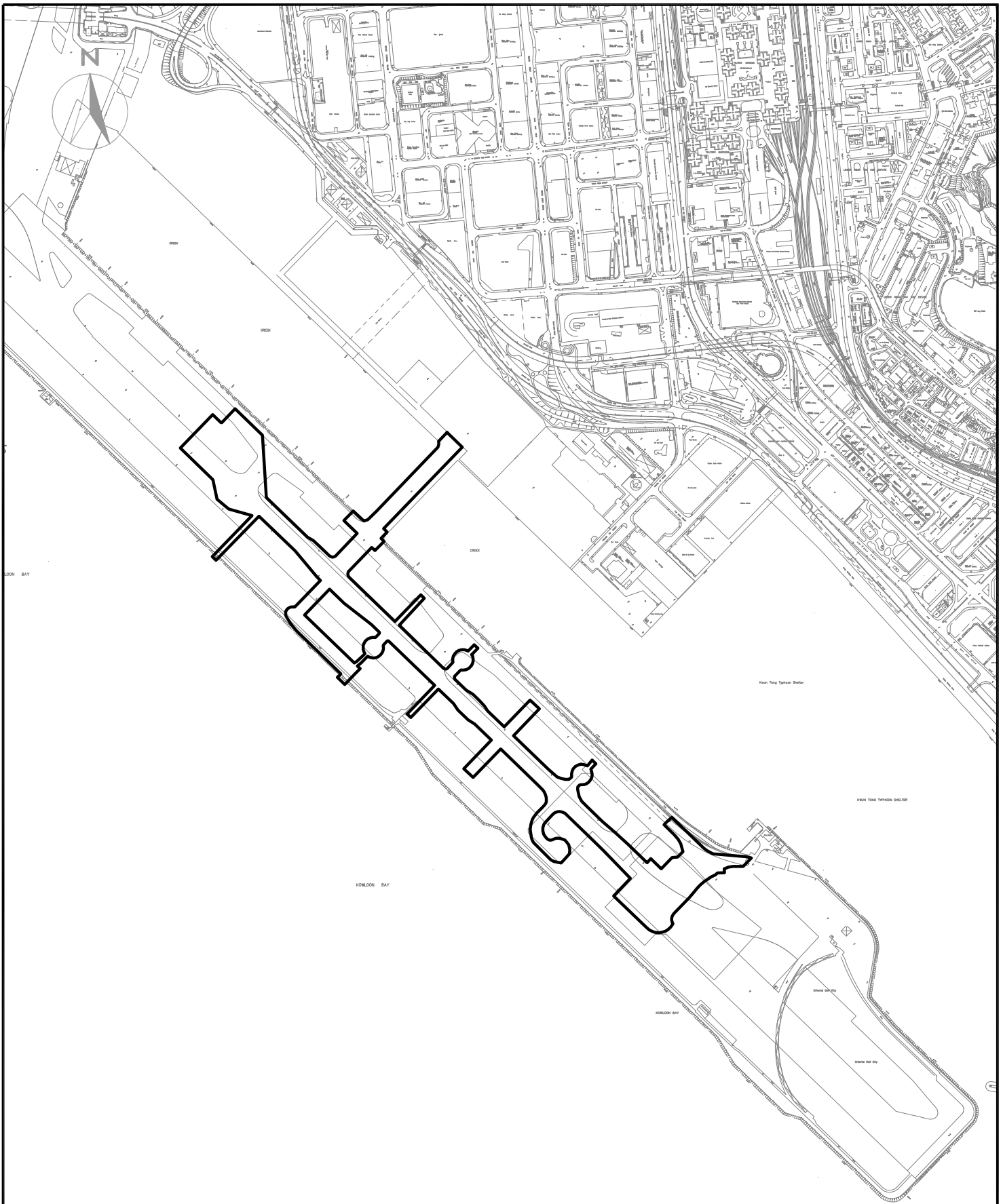
---

---

## FIGURES

---

---



LEGEND:

SITE BOUNDARY

**CINOTECH**  
Cinotech Consultants Limited

KL/2014/01 KAI TAK DEVELOPMENT - STAGE 2  
INFRASTRUCTURE WORKS FOR DEVELOPMENT AT  
SOUTHERN PART OF THE FORMER RUNWAY

**SITE LAYOUT PLAN**

|         |           |            |          |
|---------|-----------|------------|----------|
| SCALE   | 1:1000@A4 | DATE       | MAY 2016 |
| CHECK   | JL        | DRAWN      | JW       |
| JOB No. | MA15046   | FIGURE NO. | 1        |
|         |           | REV        | -        |



---

---

**APPENDIX A  
ACTION AND LIMIT LEVELS**

---

---

## Appendix A - Action and Limit Levels

**Table A-1 Action and Limit Levels for Air Quality Monitoring**

| Monitoring Station | Parameter | Action Level<br>( $\mu\text{g}/\text{m}^3$ ) | Limit Level <sup>(1)(2)</sup><br>( $\mu\text{g}/\text{m}^3$ ) |
|--------------------|-----------|--|---|
| KTD1a              | 24-hr TSP | 177  | 260   |
| KTD1a*             | 1-hr TSP  | 285  | 500   |

\* 1-hr TSP monitoring should be required in case of complaints.

**Table A-2 Action and Limit Levels for Construction Noise Monitoring**

| Time Period                      | Action Level                              | Limit Level <sup>(1)(2)</sup> |
|----------------------------------|---|-------------------------------|
| 0700-1900 hrs on normal weekdays | When one documented complaint is received | 75 dB(A)<br>70dB(A)/65dB(A)*  |

Remarks: (1) 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.  
 (2) No regular noise impact monitoring station for this Contract. It is subject to the noise sensitive receiver(s) and additional monitoring work.  
 (\*) 70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods respectively.

---

---

**APPENDIX B**  
**SUMMARY OF EXCEEDANCE**

---

---

**Contract No. KL/2014/01**

**Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**

**Appendix B – Summary of Exceedance**

**Exceedance Record for Contract No. KL/2014/01**

Reporting Month: October 2020

**(A) Exceedance Record for Construction Dust**

**(NIL in the reporting month)**

**(B) Exceedance Record for Construction Noise**

**(NIL in the reporting month)**

**(C) Exceedance Record for Landscape and Visual**

**(NIL in the reporting month)**

---

---

**APPENDIX C**  
**SITE AUDIT SUMMARY**

---

---

**Contract No. KL/2014/01**

**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**



**EP-337/2009 & EP-445/2013/A**

**Weekly Site Inspection Record Summary**

**Inspection Information**

|                            |                             |
|----------------------------|-----------------------------|
| Checklist Reference Number | 201028                      |
| Date                       | 28 October 2020 (Wednesday) |
| Time                       | 14:30 – 16:30               |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection  |                  |
|          |  |                  |
|          | <b>C. Air Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | • <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>G. Permits /Licenses</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | •  |                  |
|          | <b>H. Others</b>   |                  |
|          | Follow up on the previous audit session (Ref. No:201022): No environmental deficiencies were identified in the previous inspection.. |                  |

|             | Name        | Signature   | Date            |
|-------------|-------------|---|-----------------|
| Recorded by | Joseph Lau  |  | 29 October 2020 |
| Checked by  | Colman Wong |  | 30 October 2020 |

**Contract No. KL/2014/01**

**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**



**EP-337/2009 & EP-445/2013/A**

**Weekly Site Inspection Record Summary**

**Inspection Information**

|                            |                           |
|----------------------------|---------------------------|
| Checklist Reference Number | 201008                    |
| Date                       | 8 October 2020 (Thursday) |
| Time                       | 14:30 – 15:30             |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection  |                  |
|          |  |                  |
|          | <b>C. Air Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | • <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>G. Permits /Licenses</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | •  |                  |
|          | <b>H. Others</b>   |                  |
|          | Follow up on the previous audit session (Ref. No:200924): No environmental deficiencies were identified in the previous inspection.. |                  |

|             | Name        | Signature   | Date            |
|-------------|-------------|---|-----------------|
| Recorded by | Joseph Lau  |  | 9 October 2020  |
| Checked by  | Colman Wong |  | 12 October 2020 |

**Contract No. KL/2014/01**

**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**



**EP-337/2009 & EP-445/2013/A**

**Weekly Site Inspection Record Summary**

**Inspection Information**

|                            |                            |
|----------------------------|----------------------------|
| Checklist Reference Number | 201015                     |
| Date                       | 15 October 2020 (Thursday) |
| Time                       | 14:30 – 15:30              |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection  |                  |
|          |  |                  |
|          | <b>C. Air Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | • <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>G. Permits /Licenses</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | •  |                  |
|          | <b>H. Others</b>   |                  |
|          | Follow up on the previous audit session (Ref. No:201008): No environmental deficiencies were identified in the previous inspection.. |                  |

|             | Name        | Signature   | Date            |
|-------------|-------------|---|-----------------|
| Recorded by | Joseph Lau  |  | 16 October 2020 |
| Checked by  | Colman Wong |  | 20 October 2020 |



**Contract No. KL/2014/01**

**Kai Tak Development - Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**



**EP-337/2009 & EP-445/2013/A**

**Weekly Site Inspection Record Summary**

**Inspection Information**

|                            |                            |
|----------------------------|----------------------------|
| Checklist Reference Number | 201022                     |
| Date                       | 22 October 2020 (Thursday) |
| Time                       | 14:30 – 15:30              |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection  |                  |
|          |  |                  |
|          | <b>C. Air Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | • <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b>G. Permits /Licenses</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | •  |                  |
|          | <b>H. Others</b>   |                  |
|          | Follow up on the previous audit session (Ref. No:201015): No environmental deficiencies were identified in the previous inspection.. |                  |

|             | Name        | Signature   | Date            |
|-------------|-------------|---|-----------------|
| Recorded by | Joseph Lau  |  | 26 October 2020 |
| Checked by  | Colman Wong |  | 27 October 2020 |

---

---

**APPENDIX D**  
**EVENT ACTION PLANS**

---

---

## Appendix D - Event Action Plans

### Event/Action Plan for Construction Noise

| EVENT                       | ACTION  |   |  |   |
|-----------------------------|---|---|--|---|
|                             | ET  | IEC   | ER   | CONTRACTOR  |
| Action Level being exceeded | <ol style="list-style-type: none"> <li>4. Notify ER, IEC and Contractor;</li> <li>5. Carry out investigation;</li> <li>6. Report the results of investigation to the IEC, ER and Contractor;</li> <li>7. Discuss with the IEC and Contractor on remedial measures required;</li> <li>8. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>   | <ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>   | <ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>   |
| Limit Level being exceeded  | <ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>                                 | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> |

# Appendix D - Event Action Plans

## Event/Action Plan for Landscape and Visual

| EVENT ACTION LEVEL             | ACTION   |  |  |   |
|--------------------------------|--|--|--|---|
|                                | ET   | IEC  | ER   | CONTRACTOR  |
| Design Check                   | <ul style="list-style-type: none"> <li>Check final design conforms to the requirements of EP and prepare report.</li> </ul>  | <ul style="list-style-type: none"> <li>Check report.</li> <li>Recommend remedial design if necessary</li> </ul>  | <ul style="list-style-type: none"> <li>Undertake remedial design if necessary</li> </ul>                                       |   |
| Non-conformity on one occasion | <ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ul>  | <ul style="list-style-type: none"> <li>Check report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures.</li> </ul>               | <ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul> | <ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul> |
| Repeated Non-conformity        | <ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If non-conformity stops, cease additional monitoring</li> </ul> | <ul style="list-style-type: none"> <li>Check monitoring report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures.</li> </ul> | <ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul> | <ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul> |

---

---

**APPENDIX E  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

---

---

**Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase**

| EIA Ref.  | Mitigation Measures   | Status   |
|---|---|--|
| <b>Construction Air Quality</b>                             |   |  |
| S3.2<br>(AEIAR-130/2009)                                    | 8 times daily watering of the work site with active dust emitting activities.   | ^  |
| S4.8<br>(AEIAR-170/2013)                                    | Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.  | ^  |
| S3.2<br>(AEIAR-130/2009)<br>and<br>S4.8<br>(AEIAR-170/2013) | <p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p> <ul style="list-style-type: none"> <li>● Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> <li>● Misting for the dusty material should be carried out before being loaded into the vehicle.</li> <li>● Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> <li>● Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</li> <li>● The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> <li>● The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.</li> <li>● Vehicle washing facilities should be provided at every vehicle exit point.</li> </ul> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

| EIA Ref.                  | Mitigation Measures  | Status  |
|---------------------------|--|---|
|                           | <ul style="list-style-type: none"> <li>● The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>● Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</li> <li>● Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides; and</li> <li>● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>   | <p>^</p> <p>^</p> <p>^</p> <p>^</p>                   |
| <b>Construction Noise</b> |  |   |
| S3.3<br>(AEIAR-130/2009)  | Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.   | ^   |
| S3.3<br>(AEIAR-130/2009)  | <p>Good Site Practice:</p> <ul style="list-style-type: none"> <li>● Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.</li> <li>● Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.</li> <li>● Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>● Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.</li> <li>● Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>● Material stockpiles and other structures should be effectively utilized, wherever</li> </ul> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

| EIA Ref.  | Mitigation Measures  | Status            |
|---|--|-------------------|
|   | practicable, in screening noise from on-site construction activities.  |                   |
| S3.3<br>(AEIAR-130/2009)                                    | Scheduling of Construction Works during School Examination Period  | N/A               |
| S3.8<br>(AEIAR-170/2013)                                    | Provision of a landscaped deck along Roads D3A & D4A.  | N/A               |
| S3.8<br>(AEIAR-170/2013)                                    | <ul style="list-style-type: none"> <li>● Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A &amp; D4A;</li> <li>● Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and</li> <li>● Provision of staircases with noise barriers next to Sites 4A1 and 4B1</li> </ul> <p>It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.</p>        | N/A<br>N/A<br>N/A |
| S3.8<br>(AEIAR-170/2013)                                    | Non-noise sensitive use areas within Sites 4A1 and 4B1.  | N/A               |
| S3.8<br>(AEIAR-170/2013)                                    | Avoid sensitive façade with openable window facing Road D3A.   | N/A               |
| <b>Construction Water Quality</b>                           |  |                   |
| S3.4<br>(AEIAR-130/2009)<br>and<br>S5.8<br>(AEIAR-170/2013) | <p><u>Construction Runoff</u></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> <li>● use of sediment traps</li> <li>● adequate maintenance of drainage systems to prevent flooding and overflow</li> </ul> | ^<br>^            |



| EIA Ref.                 | Mitigation Measures   | Status |
|--------------------------|---|--------|
|                          | Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. | ^      |
|                          | Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.  | ^      |
| S5.8<br>(AEIAR-170/2013) | Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.   | ^      |
|                          | 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.   | ^      |
| S3.4<br>(AEIAR-130/2009) | Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacity, are recommended as a general mitigation measure  | ^      |

| EIA Ref.  | Mitigation Measures   | Status |
|---|---|--------|
|   | which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.   |        |
| S3.4<br>(AEIAR-130/2009)<br>and<br>S5.8<br>(AEIAR-170/2013) | Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> 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.  | ^      |
| S3.4<br>(AEIAR-130/2009)                                    | Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.  | ^      |
|   | Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.  | ^      |
| S3.4<br>(AEIAR-130/2009)<br>and<br>S5.8<br>(AEIAR-170/2013) | All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting | ^      |

| EIA Ref.                 | Mitigation Measures  | Status |
|--------------------------|--|--------|
|                          | 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.   |        |
| S5.8<br>(AEIAR-170/2013) | <p><u>Boring and Drilling Water</u><br/>Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.</p>  | ^      |
|                          | <p><u>Acid Cleaning, Etching and Pickling Wastewater</u><br/>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</p>  | ^      |
| S3.4<br>(AEIAR-130/2009) | <p><u>Drainage</u><br/>It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.</p>  | ^      |
| S3.4<br>(AEIAR-130/2009) | All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required. | ^      |

| EIA Ref.  | Mitigation Measures  | Status |
|---|--|--------|
| S3.4<br>(AEIAR-130/2009)                                    | All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.  | ^      |
| S5.8<br>(AEIAR-170/2013)                                    | There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water 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 (RO) of EPD. | ^      |
| S3.4<br>(AEIAR-130/2009)<br>and<br>S5.8<br>(AEIAR-170/2013) | <u>Sewage Effluent</u><br><br>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.  | ^      |
| S5.8  | Notices should be posted at conspicuous locations to remind the workers not to discharge   | ^      |

| EIA Ref.  | Mitigation Measures  | Status |
|---|--|--------|
| (AEIAR-170/2013)  | any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.   |        |
| S3.4<br>(AEIAR-130/2009)<br>and<br>S5.8<br>(AEIAR-170/2013) | <u>Stormwater Discharges</u><br><br>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.  | ^      |
|   | <u>Debris and Litter</u><br><br>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur.  | ^      |
| S5.8<br>(AEIAR-170/2013)                                    | <u>Accidental Spillage</u><br><br>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. | ^      |

| EIA Ref.   | Mitigation Measures  | Status                              |
|--|--|-------------------------------------|
|  | <p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> <li>● Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>● Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>● Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> |
| <b>Construction Waste Management</b>                                   |  |                                     |
| <p>S6.7<br/>(AEIAR-170/2013)</p>                                       | <p>Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC (W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites.</p>  | <p>^</p>                            |
| <p>S3.5<br/>(AEIAR-130/2009)<br/>and<br/>S6.7<br/>(AEIAR-170/2013)</p> | <p><b>Good Site Practices</b><br/>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:</p> <ul style="list-style-type: none"> <li>● Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site</li> <li>● Training of site personnel in proper waste management and chemical waste handling procedures</li> <li>● Provision of sufficient waste disposal points and regular collection for disposal</li> </ul>  | <p>^</p> <p>^</p>                   |

| EIA Ref. | Mitigation Measures  | Status   |
|----------|--|--|
|          | <ul style="list-style-type: none"> <li>● Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>● A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)</li> <li>● Regular cleaning and maintenance systems, sumps and oil interceptors</li> <li>● Separation of chemical wastes for special handling and appropriate treatment</li> </ul>   | <p>^</p> <p>^</p> <p>^</p> <p>^</p>                            |
|          | <p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>● Sort C&amp;D waste from demolition of the remaining structures to recover recyclable portions such as metals</li> <li>● 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</li> <li>● Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force</li> <li>● Any unused chemicals or those with remaining functional capacity should be recycled</li> <li>● Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> <li>● Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste</li> <li>● Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.</li> </ul> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

| EIA Ref.                         | Mitigation Measures   | Status   |
|----------------------------------|---|--|
| <p>S3.5<br/>(AEIAR-130/2009)</p> | <p>Construction and Demolition Materials</p> <p>Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&amp;D material. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>● Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.</li> <li>● Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.</li> <li>● Skip hoist for material transport should be totally enclosed by impervious sheeting.</li> <li>● Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.</li> <li>● The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>● The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.</li> <li>● All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.</li> <li>● The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.</li> </ul> <p>When delivering inert C&amp;D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&amp;D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket</p> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |



| EIA Ref.   | Mitigation Measures   | Status                                   |
|--|---|--|
|  | System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirement sand implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.  |  |
| S3.5<br>(AEIAR-130/2009)                                       | <p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem</p>   | ^  |
| <b>Construction Landscape and Visual</b>                       |   |  |
| S3.8.12<br>(AEIAR-130/2009)<br>and<br>S7.9<br>(AEIAR-170/2013) | <ul style="list-style-type: none"> <li>● Minimized construction area and contractor’s temporary works areas.</li> <li>● All existing trees should be carefully protected during construction.</li> <li>● Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</li> <li>● Control of night-time lighting.</li> <li>● Erection of decorative screen hoarding.</li> <li>● Reduction of construction period to practical minimum.</li> <li>● Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas.</li> <li>● Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.</li> </ul> | ^<br>^<br>^<br><br>^<br>^<br>^<br>^<br>^ |

|   |   |   |
|---|---|---|
| Remarks:  | EIA Report (AEIAR-130/2009) – Kai Tak Development   |   |
|   | EIA Report (AEIAR-170/2013) – Kai Tak Development – Roads D3A & D4A                           |   |
|   | ^ Compliance of mitigation measure;   | X Non-compliance of mitigation measure;           |
|   | N/A Not Applicable at this stage;<br>N/A(1) Not observed;                                     | • Non-compliance but rectified by the contractor; |
| * Recommendation was made during site audit but improved/rectified by the contractor. | # Recommendation was made during site audit but not yet improved/rectified by the contractor. |   |

---

---

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

---

---

**Contract No. KL/2014/01**

**Kai Tak Development –Stage 2 Infrastructure Works for Developments at the Southern Part of the Former Runway**

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

**Reporting Month:** October 2020

**Contract No. KL/2014/01**

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

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

---

---

**APPENDIX G  
WASTE GENERATED QUANTITY**

---

---

### Appendix 5. Monthly Summary Waste Flow Table

Name of Department: CEDD

Contract No: KL/2014/01

#### Monthly Summary Waste Flow Table for 2020

| 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 tonne)   | (in tonne)                          | (in tonne)             | (in tonne)                 | (in tonne)              | (in tonne)    | (in '000 kg)                                      | (in '000kg)                | (in '000kg) | (in '000kg)    | (in tonne)                  |
| Jan       | 936.62   | 0                                   | 0                      | 0                          | 936.62                  | 0             | 0   | 0                          | 0           | 200.08         |                             |
| Feb       | 2090.79  | 0                                   | 0                      | 0                          | 2090.79                 | 0             | 0   | 0                          | 0           | 166.68         |                             |
| Mar       | 9534.09  | 0                                   | 0                      | 0                          | 9534.09                 | 0             | 0   | 0                          | 0           | 435.76         |                             |
| Apr       | 476.74   | 0                                   | 0                      | 0                          | 476.74                  | 0             | 0   | 0                          | 0           | 168.10         |                             |
| May       | 33.33  | 0                                   | 0                      | 0                          | 33.33                   | 0             | 0   | 0                          | 0           | 228.24         |                             |
| June      | 20.49  | 0                                   | 0                      | 0                          | 20.49                   | 0             | 0   | 0                          | 0           | 147.60         |                             |
| Sub-total | 13092.06   | 0                                   | 0                      | 0                          | 13092.06                | 0             | 0   | 0                          | 0           | 1346.46        |                             |
| July      | 689.57   | 0                                   | 0                      | 0                          | 689.57                  | 0             | 0   | 0                          | 0           | 177.5          |                             |
| Aug       | 931.15   | 0                                   | 0                      | 0                          | 931.15                  | 0             | 0   | 0                          | 0           | 127.28         |                             |
| Sept      | 819.83   | 0                                   | 0                      | 0                          | 819.83                  | 0             | 0   | 0                          | 0           | 104.77         |                             |
| Oct       | 0  | 0                                   | 0                      | 0                          | 0                       | 0             | 0   | 0                          | 0           | 82.42          |                             |
| Nov       |  |                                     |                        |                            |                         |               |   |                            |             |                |                             |
| Dec       |  |                                     |                        |                            |                         |               |   |                            |             |                |                             |
| Total     | 15532.61   | 0                                   | 0                      | 0                          | 15532.61                | 0             | 0   | 0                          | 0           | 1838.43        |                             |

\* Transfer to alternative disposal ground at Lung Kwu Sheung Tan EPD approved recycler

# FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



## Appendix B

**Monthly EM&A Report  
For  
Contract No. KL/2014/03**

**Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part  
of the Former Runway**

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



Report No.: 0405/15/ED/1270A

## MONTHLY EM&A REPORT

October 2020

**Client** : Civil Engineering and Development  
Department, HKSAR

**Contract No.** : KLN/2015/07

**Contract Name** : Environmental Monitoring Works for  
Contract KL/2014/03 – Kai Tak Development  
– Stage 3 Infrastructure Works for Developments  
at the Southern Part of the Former Runway

**Report No.** : 0405/15/ED/1270A

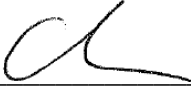
EP-337/2009 New Distributor Roads Serving the Planned Kai Tak  
Development Area

EP-339/2009/A Decommissioning of the Remaining Parts (Ex-GFS  
Building, Radar Station and Hong Kong Aviation Club)  
of the former Kai Tak Airport

EP-451/2013 Trunk Road T2

**Prepared by** : Toby K. H. Wan

**Reviewed by** : Cyrus C. Y. Lai

**Certified by** :   
Colin K. L. Yung  
Environmental Team Leader  
Materialab Consultants Limited



Ref.: CEDKTDS3EM00\_0\_0523L.20

12 November 2020

Hyder-Meinhardt Joint Venture  
17/F, Two Harbour Square,  
180 Wai Yip Street, Kwun Tong  
Kowloon, Hong Kong

By Post and Email

Attention: Mr. Pat Lam

Dear Mr. Lam,

**Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway  
Monthly EM&A Report for October 2020**

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for October 2020 (Report No. 0405/15/ED/1270A) we received by e-mail on 10 November 2020.

Please be informed that we have no adverse comment on the captioned report. We hereby verify the captioned submission according to Condition 3.3 of EP-337/2009, Condition 3.3 of EP-339/2009/A and Condition 3.4 of EP-451/2013.

Thank you for your attention. Please do not hesitate to contact us should you have any queries.

Yours sincerely,

For and on behalf of

Ramboll Hong Kong Limited



Manson Yeung

Independent Environmental Checker

|      |       |                       |                |
|------|-------|-----------------------|----------------|
| c.c. | CEDD  | Attn.: Mr. Simon Kwok | Fax: 2739 0076 |
|      | Fugro | Attn.: Mr. Colin Yung | By email       |
|      | CRBC  | Attn.: Mr. Dickey Yau | Fax: 2283 1689 |



## TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>EXECUTIVE SUMMARY</b>   | <b>1</b>  |
| <b>1. INTRODUCTION</b>   | <b>2</b>  |
| <b>2. AIR QUALITY</b>  | <b>5</b>  |
| <b>3. NOISE</b>  | <b>7</b>  |
| <b>4. LANDSCAPE AND VISUAL</b>                                       | <b>9</b>  |
| <b>5. WASTE MANAGEMENT</b>   | <b>10</b> |
| <b>6. SITE INSPECTION</b>  | <b>11</b> |
| <b>7. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE</b>                 | <b>12</b> |
| <b>8. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES</b> | <b>13</b> |
| <b>9. FUTURE KEY ISSUES</b>  | <b>14</b> |
| <b>10. CONCLUSIONS</b>   | <b>15</b> |

## FIGURES

|          |                                    |
|----------|------------------------------------|
| Figure 1 | Project General Layout             |
| Figure 2 | Air and Noise Monitoring Locations |

## LIST OF APPENDICES

|            |   |
|------------|---|
| Appendix A | Construction Programme  |
| Appendix B | Project Organization Chart  |
| Appendix C | Event Action Plans  |
| Appendix D | Waste Flow Table  |
| Appendix E | Environmental Mitigation Implementation Schedule (EMIS)   |
| Appendix F | Weather and Meteorological Conditions during Reporting Month  |
| Appendix G | Cumulative statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions |
| Appendix H | Summary of Site Audit in the Reporting Month  |
| Appendix I | Outstanding Issues and Deficiencies   |
| Appendix J | Action and Limit Levels for Air Quality and Noise   |

## EXECUTIVE SUMMARY

- i. The Civil Engineering and Development Department HKSAR has appointed MaterialLab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and implement the EM&A works.
- ii. This Monthly EM&A report presents the environmental monitoring and audit works for the period between 1 October and 31 October 2020. As informed by the Contractor, major activities in the reporting month were:
  - Utility laying
  - Construction of road base and road pavement
  - Landscape works – irrigation systems, tree and shrub planting
  - Laying Cable and Construction for Road Lighting

### Breaches of the Action and Limit Levels

- iii. Three Action Level exceedance for 24-hr TSP were recorded. An exceedance was recorded at KTD2c on 14 October 2020 and two exceedance was recorded at KER1 and KTD2c on 24 October 2020. No Action / Limit Level exceedance was recorded for 24-hr TSP at KTD1 in the reporting month.
- iv. A Limit Level exceedance for construction noise was recorded. Exceedance was recorded at KTD1 on 21 October 2020. No Action / Limit Level exceedance was recorded for construction noise at KTD2c and KER1 in the reporting month.

### Complaint, Notification of Summons and Successful Prosecution

- v. No environmental complaint, notification of summons and successful prosecution were received in the reporting month.

### Reporting Changes

- vi. There was no reporting change in the reporting month.

### Future Key Issues

- vii. The key issues to be considered in the coming reporting month include:

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

## 1. INTRODUCTION

### 1.1 Background

1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.

1.1.2 Contract No. KL/2014/03 is the works package to construct an approximately 420m long supporting underground structure (SUS) underneath Shing Cheong Road and Cheung Yip Street. The EM&A programme under this Contract is governed by three EPs (EP-337/2009, EP-339/2009/A and EP-451/2013) and two EM&A Manuals (AEIAR-130/2009 and AEIAR-174/2013). The Works to be executed under this Contract and corresponding EPs include but not be limited to the following main items:

#### **EP-451/2013 – Trunk Road T2**

(i) Construction of approximately 420m long supporting underground structure (SUS) including diaphragm walls, barrettes, piled foundation, top and bottom slabs, end wall and adits underneath Shing Cheong Road and Cheung Yip Street;

#### **EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development**

- (ii) Widening and re-alignment of Cheung Yip Street of approximately 330m long and associated footpaths;
- (iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
- (iv) Construction of drainage outfall and modification of existing seawall;
- (v) Construction of ancillary works including surface drainage, sewerage, water, fire fighting, street lighting, street furniture, road marking, road signage, utilities and services, irrigation and landscape works.

#### **EP-339/2009/A – Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport**

(vi) Demolition of RADAR Tower and guard house;

#### **Other works not covered by any EP**

- (vii) Construction of two subways between Phase II of New Acute Hospital (Site A) and Hong Kong Children's Hospital (Site C), and between Phase I of New Acute Hospital (Site B) and Site C;
- (viii) Construction of District Cooling System (DCS) along Cheung Yip Street and Shing Cheong Road

1.1.3 The location and boundary of the site is shown in **Figure 1**.

1.1.4 This Monthly EM&A report is required under EP-337/2009 Condition 3.3, EP-339/2009/A Condition 3.3 and EP-451/2013 Condition 3.4. It is to report the results and findings of the EM&A programme required in the EM&A Manuals.

1.1.5 This is the 56<sup>th</sup> monthly EM&A Report which summarize the impact monitoring results and audit findings for the Project within the period between 1 October and 31 October 2020.



**1.2 Project Organization**

1.2.1 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project.

1.2.2 The organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarized in **Table 1.1**.

**Table 1.1 Contact Information of Key Personnel**

| Party                            | Position                          | Name                     | Telephone | Fax       |
|----------------------------------|-----------------------------------|--------------------------|-----------|-----------|
| Project Proponent (CEDD)         | Engineer                          | Mr. Simon Kwok           | 3842 7140 | 2739 0076 |
| Engineer’s Representative (HMJV) | Senior Resident Engineer          | Mr. Pat Lam              | 3742 3803 | 3742 3899 |
| IEC (Ramboll Hong Kong Limited)  | Independent Environmental Checker | Mr. Manson Yeung         | 9700 6767 | 3465 2899 |
| Main Contractor (CRBC)           | Site Agent                        | Mr. Yau Kwok Kiu, Dickey | 5699 4503 | 2283 1689 |
|                                  | Environmental Officer             | Miss. Lila Lui           | 9790 5433 | 2283 1689 |
| ET (MCL)                         | Environmental Team Leader         | Mr. Colin Yung           | 3565 4114 | 3565 4160 |

**1.3 Construction Programme and Activities**

1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**.

1.3.2 A summary of the major construction activities undertaken in the reporting month were:

- Utility laying
- Construction of road base and road pavement
- Landscape works – irrigation systems, tree and shrub planting
- Laying Cable and Construction for Road Lighting



**1.4 Inter-relationship with the environmental protection/ mitigation measures with the construction programme**

1.4.1 According to the construction activities in the construction programme mentioned in Section 1.3.2, the following environmental protection/ mitigation measures including Air Quality Impact, Construction Noise Impact, Water Quality Impact, Chemical and Waste Management, Landscape and Visual Impact shall be implemented:

- Sufficient watering of the works site with the active dust emitting activities;
- Limitation of the speed for vehicles on unpaved site roads;
- Properly cover or enclosure of the stockpiles and dusty materials;
- Good site practices on loading dusty materials;
- Good maintenance to the plant and equipment;
- Use of quieter plant and Quality Powered Mechanical Equipment (QPME);
- Using the approved Non-road Mobile Machineries (NRMMs);
- Proper storage and handling of chemical;
- Onsite waste sorting and implementation of trip ticket system;
- Training of the site personnel in proper waste management and chemical waste handling procedures;
- Proper storage of the construction materials;
- Strictly following the Environmental Permits and Licenses;
- Provide sufficient mitigation measures as recommended in Approved EIA Reports.

**1.5 Status of Environmental Licences, Notifications and Permits**

1.5.1 A summary of the relevant environmental licenses, permits and/or notifications on environmental protection for this Contract is presented in **Table 1.2**.

**Table 1.2 Relevant Environmental Licenses, Permits and/or Notifications**

| Environmental License / Permit / Notification                         | Reference Number                            | Valid From   | Valid Till   |
|---|---|--|--|
| Environmental Permit  | EP-337/2009<br>EP-339/2009/A<br>EP-451/2013 | 23 April 2009<br>18 June 2009<br>19 September 2013 | Not Applicable<br>Not Applicable<br>Not Applicable |
| Notification pursuant to Air Pollution (Construction Dust) Regulation | 395601                                      | 4 December 2015                                    | Not Applicable                                     |
| Billing Account for Waste Disposal                                    | A/C No.: 7023814                            | 22 December 2015                                   | Not Applicable                                     |
| Construction Noise Permit   | GW-RE0494-20                                | 11 June 2020                                       | 10 December 2020                                   |
| Wastewater Discharge License  | WT00023125-2015                             | 6 January 2016                                     | 31 January 2021                                    |
| Chemical Waste Producer License                                       | 5213-247-C1232-12                           | 23 November 2015                                   | Not Applicable                                     |

**2. AIR QUALITY**

**2.1 Monitoring Requirement**

- 2.1.1 In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) monitoring at the designated air quality monitoring station is required. Impact 24-hour TSP monitoring should be carried out at least once every 6 days. In case of complaints, 1-hour TSP monitoring should be carried out at least 3 times per 6 days when the highest dust impacts are likely to occur.
- 2.1.2 The monitoring equipment, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports for EP-451/2013 prepared for Contract No. ED/2018/04.

**2.2 Monitoring Locations**

- 2.2.1 According to the EM&A Manual, three air quality monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two air quality monitoring locations, which are identified in Cha Kwo Ling area, are farther than 500m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by Contract No. ED/2018/04.
- 2.2.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for air quality monitoring.
- 2.2.3 According to the approved relocation of monitoring location KER1a (EPD reference: () in EP2/K19/A/21 pt.5), the monitoring location KER1a are proposed to be relocated by alternative monitoring location KER1b for air quality monitoring.
- 2.2.4 According to the approved relocation of monitoring location KTD2a (EPD reference: () in EP2/K19/A/21 pt.6), the monitoring location KTD2a are proposed to be relocated by alternative monitoring location KTD2b for air quality monitoring.
- 2.2.5 According to the approved relocation of monitoring location KTD2b (EPD reference: () in EP2/K19/A/21 pt.7), the monitoring location KTD2b are proposed to be relocated by alternative monitoring location KTD2c for air quality monitoring.
- 2.2.6 As informed by the ET of Contract No. ED/2018/04, the monitoring location KTD1a and KER1b have been relocated to KTD1 and KER1 for air monitoring on 3 August 2020.
- 2.2.7 The most updated locations are summarized in **Table 2.2** and shown in **Figure 2**.

**Table 2.1 Location of Air Quality Monitoring Station**

| Monitoring Station | Location   |
|--------------------|--|
| KTD1               | Centre of Excellence in Paediatrics (Rooftop of Children’s Hospital)                     |
| KTD2c              | G/IC Zone next to Kwun Tong Bypass (Next to the Kowloon Bay Sewage Interception Station) |
| KER1               | Future Residential Development at Kerry Godown   |

## 2.3 Results and Observations

- 2.3.1 The monitoring results and observations for KTD1, KTD2c and KER1 are reported in the Monthly EM&A Reports for EP-451/2013 prepared for Contract No. ED/2018/04.
- 2.3.2 Three Action Level exceedance for 24-hr TSP were recorded. An exceedance was recorded at KTD2c on 14 October 2020 and two exceedance were recorded at KER1 and KTD2c on 24 October 2020. No Action / Limit Level exceedance was recorded for 24-hr TSP at KTD1 in the reporting month.
- 2.3.3 On 14 October 2020, at KTD2c non-project related construction works were carried out during 24-hr TSP monitoring. Dust was generated from construction site of Trunk Road T2 when C&D materials loading and unloading activities was processing. Thus, it is considered that this exceedance is not project related.
- 2.3.4 On 24 October 2020, at KER1 and KTD2c non-project related construction works were carried out during 24-hr TSP monitoring. Dust arising from the vehicle movement from construction site of Trunk Road T2. Thus, it is considered that this exceedance is not project related.
- 2.3.5 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.
- 2.3.6 The weather conditions during the monitoring are provided in **Appendix F**.





**3. NOISE**

**3.1 Monitoring Requirement**

- 3.1.1 In accordance with the approved EM&A Manuals, Leq (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays at the designated monitoring locations.
- 3.1.2 The monitoring equipment, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports for EP-451/2013 prepared for Contract No. ED/2018/04.

**3.2 Monitoring Locations**

- 3.2.1 According to the EM&A Manual, three noise monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two noise monitoring locations, which are identified in Cha Kwo Ling area, are farther than 300m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by Contract No. ED/2018/04.
- 3.2.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 Pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for noise monitoring.
- 3.2.3 According to the approved relocation of monitoring location KER1a (EPD reference: () in EP2/K19/A/21 Pt.5), the monitoring location KER1a are proposed to be relocated by alternative monitoring location KER1b for noise monitoring.
- 3.2.4 According to the approved relocation of monitoring location KTD2a (EPD reference: () in EP2/K19/A/21 Pt.6), the monitoring location KTD2a are proposed to be relocated by alternative monitoring location KTD2b for noise monitoring.
- 3.2.5 According to the approved relocation of monitoring location KTD2b (EPD reference: () in EP2/K19/A/21 pt.7), the monitoring location KTD2b are proposed to be relocated by alternative monitoring location KTD2c for noise monitoring.
- 3.2.6 As informed by the ET of Contract No. ED/2018/04, the monitoring location KTD1a and KER1b have been relocated to KTD1 and KER1 for noise monitoring on 3 August 2020.
- 3.2.7 The most updated locations are summarized in **Table 3.3** and shown in **Figure 2**.

**Table 3.1 Location of Noise Monitoring Station**

| Monitoring Station | Location   |
|--------------------|--|
| KTD1               | Centre of Excellence in Paediatrics (Rooftop of Children's Hospital)                     |
| KTD2c              | G/IC Zone next to Kwun Tong Bypass (Next to the Kowloon Bay Sewage Interception Station) |
| KER1               | Future Residential Development at Kerry Godown   |



### **3.3 Results and Observations**

- 3.3.1 The monitoring results and observations for KTD1, KTD2c and KER1 are reported in the Monthly EM&A Reports for EP-451/2013 prepared for Contract No. ED/2018/04.
- 3.3.2 A Limit Level exceedance for construction noise was recorded. Exceedance was recorded at KTD1 on 21 October 2020. No Action / Limit Level exceedance was recorded for construction noise at KTD2c and KER1 in the reporting month.
- 3.3.3 On 21 October 2020, at KTD1 a breaker from construction site of New Acute Hospital was operated continuously. The noise generated by the breaker during breaking activity dominates the ambient or background noise. Thus, it is considered that this exceedance is not project related.



## **4. LANDSCAPE AND VISUAL**

### **4.1 Audit Requirements**

4.1.1 As per the Trunk Road T2 EM&A Manual, the landscape and visual mitigation measures during the construction phase shall be audited by a Registered Landscape Architect, as a member of the Environmental Team, at least once every two weeks to ensure compliance with the intended aims of the measures.

4.1.2 According to the Kai Tak Development EM&A Manual, measures to mitigate landscape and visual impacts during construction should be checked to ensure compliance with the intended aims of the measures. The progress of the engineering works shall be regularly reviewed onsite to identify the earliest practical opportunities for the landscape works to be undertaken. The ET shall report on the Contractor's compliance on a weekly basis.

### **4.2 Results and Observations**

4.2.1 To monitor and audit the implementation of landscape and visual mitigation measures, four weekly landscape and visual site audits were carried out on 7, 14, 21 and 28 October 2020 and two of them 7 and 21 October 2020 were carried out by a Registered Landscape Architect. The weekly landscape and visual impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).

4.2.2 Should non-compliance of the landscape and visual impact occur, action in accordance to the event action plan presented in **Appendix C** shall be carried out.



## **5. WASTE MANAGEMENT**

### **5.1 Audit Requirements**

5.1.1 The effective management of waste arising during the construction phase will be monitored through the site audit programme. Regular audits and site inspections should be carried out to ensure that the recommended good site practices and other mitigation measures are implemented by the Contractor.

5.1.2 The audit should look at all aspects of on-site waste management practices including the waste generation, storage, recycling, transport and disposal. The aims of waste audit are:

- to ensure the waste arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner;
- verify the implementation status and evaluate the effectiveness of the mitigation measures; and
- to encourage the reuse and recycling of material.

### **5.2 Results and Observations**

5.2.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

5.2.2 The amount of wastes generated by the site activities in the reporting month is shown in **Appendix D**.



## **6. SITE INSPECTION**

### **6.1 Site Inspection**

- 6.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix E**.
- 6.1.2 In the reporting month, four site inspections were carried out on 7, 14, 21 and 28 October 2020. Two of them, held on 7 and 21 October 2020 were the joint inspections with the IEC, ER, the Contractor and the ET.
- 6.1.3 No outstanding issues were reported during the reporting month. Details of observations recorded during the site inspections are summarized in **Appendix H**.
- 6.1.4 All the 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 month.



## **7. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE**

### **7.1 Environmental Exceedance**

7.1.1 Three Action Level exceedance for 24-hr TSP were recorded. An exceedance was recorded at KTD2c on 14 October 2020 and two exceedance was recorded at KER1 and KTD2c on 24 October 2020. No Action / Limit Level exceedance was recorded for 24-hr TSP at KTD1 in the reporting month.

7.1.2 A Limit Level exceedance for construction noise was recorded. Exceedance was recorded at KTD1 on 21 October 2020. No Action / Limit Level exceedance was recorded for construction noise at KTD2c and KER1 in the reporting month.

### **7.2 Complaints, Notification of Summons and Prosecution**

7.2.1 No environmental complaint, notification of summons and successful prosecution were received in the reporting month.

7.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix G**.

## 8. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

### 8.1 Implementation Status

8.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month is summarized in **Appendix E**. Status of required submission under the EP during the reporting period is summarized in **Table 8.1**.

**Table 8.1 Status of Required Submission under Environmental Permit**

| EP Condition         | Submission   | Submission Date |
|----------------------|--|-----------------|
| <u>EP-337/2009</u>   |  |                 |
| Condition 2.3        | Management Organization of Main Construction Companies | 18/12/2015      |
| Condition 2.4        | Design Drawing of the Project                          | 18/12/2015      |
| Condition 2.11       | Landscape Mitigation Plan(s)                           | 18/12/2015      |
| Condition 3.3        | Monthly EM&A Report (September 2020)                   | 15/10/2020      |
| <u>EP-339/2009/A</u> |  |                 |
| Condition 2.4        | Management Organization of Main Construction Companies | 18/12/2015      |
| Condition 2.5        | Design Drawing of the Project                          | 18/12/2015      |
| Condition 3.3        | Monthly EM&A Report (September 2020)                   | 15/10/2020      |
| <u>EP-451/2013</u>   |  |                 |
| Condition 2.3        | Management Organization of Main Construction Companies | 18/12/2015      |
| Condition 2.4        | Design Drawing of the Project                          | 18/12/2015      |
| Condition 2.5        | Landscape Mitigation Plan(s)                           | 18/12/2015      |
| Condition 2.10       | Supplementary Contamination Assessment Report          | 18/12/2015      |
| Condition 3.3        | Baseline Monitoring Report                             | 12/02/2016      |
| Condition 3.4        | Monthly EM&A Report (September 2020)                   | 15/10/2020      |

## **9. FUTURE KEY ISSUES**

### **9.1 Construction Programme for the Next Two Months**

- Laying Cable and Construction for Road Lighting
- Construction of road base and road pavement
- Landscape works – irrigation systems, tree and shrub planting
- Testing and commissioning of irrigation system

### **9.2 Key Issues for the Coming Month**

9.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality, waste management and landscape and visual impact.

### **9.3 Monitoring Schedules for the Next Three Months**

9.3.1 The tentative schedules for environmental monitoring in the coming three months are reported in the monthly EM&A Report for EP-451/2013 prepared for Contract No. ED/2018/04.



## 10. CONCLUSIONS

- 10.1.1 24-hour TSP impact monitoring and construction noise monitoring were carried out in the reporting month.
- 10.1.2 Three Action Level exceedance for 24-hr TSP were recorded. An exceedance was recorded at KTD2c on 14 October 2020 and two exceedance was recorded at KER1 and KTD2c on 24 October 2020. No Action / Limit Level exceedance was recorded for 24-hr TSP at KTD1 in the reporting month.
- 10.1.3 A Limit Level exceedance for construction noise was recorded. Exceedance was recorded at KTD1 on 21 October 2020. No Action / Limit Level exceedance was recorded for construction noise at KTD2c and KER1 in the reporting month.
- 10.1.4 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting month.
- 10.1.5 Four environmental site inspections were carried out in the reporting month. Recommendation on mitigation measures for chemical and waste management was given to the Contractor for remediating the deficiencies identified during the site inspections.
- 10.1.6 Four weekly Landscape and Visual Site audits were carried out 7, 14, 21 and 28 October 2020 and two of them 7 and 21 October 2020 were carried out by a Registered Landscape Architect in the reporting month. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).
- 10.1.7 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

## 10.2 Comment and Recommendations

- 10.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.
- 10.2.2 According to the environmental audit performed in the reporting month, the following recommendations were made:

### Air Quality Impact

- No specific observation was identified in the reporting month.

### Construction Noise Impact

- No specific observation was identified in the reporting month.

### Water Quality Impact

- No specific observation was identified in the reporting month.

### Chemical and Waste Management

- General refuse and construction waste was reminded to clear up regularly to prevent accumulation.



Land Contamination

- No specific observation was identified in the reporting month.

Landscape and Visual Impact

- No specific observation was identified in the reporting month.

General Condition

- No specific observation was identified in the reporting month.

Permit / Licenses

- No specific observation was identified in the reporting month.

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

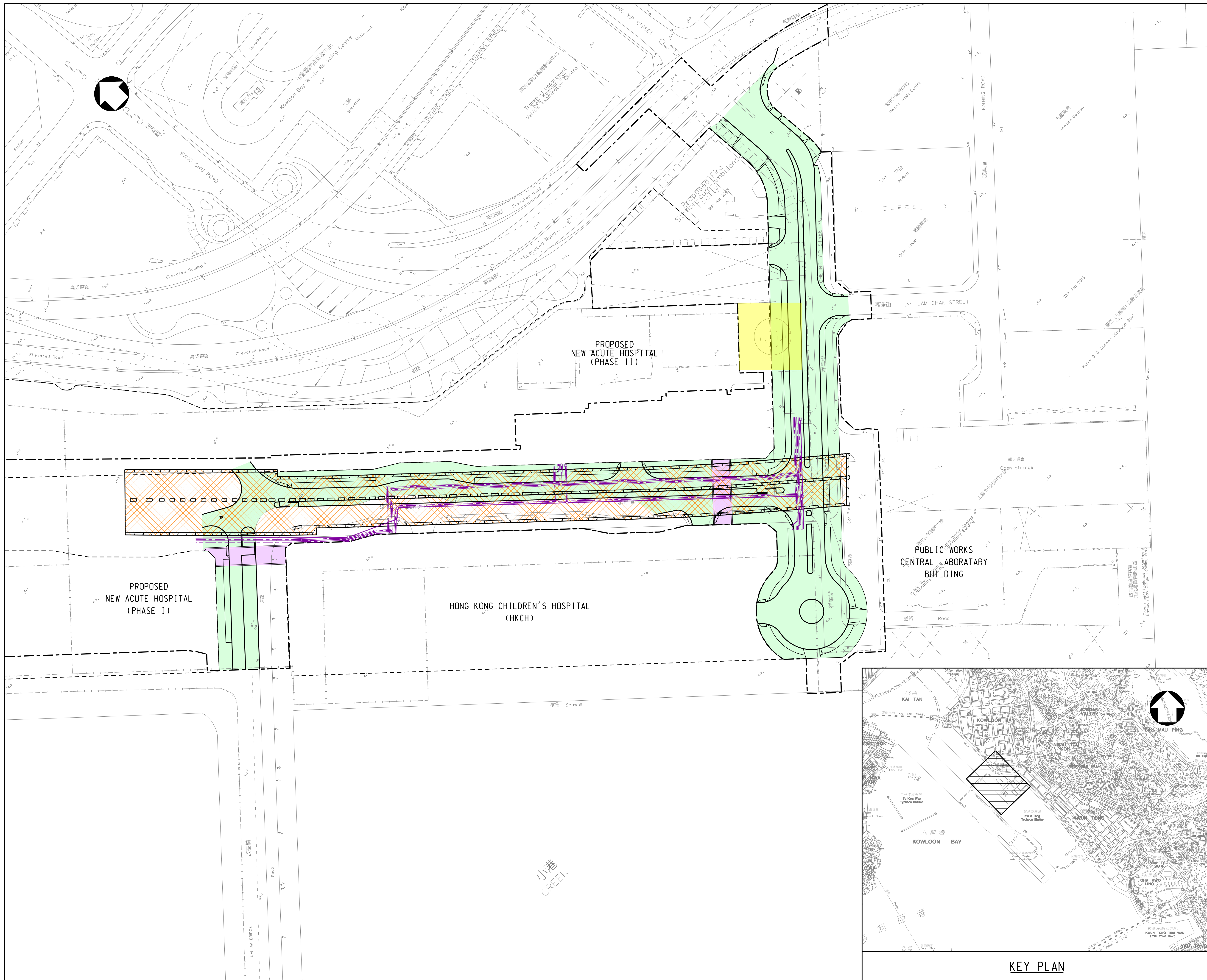
Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



### **Figure 1**

### **Project General Layout**





- LEGENDS:**
- SITE BOUNDARY
  - HOSPITAL SITE BOUNDARY
  - PROPOSED SUPPORTING UNDERGROUND STRUCTURE
  - PROPOSED SUBWAYS
  - PROPOSED ROADWORKS
  - PROPOSED DISTRICT COOLING SYSTEM
  - DEMOLITION OF RADAR TOWER

| Rev. | Date | Drawn | Description | Checked | Approved |
|------|------|-------|-------------|---------|----------|
|      |      |       |             |         |          |

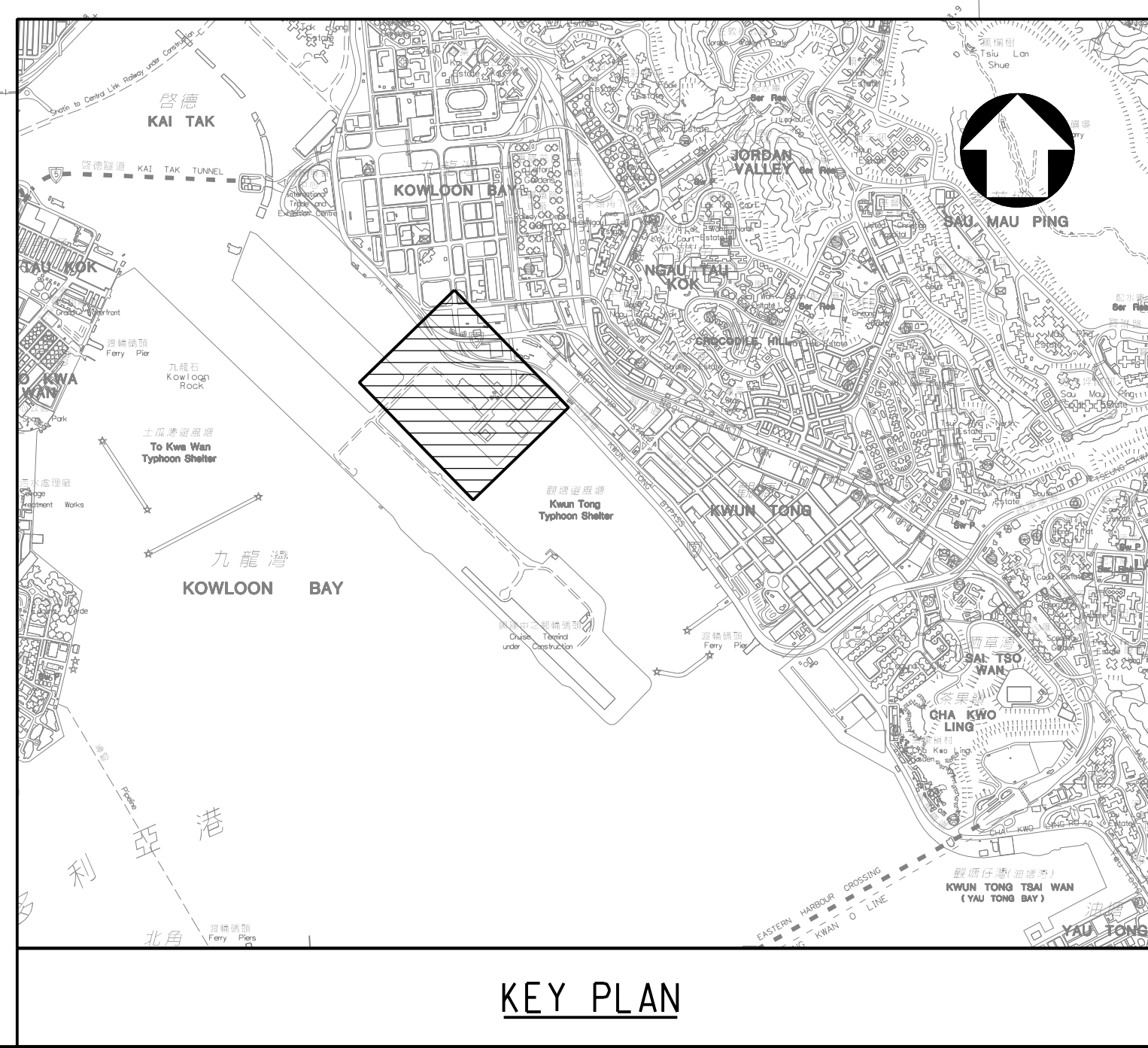


PROJECT  
 CONTRACT NO. KL/2014/03  
 KAI TAK DEVELOPMENT - STAGE 3  
 INFRASTRUCTURE WORKS FOR  
 DEVELOPMENTS AT THE SOUTHERN PART OF  
 THE FORMER RUNWAY

TITLE  
**GENERAL LAYOUT PLAN**

|                                |        |              |          |
|--------------------------------|--------|--------------|----------|
| DESIGNED                       |        | ENG. CHECK   |          |
| DRAWN                          |        | COORDINATION |          |
| DWG. CHECK                     |        | APPROVED     |          |
| SCALE AT A1<br><b>1 : 1000</b> | STATUS | REV          | <b>A</b> |

Drawing No. **FIGURE 1.0**  
 © Copyright reserved



**KEY PLAN**

PRINTED BY: kitchan 18/2/2015 13:00:43  
 FILENAME: K:\91164 Trunk Road T2\Tender Drawing (Contract 1)\Figure 1.dgn



## **MATERIALAB CONSULTANTS LIMITED**

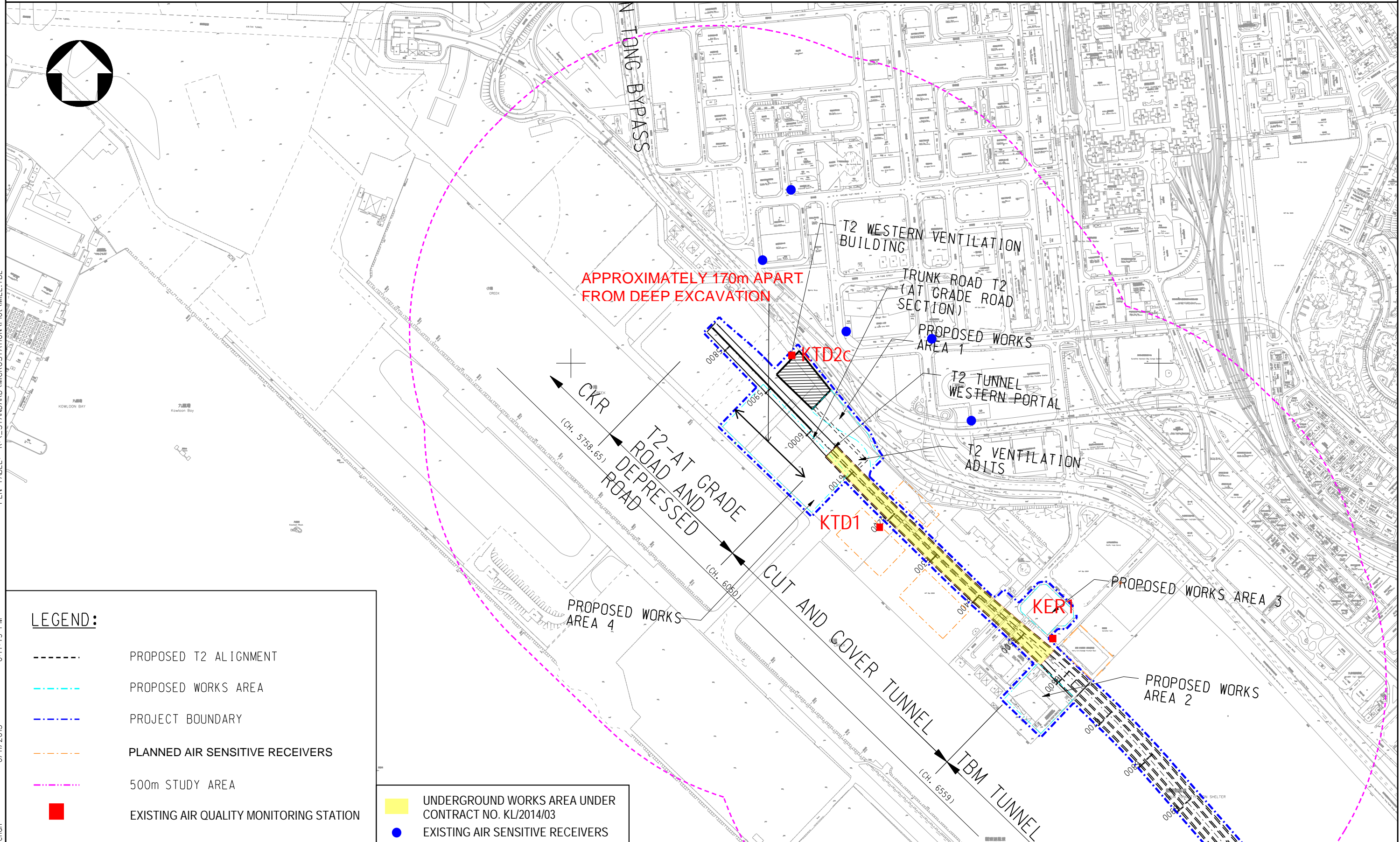
Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



### **Figure 2**

#### **Air and Noise Monitoring Locations**



**LEGEND:**

- - - - PROPOSED T2 ALIGNMENT
- - - - PROPOSED WORKS AREA
- - - - PROJECT BOUNDARY
- - - - PLANNED AIR SENSITIVE RECEIVERS
- - - - 500m STUDY AREA
- EXISTING AIR QUALITY MONITORING STATION
- UNDERGROUND WORKS AREA UNDER CONTRACT NO. KL/2014/03
- EXISTING AIR SENSITIVE RECEIVERS

Drawing title

IDENTIFIED DUST MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size

**A3**

Scale 1 : 6000

Date 30/01/2012

File name

© Copyright reserved

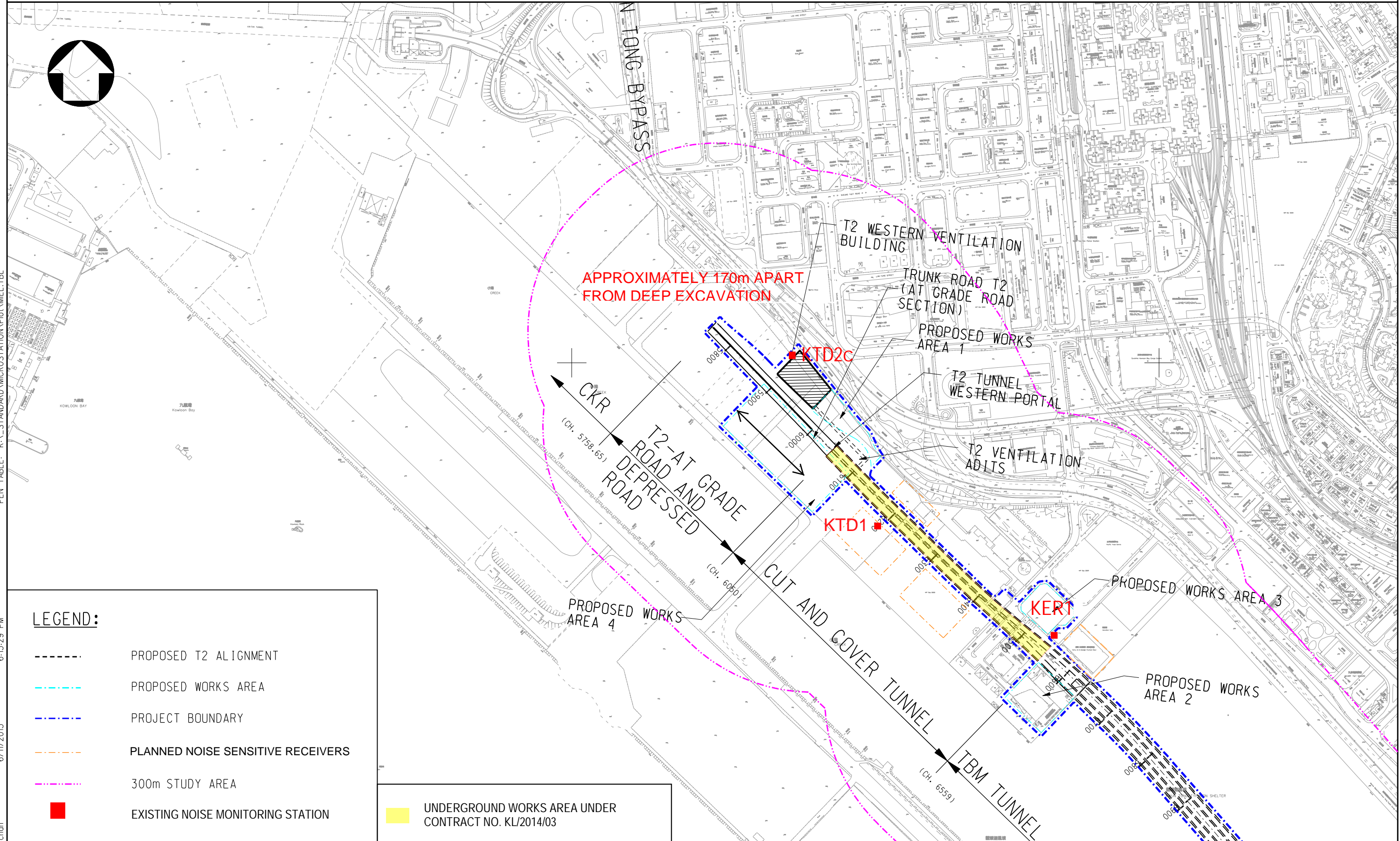
Drawing No.

**FIGURE 2.1a(revised)**

Rev. --

| Rev. | Description | Date |
|------|-------------|------|
|      |             |      |





**LEGEND:**

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED NOISE SENSITIVE RECEIVERS
- 300m STUDY AREA
- EXISTING NOISE MONITORING STATION

UNDERGROUND WORKS AREA UNDER CONTRACT NO. KL/2014/03

Drawing title

**IDENTIFIED NOISE MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT**

Original Size

A3

Scale

1 : 6000

Date

30/01/2012

File name

© Copyright reserved

Drawing No.

FIGURE 2.2 a (revised)

Rev.

--

| Rev. | Description | Date |
|------|-------------|------|
|      |             |      |

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



## **Appendix A**

### **Construction Programme**





| Activity ID  | Activity Name  | Rem Dur | Start       | Finish      | September |    |    | October |    |    |    | November |    |    |    | December |    |    | any |    |
|--|--|---------|-------------|-------------|-----------|----|----|---------|----|----|----|----------|----|----|----|----------|----|----|-----|----|
|  |  |         |             |             | 13        | 20 | 27 | 04      | 11 | 18 | 25 | 01       | 08 | 15 | 22 | 29       | 06 | 13 |     | 20 |
| <b>Road D4-4 (Cheung Yip Street)</b>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <i>CH100 to CH150 Cheung Yip Street Cul de Sac</i>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Cheung Yip Street Cul de Sac</b>  |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| SCR2670  | Laying Cable and Construction for Road Lighting                      | 7       | 06-Jul-20 A | 09-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| SCR2680  | Construction of Footpath   | 6       | 10-Apr-20 A | 08-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| SCR2690  | Construction of Street Furniture                                     | 10      | 25-Jul-20 A | 13-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <i>CH220 - CH420 Northbound</i>  |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Road Works and Miscellaneous Works</b>  |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-01-RWS-9444  | Construction of Footpath   | 0       | 17-Dec-19 A | 28-Sep-20 A |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-01-RWS-9446  | Laying Cable and Footing Construction for Road Lighting              | 12      | 25-May-20 A | 15-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <i>CH220 - CH420 Southbound</i>  |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Miscellaneous Works</b>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-01-RWS-9630  | Construction of Footpath   | 4       | 27-Mar-20 A | 06-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-01-RWS-9632  | Construction of Street Furniture                                     | 12      | 30-Sep-20   | 15-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Section 3 of the Works- Construction of District Cooling System (Subject to Excision)</b> |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Construction of District Cooling System</b>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Construction of DCS Works at Zone 4</b>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| SCR2350  | Submission of testing records, as-built drawings                     | 5       | 19-Feb-20 A | 07-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| SCR2380  | Joint inspection and handover for connection to DCS Contract/EMSD    | 5       | 28-Jun-20 A | 13-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Section 5 of the Works-Completion of All Landscape Softworks</b>                          |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Tree Planting</b>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-05-TPG-1150  | Tree Planting  | 0       | 24-Mar-20 A | 22-Sep-20 A |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Shrub Planting</b>  |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-05-SPG-1200  | Shrub Planting   | 5       | 24-Mar-20 A | 13-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Irrigation System</b>   |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-05-ISM-1280  | Application of Temporary Water Supply with WSD                       | 3       | 21-Mar-20 A | 02-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-05-ISM-1290  | Insatllation of Water Meters   | 5       | 03-Oct-20   | 07-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-05-ISM-1300  | Testing and commissioning of irrigation system                       | 30      | 08-Oct-20   | 06-Nov-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| <b>Section 7 of the Works-Preservation and Protection of Existing Trees</b>                  |  |         |             |             |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |
| K-07-001-1000  | Section 7 of the Works-Preservation and Protection of Existing Trees | 7       | 04-Jan-16 A | 06-Oct-20   |           |    |    |         |    |    |    |          |    |    |    |          |    |    |     |    |

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



### **Appendix B**

#### **Project Organization Chart**



## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



### **Appendix C**

#### **Events and Action Plan**



**Event and Action Plan for Construction Dust Monitoring**

| EVENT   | ACTION  |   |   |   |
|---|---|---|---|---|
|   | ET  | IEC   | ER  | Contractor  |
| <b>Action Level</b>                             |   |   |   |   |
| Exceedance for one sample.                      | <ol style="list-style-type: none"> <li>1. Identify sources, investigate the causes of complaint and propose remedial measures.</li> <li>2. Inform IEC and ER.</li> <li>3. Repeat measurement to confirm finding;.</li> <li>4. Increase monitoring frequency</li> </ol>  | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET.</li> <li>2. Check the Contractor's working methods.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Notify the Contractor.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Rectify any unacceptable practices.</li> <li>2. Amend working methods agreed with the ER as appropriate.</li> </ol>   |
| Exceedance for two or more consecutive samples. | <ol style="list-style-type: none"> <li>1. Identify sources.</li> <li>2. Inform the IEC and ER.</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings.</li> <li>5. Increase monitoring frequency to daily.</li> <li>6. Discuss with the IEC, ER and Contractor on remedial action required.</li> <li>7. If exceedance continues, arrange meeting with the IEC, Contractor and ER.</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET.</li> <li>2. Check the Contractor's working methods.</li> <li>3. Discuss with the ET, ER and Contractor on possible remedial measures if required.</li> <li>4. Advise the ER on the effectiveness of proposed remedial measures if required.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Notify the Contractor.</li> <li>2. Ensure remedial measures properly implemented.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Submit proposals for remedial action to the ER within 3 working days of notification.</li> <li>2. Implement the agreed proposals.</li> <li>3. Amend proposal as appropriate</li> </ol>  |
| <b>Limit Level</b>                              |   |   |   |   |
| Exceedance for one sample.                      | <ol style="list-style-type: none"> <li>1. Identify sources, investigate causes of exceedance and proposed remedial measures.</li> <li>2. Inform the IEC, ER, and Contractor.</li> <li>3. Repeat measurement to confirm finding.</li> <li>4. Increase monitoring frequency to daily.</li> <li>5. Assess effectiveness of the Contractor's remedial action and keep the IEC and ER informed of the results</li> </ol>   | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET.</li> <li>2. Check the Contractor's working methods.</li> <li>3. Discuss with the ET, ER and Contractor on possible remedial measures.</li> <li>4. Advise the ER and ET on the effectiveness of the proposed remedial measures.</li> <li>5. Supervise the implementation of remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Confirm receipt of the notification of exceedance in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Ensure remedial measures are properly implemented.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance.</li> <li>2. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification.</li> <li>3. Implement the agreed proposals.</li> <li>4. Amend proposal as appropriate.</li> </ol>   |
| Exceedance for two or more consecutive samples  | <ol style="list-style-type: none"> <li>1. Notify the IEC, ER and Contractor.</li> <li>2. Identify sources.</li> <li>3. Repeat measurements to confirm findings.</li> <li>4. Increase monitoring frequency to daily.</li> <li>5. Carry out analysis of the Contractor's working procedures with the ER to determine the possible mitigation to be implemented.</li> <li>6. Arrange meeting with the IEC and ER to discuss the remedial</li> </ol>  | <ol style="list-style-type: none"> <li>1. Discuss amongst the ER, ET and Contractor on the potential remedial action.</li> <li>2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER and ET accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Confirm receipt of the notification of exceedance in writing.</li> <li>2. Notify the Contractor.</li> <li>3. In consultation with the IEC and ET, agree with the Contractor on the remedial measures to be implemented.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedance continues, consider</li> </ol> | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance.</li> <li>2. Submit proposals for remedial action to the ER and copy to the IEC and ET within 3 working days of notification.</li> <li>3. Implement the agreed proposals.</li> <li>4. Resubmit proposals if problems still not under control.</li> <li>5. Stop the relevant portion of works as determined by the ER</li> </ol> |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
 Profit Industrial Building,  
 1-15 Kwai Fung Crescent, Kwai Fong,  
 Hong Kong.

Tel : +852 2450 8238  
 Fax : +852 2450 8032  
 E-mail : mcl@fugro.com  
 Website : www.fugro.com



| EVENT | ACTION  |     |  |                                 |
|-------|---|-----|--|---------------------------------|
|       | ET  | IEC | ER   | Contractor                      |
|       | action to be taken.<br>7. Assess the effectiveness of the Contractor's remedial action and keep the IEC, EPD and ER informed of the results.<br>8. If exceedance stops, cease additional monitoring |     | what portion of works is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated. | until the exceedance is abated. |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



## Event and Action Plan for Noise Impact

| EVENT        | ACTION  |   |   |   |
|--------------|---|---|---|---|
|              | ET  | IEC   | ER  | Contractor  |
| Action Level | <ol style="list-style-type: none"> <li>1. Notify the IEC, ER and Contractor.</li> <li>2. Carry out investigation.</li> <li>3. Report the results of investigation to the IEC and Contractor.</li> <li>4. Discuss jointly with the ER and Contractor and formulate remedial measures.</li> <li>5. Increase the monitoring frequency to check the mitigation effectiveness</li> </ol>   | <ol style="list-style-type: none"> <li>1. Review the monitoring data submitted by the ET.</li> <li>2. Review the construction methods and proposed remedial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient</li> </ol>   | <ol style="list-style-type: none"> <li>1. Notify the Contractor.</li> <li>2. Require the Contractor to propose remedial measures for implementation if required.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to the ER and copy to the IEC and ET.</li> <li>2. Implement noise mitigation proposals.</li> </ol>  |
| Limit Level  | <ol style="list-style-type: none"> <li>1. Notify the IEC, ER and Contractor.</li> <li>2. Identify sources.</li> <li>3. Repeat measurements to confirm findings.</li> <li>4. Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented.</li> <li>5. Record the causes and action taken for the exceedances.</li> <li>6. Increase the monitoring frequency.</li> <li>7. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results.</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss amongst the ER, ET and Contractor on the potential remedial action.</li> <li>2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problems.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.</li> </ol> | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance.</li> <li>2. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification.</li> <li>3. Implement the agreed proposals.</li> <li>4. Resubmit proposals if problems still not under control.</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol> |



# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



## Event and Action Plan for Landscape and Visual Impact

| EVENT                          | ACTION   |   |  |   |
|--------------------------------|--|---|--|---|
|                                | ET   | IEC   | ER   | Contractor  |
| Non-conformity on one occasion | <ol style="list-style-type: none"> <li>1. Identify Source</li> <li>2. Inform the IEC and the ER</li> <li>3. Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>4. Monitor remedial actions until rectification has been completed</li> </ol>  | <ol style="list-style-type: none"> <li>1. Check report</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with the ET and the Contractor on possible remedial measures</li> <li>4. Advise the ER on effectiveness of proposed remedial measures.</li> <li>5. Check implementation of remedial measures.</li> </ol>               | <ol style="list-style-type: none"> <li>1. Notify Contractor</li> <li>2. Ensure remedial measures are properly implemented</li> </ol>     | <ol style="list-style-type: none"> <li>1. Amend working methods</li> <li>2. Rectify damage and undertake any necessary replacement</li> </ol> |
| Repeated Non-conformity        | <ol style="list-style-type: none"> <li>1. Identify Source</li> <li>2. Inform the IEC and the ER</li> <li>3. Increase monitoring frequency</li> <li>4. Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>5. Monitor remedial actions until rectification has been completed</li> <li>6. If exceedance stops, cease additional monitoring</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring report</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with the ET and the Contractor on possible remedial measures</li> <li>4. Advise the ER on effectiveness of proposed remedial measures</li> <li>5. Supervise implementation of remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Notify the Contractor</li> <li>2. Ensure remedial measures are properly implemented</li> </ol> | <ol style="list-style-type: none"> <li>1. Amend working methods</li> <li>2. Rectify damage and undertake any necessary replacement</li> </ol> |

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



### **Appendix D**

#### **Waste Flow Table**

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



## Waste Flow Table for Year 2016

| Monthly Ending | Actual Quantities of Inert C&D Materials Generated Monthly |                                     |                          |                          |                          |                          | Actual Quantities of Non-inert C&D Wastes Generated Monthly |                            |                       |                |                             |
|----------------|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|----------------------------|-----------------------|----------------|-----------------------------|
|                | Total Quantity Generated (Inert C&D)                       | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals  | Paper/ cardboard packaging | Plastics (see Note 2) | Chemical Waste | Others, e.g. general refuse |
|                | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg)  | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| 2016 Jan       | 0.159  | 0.101                               | 0.058                    | Nil                      | Nil                      | Nil                      | Nil   | 0.023                      | 0.00002               | 0.0158         | 0.0335                      |
| 2016 Feb       | 0.291  | 0.050                               | 0.241                    | Nil                      | Nil                      | Nil                      | 1.34  | 0.023                      | 0.00002               | 0.0158         | 0.0335                      |
| 2016 Mar       | 2.7389   | 0.0407                              | 0.0662                   | Nil                      | 2.632                    | Nil                      | 5.92  | 0.023                      | 0.00002               | 0.0158         | 0.0571                      |
| 2016 Apr       | 4.1718   | 0.0578                              | 0.462                    | Nil                      | 3.652                    | Nil                      | 12.5  | 0.023                      | 0.00002               | 0.0158         | 0.0426                      |
| 2016 May       | 3.592  | Nil                                 | 0.299                    | Nil                      | 3.293                    | Nil                      | 5.23  | 0.023                      | 0.00002               | 0.0158         | 0.0621                      |
| 2016 Jun       | 4.6035   | Nil                                 | 0.8555                   | Nil                      | 3.748                    | Nil                      | Nil   | 0.023                      | 0.00002               | 0.0158         | 0.0619                      |
| 2016 Jul       | 6.155  | 0.153                               | 0.015                    | Nil                      | 5.987                    | Nil                      | 7.84  | 0.023                      | 0.00002               | 0.0158         | 0.0433                      |
| 2016 Aug       | 5.1155   | Nil                                 | Nil                      | Nil                      | 5.1155                   | Nil                      | 19.93   | 0.023                      | Nil                   | Nil            | 0.0147                      |
| 2016 Sept      | 7.2267   | Nil                                 | Nil                      | Nil                      | 7.2267                   | Nil                      | 33.65   | 0.023                      | Nil                   | Nil            | 0.0103                      |
| 2016 Oct       | 4.6448   | Nil                                 | Nil                      | Nil                      | 4.6448                   | Nil                      | 13.30   | 0.023                      | Nil                   | Nil            | 0.0385                      |
| 2016 Nov       | 6.1626   | Nil                                 | Nil                      | Nil                      | 6.1626                   | Nil                      | 27.06   | 0.023                      | Nil                   | Nil            | 0.0192                      |
| 2016 Dec       | 6.3522   | Nil                                 | Nil                      | Nil                      | 6.3522                   | Nil                      | 13.30   | 0.023                      | Nil                   | Nil            | 0.0121                      |
| <b>Total</b>   | <b>51.213</b>  | <b>0.4025</b>                       | <b>1.9967</b>            | <b>Nil</b>               | <b>48.8138</b>           | <b>Nil</b>               | <b>140.07</b>   | <b>0.276</b>               | <b>0.00014</b>        | <b>0.1106</b>  | <b>0.4288</b>               |

**Note:**

- 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 materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| Waste Flow Table for Year 2017 |  |                                     |                          |                          |                          |                          |   |                            |                       |                |                             |
|--------------------------------|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|----------------------------|-----------------------|----------------|-----------------------------|
| Monthly Ending                 | Actual Quantities of Inert C&D Materials Generated Monthly |                                     |                          |                          |                          |                          | Actual Quantities of Non-inert C&D Wastes Generated Monthly |                            |                       |                |                             |
|                                | Total Quantity Generated (Inert C&D)                       | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals  | Paper/ cardboard packaging | Plastics (see Note 2) | Chemical Waste | Others, e.g. general refuse |
|                                | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg)  | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| 2017 Jan                       | 4.2300   | Nil                                 | Nil                      | Nil                      | 4.2300                   | Nil                      | 0.015   | 0.023                      | Nil                   | Nil            | 0.0109                      |
| 2017 Feb                       | 3.2128   | Nil                                 | Nil                      | Nil                      | 3.2128                   | Nil                      | 0.015   | 0.023                      | Nil                   | Nil            | 0.0096                      |
| 2017 Mar                       | 9.4759   | Nil                                 | Nil                      | Nil                      | 9.4759                   | Nil                      | 0.034   | 0.023                      | Nil                   | Nil            | 0.0162                      |
| 2017 Apr                       | 4.8827   | Nil                                 | Nil                      | Nil                      | 4.8827                   | Nil                      | 0.016   | 0.023                      | Nil                   | Nil            | 0.0062                      |
| 2017 May                       | 3.0366   | Nil                                 | Nil                      | Nil                      | 3.0366                   | Nil                      | 0.022   | 0.023                      | Nil                   | Nil            | 0.0282                      |
| 2017 Jun                       | 2.5656   | Nil                                 | Nil                      | Nil                      | 2.5656                   | Nil                      | 41.25   | Nil                        | Nil                   | Nil            | 0.0357                      |
| 2017 Jul                       | 5.5267   | Nil                                 | 0.7851                   | Nil                      | 4.7416                   | Nil                      | 4.01  | 0.4515                     | Nil                   | 0.25           | 0.0364                      |
| 2017 Aug                       | 11.4734  | Nil                                 | 0.0276                   | Nil                      | 11.4458                  | Nil                      | 7.4   | Nil                        | Nil                   | Nil            | 0.0196                      |
| 2017 Sep                       | 23.9373  | Nil                                 | 2.6167                   | Nil                      | 21.3206                  | Nil                      | 3.52  | Nil                        | Nil                   | Nil            | 0.0333                      |
| 2017 Oct                       | 17.8261  | Nil                                 | 0.4069                   | Nil                      | 17.4192                  | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0156                      |
| 2017 Nov                       | 5.8834   | Nil                                 | 0.6664                   | Nil                      | 5.217                    | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.023                       |
| 2017 Dec                       | 21.3554  | Nil                                 | 0.4763                   | Nil                      | 20.8791                  | Nil                      | 29.13   | Nil                        | Nil                   | Nil            | 0.022                       |
| <b>Total</b>                   | <b>113.4059</b>  | <b>Nil</b>                          | <b>4.9790</b>            | <b>Nil</b>               | <b>108.4269</b>          | <b>Nil</b>               | <b>85.412</b>   | <b>0.5665</b>              | <b>Nil</b>            | <b>0.25</b>    | <b>0.2567</b>               |

**Note:**

- 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 materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



## Waste Flow Table for Year 2018

| Monthly Ending | Actual Quantities of Inert C&D Materials Generated Monthly |                                     |                          |                          |                          |                          | Actual Quantities of Non-inert C&D Wastes Generated Monthly |                            |                       |                |                             |
|----------------|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|----------------------------|-----------------------|----------------|-----------------------------|
|                | Total Quantity Generated (Inert C&D)                       | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals  | Paper/ cardboard packaging | Plastics (see Note 2) | Chemical Waste | Others, e.g. general refuse |
|                | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg)  | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| 2018 Jan       | 10.2340  | Nil                                 | Nil                      | Nil                      | 10.2340                  | Nil                      | 32.39   | Nil                        | Nil                   | Nil            | 0.0161                      |
| 2018 Feb       | 6.5256   | Nil                                 | Nil                      | Nil                      | 6.5256                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0235                      |
| 2018 Mar       | 28.1995  | Nil                                 | Nil                      | Nil                      | 28.1995                  | Nil                      | 54.54   | Nil                        | Nil                   | Nil            | 0.0190                      |
| 2018 Apr       | 11.2165  | Nil                                 | Nil                      | Nil                      | 11.2165                  | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0270                      |
| 2018 May       | 5.6011   | Nil                                 | Nil                      | Nil                      | 5.6011                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0140                      |
| 2018 Jun       | 5.8072   | Nil                                 | Nil                      | Nil                      | 5.8072                   | Nil                      | 93.3  | Nil                        | Nil                   | Nil            | 0.0235                      |
| 2018 Jul       | 7.4206   | Nil                                 | Nil                      | Nil                      | 7.4206                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0383                      |
| 2018 Aug       | 2.0815   | Nil                                 | Nil                      | Nil                      | 2.0815                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0665                      |
| 2018 Sep       | 0.3710   | Nil                                 | Nil                      | Nil                      | 0.3710                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0436                      |
| 2018 Oct       | 0.9087   | Nil                                 | Nil                      | Nil                      | 0.9620                   | 0.0533                   | Nil   | Nil                        | Nil                   | Nil            | 0.0444                      |
| 2018 Nov       | 0.7291   | Nil                                 | Nil                      | Nil                      | 0.7733                   | 0.0589                   | Nil   | Nil                        | Nil                   | Nil            | 0.0225                      |
| 2018 Dec       | -0.0931  | Nil                                 | Nil                      | Nil                      | 0.3860                   | 0.4791                   | Nil   | Nil                        | Nil                   | Nil            | 0.0228                      |
| <b>Total</b>   | <b>79.0017</b>   | <b>Nil</b>                          | <b>Nil</b>               | <b>Nil</b>               | <b>79.5783</b>           | <b>0.5913</b>            | <b>180.23</b>   | <b>Nil</b>                 | <b>Nil</b>            | <b>Nil</b>     | <b>0.3614</b>               |

**Note:**

- 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 materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



## Waste Flow Table for Year 2019

| Monthly Ending | Actual Quantities of Inert C&D Materials Generated Monthly |                                     |                          |                          |                          |                          | Actual Quantities of Non-inert C&D Wastes Generated Monthly |                            |                       |                |                             |
|----------------|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|----------------------------|-----------------------|----------------|-----------------------------|
|                | Total Quantity Generated (Inert C&D)                       | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals  | Paper/ cardboard packaging | Plastics (see Note 2) | Chemical Waste | Others, e.g. general refuse |
|                | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg)  | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| 2019 Jan       | 0.2485   | Nil                                 | Nil                      | Nil                      | 0.7063                   | 0.45774                  | Nil   | Nil                        | Nil                   | Nil            | 0.0100                      |
| 2019 Feb       | 0.2790   | Nil                                 | Nil                      | Nil                      | 0.2790                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0076                      |
| 2019 Mar       | 0.7376   | Nil                                 | Nil                      | Nil                      | 0.7376                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0929                      |
| 2019 Apr       | 0.3694   | Nil                                 | Nil                      | Nil                      | 0.3694                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0365                      |
| 2019 May       | 0.4683   | Nil                                 | Nil                      | Nil                      | 0.4683                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0383                      |
| 2019 Jun       | 0.8571   | Nil                                 | Nil                      | Nil                      | 0.8571                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0160                      |
| 2019 Jul       | 15.2091  | Nil                                 | Nil                      | Nil                      | 15.2091                  | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0331                      |
| 2019 Aug       | 5.7307   | Nil                                 | Nil                      | Nil                      | 5.7307                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0249                      |
| 2019 Sep       | 9.0074   | Nil                                 | Nil                      | Nil                      | 9.0074                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0541                      |
| 2019 Oct       | 0.6616   | Nil                                 | Nil                      | Nil                      | 0.6616                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0269                      |
| 2019 Nov       | 0.8783   | Nil                                 | Nil                      | Nil                      | 0.8783                   | Nil                      | Nil   | 0.17                       | Nil                   | Nil            | 0.0453                      |
| 2019 Dec       | 0.6110   | Nil                                 | Nil                      | Nil                      | 0.6110                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0519                      |
| <b>Total</b>   | <b>35.058</b>  | <b>0</b>                            | <b>0</b>                 | <b>0</b>                 | <b>35.5158</b>           | <b>0.4577</b>            | <b>0</b>  | <b>0.17</b>                | <b>0</b>              | <b>0</b>       | <b>0.4375</b>               |

Note:

- 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 materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| Waste Flow Table for Year 2020 |  |                                     |                          |                          |                          |                          |   |                            |                       |                |                             |
|--------------------------------|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|----------------------------|-----------------------|----------------|-----------------------------|
| Monthly Ending                 | Actual Quantities of Inert C&D Materials Generated Monthly |                                     |                          |                          |                          |                          | Actual Quantities of Non-inert C&D Wastes Generated Monthly |                            |                       |                |                             |
|                                | Total Quantity Generated (Inert C&D)                       | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals  | Paper/ cardboard packaging | Plastics (see Note 2) | Chemical Waste | Others, e.g. general refuse |
|                                | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg)  | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| 2020 Jan                       | 0.3807   | Nil                                 | Nil                      | Nil                      | 0.3807                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0276                      |
| 2020 Feb                       | 0.2862   | Nil                                 | Nil                      | Nil                      | 0.2862                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0365                      |
| 2020 Mar                       | 0.4291   | Nil                                 | Nil                      | Nil                      | 0.4291                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0270                      |
| 2020 Apr                       | 0.1812   | Nil                                 | Nil                      | Nil                      | 0.1812                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0201                      |
| 2020 May                       | 0.2966   | Nil                                 | Nil                      | Nil                      | 0.2966                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0168                      |
| 2020 Jun                       | 0.1691   | Nil                                 | Nil                      | Nil                      | 0.1691                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0079                      |
| 2020 Jul                       | 0.0630   | Nil                                 | Nil                      | Nil                      | 0.0630                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0273                      |
| 2020 Aug                       | 0.1189   | Nil                                 | Nil                      | Nil                      | 0.1189                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0116                      |
| 2020 Sep                       | 0.1151   | Nil                                 | Nil                      | Nil                      | 0.1151                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0090                      |
| 2020 Oct                       | 0.0400   | Nil                                 | Nil                      | Nil                      | 0.0400                   | Nil                      | Nil   | Nil                        | Nil                   | Nil            | 0.0083                      |
| 2020 Nov                       |  |                                     |                          |                          |                          |                          |   |                            |                       |                |                             |
| 2020 Dec                       |  |                                     |                          |                          |                          |                          |   |                            |                       |                |                             |
| <b>Total</b>                   | <b>2.0799</b>  | <b>0</b>                            | <b>0</b>                 | <b>0</b>                 | <b>2.0799</b>            | <b>0</b>                 | <b>0</b>  | <b>0</b>                   | <b>0</b>              | <b>0</b>       | <b>0.1921</b>               |

**Note:**

- 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 materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : [mcl@fugro.com](mailto:mcl@fugro.com)  
Website : [www.fugro.com](http://www.fugro.com)



### **Appendix E**

#### **Environmental Mitigation Implementation Schedule (EMIS)**



# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref  | EM&A Ref                                  | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|--|---|---|------------------------------|------------------------|--|
| <u>Air Quality Measures</u>  |   |   |                              |                        |  |
| New Distributor Roads Serving the Planned KTD                      |   |   |                              |                        |  |
| AEIAR-130/2009<br>S3.2   | AEIAR 130/2009<br>EM&A Manual<br>S2.2     | 8 times daily watering of the work site with active dust emitting activities.   | Contractor                   | All relevant worksites | Not Applicable                           |
| Decommissioning of the Radar Station of the former Kai Tak Airport |   |   |                              |                        |  |
| AEIAR-130/2009<br>S5.2.19  | AEIAR 130/2009<br>EM&A Manual<br>S4.2.4   | The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work.<br><br>The exposed excavated area should be covered by the tarpaulin during night time.<br><br>The top layer soils should be sprayed with fine misting of water immediately before the excavation. | Contractor                   | All relevant worksites | Not Applicable                           |
| Trunk Road T2  |   |   |                              |                        |  |
| AEIAR-174/2013<br>S4.9.2.1   | AEIAR-174/2013<br>EM&A Manual<br>S2.3.1.1 | Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m <sup>2</sup> for the respective watering frequency.  | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression.   | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | 8 km per hour is the recommended limit of the speed for vehicles on unpaved site roads.   | Contractor                   | All relevant worksites | Implemented                              |
|  |   | <u>Good Site Practices</u>  |                              |                        |  |
| AEIAR-130/2009   | AEIAR 130/2009                            | Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should   | Contractor                   | All relevant           | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref                                | EM&A Ref  | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|--|---|---|------------------------------|------------------------|--|
| S3.2, S5.2.19, AEIAR-174/2013 S4.9.2.2 | EM&A Manual S2.2, S4.2, AEIAR 174/2013 EM&A Manual S2.3.1.2 | be fully covered by impermeable sheeting to reduce dust emission.   |                              | worksites              |  |
|  |   | Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs.   | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.  | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.  | Contractor                   | All relevant worksites | Implemented                              |
|  |   | Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.  | Contractor                   | All relevant worksites | Implemented                              |
|  |   | The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.  | Contractor                   | All relevant worksites | Implemented                              |
|  |   | Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.<br><br>The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.  | Contractor                   | All relevant worksites | Implemented                              |
|  |   | 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.  | Contractor                   | All relevant worksites | Not Applicable                           |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref                 | EM&A Ref                            | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|-------------------------|-------------------------------------|---|------------------------------|------------------------|--|
|                         |                                     | Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.  | Contractor                   | All relevant worksites | Not Applicable                           |
|                         |                                     | 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.  | Contractor                   | All relevant worksites | Not Applicable                           |
|                         |                                     | Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.  | Contractor                   | All relevant worksites | Implemented                              |
|                         |                                     | Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs.  | Contractor                   | All relevant worksites | Implemented                              |
|                         |                                     | Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.  | Contractor                   | All relevant worksites | Implemented                              |
|                         |                                     | <u>Dark smoke</u>   |                              |                        |  |
|                         |                                     | Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke) Regulation and ETWB TCW 19/2005.  | Contractor                   | All relevant worksites | Implemented                              |
|                         |                                     | Plant and equipment should be well maintained to prevent dark smoke emission.   | Contractor                   | All relevant worksites | Implemented                              |
| <u>Noise Measures</u>   |                                     |   |                              |                        |  |
| Trunk Road T2           |                                     |   |                              |                        |  |
| AEIAR-174/2013 S5.9.2.1 | AEIAR-174/2013 EM&A Manual S3.4.1.1 | The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment: <ul style="list-style-type: none"> <li>• Concrete lorry mixer</li> <li>• Dump Truck, 5.5 tonne &lt; gross vehicle weight &lt;= 38 tonne</li> <li>• Generator, Super Silenced, 70 dB(A) at 7m</li> </ul> | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref   | EM&A Ref   | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|---|--|---|------------------------------|------------------------|--|
|   |  | <ul style="list-style-type: none"> <li>• Poker, vibratory, Hand-held (electric)</li> <li>• Water Pump, Submersible (Electric)</li> <li>• Mobile Crane - KOBELCO CKS900</li> <li>• Excavator, wheeled/tracked - HYUNDAI R80CR-9</li> </ul> |                              |                        |  |
|   |  | Use of temporary or fixed noise barriers with a surface density of at least 10kg/m <sup>2</sup> to screen noise from movable and stationary plant.  | Contractor                   | All relevant worksites | Not Applicable                           |
|   |  | Use of enclosures with covers at top and three sides and a surface density of at least 10kg/m <sup>2</sup> to screen noise from generally static noisy plant such as air compressors.   | Contractor                   | All relevant worksites | Not Applicable                           |
|   |  | Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc.   | Contractor                   | All relevant worksites | Not Applicable                           |
|   |  | <u>Good Site Practices</u>  |                              |                        |  |
| AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013 S5.9.2.1 | AEIAR 130/2009 EM&A Manual S2.3, S4.3.2, AEIAR-174/2013 EM&A Manual S3.4.1.1 | Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction/ decommissioning program.   | Contractor                   | All relevant worksites | Implemented                              |
|   |  | Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction/ decommissioning program.   | Contractor                   | All relevant worksites | Not Applicable                           |
|   |  | Mobile plant, if any, should be sited as far away from NSRs as possible.  | Contractor                   | All relevant worksites | Implemented                              |
|   |  | Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or should be throttled down to a minimum.  | Contractor                   | All relevant worksites | Implemented                              |
|   |  | Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.  | Contractor                   | All relevant worksites | Implemented                              |
|   |  | Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction/ decommissioning activities.  | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref                       | EM&A Ref                                  | Environmental Protection Measures / Mitigation Measures  | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|-------------------------------|---|--|------------------------------|------------------------|--|
|                               |   | Use of site hoarding as a noise barrier to screen noise at low level NSRs.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                               |   | For the use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above), the noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use at any time in construction site.   | Contractor                   | All relevant worksites | Implemented                              |
|                               |   | Quiet powered mechanical equipment (PME) shall be used for the construction of the Project.  | Contractor                   | All relevant worksites | Implemented                              |
|                               |   | Full enclosures shall be used to screen noise from relatively static PMEs (including air compressor, bar bender, concrete pump, generator and water pump) from sensitive receiver(s).  | Contractor                   | All relevant worksites | Not Applicable                           |
|                               |   | Movable cantilevered noise barriers shall be used to screen noise from mobile PMEs (including asphalt paver, breaker, excavator and hand-held breaker) from sensitive receiver(s). These movable cantilevered noise barriers shall be located close to the mobile PMEs and shall be moved/adjusted iteratively in step with each movement of the corresponding mobile PMEs in order to maximize their noise reduction effects. | Contractor                   | All relevant worksites | Not Applicable                           |
|                               |   | Only approved or exempted Non-road Mobile Machineries (NRMMS) including regulated machines and non-road vehicles with proper labels are allowed to be used in specified activities on-site.  | Contractor                   | All relevant worksites | Implemented                              |
| <u>Water Quality Measures</u> |   |  |                              |                        |  |
| Trunk Road T2                 |   |  |                              |                        |  |
|                               |   | <u>Accidental Spillage</u>   |                              |                        |  |
| AEIAR-174/2013<br>S6.4.8.5    | AEIAR-174/2013<br>EM&A Manual<br>S4.2.1.1 | All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed; The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only.  | Contractor                   | All relevant worksites | Not Applicable                           |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref  | EM&A Ref                                  | Environmental Protection Measures / Mitigation Measures  | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|--|---|--|------------------------------|------------------------|--|
|  |   | The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size or 20% by volume stored in the area and enclosed with at least 3 sides.   | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | The storage container should be sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary). An emergency clean up kit shall be readily available where bentonite fluid will be stored or used.  | Contractor                   | All relevant worksites | Not Applicable                           |
|  |   | The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort. | Contractor                   | All relevant worksites | Not Applicable                           |
| AEIAR-174/2013<br>S6.4.8.8   | AEIAR-174/2013<br>EM&A Manual<br>S4.2.1.1 | In order to protect against impacts to the surrounding marine waters of the KTTS and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.  | Contractor                   | All relevant worksites | Implemented                              |
|  |   | <u>Dredging, Reclamation and Filling</u>   |                              |                        |  |
|  |   | No dredging, reclamation or filling in the marine environment shall be carried out.  | Contractor                   | All relevant worksites | Not Applicable                           |
| Decommissioning of the Radar Station of the former Kai Tak Airport |   |  |                              |                        |  |
|  |   | <u>Building Demolition</u>   |                              |                        |  |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref  | EM&A Ref   | Environmental Protection Measures / Mitigation Measures  | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|--|--|--|------------------------------|------------------------|--|
| AEIAR-130/2009 S5.4                                | AEIAR 130/2009 EM&A Manual S4.4  | The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion.  | Contractor                   | All relevant worksites | Not Applicable                           |
|  |  | There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It is anticipated that the wastewater generated from the works areas would be of small quantity. Monitoring of the treated effluent quality from the works areas should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. | Contractor                   | All relevant worksites | Not Applicable                           |
|  |  | <u>General Construction Works</u>  |                              |                        |  |
|  |  | <u>Construction Runoff</u>   |                              |                        |  |
| AEIAR-130/2009 S3.4, S5.4/ AEIAR-174/2013 S6.4.8.1 | AEIAR 130/2009 EM&A Manual S2.4, S4.4/ AEIAR-174/2013 EM&A Manual S4.2.1.1 | Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include the use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow.   | Contractor                   | All relevant worksites | Implemented                              |
|  |  | Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.  | Contractor                   | All relevant worksites | Implemented                              |
|  |  | Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the  | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures  | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|---------|----------|--|------------------------------|------------------------|--|
|         |          | rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.   |                              |                        |  |
|         |          | Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.   | Contractor                   | All relevant worksites | Not Applicable                           |
|         |          | Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> 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.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | 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.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. | Contractor                   | All relevant worksites | Not Applicable                           |



# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|---------|----------|---|------------------------------|------------------------|--|
|         |          | <u>Drainage</u>   |                              |                        |  |
|         |          | It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.  | Contractor                   | All relevant worksites | Implemented                              |
|         |          | All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.          | Contractor                   | All relevant worksites | Implemented                              |
|         |          | <u>Stormwater Discharges</u>  |                              |                        |  |
|         |          | Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | <u>Sewage Effluent</u>  |                              |                        |  |
|         |          | Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices. | Contractor                   | All relevant worksites | Not Applicable                           |
|         |          | <u>Debris and Litter</u>  |                              |                        |  |
|         |          | In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur. Debris and refuse generated on-site should be collected, handled and disposed of  | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref                          | EM&A Ref                                    | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|----------------------------------|---|---|------------------------------|------------------------|--|
|                                  |   | properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.  |                              |                        |  |
|                                  |   | <u>Accidental Spillage</u>  |                              |                        |  |
|                                  |   | Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all fuel tanks and storage areas should be provided with locks and be 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 the coastal waters of the Victoria Harbour WCZ. The bund should be drained of rainwater after a rain event. | Contractor                   | All relevant worksites | Implemented                              |
| <u>Waste Management Measures</u> |   |   |                              |                        |  |
|                                  |   | <u>Waste Management Plan</u>  |                              |                        |  |
| AEIAR-174/2013<br>S11.4.8.1      | AEIAR-174/2013<br>EM&A Manual<br>S9.2.1.2   | Contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction.   | Contractor                   | All relevant worksites | Implemented                              |
|                                  |   | <u>Good Site Practices</u>  |                              |                        |  |
| AEIAR-130/2009<br>S3.5, S5.5     | AEIAR 130/2009<br>EM&A Manual<br>S2.5, S4.5 | Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.  | Contractor                   | All relevant worksites | Implemented                              |
|                                  |   | Training of site personnel in proper waste management and chemical waste handling procedures.   | Contractor                   | All relevant worksites | Implemented                              |
|                                  |   | Provision of sufficient waste disposal points and regular collection for disposal.  | Contractor                   | All relevant worksites | Implemented                              |
|                                  |   | Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.   | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|---------|----------|---|------------------------------|------------------------|--|
|         |          | A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | <u>Waste Reduction Measures</u>   |                              |                        |  |
|         |          | Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | 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.  | Contractor                   | All relevant worksites | Implemented                              |
|         |          | Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.                               | Contractor                   | All relevant worksites | Not Applicable                           |
|         |          | Any unused chemicals or those with remaining functional capacity should be recycled.  | Contractor                   | All relevant worksites | Implemented                              |
|         |          | Proper storage and site practices to minimize the potential for damage or contamination of construction materials.  | Contractor                   | All relevant worksites | Implemented                              |
|         |          | <u>Construction and Demolition Materials</u>  |                              |                        |  |
|         |          | Where it is unavoidable to have transient stockpiles of C&D material within the work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. | Contractor                   | All relevant worksites | Implemented                              |
|         |          | Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.  | Contractor                   | All relevant worksites | Implemented                              |
|         |          | Skip hoist for material transport should be totally enclosed by impervious sheeting.  | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|---------|----------|---|------------------------------|------------------------|--|
|         |          | Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.  | Contractor                   | All relevant worksites | Not Applicable                           |
|         |          | The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.   | Contractor                   | All relevant worksites | Implemented                              |
|         |          | All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.   | Contractor                   | All relevant worksites | Not Applicable                           |
|         |          | The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.  | Contractor                   | All relevant worksites | Implemented                              |
|         |          | When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system. | Contractor                   | All relevant worksites | Implemented                              |
|         |          | <u>Chemical Waste</u>   |                              |                        |  |
|         |          | After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.   | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref                            | EM&A Ref | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|------------------------------------|----------|---|------------------------------|------------------------|--|
|                                    |          | <u>General Refuse</u>   |                              |                        |  |
|                                    |          | General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem. | Contractor                   | All relevant worksites | Implemented                              |
| <u>Land Contamination Measures</u> |          |   |                              |                        |  |
|                                    |          | <u>For any excavation works conducted at Radar Station</u>  |                              |                        |  |
|                                    |          | As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure.   | Contractor                   | All relevant worksites | Not Applicable                           |
| <u>Landscape and Visual Impact</u> |          |   |                              |                        |  |
|                                    |          | <u>New Distributor Roads Serving the Planned KTD</u>  |                              |                        |  |
|                                    |          | <u>Construction Phase</u>   |                              |                        |  |
|                                    |          | All existing trees should be carefully protected during construction.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                                    |          | Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                                    |          | Control of night-time lighting.   | Contractor                   | All relevant worksites | Not Applicable                           |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref                    | EM&A Ref                                  | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing      | Construction Phase Implementation Status |
|----------------------------|---|---|------------------------------|------------------------|--|
|                            |   | Erection of decorative screen hoarding.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                            |   | <u>Trunk Road T2</u>  |                              |                        |  |
|                            |   | <u>Construction Phase</u>   |                              |                        |  |
| AEIAR-174/2013<br>S9.9.1.1 | AEIAR-174/2013<br>EM&A Manual<br>S7.2.1.2 | All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                            |   | Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                            |   | Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                            |   | Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.  | Contractor                   | All relevant worksites | Implemented                              |
|                            |   | Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.   | Contractor                   | All relevant worksites | Not Applicable                           |
|                            |   | All lighting in construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts.   | Contractor                   | All relevant worksites | Not Applicable                           |
| <u>General Condition</u>   |   |   |                              |                        |  |
|                            |   | The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same | Contractor                   | All relevant worksites | Implemented                              |

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com  
Website : www.fugro.com



| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures   | Who to implement the measure | Location / Timing | Construction Phase<br>Implementation Status |
|---------|----------|---|------------------------------|-------------------|---|
|         |          | locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s). |                              |                   |   |

Implementation status: Implemented / Partially Implemented / Not Implemented / Not Applicable

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



### **Appendix F**

#### **Weather and Meteorological Conditions during Reporting Month**



# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



| Date         | Mean Pressure (hPa) | Air Temperature  |               |                  | Mean Relative Humidity (%) | Total Rainfall (mm) |
|--------------|---------------------|------------------|---------------|------------------|----------------------------|---------------------|
|              |                     | Maximum (deg. C) | Mean (deg. C) | Minimum (deg. C) |                            |                     |
| October 2020 |                     |                  |               |                  |                            |                     |
| 1            | 1009.5              | 28.8             | 26.7          | 25.3             | 77                         | 0.1                 |
| 2            | 1010.8              | 30.4             | 27.6          | 26.2             | 75                         | 0                   |
| 3            | 1011.3              | 31.9             | 28.3          | 26.7             | 75                         | 0                   |
| 4            | 1009.9              | 31.4             | 28.4          | 26.8             | 78                         | 0                   |
| 5            | 1011.2              | 30.6             | 28.0          | 25.0             | 79                         | 106.1               |
| 6            | 1013.8              | 27.4             | 25.9          | 24.9             | 78                         | 2.7                 |
| 7            | 1014.8              | 26.3             | 24.9          | 24.1             | 70                         | 0                   |
| 8            | 1015.2              | 28.8             | 25.2          | 23.1             | 67                         | 0                   |
| 9            | 1014.7              | 30.0             | 26.0          | 23.3             | 64                         | Trace               |
| 10           | 1012.8              | 29.7             | 26.1          | 23.3             | 69                         | Trace               |
| 11           | 1010.3              | 30.4             | 27.0          | 24.7             | 73                         | 0                   |
| 12           | 1008.7              | 30.9             | 28.0          | 25.6             | 72                         | 0.6                 |
| 13           | 1009.6              | 26.5             | 24.9          | 23.8             | 86                         | 26                  |
| 14           | 1012.5              | 26.4             | 25.5          | 24.3             | 80                         | 1.2                 |
| 15           | 1013.8              | 29.4             | 26.5          | 24.8             | 73                         | 0                   |
| 16           | 1013.6              | 31.4             | 27.0          | 25.1             | 71                         | Trace               |
| 17           | 1014.9              | 28.9             | 25.6          | 23.8             | 72                         | 0.2                 |
| 18           | 1015.7              | 28.5             | 24.9          | 22.2             | 73                         | 0.7                 |
| 19           | 1015.9              | 27.9             | 24.6          | 22.3             | 70                         | 0                   |
| 20           | 1015.0              | 29.0             | 25.0          | 22.1             | 68                         | 0                   |
| 21           | 1011.8              | 28.4             | 24.5          | 21.7             | 63                         | 0                   |
| 22           | 1009.4              | 28.3             | 24.7          | 22.8             | 60                         | 0                   |
| 23           | 1011.4              | 24.8             | 23.5          | 21.9             | 51                         | 0                   |
| 24           | 1013.9              | 26.3             | 23.8          | 22.3             | 55                         | Trace               |
| 25           | 1014.8              | 28.1             | 24.2          | 23.0             | 69                         | 0                   |
| 26           | 1013.5              | 28.1             | 24.6          | 22.8             | 76                         | 0                   |
| 27           | 1012.9              | 28.6             | 25.1          | 22.9             | 73                         | 0                   |
| 28           | 1014.9              | 26.7             | 24.4          | 22.6             | 78                         | 4.7                 |
| 29           | 1017.3              | 26.7             | 24.7          | 22.6             | 74                         | 0.1                 |
| 30           | 1018.3              | 27               | 24.4          | 23.2             | 78                         | Trace               |
| 31           | 1017.7              | 26               | 23.4          | 22               | 71                         | 0                   |

Source: Hong Kong Observatory

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



### **Appendix G**

#### **Cumulative statistics on Environmental Complaints, Notifications of Summons and Successful Prosecution**

**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com

**Environmental Complaints Log**

| Reference No.        | Date of Complaint Received | Received From | Received By      | Nature of Complaint | Date of Investigation | Outcome             | Date of Reply |
|----------------------|----------------------------|---------------|------------------|---------------------|-----------------------|---------------------|---------------|
| 20161207_complaint_c | 7 Dec 2016                 | EPD           | Andy Choy (CRBC) | Air                 | 13 Feb 2017           | Project-related     | 13 Feb 2017   |
| 20170209_complaint_c | 9 Feb 2017                 | EPD           | Andy Choy (CRBC) | Air                 | 22 Feb 2017           | Not Project-related | 7 Mar 2017    |
| 20170502_complaint_c | 2 May 2017                 | CEDD          | Andy Choy (CRBC) | Noise               | 4 May 2017            | Not Valid           | 22 May 2017   |
| 20170716_complaint_a | 16 July 2017               | CEDD          | HMJV             | Water Quality       | 4 Aug 2017            | Not Project-related | 4 Aug 2017    |
| 20180530_complaint   | 30 May 2018                | EPD           | CRBC             | Air                 | 9 June 2018           | Not Valid           | 20 June 2018  |

**Cumulative Statistics on Complaints**

| Environmental Parameters | Cumulative No. Brought Forward | No. of Complaints This Month | Cumulative Project-to-Date |
|--------------------------|--------------------------------|------------------------------|----------------------------|
| Air                      | 3                              | 0                            | 3                          |
| Noise                    | 1                              | 0                            | 1                          |
| Water                    | 1                              | 0                            | 1                          |
| Waste                    | 0                              | 0                            | 0                          |
| Total                    | 0                              | 0                            | 0                          |

**Cumulative Statistics on Notification of Summons and Successful Prosecutions**

| Environmental Parameters | Cumulative No. Brought Forward | No. of Notification of Summons and Prosecutions This Month | Cumulative Project-to-Date |
|--------------------------|--------------------------------|--|----------------------------|
| Air                      | 0                              | 0  | 0                          |
| Noise                    | 0                              | 0  | 0                          |
| Water                    | 0                              | 0  | 0                          |
| Waste                    | 0                              | 0  | 0                          |
| Total                    | 0                              | 0  | 0                          |

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



### **Appendix H**

#### **Summary of Site Audit in the Reporting Month**



**Summary of Site Audit in the Reporting Month**

| Parameters                    | Date        | Observations and Recommendations   | Follow-up |
|-------------------------------|-------------|--|-----------|
| Air Quality                   |             | NA   |           |
| Noise                         |             | NA   |           |
| Water Quality                 |             | NA   |           |
| Chemical and Waste Management | 28 Oct 2020 | Reminder:<br>General refuse and construction waste was reminded to clear up regularly to prevent accumulation. | NA        |
| Land Contamination            |             | NA   |           |
| Landscape and Visual Impact   |             | NA   |           |
| General Condition             |             | NA   |           |
| Permit / Licenses             |             | NA   |           |

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



### **Appendix I**

#### **Outstanding Issues and Deficiencies**

# MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



## Summary of Outstanding Issues and Deficiencies in the Reporting Month

| Parameters                    | Outstanding Issues | Deficiencies  |
|-------------------------------|--------------------|---|
| Air Quality                   | NA                 | Any items of deficiencies can be referred to <b>Appendix M.</b> |
| Noise                         | NA                 |   |
| Water Quality                 | NA                 |   |
| Chemical and Waste Management | NA                 |   |
| Land Contamination            | NA                 |   |
| Landscape and Visual Impact   | NA                 |   |
| General Condition             | NA                 |   |
| Others                        | NA                 |   |

## **MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
Profit Industrial Building,  
1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : +852 2450 8238  
Fax : +852 2450 8032  
E-mail : mcl@fugro.com



### **Appendix J**

#### **Action and Limit Levels for Air Quality and Noise**





**Action and Limit Levels for 24-hr TSP and 1-hr TSP**

| Parameter                              | Monitoring Station | Action Level ( $\mu\text{g}/\text{m}^3$ ) | Limit Level ( $\mu\text{g}/\text{m}^3$ ) |
|--|--------------------|---|--|
| 24-hr TSP ( $\mu\text{g}/\text{m}^3$ ) | KTD1               | 177                                       | 260                                      |
|  | KTD2c              | 157                                       |  |
|  | KER1               | 172                                       |  |
| *1-hr TSP ( $\mu\text{g}/\text{m}^3$ ) | KTD1               | 285                                       | 500                                      |
|  | KTD2c              | 279                                       |  |
|  | KER1               | 295                                       |  |

Note:

1-hr TSP monitoring should be required in case of complaints.

**Action and Limit Levels for Construction Noise, Leq (30min), dB(A)**

| Time Period                      | Location              | Action                                    | Limit    |
|----------------------------------|-----------------------|---|----------|
| 0700-1900 hrs on normal weekdays | KTD1<br>KTD2c<br>KER1 | When one documented complaint is received | 75 dB(A) |

## **FUGRO TECHNICAL SERVICES LIMITED**

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



### **Appendix C**

**Monthly EM&A Report  
For  
Contract No. KL/2015/02  
Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

# Civil Engineering and Development Department

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


**Contract No. KLN/2016/04  
Environmental Monitoring Works for  
Contract No. KL/2015/02  
Kai Tak Development – Stage 5A Infrastructure  
at Former North Apron Area**

Monthly EM&A Report

October 2020

(version 1.1)

Approved By

  
(Environmental Team Leader)

**REMARKS:**

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

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

**CINOTECH CONSULTANTS LTD**  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong  
Tel: (852) 2151 2083 Fax: (852) 3107 1388  
Email: [info@cinotech.com.hk](mailto:info@cinotech.com.hk)



## FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T., Hong Kong.  
Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com

Date 12 November 2020  
Our Ref. MCL/ED/0597/2020/C

Cinotech Consultants Limited  
Rm 1710, Technology Park,  
18 On Lai Street, Shatin,  
New Territories,  
Hong Kong

BY EMAIL

Attn.: Mr. K.S Lee

Dear Sir,

**Contract No. KL/2015/02**  
**Kai Tak Development –Stage 5A Infrastructure at Former North Apron**  
**Verification of Monthly EM&A Report for October 2020**

We refer to your emails dated 9, 10 and 12 November 2020 for the captioned report prepared by the ET.

We have no further comment and hereby verify the Report in accordance with Clause 3.3 of Environmental Permit no. EP-337/2009.

Should you require further information, please do not hesitate to contact me on 3565 4114 or our Wingo So on 3565 4374.

Assuring you of our best attention at all times.

Yours faithfully,  
For and on behalf of  
FUGRO TECHNICAL SERVICES LIMITED

Colin K. L. Yung  
Independent Environmental Checker

CY/ws

c.c. CEDD –  
AECOM –

Attn.: Mr. Ricky Chan  
Attn.: Mr. Vincent Yip  
Attn.: Mr. Vincent Lee  
Attn.: Mr. Teddy Shih

# TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>EXECUTIVE SUMMARY .....</b>   | <b>1</b>  |
| Introduction .....   | 1         |
| Environmental Monitoring Works .....   | 2         |
| Environmental Licenses and Permits .....   | 3         |
| Key Information in the Reporting Month .....   | 3         |
| Future Key Issues .....  | 3         |
| <b>1 INTRODUCTION .....</b>  | <b>4</b>  |
| Background .....   | 4         |
| Project Organizations .....  | 4         |
| Construction Activities undertaken during the Reporting Month.....                         | 5         |
| Summary of EM&A Requirements .....   | 6         |
| <b>2 AIR QUALITY .....</b>   | <b>7</b>  |
| Monitoring Requirements .....  | 7         |
| Monitoring Locations .....   | 7         |
| Monitoring Equipment .....   | 7         |
| Monitoring Parameters, Frequency and Duration .....  | 8         |
| Monitoring Methodology and QA/QC Procedure .....   | 8         |
| Results and Observations .....   | 10        |
| <b>3 NOISE.....</b>  | <b>12</b> |
| Monitoring Requirements .....  | 12        |
| Monitoring Locations .....   | 12        |
| Monitoring Equipment .....   | 12        |
| Monitoring Parameters, Frequency and Duration .....  | 13        |
| Monitoring Methodology and QA/QC Procedures .....  | 13        |
| Maintenance and Calibration .....  | 13        |
| Results and Observations .....   | 14        |
| <b>4 COMPARISON OF EM&amp;A RESULTS WITH EIA PREDICTIONS.....</b>                          | <b>16</b> |
| <b>5 LANDSCAPE AND VISUAL .....</b>  | <b>18</b> |
| Monitoring Requirements .....  | 18        |
| Results and Observations .....   | 18        |
| <b>6 ENVIRONMENTAL INSPECTION.....</b>   | <b>19</b> |
| Site Inspections .....   | 19        |
| Review of Environmental Monitoring Procedures .....  | 19        |
| Status of Environmental Licensing and Permitting .....                                     | 19        |
| Status of Waste Management.....  | 20        |
| Implementation Status of Environmental Mitigation Measures .....                           | 20        |
| Summary of Mitigation Measures Implemented.....  | 21        |
| Implementation Status of Event Action Plans .....  | 21        |
| Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution..... | 22        |
| <b>7 FUTURE KEY ISSUES .....</b>   | <b>23</b> |
| Monitoring Schedule for Next Month.....  | 24        |
| <b>8 CONCLUSIONS AND RECOMMENDATIONS .....</b>   | <b>25</b> |
| Conclusions .....  | 25        |
| Recommendations .....  | 25        |

## **LIST OF TABLES**

|           |   |
|-----------|---|
| Table I   | Air Quality and Noise Monitoring Stations for this Project  |
| Table II  | Non-compliance Recorded for the Project in the Reporting Month  |
| Table III | Summary Table for Key Information in the Reporting Month  |
| Table 1.1 | Key Project Contacts  |
| Table 1.2 | Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures |
| Table 2.1 | Locations for Air Quality Monitoring  |
| Table 2.2 | Air Quality Monitoring Equipment  |
| Table 2.3 | Impact Dust Monitoring Parameters, Frequency and Duration   |
| Table 2.4 | Summary Table of Air Quality Monitoring Results during the reporting month                              |
| Table 3.1 | Noise Monitoring Stations   |
| Table 3.2 | Noise Monitoring Equipment  |
| Table 3.3 | Noise Monitoring Parameters, Frequency and Duration   |
| Table 3.4 | Major Noise Source identified at the Designated Noise Monitoring Stations                               |
| Table 3.5 | Baseline Noise Level and Noise Limit Level for Monitoring Stations                                      |
| Table 4.1 | Comparison of 1-hr TSP data with EIA predictions  |
| Table 4.2 | Comparison of 24-hr TSP data with EIA predictions   |
| Table 4.3 | Comparison of Noise Monitoring Data with EIA predictions  |
| Table 6.1 | Summary of Environmental Licensing and Permit Status  |
| Table 6.2 | Observations and Recommendations of Site Inspections  |

## **LIST OF FIGURES**

|          |   |
|----------|---|
| Figure 1 | Site Layout Plan                            |
| Figure 2 | Location of Air Quality Monitoring Stations |
| Figure 3 | Location of Noise Monitoring Stations       |
| Figure 4 | Location of Wind Data Monitoring Equipment  |

## **LIST OF APPENDICES**

|   |  |
|---|--|
| A | Action and Limit Levels for Air Quality and Noise  |
| B | Copies of Calibration Certificates   |
| C | Weather Information  |
| D | Environmental Monitoring Schedules   |
| E | 1-hour TSP Monitoring Results and Graphical Presentations  |
| F | 24-hour TSP Monitoring Results and Graphical Presentations                                       |
| G | Noise Monitoring Results and Graphical Presentations   |
| H | Summary of Exceedance  |
| I | Site Audit Summary   |
| J | Event Action Plans   |
| K | Environmental Mitigation Implementation Schedule (EMIS)  |
| L | Summaries of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution |
| M | Summary of Waste Generation and Disposal Records   |
| N | Construction Programme   |

## EXECUTIVE SUMMARY

### Introduction

1. This is the 46<sup>th</sup> Monthly Environmental Monitoring and Audit Report prepared by Cinotech Consultants Ltd. for “Contract No. KL/2015/02 - Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area” (Hereafter referred to as “the Project”). This contract comprises one Schedule 2 designated project (DP), namely the new distributor road D1 serving the planned KTD. The DP is part of the designated project under Environmental Permit (EP) No.: EP-337/2009 (“New distributor roads serving the planned Kai Tak Development”) respectively. This report documents the findings of EM&A Works conducted during October 2020.
2. With reference to the same principle of EIA report of the Project, air quality monitoring stations within 500m and noise monitoring stations within 300m from the boundary of this Project are considered as relevant monitoring locations. In such regard, the relevant air quality and noise monitoring locations are tabulated in **Table I** (see **Figure 2 and 3** for their locations).

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

| Locations                              | Monitoring Stations In accordance with EM&A Manual | Alternative Monitoring Stations            |
|--|--|--|
| <b>Air Quality Monitoring Stations</b> |  |  |
| AM2 - Lee Kau Yan Memorial School      | Yes (1-hour TSP)                                   | N/A  |
|  | No (24-hour TSP)                                   | AM2(A) – Ng Wah Catholic Secondary School  |
| <b>Noise Monitoring Stations</b>       |  |  |
| M3 - Cognitio College                  | No   | M3(A) – The Bridge connecting The Latitude |
| M4 - Lee Kau Yan Memorial School       | Yes  | N/A  |
| M5 – Nam Yuen                          | No   | M5(C) – Mercy Grace’s Home                 |

3. The major site activities undertaken in the reporting month included:
  - Carry out trial pits at PERE TTA Stage 4-2
  - Carry out structural works for subway at SKLR Playground
  - Remove the uncharted concrete support underneath the DN750 water main at PERE TTA Stage 3
  - Construct retaining wall and backfill underneath traffic Deck of TTA Stage 1
  - Install sub-frame of VE panel inside subway

- Modify the brackets of glazing panel at lift LT3
- Construction of Bridge S15
- Drainage works at Road D1
- Road works at Road D1, Road L7 and Slip Road S15
- Underground E&M, lighting and Irrigation works at Road D1
- UU installation at Road D1
- Underground E&M, lighting and Irrigation works at Road L7
- Drill & reinstate the existing anchor bolts at K72
- Fixing rebar & erection of formwork for the extended bridge
- Pouring concrete for the parapet & extended bridge
- Laying of optical fibre

### Environmental Monitoring Works

4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in **Table II**.

**Table II Non-compliance Recorded for the Project in the Reporting Month**

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

#### *1-hour & 24-hour TSP Monitoring*

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

#### *Construction Noise Monitoring*

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



### Environmental Licenses and Permits

9. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, EP-337/2009 issued on 23 April 2009. All valid Licenses/Permits for this Project are shown in **Table 6.1**.
- Billing Account for Construction Waste Disposal (A/C# 7026164).
  - Effluent Discharge License (WT00027495-2017).
  - Registration of Chemical Waste Producer (WPN5213-286-P3271-01).

### Key Information in the Reporting Month

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

**Table III Summary Table for Key Information in the Reporting Month**

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

### Future Key Issues

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

## 1 INTRODUCTION

### Background

- 1.1. The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. Stage 5A Infrastructure at Former North Apron Area is one of the construction stages of KTD. It contains one Schedule 2 DP including new distributor roads serving the planned KTD. The general layout of the Project is shown in **Figure 1**.
- 1.2. An Environmental Permit (EP) No. EP-337/2009 was issued on 23 April 2009 for new distributor roads serving the planned KTD to Civil Engineering and Development Department as the Permit Holder.
- 1.3. A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, waste, land contamination, cultural heritage and landscape and visual impact, and identify possible mitigation measures associated with the works. An EIA Report (Register No. AEIAR-130/2009) was approved by the Environmental Protection Department (EPD) on 4 April 2009.
- 1.4. Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) to undertake the role of the Environmental Team (ET) for the Contract No. KL/2015/02 – Stage 5A Infrastructure at Former North Apron Area. The construction work under KL/2015/02 comprises the construction of part of the Road D1 under the EP (EP-337/2009).
- 1.5. Cinotech Consultants Limited was commissioned by Civil Engineering and Development Department (CEDD) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The commencement date of construction of Road D1 (part) under this Contract was on 16 January 2017.

### Project Organizations

- 1.6. Different parties with different levels of involvement in the project organization include:
  - Project Proponent – Civil Engineering and Development Department (CEDD).
  - The Engineer and the Engineer's Representative (ER) – AECOM Asia Co. Ltd (AECOM).
  - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech).
  - Independent Environmental Checker (IEC) – Fugro Technical Services Limited (FTS).
  - Contractor – Peako - Wo Hing Joint Venture (PWHJV).

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

**Table 1.1 Key Project Contacts**

| Party    | Role                              | Contact Person             | Position                          | Phone No. | Fax No.   |
|----------|-----------------------------------|----------------------------|-----------------------------------|-----------|-----------|
| CEDD     | Project Proponent                 | Mr. CHAN Wai Kit,<br>Ricky | Senior Engineer                   | 2116 3753 | 2116 0714 |
| AECOM    | Engineer's Representative         | Mr. Vincent Lee            | SRE                               | 2798 0771 | 2210 6110 |
| Cinotech | Environmental Team                | Mr. K.S Lee                | Environmental Team Leader         | 2151 2091 | 3107 1388 |
|          |                                   | Ms. Betty Choy             | Audit Team Leader                 | 2151 2072 |           |
| FTS      | Independent Environmental Checker | Mr. Colin Yung             | Independent Environmental Checker | 3565 4114 | 2450 8032 |
| PWHJV    | Contractor                        | Mr. W.M. Wong              | Site Agent                        | 6386 3535 | 2398 8301 |

### Construction Activities undertaken during the Reporting Month

1.8. The site activities undertaken in the reporting month included:

- Carry out trial pits at PERE TTA Stage 4-2
- Carry out structural works for subway at SKLR Playground
- Remove the uncharted concrete support underneath the DN750 water main at PERE TTA Stage 3
- Construct retaining wall and backfill underneath traffic Deck of TTA Stage 1
- Install sub-frame of VE panel inside subway
- Modify the brackets of glazing panel at lift LT3
- Construction of Bridge S15
- Drainage works at Road D1
- Road works at Road D1, Road L7 and Slip Road S15
- Underground E&M, lighting and Irrigation works at Road D1
- UU installation at Road D1
- Underground E&M, lighting and Irrigation works at Road L7
- Drill & reinstate the existing anchor bolts at K72
- Fixing rebar & erection of formwork for the extended bridge
- Pouring concrete for the parapet & extended bridge
- Laying of optical fibre

1.9. The construction programme for the Project is shown in **Appendix N**.

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

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

| Construction Works   | Major Environmental Impact                             | Control Measures   |
|----------------------|--|--|
| Refer to Section 1.8 | Noise, dust impact, water quality and waste generation | <ul style="list-style-type: none"> <li>• Sufficient watering of the works site with active dust emitting activities;</li> <li>• Properly cover the stockpiles;</li> <li>• On-site waste sorting and implementation of trip ticket system</li> <li>• Appropriate desilting/sedimentation devices provided on site for treatment before discharge;</li> <li>• Use of quiet plant and well-maintained construction plant;</li> <li>• Provide movable noise barrier;</li> <li>• Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall;</li> <li>• Provide sufficient mitigation measures as recommended in Approved EIA Report/Lease requirement.</li> </ul> |

### Summary of EM&A Requirements

- 1.11. The EM&A programme requires construction noise monitoring, air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event Action Plans;
  - Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.
- 1.12. The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.
- 1.13. This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise levels and audit works for the Project during the reporting month.

## 2 AIR QUALITY

### Monitoring Requirements

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

### Monitoring Locations

- 2.2. 1-hour TSP impact dust monitoring was conducted at the air quality monitoring station, AM2 - Lee Kau Yan Memorial School and 24-hour TSP impact dust monitoring were conducted at the air quality monitoring station, AM2(A) - Ng Wah Catholic Secondary School in the reporting month.
- 2.3. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

**Table 2.1 Locations for Air Quality Monitoring**

| Monitoring Stations     | Locations                        | Location of Measurement  |
|-------------------------|----------------------------------|--------------------------|
| AM2<br>(1-hour TSP)     | Lee Kau Yan Memorial School      | Rooftop (about 8/F) Area |
| AM2(A)<br>(24-hour TSP) | Ng Wah Catholic Secondary School | Rooftop (about 8/F) Area |

### Monitoring Equipment

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

**Table 2.2 Air Quality Monitoring Equipment**

| Equipment             | Model and Make                       | Quantity |
|-----------------------|--------------------------------------|----------|
| Calibrator            | • TISCH TE-5025A                     | 1        |
| 1-hour TSP Dust Meter | • Sibata Scientific Technology LD-5R | 3        |
| HVS Sampler           | • TE-5170 c/w of TSP sampling inlet  | 1        |
| Wind Anemometer       | • Davis Instruments 6152             | 1        |

### Monitoring Parameters, Frequency and Duration

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

**Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration**

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

### Monitoring Methodology and QA/QC Procedure

#### *1-hour TSP Monitoring*

#### Measuring Procedures

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

*(Equipment: Sibata Scientific Technology; Model no. LD-3B, LD-5R)*

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

- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

#### Maintenance/Calibration

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

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

#### *24-hour TSP Monitoring*

#### Instrumentation

- 2.8. High volume (HVS) samplers (Model TE-5170), completed with appropriate sampling inlets, were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.5 of the updated EM&A Manual.

#### Operating/Analytical Procedures

- 2.9. Operating/analytical procedures for the operation of HVS were as follows:

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

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

- 2.11. For TSP sampling, fiberglass filters have a collection efficiency of > 99% for particles of 0.3µm diameter were used.
- 2.12. The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13. The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14. The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15. The shelter lid was closed and secured with the aluminium strip.
- 2.16. The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17. After sampling, the filter was removed and sent to the HOKLAS laboratory (Wellab Ltd.) for weighing. The elapsed time was also recorded.
- 2.18. Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.19. The following maintenance/calibration was required for the HVS:
  - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
  - High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

#### **Results and Observations**

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



- 2.22. The weather information for the reporting month is summarized in **Appendix C**.
- 2.23. The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively.
- 2.24. The summary of exceedance record in reporting month is shown in **Appendix H**. No exceedance was recorded for the air quality monitoring.
- 2.25. According to our field observations during the monitoring, the major dust source identified at the two designated air quality monitoring stations are road traffic dust, exposed site area and open stockpiles, excavation works and site vehicle movements.
- 2.26. The summary of 1-hour and 24-hour TSP air quality monitoring results during the reporting month are shown in **Appendix E** and **Appendix F** respectively.

### 3 NOISE

#### Monitoring Requirements

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

#### Monitoring Locations

- 3.2. Three designated monitoring stations were selected for noise monitoring programme. Noise monitoring was conducted at three designated monitoring stations (M3(A), M4, and M5(C)). **Figure 3** shows the locations of these stations.

**Table 3.1 Noise Monitoring Stations**

| Monitoring Stations | Locations                          | Location of Measurement   |
|---------------------|------------------------------------|---|
| M3(A)               | The Bridge connecting The Latitide | In the middle of the foot bridge connecting The Latitide  |
| M4                  | Lee Kau Yan Memorial School        | Rooftop (about 7/F) Area  |
| M5(C)               | Mercy Grace's Home                 | Ground in front of the building entrance facing Prince Edward Road East (noise monitoring is not allowed on the rooftop from 27 February 2020, due to the coronavirus countermeasure in Mercy Grace's Home) |

#### Monitoring Equipment

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

**Table 3.2 Noise Monitoring Equipment**

| Equipment                     | Model and Make          | Qty. |
|-------------------------------|-------------------------|------|
| Integrating Sound Level Meter | • SVANTEK SVAN 957/ 979 | 3    |
| Calibrator                    | • SOUNDTEK ST-120       | 1    |
|                               | • SVAN 30A              | 1    |

**Monitoring Parameters, Frequency and Duration**

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

**Table 3.3 Noise Monitoring Parameters, Frequency and Duration**

| Monitoring Stations  | Parameter   | Period                              | Frequency        | Measurement |
|----------------------|---|-------------------------------------|------------------|-------------|
| M3(A)<br>M4<br>M5(C) | L <sub>10</sub> (30 min.) dB(A)<br>L <sub>90</sub> (30 min.) dB(A)<br>L <sub>eq</sub> (30 min.) dB(A) | 0700-1900 hrs on<br>normal weekdays | Once per<br>week | Façade      |

**Monitoring Methodology and QA/QC Procedures**

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

**Maintenance and Calibration**

- 3.5. The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.6. The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.7. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

### Results and Observations

- 3.8. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix H**.
- 3.9. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.
- 3.10. Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.11. The major noise source identified at the designated noise monitoring stations are shown in **Table 3.4**.

**Table 3.4 Major Noise Source identified at the Designated Noise Monitoring Stations**

| Monitoring Stations | Locations                          | Major Noise Source  |
|---------------------|------------------------------------|---|
| M3(A)               | The Bridge connecting The Latitude | Traffic Noise<br>Site vehicle movement  |
| M4                  | Lee Kau Yan Memorial School        | Traffic Noise<br>Site vehicle movement<br>Excavation works<br>Piling works<br>Daily school activities |
| M5(C)               | Mercy Grace's Home                 | Traffic Noise<br>Site vehicle movement  |

**Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations**

| Station | Baseline Noise Level, dB (A)                                   | Noise Limit Level, dB (A)                     |
|---------|--|---|
| M3(A)   | N/A <sup>(1)</sup><br>(at 0700 – 1900 hrs on normal weekdays)  | 75<br>(at 0700 – 1900 hrs on normal weekdays) |
| M4      | 76.7 <sup>(2)</sup><br>(at 0700 – 1900 hrs on normal weekdays) | 70<br>(at 0700 – 1900 hrs on normal weekdays) |
| M5(C)   | N/A <sup>(1)</sup><br>(at 0700 – 1900 hrs on normal weekdays)  | 75<br>(at 0700 – 1900 hrs on normal weekdays) |

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

Note (1): The background Noise Level was recorded during the Lunch Hour of Construction Site

(i.e. 12:00-13:00) and to be used as the referencing value for compliance checking for Noise Action and Limit Level.

Note (2): The noise level due to the construction work (CNL) was calculated by the following formula:

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

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

## 4 COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

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

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

| Station                           | Predicted 1-hr TSP conc.                                   |   | Measured 1-hr TSP conc.                                  |         |
|-----------------------------------|--|---|--|---------|
|                                   | Scenario1 (Mid 2009 to Mid-2013), $\mu\text{g}/\text{m}^3$ | Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$ | Reporting Month (October 2020), $\mu\text{g}/\text{m}^3$ |         |
|                                   |  |   | Average  | Range   |
| AM2 – Lee Kau Yan Memorial School | 290  | 312   | 56   | 39 – 70 |

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

| Station                                   | Predicted 24-hr TSP conc.                                  |   | Measured 24-hr TSP conc.                                 |         |
|---|--|---|--|---------|
|   | Scenario1 (Mid 2009 to Mid-2013), $\mu\text{g}/\text{m}^3$ | Scenario2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$ | Reporting Month (October 2020), $\mu\text{g}/\text{m}^3$ |         |
|   |  |   | Average  | Range   |
| AM2(A) – Ng Wah Catholic Secondary School | 145  | 169   | 60   | 46 – 68 |

**Table 4.3 Comparison of Noise Monitoring Data with EIA predictions**

| Stations                                   | Predicted Mitigated Construction Noise Levels during Normal Working Hour ( $L_{eq(30min)}$ dB(A)) | Reporting Month (October 2020), $L_{eq(30min)}$ dB(A) |
|--|---|---|
| M3(A) – The Bridge connecting The Latitude | Not predicted in EIA Report   | 59 – 75 <sup>(2)</sup>                                |
| M4 – Lee Kau Yan Memorial School           | 47 – 74   | 73 – 77 <sup>(1)</sup>                                |
| M5(C) – Mercy Grace's Home                 | Not predicted in EIA Report   | 61 – 76 <sup>(2)</sup>                                |

Remarks:

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

- 4.2. The average 1-hour TSP concentrations at AM2 in the reporting month were below the prediction in the approved Environmental Impact Assessment (EIA) Report.
- 4.3. The average 24-hour TSP concentrations at AM2(A) in the reporting month were below the prediction in the approved EIA Report.

- 4.4. The noise monitoring results in the reporting month from M4 were outside the ranges of the predicted mitigated construction noise levels in the EIA Report.
- 4.5. Construction noise levels at M3(A) and M5(C) were not predicted in EIA Report.

## 5 LANDSCAPE AND VISUAL

### Monitoring Requirements

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

### Results and Observations

- 5.2. Site audits were conducted on a weekly basis to monitor the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix I**.
- 5.3. No non-compliance of the landscape and visual impact was recorded in the reporting month.
- 5.4. Should non-compliance of the landscape and visual impact occur, action in accordance with the action plan presented in **Appendix J** shall be performed.



## 6 ENVIRONMENTAL INSPECTION

### Site Inspections

- 6.1. Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site inspections are attached in **Appendix I**.
- 6.2. Site inspections were conducted on 5, 14, 19 and 27 October 2020 in the reporting month. A joint site inspection with the representative of IEC, ER, the Contractor and the ET was conducted on 14 October 2020. The details of the observations during site inspection are summarized in **Table 6.2**.

### Review of Environmental Monitoring Procedures

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

#### *Air Quality Monitoring*

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

#### *Noise Monitoring*

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

### Status of Environmental Licensing and Permitting

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

**Table 6.1 Summary of Environmental Licensing and Permit Status**

| Permit No.   | Valid Period |          | Status  |
|--|--------------|----------|---------|
|  | From         | To       |         |
| <b>Environmental Permit (EP)</b>                       |              |          |         |
| EP-337/2009  | 23/04/09     | N/A      | Valid   |
| <b>Effluent Discharge License</b>                      |              |          |         |
| WT00027495-2017  | 28/03/17     | 31/03/22 | Valid   |
| <b>Billing Account for Construction Waste Disposal</b> |              |          |         |
| A/C# 7026164   | 20/10/16     | N/A      | Valid   |
| <b>Registration of Chemical Waste Producer</b>         |              |          |         |
| WPN5213-229-P3271-01                                   | 14/08/17     | N/A      | Valid   |
| <b>Construction Noise Permit (CNP)</b>                 |              |          |         |
| GW-RE0915-19   | 08/11/19     | 04/05/20 | Expired |
| GW-RE0984-19   | 15/12/19     | 24/02/20 | Expired |
| GW-RE0083-20   | 01/03/20     | 01/06/20 | Expired |
| GW-RE0266-20   | 02/05/20     | 31/07/20 | Expired |

**Status of Waste Management**

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

**Implementation Status of Environmental Mitigation Measures**

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

**Table 6.2 Observations and Recommendations of Site Inspections**

| <b>Parameters</b>                 | <b>Ref No.</b> | <b>Date</b>                   | <b>Observations and Recommendations</b>                             | <b>Follow-up/Rectification</b>   |
|-----------------------------------|----------------|-------------------------------|---|--|
| <i>Water Quality</i>              | N/A            | N/A                           | --  | --   |
| <i>Air Quality</i>                | 201019/-R1     | 19 <sup>th</sup> October 2020 | The dusty material was not covered with dust screen at Portion 6.   | The condition was observed to be improved/rectified by the contractor during the inspection session on 27 October 2020 |
| <i>Noise</i>                      | N/A            | N/A                           | --  | --   |
| <i>Waste/ Chemical Management</i> | 201005/-R1     | 5 <sup>th</sup> October 2020  | The construction material was not placed properly near the Road D1. | The condition was observed to be improved/rectified by the contractor during the inspection session on 14 October 2020 |
|                                   | 201005/-R2     |                               | Waste accumulation was observed at Portion 6.                       |  |
| <i>Landscape and Visual</i>       | N/A            | N/A                           | --  | --   |
| <i>Permits/ Licenses</i>          | N/A            | N/A                           | --  | --   |

### Summary of Mitigation Measures Implemented

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

### Implementation Status of Event Action Plans

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

#### 1-hr TSP Monitoring

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

#### 24-hr TSP Monitoring

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

#### Construction Noise

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

#### Landscape and visual

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

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

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

## 7 FUTURE KEY ISSUES

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

- Demolish the uncharted underground concrete structure and drive sheet pilings/king posts at PERE TTA Stage 4-2
- Carry out structural works for subway at SKLR Playground
- Excavate with ELS installation at PERE TTA Stage 3
- Backfill underneath traffic Deck of TTA Stage 1
- Carry out glazing works and lift installation at Lift LT3
- Install sub-frame of VE panel inside subway
- Construction of Bridge S15
- Drainage works at Road D1
- Road works at Road D1, Road L7 and Slip Road S15
- Underground E&M, lighting and Irrigation works at Road D1
- UU installation at Road D1
- Underground E&M, lighting and Irrigation works at Road L7
- Construction of parapet & slab of extended bridge
- Installation of compressive seal within K72
- Dismantling of portal frame
- Installation of top railing
- Installation of movement joint
- Drill & reinstate anchor bolt
- Connection of watermains in Portion 1

### 7.2. Key environmental issues in the coming month include:

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

### 7.3. The tentative major site activities is mentioned in Section 7.1 of this report. The impact prediction and control measures for the coming two months are summarized as follows:

Air quality impact (dust)

- Frequent watering of haul road and unpaved/exposed areas;
- Frequent watering or covering stockpiles with tarpaulin or similar means; and
- Watering of any earth moving activities.

Water quality impact (surface run-off)

- Diversion of the collected effluent to de-silting facilities for treatment prior to discharge to public storm water drains;
- Provision of adequate de-silting facilities for treating surface run-off and other collected effluents prior to discharge;
- Provision of perimeter protection such as sealing of hoarding footings to avoid run-off from entering the existing storm water drainage system via public road; and
- Provision of measures to prevent discharge into the stream.

Noise Impact

- Scheduling of noisy construction activities if necessary to avoid persistent noisy operation;
- Controlling the number of plants use on site;
- Regular maintenance of machines; and
- Use of acoustic barriers if necessary.

**Monitoring Schedule for Next Month**

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

## 8 CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

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

#### 1-hr TSP Monitoring

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

#### 24-hr TSP Monitoring

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

#### Construction Noise Monitoring

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

#### Landscape and visual

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

#### Complaint and Prosecution

- 8.6. No environmental complaint and environmental prosecution was received in the reporting month.

### Recommendations

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

#### *Air Quality*

- The Contractor should cover the dusty material by dust screen.

#### *Waste/Chemical Management*

- The Contractor should place the construction material at the proper place.
- The Contractor was reminded to remove accumulated waste from the site.

---

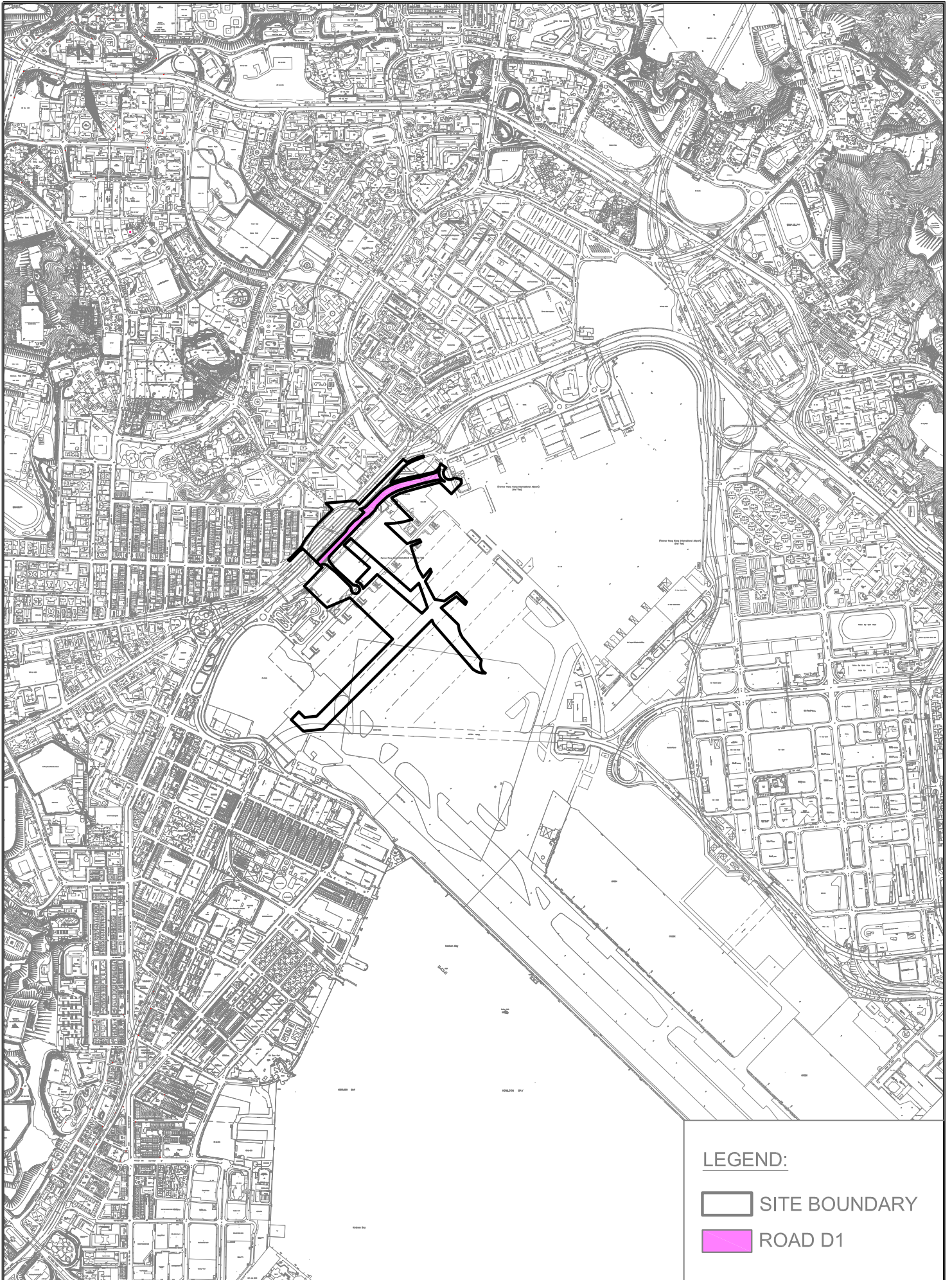
---

## FIGURES

---

---





**LEGEND:**

 SITE BOUNDARY

 ROAD D1

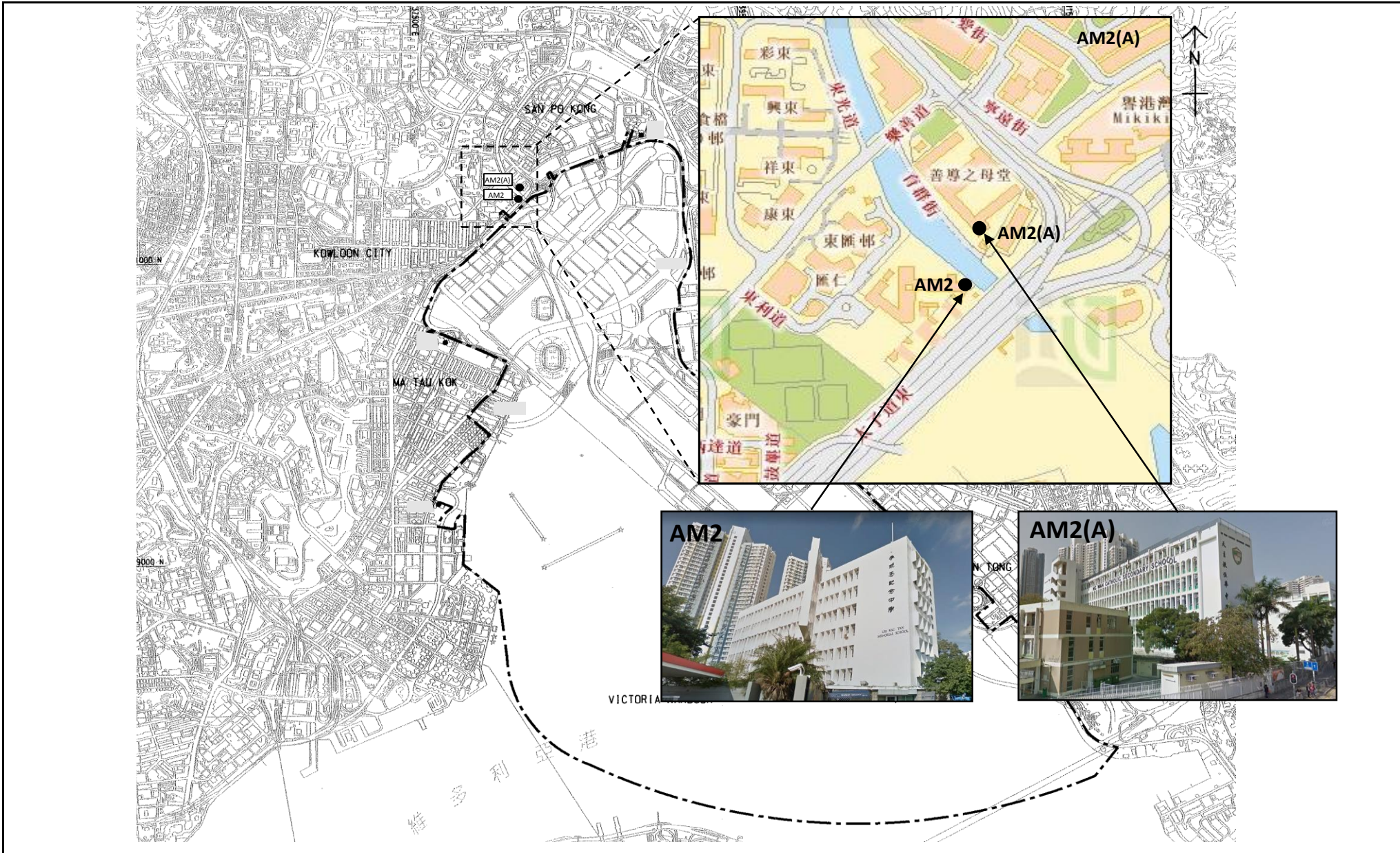


KL/2015/02 KAI TAK - STAGE 5A INFRASTRUCTURE  
AT FORMER NORTH APRON AREA

**SITE LAYOUT PLAN**

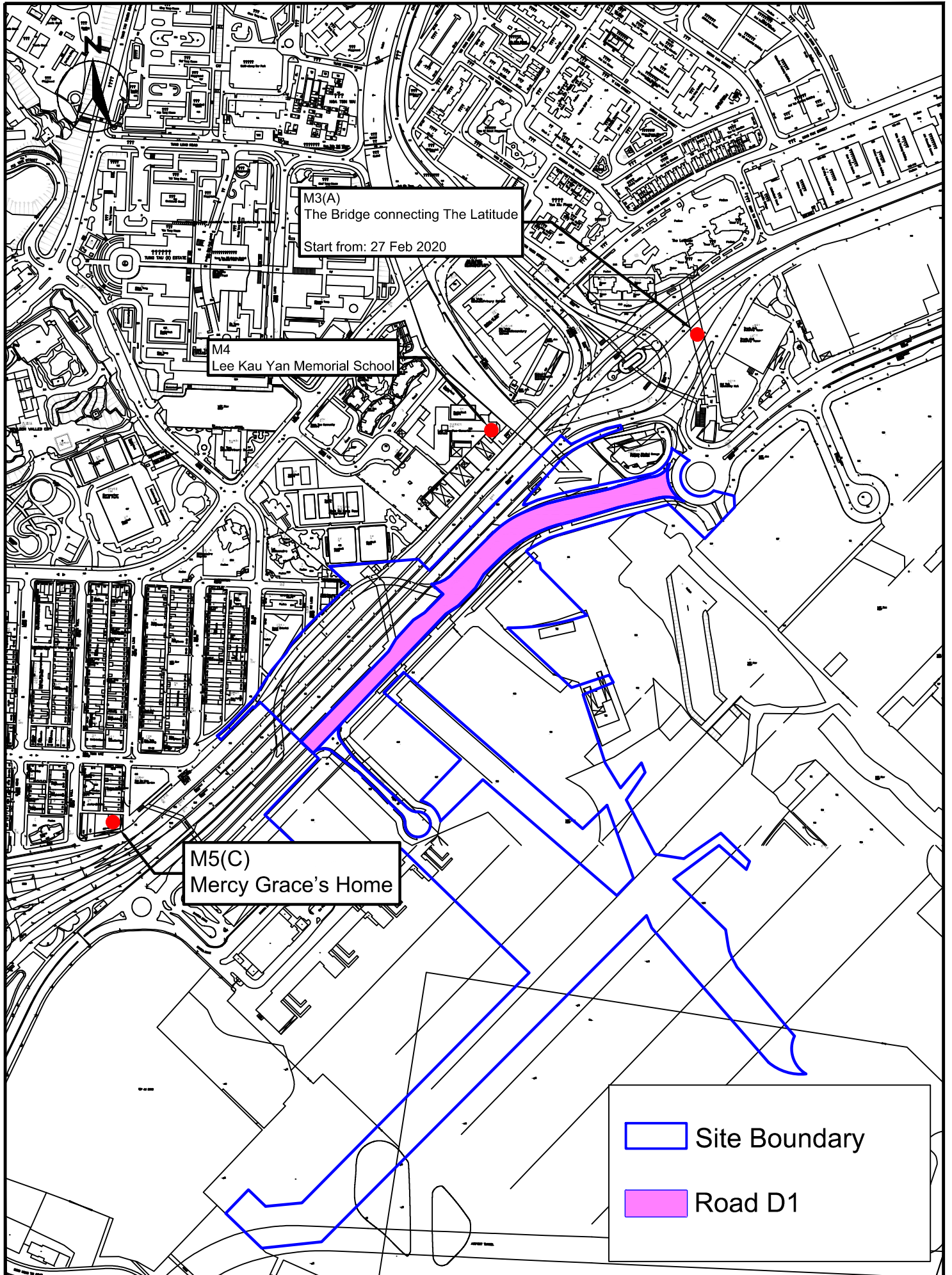
|         |           |            |          |
|---------|-----------|------------|----------|
| SCALE   | 1:1500@A4 | DATE       | DEC 2016 |
| CHECK   | KC        | DRAWN      | JW       |
| JOB No. | MA16043   | FIGURE NO. | 1        |
|         |           | REV        | -        |





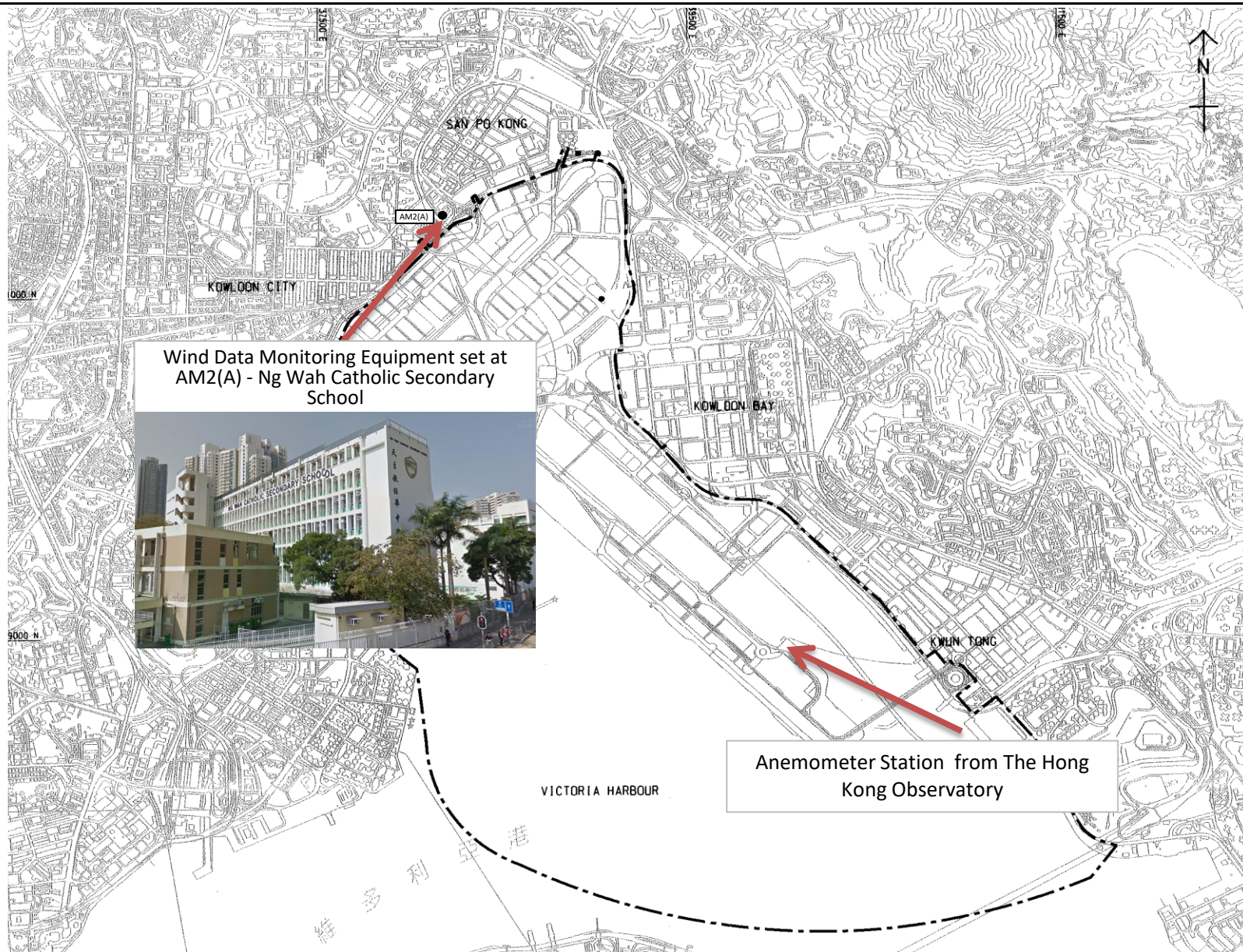
|  |  |  |        |             |          |
|--|--|--|--------|-------------|----------|
| Title  | Contract No. KLN/2016/04                                   |  | Scale  | Project     | CINOTECH |
|  | Environmental Monitoring Works for Contract No. KL/2015/02 |  | N.T.S  | No. MA16043 |          |
| Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area |  |  | Date   | Figure      |          |
| Location of Air Quality Monitoring Stations                              |  |  | Aug-17 | 2           |          |





|         |           |            |          |
|---------|-----------|------------|----------|
| SCALE   | 1:5000@A4 | DATE       | Mar 2020 |
| CHECK   | KC        | DRAWN      | CC       |
| JOB No. | MA16043   | FIGURE NO. | 3        |
|         |           | REV        | -        |





Wind Data Monitoring Equipment set at AM2(A) - Ng Wah Catholic Secondary School



Anemometer Station from The Hong Kong Observatory

|  |   |        |       |             |          |
|--|---|--------|-------|-------------|----------|
| Title                                      | Contract No. KLN/2016/04  |        | Scale | Project No. | CINOTECH |
|  | Environmental Monitoring Works for Contract No. KL/2015/02              |        |       |             |          |
|  | Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area |        | Date  | Figure      |          |
| Location of Wind Data Monitoring Equipment |   | Aug-17 | 4     |             |          |

---

---

**APPENDIX A  
ACTION AND LIMIT LEVELS FOR AIR  
QUALITY AND NOISE**

---

---

## Appendix A - Action and Limit Levels

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

| Location | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|----------|--|---------------------------------------|
| AM2      | 346                                    | 500                                   |

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

| Location | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|----------|--|---------------------------------------|
| AM2(A)   | 157                                    | 260                                   |

**Table A-3 Action and Limit Levels for Construction Noise**

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

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

---

**APPENDIX B-1  
COPIES OF CALIBRATION  
CERTIFICATES (AIR)**

---

## Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 5-Oct-20  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Dec-20  
 Model No.: LD-5R  
 Serial No.: 8Y2374  
 Equipment No.: SA-01-04 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 652  
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 652

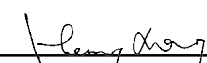
| Calibration of 1 hr TSP  |   |   |
|--|---|---|
| Calibration Point  | Laser Dust Monitor  | HVS   |
|  | Mass Concentration ( $\mu\text{g}/\text{m}^3$ )<br>X-axis | Mass concentration ( $\mu\text{g}/\text{m}^3$ )<br>Y-axis |
| 1  | 48.0  | 78.9  |
| 2  | 44.0  | 75.2  |
| 3  | 40.0  | 70.8  |
| <b>Average</b>   | <b>44.0</b>   | <b>75.0</b>   |
| <b>By Linear Regression of Y on X</b><br>Slope , mw = <u>1.0125</u> Intercept, bw = <u>30.4167</u><br>Correlation coefficient* = <u>0.9988</u> |   |   |
| Set Correlation Factor   |   |   |
| Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )  |   | 75.0  |
| Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )   |   | 44.0  |
| Measureing time, (min)   |   | 60.0  |
| Set Correlation Factor , SCF<br>SCF = [ K=High Volume Sampler / Dust Meter, ( $\mu\text{g}/\text{m}^3$ ) ] <u>1.7</u>                          |   |   |

In-house method in according to the instruction manual:

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

**Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)**

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung



## Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 5-Oct-20  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Dec-20  
 Model No.: LD-5R  
 Serial No.: 972778  
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 735 CPM  
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 735 CPM

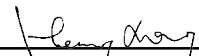
| Calibration of 1 hr TSP  |   |   |
|--|---|---|
| Calibration Point  | Laser Dust Monitor  | HVS   |
|  | Mass Concentration ( $\mu\text{g}/\text{m}^3$ )<br>X-axis | Mass concentration ( $\mu\text{g}/\text{m}^3$ )<br>Y-axis |
| 1  | 45.0  | 78.9  |
| 2  | 34.0  | 75.2  |
| 3  | 23.0  | 70.8  |
| <b>Average</b>   | <b>34.0</b>   | <b>75.0</b>   |
| <b>By Linear Regression of Y on X</b><br>Slope , mw = <u>0.3682</u> Intercept, bw = <u>62.4485</u><br>Correlation coefficient* = <u>0.9988</u> |   |   |
| Set Correlation Factor   |   |   |
| Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )  | 75.0  |   |
| Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )   | 34.0  |   |
| Measuring time, (min)  | 60.0  |   |
| Set Correlation Factor , SCF   |   |   |
| SCF = [ K=High Volume Sampler / Dust Meter, ( $\mu\text{g}/\text{m}^3$ ) ]   | <u>2.2</u>  |   |

In-house method in according to the instruction manual:

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

**Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)**

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung

## Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 5-Aug-20  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Oct-20  
 Model No.: LD-5R  
 Serial No.: 972780  
 Equipment No.: SA-01-09 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 739 CPM  
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 739 CPM

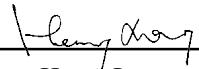
| Calibration of 1 hr TSP  |   |   |
|--|---|---|
| Calibration Point  | Laser Dust Monitor  | HVS   |
|  | Mass Concentration ( $\mu\text{g}/\text{m}^3$ )<br>X-axis | Mass concentration ( $\mu\text{g}/\text{m}^3$ )<br>Y-axis |
| 1  | 42.0  | 65.8  |
| 2  | 36.0  | 62.7  |
| 3  | 26.0  | 59.0  |
| <b>Average</b>   | <b>34.7</b>   | <b>62.5</b>   |
| <b>By Linear Regression of Y on X</b><br>Slope , mw = <u>0.4194</u> Intercept, bw = <u>47.9612</u><br>Correlation coefficient* = <u>0.9957</u> |   |   |
| Set Correlation Factor   |   |   |
| Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )  |   | 62.5  |
| Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )   |   | 34.7  |
| Measureing time, (min)   |   | 60.0  |
| Set Correlation Factor , SCF   |   |   |
| SCF = [ K=High Volume Sampler / Dust Meter, ( $\mu\text{g}/\text{m}^3$ ) ]   |   | <u>1.8</u>  |

In-house method in according to the instruction manual:

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

**Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)**

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung

## Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 5-Oct-20  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 5-Dec-20  
 Model No.: LD-5R  
 Serial No.: 972780  
 Equipment No.: SA-01-09 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 739 CPM  
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 739 CPM

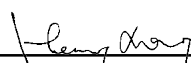
| Calibration of 1 hr TSP  |   |   |
|--|---|---|
| Calibration Point  | Laser Dust Monitor  | HVS   |
|  | Mass Concentration ( $\mu\text{g}/\text{m}^3$ )<br>X-axis | Mass concentration ( $\mu\text{g}/\text{m}^3$ )<br>Y-axis |
| 1  | 48.0  | 78.9  |
| 2  | 41.0  | 75.2  |
| 3  | 30.0  | 70.8  |
| <b>Average</b>   | <b>39.7</b>   | <b>75.0</b>   |
| <b>By Linear Regression of Y on X</b><br>Slope , mw = <u>0.4455</u> Intercept, bw = <u>57.2933</u><br>Correlation coefficient* = <u>0.9970</u> |   |   |
| Set Correlation Factor   |   |   |
| Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )  |   | 75.0  |
| Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )   |   | 39.7  |
| Measuring time, (min)  |   | 60.0  |
| Set Correlation Factor , SCF   |   |   |
| SCF = [ K=High Volume Sampler / Dust Meter, ( $\mu\text{g}/\text{m}^3$ ) ]   |   | <u>1.9</u>  |

In-house method in according to the instruction manual:

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

**Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)**

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA16043/13/0019

Project No. AM2(A) - Ng Wah Catholic Secondary School  
 Date: 5-Sep-20 Next Due Date: 5-Nov-20 Operator: SK  
 Equipment No.: A-01-13 Model No.: TE-5170 Serial No. 1352

| Ambient Condition   |              |                     |              |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <b>301.4</b> | Pressure, Pa (mmHg) | <b>755.5</b> |

| Orifice Transfer Standard Information |           |  |        |               |          |
|---------------------------------------|-----------|--|--------|---------------|----------|
| Serial No.                            | 3746      | Slope, mc  | 0.0592 | Intercept, bc | -0.02740 |
| Last Calibration Date:                | 17-Jan-20 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |        |               |          |
| Next Calibration Date:                | 17-Jan-21 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$  |        |               |          |

| Calibration of TSP Sampler |                            |  |                        |                        |  |
|----------------------------|----------------------------|--|------------------------|------------------------|--|
| Calibration Point          | Orifice                    |  |                        | HVS                    |  |
|                            | DH (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM)<br>X - axis | DW (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$<br>Y-axis |
| 1                          | <b>13.1</b>                | 3.59   | 61.08                  | <b>9.4</b>             | 3.04   |
| 2                          | <b>10.2</b>                | 3.17   | 53.95                  | <b>7.1</b>             | 2.64   |
| 3                          | <b>7.7</b>                 | 2.75   | 46.93                  | <b>5.4</b>             | 2.30   |
| 4                          | <b>5.3</b>                 | 2.28   | 39.02                  | <b>3.1</b>             | 1.75   |
| 5                          | <b>3.2</b>                 | 1.77   | 30.42                  | <b>1.8</b>             | 1.33   |

By Linear Regression of Y on X

Slope, mw = 0.0566 Intercept, bw : -0.4079

Correlation coefficient\* = 0.9983

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

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

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

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.18

Remarks: \_\_\_\_\_

Conducted by: SK Wong Signature:  Date: 5 September 2020

Checked by: Henry Leung Signature:  Date: 5 September 2020



# Certificate of Calibration

| Calibration Certification Information |                               |                  |              |
|---------------------------------------|-------------------------------|------------------|--------------|
| <b>Cal. Date:</b> January 17, 2020    | <b>Rootsmeter S/N:</b> 438320 | <b>Ta:</b> 295   | <b>°K</b>    |
| <b>Operator:</b> Jim Tisch            |                               | <b>Pa:</b> 744.2 | <b>mm Hg</b> |
| <b>Calibration Model #:</b> TE-5025A  | <b>Calibrator S/N:</b> 3746   |                  |              |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|-----|----------------|-----------------|------------|-------------|------------|-------------|
| 1   | 1              | 2               | 1          | 1.4340      | 3.2        | 2.00        |
| 2   | 3              | 4               | 1          | 1.0180      | 6.4        | 4.00        |
| 3   | 5              | 6               | 1          | 0.9080      | 7.9        | 5.00        |
| 4   | 7              | 8               | 1          | 0.8700      | 8.7        | 5.50        |
| 5   | 9              | 10              | 1          | 0.7150      | 12.6       | 8.00        |

| Data Tabulation |               |  |           |             |   |
|-----------------|---------------|--|-----------|-------------|---|
| Vstd (m3)       | Qstd (x-axis) | $\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis) | Va        | Qa (x-axis) | $\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis) |
| 0.9849          | 0.6868        | 1.4066   | 0.9957    | 0.6944      | 0.8904  |
| 0.9807          | 0.9633        | 1.9892   | 0.9914    | 0.9739      | 1.2592  |
| 0.9787          | 1.0779        | 2.2240   | 0.9894    | 1.0896      | 1.4078  |
| 0.9776          | 1.1237        | 2.3325   | 0.9883    | 1.1360      | 1.4765  |
| 0.9724          | 1.3601        | 2.8131   | 0.9831    | 1.3749      | 1.7808  |
| <b>QSTD</b>     | <b>m=</b>     | <b>2.09221</b>   | <b>QA</b> | <b>m=</b>   | <b>1.31010</b>  |
|                 | <b>b=</b>     | <b>-0.02779</b>  |           | <b>b=</b>   | <b>-0.01759</b>   |
|                 | <b>r=</b>     | <b>0.99994</b>   |           | <b>r=</b>   | <b>0.99994</b>  |

| Calculations   |   |
|--|---|
| <b>Vstd=</b> $\Delta Vol((Pa-\Delta P)/Pstd)(Tstd/Ta)$   | <b>Va=</b> $\Delta Vol((Pa-\Delta P)/Pa)$   |
| <b>Qstd=</b> $Vstd/\Delta Time$  | <b>Qa=</b> $Va/\Delta Time$   |
| <b>For subsequent flow rate calculations:</b>  |   |
| <b>Qstd=</b> $1/m \left( \left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)} \right) - b \right)$ | <b>Qa=</b> $1/m \left( \left( \sqrt{\Delta H \left( \frac{Ta}{Pa} \right)} \right) - b \right)$ |

| Standard Conditions                       |           |
|---|-----------|
| Tstd:                                     | 298.15 °K |
| Pstd:                                     | 760 mm Hg |
| Key                                       |           |
| ΔH: calibrator manometer reading (in H2O) |           |
| ΔP: rootsmeter manometer reading (mm Hg)  |           |
| Ta: actual absolute temperature (°K)      |           |
| Pa: actual barometric pressure (mm Hg)    |           |
| b: intercept                              |           |
| m: slope                                  |           |

| RECALIBRATION  |
|--|
| US EPA recommends annual recalibration per 1998<br>40 Code of Federal Regulations Part 50 to 51,<br>Appendix B to Part 50, Reference Method for the<br>Determination of Suspended Particulate Matter in<br>the Atmosphere, 9.2.17, page 30 |

## Certificate of Calibration - Wind Monitoring Station

Description: Ng Wah Catholic Secondary School - Weather Stations  
 Manufacturer: Davis Instruments  
 Model No.: Davis 6152, Vantage Pro2  
 Serial No.: BC180522050  
 Equipment No.: SA-03-03  
 Date of Calibration: 9-Apr-20  
 Next Due Date: 9-Oct-20

### 1. Performance check of Wind Speed

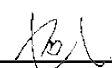
| Wind Speed, m/s         |                       | Difference D (m/s) |
|-------------------------|-----------------------|--------------------|
| Wind Speed Reading (V1) | Anemometer Value (V1) | $D = V1 - V2$      |
| 0.0                     | 0.0                   | 0.0                |
| 1.3                     | 1.3                   | 0.0                |
| 2.4                     | 2.3                   | 0.1                |
| 3.0                     | 3.1                   | -0.1               |

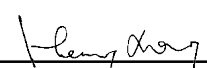
### 2. Performance check of Wind Direction

| Wind Direction (°)          |                           | Difference D (°) |
|-----------------------------|---------------------------|------------------|
| Wind Direction Reading (V1) | Marine Compass Value (V1) | $D = W1 - W2$    |
| 0                           | 0                         | 0.0              |
| 90                          | 90                        | 0.0              |
| 180                         | 180                       | 0.0              |
| 270                         | 270                       | 0.0              |

### Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer
2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung

## Certificate of Calibration - Wind Monitoring Station

Description: Ng Wah Catholic Secondary School - Weather Stations  
 Manufacturer: Davis Instruments  
 Model No.: Davis 6152, Vantage Pro2  
 Serial No.: BC180522050  
 Equipment No.: SA-03-03  
 Date of Calibration: 9-Oct-20  
 Next Due Date: 9-Apr-21

### 1. Performance check of Wind Speed


| Wind Speed, m/s         |                       | Difference D (m/s) |
|-------------------------|-----------------------|--------------------|
| Wind Speed Reading (V1) | Anemometer Value (V1) | $D = V1 - V2$      |
| 0.0                     | 0.0                   | 0.0                |
| 1.5                     | 1.5                   | 0.0                |
| 2.1                     | 2.0                   | 0.1                |
| 3.0                     | 3.1                   | -0.1               |

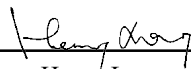
### 2. Performance check of Wind Direction

| Wind Direction (°)          |                           | Difference D (°) |
|-----------------------------|---------------------------|------------------|
| Wind Direction Reading (V1) | Marine Compass Value (V1) | $D = W1 - W2$    |
| 0                           | 0                         | 0.0              |
| 90                          | 90                        | 0.0              |
| 180                         | 180                       | 0.0              |
| 270                         | 270                       | 0.0              |

### Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer
2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:   
 Wong Shing Kwai

Approved by:   
 Henry Leung

---

**APPENDIX B-2  
COPIES OF CALIBRATION  
CERTIFICATES (NOISE)**

---





# Calibration Certificate

0023000

|  |   |
|--|---|
| Customer :<br>Cinotech Consultants Limited<br>RM 1710, Technology Park,<br>18 On Lai Street, Shatin, N.T.<br>Hong Kong | Object 1 : SVAN957 SLM<br>Serial No. /Ref. No. : 23852 / N-08-11<br>Object 2 : Microphone<br>Serial No. /Ref. No. : 35989 |
| Customer Code : SVEC09005  | Manufacturer : Svantek  |
| Date of calibration: 19/12/2019<br>Date of the recommended re-calibration: 19/12/2020                                  | Certificate No.: 0023000<br>Handle by: E0002  |

## Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.4dB           | -0.6dB    | +/- 1.5dB         | 1      |
| 114.0dB         | 113.4dB          | -0.6dB    | +/- 1.5dB         | 1      |

## Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

## Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

## Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

## Uncertainty

+/- 0.2dB for probability not less than 95%.

## Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager



## Calibration Certificate

0023155

|  |  |
|--|--|
| Customer :<br>Cinotech Consultants Limited<br>RM 1710, Technology Park,<br>18 On Lai Street, Shatin, N.T.<br>Hong Kong | Object 1 : SVAN979 SLM<br>Serial No. /Ref. No. : 27189 / SN-01-01<br>Object 2 : Microphone<br>Serial No. /Ref. No. : 25204 |
| Customer Code : SVEC09005  | Manufacturer : BSWAtech  |
| Date of calibration: 08/01/2020<br>Date of the recommended re-calibration: 08/01/2021                                  | Certificate No.: 0023155<br>Handle by: E0002   |

### Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.7dB           | -0.3dB    | +/- 1.5dB         | 1      |
| 114.0dB         | 113.6dB          | -0.4dB    | +/- 1.5dB         | 1      |

### Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

### Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

### Uncertainty

+/- 0.2dB for probability not less than 95%.

### Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager



# Calibration Certificate

0023156

|  |  |
|--|--|
| Customer :<br>Cinotech Consultants Limited<br>RM 1710, Technology Park,<br>18 On Lai Street, Shatin, N.T.<br>Hong Kong | Object 1 : SVAN979 SLM<br>Serial No. /Ref. No. : 27190 / SN-01-02<br>Object 2 : Microphone<br>Serial No. /Ref. No. : 25202 |
| Customer Code : SVEC09005  | Manufacturer : BSWAtech  |
| Date of calibration: 08/01/2020<br>Date of the recommended re-calibration: 08/01/2021                                  | Certificate No.: 0023156<br>Handle by: E0002   |

## Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 94.0dB           | 0.0dB     | +/- 1.5dB         | 1      |
| 114.0dB         | 113.9dB          | -0.1dB    | +/- 1.5dB         | 1      |

## Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

## Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

## Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

## Uncertainty

+/- 0.2dB for probability not less than 95%.

## Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4. HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5. The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager



## Calibration Certificate

0022673

|  |  |
|--|--|
| Customer :<br>Cinotech Consultants Limited<br>RM 1710, Technology Park,<br>18 On Lai Street, Shatin, N.T.<br>Hong Kong | Object 1 : ST-120 sound calibrator<br>Serial No. /Ref. No. : 181001608<br>Object 2 :<br>Serial No. /Ref. No. : |
| Customer Code : SVEC09005  | Manufacturer : Soundtek  |
| Date of calibration: 24/10/2019<br>Date of the recommended re-calibration: 24/10/2020                                  | Certificate No.: 0022673<br>Handle by: E0002   |

### Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 94.0dB           | 0.0dB     | +/- 0.3dB         | 1      |
| 114.0dB         | 114.1dB          | +0.1dB    | +/- 0.5dB         | 1      |

### Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

### Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

### Uncertainty

+/- 0.2dB for probability not less than 95%.

### Conformity


- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

  
\_\_\_\_\_  
Calibration Technician

Approved by

  
\_\_\_\_\_  
Quality Manager



# Calibration Certificate

0023002

|  |   |
|--|---|
| Customer :<br>Cinotech Consultants Limited<br>RM 1710, Technology Park,<br>18 On Lai Street, Shatin, N.T.<br>Hong Kong | Object 1 : SV30A sound calibrator<br>Serial No. /Ref. No. : 10965 / N-09-02<br>Object 2 :<br>Serial No. /Ref. No. : |
| Customer Code : SVEC09005  | Manufacturer : Svantek  |
| Date of calibration: 19/12/2019<br>Date of the recommended re-calibration: 19/12/2020                                  | Certificate No.: 0023002<br>Handle by: E0002  |

## Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.9dB           | -0.1dB    | +/- 0.3dB         | 1      |
| 114.0dB         | 114.2dB          | +0.2dB    | +/- 0.3dB         | 1      |

## Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

## Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

## Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

## Uncertainty

+/- 0.2 dB for probability not less than 95%.

## Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager

---

---

**APPENDIX C**  
**WEATHER INFORMATION**

---

---

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

October 2020

| Day | Mean Pressure (hPa) | Air Temperature | Mean Relative Humidity (%) | Total Rainfall (mm) |
|-----|---------------------|-----------------|----------------------------|---------------------|
|     |                     | Mean (deg. C)   |                            |                     |
| 1   | 1009.5              | 26.7            | 77                         | 0.1                 |
| 2   | 1010.8              | 27.6            | 75                         | 0                   |
| 3   | 1011.3              | 28.3            | 75                         | 0                   |
| 4   | 1009.9              | 28.4            | 78                         | 0                   |
| 5   | 1011.2              | 28              | 79                         | 106.1               |
| 6   | 1013.8              | 25.9            | 78                         | 2.7                 |
| 7   | 1014.8              | 24.9            | 70                         | 0                   |
| 8   | 1015.2              | 25.2            | 67                         | 0                   |
| 9   | 1014.7              | 26              | 64                         | Trace               |
| 10  | 1012.8              | 26.1            | 69                         | Trace               |
| 11  | 1010.3              | 27              | 73                         | 0                   |
| 12  | 1008.7              | 28              | 72                         | 0.6                 |
| 13  | 1009.6              | 24.9            | 86                         | 26                  |
| 14  | 1012.5              | 25.5            | 80                         | 1.2                 |
| 15  | 1013.8              | 26.5            | 73                         | 0                   |
| 16  | 1013.6              | 27              | 71                         | Trace               |
| 17  | 1014.9              | 25.6            | 72                         | 0.2                 |
| 18  | 1015.7              | 24.9            | 73                         | 0.7                 |
| 19  | 1015.9              | 24.6            | 70                         | 0                   |
| 20  | 1015                | 25              | 68                         | 0                   |
| 21  | 1011.8              | 24.5            | 63                         | 0                   |
| 22  | 1009.4              | 24.7            | 60                         | 0                   |
| 23  | 1011.4              | 23.5            | 51                         | 0                   |
| 24  | 1013.9              | 23.8            | 55                         | Trace               |
| 25  | 1014.8              | 24.2            | 69                         | 0                   |
| 26  | 1013.5              | 24.6            | 76                         | 0                   |
| 27  | 1012.9              | 25.1            | 73                         | 0                   |
| 28  | 1014.9              | 24.4            | 78                         | 4.7                 |
| 29  | 1017.3              | 24.7            | 74                         | 0.1                 |
| 30  | 1018.3              | 24.4            | 78                         | Trace               |
| 31  | 1017.7              | 23.4            | 71                         | 0                   |



APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| October 2020                        |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Table II: Wind Speed and Directions |       |                |           |
| Date                                | Time  | Wind Speed m/s | Direction |
| 01-Oct-20                           | 1:00  | 0.3            | NE        |
| 01-Oct-20                           | 2:00  | 0.2            | NNE       |
| 01-Oct-20                           | 3:00  | 0.2            | ENE       |
| 01-Oct-20                           | 4:00  | 0.3            | ENE       |
| 01-Oct-20                           | 5:00  | 0.2            | ENE       |
| 01-Oct-20                           | 6:00  | 0.2            | ENE       |
| 01-Oct-20                           | 7:00  | 0.3            | ENE       |
| 01-Oct-20                           | 8:00  | 1.8            | E         |
| 01-Oct-20                           | 9:00  | 0.4            | E         |
| 01-Oct-20                           | 10:00 | 0.5            | ENE       |
| 01-Oct-20                           | 11:00 | 0.4            | E         |
| 01-Oct-20                           | 12:00 | 0.3            | ENE       |
| 01-Oct-20                           | 13:00 | 0.4            | E         |
| 01-Oct-20                           | 14:00 | 0.4            | ENE       |
| 01-Oct-20                           | 15:00 | 0.2            | E         |
| 01-Oct-20                           | 16:00 | 0.2            | ENE       |
| 01-Oct-20                           | 17:00 | 0.2            | NE        |
| 01-Oct-20                           | 18:00 | 0.2            | SSE       |
| 01-Oct-20                           | 19:00 | 0.3            | ENE       |
| 01-Oct-20                           | 20:00 | 0.3            | ENE       |
| 01-Oct-20                           | 21:00 | 0.3            | ENE       |
| 01-Oct-20                           | 22:00 | 0.3            | ENE       |
| 01-Oct-20                           | 23:00 | 0.3            | ENE       |
| 02-Oct-20                           | 0:00  | 0.4            | E         |
| 02-Oct-20                           | 1:00  | 0.2            | E         |
| 02-Oct-20                           | 2:00  | 0.2            | ENE       |
| 02-Oct-20                           | 3:00  | 0.2            | ENE       |
| 02-Oct-20                           | 4:00  | 0.2            | ENE       |
| 02-Oct-20                           | 5:00  | 0.2            | ENE       |
| 02-Oct-20                           | 6:00  | 0.2            | ENE       |
| 02-Oct-20                           | 7:00  | 0.2            | ENE       |
| 02-Oct-20                           | 8:00  | 0.2            | ENE       |
| 02-Oct-20                           | 9:00  | 0.2            | ENE       |
| 02-Oct-20                           | 10:00 | 0.2            | NE        |
| 02-Oct-20                           | 11:00 | 0.2            | NNW       |
| 02-Oct-20                           | 12:00 | 0.3            | ENE       |
| 02-Oct-20                           | 13:00 | 0.3            | ESE       |
| 02-Oct-20                           | 14:00 | 0.2            | ENE       |
| 02-Oct-20                           | 15:00 | 0.2            | ESE       |
| 02-Oct-20                           | 16:00 | 0.1            | SE        |
| 02-Oct-20                           | 17:00 | 0.3            | S         |
| 02-Oct-20                           | 18:00 | 0.2            | SE        |
| 02-Oct-20                           | 19:00 | 0.3            | ENE       |
| 02-Oct-20                           | 20:00 | 0.6            | E         |
| 02-Oct-20                           | 21:00 | 0.2            | ENE       |
| 02-Oct-20                           | 22:00 | 0.1            | ENE       |
| 02-Oct-20                           | 23:00 | 0.1            | E         |
| 03-Oct-20                           | 0:00  | 0.1            | E         |

| October 2020                        |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Table II: Wind Speed and Directions |       |                |           |
| Date                                | Time  | Wind Speed m/s | Direction |
| 03-Oct-20                           | 1:00  | 0.1            | NE        |
| 03-Oct-20                           | 2:00  | 0.1            | NE        |
| 03-Oct-20                           | 3:00  | 0.1            | NE        |
| 03-Oct-20                           | 4:00  | 0.1            | NNE       |
| 03-Oct-20                           | 5:00  | 0.1            | ENE       |
| 03-Oct-20                           | 6:00  | 0.1            | NE        |
| 03-Oct-20                           | 7:00  | 0.1            | ENE       |
| 03-Oct-20                           | 8:00  | 0.1            | NNE       |
| 03-Oct-20                           | 9:00  | 0.1            | NE        |
| 03-Oct-20                           | 10:00 | 0.1            | E         |
| 03-Oct-20                           | 11:00 | 0.2            | ENE       |
| 03-Oct-20                           | 12:00 | 0.2            | NE        |
| 03-Oct-20                           | 13:00 | 0.2            | ENE       |
| 03-Oct-20                           | 14:00 | 0.3            | SW        |
| 03-Oct-20                           | 15:00 | 0.3            | S         |
| 03-Oct-20                           | 16:00 | 0.1            | SE        |
| 03-Oct-20                           | 17:00 | 0.1            | ESE       |
| 03-Oct-20                           | 18:00 | 0.1            | ESE       |
| 03-Oct-20                           | 19:00 | 0.1            | NE        |
| 03-Oct-20                           | 20:00 | 0.1            | NE        |
| 03-Oct-20                           | 21:00 | 0.1            | NE        |
| 03-Oct-20                           | 22:00 | 0.1            | ENE       |
| 03-Oct-20                           | 23:00 | 0.1            | ENE       |
| 04-Oct-20                           | 0:00  | 0.1            | ENE       |
| 04-Oct-20                           | 1:00  | 0.1            | ENE       |
| 04-Oct-20                           | 2:00  | 0.1            | ENE       |
| 04-Oct-20                           | 3:00  | 0.1            | ENE       |
| 04-Oct-20                           | 4:00  | 0.1            | NE        |
| 04-Oct-20                           | 5:00  | 0.1            | ENE       |
| 04-Oct-20                           | 6:00  | 0.1            | ENE       |
| 04-Oct-20                           | 7:00  | 0.1            | ENE       |
| 04-Oct-20                           | 8:00  | 0.1            | NE        |
| 04-Oct-20                           | 9:00  | 0.1            | ENE       |
| 04-Oct-20                           | 10:00 | 0.1            | WNW       |
| 04-Oct-20                           | 11:00 | 0.1            | W         |
| 04-Oct-20                           | 12:00 | 0.1            | SE        |
| 04-Oct-20                           | 13:00 | 0.7            | WSW       |
| 04-Oct-20                           | 14:00 | 0.3            | SW        |
| 04-Oct-20                           | 15:00 | 0.5            | SW        |
| 04-Oct-20                           | 16:00 | 0.1            | W         |
| 04-Oct-20                           | 17:00 | 0.1            | W         |
| 04-Oct-20                           | 18:00 | 0.1            | SW        |
| 04-Oct-20                           | 19:00 | 0.1            | SSW       |
| 04-Oct-20                           | 20:00 | 0.1            | E         |
| 04-Oct-20                           | 21:00 | 0.1            | WSW       |
| 04-Oct-20                           | 22:00 | 0.1            | SW        |
| 04-Oct-20                           | 23:00 | 0.1            | SW        |
| 05-Oct-20                           | 0:00  | 0.1            | NNE       |



APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 05-Oct-20                           | 1:00  | 0.1            | NE        |
| 05-Oct-20                           | 2:00  | 0.1            | NE        |
| 05-Oct-20                           | 3:00  | 0.1            | NE        |
| 05-Oct-20                           | 4:00  | 0.1            | NE        |
| 05-Oct-20                           | 5:00  | 0.1            | N         |
| 05-Oct-20                           | 6:00  | 0.1            | SSW       |
| 05-Oct-20                           | 7:00  | 0.1            | NE        |
| 05-Oct-20                           | 8:00  | 0.1            | S         |
| 05-Oct-20                           | 9:00  | 0.1            | NE        |
| 05-Oct-20                           | 10:00 | 0.1            | SSE       |
| 05-Oct-20                           | 11:00 | 0.2            | ESE       |
| 05-Oct-20                           | 12:00 | 0.3            | NE        |
| 05-Oct-20                           | 13:00 | 0.2            | ENE       |
| 05-Oct-20                           | 14:00 | 0.3            | ENE       |
| 05-Oct-20                           | 15:00 | 0.2            | ENE       |
| 05-Oct-20                           | 16:00 | 0.1            | E         |
| 05-Oct-20                           | 17:00 | 0.1            | ENE       |
| 05-Oct-20                           | 18:00 | 0.2            | E         |
| 05-Oct-20                           | 19:00 | 0.1            | ENE       |
| 05-Oct-20                           | 20:00 | 0.1            | ESE       |
| 05-Oct-20                           | 21:00 | 0.1            | NE        |
| 05-Oct-20                           | 22:00 | 0.1            | ENE       |
| 05-Oct-20                           | 23:00 | 0.1            | ENE       |
| 06-Oct-20                           | 0:00  | 0.1            | E         |
| 06-Oct-20                           | 1:00  | 0.1            | NE        |
| 06-Oct-20                           | 2:00  | 0.1            | NNE       |
| 06-Oct-20                           | 3:00  | 0.1            | NNE       |
| 06-Oct-20                           | 4:00  | 0.4            | NNE       |
| 06-Oct-20                           | 5:00  | 0.1            | NE        |
| 06-Oct-20                           | 6:00  | 0.2            | NNE       |
| 06-Oct-20                           | 7:00  | 0.9            | NE        |
| 06-Oct-20                           | 8:00  | 0.1            | E         |
| 06-Oct-20                           | 9:00  | 0.2            | ESE       |
| 06-Oct-20                           | 10:00 | 0.3            | NW        |
| 06-Oct-20                           | 11:00 | 0.3            | NE        |
| 06-Oct-20                           | 12:00 | 0.1            | NE        |
| 06-Oct-20                           | 13:00 | 0.1            | ENE       |
| 06-Oct-20                           | 14:00 | 0.1            | NNE       |
| 06-Oct-20                           | 15:00 | 0.1            | NNE       |
| 06-Oct-20                           | 16:00 | 0.2            | NNE       |
| 06-Oct-20                           | 17:00 | 0.1            | ENE       |
| 06-Oct-20                           | 18:00 | 0.4            | E         |
| 06-Oct-20                           | 19:00 | 0.2            | NE        |
| 06-Oct-20                           | 20:00 | 0.2            | NE        |
| 06-Oct-20                           | 21:00 | 0.2            | N         |
| 06-Oct-20                           | 22:00 | 0.8            | E         |
| 06-Oct-20                           | 23:00 | 0.2            | NE        |
| 07-Oct-20                           | 0:00  | 0.5            | N         |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 07-Oct-20                           | 1:00  | 0.9            | ENE       |
| 07-Oct-20                           | 2:00  | 0.4            | NE        |
| 07-Oct-20                           | 3:00  | 0.2            | NNE       |
| 07-Oct-20                           | 4:00  | 0.3            | ENE       |
| 07-Oct-20                           | 5:00  | 0.2            | N         |
| 07-Oct-20                           | 6:00  | 0.4            | NE        |
| 07-Oct-20                           | 7:00  | 0.1            | N         |
| 07-Oct-20                           | 8:00  | 0.4            | NNE       |
| 07-Oct-20                           | 9:00  | 0.2            | NE        |
| 07-Oct-20                           | 10:00 | 0.6            | N         |
| 07-Oct-20                           | 11:00 | 0.5            | ENE       |
| 07-Oct-20                           | 12:00 | 0.2            | ENE       |
| 07-Oct-20                           | 13:00 | 0.3            | N         |
| 07-Oct-20                           | 14:00 | 0.7            | NW        |
| 07-Oct-20                           | 15:00 | 1              | NNE       |
| 07-Oct-20                           | 16:00 | 0.1            | NNE       |
| 07-Oct-20                           | 17:00 | 0.3            | NNE       |
| 07-Oct-20                           | 18:00 | 0.1            | ENE       |
| 07-Oct-20                           | 19:00 | 0.4            | NE        |
| 07-Oct-20                           | 20:00 | 0.7            | N         |
| 07-Oct-20                           | 21:00 | 0.2            | NNE       |
| 07-Oct-20                           | 22:00 | 0.1            | NNE       |
| 07-Oct-20                           | 23:00 | 0.1            | ENE       |
| 08-Oct-20                           | 0:00  | 0.1            | NE        |
| 08-Oct-20                           | 1:00  | 0.2            | NNE       |
| 08-Oct-20                           | 2:00  | 1.5            | ENE       |
| 08-Oct-20                           | 3:00  | 0.1            | ENE       |
| 08-Oct-20                           | 4:00  | 1.5            | NE        |
| 08-Oct-20                           | 5:00  | 0.9            | N         |
| 08-Oct-20                           | 6:00  | 0.1            | NE        |
| 08-Oct-20                           | 7:00  | 0.2            | NE        |
| 08-Oct-20                           | 8:00  | 0.2            | SE        |
| 08-Oct-20                           | 9:00  | 0.2            | E         |
| 08-Oct-20                           | 10:00 | 0.3            | ENE       |
| 08-Oct-20                           | 11:00 | 0.7            | ENE       |
| 08-Oct-20                           | 12:00 | 2.5            | NNW       |
| 08-Oct-20                           | 13:00 | 0.8            | NNE       |
| 08-Oct-20                           | 14:00 | 0.2            | ENE       |
| 08-Oct-20                           | 15:00 | 0.1            | NNE       |
| 08-Oct-20                           | 16:00 | 0.3            | NE        |
| 08-Oct-20                           | 17:00 | 0.7            | NE        |
| 08-Oct-20                           | 18:00 | 0.5            | ENE       |
| 08-Oct-20                           | 19:00 | 0.1            | ENE       |
| 08-Oct-20                           | 20:00 | 0.4            | NNE       |
| 08-Oct-20                           | 21:00 | 0.1            | ENE       |
| 08-Oct-20                           | 22:00 | 0.1            | N         |
| 08-Oct-20                           | 23:00 | 0.6            | NNE       |
| 09-Oct-20                           | 0:00  | 0.1            | E         |

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 09-Oct-20                           | 1:00  | 0.6            | N         |
| 09-Oct-20                           | 2:00  | 0.1            | ESE       |
| 09-Oct-20                           | 3:00  | 0.1            | NE        |
| 09-Oct-20                           | 4:00  | 0.2            | ENE       |
| 09-Oct-20                           | 5:00  | 2.1            | ENE       |
| 09-Oct-20                           | 6:00  | 0.1            | E         |
| 09-Oct-20                           | 7:00  | 1              | ENE       |
| 09-Oct-20                           | 8:00  | 0.1            | NNE       |
| 09-Oct-20                           | 9:00  | 1.4            | N         |
| 09-Oct-20                           | 10:00 | 0.1            | NE        |
| 09-Oct-20                           | 11:00 | 0.3            | NNE       |
| 09-Oct-20                           | 12:00 | 0.3            | N         |
| 09-Oct-20                           | 13:00 | 0.4            | N         |
| 09-Oct-20                           | 14:00 | 0.1            | N         |
| 09-Oct-20                           | 15:00 | 0.2            | ENE       |
| 09-Oct-20                           | 16:00 | 0.1            | NE        |
| 09-Oct-20                           | 17:00 | 0.1            | NE        |
| 09-Oct-20                           | 18:00 | 0.1            | ENE       |
| 09-Oct-20                           | 19:00 | 0.1            | NNE       |
| 09-Oct-20                           | 20:00 | 0.3            | ENE       |
| 09-Oct-20                           | 21:00 | 0.2            | E         |
| 09-Oct-20                           | 22:00 | 0.1            | NNE       |
| 09-Oct-20                           | 23:00 | 0.2            | NNE       |
| 10-Oct-20                           | 0:00  | 0.1            | NNE       |
| 10-Oct-20                           | 1:00  | 0.1            | NNE       |
| 10-Oct-20                           | 2:00  | 0.1            | NNE       |
| 10-Oct-20                           | 3:00  | 0.1            | NE        |
| 10-Oct-20                           | 4:00  | 0.1            | NNE       |
| 10-Oct-20                           | 5:00  | 0.2            | NNE       |
| 10-Oct-20                           | 6:00  | 0.1            | NNE       |
| 10-Oct-20                           | 7:00  | 0.1            | NE        |
| 10-Oct-20                           | 8:00  | 0.1            | NE        |
| 10-Oct-20                           | 9:00  | 0.4            | N         |
| 10-Oct-20                           | 10:00 | 0.1            | ENE       |
| 10-Oct-20                           | 11:00 | 0.1            | NE        |
| 10-Oct-20                           | 12:00 | 0.1            | NNE       |
| 10-Oct-20                           | 13:00 | 0.3            | WNW       |
| 10-Oct-20                           | 14:00 | 0.1            | NE        |
| 10-Oct-20                           | 15:00 | 0.1            | NE        |
| 10-Oct-20                           | 16:00 | 0.1            | ENE       |
| 10-Oct-20                           | 17:00 | 0.1            | ENE       |
| 10-Oct-20                           | 18:00 | 0.1            | ENE       |
| 10-Oct-20                           | 19:00 | 0.1            | ENE       |
| 10-Oct-20                           | 20:00 | 0.1            | NE        |
| 10-Oct-20                           | 21:00 | 0.1            | E         |
| 10-Oct-20                           | 22:00 | 0.1            | ENE       |
| 10-Oct-20                           | 23:00 | 0.1            | ENE       |
| 11-Oct-20                           | 0:00  | 0.1            | ENE       |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 11-Oct-20                           | 1:00  | 0.1            | NE        |
| 11-Oct-20                           | 2:00  | 0.1            | SSW       |
| 11-Oct-20                           | 3:00  | 0.1            | NE        |
| 11-Oct-20                           | 4:00  | 0.1            | NE        |
| 11-Oct-20                           | 5:00  | 0.1            | NE        |
| 11-Oct-20                           | 6:00  | 0.1            | ENE       |
| 11-Oct-20                           | 7:00  | 0.1            | ENE       |
| 11-Oct-20                           | 8:00  | 0.2            | E         |
| 11-Oct-20                           | 9:00  | 0.5            | N         |
| 11-Oct-20                           | 10:00 | 0.1            | ESE       |
| 11-Oct-20                           | 11:00 | 0.2            | ENE       |
| 11-Oct-20                           | 12:00 | 0.3            | N         |
| 11-Oct-20                           | 13:00 | 0.1            | NE        |
| 11-Oct-20                           | 14:00 | 0.1            | ENE       |
| 11-Oct-20                           | 15:00 | 0.1            | SSE       |
| 11-Oct-20                           | 16:00 | 0.1            | E         |
| 11-Oct-20                           | 17:00 | 0.3            | ENE       |
| 11-Oct-20                           | 18:00 | 0.1            | ENE       |
| 11-Oct-20                           | 19:00 | 0.1            | NE        |
| 11-Oct-20                           | 20:00 | 0.1            | ENE       |
| 11-Oct-20                           | 21:00 | 0.1            | NE        |
| 11-Oct-20                           | 22:00 | 0.1            | ENE       |
| 11-Oct-20                           | 23:00 | 0.1            | ENE       |
| 12-Oct-20                           | 0:00  | 0.1            | ENE       |
| 12-Oct-20                           | 1:00  | 0.1            | ENE       |
| 12-Oct-20                           | 2:00  | 0.1            | NE        |
| 12-Oct-20                           | 3:00  | 0.1            | E         |
| 12-Oct-20                           | 4:00  | 0.1            | E         |
| 12-Oct-20                           | 5:00  | 0.1            | NNE       |
| 12-Oct-20                           | 6:00  | 0.1            | ENE       |
| 12-Oct-20                           | 7:00  | 0.1            | NE        |
| 12-Oct-20                           | 8:00  | 0.1            | NE        |
| 12-Oct-20                           | 9:00  | 0.3            | NNE       |
| 12-Oct-20                           | 10:00 | 0.2            | ENE       |
| 12-Oct-20                           | 11:00 | 0.1            | NE        |
| 12-Oct-20                           | 12:00 | 0.1            | ENE       |
| 12-Oct-20                           | 13:00 | 0.2            | ENE       |
| 12-Oct-20                           | 14:00 | 0.1            | ENE       |
| 12-Oct-20                           | 15:00 | 0.1            | E         |
| 12-Oct-20                           | 16:00 | 0.3            | E         |
| 12-Oct-20                           | 17:00 | 0.5            | ENE       |
| 12-Oct-20                           | 18:00 | 0.1            | ENE       |
| 12-Oct-20                           | 19:00 | 0.1            | NE        |
| 12-Oct-20                           | 20:00 | 0.1            | NE        |
| 12-Oct-20                           | 21:00 | 0.1            | ENE       |
| 12-Oct-20                           | 22:00 | 0.1            | E         |
| 12-Oct-20                           | 23:00 | 0.1            | ESE       |
| 13-Oct-20                           | 0:00  | 0.1            | NE        |

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 13-Oct-20                           | 1:00  | 0.4            | ENE       |
| 13-Oct-20                           | 2:00  | 0.6            | ENE       |
| 13-Oct-20                           | 3:00  | 0.6            | NE        |
| 13-Oct-20                           | 4:00  | 0.4            | NE        |
| 13-Oct-20                           | 5:00  | 0.5            | NNE       |
| 13-Oct-20                           | 6:00  | 0.7            | ENE       |
| 13-Oct-20                           | 7:00  | 0.8            | E         |
| 13-Oct-20                           | 8:00  | 0.9            | ENE       |
| 13-Oct-20                           | 9:00  | 0.8            | E         |
| 13-Oct-20                           | 10:00 | 1.2            | ENE       |
| 13-Oct-20                           | 11:00 | 1.1            | NE        |
| 13-Oct-20                           | 12:00 | 1.2            | ESE       |
| 13-Oct-20                           | 13:00 | 1.3            | SE        |
| 13-Oct-20                           | 14:00 | 1.1            | NE        |
| 13-Oct-20                           | 15:00 | 0.9            | ENE       |
| 13-Oct-20                           | 16:00 | 1.1            | NE        |
| 13-Oct-20                           | 17:00 | 0.8            | NE        |
| 13-Oct-20                           | 18:00 | 1.7            | E         |
| 13-Oct-20                           | 19:00 | 1.9            | ESE       |
| 13-Oct-20                           | 20:00 | 1.2            | ENE       |
| 13-Oct-20                           | 21:00 | 1.6            | ENE       |
| 13-Oct-20                           | 22:00 | 1.5            | S         |
| 13-Oct-20                           | 23:00 | 0.3            | SE        |
| 14-Oct-20                           | 0:00  | 0.5            | ESE       |
| 14-Oct-20                           | 1:00  | 0.8            | SSE       |
| 14-Oct-20                           | 2:00  | 0.3            | ENE       |
| 14-Oct-20                           | 3:00  | 0.3            | ESE       |
| 14-Oct-20                           | 4:00  | 0.3            | ENE       |
| 14-Oct-20                           | 5:00  | 0.4            | E         |
| 14-Oct-20                           | 6:00  | 1.5            | NE        |
| 14-Oct-20                           | 7:00  | 0.6            | E         |
| 14-Oct-20                           | 8:00  | 0.8            | ESE       |
| 14-Oct-20                           | 9:00  | 0.9            | ENE       |
| 14-Oct-20                           | 10:00 | 0.4            | ESE       |
| 14-Oct-20                           | 11:00 | 1.2            | ENE       |
| 14-Oct-20                           | 12:00 | 1.3            | ENE       |
| 14-Oct-20                           | 13:00 | 1.5            | SE        |
| 14-Oct-20                           | 14:00 | 0.5            | E         |
| 14-Oct-20                           | 15:00 | 1.3            | ESE       |
| 14-Oct-20                           | 16:00 | 0.2            | NE        |
| 14-Oct-20                           | 17:00 | 1.1            | ENE       |
| 14-Oct-20                           | 18:00 | 0.5            | E         |
| 14-Oct-20                           | 19:00 | 0.9            | NNW       |
| 14-Oct-20                           | 20:00 | 0.5            | ENE       |
| 14-Oct-20                           | 21:00 | 0.4            | N         |
| 14-Oct-20                           | 22:00 | 0.3            | ENE       |
| 14-Oct-20                           | 23:00 | 0.2            | E         |
| 15-Oct-20                           | 0:00  | 0.1            | E         |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 15-Oct-20                           | 1:00  | 0.1            | E         |
| 15-Oct-20                           | 2:00  | 0.8            | ENE       |
| 15-Oct-20                           | 3:00  | 0.1            | ENE       |
| 15-Oct-20                           | 4:00  | 0.1            | E         |
| 15-Oct-20                           | 5:00  | 0.2            | NNE       |
| 15-Oct-20                           | 6:00  | 0.2            | ENE       |
| 15-Oct-20                           | 7:00  | 0.2            | ENE       |
| 15-Oct-20                           | 8:00  | 0.1            | ENE       |
| 15-Oct-20                           | 9:00  | 0.1            | ESE       |
| 15-Oct-20                           | 10:00 | 0.4            | NE        |
| 15-Oct-20                           | 11:00 | 1.5            | ENE       |
| 15-Oct-20                           | 12:00 | 0.2            | ENE       |
| 15-Oct-20                           | 13:00 | 1.2            | E         |
| 15-Oct-20                           | 14:00 | 0.2            | WSW       |
| 15-Oct-20                           | 15:00 | 0.2            | N         |
| 15-Oct-20                           | 16:00 | 0.1            | SW        |
| 15-Oct-20                           | 17:00 | 0.6            | NE        |
| 15-Oct-20                           | 18:00 | 0.2            | NE        |
| 15-Oct-20                           | 19:00 | 0.2            | SE        |
| 15-Oct-20                           | 20:00 | 0.1            | NE        |
| 15-Oct-20                           | 21:00 | 0.1            | NE        |
| 15-Oct-20                           | 22:00 | 0.1            | NE        |
| 15-Oct-20                           | 23:00 | 0.1            | ENE       |
| 16-Oct-20                           | 0:00  | 0.2            | NE        |
| 16-Oct-20                           | 1:00  | 0.1            | ENE       |
| 16-Oct-20                           | 2:00  | 0.1            | E         |
| 16-Oct-20                           | 3:00  | 0.2            | E         |
| 16-Oct-20                           | 4:00  | 0.1            | NE        |
| 16-Oct-20                           | 5:00  | 0.1            | E         |
| 16-Oct-20                           | 6:00  | 0.1            | NNE       |
| 16-Oct-20                           | 7:00  | 0.2            | ENE       |
| 16-Oct-20                           | 8:00  | 0.2            | NE        |
| 16-Oct-20                           | 9:00  | 0.5            | ESE       |
| 16-Oct-20                           | 10:00 | 0.2            | NNE       |
| 16-Oct-20                           | 11:00 | 0.1            | SSE       |
| 16-Oct-20                           | 12:00 | 0.1            | ENE       |
| 16-Oct-20                           | 13:00 | 0.2            | ENE       |
| 16-Oct-20                           | 14:00 | 0.1            | E         |
| 16-Oct-20                           | 15:00 | 0.1            | ENE       |
| 16-Oct-20                           | 16:00 | 0.1            | ENE       |
| 16-Oct-20                           | 17:00 | 0.1            | ENE       |
| 16-Oct-20                           | 18:00 | 0.1            | ESE       |
| 16-Oct-20                           | 19:00 | 0.1            | SE        |
| 16-Oct-20                           | 20:00 | 0.1            | E         |
| 16-Oct-20                           | 21:00 | 0.1            | ESE       |
| 16-Oct-20                           | 22:00 | 0.1            | ENE       |
| 16-Oct-20                           | 23:00 | 0.1            | NE        |
| 17-Oct-20                           | 0:00  | 0.2            | ENE       |

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 17-Oct-20                           | 1:00  | 0.4            | NE        |
| 17-Oct-20                           | 2:00  | 2.8            | NE        |
| 17-Oct-20                           | 3:00  | 0.5            | NE        |
| 17-Oct-20                           | 4:00  | 0.1            | NNE       |
| 17-Oct-20                           | 5:00  | 0.1            | NNE       |
| 17-Oct-20                           | 6:00  | 0.1            | NNE       |
| 17-Oct-20                           | 7:00  | 0.4            | E         |
| 17-Oct-20                           | 8:00  | 0.2            | NNE       |
| 17-Oct-20                           | 9:00  | 0.6            | NNE       |
| 17-Oct-20                           | 10:00 | 0.1            | E         |
| 17-Oct-20                           | 11:00 | 0.2            | NNE       |
| 17-Oct-20                           | 12:00 | 0.2            | NNW       |
| 17-Oct-20                           | 13:00 | 0.1            | NE        |
| 17-Oct-20                           | 14:00 | 0.1            | NE        |
| 17-Oct-20                           | 15:00 | 0.1            | WNW       |
| 17-Oct-20                           | 16:00 | 0.1            | NE        |
| 17-Oct-20                           | 17:00 | 0.1            | ENE       |
| 17-Oct-20                           | 18:00 | 0.1            | ENE       |
| 17-Oct-20                           | 19:00 | 0.1            | E         |
| 17-Oct-20                           | 20:00 | 0.1            | NE        |
| 17-Oct-20                           | 21:00 | 0.6            | NNE       |
| 17-Oct-20                           | 22:00 | 0.2            | N         |
| 17-Oct-20                           | 23:00 | 0.2            | ENE       |
| 18-Oct-20                           | 0:00  | 0.2            | NE        |
| 18-Oct-20                           | 1:00  | 1.6            | N         |
| 18-Oct-20                           | 2:00  | 0.4            | E         |
| 18-Oct-20                           | 3:00  | 0.3            | ENE       |
| 18-Oct-20                           | 4:00  | 0.4            | NE        |
| 18-Oct-20                           | 5:00  | 0.3            | E         |
| 18-Oct-20                           | 6:00  | 0.3            | NE        |
| 18-Oct-20                           | 7:00  | 0.2            | NE        |
| 18-Oct-20                           | 8:00  | 0.1            | ENE       |
| 18-Oct-20                           | 9:00  | 0.2            | NE        |
| 18-Oct-20                           | 10:00 | 0.2            | E         |
| 18-Oct-20                           | 11:00 | 0.7            | ENE       |
| 18-Oct-20                           | 12:00 | 0.1            | NNW       |
| 18-Oct-20                           | 13:00 | 0.2            | NE        |
| 18-Oct-20                           | 14:00 | 0.2            | NE        |
| 18-Oct-20                           | 15:00 | 0.4            | NNE       |
| 18-Oct-20                           | 16:00 | 0.2            | ENE       |
| 18-Oct-20                           | 17:00 | 0.2            | ENE       |
| 18-Oct-20                           | 18:00 | 0.2            | ESE       |
| 18-Oct-20                           | 19:00 | 0.1            | ENE       |
| 18-Oct-20                           | 20:00 | 0.2            | ESE       |
| 18-Oct-20                           | 21:00 | 1.8            | NNE       |
| 18-Oct-20                           | 22:00 | 0.8            | NE        |
| 18-Oct-20                           | 23:00 | 0.7            | NNE       |
| 19-Oct-20                           | 0:00  | 0.1            | NE        |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 19-Oct-20                           | 1:00  | 0.1            | NE        |
| 19-Oct-20                           | 2:00  | 0.3            | NE        |
| 19-Oct-20                           | 3:00  | 0.2            | ENE       |
| 19-Oct-20                           | 4:00  | 0.2            | ESE       |
| 19-Oct-20                           | 5:00  | 0.1            | SSE       |
| 19-Oct-20                           | 6:00  | 0.6            | NE        |
| 19-Oct-20                           | 7:00  | 0.2            | NE        |
| 19-Oct-20                           | 8:00  | 0.7            | ENE       |
| 19-Oct-20                           | 9:00  | 0.4            | ENE       |
| 19-Oct-20                           | 10:00 | 1.5            | ESE       |
| 19-Oct-20                           | 11:00 | 0.1            | NE        |
| 19-Oct-20                           | 12:00 | 0.4            | N         |
| 19-Oct-20                           | 13:00 | 0.1            | NE        |
| 19-Oct-20                           | 14:00 | 0.1            | NW        |
| 19-Oct-20                           | 15:00 | 0.1            | NE        |
| 19-Oct-20                           | 16:00 | 0.6            | ENE       |
| 19-Oct-20                           | 17:00 | 0.2            | NW        |
| 19-Oct-20                           | 18:00 | 0.4            | ENE       |
| 19-Oct-20                           | 19:00 | 0.1            | NNW       |
| 19-Oct-20                           | 20:00 | 0.1            | NE        |
| 19-Oct-20                           | 21:00 | 0.3            | NE        |
| 19-Oct-20                           | 22:00 | 0.6            | ENE       |
| 19-Oct-20                           | 23:00 | 0.2            | NNE       |
| 20-Oct-20                           | 0:00  | 0.1            | E         |
| 20-Oct-20                           | 1:00  | 1              | NE        |
| 20-Oct-20                           | 2:00  | 0.7            | NE        |
| 20-Oct-20                           | 3:00  | 0.1            | NNE       |
| 20-Oct-20                           | 4:00  | 1.4            | NE        |
| 20-Oct-20                           | 5:00  | 0.1            | N         |
| 20-Oct-20                           | 6:00  | 0.3            | NE        |
| 20-Oct-20                           | 7:00  | 0.9            | NNW       |
| 20-Oct-20                           | 8:00  | 0.2            | ENE       |
| 20-Oct-20                           | 9:00  | 0.2            | NNE       |
| 20-Oct-20                           | 10:00 | 0.3            | NW        |
| 20-Oct-20                           | 11:00 | 0.1            | NNE       |
| 20-Oct-20                           | 12:00 | 0.1            | NE        |
| 20-Oct-20                           | 13:00 | 0.1            | E         |
| 20-Oct-20                           | 14:00 | 1              | NNW       |
| 20-Oct-20                           | 15:00 | 0.1            | N         |
| 20-Oct-20                           | 16:00 | 0.3            | NNE       |
| 20-Oct-20                           | 17:00 | 0.1            | N         |
| 20-Oct-20                           | 18:00 | 0.5            | N         |
| 20-Oct-20                           | 19:00 | 0.6            | W         |
| 20-Oct-20                           | 20:00 | 0.3            | NE        |
| 20-Oct-20                           | 21:00 | 1.7            | ENE       |
| 20-Oct-20                           | 22:00 | 0.1            | NE        |
| 20-Oct-20                           | 23:00 | 0.2            | NE        |
| 21-Oct-20                           | 0:00  | 0.1            | ENE       |

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 21-Oct-20                           | 1:00  | 0.2            | NE        |
| 21-Oct-20                           | 2:00  | 0.3            | NE        |
| 21-Oct-20                           | 3:00  | 0.4            | N         |
| 21-Oct-20                           | 4:00  | 0.3            | NE        |
| 21-Oct-20                           | 5:00  | 0.1            | NNE       |
| 21-Oct-20                           | 6:00  | 0.2            | ESE       |
| 21-Oct-20                           | 7:00  | 0.2            | ENE       |
| 21-Oct-20                           | 8:00  | 0.1            | NNE       |
| 21-Oct-20                           | 9:00  | 1.4            | E         |
| 21-Oct-20                           | 10:00 | 0.4            | N         |
| 21-Oct-20                           | 11:00 | 1              | ENE       |
| 21-Oct-20                           | 12:00 | 0.1            | ENE       |
| 21-Oct-20                           | 13:00 | 0.2            | NNE       |
| 21-Oct-20                           | 14:00 | 1.6            | NE        |
| 21-Oct-20                           | 15:00 | 0.5            | N         |
| 21-Oct-20                           | 16:00 | 0.2            | NE        |
| 21-Oct-20                           | 17:00 | 0.2            | NNE       |
| 21-Oct-20                           | 18:00 | 0.1            | ENE       |
| 21-Oct-20                           | 19:00 | 0.1            | N         |
| 21-Oct-20                           | 20:00 | 0.1            | NW        |
| 21-Oct-20                           | 21:00 | 0.1            | N         |
| 21-Oct-20                           | 22:00 | 0.2            | NNE       |
| 21-Oct-20                           | 23:00 | 0.2            | NE        |
| 22-Oct-20                           | 0:00  | 0.3            | ENE       |
| 22-Oct-20                           | 1:00  | 0.1            | NE        |
| 22-Oct-20                           | 2:00  | 1.2            | NNE       |
| 22-Oct-20                           | 3:00  | 0.1            | NNE       |
| 22-Oct-20                           | 4:00  | 0.1            | NNE       |
| 22-Oct-20                           | 5:00  | 1.2            | NE        |
| 22-Oct-20                           | 6:00  | 0.1            | SE        |
| 22-Oct-20                           | 7:00  | 0.1            | NE        |
| 22-Oct-20                           | 8:00  | 0.3            | S         |
| 22-Oct-20                           | 9:00  | 0.2            | ENE       |
| 22-Oct-20                           | 10:00 | 1              | NE        |
| 22-Oct-20                           | 11:00 | 1.4            | E         |
| 22-Oct-20                           | 12:00 | 0.9            | NNE       |
| 22-Oct-20                           | 13:00 | 4.2            | NNW       |
| 22-Oct-20                           | 14:00 | 0.9            | NE        |
| 22-Oct-20                           | 15:00 | 0.9            | ENE       |
| 22-Oct-20                           | 16:00 | 1.4            | NNE       |
| 22-Oct-20                           | 17:00 | 0.7            | N         |
| 22-Oct-20                           | 18:00 | 0.7            | ENE       |
| 22-Oct-20                           | 19:00 | 0.1            | N         |
| 22-Oct-20                           | 20:00 | 0.1            | ENE       |
| 22-Oct-20                           | 21:00 | 0.1            | E         |
| 22-Oct-20                           | 22:00 | 0.4            | NNE       |
| 22-Oct-20                           | 23:00 | 0.4            | N         |
| 23-Oct-20                           | 0:00  | 0.3            | NNE       |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 23-Oct-20                           | 1:00  | 0.1            | ENE       |
| 23-Oct-20                           | 2:00  | 2.3            | E         |
| 23-Oct-20                           | 3:00  | 0.3            | NE        |
| 23-Oct-20                           | 4:00  | 0.1            | ENE       |
| 23-Oct-20                           | 5:00  | 1.2            | E         |
| 23-Oct-20                           | 6:00  | 0.1            | NE        |
| 23-Oct-20                           | 7:00  | 0.3            | ENE       |
| 23-Oct-20                           | 8:00  | 1.6            | NE        |
| 23-Oct-20                           | 9:00  | 0.4            | E         |
| 23-Oct-20                           | 10:00 | 0.5            | NE        |
| 23-Oct-20                           | 11:00 | 1.1            | NE        |
| 23-Oct-20                           | 12:00 | 1.7            | ENE       |
| 23-Oct-20                           | 13:00 | 0.7            | NE        |
| 23-Oct-20                           | 14:00 | 0.1            | E         |
| 23-Oct-20                           | 15:00 | 0.5            | NE        |
| 23-Oct-20                           | 16:00 | 0.8            | E         |
| 23-Oct-20                           | 17:00 | 0.4            | E         |
| 23-Oct-20                           | 18:00 | 0.2            | NNE       |
| 23-Oct-20                           | 19:00 | 1.3            | NNE       |
| 23-Oct-20                           | 20:00 | 0.2            | ESE       |
| 23-Oct-20                           | 21:00 | 0.1            | ENE       |
| 23-Oct-20                           | 22:00 | 0.1            | NNE       |
| 23-Oct-20                           | 23:00 | 0.1            | NE        |
| 24-Oct-20                           | 0:00  | 0.1            | ENE       |
| 24-Oct-20                           | 1:00  | 0.1            | NE        |
| 24-Oct-20                           | 2:00  | 0.1            | NW        |
| 24-Oct-20                           | 3:00  | 0.2            | NE        |
| 24-Oct-20                           | 4:00  | 0.1            | NE        |
| 24-Oct-20                           | 5:00  | 0.3            | ENE       |
| 24-Oct-20                           | 6:00  | 0.3            | ENE       |
| 24-Oct-20                           | 7:00  | 0.1            | NE        |
| 24-Oct-20                           | 8:00  | 0.6            | ENE       |
| 24-Oct-20                           | 9:00  | 0.2            | ESE       |
| 24-Oct-20                           | 10:00 | 0.4            | NE        |
| 24-Oct-20                           | 11:00 | 0.5            | ENE       |
| 24-Oct-20                           | 12:00 | 0.2            | ENE       |
| 24-Oct-20                           | 13:00 | 0.2            | NNE       |
| 24-Oct-20                           | 14:00 | 0.5            | ENE       |
| 24-Oct-20                           | 15:00 | 0.1            | ENE       |
| 24-Oct-20                           | 16:00 | 0.1            | ENE       |
| 24-Oct-20                           | 17:00 | 0.1            | NE        |
| 24-Oct-20                           | 18:00 | 0.1            | ENE       |
| 24-Oct-20                           | 19:00 | 0.1            | ENE       |
| 24-Oct-20                           | 20:00 | 0.1            | N         |
| 24-Oct-20                           | 21:00 | 0.1            | NE        |
| 24-Oct-20                           | 22:00 | 0.1            | NNE       |
| 24-Oct-20                           | 23:00 | 0.1            | E         |
| 25-Oct-20                           | 0:00  | 0.1            | ENE       |

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 25-Oct-20                           | 1:00  | 0.1            | ENE       |
| 25-Oct-20                           | 2:00  | 0.1            | E         |
| 25-Oct-20                           | 3:00  | 0.1            | E         |
| 25-Oct-20                           | 4:00  | 0.1            | ENE       |
| 25-Oct-20                           | 5:00  | 0.1            | ENE       |
| 25-Oct-20                           | 6:00  | 0.1            | NE        |
| 25-Oct-20                           | 7:00  | 0.1            | NE        |
| 25-Oct-20                           | 8:00  | 0.1            | E         |
| 25-Oct-20                           | 9:00  | 0.1            | E         |
| 25-Oct-20                           | 10:00 | 0.4            | ENE       |
| 25-Oct-20                           | 11:00 | 0.3            | ENE       |
| 25-Oct-20                           | 12:00 | 0.6            | ENE       |
| 25-Oct-20                           | 13:00 | 0.1            | ESE       |
| 25-Oct-20                           | 14:00 | 0.1            | ENE       |
| 25-Oct-20                           | 15:00 | 0.4            | SE        |
| 25-Oct-20                           | 16:00 | 0.4            | ENE       |
| 25-Oct-20                           | 17:00 | 0.1            | ENE       |
| 25-Oct-20                           | 18:00 | 0.1            | ENE       |
| 25-Oct-20                           | 19:00 | 0.1            | S         |
| 25-Oct-20                           | 20:00 | 0.1            | E         |
| 25-Oct-20                           | 21:00 | 0.1            | E         |
| 25-Oct-20                           | 22:00 | 0.1            | E         |
| 25-Oct-20                           | 23:00 | 0.1            | ESE       |
| 26-Oct-20                           | 0:00  | 0.1            | E         |
| 26-Oct-20                           | 1:00  | 0.1            | ENE       |
| 26-Oct-20                           | 2:00  | 0.1            | ENE       |
| 26-Oct-20                           | 3:00  | 0.1            | ENE       |
| 26-Oct-20                           | 4:00  | 0.1            | ENE       |
| 26-Oct-20                           | 5:00  | 0.1            | NE        |
| 26-Oct-20                           | 6:00  | 0.1            | E         |
| 26-Oct-20                           | 7:00  | 0.1            | NE        |
| 26-Oct-20                           | 8:00  | 0.1            | ENE       |
| 26-Oct-20                           | 9:00  | 0.2            | ENE       |
| 26-Oct-20                           | 10:00 | 0.1            | W         |
| 26-Oct-20                           | 11:00 | 0.9            | ENE       |
| 26-Oct-20                           | 12:00 | 0.1            | NNE       |
| 26-Oct-20                           | 13:00 | 0.1            | SE        |
| 26-Oct-20                           | 14:00 | 0.1            | SSE       |
| 26-Oct-20                           | 15:00 | 0.1            | E         |
| 26-Oct-20                           | 16:00 | 0.1            | ENE       |
| 26-Oct-20                           | 17:00 | 0.1            | ENE       |
| 26-Oct-20                           | 18:00 | 0.1            | ENE       |
| 26-Oct-20                           | 19:00 | 0.1            | ESE       |
| 26-Oct-20                           | 20:00 | 0.1            | ESE       |
| 26-Oct-20                           | 21:00 | 0.1            | ENE       |
| 26-Oct-20                           | 22:00 | 0.1            | ENE       |
| 26-Oct-20                           | 23:00 | 0.1            | E         |
| 27-Oct-20                           | 0:00  | 0.1            | ENE       |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 27-Oct-20                           | 1:00  | 0.1            | E         |
| 27-Oct-20                           | 2:00  | 0.1            | ENE       |
| 27-Oct-20                           | 3:00  | 0.2            | NE        |
| 27-Oct-20                           | 4:00  | 0.1            | E         |
| 27-Oct-20                           | 5:00  | 0.1            | NNE       |
| 27-Oct-20                           | 6:00  | 0.1            | NNE       |
| 27-Oct-20                           | 7:00  | 0.2            | E         |
| 27-Oct-20                           | 8:00  | 0.1            | ESE       |
| 27-Oct-20                           | 9:00  | 0.1            | ENE       |
| 27-Oct-20                           | 10:00 | 0.1            | ENE       |
| 27-Oct-20                           | 11:00 | 0.1            | NE        |
| 27-Oct-20                           | 12:00 | 0.1            | WSW       |
| 27-Oct-20                           | 13:00 | 0.1            | SE        |
| 27-Oct-20                           | 14:00 | 0.1            | ENE       |
| 27-Oct-20                           | 15:00 | 0.2            | ENE       |
| 27-Oct-20                           | 16:00 | 0.1            | ENE       |
| 27-Oct-20                           | 17:00 | 0.1            | E         |
| 27-Oct-20                           | 18:00 | 0.2            | E         |
| 27-Oct-20                           | 19:00 | 0.1            | ENE       |
| 27-Oct-20                           | 20:00 | 0.1            | SSE       |
| 27-Oct-20                           | 21:00 | 0.1            | ENE       |
| 27-Oct-20                           | 22:00 | 0.1            | ENE       |
| 27-Oct-20                           | 23:00 | 0.1            | SSE       |
| 28-Oct-20                           | 0:00  | 0.2            | ENE       |
| 28-Oct-20                           | 1:00  | 0.1            | E         |
| 28-Oct-20                           | 2:00  | 0.1            | NE        |
| 28-Oct-20                           | 3:00  | 0.1            | ENE       |
| 28-Oct-20                           | 4:00  | 0.1            | NE        |
| 28-Oct-20                           | 5:00  | 0.1            | ENE       |
| 28-Oct-20                           | 6:00  | 0.1            | NNE       |
| 28-Oct-20                           | 7:00  | 0.1            | ENE       |
| 28-Oct-20                           | 8:00  | 0.1            | NE        |
| 28-Oct-20                           | 9:00  | 0.1            | NE        |
| 28-Oct-20                           | 10:00 | 0.1            | ENE       |
| 28-Oct-20                           | 11:00 | 0.1            | ENE       |
| 28-Oct-20                           | 12:00 | 0.1            | E         |
| 28-Oct-20                           | 13:00 | 0.1            | N         |
| 28-Oct-20                           | 14:00 | 0.3            | E         |
| 28-Oct-20                           | 15:00 | 0.1            | ENE       |
| 28-Oct-20                           | 16:00 | 0.1            | ENE       |
| 28-Oct-20                           | 17:00 | 0.1            | ENE       |
| 28-Oct-20                           | 18:00 | 0.1            | ESE       |
| 28-Oct-20                           | 19:00 | 0.1            | E         |
| 28-Oct-20                           | 20:00 | 0.1            | ESE       |
| 28-Oct-20                           | 21:00 | 0.2            | NE        |
| 28-Oct-20                           | 22:00 | 0.1            | ENE       |
| 28-Oct-20                           | 23:00 | 0.2            | ENE       |
| 29-Oct-20                           | 0:00  | 0.2            | ENE       |

APPENDIX C - WEATHERING CONDITINS DURING MONITORING PERIOD

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 29-Oct-20                           | 1:00  | 0.2            | ENE       |
| 29-Oct-20                           | 2:00  | 0.2            | ENE       |
| 29-Oct-20                           | 3:00  | 0.2            | NE        |
| 29-Oct-20                           | 4:00  | 0.2            | NE        |
| 29-Oct-20                           | 5:00  | 0.2            | ENE       |
| 29-Oct-20                           | 6:00  | 0.2            | NE        |
| 29-Oct-20                           | 7:00  | 0.3            | E         |
| 29-Oct-20                           | 8:00  | 0.2            | ENE       |
| 29-Oct-20                           | 9:00  | 0.2            | E         |
| 29-Oct-20                           | 10:00 | 0.2            | NNE       |
| 29-Oct-20                           | 11:00 | 0.2            | E         |
| 29-Oct-20                           | 12:00 | 0.3            | WSW       |
| 29-Oct-20                           | 13:00 | 0.6            | NNE       |
| 29-Oct-20                           | 14:00 | 0.2            | NNE       |
| 29-Oct-20                           | 15:00 | 0.3            | ENE       |
| 29-Oct-20                           | 16:00 | 0.2            | N         |
| 29-Oct-20                           | 17:00 | 0.4            | NE        |
| 29-Oct-20                           | 18:00 | 0.2            | ENE       |
| 29-Oct-20                           | 19:00 | 0.4            | N         |
| 29-Oct-20                           | 20:00 | 0.1            | NE        |
| 29-Oct-20                           | 21:00 | 0.1            | NE        |
| 29-Oct-20                           | 22:00 | 0.1            | N         |
| 29-Oct-20                           | 23:00 | 0.1            | NNW       |
| 30-Oct-20                           | 0:00  | 0.1            | NNE       |
| 30-Oct-20                           | 1:00  | 0.1            | NE        |
| 30-Oct-20                           | 2:00  | 0.1            | NNE       |
| 30-Oct-20                           | 3:00  | 0.1            | ENE       |
| 30-Oct-20                           | 4:00  | 0.1            | NE        |
| 30-Oct-20                           | 5:00  | 0.1            | ENE       |
| 30-Oct-20                           | 6:00  | 0.1            | NE        |
| 30-Oct-20                           | 7:00  | 0.1            | NNE       |
| 30-Oct-20                           | 8:00  | 0.1            | NE        |
| 30-Oct-20                           | 9:00  | 0.1            | NNE       |
| 30-Oct-20                           | 10:00 | 0.2            | E         |
| 30-Oct-20                           | 11:00 | 0.2            | NE        |
| 30-Oct-20                           | 12:00 | 0.2            | ENE       |
| 30-Oct-20                           | 13:00 | 0.1            | E         |
| 30-Oct-20                           | 14:00 | 0.1            | E         |
| 30-Oct-20                           | 15:00 | 0.1            | NNE       |
| 30-Oct-20                           | 16:00 | 0.2            | E         |
| 30-Oct-20                           | 17:00 | 0.1            | ENE       |
| 30-Oct-20                           | 18:00 | 0.1            | ENE       |
| 30-Oct-20                           | 19:00 | 0.1            | ENE       |
| 30-Oct-20                           | 20:00 | 0.1            | ENE       |
| 30-Oct-20                           | 21:00 | 0.1            | E         |
| 30-Oct-20                           | 22:00 | 0.1            | ENE       |
| 30-Oct-20                           | 23:00 | 0.1            | E         |
| 31-Oct-20                           | 0:00  | 0.1            | ESE       |

| Table II: Wind Speed and Directions |       |                |           |
|-------------------------------------|-------|----------------|-----------|
| Date                                | Time  | Wind Speed m/s | Direction |
| 31-Oct-20                           | 1:00  | 0.1            | NNE       |
| 31-Oct-20                           | 2:00  | 0.1            | NE        |
| 31-Oct-20                           | 3:00  | 0.1            | ENE       |
| 31-Oct-20                           | 4:00  | 0.1            | ENE       |
| 31-Oct-20                           | 5:00  | 0.1            | E         |
| 31-Oct-20                           | 6:00  | 0.1            | ESE       |
| 31-Oct-20                           | 7:00  | 0.1            | NE        |
| 31-Oct-20                           | 8:00  | 0.1            | SE        |
| 31-Oct-20                           | 9:00  | 0.2            | NE        |
| 31-Oct-20                           | 10:00 | 0.1            | NNE       |
| 31-Oct-20                           | 11:00 | 0.1            | E         |
| 31-Oct-20                           | 12:00 | 0.3            | E         |
| 31-Oct-20                           | 13:00 | 0.1            | SE        |
| 31-Oct-20                           | 14:00 | 0.1            | S         |
| 31-Oct-20                           | 15:00 | 0.5            | SE        |
| 31-Oct-20                           | 16:00 | 0.1            | ENE       |
| 31-Oct-20                           | 17:00 | 0.1            | E         |
| 31-Oct-20                           | 18:00 | 0.1            | ESE       |
| 31-Oct-20                           | 19:00 | 0.1            | ENE       |
| 31-Oct-20                           | 20:00 | 0.1            | SSE       |
| 31-Oct-20                           | 21:00 | 0.1            | ESE       |
| 31-Oct-20                           | 22:00 | 0.1            | E         |
| 31-Oct-20                           | 23:00 | 0.1            | NNE       |

---

---

**APPENDIX D  
ENVIRONMENTAL MONITORING  
SCHEDULES**

---

---



**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area**  
**Impact Air and Noise Monitoring Schedule for October 2020**

| Sunday | Monday  | Tuesday            | Wednesday   | Thursday           | Friday                    | Saturday           |
|--------|---|--------------------|---|--------------------|---------------------------|--------------------|
| 27-Sep | 28-Sep  | 29-Sep             | 30-Sep  | 1-Oct              | 2-Oct                     | 3-Oct              |
|        | 1-hr TSP x 3 [AM2]<br><br>Noise [M3(A), M4 & M5(C)] |                    | 24-hr TSP [AM2(A)]                                  |                    |                           | 1-hr TSP x 3 [AM2] |
| 4-Oct  | 5-Oct   | 6-Oct              | 7-Oct   | 8-Oct              | 9-Oct                     | 10-Oct             |
|        |   | 24-hr TSP [AM2(A)] | 1-hr TSP x 3 [AM2]<br><br>Noise [M3(A), M4 & M5(C)] |                    |                           |                    |
| 11-Oct | 12-Oct  | 13-Oct             | 14-Oct  | 15-Oct             | 16-Oct                    | 17-Oct             |
|        | 24-hr TSP [AM2(A)]                                  |                    | 1-hr TSP x 3 [AM2]<br><br>Noise [M3(A), M4 & M5(C)] |                    |                           | 24-hr TSP [AM2(A)] |
| 18-Oct | 19-Oct  | 20-Oct             | 21-Oct  | 22-Oct             | 23-Oct                    | 24-Oct             |
|        | 1-hr TSP x 3 [AM2]<br><br>Noise [M3(A), M4 & M5(C)] |                    |   | 24-hr TSP [AM2(A)] | 1-hr TSP x 3 [AM2]        |                    |
| 25-Oct | 26-Oct  | 27-Oct             | 28-Oct  | 29-Oct             | 30-Oct                    | 31-Oct             |
|        |   | 24-hr TSP [AM2(A)] |   | 1-hr TSP x 3 [AM2] | Noise [M3(A), M4 & M5(C)] |                    |

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

**Air Quality Monitoring Station**

AM2 - Lee Kau Yan Memorial School  
AM2(A) - Ng Wah Catholic Secondary School

**Noise Monitoring Station**

M3(A) - The Bridge connecting The Latitude  
M4 - Lee Kau Yan Memorial School  
M5(C) - Mercy Grace's Home

**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area**  
**Tentative Impact Air and Noise Monitoring Schedule for November 2020**

| Sunday | Monday  | Tuesday   | Wednesday                                       | Thursday  | Friday             | Saturday           |
|--------|---|---|---|---|--------------------|--------------------|
| 1-Nov  | 2-Nov   | 3-Nov   | 4-Nov   | 5-Nov   | 6-Nov              | 7-Nov              |
|        |   | 24-hr TSP [AM2(A)]                              | 1-hr TSP x 3 [AM2]<br>Noise [M3(A), M4 & M5(C)] |   |                    |                    |
| 8-Nov  | 9-Nov   | 10-Nov  | 11-Nov  | 12-Nov  | 13-Nov             | 14-Nov             |
|        | 24-hr TSP [AM2(A)]                              | 1-hr TSP x 3 [AM2]<br>Noise [M3(A), M4 & M5(C)] |   |   |                    | 24-hr TSP [AM2(A)] |
| 15-Nov | 16-Nov  | 17-Nov  | 18-Nov  | 19-Nov  | 20-Nov             | 21-Nov             |
|        | 1-hr TSP x 3 [AM2]<br>Noise [M3(A), M4 & M5(C)] |   |   | 24-hr TSP [AM2(A)]                              | 1-hr TSP x 3 [AM2] |                    |
| 22-Nov | 23-Nov  | 24-Nov  | 25-Nov  | 26-Nov  | 27-Nov             | 28-Nov             |
|        |   |   | 24-hr TSP [AM2(A)]                              | 1-hr TSP x 3 [AM2]<br>Noise [M3(A), M4 & M5(C)] | 1-hr TSP x 3 [AM2] |                    |
| 29-Nov | 30-Nov  | 1-Dec   | 2-Dec   | 3-Dec   | 4-Dec              | 5-Dec              |
|        |   | 24-hr TSP [AM2(A)]                              | 1-hr TSP x 3 [AM2]<br>Noise [M3(A), M4 & M5(C)] |   |                    |                    |

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

\* The noise level limit is 65dB(A) during the exam period

**Air Quality Monitoring Station**

AM2 - Lee Kau Yan Memorial School  
AM2(A) - Ng Wah Catholic Secondary School

**Noise Monitoring Station**

M3(A) - The Bridge connecting The Latitude  
M4 - Lee Kau Yan Memorial School  
M5(C) - Mercy Grace's Home

---

---

**APPENDIX E  
1-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

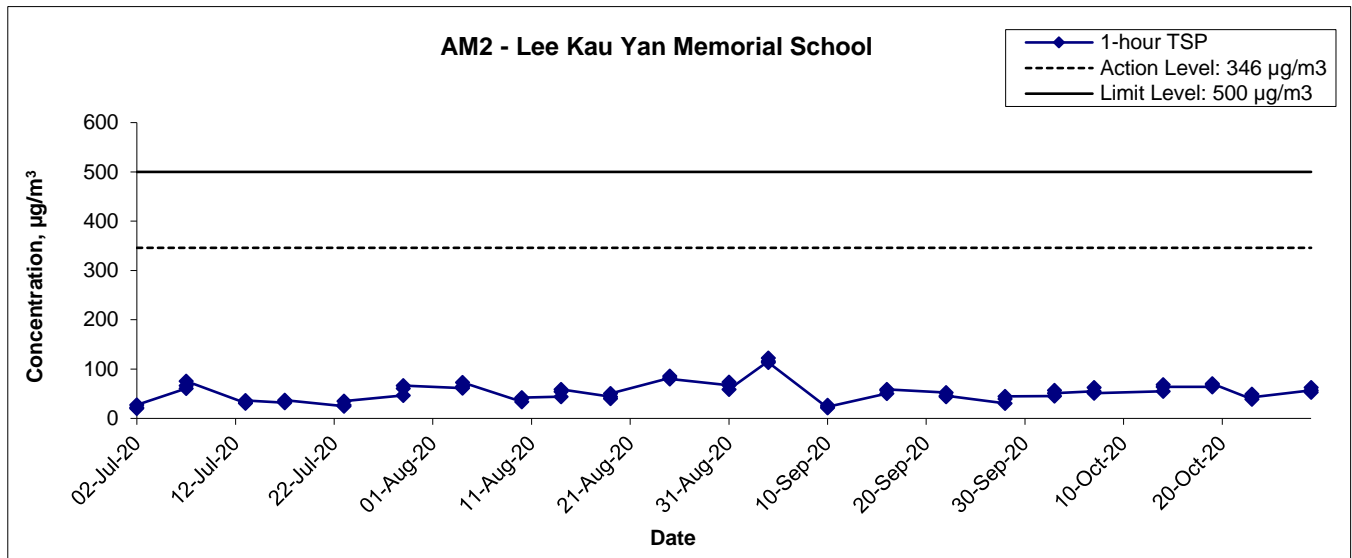
---

---

## Appendix E - 1-hour TSP Monitoring Results

| Location AM2 - Lee Kau Yan Memorial School |       |         |  |
|--|-------|---------|--|
| Date                                       | Time  | Weather | Particulate Concentration ( $\mu\text{g}/\text{m}^3$ ) |
| 3-Oct-20                                   | 10:47 | Fine    | 46   |
| 3-Oct-20                                   | 11:47 | Fine    | 57   |
| 3-Oct-20                                   | 12:47 | Fine    | 51   |
| 7-Oct-20                                   | 14:47 | Fine    | 55   |
| 7-Oct-20                                   | 15:47 | Fine    | 63   |
| 7-Oct-20                                   | 16:47 | Fine    | 51   |
| 14-Oct-20                                  | 14:00 | Fine    | 55   |
| 14-Oct-20                                  | 15:00 | Fine    | 68   |
| 14-Oct-20                                  | 16:00 | Fine    | 64   |
| 19-Oct-20                                  | 14:00 | Sunny   | 64   |
| 19-Oct-20                                  | 15:00 | Sunny   | 68   |
| 19-Oct-20                                  | 16:00 | Sunny   | 70   |
| 23-Oct-20                                  | 9:00  | Sunny   | 39   |
| 23-Oct-20                                  | 10:00 | Sunny   | 49   |
| 23-Oct-20                                  | 11:00 | Sunny   | 43   |
| 29-Oct-20                                  | 14:17 | Fine    | 57   |
| 29-Oct-20                                  | 15:17 | Fine    | 63   |
| 29-Oct-20                                  | 16:17 | Fine    | 53   |
| Average                                    |       |         | 56   |
| Maximum                                    |       |         | 70   |
| Minimum                                    |       |         | 39   |

### 1-hr TSP Concentration Levels



|   |                |                        |  |
|---|----------------|------------------------|--|
| Title<br>Contract No. KLN/2016/04<br>Environmental Monitoring Works for Contract No. KL/2015/02<br>Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area<br>Graphical Presentation of 1-hour TSP Monitoring Results | Scale<br>N.T.S | Project<br>No. MA16043 |  |
|   |                | Appendix<br>E          |  |

---

---

**APPENDIX F  
24-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

---

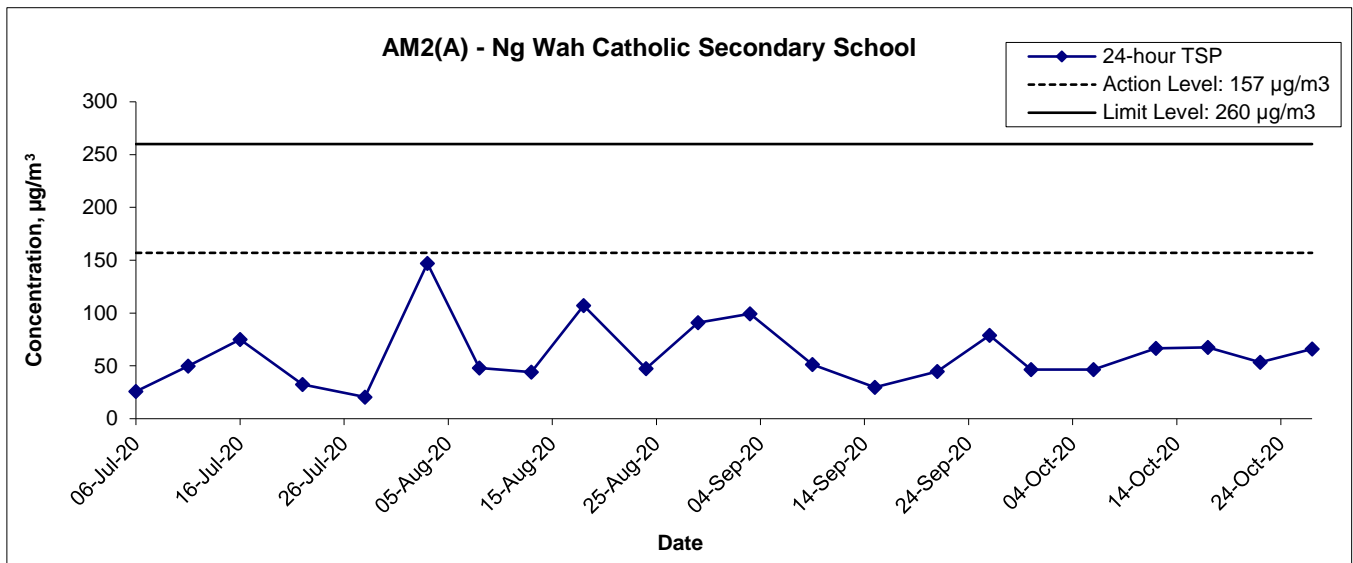
---

## Appendix F - 24-hour TSP Monitoring Results

### Location AM2(A) - Ng Wah Catholic Secondary School

| Start Date | Weather Condition | Air Temp. (K) | Atmospheric Pressure, Pa (mmHg) | Filter Weight (g) |        | Particulate weight (g) | Elapse Time |        | Sampling Time (hrs.) | Flow Rate (m <sup>3</sup> /min.) |       | Av. Flow (m3/min) | Total vol. (m3) | Conc. (µg/m3) |
|------------|-------------------|---------------|---------------------------------|-------------------|--------|------------------------|-------------|--------|----------------------|----------------------------------|-------|-------------------|-----------------|---------------|
|            |                   |               |                                 | Initial           | Final  |                        | Initial     | Final  |                      | Initial                          | Final |                   |                 |               |
| 6-Oct-20   | Fine              | 298.4         | 761.0                           | 3.4812            | 3.5632 | 0.0820                 | 6407.1      | 6431.1 | 24.0                 | 1.23                             | 1.23  | 1.23              | 1767.4          | 46            |
| 12-Oct-20  | Fine              | 299.5         | 757.1                           | 3.4809            | 3.5982 | 0.1173                 | 6431.1      | 6455.1 | 24.0                 | 1.22                             | 1.22  | 1.22              | 1759.4          | 67            |
| 17-Oct-20  | Sunny             | 298.3         | 761.7                           | 3.4817            | 3.6012 | 0.1195                 | 6455.1      | 6479.1 | 24.0                 | 1.23                             | 1.23  | 1.23              | 1766.8          | 68            |
| 22-Oct-20  | Fine              | 297.1         | 758.0                           | 3.4805            | 3.5748 | 0.0943                 | 6479.1      | 6503.1 | 24.0                 | 1.23                             | 1.23  | 1.23              | 1766.8          | 53            |
| 27-Oct-20  | Fine              | 297.8         | 760.7                           | 3.4815            | 3.5984 | 0.1169                 | 6503.1      | 6527.1 | 24.0                 | 1.23                             | 1.23  | 1.23              | 1767.7          | 66            |
|            |                   |               |                                 |                   |        |                        |             |        |                      |                                  |       |                   | Min             | 46            |
|            |                   |               |                                 |                   |        |                        |             |        |                      |                                  |       |                   | Max             | 68            |
|            |                   |               |                                 |                   |        |                        |             |        |                      |                                  |       |                   | Average         | 60            |

### 24-hr TSP Concentration Levels



|  |                |                        |  |
|--|----------------|------------------------|--|
| Title<br>Contract No. KLN/2016/04<br>Environmental Monitoring Works for Contract No. KL/2015/02<br>Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area<br>Graphical Presentation of 24-hour TSP Monitoring Results | Scale<br>N.T.S | Project<br>No. MA16043 |  |
|  |                | Appendix<br>F          |  |



---

---

**APPENDIX G  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATION**

---

---

## Appendix G - Noise Monitoring Results

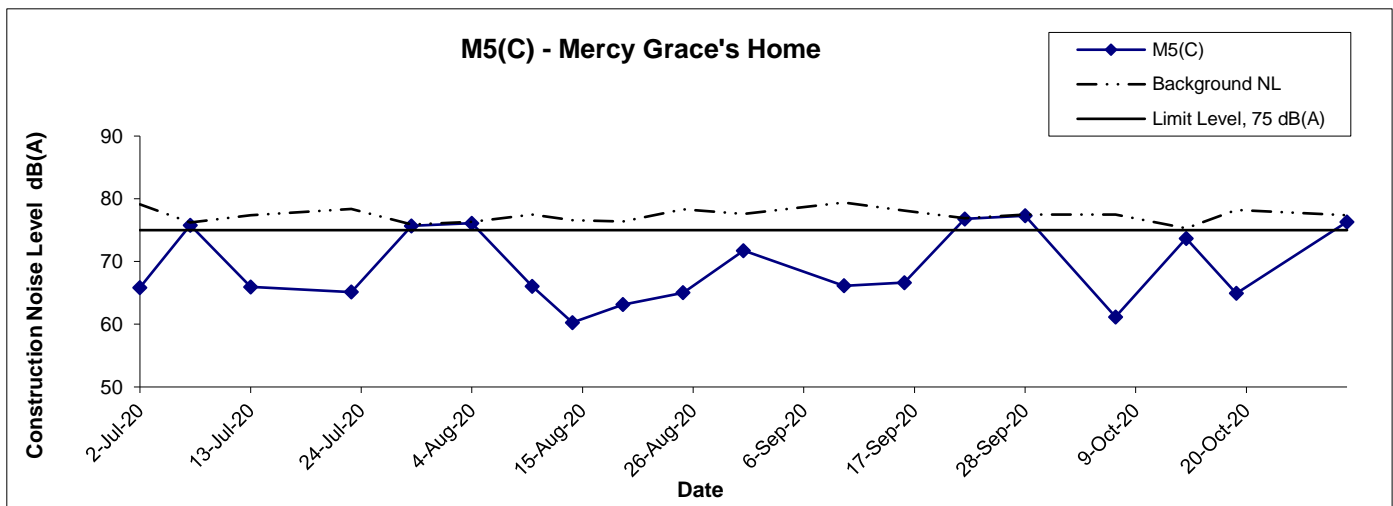
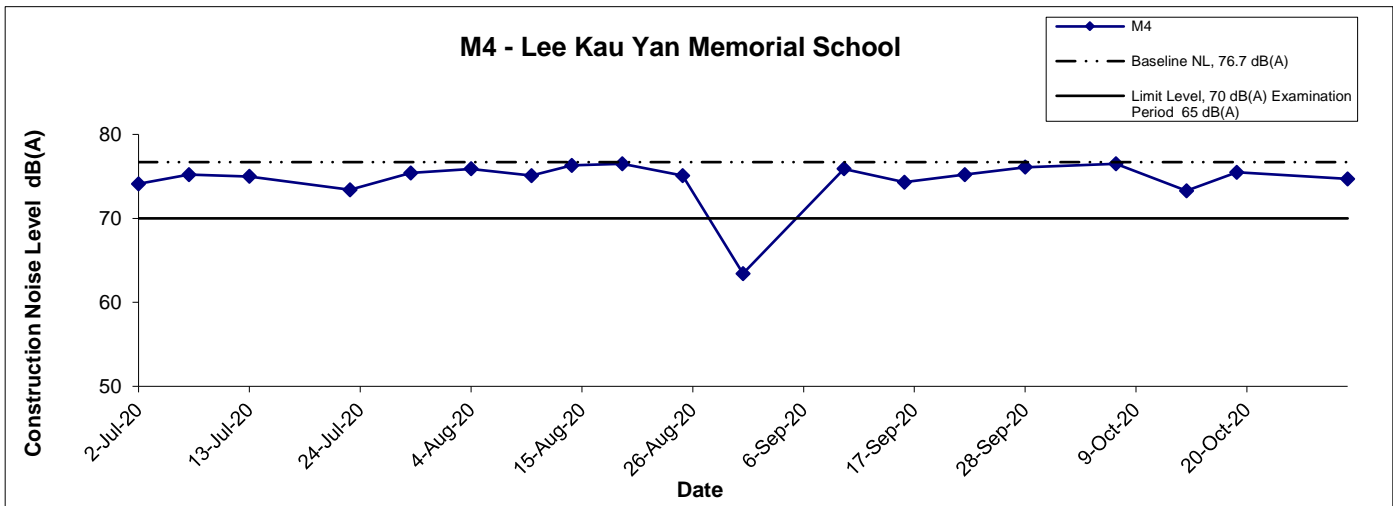
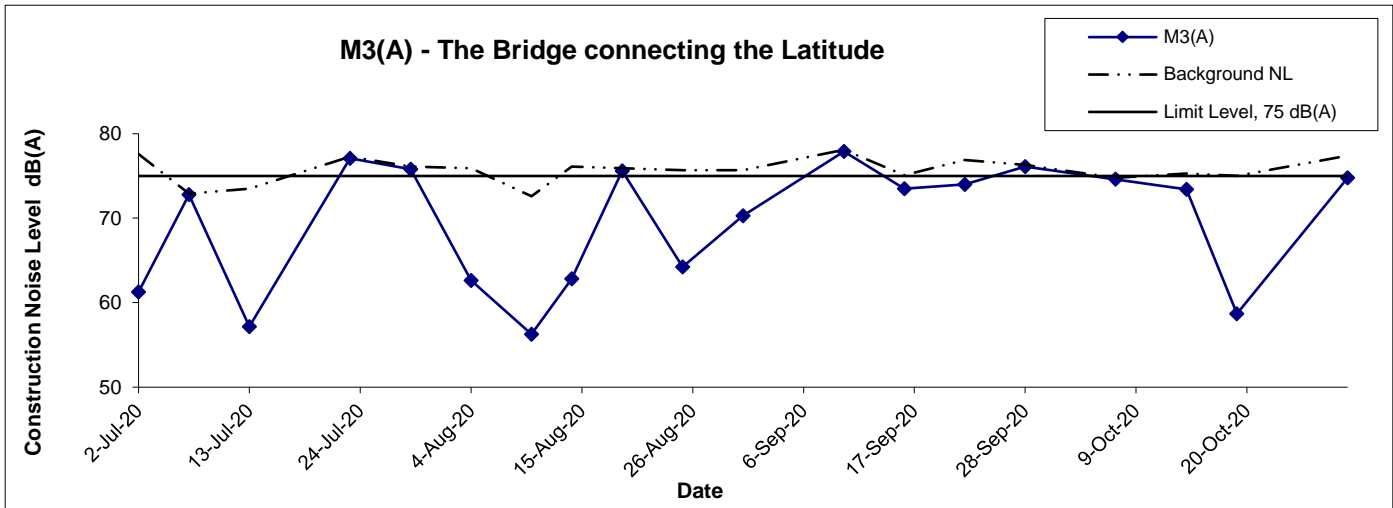
| Location M3(A) - The Bridge connecting The Latitude |       |         |                       |                 |                 |                  |                          |                       |
|---|-------|---------|-----------------------|-----------------|-----------------|------------------|--------------------------|-----------------------|
| Date  | Time  | Weather | Unit: dB (A) (30-min) |                 |                 |                  |                          |                       |
|   |       |         | Measured Noise Level  |                 |                 | Background Noise | Construction Noise Level |                       |
|   |       |         | L <sub>eq</sub>       | L <sub>10</sub> | L <sub>90</sub> | L <sub>eq</sub>  | L <sub>eq</sub>          |                       |
| 7-Oct-20  | 14:06 | Fine    | 75                    | 77              | 72              | 75               | 75                       | Measured ≤ Background |
| 14-Oct-20   | 11:00 | Fine    | 73                    | 76              | 71              | 75               | 73                       | Measured ≤ Background |
| 19-Oct-20   | 11:30 | Sunny   | 75                    | 76              | 74              | 75               | 59                       |                       |
| 30-Oct-20   | 11:00 | Sunny   | 75                    | 77              | 72              | 77               | 75                       | Measured ≤ Background |

| Location M4 - Lee Kau Yan Memorial School |       |         |                       |                 |                 |                 |                          |                     |
|---|-------|---------|-----------------------|-----------------|-----------------|-----------------|--------------------------|---------------------|
| Date                                      | Time  | Weather | Unit: dB (A) (30-min) |                 |                 |                 |                          |                     |
|   |       |         | Measured Noise Level  |                 |                 | Baseline Level  | Construction Noise Level |                     |
|   |       |         | L <sub>eq</sub>       | L <sub>10</sub> | L <sub>90</sub> | L <sub>eq</sub> | L <sub>eq</sub>          |                     |
| 7-Oct-20                                  | 14:47 | Fine    | 77                    | 78              | 74              | 77              | 77                       | Measured ≤ Baseline |
| 14-Oct-20                                 | 14:33 | Fine    | 73                    | 76              | 71              |                 | 73                       | Measured ≤ Baseline |
| 19-Oct-20                                 | 14:10 | Sunny   | 76                    | 77              | 74              |                 | 76                       | Measured ≤ Baseline |
| 30-Oct-20                                 | 14:21 | Sunny   | 75                    | 76              | 72              |                 | 75                       | Measured ≤ Baseline |

| Location M5(C) - Mercy Grace's Home |       |         |                       |                 |                 |                  |                          |                       |
|-------------------------------------|-------|---------|-----------------------|-----------------|-----------------|------------------|--------------------------|-----------------------|
| Date                                | Time  | Weather | Unit: dB (A) (30-min) |                 |                 |                  |                          |                       |
|                                     |       |         | Measured Noise Level  |                 |                 | Background Noise | Construction Noise Level |                       |
|                                     |       |         | L <sub>eq</sub>       | L <sub>10</sub> | L <sub>90</sub> | L <sub>eq</sub>  | L <sub>eq</sub>          |                       |
| 7-Oct-20                            | 11:22 | Fine    | 78                    | 79              | 75              | 78               | 61                       |                       |
| 14-Oct-20                           | 13:00 | Fine    | 74                    | 75              | 72              | 75               | 74                       | Measured ≤ Background |
| 19-Oct-20                           | 13:00 | Sunny   | 78                    | 81              | 75              | 78               | 65                       |                       |
| 30-Oct-20                           | 13:00 | Sunny   | 76                    | 78              | 75              | 77               | 76                       | Measured ≤ Background |

\*All data has been presented to the nearest integer

## Noise Levels



Remarks: <sup>[1]</sup> The construction noise levels in the Tables in Appendix G were adopted for plotting the graphs

|   |                |                        |          |
|---|----------------|------------------------|----------|
| Title<br>Contract No. KLN/2016/04<br>Environmental Monitoring Works for Contract No. KL/2015/02<br>Kai Tak Development –Stage 5A Infrastructure at Former North Apron Area<br>Graphical Presentation of Construction Noise Monitoring Results | Scale<br>N.T.S | Project No.<br>MA16043 | CINOTECH |
|   | Date           | Appendix<br>G          |          |

---

---

**APPENDIX H**  
**SUMMARY OF EXCEEDANCE**

---

---

## **Appendix H – Summary of Exceedance**

### **Exceedance Report for Contract No. KL/2015/02**

- (A) Exceedance Report for Air Quality  
(NIL in the reporting month)**
  
- (B) Exceedance Report for Construction Noise  
(NIL in the reporting month)**
  
- (C) Exceedance Report for Landscape and Visual  
(NIL in the reporting month)**

---

---

**APPENDIX I  
SITE AUDIT SUMMARY**

---

---

**Contract No. KLN/2016/04**

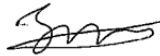

**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

|                            |                |
|----------------------------|----------------|
| Checklist Reference Number | 201005         |
| Date                       | 5 October 2020 |
| Time                       | 14:00 – 14:50  |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>C. Air Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
| R1       | • The construction material was not placed properly near the Road D1.  | E7               |
| R2       | • Waste accumulation was observed at Portion 6.  | E1               |
|          | <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>G. Permits /Licences</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>H. Others</b>   |                  |
|          | • Following up on the previous site inspection (200928): No environmental deficiency was identified during previous site inspection. |                  |

|             | Name        | Signature  | Date           |
|-------------|-------------|--|----------------|
| Recorded by | Tommy Lam   |  | 5 October 2020 |
| Checked by  | Colman Wong |  | 8 October 2020 |

**Contract No. KLN/2016/04**

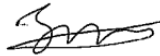
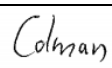
**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

|                            |                 |
|----------------------------|-----------------|
| Checklist Reference Number | 201014          |
| Date                       | 14 October 2020 |
| Time                       | 9:30 – 10:30    |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b><i>B. Water Quality</i></b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b><i>C. Air Quality</i></b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b><i>D. Noise</i></b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b><i>E. Waste / Chemical Management</i></b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b><i>F. Visual and Landscape</i></b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b><i>G. Permits /Licences</i></b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          |  |                  |
|          | <b><i>H. Others</i></b>  |                  |
|          | • Following up on the previous site inspection (201014): All the items in the previous inspection were rectified/improved by the Contractor. |                  |

|             | Name        | Signature  | Date            |
|-------------|-------------|--|-----------------|
| Recorded by | Tommy Lam   |  | 15 October 2020 |
| Checked by  | Colman Wong |  | 19 October 2020 |



**Contract No. KLN/2016/04**

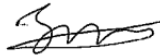
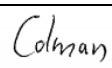
**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

|                            |                 |
|----------------------------|-----------------|
| Checklist Reference Number | 201019          |
| Date                       | 19 October 2020 |
| Time                       | 14:00 – 14:45   |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>C. Air Quality</b>  |                  |
| R1       | • The dusty material was not covered with dust screen at Portion 6.  | C7               |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>G. Permits /Licences</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>H. Others</b>   |                  |
|          | • Following up on the previous site inspection (201014): All the items in the previous inspection were rectified/improved by the Contractor. |                  |

|             | Name        | Signature  | Date            |
|-------------|-------------|--|-----------------|
| Recorded by | Tommy Lam   |  | 19 October 2020 |
| Checked by  | Colman Wong |  | 27 October 2020 |

**Contract No. KLN/2016/04**

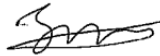
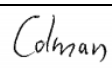
**Environmental Monitoring Works for Contract No. KL/2015/02**

**Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area**

**Weekly Site Inspection Record Summary  
Inspection Information**

|                            |                 |
|----------------------------|-----------------|
| Checklist Reference Number | 201027          |
| Date                       | 27 October 2020 |
| Time                       | 14:00 – 15:00   |

| Ref. No. | Non-Compliance   | Related Item No. |
|----------|--|------------------|
| -        | None identified  | -                |
| Ref. No. | Remarks/Observations   | Related Item No. |
|          | <b>B. Water Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>C. Air Quality</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>D. Noise</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>E. Waste / Chemical Management</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>F. Visual and Landscape</b>   |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>G. Permits /Licences</b>  |                  |
|          | • No environmental deficiency was identified during site inspection.   |                  |
|          | <b>H. Others</b>   |                  |
|          | • Following up on the previous site inspection (201019): All the items in the previous inspection were rectified/improved by the Contractor. |                  |

|             | Name        | Signature  | Date            |
|-------------|-------------|--|-----------------|
| Recorded by | Tommy Lam   |  | 27 October 2020 |
| Checked by  | Colman Wong |  | 30 October 2020 |

---

---

**APPENDIX J**  
**EVENT ACTION PLANS**

---

---

## Appendix J - Event Action Plans

### Event/Action Plan for Air Quality

| EVENT   | ACTION   |  |  |  |
|---|--|--|--|--|
|   | ET   | IEC  | ER   | CONTRACTOR   |
| Action Level being exceeded by one sampling                     | <ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contactor, IEC and ER;</li> <li>3. Repeat measurement to confirm finding.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>  |
| Action Level being exceeded by two or more consecutive sampling | <ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and ER;</li> <li>3. Increase monitoring frequency to daily;</li> <li>4. Discuss with IEC and Contractor on remedial actions required;</li> <li>5. Assess the effectiveness of Contractor's remedial actions;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. Conduct meeting with ET and IEC if exceedance continues.</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET and IEC on proper remedial actions;</li> <li>2. Submit proposals for remedial actions to ER and IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol> |
| Limit Level being exceeded by one sampling                      | <ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC, ER, and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Assess effectiveness of Contractor's remedial actions and keep</li> </ol>  | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> </ol>   | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be</li> </ol>  | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposals for remedial actions to ER and IEC within three</li> </ol>   |

## Appendix J - Event Action Plans

|  |  |   |   |  |
|--|--|---|---|--|
|  | EPD, IEC and ER informed of the results.   | 4. Advise the ER on the effectiveness of the proposed remedial measures.  | implemented;<br>4. Supervise implementation of remedial measures;<br>5. Conduct meeting with ET and IEC if exceedance continues.  | working days of notification;<br>4. Implement the agreed proposals.  |
| Limit Level being exceeded by two or more consecutive sampling | <ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken;</li> <li>6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> </ol> | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET, ER and IEC on proper remedial actions;</li> <li>3. Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>4. Implement the agreed proposals;</li> <li>5. Submit further remedial actions if problem still not under control;</li> <li>6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</li> </ol> |

## Appendix J - Event Action Plans

### Event/Action Plan for Construction Noise

| EVENT                       | ACTION  |   |  |   |
|-----------------------------|---|---|--|---|
|                             | ET  | IEC   | ER   | CONTRACTOR  |
| Action Level being exceeded | <ol style="list-style-type: none"> <li>1. Notify ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> |
| Limit Level being exceeded  | <ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> </ol>   | <ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial</li> </ol>  | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> </ol>  |

## Appendix J - Event Action Plans

|  |   |   |   |  |
|--|---|---|---|--|
|  | <p>5. Carry out analysis of Contractor's working procedures;</p> <p>6. Discuss with the IEC, Contractor and ER on remedial measures required;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <p>measures to be implemented;</p> <p>4. Supervise the implementation of remedial measures;</p> <p>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> | <p>4. Submit further proposal if problem still not under control;</p> <p>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</p> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p> |
|--|---|---|---|--|

## Appendix J - Event Action Plans

### Event/Action Plan for Landscape and Visual

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



## Appendix J - Event Action Plans

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

---

---

**APPENDIX K  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

---

---

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

| EIA Ref.                               | Recommended Mitigation Measures  | Implementation Status  |
|--|--|--|
| <b><i>Construction Air Quality</i></b> |  |  |
| S6.5                                   | 8 times daily watering of the work site with active dust emitting activities.  | ^  |
| S6.8                                   | <p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p> <ul style="list-style-type: none"> <li>• Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> <li>• Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> <li>• Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</li> <li>• The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> <li>• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.</li> <li>• Vehicle washing facilities should be provided at every vehicle exit point.</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</li> <li>• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul> | <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |   |   |
|------|---|---|
| S6.8 | <ul style="list-style-type: none"> <li>• <u>DWFI compound for JVBC:</u><br/>A DWFI compound is proposed at the downstream of JVC to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of JVBC and hence fully mitigate the potential odour emissions from the headspace of JVBC near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere.</li> <li>• <u>Desilting compound for KTN:</u><br/>Two desilting compounds are proposed for KTN (at Site 1D6 and Site 1P1) to contain pollution in drainage systems entering the KTAC and KTTS by interception facilities until the ultimate removal of the pollution sources. Tidal barriers and desilting facilities will form part of the compounds to prevent any accumulation of sediment within the downstream section of KTN and hence fully mitigate the potential odour emissions from the headspace of KTN near the existing discharge locations. The odour generating operations within the proposed desilting compound will be fully enclosed and the odorous air will be collected and treated by high efficiency deodorizers before discharge to the atmosphere.</li> <li>• <u>Decking or reconstruction of KTN within apron area:</u><br/>It is proposed to deck the KTN or reconstruct the KTN within the former Apron area into Kai Tak River from the south of Road D1 to the north of Road D2 along the existing alignment of KTN. The Kai Tak River will compose of a number of channels flowing with nonodorous fresh water and THEES effluent. The channel flowing with THEES effluent will be designed with the width of water surface of not more than 16m.</li> <li>• <u>Localised maintenance dredging:</u><br/>Localised maintenance dredging should be conducted to provide water depth of not less than 3.5m over the whole of KTAC and KTTS. With reference to the water depth data recorded during the odour survey, only some of the areas in the northern part of KTAC (i.e. to the north of taxiway bridge) including the area near the northern edge of KTAC, the area near western bank of KTAC, and the area near the JVC discharge have water depths shallower than 3.5m. The area involved would be about 40% of the northern KTAC and the dredging depth required would be from about 2.7m to less than 1m. The maintenance dredging to be carried out prior to the occupation of any new development in the immediate vicinity of KTAC to avoid potential localized odour impacts at the future ASRs during the maintenance</li> </ul> | <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> |
|------|---|---|

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|                           |  |                            |
|---------------------------|--|----------------------------|
|                           | <p>dredging operation.</p> <ul style="list-style-type: none"> <li>• <u>Improvement of water circulation in KTAC and KTTS:</u><br/>600m gap opening at the northern part of the former Kai Tak runway, the water circulation in KTAC and KTTS would be substantially improved. Together with the improvement in water circulation, the DO level in KTAC and KTTS would also be increased.</li> <li>• <u>In-situ sediment treatment by bioremediation:</u><br/>Bioremediation would be applied to the entire KTAC and KTTS.</li> </ul>   | N/A                        |
| <b>Construction Noise</b> |  |                            |
| S7.8                      | Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.   | ^                          |
| S7.9                      | <p>Good Site Practice:</p> <ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.</li> <li>• Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.</li> <li>• Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>• Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.</li> <li>• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>• Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul> | ^<br>^<br>^<br>^<br>^<br>^ |
| S7.9                      | Scheduling of Construction Works during School Examination Period  | ^                          |
| S7.8                      | (i) Provision of low noise surfacing in a section of Road L2; and  | N/A                        |
|                           | (ii) Provision of structural fins  | N/A                        |
| S7.8                      | (i) Avoid the sensitive façade of class room facing Road L2 and L4; and  | N/A                        |
|                           | (ii) Provision of low noise surfacing in a section of Road L2 & L4   | N/A                        |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|  |  |                          |
|--|--|--------------------------|
| S7.8                                     | (i) Provision of low noise surfacing in a section of Road L4 before occupation of Site 111; and<br>(ii) Setback of building about 5m from site boundary.   | N/A<br>N/A               |
| S7.8                                     | Setback of building about 35m to the northwest direction at 1L3 and 5m at Site 1L2.  | N/A                      |
| S7.8                                     | (i) avoid any sensitive façades with openable window facing the existing Kowloon City Road network; and Avoid the sensitive façade of class room facing Road L2 and L4; and<br>(ii) for the sensitive facades facing the To Kwa Wan direction, either setback the facades by about 5m to the northeast direction or do not provide the facades with openable window.   | N/A<br>N/A               |
| S7.8                                     | (i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or<br>(ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground   | N/A<br>N/A               |
| S7.8                                     | (i) avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures and at-source mitigation measures for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road   | ^                        |
| S7.8                                     | All the ventilation fans installed in the below will be provided with silencers or acoustics treatment.<br>(i) SPS<br>(ii) ESS<br>(iii) Tunnel Ventilation Shaft<br>(iv) EFTS depot  | N/A<br>N/A<br>N/A<br>N/A |
| S7.8                                     | Installation of retractable roof or other equivalent measures  | N/A                      |
| <b><i>Construction Water Quality</i></b> |  |                          |
| S8.8                                     | The following mitigation measures are proposed to be incorporated in the design of the SPS at KTD, including: <ul style="list-style-type: none"> <li>• Dual power supply or emergency generator should be provided at all the SPSs to secure electrical power supply;</li> <li>• Standby pumps should be provided at all SPSs to ensure smooth operation of the SPS during maintenance of the duty pumps;</li> <li>• An alarm should be installed to signal emergency high water level in the wet well at all SPSs; and</li> <li>• For all unmanned SPSs, a remote monitor system connecting SPSs with the control station through telemetry system should be provided so that swift actions could be taken in case of malfunction of unmanned facilities</li> </ul> | N/A<br>N/A<br>N/A<br>N/A |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |   |     |
|------|---|-----|
| S8.8 | <p><b>Construction Phase</b></p> <p><u>Marine-based Construction</u></p> <p><i>Capital and Maintenance Dredging for Cruise Terminal</i></p> <p>Mitigation measures for construction of the proposed cruise terminal should follow those recommended in the approved EIA for CT Dredging.</p>  | N/A |
| S8.8 | <p><i>Fireboat Berth, Runway Opening and Road T2</i></p> <p>Silt curtains should be deployed around the close grab dredger to minimize release of sediment and other contaminants for any dredging and filling activities in open water.</p>  | N/A |
| S8.8 | <p>Dredging at and near the seawall area for construction of the public landing steps cum fireboat berth should be carried out at a maximum production rate of 1,000m<sup>3</sup> per day using one grab dredger.</p>   | N/A |
| S8.8 | <p>The proposed construction method for runway opening should adopt an approach where the existing seawall at the runway will not be removed until completion of all excavation and dredging works for demolition of the runway. Thus, excavation of bulk fill and majority of the dredging works will be carried out behind the existing seawall, and the sediment plume can be effectively contained within the works area. As there is likely some accumulation of sediments alongside the runway, there will be a need to dredge the existing seabed after completion of all the demolition works. Dredging alongside the 600m opening should be carried out at a maximum production rate of 2,000m<sup>3</sup> per day using one grab dredger.</p> | N/A |
| 8.8  | <p>Dredging for Road T2 should be conducted at a maximum rate of 8,000m<sup>3</sup> per day (using four grab dredgers) whereas the sand filling should be conducted at a maximum rate of 2,000m<sup>3</sup> per day (using two grab dredgers).</p>  | N/A |
| 8.8  | <p>Silt screens shall be applied to seawater intakes at WSD seawater intake.</p>  | N/A |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |  |   |
|------|--|---|
| S8.8 | <p><u>Land-based Construction</u></p> <p><i>Construction Runoff</i></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> <li>• use of sediment traps</li> <li>• adequate maintenance of drainage systems to prevent flooding and overflow</li> </ul>   | <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> |
| S8.8 | <p>Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.</p>  | <p style="text-align: center;">^</p>                                      |
| S8.8 | <p>Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.</p> | <p style="text-align: center;">^</p>                                      |
| S8.8 | <p>Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.</p>   | <p style="text-align: center;">^</p>                                      |
| S8.8 | <p>Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m<sup>3</sup> 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.</p>   | <p style="text-align: center;">^</p>                                      |
| S8.8 | <p>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>  | <p style="text-align: center;">^</p>                                      |
| S8.8 | <p>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty</p>  | <p style="text-align: center;">^</p>                                      |



## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |  |        |
|------|--|--------|
|      | surface runoff during storm events.  |        |
| S8.8 | Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.   | N/A(1) |
| S8.8 | All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. | ^      |
| S8.8 | <i>Drainage</i><br><br>It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea   | ^      |
| S8.8 | All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.   | ^      |
| S8.8 | All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.  | ^      |
| S8.8 | <i>Sewage Effluent</i><br><br>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.  | ^      |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |  |     |
|------|--|-----|
| S8.8 | <i>Stormwater Discharges</i><br><br>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes   | ^   |
| S8.8 | <i>Debris and Litter</i><br><br>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur | ^   |
| S8.8 | <i>Construction Works at or in Close Proximity of Storm Culvert or Seafront</i><br><br>The proposed works should preferably be carried out within the dry season where the flow in the drainage channel /storm culvert/ nullah is low.   | ^   |
| S8.8 | The use of less or smaller construction plants may be specified to reduce the disturbance to the bottom sediment at the drainage channel /storm culvert / nullah.  | ^   |
| S8.8 | Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works  | ^   |
| S8.8 | Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.   | ^   |
| S8.8 | Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.   | ^   |
| S8.8 | Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.   | ^   |
| S8.8 | Mitigation measures to control site runoff from entering the nearby water environment should be implemented to minimize water quality impacts.<br><br>Surface channels should be provided along the edge of the waterfront within the work sites to intercept the runoff.  | ^   |
| S8.8 | Construction effluent, site run-off and sewage should be properly collected and/or treated.  | ^   |
| S8.8 | Any works site inside the storm water courses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the storm water quality.  | N/A |
| S8.8 | Silt curtain may be installed around the construction activities at the seafront to minimize the potential impacts due to accidental spillage of construction materials.   | N/A |
| S8.8 | Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert/drainage channel/sea.  | N/A |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|   |   |  |
|---|---|--|
| S8.8  | Supervisory staff should be assigned to station on site to closely supervise and monitor the works  | ^  |
| S8.8  | Marine water quality monitoring and audit programme shall be implemented for the proposed sediment treatment operation.   | N/A  |
| <b><i>Construction Waste Management</i></b> |   |  |
| S9.5  | <p>Good Site Practices</p> <p>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during the dredging activities include:</p> <ul style="list-style-type: none"> <li>• Nomination of an approved person, such as a site manager, be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.</li> <li>• Training of site personnel in proper waste management and chemical waste handling procedures.</li> <li>• Provision of sufficient waste disposal points and regular collection for disposal.</li> <li>• Appropriate measure to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).</li> </ul>  | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |
| S9.5  | <p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>• Sort C&amp;D waste from demolition of the remaining structures to recover recyclable portions such as metals</li> <li>• 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</li> <li>• Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force</li> <li>• Any unused chemicals or those with remaining functional capacity should be recycled</li> <li>• Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> </ul> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p> |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |  |                                  |
|------|--|----------------------------------|
| S9.5 | <p>Dredged Marine Sediment</p> <p>The basic requirements and procedures for dredged mud disposal are specified under the ETWB TCW No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is required under the Dumping at Sea Ordinance and is the responsibility of the Director of Environmental Protection (DEP)</p>  | N/A                              |
| S9.5 | <p>The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 - Open Sea Disposal. Contaminated sediment would require either Type 1 – Open Sea Disposal (Dedicated Sites), Type 2 - Confined Marine Disposal, or Type 3 – Special Treatment / Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment and disposed properly at the designated disposal site</p>   | N/A                              |
| S9.5 | <p>It will be the responsibility of the contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works should apply for allocation of marine disposal sites and all necessary permits from relevant authorities for the disposal of dredged sediment. During transportation and disposal of the dredged marine sediments requiring Type 1, Type 2, or Type 3 disposal, the following measures should be taken to minimise potential impacts on water quality:</p> <ul style="list-style-type: none"> <li>• Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved</li> <li>• Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic selfmonitoring devices as required under the Dumping at Sea Ordinance and as specified by the DEP</li> <li>• Barges or hopper barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation</li> </ul> | <p>N/A</p> <p>N/A</p> <p>N/A</p> |
| S9.5 | <p>Construction and Demolition Material</p> <p>Mitigation measures and good site practices should be incorporated into contract document to control potential environmental impact from handling and transportation of C&amp;D material. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>• Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the</li> </ul>   | ^                                |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|      |   |   |
|------|---|---|
|      | <p>transient stockpiles should be located away from waterfront or storm drains as far as possible</p> <ul style="list-style-type: none"> <li>• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric</li> <li>• Skip hoist for material transport should be totally enclosed by impervious sheeting</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores</li> <li>• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle</li> <li>• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</li> <li>• The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading</li> </ul> <p>When delivering inert C&amp;D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&amp;D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.</p> | <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> |
| S9.5 | <p>Chemical Waste</p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p>  | <p>*</p>  |

## Appendix K – Summary of Implementation Schedule of Mitigation Measures for Construction Phase

|   |   |  |
|---|---|--|
| S9.5  | <p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem</p> | ^  |
| <b><i>Construction Landscape and Visual</i></b> |   |  |
| S13.9   | <p>CM1 All existing trees should be carefully protected during construction.</p> <p>CM2 Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>CM3 Control of night-time lighting.</p> <p>CM4 Erection of decorative screen hoarding.</p>   | <p>^</p> <p>^</p> <p>N/A(1)</p> <p>^</p> |

### Remarks:

|        |  |
|--------|--|
| ^      | Compliance of mitigation measure   |
| *      | Recommendations were made during site audits but improved/rectified by the Contractor                  |
| #      | Recommendations were made during site audits but has not yet been improved/rectified by the Contractor |
| ●      | Non-compliance but rectified by the Contractor   |
| X      | Non-compliance of mitigation measure   |
| N/A    | Not Applicable at this stage   |
| N/A(1) | Not observed   |

---

---

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

---

---

**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area**

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

**Complaint Log**

| EPD Complaint Ref No. | Location                        | Received Date   | Details of Complaint   | Investigation/Mitigation Action   | Status |
|-----------------------|---------------------------------|-----------------|--|---|--------|
| 17-34438              | Dakota Drive and Olympic Avenue | 23 October 2017 | The complainant concerned about the dust emission when vehicle running on the dry surface outside Dakota Drive and Olympic Avenue. In addition, vehicles were not clear enough before leaving the construction site. | <p>In accordance with the information gathered in the investigation, construction activities were conducted with proper mitigation measures to minimize the dust impact arise from the construction site to the vicinity of this Project.</p> <p>Regular water spraying was provided to haul roads and unpaved areas within the site areas to reduce the dust impact arise from the construction site to the vicinity of this Project. The Contractor had also ensured vehicles and plants were wheel washed to be cleaned of mud and debris before leaving the construction site area. Therefore, the complaint is considered as non-project related.</p> <p>The following recommendations were made to further enhance the mitigation measures:</p> <ul style="list-style-type: none"> <li>● Where practicable, to provide sheltered area on the top and three sides for stockpiles of dusty materials, or perform frequent water spraying so as to maintain the entire surface wet;</li> <li>● Frequent checking and repair the gaps or broken tarpaulin sheets; and</li> <li>● To provide a hard-surfaced road between any cleaning facility and the public Road</li> </ul> | Closed |

**Remarks:** No complaint was received in the reporting month.



**Contract No. KLN/2016/04**  
**Environmental Monitoring Works for Contract No. KL/2015/02**  
**Kai Tak Development – Stage 5A Infrastructure at Former North Apron Area**

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

**Warnings / Summons and Successful Prosecutions received**

| <b>Log Ref.</b> | <b>Received Date</b> | <b>Details of Warning / Summons and Successful Prosecutions</b> | <b>Investigation/Mitigation Action</b> | <b>Status</b> |
|-----------------|----------------------|---|--|---------------|
| N/A             | N/A                  | N/A   | N/A                                    | N/A           |

**Remarks:** No warning/summon and prosecution was received in the reporting month.

---

---

**APPENDIX M  
SUMMARY OF WASTE GENERATION  
AND DISPOSAL RECORDS**

---

---

Department: CEDD  
 Contract No.: KL/2015/02  
 Project : Kai Tak Development - Stage 5A Infrastructure at Former North Apron Area



Peak - Wo Hing Joint Venture

**Monthly Summary Waste Flow Table for 2020**

As at 2 November 2020

| Month     | Quantities of Inert C & D Materials Generated Monthly |                                     |                          |                          |                          |                          | 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 (see Note 3) | Chemical Waste | Others, e.g. general refuse |
|           | (in '000m <sup>3</sup> )                              | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000kg)                                  | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| Jan       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.007                       |
| Feb       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.021                       |
| Mar       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.035                       |
| Apr       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.021                       |
| May       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.028                       |
| June      | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.049                       |
| Sub-total | 66.537  | 0                                   | 0                        | 0                        | 66.537                   | 0                        | 0  | 0                          | 0                     | 0              | 1.995                       |
| July      | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.056                       |
| Aug       | 0   | 0                                   | 0                        | 0.028                    | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.035                       |
| Sept      | 0   | 0                                   | 0                        | 0.112                    | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.049                       |
| Oct       | 0   | 0                                   | 0                        | 0.112                    | 0                        | 0                        | 0  | 0                          | 0                     | 0              | 0.007                       |
| Nov       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | -                           |
| Dec       | 0   | 0                                   | 0                        | 0                        | 0                        | 0                        | 0  | 0                          | 0                     | 0              | -                           |
| Total     | 66.537  | 0                                   | 0                        | 0.252                    | 66.537                   | 0                        | 0  | 0                          | 0                     | 0              | 2.142                       |

| Forecast of Total Quantities of C&D Materials to be Generated from the Contract* |                                     |                          |                          |                          |                          |             |                            |                       |                |                             |
|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------|----------------------------|-----------------------|----------------|-----------------------------|
| Total Quantity Generated   | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals      | Paper/ Cardboard packaging | Plastics (see Note 3) | Chemical Waste | Others, e.g. general refuse |
| (in '000m <sup>3</sup> )   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000kg) | (in '000kg)                | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| 67   | 0                                   | 0                        | 1                        | 67                       | 0                        | 0           | 0                          | 0                     | 0              | 2.5                         |

- Notes:
- (1) The performance targets are given in PS clause 6(14).
  - (2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for use at the Site.
  - (3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.
  - (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,00 m<sup>3</sup>. (PS Clause 25.02A(7) refers).

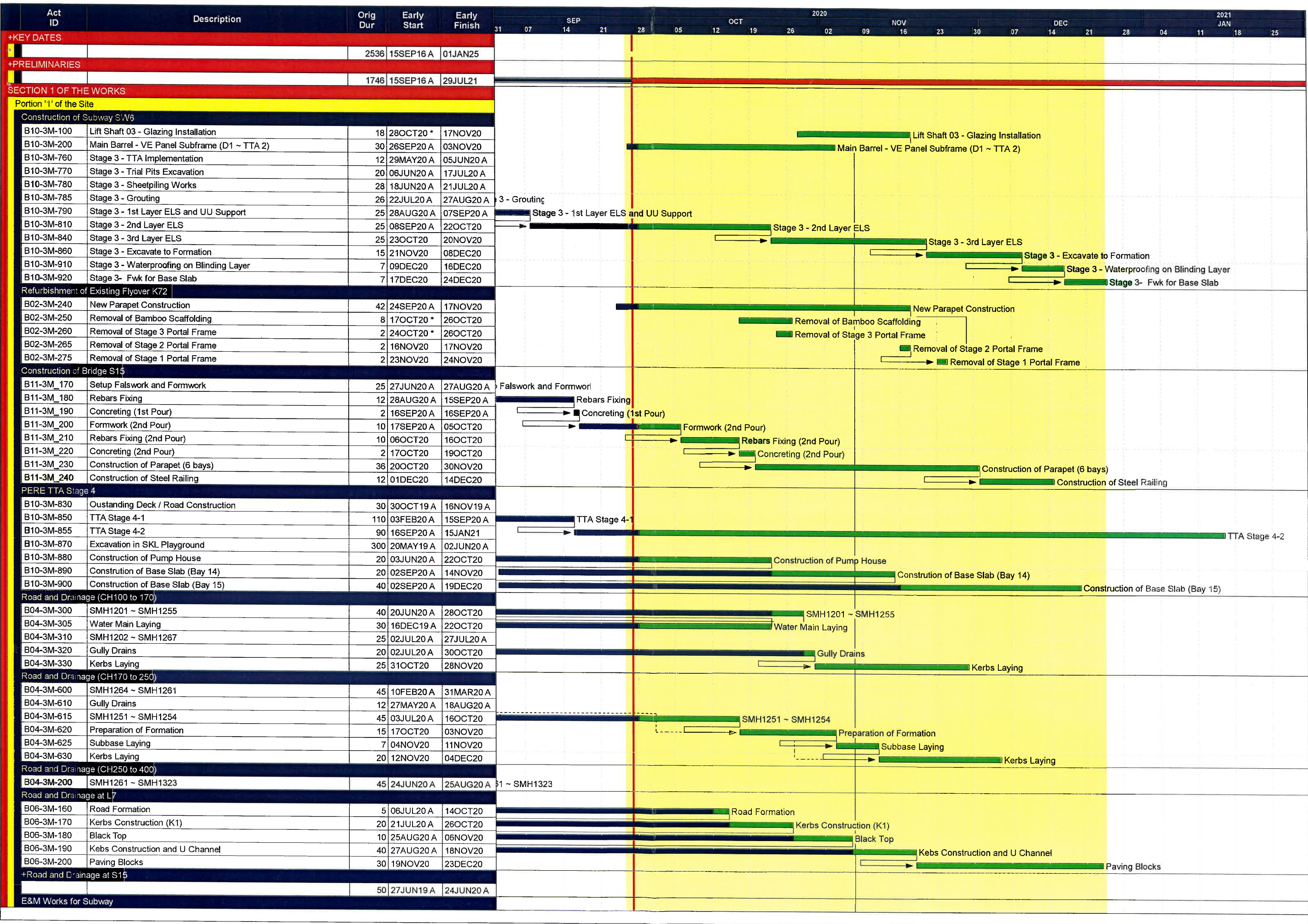
---

---

**APPENDIX N**  
**CONSTRUCTION PROGRAMME**

---

---







|                           |         |
|---------------------------|---------|
| Data date                 | 27SEP20 |
| c Primavera Systems, Inc. |         |

PEAKO - WO HING JOINT VENTURE  
 CONTRACT NO. KL/2015/02  
 KAI TAK DEVELOPMENT - STAGE 5A  
 INFRASTRUCTURE AT FORMER NORTH APRON AREA

| Date    | Revision        | Checked | Approved |
|---------|-----------------|---------|----------|
| 30AUG18 | Rev 5           | KN      | CP       |
| 28FEB19 | Rev 6           | KN      | CP       |
| 12JUL19 | Rev 7           | KN      | CP       |
| 28SEP20 | 3 Month Rolling | WMW     | KN       |

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

## **FUGRO TECHNICAL SERVICES LIMITED**

Fugro Development Centre,  
5 Lok Yi Street, Tai Lam,  
Tuen Mun, N.T.,  
Hong Kong.

Tel : +852 2450 8233  
Fax : +852 2450 6138  
E-mail : matlab@fugro.com  
Website : www.fugro.com



### **Appendix D**

#### **Monthly EM&A Report For**

**Contract No. ED/2018/01**


**Kai Tak Development – Stage 4 infrastructure at the former runway and south apron**

**Environmental Monitoring and Audit Report**  
**for**  
**Contract No. ED/2018/01 –**  
**Kai Tak Development – Stage 4 infrastructure at the**  
**former runway and south apron**

**Contract No.: EDO 15/2018**

October 2020

(Version 1.2)

Certified By:  \_\_\_\_\_

(Environmental Team Leader)



12 November 2020

AECOM Asia Company Limited  
8/F, Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin, Hong Kong

By Post and E-mail

Attention: Mr. Clive Cheng

Dear Sir,

**Re: Contract No. ED/2018/01 – Kai Tak Development  
Stage 4 Infrastructure at the Former Runway and South Apron**

**Monthly EM&A Report for October 2020**

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for October 2020 (Version 1.2) certified by the ET Leader and provided to us via email on 12 November 2020. Please be informed that we have no further comments on the captioned submission. We hereby verify the captioned submission in accordance with Condition 3.3 of EP-337/2009 and Condition 3.2 of EP-445/2013/A.

The ET Leader is reminded that it is the ET's responsibility to ensure the reported information be true, valid and correct as per Condition 3.4 of EP-337/2009 and Condition 3.3 of EP-445/2013/A.

Thank you for your attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours faithfully,

For and on behalf of

Ramboll Hong Kong Limited



Manson Yeung

Independent Environmental Checker

|      |             |                       |                |
|------|-------------|-----------------------|----------------|
| c.c. | CEDD        | Attn.: Mr. Ronald Siu | Fax: 2739 0076 |
|      | Ka Shing    | Attn.: Mr. Chan Pang  | By e-mail      |
|      | Penta-Ocean | Attn.: Mr. Daniel Ho  | Fax: 2572 4080 |

| <b>Table of Content</b>                                    | <b>Page</b> |
|--|-------------|
| EXECUTIVE SUMMARY .....                                    | 1           |
| Breaches of Action and Limit Levels .....                  | 1           |
| Complaint log .....  | 1           |
| Notifications of summons and successful prosecutions ..... | 3           |
| Report changes .....                                       | 4           |
| Key construction works in the reporting month .....        | 4           |
| Future key issues .....                                    | 5           |
| 1.    INTRODUCTION.....                                    | 6           |
| Project Background .....                                   | 6           |
| Project Organization .....                                 | 7           |
| Works Area and Construction Programme.....                 | 7           |
| Construction works undertaken during reporting month.....  | 8           |
| Submission Status under the Environmental Permits.....     | 9           |
| 2.    AIR QUALITY MONITORING .....                         | 11          |
| Monitoring Requirements.....                               | 11          |
| Monitoring Locations .....                                 | 11          |
| Monitoring Parameters, Frequency and Duration .....        | 11          |
| Monitoring Equipment .....                                 | 12          |
| Monitoring Methodology and QA/QC Procedure .....           | 13          |
| Wind Data Monitoring.....                                  | 15          |
| Action and Limit Levels .....                              | 15          |
| Impact Air Quality Monitoring results .....                | 16          |
| 3.    NOISE MONITORING .....                               | 18          |
| Monitoring Requirements.....                               | 18          |
| Monitoring Locations .....                                 | 18          |
| Monitoring Parameters, Frequency and Duration .....        | 18          |

|  |    |
|--|----|
| Monitoring Equipment .....   | 19 |
| Monitoring Methodology and QA/QC Procedure .....                           | 19 |
| Maintenance and Calibration.....   | 20 |
| Action and Limit Levels .....  | 20 |
| Impact Noise Monitoring results .....                                      | 21 |
| 4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS .....                   | 22 |
| 5. LANDSCAPE AND VISUAL MONITORING .....                                   | 24 |
| Results and Observations.....  | 24 |
| 6. ENVIRONMENTAL SITE INSPECTION AND AUDIT .....                           | 25 |
| Site Inspection .....  | 25 |
| Status of Waste Management .....   | 26 |
| Status of Environmental Licenses, Notification and Permits .....           | 26 |
| Implementation Status of Environmental Mitigation Measures.....            | 27 |
| Environmental Complaint and Non-compliance .....                           | 27 |
| Notifications of summons and successful prosecutions .....                 | 29 |
| 7. FUTURE KEY ISSUES .....   | 31 |
| Construction Programme in the coming month.....                            | 31 |
| Environmental Site Inspection and Monitoring Schedule for next month ..... | 32 |
| 8. CONCLUSIONS .....   | 33 |

**List of Tables**

|           |   |
|-----------|---|
| Table I   | Non-compliance Record in the Reporting Month                          |
| Table II  | Summary of complaints in the Reporting Month                          |
| Table III | Summary of summons and successful prosecutions in the Reporting Month |
| Table IV  | Summary of future key issues and potential impact in the coming month |
| Table 1.1 | Contact Information of Key Personnel                                  |
| Table 1.2 | Major activities of the Project during reporting month                |
| Table 1.3 | Summary of Status of Required Submission of EPs                       |

|           |  |
|-----------|--|
| Table 2.1 | Locations of Air Quality Monitoring Stations                                       |
| Table 2.2 | Air Quality Monitoring Parameters, Frequency and Duration                          |
| Table 2.3 | Air Quality Monitoring Equipment   |
| Table 2.4 | Action and Limit Levels of 24-hour average TSP for Construction Dust Monitoring    |
| Table 2.5 | Action and Limit Levels of 1-hour average TSP for Construction Dust Monitoring     |
| Table 2.6 | Summary of 24-hour average TSP Monitoring Data during the reporting month          |
| Table 2.7 | Summary of 1-hour average TSP Monitoring Data during the reporting month           |
| Table 3.1 | Locations of Noise Monitoring Stations   |
| Table 3.2 | Noise Monitoring Parameters, Frequency and Duration                                |
| Table 3.3 | Noise Monitoring Equipment   |
| Table 3.4 | Baseline Noise Level and Action and Limit Levels for Construction Noise Monitoring |
| Table 3.5 | Summary of Noise Monitoring Data during the reporting month                        |
| Table 4.1 | Comparison of 24-hour average TSP Monitoring Data with EIA predictions             |
| Table 4.2 | Comparison of 1-hour average TSP Monitoring Data with EIA predictions              |
| Table 4.3 | Comparison of Noise Monitoring Data with EIA predictions                           |
| Table 5.1 | Summary of observations of Landscape and Visual impact during the reporting month  |
| Table 6.1 | Summary of site inspections observations during the reporting month                |
| Table 6.2 | Summary of Environmental Licenses, Notifications and Permits                       |
| Table 6.3 | Summary of complaints in the Reporting Month                                       |
| Table 6.4 | Summary of summons and successful prosecutions in the Reporting Month              |
| Table 7.1 | Summary of future key issues and potential impact in the coming month              |

### **List of Figure**

Figure 1 – Proposed works of Contract No. ED/2018/01

Figure 2 – Proposed Bus Stop And Associated Noise Barrier At Road D3A

Figure 3 – Future Pedestrian Connection Between Landscaped Deck And Private Developments

Figure 4 – Site Layout Plan

Figure 5 – Air Quality Monitoring Stations

Figure 6 – Noise Monitoring Stations

### **List of Appendices**

Appendix A – Organization Chart of EM&A Team

Appendix B – Construction Programme

Appendix C – Environmental monitoring schedules

Appendix D – Photographic records

Appendix E – Calibration certificates, catalogue of air quality monitoring equipment

Appendix F – Weather information

Appendix G – 24-hr TSP monitoring results and graphical presentation

Appendix H – 1-hr TSP monitoring results and graphical presentation

Appendix I – Event and Action Plan for air quality

Appendix J – Calibration certificates, catalogue of noise monitoring equipment

Appendix K – Noise monitoring results and graphical presentation

Appendix L – Event and Action Plan for noise

Appendix M – Event and Action Plan for Landscape and Visual Impact

Appendix N – Waste Flow Table

Appendix O – Environmental Licenses and Notification

Appendix P – Environmental Mitigation Implementation Schedule (EMIS)

Appendix Q – Summaries of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution

## EXECUTIVE SUMMARY

1. This is the 10<sup>th</sup> Monthly Environmental Monitoring & Audit (EM&A) report which summaries the findings of the EM&A Programme during the reporting period from 1 to 31 October 2020.

### **Breaches of Action and Limit Levels**

2. 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
3. 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
4. Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
5. Summary of the non-compliance in the reporting month for the Project is tabulated in Table I.

*Table I Non-compliance Record in the Reporting Month*

| Parameter          | No. of Exceedance |             | Action Taken |
|--------------------|-------------------|-------------|--------------|
|                    | Action Level      | Limit Level |              |
| 1-hr TSP           | 0                 | 0           | N/A          |
| 24-hr TSP          | 0                 | 0           | N/A          |
| Construction noise | 0                 | 0           | N/A          |

### **Complaint log**

6. One dust complaint (received by hotline 1823 on 20 October 2020) was referred by the Contractor in the reporting month. Summary of complaints in the reporting month is tabulated in Table II.

*Table II Summary of complaints in the Reporting Month*

| Date of complaint received   | Date of complaint  | Description of complaint  | Investigation / Recommendations / Action take  | Close-out date / Status  |
|--|--|---|--|--|
| <p>A dust complaint was referred from the Contractor on 21 October 2020.</p> | <p>Contractor received public complaint via 1823 hotline (Case no. 3-6518939602) on 20 October 2020.</p> | <ol style="list-style-type: none"> <li>1. The water spraying system was not operated in proper time.</li> <li>2. Stockpile was not covered properly.</li> <li>3. Haul road was not wetted.</li> <li>4. Materials transported on trucks were not provided with mechanical covers.</li> </ol> | <p><u>Investigation</u></p> <ol style="list-style-type: none"> <li>1. Based on the information provided by the Contractor on 22 October 2020, the water sprinklers system was sprayed every 15 minutes with 70 seconds interval automatically. For the area that water sprinklers system was not covered, manual water spraying was provided. Dump trucks were covered with mechanical cover after loading the materials. The stockpile area was covered by the tarpaulin during night time.</li> <li>2. Based on the monitoring results on 16 October 2020, the 1-hour and 24-hour TSP results were below the Action Levels and Limit Levels.</li> <li>3. Regular site inspection was conducted by ET on 22 October 2020, no adverse observation against the dust impact was recorded.</li> </ol> <p><u>Recommendations</u><br/>To minimize the impact for air quality, mitigation measures</p> | <ul style="list-style-type: none"> <li>- Closed-out on 5 Nov 2020</li> <li>- No further complaint was received.</li> </ul> |

| Date of complaint received | Date of complaint | Description of complaint | Investigation / Recommendations / Action take   | Close-out date / Status |
|----------------------------|-------------------|--------------------------|---|-------------------------|
|                            |                   |                          | <p>should be enhanced specially in dry seasons are recommended:</p> <ol style="list-style-type: none"> <li>1. Increase the frequency and duration for automatic water spraying system.</li> <li>2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis.</li> <li>3. Ensure stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process.</li> </ol> <p><u>Action taken</u><br/>As per the Contractor, the water sprinkler are now adjusted to start at 8:00am and end at 6:00pm for Monday to Saturday while from 8:00am to 5:00pm on Sunday. Water spraying are set with 5-minute time interval with duration 30-60 seconds.</p> |                         |

**Notifications of summons and successful prosecutions**



7. No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table III.

*Table III Summary of summons and successful prosecutions in the Reporting Month*

| Date of receiving notification of summons or prosecutions                                    | Date of event | Description of event | Action take | Close-out date / Status |
|--|---------------|----------------------|-------------|-------------------------|
| No notification of summons and successful prosecutions were received in the reporting month. | NA            | NA                   | NA          | NA                      |

**Report changes**

8. There was no reporting change in the reporting month.

**Key construction works in the reporting month**

9. Major construction activities undertake during the reporting month included:

- Installation of Sheet Pile
- Pumping Test at North Depressed Road Cofferdam and South Depressed Road
- Construction of Bored Pile of Bridge D3 and Landscape Deck
- ELS Installation & Excavation for South Depressed Road
- Construction of base slab, walls and columns for North Approach Ramp
- Permanent Structure Construction for North Depressed Road
- Permanent Structure Construction for Pile Cap of Bridge D3
- Construction of Hoarding

## **Future key issues**

10. The future key issues and potential impact in the coming month are given in Table IV.

*Table IV Summary of future key issues and potential impact in the coming month*

| Future key issues in the coming month                                   | Potential impact      |
|---|-----------------------|
| Installation of Sheet Pile  | Noise and Air Quality |
| Pumping Test at North Depressed Road Cofferdam and South Depressed Road | Noise                 |
| Permanent Structure Construction for Pile Cap                           | Noise and Air Quality |
| ELS Installation & Excavation for South Depressed Road                  | Noise and Air Quality |
| Construction of base slab, walls and columns for North Approach Ramp    | Noise and Air Quality |
| Permanent Structure Construction for North Depressed Road               | Noise and Air Quality |
| Erection of Temporary Working Platform                                  | Noise and Air Quality |

# 1. INTRODUCTION

## Project Background

- 1.1 The Kai Tak Development (KTD) is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.
- 1.2 Contract No. ED/2018/01 - Kai Tak Development – stage 4 infrastructure at the former runway and south apron (The Project), comprises mainly the design and construction of a dual two-lane Road D3 (Metro Park Section), a single 2-lane Road L12d, a salt water pumping station, a sewage pumping station, landscaped deck and promenade above and adjoining Road D3 (Metro Park Section) respectively, some remaining road works at Road L14, noise barrier at Road D3A, and other associated works at the former runway and south apron. The proposed works are shown in Figure 1 and Figure 2. During the course of the Contract No. ED/2018/01, there may be modification of noise barriers in association with the construction of footbridges connecting to the landscaped deck of Road D3A by developers of adjacent lands (Figure 3). The proposed works and site boundary are shown in Figure 4.
- 1.3 Civil Engineering and Development Department (CEDD) had completed an Environmental Impact Assessment (EIA) and is the Permit Holder.
- 1.4 The construction work under ED/2018/01 comprises the EM&A Manuals (EIA Register Nos. AEIAR-130/2009 for Kai Tak Development and EIA Register Nos. AEIAR-170/2013 for Roads D3A and D4A) and Environmental Permit (EP) Nos. EP-337/2009, EP-445/2013 and Variation to the EP (VEP) No. EP-445/2013/A.
- 1.5 Air quality and noise monitoring has been proposed in the EM&A Manual with EIA Register Nos. AEIAR-130/2009 for Kai Tak Development while no air quality and noise monitoring are proposed in EM&A Manual with EIA Register Nos. AEIAR-170/2013 for Roads D3A and D4A.

## **Project Organization**

1.6 The project organization chart and with respect to the EM&A programme is shown in Appendix A. Information of key personnel contact names and telephone numbers are summarized in Table 1.1.

*Table 1.1 Contact Information of Key Personnel*

| Party   | Role   | Contact Person   | Position              | Phone No. | Fax No.   |
|---|--|------------------|-----------------------|-----------|-----------|
| Civil Engineering and Development Department (CEDD) | Project Proponent  | Mr. Ronald Siu   | Senior Engineer       | 3579 2452 | 2739 0076 |
|   |  | Mr. Edwin Chan   | Engineer              | 3579 2458 | 2739 0076 |
| AECOM Asia Co. Ltd. (AECOM)                         | Supervisor (act as Engineers' Representative (ER) listed in EM&A Manual) | Mr. Clive Cheng  | CRE                   | 3911 4201 | 3911 4288 |
| Ramboll Hong Kong Limited (Ramboll)                 | Independent Environmental Checker (IEC)                                  | Mr. Manson Yeung | IEC                   | 9700 6767 | 3465 2899 |
| Ka Shing Management Consultant Limited (Ka Shing)   | Environmental Team (ET)  | Mr. Chan Pang    | ET Leader             | 6082 2973 | 2120 7752 |
| Penta-Ocean Construction Co., Ltd. (Penta-Ocean)    | Contractor   | Ms. Juliet Ting  | Environmental Officer | 9555 8820 | 3465 8898 |

## **Works Area and Construction Programme**

1.7 The construction works commenced on 20 January 2020. The construction programme of the Project is given in Appendix B.

**Construction works undertaken during reporting month**

1.8 Major construction works of the Project in the reporting month are summarized in Table 1.2:

*Table 1.2 Major activities of the Project during reporting month*

|   |   |
|---|---|
|  <p>Installation of Sheet Pile</p>                                   |  <p>Pumping Test at North Depressed Road Cofferdam and South Depressed Road</p> |
|  <p>Construction of Bored Pile of Bridge D3 and Landscape Deck</p> |  <p>ELS Installation &amp; Excavation for South Depressed Road</p>            |



Construction of base slab, walls and columns for North Approach Ramp



Permanent Structure Construction for North Depressed Road



Permanent Structure Construction for Pile Cap of Bridge D3



Construction of Hoarding

**Submission Status under the Environmental Permits**

1.9 The status of required submission under Environmental Permit (EP) conditions under EP-337/2009, EP-445/2013 and Variation to the EP (VEP) No. EP-445/2013/A are summarized in Table 1.3.

*Table 1.3 Summary of Status of Required Submission of EPs*

| EP Condition EP-337/2009 | EP Condition EP-445/2013 | EP Condition EP-445/2013/A | Submission   | Submission Date |
|--------------------------|--------------------------|----------------------------|--|-----------------|
| Condition 1.11           | Condition 1.12           | Condition 1.12             | Notification of Commencement Date of Construction of the Project | 6 Jan 2020      |
| Condition 2.3            | Condition 2.3            | Condition 2.3              | Management Organization of Main Construction Companies           | 9 Sep 2019      |
| Condition 2.3            | Condition 2.3            | Condition 2.3              | Updated Management   | 28 May 2020     |

| EP Condition<br>EP-337/2009 | EP Condition<br>EP-445/2013 | EP Condition<br>EP-445/2013/A | Submission                                     | Submission<br>Date |
|-----------------------------|-----------------------------|-------------------------------|--|--------------------|
|                             |                             |                               | Organization of Main<br>Construction Companies |                    |
| Condition 2.4               | Condition 2.4               | Condition 2.4                 | Design Drawings                                | 6 Jan 2020         |
| Condition 2.11              | Condition 2.5               | Condition 2.5                 | Landscape Mitigation<br>Plans                  | 2 Jan 2020         |
| Condition 3.2               | NA                          | NA                            | Baseline Monitoring<br>Report                  | 2 Jan 2020         |
| Condition 3.2               | NA                          | NA                            | Revised Baseline<br>Monitoring Report          | 28 Mar 2020        |
| Condition 3.3               | Condition 3.2               | Condition 3.2                 | Monthly EM&A Report<br>(September 2020)        | 14 October<br>2020 |

## 2. AIR QUALITY MONITORING

### Monitoring Requirements

2.1 In accordance with EM&A Manuals (EIA Register Nos. AEIAR-130/2009), impact air quality monitoring shall be carried out during the construction phase of the Project. For regular impact monitoring, a sampling frequency of at least once in every six days will be strictly observed at all of the monitoring stations for 24-hour TSP. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days will be undertaken when the highest dust impact occurs.

### Monitoring Locations

2.2 Three designated monitoring stations were selected for air quality monitoring programme. Impact air quality monitoring was conducted at three air quality monitoring stations in the reporting month. Table 2.1 describes the air quality monitoring locations, which are also depicted in Figure 5.

*Table 2.1 Locations of Air Quality Monitoring Stations*

| Air Quality Monitoring Locations for the Project                                 | Location of Measurement |
|--|-------------------------|
| AM3 - Sky Tower  | Podium floor near T7    |
| AM4(A) - The Hong Kong Society for the Blind's<br>Factory cum Sheltered Workshop | Rooftop                 |
| AM7 – Hong Kong Children's Hospital  | Rooftop                 |

### Monitoring Parameters, Frequency and Duration

2.3 The air quality monitoring locations and monitoring frequency are listed in Table 2.2.



*Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration*

| Air Monitoring Station  | Location for Measurement | Parameter   | Duration   | Frequency                  |
|---|--------------------------|---|------------|----------------------------|
| AM3 - Sky Tower   | Podium floor near T7     | - 24-hour average TSP<br><br>- 1-hour average TSP | - 24 hours | - Once every 6 days        |
| AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop | Rooftop                  |   | - 1 hour   | - Three times every 6 days |
| AM7 - Hong Kong Children's Hospital   | Rooftop                  |   |            |                            |

2.4 The monitoring schedule for reporting month and next month is presented in Appendix C.

2.5 Photographic records of the impact monitoring setup are shown in Appendix D.

### **Monitoring Equipment**

2.6 24-hour average TSP and 1-hour average TSP levels were measured for impact monitoring. 24-hour average TSP levels were measured by the High Volume Samplers (HVS) and 1-hour average TSP levels were measured by direct reading method to indicate short-term impacts. Wind data monitoring equipment was set up at conspicuous locations for logging wind speed and wind direction near to the dust monitoring locations. Table 2.3 summarizes the equipment to be used in the air quality monitoring.

*Table 2.3 Air Quality Monitoring Equipment*

| Equipment             | Model  | Quantity |
|-----------------------|--|----------|
| HVS Sampler           | TE-5170 X c/w of TSP sampling inlet              | 3        |
| Calibrator            | TISCH TE-5025A                                   | 1        |
| 1-hour TSP Dust Meter | TSI Model AM510 SidePak Personal Aerosol Monitor | 2        |
| Wind Anemometer       | Davis Vantage Pro2 Weather Station               | 1        |

2.7 High volume samplers (HVS) (TE-5170 X c/w of TSP sampling inlet) comprising with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

2.8 Calibration certificates, catalogue of equipment are given in Appendix E.

## **Monitoring Methodology and QA/QC Procedure**

### ***24-hour TSP Monitoring***

#### **Operating/Analytical Procedures**

2.9 Setup criteria of HVS are shown as follows:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- No two samplers were placed less than 2m 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 2m of separation from walls, parapets and penthouses was set for the rooftop samples.
- A minimum of 2m separation from any supporting structure, measured horizontally was set.
- No furnaces or incineration flues was nearby.
- Airflow around the sampler was unrestricted.
- The sampler was more than 20m from the dripline.
- Any wire fence and gate, to protect the samplers, was not caused any obstruction during monitoring.
- Permission were obtained to setup the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity was provided to operate the samplers.

2.10 Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m<sup>3</sup>/min. and 1.7 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

2.11 For TSP sampling, Glass Fiber Filter Media 8" x 10" have a collection efficiency of > 99 % for particles of 0.3 µm diameter were used.

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

- 2.13 The filter holding frame was removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
- 2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure was sufficient to avoid air leakage at the edges.
- 2.15 The shelter lid was closed and secured with the aluminium strip.
- 2.16 The timer was programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17 After sampling, the filter was removed from the HVS and put into a clean and labeled seal plastic bag to avoid cross contamination. The elapsed time was also be recorded. The sampled filters were sent to the Castco Testing Centre Limited for weighting.
- 2.18 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature was between 25°C and 30°C and not vary by more than  $\pm 3^\circ\text{C}$ ; the relative humidity (RH) was less than 50% and not vary by more than  $\pm 5\%$ . A convenient working RH is 40%.

#### Maintenance/Calibration

2.19 The following maintenance/calibration are required for the HVS:

- The HVS and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated with at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

#### ***1-hour TSP Monitoring***

#### Measurement Procedures

2.20 The measurement procedures of the 1-hour TSP were conducted in accordance with the

Manufacturer's Instruction Manual as follows:

- Set up the dust meter on a tripod at 1.2m level.
- Turned on the dust meter and check the battery, if too low, change new ones. Pointed the meter to the source area or the planned measurement area.
- The zero calibration of the instrument was conducted before and after each sampling.
- TSP levels were recorded for 1-hour with 5-minute data logging interval.
- Recorded down the general meteorological conditions, Test ID no., start/end time, initial/final reading at each sampling location for data processing.
- Recorded any activities that may generate dust during measurement period.

### Maintenance/Calibration

2.21 The following maintenance/calibration are required for the direct dust meters:

- To validity the accuracy of dust meter, compare the results measured by dust meter and HVS by direct reading method every 12 months throughout all stages of the air quality monitoring.

### **Wind Data Monitoring**

2.22 Wind Anemometer was installed at the roof-top of AM7 - Hong Kong Children's Hospital with 10m above ground and clear of constructions or turbulence caused by the buildings.

2.23 The wind data was captured by a data logger and the data was downloaded at least once per month for analysis.

2.24 The wind data monitoring equipment will be re-calibrated at least once every six months.

2.25 Wind direction is divided into 16 sectors of 22.5 degrees each.

2.26 Details of weather information during the monitoring period are shown in Appendix F.

### **Action and Limit Levels**

2.27 The Action and Limit Levels of 24-hour average TSP and 1-hour average TSP are summarized

in Table 2.4 and Table 2.5 respectively.

*Table 2.4 Action and Limit Levels of 24-hour average TSP for Construction Dust Monitoring*

| Parameter           | Air Monitoring Station | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|---------------------|------------------------|--|---------------------------------------|
| 24-hour average TSP | AM3                    | 182                                    | 260                                   |
|                     | AM4(A)                 | 187                                    | 260                                   |
|                     | AM7                    | 181                                    | 260                                   |

*Table 2.5 Action and Limit Levels of 1-hour average TSP for Construction Dust Monitoring*

| Parameter          | Air Monitoring Station | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|--------------------|------------------------|--|---------------------------------------|
| 1-hour average TSP | AM3                    | 297                                    | 500                                   |
|                    | AM4(A)                 | 326                                    | 500                                   |
|                    | AM7                    | 315                                    | 500                                   |

### **Impact Air Quality Monitoring results**

2.28 Impact monitoring results for 24-hour average TSP and 1-hour average TSP levels at the designed air quality monitoring stations are summarized in Table 2.6 and Table 2.7 respectively.

*Table 2.6 Summary of 24-hour average TSP Monitoring Data during the reporting month*

| Air Monitoring Station | Average TSP Concentration, $\mu\text{g}/\text{m}^3$ | Range, $\mu\text{g}/\text{m}^3$ | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|------------------------|---|---------------------------------|--|---------------------------------------|
| AM3                    | 63  | 53 – 72                         | 182                                    | 260                                   |
| AM4(A)                 | 60  | 39 – 72                         | 187                                    | 260                                   |
| AM7                    | 56  | 44 – 68                         | 181                                    | 260                                   |

*Table 2.7 Summary of 1-hour average TSP Monitoring Data during the reporting month*

| Air Monitoring Station | Average TSP Concentration, $\mu\text{g}/\text{m}^3$ | Range, $\mu\text{g}/\text{m}^3$ | Action Level, $\mu\text{g}/\text{m}^3$ | Limit Level, $\mu\text{g}/\text{m}^3$ |
|------------------------|---|---------------------------------|--|---------------------------------------|
| AM3                    | 84  | 70 – 94                         | 297                                    | 500                                   |
| AM4(A)                 | 84  | 74 – 95                         | 326                                    | 500                                   |
| AM7                    | 86  | 67 – 131                        | 315                                    | 500                                   |

2.29 There was no Action and Limit Level exceedance of 24-hour average TSP and 1-hour average TSP levels recorded during the reporting month.

2.30 Graphical presentation and detailed monitoring results of 24-hour average TSP and 1-hour

average TSP levels are shown in Appendix G and Appendix H respectively.

2.31 The Event and Action Plan is provided in Appendix I.

2.32 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

### 3. NOISE MONITORING

#### **Monitoring Requirements**

- 3.1 In accordance with EM&A Manuals (EIA Register Nos. AEIAR-130/2009), impact noise monitoring shall be carried out during the construction phase of the Project.
- 3.2 Regular monitoring,  $L_{Aeq, 30\text{-minute}}$ , for each station will be on a weekly basis and conduct one set of measurements between 0700 – 1900 on normal weekdays.
- 3.3 If construction works are extended to include works during 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring will be carried out during the respective restricted hours periods.

#### **Monitoring Locations**

- 3.4 Two designated monitoring stations were selected for noise monitoring programme. Impact noise monitoring was conducted at two noise monitoring stations in the reporting month. Table 3.1 describes the noise monitoring locations, which are also depicted in Figure 6.

*Table 3.1 Locations of Noise Monitoring Stations*

| Noise Monitoring Locations for the Project                                 | Location of Measurement |
|--|-------------------------|
| M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop | Rooftop (Façade)        |
| M12 - Hong Kong Children's Hospital  | Rooftop (Façade)        |

#### **Monitoring Parameters, Frequency and Duration**

- 3.5 The noise monitoring locations and monitoring frequency are listed in Table 3.2.

*Table 3.2 Noise Monitoring Parameters, Frequency and Duration*

| Noise Monitoring Station   | Location for Measurement | Parameter                           | Frequency and Duration   |
|--|--------------------------|-------------------------------------|--|
| M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop | Rooftop (Façade)         | $L_{Aeq}$ , $L_{A10}$ and $L_{A90}$ | 30 - minutes measurement at each monitoring station between 0700 – 1900 hrs on normal weekdays (Monday to Saturday) at frequency of once per week. |
| M12 - Hong Kong Children's Hospital  | Rooftop (Façade)         |                                     |  |

3.6 The monitoring schedule for reporting month and next month is presented in Appendix C.

3.7 Photographic records of the monitoring setup are shown in Appendix D.

### **Monitoring Equipment**

3.8 As referred to in the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the IEC 61672-1 (Type 1) standard [this standard replaced the International Electrotechnical Commission Publications 60651:1979 (Type 1) and 60804:1985 (Type 1)] were used for noise monitoring. Table 3.3 summarizes the equipment to be used in the noise monitoring.

*Table 3.3 Noise Monitoring Equipment*

| Equipment              | Model                  | Quantity |
|------------------------|------------------------|----------|
| Sound Level Meter      | RION NL52              | 2        |
| Sound Level Calibrator | RION NC 74             | 2        |
| Air Flowmeter          | TSI TA440 Air Velocity | 2        |

3.9 Calibration certificates, catalogue of equipment are given in Appendix J.

### **Monitoring Methodology and QA/QC Procedure**

3.10 The noise level measurement was conducted at 1m from the exterior of the nearby noise sensitive receivers building façade and at 1.2m above the ground and facing to the source area or the planned measurement area.

3.11 No noise measurement was conducted in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. Air flow was measured by air flow



meter.

3.12 Turned on the sound level meter and check the battery, if too low, change new ones.

3.13 Calibration was conducted immediately prior to and after each noise measurement, the accuracy of the sound level meters was checked by using sound calibrator generating 1,000 Hz with 94dB. Measurement data was found to be valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.

3.14 Noise level was recorded.

3.15 Recorded any activities that may generate noise during measurement period.

### **Maintenance and Calibration**

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

3.17 The sound level meter and sound calibrator were calibrated annually.

3.18 Calibration for sound level meter was conducted immediately prior to and following each noise measurement by using sound calibrator generating a known sound pressure level at a known frequency (1,000 Hz with 94dB). Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

### **Action and Limit Levels**

3.19 The Baseline Noise Levels and Action and Limit Levels for construction noise is presented in Table 3.4.

*Table 3.4 Baseline Noise Level and Action and Limit Levels for Construction Noise Monitoring*

| Time Period                    | Noise Monitoring Station | Baseline Noise Levels, dB (A) | Action Level                               | Limit Level <sup>^</sup> |
|--------------------------------|--------------------------|-------------------------------|--|--------------------------|
| 0700 – 1900 on normal weekdays | M11                      | 68.3                          | When one documented complaint is received. | 75 dB(A)                 |
|                                | M12                      | 61.9                          |  |                          |

Note: ^ 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.

**Impact Noise Monitoring results**

3.20 Impact noise monitoring results at the designed noise monitoring stations are summarized in Table 3.5 respectively.

*Table 3.5 Summary of Noise Monitoring Data during the reporting month*

| Noise Monitoring Station | Measured $L_{Aeq, 30\text{-min}}$ , Average, dB(A) | Measured $L_{Aeq, 30\text{-min}}$ , Range, dB(A) | Action Level                              | Limit Level <sup>^</sup> |
|--------------------------|--|--|---|--------------------------|
| M11                      | 70.6   | 67.8 – 73.2                                      | When one documented complaint is received | 75 dB(A)                 |
| M12                      | 66.8   | 66.1 – 67.7                                      |   |                          |

Note: <sup>^</sup> 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.

3.21 There were no action level exceedance of noise monitoring and limit level exceedance of  $L_{Aeq, 30\text{min}}$  recorded during the reporting month.

3.22 Graphical presentation and detailed monitoring results are shown in Appendix K.

3.23 The Event and Action Plan is provided in Appendix L.

3.24 Non-project related construction activities in the adjacent construction sites were observed during the reporting period and may affect the monitoring results.

## 4. COMPARISON OF EM&A RESULTS WITH EIA PREDICTIONS

4.1 The environmental impacts predictions were given in Agreement No. CE 35/2006(CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction - Kai Tak Development Environmental Impact Assessment Report, EIA Register Nos. AEIAR-130/2009 for Kai Tak Development (The EIA Report). The EM&A data was compared with the EIA predictions as summarized in Table 4.1 to Table 4.3.

*Table 4.1 Comparison of 24-hour average TSP Monitoring Data with EIA predictions*

| Air Monitoring Station  | ASR No. in EIA report | Predicted Cumulative Maximum 24-hour average TSP concentration |  | Measured 24-hr average TSP in Reporting Month (October 2020) $\mu\text{g}/\text{m}^3$ |
|---|-----------------------|--|--|---|
|   |                       | Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$    | Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$ |   |
| AM3 - Sky Tower   | A40 <sup>^</sup>      | 106  | 138  | 53 – 72   |
| AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop | A43 <sup>^</sup>      | 123  | 195  | 39 – 72   |
| AM7 – Hong Kong Children's Hospital   | PA60                  | NA   | NA   | 44 – 68   |

Note:

<sup>^</sup> Prediction results are given in the Table 3.13 of the EIA report EIA Register Nos. AEIAR-130/2009 for Kai Tak Development.

*Table 4.2 Comparison of 1-hour average TSP Monitoring Data with EIA predictions*

| Air Monitoring Station  | ASR No. in EIA report | Predicted Cumulative Maximum 1-hour average TSP concentration |  | Measured 1-hr average TSP in Reporting Month (October 2020) $\mu\text{g}/\text{m}^3$ |
|---|-----------------------|---|--|--|
|   |                       | Scenario 1 (Mid 2009 to Mid 2013), $\mu\text{g}/\text{m}^3$   | Scenario 2 (Mid 2013 to Late 2016), $\mu\text{g}/\text{m}^3$ |  |
| AM3 - Sky Tower   | A40                   | 217 <sup>^</sup>  | 247 <sup>^</sup>   | 70 – 94  |
| AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop | A43                   | 283 <sup>^</sup>  | 409 <sup>^</sup>   | 74 – 95  |
| AM7 – Hong Kong Children's Hospital   | PA60                  | NA  | NA   | 67 – 131   |

Note:

<sup>^</sup> Prediction results are given in the Table 3.13 of the EIA report EIA Register Nos. AEIAR-130/2009 for Kai Tak Development.

*Table 4.3 Comparison of Noise Monitoring Data with EIA predictions*

| Noise Monitoring Station   | NSR No. in EIA report | Predicted Mitigated Construction Noise Levels during Normal Daytime Working Hour<br>L <sub>Aeq, 30min</sub> , dB(A) | Measured Noise Level in Reporting Month (October 2020)<br>L <sub>Aeq, 30min</sub> , dB(A) |
|--|-----------------------|---|---|
| M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop | N18                   | 50 – 76*  | 67.8 – 73.2   |
| M12 - Hong Kong Children's Hospital  | PN83, PN84, PN84A     | NA  | 66.1 – 67.7   |

Note:

\* Prediction results are given in the Table 3.20 of the EIA report EIA Register Nos. AEIAR-130/2009 for Kai Tak Development.

- 4.2 24-hour TSP monitoring results at AM3, AM4(A) were recorded lower than the prediction in the EIA Report.
- 4.3 No prediction in the EIA Report for 24-hour TSP monitoring results at AM7.
- 4.4 1-hour TSP monitoring results at AM3, AM4(A) were recorded lower than the prediction in the EIA Report.
- 4.5 No prediction in the EIA Report for 1-hour TSP monitoring results at AM7.
- 4.6 Noise monitoring results at M11 was recorded lower than the prediction in the EIA Report.
- 4.7 No prediction in the EIA Report for noise monitoring results at M12.

## 5. LANDSCAPE AND VISUAL MONITORING

5.1 In accordance with EM&A Manuals (EIA Register Nos. AEIAR-130/2009 and AEIAR-170/2013), Landscape and Visual Monitoring shall be carried out during the construction phase of the Project. Regular impact monitoring will be conducted at least once per week.

### **Results and Observations**

5.2 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

5.3 Site inspections were conducted on 8, 14, 22 and 29 October 2020 in the reporting month.

5.4 The summaries of site audits are attached in Table 5.1.

*Table 5.1 Summary of observations of Landscape and Visual impact during the reporting month*

| Inspection Date | Key Observations | Recommendations / Actions | Close-out Date / Status |
|-----------------|------------------|---------------------------|-------------------------|
| 8 October 2020  | No               | NA                        | NA                      |
| 14 October 2020 | No               | NA                        | NA                      |
| 22 October 2020 | No               | NA                        | NA                      |
| 29 October 2020 | No               | NA                        | NA                      |

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

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

## 6. ENVIRONMENTAL SITE INSPECTION AND AUDIT





### Site Inspection

6.1 Site inspections were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

6.2 Site inspections were conducted on 8, 14, 22 and 29 October 2020 in the reporting month.

6.3 The summaries of site audits are attached in Table 6.1.

*Table 6.1 Summary of site inspections observations during the reporting month*

| Inspection Date | Key Observations  | Recommendations / Actions  | Close-out Date / Status          |
|-----------------|---|--|----------------------------------|
| 8 October 2020  | No  | NA   | NA                               |
| 14 October 2020 |  <p>Observation:<br/>The tree protection zone should be kept clean.</p>                            |  <p>Action Taken:<br/>The tree protection zone were cleaned.</p>                               | Closed-out<br>22 October<br>2020 |
|                 |  <p>Observation:<br/>The open stockpiles of construction materials on sites should be covered.</p> |  <p>Action Taken:<br/>The open stockpiles of construction materials on sites were covered.</p> |                                  |

| Inspection Date | Key Observations | Recommendations / Actions | Close-out Date / Status |
|-----------------|------------------|---------------------------|-------------------------|
| 22 October 2020 | No               | NA                        | NA                      |
| 29 October 2020 | No               | NA                        | NA                      |

### **Status of Waste Management**

- 6.4 The amount of wastes generated by the major site activities of the work contracts within the Project during the reporting month is shown in Appendix N.
- 6.5 The Contractor was registered as a chemical waste producer for the Project. The Contractor was 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 Practice on the Packaging, Labelling and Storage of Chemical Wastes.

### **Status of Environmental Licenses, Notification and Permits**

- 6.6 A summary of the relevant permits, licenses and/or notifications on environmental protection for the Project is shown in Table 6.2. Environmental licenses and notifications are reported in Appendix O.

*Table 6.2 Summary of Environmental Licenses, Notifications and Permits*

| Environmental Licenses, Notifications and Permits | Ref. No.          | Valid Form  | Valid Till  |
|---|-------------------|-------------|-------------|
| Environmental Permit under EIAO                   | EP-337/2009       | 23 Apr 2009 | N/A         |
|   | EP-445/2013       | 3 May 2013  | N/A         |
|   | EP-445/2013/A     | 13 Aug 2014 | N/A         |
| Construction Dust Notification under APCO         | 445956            | 6 Jun 2019  | N/A         |
| Wastewater Discharge License under WPCO           | WT00034610-2019   | 26 Sep 2019 | 30 Sep 2024 |
| Waste Disposal Billing Account                    | 7034450           | 28 Jun 2019 | N/A         |
| Registration as a Chemical Waste Producer         | 5218-286-P3182-03 | 18 Jul 2019 | N/A         |
| Construction Noise Permit                         | GW-RE0173-20      | 28 Apr 2020 | 27 Oct 2020 |

| Environmental Licenses, Notifications and Permits | Ref. No.     | Valid Form  | Valid Till  |
|---|--------------|-------------|-------------|
|   | GW-RE0449-20 | 1 Jun 2020  | 26 Nov 2020 |
|   | GW-RE0582-20 | 15 Jul 2020 | 19 Oct 2020 |
|   | GW-RE0705-20 | 21 Aug 2020 | 23 Mar 2021 |
|   | GW-RE0735-20 | 3 Sep 2020  | 6 Mar 2021  |
|   | GW-RE0742-20 | 11 Sep 2020 | 6 Mar 2021  |
|   | GW-RE0862-20 | 12 Oct 2020 | 27 Apr 2021 |
|   | GW-RE0869-20 | 16 Oct 2020 | 8 Apr 2021  |

### **Implementation Status of Environmental Mitigation Measures**

6.7 The Contractor has implemented environmental mitigation measures and requires as stated in the EIA reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting month is summarized in Appendix P.

6.8 In response to the site audit findings, the Contractor carried out corrective actions with summary given in Appendix P.

### **Environmental Complaint and Non-compliance**

6.9 One complaint was received in the reporting month. Summary of complaints in the reporting month is tabulated in Table 6.3.

*Table 6.3 Summary of complaints in the Reporting Month*

| Date of complaint received  | Date of complaint   | Description of complaint  | Investigation / Recommendations / Action take   | Close-out date / Status  |
|---|---|---|---|--|
| A dust complaint was referred from the Contractor on 21 October 2020. | Contractor received public complaint via 1823 hotline (Case no. 3-6518939602) on 20 October 2020. | <ol style="list-style-type: none"> <li>1. The water spraying system was not operated in proper time.</li> <li>2. Stockpile was not covered properly.</li> <li>3. Haul road was not wetted.</li> <li>4. Materials transported on trucks were not provided with mechanical covers.</li> </ol> | <u>Investigation</u><br>1. Based on the information provided by the Contractor on 22 October 2020, the water sprinklers system was sprayed every 15 minutes with 70 seconds interval automatically. For the area that water | <ul style="list-style-type: none"> <li>- Closed-out on 5 Nov 2020</li> <li>- No further complaint was received.</li> </ul> |



| Date of complaint received | Date of complaint | Description of complaint | Investigation / Recommendations / Action take   | Close-out date / Status |
|----------------------------|-------------------|--------------------------|---|-------------------------|
|                            |                   |                          | <p>sprinklers system was not covered, manual water spraying was provided. Dump trucks were covered with mechanical cover after loading the materials. The stockpile area was covered by the tarpaulin during night time.</p> <p>2. Based on the monitoring results on 16 October 2020, the 1-hour and 24-hour TSP results were below the Action Levels and Limit Levels.</p> <p>3. Regular site inspection was conducted by ET on 22 October 2020, no adverse observation against the dust impact was recorded.</p> <p><u>Recommendations</u><br/>To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:</p> <p>1. Increase the frequency and duration for automatic water spraying system.</p> <p>2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by</p> |                         |

| Date of complaint received | Date of complaint | Description of complaint | Investigation / Recommendations / Action take  | Close-out date / Status |
|----------------------------|-------------------|--------------------------|--|-------------------------|
|                            |                   |                          | <p>water trucks or manually in regular basis.</p> <p>3. Ensure stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process.</p> <p><u>Action taken</u><br/>As per the Contractor, the water sprinkler are now adjusted to start at 8:00am and end at 6:00pm for Monday to Saturday while from 8:00am to 5:00pm on Sunday. Water spraying are set with 5-minute time interval with duration 30-60 seconds.</p> |                         |

6.10 Complaint log and Complaint Investigation report are shown in Appendix Q.

**Notifications of summons and successful prosecutions**

6.11 No notification of summons and successful prosecutions was received in the reporting month. Summary of summons and successful prosecutions in the reporting month is tabulated in Table 6.4.

*Table 6.4 Summary of summons and successful prosecutions in the Reporting Month*

| Date of receiving notification of summons or prosecutions                                    | Date of event | Description of event | Action take | Close-out date / Status |
|--|---------------|----------------------|-------------|-------------------------|
| No notification of summons and successful prosecutions were received in the reporting month. | NA            | NA                   | NA          | NA                      |

6.12 The summaries of cumulative environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in Appendix Q.

## 7. FUTURE KEY ISSUES

### Construction Programme in the coming month

7.1 The major construction activities and potential impacts in the next reporting month as follow:

*Table 7.1 Summary of future key issues and potential impact in the coming month*

| Future key issues in the coming month                                   | Potential impact      |
|---|-----------------------|
| Installation of Sheet Pile  | Noise and Air Quality |
| Pumping Test at North Depressed Road Cofferdam and South Depressed Road | Noise                 |
| Permanent Structure Construction for Pile Cap                           | Noise and Air Quality |
| ELS Installation & Excavation for South Depressed Road                  | Noise and Air Quality |
| Construction of base slab, walls and columns for North Approach Ramp    | Noise and Air Quality |
| Permanent Structure Construction for North Depressed Road               | Noise and Air Quality |
| Erection of Temporary Working Platform                                  | Noise and Air Quality |

7.2 The mitigation measures for environmental impact including Air Quality, Construction Noise, Water Quality, Chemical and Waste Management, Landscape and Visual shall be implemented:

- Sufficient watering of the works site with the active dust emitting activities,
- Limitation of the speed for vehicles on unpaved site roads,
- Properly cover the stockpiles,
- Good maintenance to the plant and equipment,
- Use of quieter plant and Quality Powered Mechanical Equipment (QPME),
- Provide movable noise barriers,
- Appropriate desilting/ sedimentation devices provided on site for treatment before discharge,
- Well maintain the drainage system to prevent the spillage of wastewater during heavy rainfall,
- Onsite waste sorting and implementation of trip ticket system,
- Good management and control on construction waste reduction,
- Erection of decorative screen hoarding,
- Strictly following the Environmental Permits and Licenses, and
- Provide sufficient mitigation measures as recommended in Approved EIA Reports.

**Environmental Site Inspection and Monitoring Schedule for next month**

7.3 The tentative schedule for weekly site inspection and air quality and noise monitoring in the next month is provided in Appendix C.

## **8. CONCLUSIONS**

- 8.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 8.2 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.3 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.4 Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 8.5 One dust complaint (received by hotline 1823 on 20 October 2020) was referred by the Contractor in the reporting month and was closed-out on 5 November 2020. No further complaint was received.
- 8.6 No notification of summons and successful prosecutions was received in the reporting month.

**Figure**

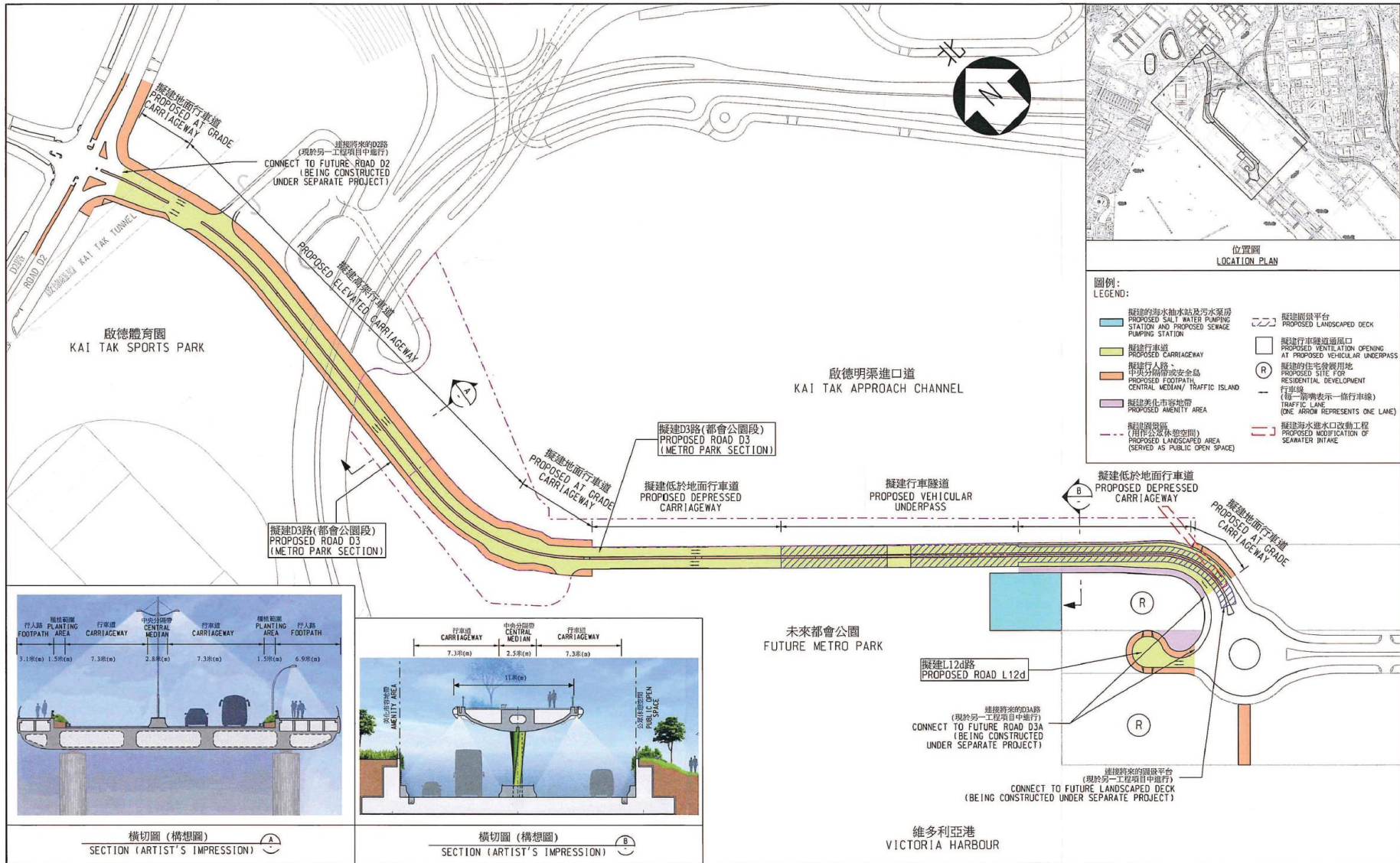


Figure 1 – Proposed works of Contract No. ED/2018/01



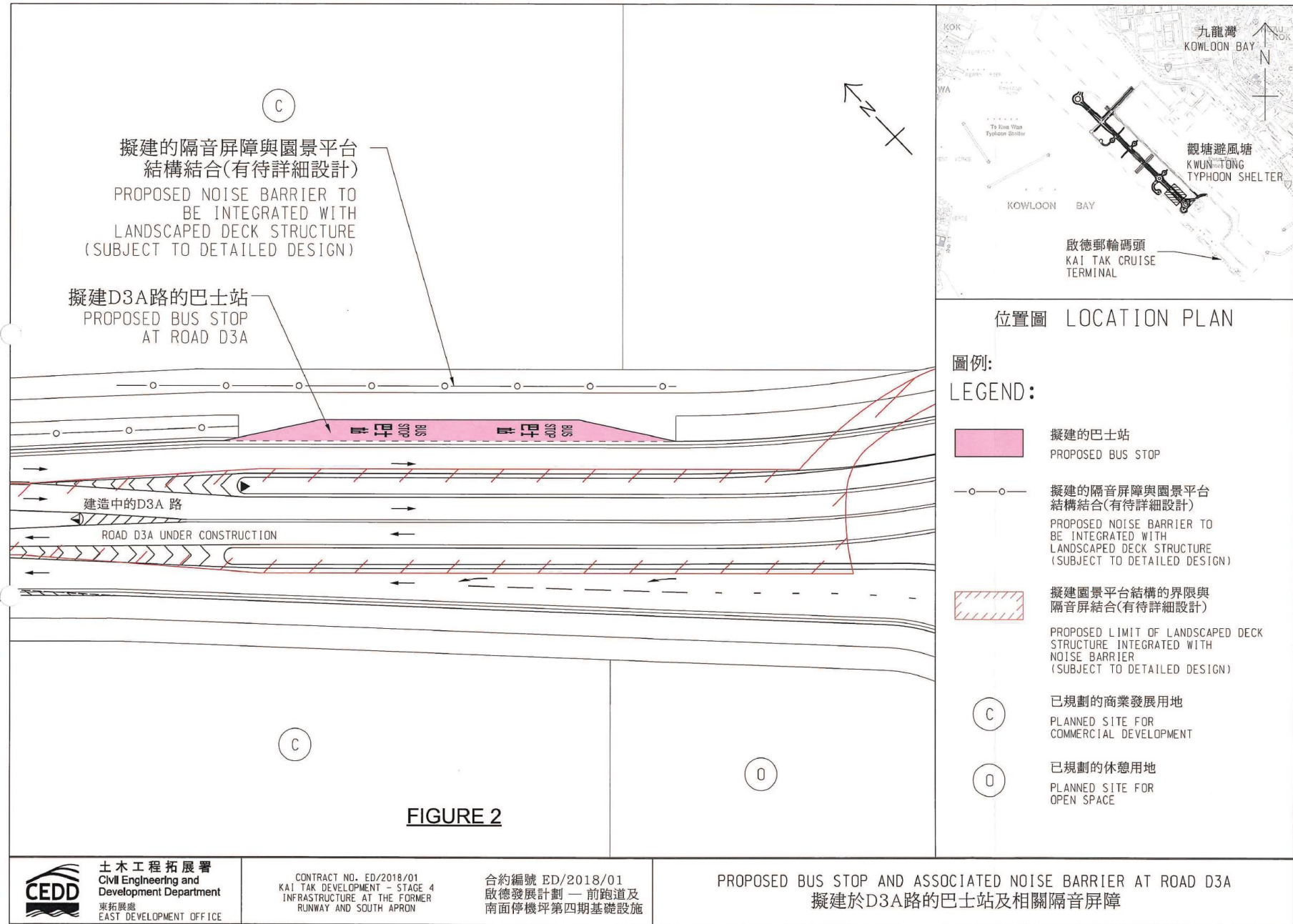


Figure 2 – Proposed Bus Stop And Associated Noise Barrier At Road D3A

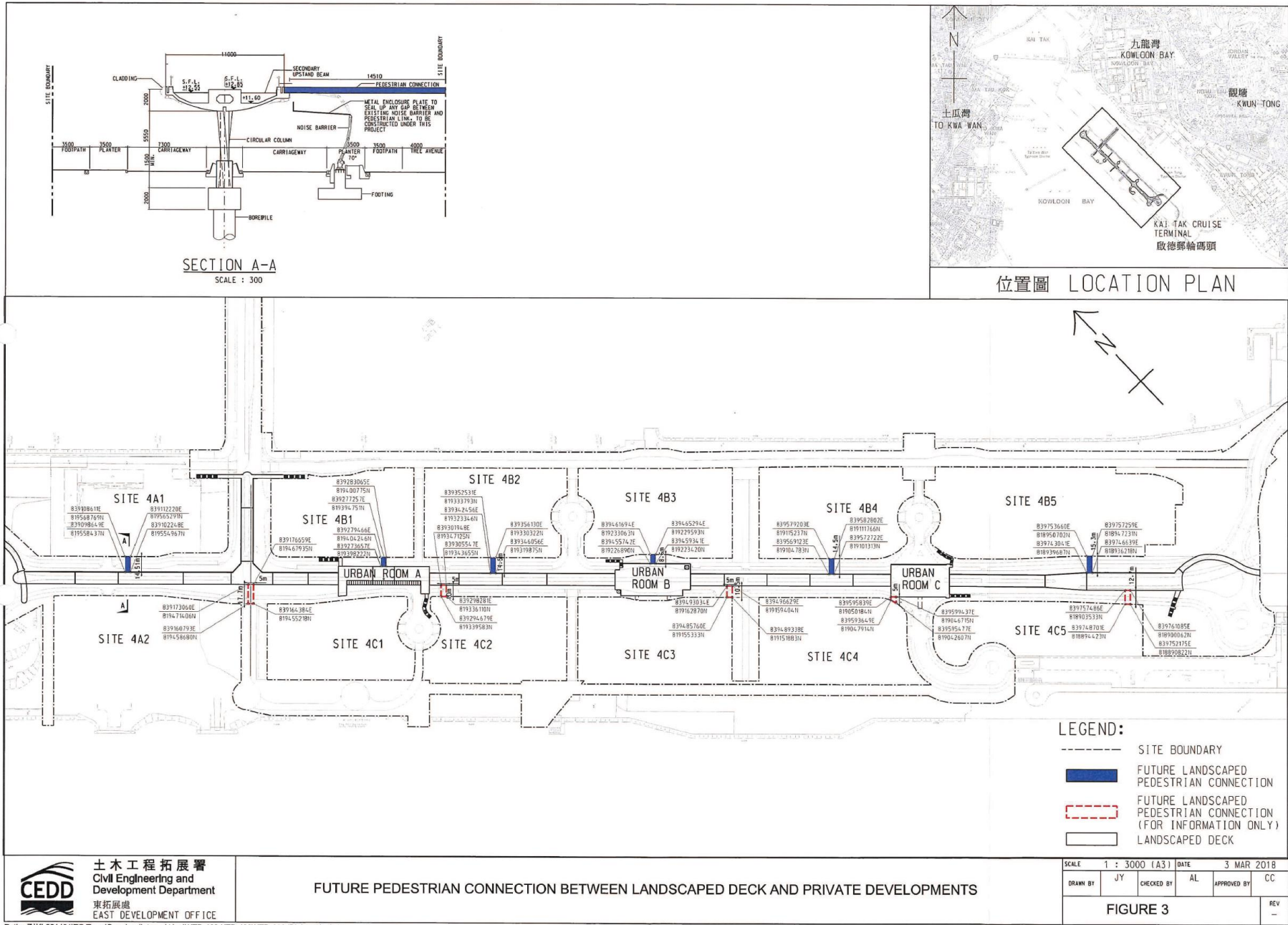


Figure 3 – Future Pedestrian Connection Between Landscaped Deck And Private Developments

Path : Z:\KL2014011TO Team\Drawing (Internal Use)\KTD-400-KTD-499\KTD-414 (PL Location).dgn

Print Date : 7/3/2019



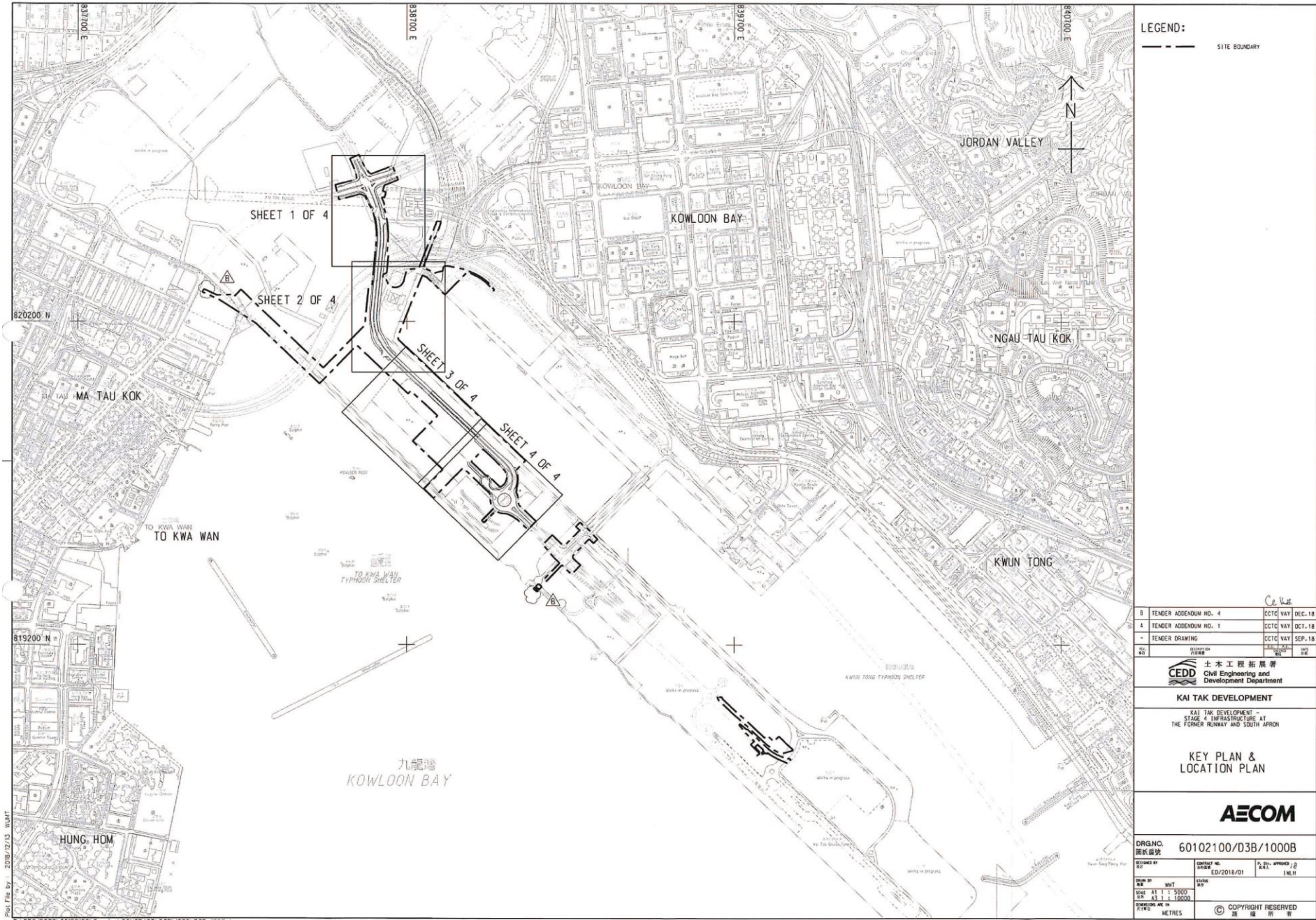


Figure 4 – Site Layout Plan



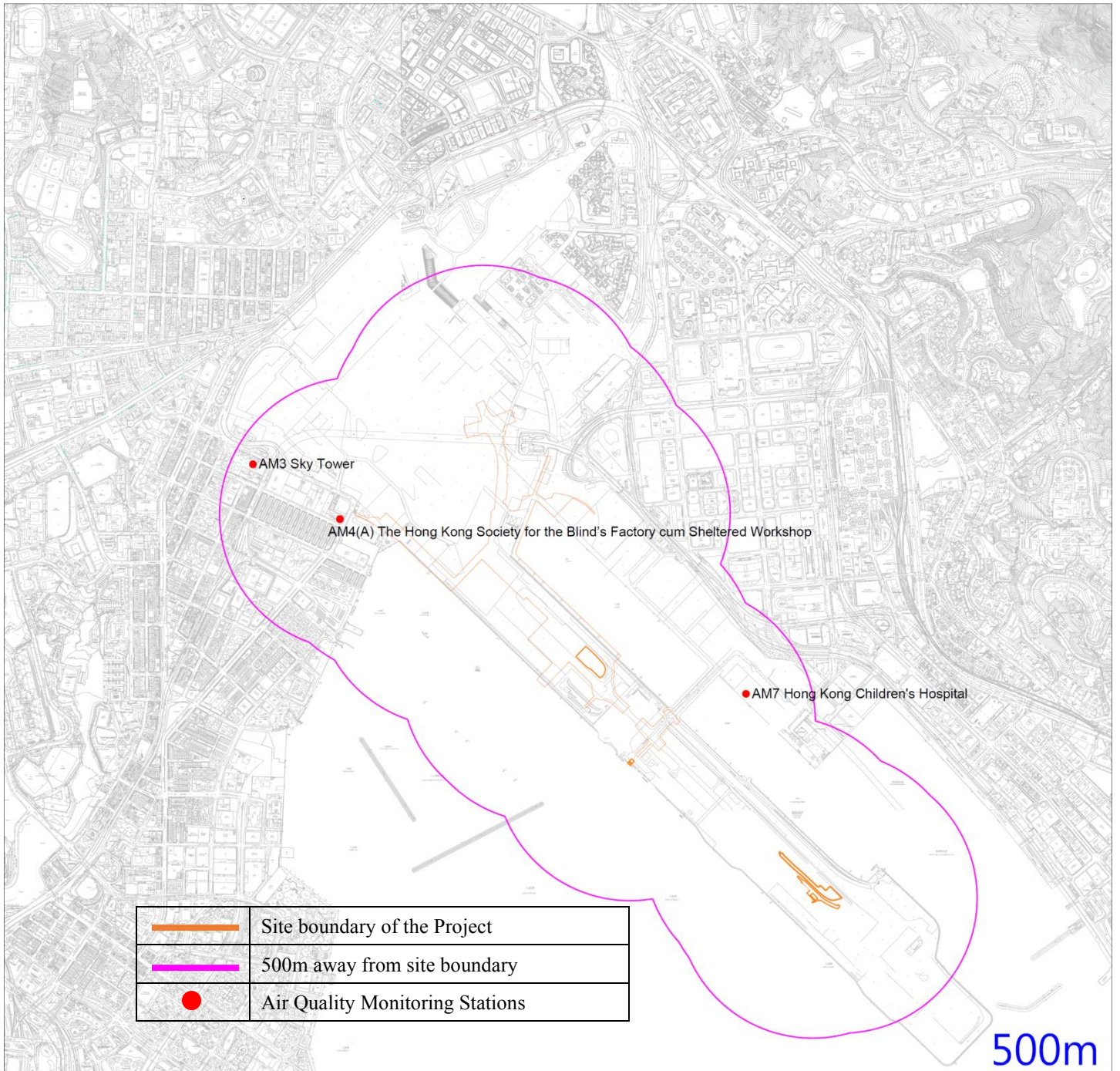


Figure 5 – Air Quality Monitoring Stations



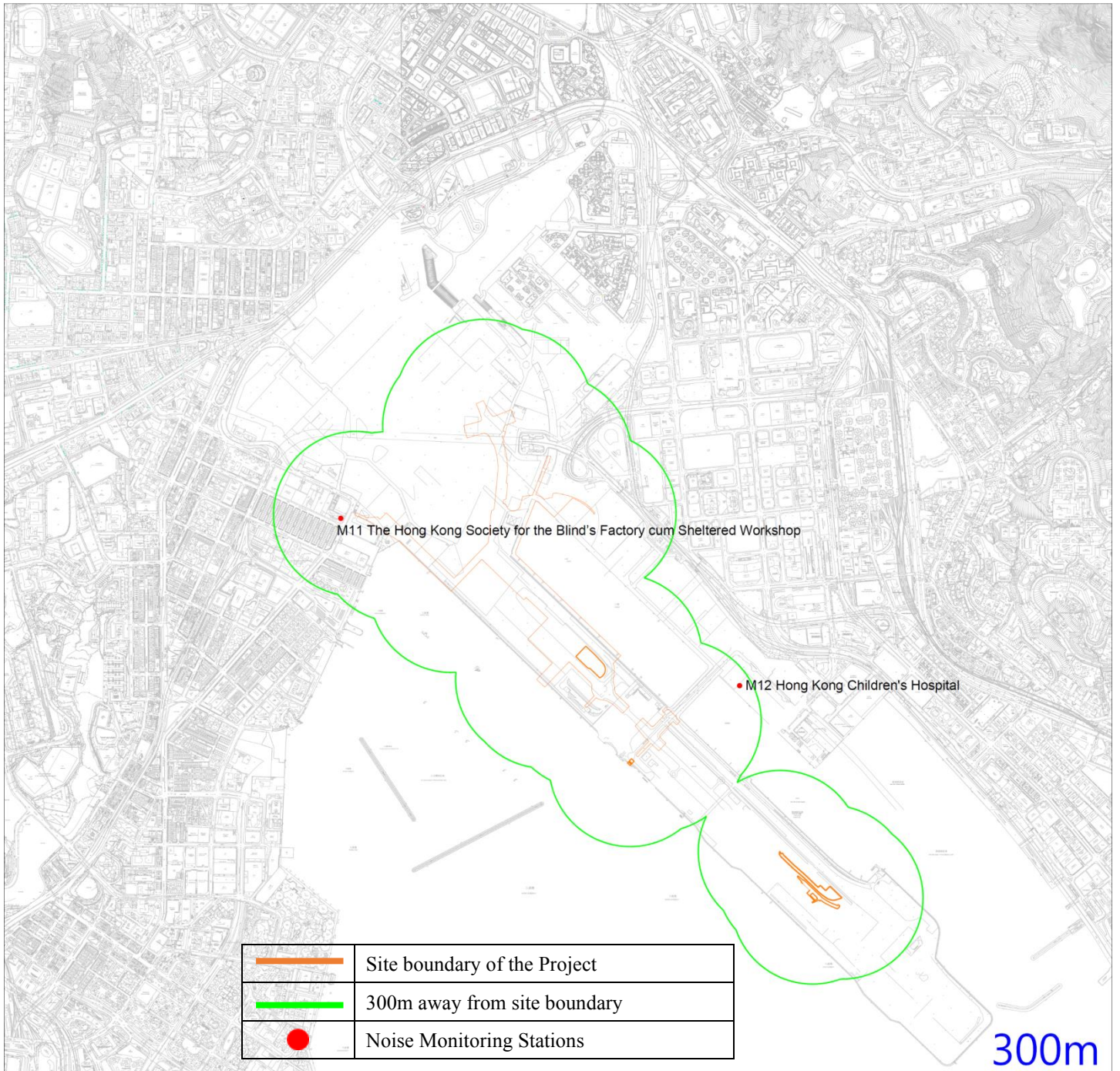
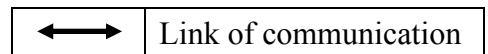
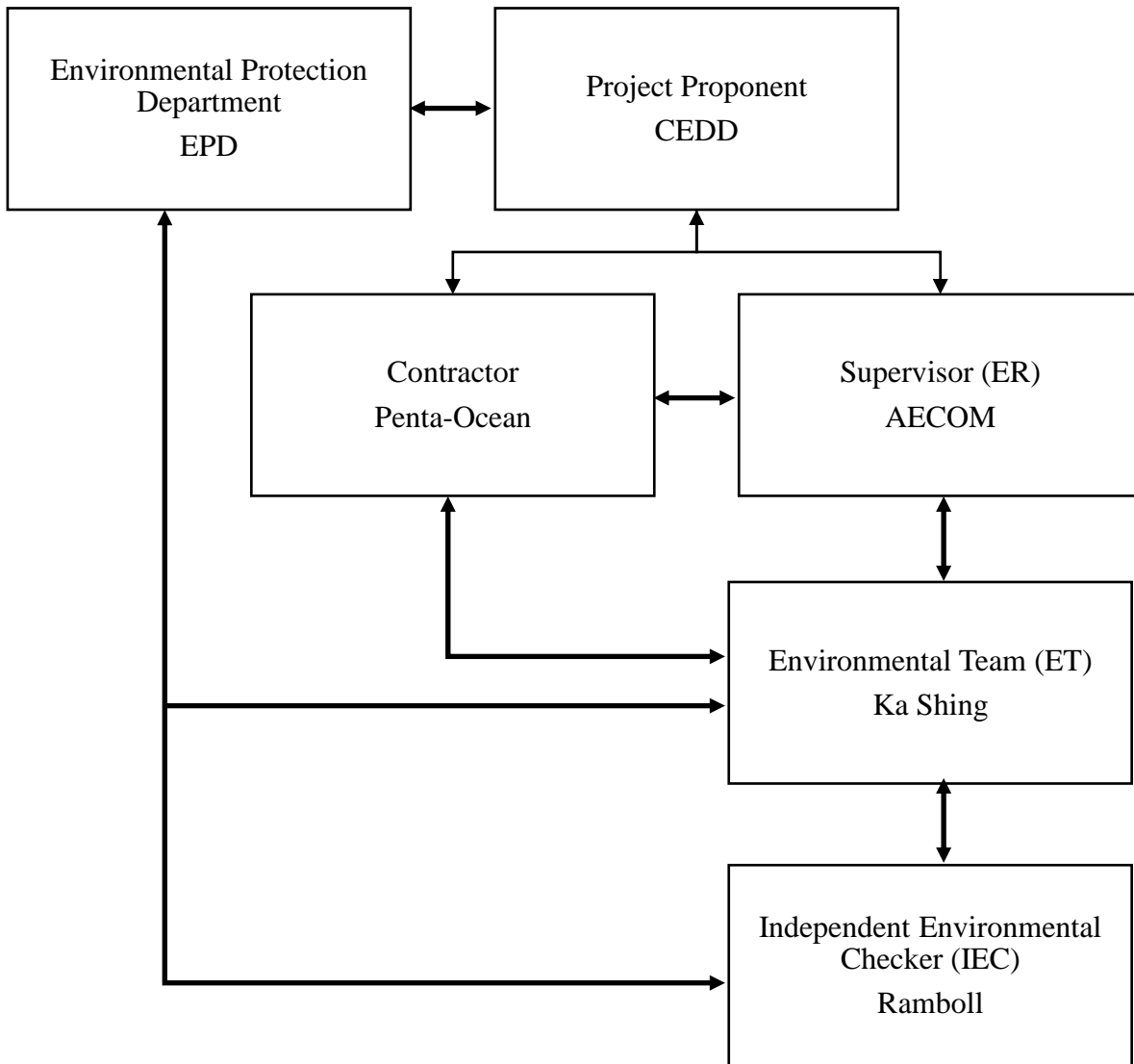


Figure 6 – Noise Monitoring Stations

**Appendix A – Organization Chart of EM&A Team**



# Appendix B – Construction Programme



| ID | Task Name   | Duration         | Remaining Duration | Actual Start           | Actual Finish   | Plan Start               | Plan Finish                | Late Start             | Late Finish            | Physical % Complete | Free Slack       | Time Risk Allowances (TRA) | Total Slack      | 2019 H1 H2 2020 H1 H2 2021 H1 H2 2022 H1 H2 2023 H1 H2 2024 H1        |  |  |  |  |  |  |  |  |  |  |  |
|----|---|------------------|--------------------|------------------------|-----------------|--------------------------|----------------------------|------------------------|------------------------|---------------------|------------------|----------------------------|------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| 1  | <b>Project Dates</b>  | <b>1841 days</b> | <b>1841 days</b>   | <b>May 16, 2019</b>    | <b>NA</b>       | <b>May 16, 2019</b>      | <b>May 29, 2024</b>        | <b>May 16, 2019</b>    | <b>May 29, 2024</b>    | <b>0%</b>           | <b>0 days</b>    | <b>0 days</b>              | <b>0 days</b>    | Sun September 22  |  |  |  |  |  |  |  |  |  |  |  |
| 2  | Contract Date   | 0 days           | 0 days             | May 16, 2019           | May 16, 2019    | May 16, 2019             | May 16, 2019               | May 16, 2019           | May 16, 2019           | 0%                  | 0 days           | 0 days                     | 0 days           | Contract Date   |  |  |  |  |  |  |  |  |  |  |  |
| 3  | <b>Date of Commencement &amp; Completion (CDP1: Item 3)</b>           | <b>1827 days</b> | <b>1827 days</b>   | <b>May 30, 2019</b>    | <b>NA</b>       | <b>May 30, 2019</b>      | <b>May 29, 2024</b>        | <b>May 30, 2019</b>    | <b>May 29, 2024</b>    | <b>0%</b>           | <b>0 days</b>    | <b>0 days</b>              | <b>0 days</b>    | Starting Date (CDP1: Item 3)  |  |  |  |  |  |  |  |  |  |  |  |
| 4  | Starting Date (CDP1: Item 3)  | 0 days           | 0 days             | May 30, 2019           | May 30, 2019    | May 30, 2019             | May 30, 2019               | May 30, 2019           | May 30, 2019           | 100%                | 0 days           | 0 days                     | 0 days           | Completion Date   |  |  |  |  |  |  |  |  |  |  |  |
| 5  | Completion Date   | 0 days           | 0 days             | NA                     | NA              | May 30, 2023             | May 30, 2023               | May 30, 2023           | May 30, 2023           | 0%                  | 0 days           | 0 days                     | 0 days           | Schedule of Access Dates (CDP1: Item 3)                               |  |  |  |  |  |  |  |  |  |  |  |
| 6  | Establishment Work  | 365 days         | 365 days           | NA                     | NA              | May 31, 2023             | May 29, 2024               | May 31, 2023           | May 29, 2024           | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 1, 6A, 6B, 9A, 9B                                  |  |  |  |  |  |  |  |  |  |  |  |
| 7  | <b>Schedule of Access Dates (CDP1: Item 3[TA No.1])</b>               | <b>1221 days</b> | <b>1221 days</b>   | <b>May 30, 2019</b>    | <b>NA</b>       | <b>May 30, 2019</b>      | <b>October 2, 2022</b>     | <b>May 30, 2019</b>    | <b>October 2, 2022</b> | <b>0%</b>           | <b>0 days</b>    | <b>0 days</b>              | <b>0 days</b>    | Access Date - Part 2A, 2C   |  |  |  |  |  |  |  |  |  |  |  |
| 8  | Access Date - Part 1, 6A, 6B, 9A, 9B                                  | 0 days           | 0 days             | May 30, 2019           | May 30, 2019    | May 30, 2019             | May 30, 2019               | May 30, 2019           | May 30, 2019           | 100%                | 0 days           | 0 days                     | 0 days           | Access Date - Part 2B   |  |  |  |  |  |  |  |  |  |  |  |
| 9  | Access Date - Part 2A, 2C   | 0 days           | 0 days             | NA                     | NA              | June 2, 2020             | June 2, 2020               | June 2, 2020           | June 2, 2020           | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 2E   |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Access Date - Part 2B   | 0 days           | 0 days             | NA                     | NA              | January 31, 2021         | January 31, 2021           | January 31, 2021       | January 31, 2021       | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 3A   |  |  |  |  |  |  |  |  |  |  |  |
| 11 | Access Date - Part 2E   | 0 days           | 0 days             | NA                     | NA              | October 2, 2022          | October 2, 2022            | October 2, 2022        | October 2, 2022        | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 3B, 4  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | Access Date - Part 3A   | 0 days           | 0 days             | NA                     | NA              | March 6, 2022            | March 6, 2022              | March 6, 2022          | March 6, 2022          | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 3F   |  |  |  |  |  |  |  |  |  |  |  |
| 13 | Access Date - Part 3B, 4  | 0 days           | 0 days             | NA                     | NA              | March 5, 2021            | March 5, 2021              | March 5, 2021          | March 5, 2021          | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 3H, 7A, 7B, 8, 9 (TA No.1)                         |  |  |  |  |  |  |  |  |  |  |  |
| 14 | Access Date - Part 3C, 3D, 3E, 3G, 3I                                 | 0 days           | 0 days             | NA                     | NA              | December 2, 2019         | December 2, 2019           | December 2, 2019       | December 2, 2019       | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Part 10   |  |  |  |  |  |  |  |  |  |  |  |
| 15 | Access Date - Part 3F   | 0 days           | 0 days             | NA                     | NA              | June 3, 2022             | June 3, 2022               | June 3, 2022           | June 3, 2022           | 0%                  | 0 days           | 0 days                     | 0 days           | Access Date - Area WA1  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | Access Date - Part 3H, 7A, 7B, 8, 9 (TA No.1)                         | 0 days           | 0 days             | NA                     | NA              | August 31, 2021          | August 31, 2021            | August 31, 2021        | August 31, 2021        | 0%                  | 0 days           | 0 days                     | 0 days           | Schedule of Time for Ordering (CDP1: Item CI.B5)                      |  |  |  |  |  |  |  |  |  |  |  |
| 17 | Access Date - Part 10   | 0 days           | 0 days             | NA                     | NA              | June 2, 2021             | June 2, 2021               | June 2, 2021           | June 2, 2021           | 0%                  | 0 days           | 0 days                     | 0 days           | Time for Ordering "Section Subject to Excision" - Section 4           |  |  |  |  |  |  |  |  |  |  |  |
| 18 | Access Date - Area WA1  | 0 days           | 0 days             | May 30, 2019           | May 30, 2019    | May 30, 2019             | May 30, 2019               | May 30, 2019           | May 30, 2019           | 100%                | 0 days           | 0 days                     | 0 days           | Time for Ordering "Section Subject to Excision" - Section 8           |  |  |  |  |  |  |  |  |  |  |  |
| 19 | <b>Schedule of Time for Ordering (CDP1: Item CI.B5)</b>               | <b>695 days</b>  | <b>695 days</b>    | <b>July 5, 2019</b>    | <b>NA</b>       | <b>July 5, 2019</b>      | <b>May 30, 2021</b>        | <b>July 5, 2019</b>    | <b>May 30, 2021</b>    | <b>0%</b>           | <b>0 days</b>    | <b>0 days</b>              | <b>0 days</b>    | Time for Ordering "Section Subject to Excision" - Section 9           |  |  |  |  |  |  |  |  |  |  |  |
| 20 | Time for Ordering "Section Subject to Excision" - Section 4           | 0 days           | 0 days             | NA                     | NA              | June 2, 2020             | June 2, 2020               | June 2, 2020           | June 2, 2020           | 0%                  | 0 days           | 0 days                     | 0 days           | Time for Ordering "Section Subject to Excision" - Section 10          |  |  |  |  |  |  |  |  |  |  |  |
| 21 | Time for Ordering "Section Subject to Excision" - Section 8           | 0 days           | 0 days             | NA                     | NA              | June 2, 2020             | June 2, 2020               | June 2, 2020           | June 2, 2020           | 0%                  | 0 days           | 0 days                     | 0 days           | Schedule of Key Dates (CDP1: Item 3[TA No.1])                         |  |  |  |  |  |  |  |  |  |  |  |
| 22 | Time for Ordering "Section Subject to Excision" - Section 9           | 0 days           | 0 days             | July 5, 2019           | July 5, 2019    | July 5, 2019             | July 5, 2019               | July 5, 2019           | July 5, 2019           | 100%                | 0 days           | 0 days                     | 0 days           | KD1   |  |  |  |  |  |  |  |  |  |  |  |
| 23 | Time for Ordering "Section Subject to Excision" - Section 10          | 0 days           | 0 days             | NA                     | NA              | May 30, 2021             | May 30, 2021               | May 30, 2021           | May 30, 2021           | 0%                  | 0 days           | 0 days                     | 0 days           | KD2   |  |  |  |  |  |  |  |  |  |  |  |
| 24 | <b>Schedule of Key Dates (CDP1: Item 3[TA No.1])</b>                  | <b>665 days</b>  | <b>665 days</b>    | <b>NA</b>              | <b>NA</b>       | <b>August 7, 2020</b>    | <b>June 3, 2022</b>        | <b>August 7, 2020</b>  | <b>June 3, 2022</b>    | <b>0%</b>           | <b>0 days</b>    | <b>0 days</b>              | <b>0 days</b>    | KD3   |  |  |  |  |  |  |  |  |  |  |  |
| 25 | KD1   | 0 days           | 0 days             | NA                     | NA              | August 7, 2020           | August 7, 2020             | August 7, 2020         | August 7, 2020         | 0%                  | 0 days           | 0 days                     | 0 days           | KD4   |  |  |  |  |  |  |  |  |  |  |  |
| 26 | KD2   | 0 days           | 0 days             | NA                     | NA              | April 18, 2021           | April 18, 2021             | April 18, 2021         | April 18, 2021         | 0%                  | 0 days           | 0 days                     | 0 days           | KD5   |  |  |  |  |  |  |  |  |  |  |  |
| 27 | KD3   | 0 days           | 0 days             | NA                     | NA              | June 1, 2021             | June 1, 2021               | June 1, 2021           | June 1, 2021           | 0%                  | 0 days           | 0 days                     | 0 days           | KD6   |  |  |  |  |  |  |  |  |  |  |  |
| 28 | KD4   | 0 days           | 0 days             | NA                     | NA              | January 31, 2022         | January 31, 2022           | January 31, 2022       | January 31, 2022       | 0%                  | 0 days           | 0 days                     | 0 days           | KD7   |  |  |  |  |  |  |  |  |  |  |  |
| 29 | KD5   | 0 days           | 0 days             | NA                     | NA              | September 17, 2021       | September 17, 2021         | September 17, 2021     | September 17, 2021     | 0%                  | 0 days           | 0 days                     | 0 days           | Section Completion Date Section 1                                     |  |  |  |  |  |  |  |  |  |  |  |
| 30 | KD6   | 0 days           | 0 days             | NA                     | NA              | December 29, 2021        | December 29, 2021          | December 29, 2021      | December 29, 2021      | 0%                  | 0 days           | 0 days                     | 0 days           | Section Completion Date Section 2                                     |  |  |  |  |  |  |  |  |  |  |  |
| 31 | KD7   | 0 days           | 0 days             | NA                     | NA              | June 3, 2022             | June 3, 2022               | June 3, 2022           | June 3, 2022           | 0%                  | 0 days           | 0 days                     | 0 days           | Section Completion Date Section 3                                     |  |  |  |  |  |  |  |  |  |  |  |
| 32 | <b>Schedule of Section Completion (CDP1 CI. X5)</b>                   | <b>1092 days</b> | <b>1092 days</b>   | <b>NA</b>              | <b>NA</b>       | <b>June 2, 2021</b>      | <b>May 29, 2024</b>        | <b>June 2, 2021</b>    | <b>May 29, 2024</b>    | <b>0%</b>           | <b>0 days</b>    | <b>0 days</b>              | <b>0 days</b>    | Section Completion Date Section 5                                     |  |  |  |  |  |  |  |  |  |  |  |
| 33 | Section Completion Date Section 1                                     | 0 days           | 0 days             | NA                     | NA              | March 1, 2022            | March 1, 2022              | March 1, 2022          | March 1, 2022          | 0%                  | 0 days           | 0 days                     | 0 days           | Section Completion Date Section 8                                     |  |  |  |  |  |  |  |  |  |  |  |
| 34 | Section Completion Date Section 2                                     | 0 days           | 0 days             | NA                     | NA              | June 2, 2021             | June 2, 2021               | June 2, 2021           | June 2, 2021           | 0%                  | 0 days           | 0 days                     | 0 days           | Section Completion Date Section 9                                     |  |  |  |  |  |  |  |  |  |  |  |
| 35 | Section Completion Date Section 3                                     | 0 days           | 0 days             | NA                     | NA              | November 2, 2021         | November 2, 2021           | November 2, 2021       | November 2, 2021       | 0%                  | 0 days           | 0 days                     | 0 days           | Pre-meeting of ACABAS   |  |  |  |  |  |  |  |  |  |  |  |
| 36 | Section Completion Date Section 4                                     | 0 days           | 0 days             | NA                     | NA              | May 30, 2023             | May 30, 2023               | May 30, 2023           | May 30, 2023           | 0%                  | 0 days           | 0 days                     | 0 days           | Design Working Group Meeting  |  |  |  |  |  |  |  |  |  |  |  |
| 37 | Section Completion Date Section 5                                     | 0 days           | 0 days             | NA                     | NA              | July 5, 2021             | July 5, 2021               | July 5, 2021           | July 5, 2021           | 0%                  | 0 days           | 0 days                     | 0 days           | Task Force on Kai Tak Harbourfront Development Meeting                |  |  |  |  |  |  |  |  |  |  |  |
| 38 | Section Completion Date Section 6                                     | 0 days           | 0 days             | NA                     | NA              | May 30, 2023             | May 30, 2023               | May 30, 2023           | May 30, 2023           | 0%                  | 0 days           | 0 days                     | 0 days           | District Council Consultation   |  |  |  |  |  |  |  |  |  |  |  |
| 39 | Section Completion Date Section 7                                     | 0 days           | 0 days             | NA                     | NA              | May 29, 2024             | May 29, 2024               | May 29, 2024           | May 29, 2024           | 0%                  | 0 days           | 0 days                     | 0 days           | Project Submission  |  |  |  |  |  |  |  |  |  |  |  |
| 40 | Section Completion Date Section 8                                     | 0 days           | 0 days             | NA                     | NA              | December 2, 2021         | December 2, 2021           | December 2, 2021       | December 2, 2021       | 0%                  | 0 days           | 0 days                     | 0 days           | Submit Third Parties Insurance  |  |  |  |  |  |  |  |  |  |  |  |
| 41 | Section Completion Date Section 9                                     | 0 days           | 0 days             | NA                     | NA              | July 5, 2021             | July 5, 2021               | July 5, 2021           | July 5, 2021           | 0%                  | 0 days           | 0 days                     | 0 days           | Submit Professional Indemnity Insurance                               |  |  |  |  |  |  |  |  |  |  |  |
| 42 | Section Completion Date Section 10                                    | 0 days           | 0 days             | NA                     | NA              | May 30, 2023             | May 30, 2023               | May 30, 2023           | May 30, 2023           | 0%                  | 0 days           | 0 days                     | 0 days           | Review, Comment and Acceptance of Insurances by Project Manager       |  |  |  |  |  |  |  |  |  |  |  |
| 43 | <b>Pre-meeting of ACABAS</b>  | <b>153 days</b>  | <b>153 days</b>    | <b>NA</b>              | <b>NA</b>       | <b>November 29, 2019</b> | <b>April 30, 2020</b>      | <b>May 29, 2024</b>    | <b>May 29, 2024</b>    | <b>0%</b>           | <b>1491 d...</b> | <b>1491 d...</b>           | <b>1491 d...</b> | Submit First Programme  |  |  |  |  |  |  |  |  |  |  |  |
| 44 | Design Working Group Meeting  | 0 days           | 0 days             | NA                     | NA              | November 29, 2019        | November 29, 2019          | May 29, 2024           | May 29, 2024           | 0%                  | 1644 d...        | 1644 d...                  | 1644 d...        | Review and Comment by Project Manager                                 |  |  |  |  |  |  |  |  |  |  |  |
| 45 | Task Force on Kai Tak Harbourfront Development Meeting                | 0 days           | 0 days             | NA                     | NA              | January 31, 2020         | January 31, 2020           | May 29, 2024           | May 29, 2024           | 0%                  | 1581 d...        | 1581 d...                  | 1581 d...        | Revise and Resubmission of Works Programme                            |  |  |  |  |  |  |  |  |  |  |  |
| 46 | District Council Consultation   | 0 days           | 0 days             | NA                     | NA              | April 30, 2020           | April 30, 2020             | May 29, 2024           | May 29, 2024           | 0%                  | 1491 d...        | 1491 d...                  | 1491 d...        | Final Review and Acceptance of the First Programme by Project Manager |  |  |  |  |  |  |  |  |  |  |  |
| 47 | <b>Project Submission</b>   | <b>853 days</b>  | <b>679.02 days</b> | <b>May 16, 2019</b>    | <b>NA</b>       | <b>May 16, 2019</b>      | <b>September 14, 20...</b> | <b>May 16, 2019</b>    | <b>May 29, 2024</b>    | <b>0%</b>           | <b>988 days</b>  | <b>0 days</b>              | <b>988 days</b>  | Submit Health and Safety Management Plan (ACC Cl. D6(2))              |  |  |  |  |  |  |  |  |  |  |  |
| 48 | Submit Third Parties Insurance  | 71 days          | 0 days             | June 18, 2019          | August 27, 2019 | June 18, 2019            | August 27, 2019            | June 18, 2019          | August 27, 2019        | 100%                | 0 days           | 0 days                     | 0 days           | Submit Detailed Programme for Safety Risk (ER Part 7, Cl. 7.3.4)      |  |  |  |  |  |  |  |  |  |  |  |
| 49 | Submit Professional Indemnity Insurance                               | 29.39 days       | 14 days            | June 11, 2019          | NA              | June 11, 2019            | October 22, 2019           | June 11, 2019          | May 29, 2024           | 52%                 | 2 days           | 0 days                     | 1681.1...        | Submit Environmental Management Plan (ACC Cl. D20(2))                 |  |  |  |  |  |  |  |  |  |  |  |
| 50 | Review, Comment and Acceptance of Insurances by Project Manager       | 139.1 days       | 50 days            | June 13, 2019          | NA              | June 13, 2019            | November 11, 2019          | June 13, 2019          | May 29, 2024           | 64%                 | 1661 days        | 0 days                     | 1661 days        | Submit QA/QC Manual   |  |  |  |  |  |  |  |  |  |  |  |
| 51 | <b>Works Programme</b>  | <b>160 days</b>  | <b>60.42 days</b>  | <b>May 16, 2019</b>    | <b>NA</b>       | <b>May 16, 2019</b>      | <b>October 22, 2019</b>    | <b>May 16, 2019</b>    | <b>June 1, 2020</b>    | <b>0%</b>           | <b>223 days</b>  | <b>0 days</b>              | <b>223 days</b>  | Submit BIM Models Deliverables  |  |  |  |  |  |  |  |  |  |  |  |
| 52 | Submit First Programme  | 20 days          | 0 days             | May 16, 2019           | June 4, 2019    | May 16, 2019             | June 4, 2019               | May 16, 2019           | June 4, 2019           | 100%                | 0 days           | 0 days                     | 0 days           | Existing Site Model (Topography)                                      |  |  |  |  |  |  |  |  |  |  |  |
| 53 | Review and Comment by Project Manager                                 | 9 days           | 0 days             | June 5, 2019           | June 13, 2019   | June 5, 2019             | June 13, 2019              | June 5, 2019           | June 13, 2019          | 100%                | 0 days           | 0 days                     | 0 days           |   |  |  |  |  |  |  |  |  |  |  |  |
| 54 | Revise and Resubmission of Works Programme                            | 30 days          | 9.21 days          | June 14, 2019          | NA              | June 14, 2019            | October 2, 2019            | June 14, 2019          | May 11, 2020           | 69%                 | 0 days           | 0 days                     | 222.79...        |   |  |  |  |  |  |  |  |  |  |  |  |
| 55 | Final Review and Acceptance of the First Programme by Project Manager | 21 days          | 21 days            | NA                     | NA              | October 2, 2019          | October 23, 2019           | May 12, 2020           | June 1, 2020           | 0%                  | 218.79 days      | 0 days                     | 222.79 days      |   |  |  |  |  |  |  |  |  |  |  |  |
| 56 | Submit Health and Safety Management Plan (ACC Cl. D6(2))              | 6 days           | 0 days             | May 30, 2019           | June 4, 2019    | May 30, 2019             | June 4, 2019               | May 30, 2019           | June 4, 2019           | 100%                | 0 days           | 0 days                     | 0 days           |   |  |  |  |  |  |  |  |  |  |  |  |
| 57 | Submit Detailed Programme for Safety Risk (ER Part 7, Cl. 7.3.4)      | 12 days          | 12 days            | NA                     | NA              | October 29, 2019         | November 9, 2019           | May 18, 2024           | May 29, 2024           | 0%                  | 1663 days        | 0 days                     | 1663 days        |   |  |  |  |  |  |  |  |  |  |  |  |
| 58 | Submit Environmental Management Plan (ACC Cl. D20(2))                 | 6 days           | 0 days             | May 30, 2019           | June 4, 2019    | May 30, 2019             | June 4, 2019               | May 30, 2019           | June 4, 2019           | 100%                | 0 days           | 0 days                     | 0 days           |   |  |  |  |  |  |  |  |  |  |  |  |
| 59 | Submit QA/QC Manual   | 14 days          | 14 days            | NA                     | NA              | October 25, 2019         | November 7, 2019           | May 16, 2024           | May 29, 2024           | 0%                  | 1665 d...        | 0 days                     | 1665 d...        |   |  |  |  |  |  |  |  |  |  |  |  |
| 60 | <b>Submit BIM Models Deliverables</b>                                 | <b>103 days</b>  | <b>41.33 days</b>  | <b>August 19, 2019</b> | <b>NA</b>       | <b>August 19, 2019</b>   | <b>November 30, 2019</b>   | <b>August 19, 2019</b> | <b>May 29, 2024</b>    | <b>0%</b>           | <b>1643 d...</b> | <b>0 days</b>              | <b>1643 d...</b> |   |  |  |  |  |  |  |  |  |  |  |  |
| 61 | Existing Site Model (Topography)                                      | 5 days           | 0 days             | August 19, 2019        | August 23, 2019 | August 19, 2019          | August 23, 2019            | August 19, 2019        | August 23, 2019        | 100%                | 0 days           | 0 days                     | 0 days           |   |  |  |  |  |  |  |  |  |  |  |  |

Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19

█ Critical Task █ Manual Task █ Duration-only █ Baseline Milestone █ Summary █ External Tasks █ Inactive Milestone █ Baseline Summary  
..... Critical Split ..... Split ..... Start-only ..... Baseline ..... Manual Summary ..... External Milestone ..... Inactive Summary  
█ Critical Progress █ Task Progress █ Finish-only █ Baseline Split █ Summary Progress █ Project Summary █ Inactive Task █ Deadline





| ID  | Task Name   | Duration | Remaining Duration | Actual Start       | Actual Finish    | Plan Start         | Plan Finish        | Late Start         | Late Finish        | Physical % Complete | Free Slack | Time Risk Allowances (TRA) | Total Slack | 2019 H1 | 2019 H2 | 2020 H1 | 2020 H2 | 2021 H1 | 2021 H2 | 2022 H1 | 2022 H2 | 2023 H1 | 2023 H2 | 2024 H1 |
|-----|---|----------|--------------------|--------------------|------------------|--------------------|--------------------|--------------------|--------------------|---------------------|------------|----------------------------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 120 | VCAB (Draft)  | 45 days  | 0 days             | September 4, 2019  | October 18, 2019 | September 4, 2019  | October 18, 2019   | September 4, 2019  | October 18, 2019   | 100%                | 0 days     | 2 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 121 | Address Committee's comments  | 15 days  | 15 days            | NA                 | NA               | October 19, 2019   | November 2, 2019   | October 22, 2019   | November 5, 2019   | 0%                  | 0 days     | 2 days                     | 3 days      |         |         |         |         |         |         |         |         |         |         |         |
| 122 | VCAB (Final)  | 15 days  | 15 days            | NA                 | NA               | November 3, 2019   | November 17, 2019  | November 6, 2019   | November 20, 2019  | 0%                  | 0 days     | 2 days                     | 3 days      |         |         |         |         |         |         |         |         |         |         |         |
| 123 | Durability Assessment Report (Draft)  | 60 days  | 0 days             | May 30, 2019       | July 28, 2019    | May 30, 2019       | July 28, 2019      | May 30, 2019       | July 28, 2019      | 0%                  | 0 days     | 3 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 124 | Address Comments  | 30 days  | 0 days             | July 29, 2019      | August 27, 2019  | July 29, 2019      | August 27, 2019    | July 29, 2019      | August 27, 2019    | 0%                  | 0 days     | 2 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 125 | Durability Assessment Report (Final)  | 30 days  | 4 days             | August 28, 2019    | NA               | August 28, 2019    | September 26, 2019 | August 28, 2019    | November 20, 2019  | 0%                  | 52 days    | 2 days                     | 55 days     |         |         |         |         |         |         |         |         |         |         |         |
| 126 | Landscape Mitigation Plan   | 20 days  | 20 days            | NA                 | NA               | November 18, 2019  | December 7, 2019   | November 21, 2019  | December 10, 2019  | 0%                  | 3 days     | 3 days                     | 3 days      |         |         |         |         |         |         |         |         |         |         |         |
| 127 | Site Investigation  | 209 days | 116.69 days        | June 1, 2019       | NA               | June 1, 2019       | December 26, 2019  | June 1, 2019       | January 10, 2020   | 0%                  | 15 days    |                            | 15 days     |         |         |         |         |         |         |         |         |         |         |         |
| 128 | Ground Investigation Proposal (Draft)   | 56 days  | 0 days             | June 1, 2019       | July 26, 2019    | June 1, 2019       | July 26, 2019      | June 1, 2019       | July 26, 2019      | 100%                | 0 days     | 1 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 129 | Submit & endorse by Gov. Depts and PM   | 6 days   | 0 days             | July 27, 2019      | August 1, 2019   | July 27, 2019      | August 1, 2019     | July 27, 2019      | August 1, 2019     | 100%                | 0 days     | 1 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 130 | Ground Investigation Proposal (Final)   | 25 days  | 25 days            | August 2, 2019     | NA               | August 2, 2019     | October 17, 2019   | August 2, 2019     | November 29, 2019  | 0%                  | 0 days     | 1 days                     | 43 days     |         |         |         |         |         |         |         |         |         |         |         |
| 131 | Submit and endorse by Gov. Depts and PM   | 14 days  | 14 days            | NA                 | NA               | October 18, 2019   | October 31, 2019   | November 30, 2019  | December 13, 2019  | 0%                  | 28 days    | 1 days                     | 43 days     |         |         |         |         |         |         |         |         |         |         |         |
| 132 | Supervise the SI Carry Out on Site  | 90 days  | 46 days            | August 10, 2019    | NA               | August 10, 2019    | November 7, 2019   | August 10, 2019    | November 22, 2019  | 49%                 | 0 days     | 4 days                     | 15 days     |         |         |         |         |         |         |         |         |         |         |         |
| 133 | Submit SI Report(Draft) for Comment   | 21 days  | 21 days            | NA                 | NA               | November 8, 2019   | November 28, 2019  | November 23, 2019  | December 13, 2019  | 0%                  | 0 days     | 1 days                     | 15 days     |         |         |         |         |         |         |         |         |         |         |         |
| 134 | Submit and endorse SI Report(Final) by Project Manager  | 28 days  | 28 days            | NA                 | NA               | November 29, 2019  | December 26, 2019  | December 14, 2019  | January 10, 2020   | 0%                  | 15 days    | 1 days                     | 15 days     |         |         |         |         |         |         |         |         |         |         |         |
| 135 | Lifts (LT1 to LT4), Staircase and Associated Works  | 278 days | 269.21 days        | September 12, 2019 | NA               | September 12, 2019 | June 15, 2020      | September 12, 2019 | June 19, 2020      | 0%                  | 0 days     |                            | 4 days      |         |         |         |         |         |         |         |         |         |         |         |
| 136 | Prepare AIP and ICE certification (Draft)   | 60 days  | 49 days            | September 12, 2019 | NA               | September 12, 2019 | November 10, 2019  | September 12, 2019 | November 14, 2019  | 18%                 | 0 days     | 3 days                     | 4 days      |         |         |         |         |         |         |         |         |         |         |         |
| 137 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | November 11, 2019  | January 9, 2020    | December 5, 2019   | February 2, 2020   | 0%                  | 0 days     | 0.5 days                   | 24 days     |         |         |         |         |         |         |         |         |         |         |         |
| 138 | Prepare AIP and ICE certification (Final)   | 10 days  | 10 days            | NA                 | NA               | January 10, 2020   | January 19, 2020   | February 3, 2020   | February 12, 2020  | 0%                  | 20 days    | 0 days                     | 24 days     |         |         |         |         |         |         |         |         |         |         |         |
| 139 | Prepare DDA and ICE certification (Draft)   | 90 days  | 90 days            | NA                 | NA               | November 11, 2019  | February 8, 2020   | November 15, 2019  | February 12, 2020  | 0%                  | 0 days     | 4 days                     | 4 days      |         |         |         |         |         |         |         |         |         |         |         |
| 140 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | February 9, 2020   | April 8, 2020      | February 13, 2020  | April 12, 2020     | 0%                  | 0 days     | 3 days                     | 4 days      |         |         |         |         |         |         |         |         |         |         |         |
| 141 | Prepare DDA for and ICE certification (Final)   | 15 days  | 15 days            | NA                 | NA               | April 9, 2020      | April 23, 2020     | April 13, 2020     | April 27, 2020     | 0%                  | 0 days     | 1 days                     | 4 days      |         |         |         |         |         |         |         |         |         |         |         |
| 142 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 53 days  | 53 days            | NA                 | NA               | April 24, 2020     | June 15, 2020      | April 28, 2020     | June 19, 2020      | 0%                  | 0 days     | 3 days                     | 4 days      |         |         |         |         |         |         |         |         |         |         |         |
| 143 | Noise barrier fronting to 4B5 at Rd D3A & Bus Lay By  | 222 days | 222 days           | NA                 | NA               | November 11, 2019  | June 19, 2020      | November 18, 2019  | June 26, 2020      | 0%                  | 0 days     |                            | 7 days      |         |         |         |         |         |         |         |         |         |         |         |
| 144 | Prepare AIP and ICE certification (Draft)   | 50 days  | 50 days            | NA                 | NA               | November 11, 2019  | December 30, 2019  | November 18, 2019  | January 6, 2020    | 0%                  | 0 days     | 2 days                     | 7 days      |         |         |         |         |         |         |         |         |         |         |         |
| 145 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | December 31, 2019  | February 28, 2020  | January 11, 2020   | March 10, 2020     | 0%                  | 0 days     | 0.5 days                   | 11 days     |         |         |         |         |         |         |         |         |         |         |         |
| 146 | Prepare AIP and ICE certification (Final)   | 14 days  | 14 days            | NA                 | NA               | February 29, 2020  | March 13, 2020     | March 11, 2020     | March 24, 2020     | 0%                  | 4 days     | 0 days                     | 11 days     |         |         |         |         |         |         |         |         |         |         |         |
| 147 | Prepare DDA and ICE certification (Draft)   | 78 days  | 78 days            | NA                 | NA               | December 31, 2019  | March 17, 2020     | January 7, 2020    | March 24, 2020     | 0%                  | 0 days     | 4 days                     | 7 days      |         |         |         |         |         |         |         |         |         |         |         |
| 148 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 40 days  | 40 days            | NA                 | NA               | March 18, 2020     | April 26, 2020     | March 25, 2020     | May 3, 2020        | 0%                  | 0 days     | 2 days                     | 7 days      |         |         |         |         |         |         |         |         |         |         |         |
| 149 | Prepare DDA for and ICE certification (Final)   | 14 days  | 14 days            | NA                 | NA               | April 27, 2020     | May 10, 2020       | May 4, 2020        | May 17, 2020       | 0%                  | 0 days     | 1 days                     | 7 days      |         |         |         |         |         |         |         |         |         |         |         |
| 150 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 40 days  | 40 days            | NA                 | NA               | May 11, 2020       | June 19, 2020      | May 18, 2020       | June 26, 2020      | 0%                  | 0 days     | 1 days                     | 7 days      |         |         |         |         |         |         |         |         |         |         |         |
| 151 | Decking for Underpass (Rd L14)  | 390 days | 390 days           | NA                 | NA               | May 11, 2020       | June 4, 2021       | May 23, 2020       | June 16, 2021      | 0%                  | 0 days     |                            | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 152 | Prepare AIP and ICE certification (Draft)   | 60 days  | 60 days            | NA                 | NA               | May 11, 2020       | July 9, 2020       | May 23, 2020       | July 21, 2020      | 0%                  | 0 days     | 3 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 153 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | July 10, 2020      | September 7, 2020  | August 23, 2020    | October 21, 2020   | 0%                  | 0 days     | 0.5 days                   | 44 days     |         |         |         |         |         |         |         |         |         |         |         |
| 154 | Prepare AIP and ICE certification (Final)   | 14 days  | 14 days            | NA                 | NA               | September 8, 2020  | September 21, 2020 | October 22, 2020   | November 4, 2020   | 0%                  | 0 days     | 0 days                     | 44 days     |         |         |         |         |         |         |         |         |         |         |         |
| 155 | Prepare DDA and ICE certification (Draft)   | 90 days  | 90 days            | NA                 | NA               | September 22, 2020 | December 20, 2020  | November 5, 2020   | February 2, 2021   | 0%                  | 0 days     | 1 day                      | 44 days     |         |         |         |         |         |         |         |         |         |         |         |
| 156 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | December 21, 2020  | February 18, 2021  | February 3, 2021   | April 3, 2021      | 0%                  | 0 days     | 0.5 days                   | 44 days     |         |         |         |         |         |         |         |         |         |         |         |
| 157 | Prepare DDA for and ICE certification (Final)   | 14 days  | 14 days            | NA                 | NA               | February 19, 2021  | March 4, 2021      | April 4, 2021      | April 17, 2021     | 0%                  | 0 days     | 0 days                     | 44 days     |         |         |         |         |         |         |         |         |         |         |         |
| 158 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | March 5, 2021      | May 3, 2021        | April 18, 2021     | June 16, 2021      | 0%                  | 32 days    | 0 days                     | 44 days     |         |         |         |         |         |         |         |         |         |         |         |
| 159 | AIP for E&M Works and Architectural Finishes of Underpass and ICE certification (Draft)         | 60 days  | 60 days            | NA                 | NA               | July 10, 2020      | September 7, 2020  | July 22, 2020      | September 19, 2020 | 0%                  | 0 days     | 3 day                      | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 160 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | September 8, 2020  | November 6, 2020   | September 20, 2020 | November 18, 2020  | 0%                  | 0 days     | 3 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 161 | Prepare AIP for E&M Works and Architectural Finishes of Underpass and ICE certification (Final) | 10 days  | 10 days            | NA                 | NA               | November 7, 2020   | November 16, 2020  | November 19, 2020  | November 28, 2020  | 0%                  | 0 days     | 0 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 162 | Prepare DDA for E&M Works and Architectural Finishes of Underpass certification (Draft)         | 90 days  | 90 days            | NA                 | NA               | November 17, 2020  | February 14, 2021  | November 29, 2020  | February 26, 2021  | 0%                  | 0 days     | 3 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 163 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 60 days  | 60 days            | NA                 | NA               | February 15, 2021  | April 15, 2021     | February 27, 2021  | April 27, 2021     | 0%                  | 0 days     | 3 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 164 | Prepare DDA for E&M Works and Architectural Finishes of Underpass and ICE certification (Final) | 10 days  | 10 days            | NA                 | NA               | April 16, 2021     | April 25, 2021     | April 28, 2021     | May 7, 2021        | 0%                  | 0 days     | 0 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 165 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 40 days  | 40 days            | NA                 | NA               | April 26, 2021     | June 4, 2021       | May 8, 2021        | June 16, 2021      | 0%                  | 12 days    | 2 days                     | 12 days     |         |         |         |         |         |         |         |         |         |         |         |
| 166 | Road D3 Bridge & Approach Ramps   | 226 days | 98.71 days         | May 30, 2019       | NA               | May 30, 2019       | January 10, 2020   | May 30, 2019       | January 10, 2020   | 0%                  | 0 days     |                            | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 167 | D3 Bridge   | 226 days | 106.5 days         | May 30, 2019       | NA               | May 30, 2019       | January 10, 2020   | May 30, 2019       | January 10, 2020   | 0%                  | 0 days     |                            | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 168 | Prepare AIP and ICE certification (Draft)   | 66 days  | 0 days             | May 30, 2019       | August 3, 2019   | May 30, 2019       | August 3, 2019     | May 30, 2019       | August 3, 2019     | 100%                | 0 days     | 3 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 169 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                                      | 15 days  | 0 days             | August 5, 2019     | August 19, 2019  | August 5, 2019     | August 19, 2019    | August 5, 2019     | August 19, 2019    | 100%                | 0 days     | 1 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |
| 170 | Prepare AIP and ICE certification (Final)   | 21 days  | 21 days            | August 20, 2019    | NA               | August 20, 2019    | October 13, 2019   | August 20, 2019    | October 16, 2019   | 0%                  | 3 days     | 0 days                     | 3 days      |         |         |         |         |         |         |         |         |         |         |         |
| 171 | Prepare DDA and ICE certification (Draft)   | 90 days  | 24 days            | July 19, 2019      | NA               | July 19, 2019      | October 16, 2019   | July 19, 2019      | October 16, 2019   | 73%                 | 0 days     | 5 days                     | 0 days      |         |         |         |         |         |         |         |         |         |         |         |



Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19

█ Task  
█ Manual Task  
█ Duration-only  
█ Inactive Milestone  
█ Critical Split  
█ Start-only  
█ Baseline  
█ Inactive Summary  
█ Critical Progress  
█ Task Progress  
█ Finish-only  
█ Baseline Split  
█ Milestone  
█ Summary Progress  
█ Project Summary  
█ Inactive Task  
█ Deadline  
█ External Tasks  
█ External Milestone  
█ Baseline Summary

| ID  | Task Name  | Duration        | Remaining Duration | Actual Start           | Actual Finish      | Plan Start             | Plan Finish             | Late Start             | Late Finish              | Physical % Complete | Free Slack      | Time Risk Allowances (TRA) | Total Slack     | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |    |    |    |  |
|-----|--|-----------------|--------------------|------------------------|--------------------|------------------------|-------------------------|------------------------|--------------------------|---------------------|-----------------|----------------------------|-----------------|------|------|------|------|------|------|----|----|----|--|
|     |  |                 |                    |                        |                    |                        |                         |                        |                          |                     |                 |                            |                 | H1   | H2   | H1   | H2   | H1   | H2   | H1 | H2 | H1 |  |
| 172 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 40 days         | 40 days            | NA                     | NA                 | October 17, 2019       | November 25, 2019       | October 17, 2019       | November 25, 2019        | 0%                  | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 173 | Prepare DDA for and ICE certification (Final)                  | 15 days         | 15 days            | NA                     | NA                 | November 26, 2019      | December 10, 2019       | November 26, 2019      | December 10, 2019        | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 174 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 31 days         | 31 days            | NA                     | NA                 | December 11, 2019      | January 10, 2020        | December 11, 2019      | January 10, 2020         | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 175 | <b>D3 North Approach Ramp</b>                                  | <b>226 days</b> | <b>103.48 days</b> | <b>May 30, 2019</b>    | <b>NA</b>          | <b>May 30, 2019</b>    | <b>January 10, 2020</b> | <b>May 30, 2019</b>    | <b>January 10, 2020</b>  | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |      |      |      |      |      |    |    |    |  |
| 176 | Prepare AIP and ICE certification (Draft)                      | 56 days         | 0 days             | May 30, 2019           | July 24, 2019      | May 30, 2019           | July 24, 2019           | May 30, 2019           | July 24, 2019            | 100%                | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 177 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 12 days         | 0 days             | July 25, 2019          | August 5, 2019     | July 25, 2019          | August 5, 2019          | July 25, 2019          | August 5, 2019           | 100%                | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 178 | Prepare AIP and ICE certification (Final)                      | 29 days         | 15 days            | August 6, 2019         | NA                 | August 6, 2019         | October 7, 2019         | August 6, 2019         | October 16, 2019         | 48%                 | 9 days          | 0 days                     | 9 days          |      |      |      |      |      |      |    |    |    |  |
| 179 | Prepare DDA and ICE certification (Draft)                      | 90 days         | 24 days            | July 19, 2019          | NA                 | July 19, 2019          | October 16, 2019        | July 19, 2019          | October 16, 2019         | 73%                 | 0 days          | 5 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 180 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 40 days         | 40 days            | NA                     | NA                 | October 17, 2019       | November 25, 2019       | October 17, 2019       | November 25, 2019        | 0%                  | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 181 | Prepare DDA for and ICE certification (Final)                  | 15 days         | 15 days            | NA                     | NA                 | November 26, 2019      | December 10, 2019       | November 26, 2019      | December 10, 2019        | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 182 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 31 days         | 31 days            | NA                     | NA                 | December 11, 2019      | January 10, 2020        | December 11, 2019      | January 10, 2020         | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 183 | <b>D3 South Approach Ramp</b>                                  | <b>226 days</b> | <b>86.62 days</b>  | <b>May 30, 2019</b>    | <b>NA</b>          | <b>May 30, 2019</b>    | <b>January 10, 2020</b> | <b>May 30, 2019</b>    | <b>January 10, 2020</b>  | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |      |      |      |      |      |    |    |    |  |
| 184 | Prepare AIP and ICE certification (Draft)                      | 50 days         | 0 days             | May 30, 2019           | July 18, 2019      | May 30, 2019           | July 18, 2019           | May 30, 2019           | July 18, 2019            | 100%                | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 185 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 46 days         | 0 days             | July 19, 2019          | September 2, 2019  | July 19, 2019          | September 2, 2019       | July 19, 2019          | September 2, 2019        | 100%                | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 186 | Prepare AIP and ICE certification (Final)                      | 15 days         | 0 days             | August 18, 2019        | September 1, 2019  | August 18, 2019        | September 1, 2019       | August 18, 2019        | September 1, 2019        | 100%                | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 187 | Prepare DDA and ICE certification (Draft)                      | 90 days         | 24 days            | July 19, 2019          | NA                 | July 19, 2019          | October 16, 2019        | July 19, 2019          | October 16, 2019         | 73%                 | 0 days          | 5 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 188 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 40 days         | 40 days            | NA                     | NA                 | October 17, 2019       | November 25, 2019       | October 17, 2019       | November 25, 2019        | 0%                  | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 189 | Prepare DDA for and ICE certification (Final)                  | 15 days         | 15 days            | NA                     | NA                 | November 26, 2019      | December 10, 2019       | November 26, 2019      | December 10, 2019        | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 190 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 31 days         | 31 days            | NA                     | NA                 | December 11, 2019      | January 10, 2020        | December 11, 2019      | January 10, 2020         | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 191 | <b>Road D3 Underpass and Depressed Road</b>                    | <b>412 days</b> | <b>213.27 days</b> | <b>May 30, 2019</b>    | <b>NA</b>          | <b>May 30, 2019</b>    | <b>July 14, 2020</b>    | <b>May 30, 2019</b>    | <b>December 1, 2020</b>  | <b>0%</b>           | <b>140 days</b> | <b>140 days</b>            | <b>140 days</b> |      |      |      |      |      |      |    |    |    |  |
| 192 | <b>Underpass</b>   | <b>412 days</b> | <b>296 days</b>    | <b>May 30, 2019</b>    | <b>NA</b>          | <b>May 30, 2019</b>    | <b>July 14, 2020</b>    | <b>May 30, 2019</b>    | <b>December 1, 2020</b>  | <b>0%</b>           | <b>100 days</b> | <b>140 days</b>            | <b>140 days</b> |      |      |      |      |      |      |    |    |    |  |
| 193 | Prepare AIP and ICE certification (Draft)                      | 50 days         | 0 days             | May 30, 2019           | July 18, 2019      | May 30, 2019           | July 18, 2019           | May 30, 2019           | July 18, 2019            | 100%                | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 194 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 40 days         | 0 days             | July 19, 2019          | August 27, 2019    | July 19, 2019          | August 27, 2019         | July 19, 2019          | August 27, 2019          | 100%                | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 195 | Prepare AIP and ICE certification (Final)                      | 38 days         | 12 days            | August 28, 2019        | NA                 | August 28, 2019        | October 4, 2019         | August 28, 2019        | October 4, 2019          | 68%                 | 0 days          | 2 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 196 | Prepare DDA and ICE certification (Draft)                      | 64 days         | 64 days            | NA                     | NA                 | October 5, 2019        | December 7, 2019        | October 5, 2019        | December 7, 2019         | 0%                  | 0 days          | 3 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 197 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 90 days         | 90 days            | NA                     | NA                 | December 8, 2019       | March 6, 2020           | April 26, 2020         | July 24, 2020            | 0%                  | 0 days          | 0.5 days                   | 140 days        |      |      |      |      |      |      |    |    |    |  |
| 198 | Prepare DDA for and ICE certification (Final)                  | 40 days         | 40 days            | NA                     | NA                 | March 7, 2020          | April 15, 2020          | July 25, 2020          | September 2, 2020        | 0%                  | 0 days          | 0 days                     | 140 days        |      |      |      |      |      |      |    |    |    |  |
| 199 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 90 days         | 90 days            | NA                     | NA                 | April 16, 2020         | July 14, 2020           | September 3, 2020      | December 1, 2020         | 0%                  | 100 days        | 0 days                     | 140 days        |      |      |      |      |      |      |    |    |    |  |
| 200 | <b>Depressed Road (North and South)</b>                        | <b>162 days</b> | <b>33.85 days</b>  | <b>May 30, 2019</b>    | <b>NA</b>          | <b>May 30, 2019</b>    | <b>November 7, 2019</b> | <b>May 30, 2019</b>    | <b>April 15, 2020</b>    | <b>0%</b>           | <b>46 days</b>  | <b>160 days</b>            | <b>160 days</b> |      |      |      |      |      |      |    |    |    |  |
| 201 | Prepare AIP and ICE certification (Draft)                      | 66 days         | 0 days             | May 30, 2019           | August 3, 2019     | May 30, 2019           | August 3, 2019          | May 30, 2019           | August 3, 2019           | 100%                | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 202 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 30 days         | 0 days             | August 6, 2019         | September 4, 2019  | August 6, 2019         | September 4, 2019       | August 6, 2019         | September 4, 2019        | 100%                | 0 days          | 2 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 203 | Prepare AIP and ICE certification (Final)                      | 10 days         | 10 days            | NA                     | NA                 | September 23, 2019     | October 2, 2019         | April 6, 2020          | April 15, 2020           | 0%                  | 196 days        | 0 days                     | 196 days        |      |      |      |      |      |      |    |    |    |  |
| 204 | Prepare DDA and ICE certification (Draft)                      | 71 days         | 0 days             | May 30, 2019           | August 8, 2019     | May 30, 2019           | August 8, 2019          | May 30, 2019           | August 8, 2019           | 100%                | 0 days          | 5 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 205 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 40 days         | 0 days             | August 9, 2019         | September 17, 2019 | August 9, 2019         | September 17, 2019      | August 9, 2019         | September 17, 2019       | 100%                | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |    |  |
| 206 | Prepare DDA for and ICE certification (Final)                  | 11 days         | 6 days             | September 18, 2019     | NA                 | September 18, 2019     | September 28, 2019      | September 18, 2019     | March 6, 2020            | 45%                 | 0 days          | 1 days                     | 160 days        |      |      |      |      |      |      |    |    |    |  |
| 207 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 40 days         | 40 days            | NA                     | NA                 | September 29, 2019     | November 7, 2019        | March 7, 2020          | April 15, 2020           | 0%                  | 160 days        | 1 days                     | 160 days        |      |      |      |      |      |      |    |    |    |  |
| 208 | <b>Remaining Road Works</b>                                    | <b>332 days</b> | <b>316.32 days</b> | <b>August 13, 2019</b> | <b>NA</b>          | <b>August 13, 2019</b> | <b>July 9, 2020</b>     | <b>August 13, 2019</b> | <b>November 21, 2021</b> | <b>0%</b>           | <b>500 days</b> | <b>500 days</b>            | <b>500 days</b> |      |      |      |      |      |      |    |    |    |  |
| 209 | Prepare AIP for At-grade Road D3 and ICE certification (Draft) | 60 days         | 19 days            | August 13, 2019        | NA                 | August 13, 2019        | October 11, 2019        | August 13, 2019        | May 16, 2020             | 68%                 | 0 days          | 1 day                      | 218 days        |      |      |      |      |      |      |    |    |    |  |
| 210 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 28 days         | 28 days            | NA                     | NA                 | October 12, 2019       | November 8, 2019        | April 30, 2021         | May 27, 2021             | 0%                  | 0 days          | 0.5 days                   | 566 days        |      |      |      |      |      |      |    |    |    |  |
| 211 | Prepare AIP for At-grade Road D3 and ICE certification (Final) | 14 days         | 14 days            | NA                     | NA                 | November 9, 2019       | November 22, 2019       | May 28, 2021           | June 10, 2021            | 0%                  | 48 days         | 0 days                     | 566 days        |      |      |      |      |      |      |    |    |    |  |
| 212 | Prepare DDA for At-grade Road D3 and ICE certification (Draft) | 90 days         | 90 days            | NA                     | NA                 | October 12, 2019       | January 9, 2020         | March 13, 2021         | June 10, 2021            | 0%                  | 0 days          | 1 day                      | 518 days        |      |      |      |      |      |      |    |    |    |  |
| 213 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 60 days         | 60 days            | NA                     | NA                 | January 10, 2020       | March 9, 2020           | June 11, 2021          | August 9, 2021           | 0%                  | 0 days          | 0.5 days                   | 518 days        |      |      |      |      |      |      |    |    |    |  |
| 214 | Prepare DDA for At-grade Road D3 and ICE certification (Final) | 14 days         | 14 days            | NA                     | NA                 | March 10, 2020         | March 23, 2020          | August 10, 2021        | August 23, 2021          | 0%                  | 0 days          | 0 days                     | 518 days        |      |      |      |      |      |      |    |    |    |  |
| 215 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 90 days         | 90 days            | NA                     | NA                 | March 24, 2020         | June 21, 2020           | August 24, 2021        | November 21, 2021        | 0%                  | 518 days        | 0 days                     | 518 days        |      |      |      |      |      |      |    |    |    |  |
| 216 | Prepare AIP for Road L12d and ICE certification (Draft)        | 60 days         | 60 days            | NA                     | NA                 | October 12, 2019       | December 10, 2019       | May 17, 2020           | July 15, 2020            | 0%                  | 0 days          | 1 day                      | 218 days        |      |      |      |      |      |      |    |    |    |  |
| 217 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 28 days         | 28 days            | NA                     | NA                 | December 11, 2019      | January 7, 2020         | April 24, 2021         | May 21, 2021             | 0%                  | 0 days          | 0.5 days                   | 500 days        |      |      |      |      |      |      |    |    |    |  |
| 218 | Prepare AIP for Road L12d and ICE certification (Final)        | 10 days         | 10 days            | NA                     | NA                 | January 8, 2020        | January 17, 2020        | May 22, 2021           | May 31, 2021             | 0%                  | 0 days          | 0 days                     | 500 days        |      |      |      |      |      |      |    |    |    |  |
| 219 | Prepare DDA for Road L12d and ICE certification (Draft)        | 90 days         | 90 days            | NA                     | NA                 | January 18, 2020       | April 16, 2020          | June 1, 2021           | August 29, 2021          | 0%                  | 0 days          | 1 day                      | 500 days        |      |      |      |      |      |      |    |    |    |  |
| 220 | Submit & endorse by PM and Statutory Authorities/Gov. Dept     | 60 days         | 60 days            | NA                     | NA                 | April 17, 2020         | June 15, 2020           | August 30, 2021        | October 28, 2021         | 0%                  | 0 days          | 0.5 days                   | 500 days        |      |      |      |      |      |      |    |    |    |  |
| 221 | Prepare DDA for Road L12d and ICE certification (Final)        | 10 days         | 10 days            | NA                     | NA                 | June 16, 2020          | June 25, 2020           | October 29, 2021       | November 7, 2021         | 0%                  | 0 days          | 0 days                     | 500 days        |      |      |      |      |      |      |    |    |    |  |



Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19

█ Task █ Manual Task █ Duration-only █ Baseline Milestone █ Summary █ External Tasks █ Inactive Milestone █ Baseline Summary

● Critical Split ● Split ● Start-only ● Baseline ● Milestone ● Manual Summary ● External Milestone ● Inactive Summary

▬ Critical Progress ▬ Task Progress ▬ Finish-only ▬ Baseline Split ▬ Summary Progress ▬ Project Summary ▬ Inactive Task ▬ Deadline



| ID  | Task Name   | Duration        | Remaining Duration | Actual Start           | Actual Finish | Plan Start              | Plan Finish              | Late Start              | Late Finish           | Physical % Complete | Free Slack     | Time Risk Allowances (TRA) | Total Slack     | 2019 | 2020             | 2021 | 2022 | 2023 | 2024 |    |    |    |  |
|-----|---|-----------------|--------------------|------------------------|---------------|-------------------------|--------------------------|-------------------------|-----------------------|---------------------|----------------|----------------------------|-----------------|------|------------------|------|------|------|------|----|----|----|--|
|     |   |                 |                    |                        |               |                         |                          |                         |                       |                     |                |                            |                 | H1   | H2               | H1   | H2   | H1   | H2   | H1 | H2 | H1 |  |
| 222 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 14 days         | 14 days            | NA                     | NA            | June 26, 2020           | July 9, 2020             | November 8, 2021        | November 21, 2021     | 0%                  | 500 days       | 0 days                     | 500 days        |      | Sun September 22 |      |      |      |      |    |    |    |  |
| 223 | AIP for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Draft) | 60 days         | 60 days            | NA                     | NA            | December 11, 2019       | February 8, 2020         | July 16, 2020           | September 13, 2020    | 0%                  | 0 days         | 1 day                      | 218 days        |      |                  |      |      |      |      |    |    |    |  |
| 224 | AIP for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Final) | 38 days         | 38 days            | NA                     | NA            | February 9, 2020        | March 17, 2020           | August 24, 2021         | September 30, 2021    | 0%                  | 52 days        | 0.5 days                   | 562 days        |      |                  |      |      |      |      |    |    |    |  |
| 225 | DDA for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Draft) | 90 days         | 90 days            | NA                     | NA            | February 9, 2020        | May 8, 2020              | July 3, 2021            | September 30, 2021    | 0%                  | 0 days         | 1 day                      | 510 days        |      |                  |      |      |      |      |    |    |    |  |
| 226 | DDA for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Final) | 52 days         | 52 days            | NA                     | NA            | May 9, 2020             | June 29, 2020            | October 1, 2021         | November 21, 2021     | 0%                  | 510 days       | 0.5 days                   | 510 days        |      |                  |      |      |      |      |    |    |    |  |
| 227 | <b>Seawater &amp; DCS Intake Box Culverts</b>                                   | <b>253 days</b> | <b>199.53 days</b> | <b>August 13, 2019</b> | <b>NA</b>     | <b>August 13, 2019</b>  | <b>April 21, 2020</b>    | <b>August 13, 2019</b>  | <b>April 21, 2020</b> | <b>0%</b>           | <b>0 days</b>  | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |    |    |  |
| 228 | Prepare AIP and ICE certification (Draft)                                       | 60 days         | 19 days            | August 13, 2019        | NA            | August 13, 2019         | October 11, 2019         | August 13, 2019         | October 11, 2019      | 68%                 | 0 days         | 3 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 229 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | October 12, 2019        | December 10, 2019        | October 12, 2019        | December 10, 2019     | 0%                  | 0 days         | 3 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 230 | Prepare AIP and ICE certification (Final)                                       | 15 days         | 15 days            | NA                     | NA            | December 11, 2019       | December 25, 2019        | December 11, 2019       | December 25, 2019     | 0%                  | 0 days         | 1 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 231 | Prepare DDA and ICE certification (Draft)                                       | 135 days        | 94 days            | August 13, 2019        | NA            | August 13, 2019         | December 25, 2019        | August 13, 2019         | December 25, 2019     | 30%                 | 0 days         | 1 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 232 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 66 days         | 66 days            | NA                     | NA            | December 26, 2019       | February 29, 2020        | December 26, 2019       | February 29, 2020     | 0%                  | 0 days         | 3 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 233 | Prepare DDA for and ICE certification (Final)                                   | 14 days         | 14 days            | NA                     | NA            | March 1, 2020           | March 14, 2020           | March 1, 2020           | March 14, 2020        | 0%                  | 0 days         | 0 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 234 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 38 days         | 38 days            | NA                     | NA            | March 15, 2020          | April 21, 2020           | March 15, 2020          | April 21, 2020        | 0%                  | 0 days         | 2 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 235 | <b>Rising Main</b>  | <b>215 days</b> | <b>215 days</b>    | <b>NA</b>              | <b>NA</b>     | <b>December 8, 2019</b> | <b>July 9, 2020</b>      | <b>December 8, 2019</b> | <b>July 9, 2020</b>   | <b>0%</b>           | <b>0 days</b>  | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |    |    |  |
| 236 | Prepare AIP and ICE certification (Draft)                                       | 60 days         | 60 days            | NA                     | NA            | December 8, 2019        | February 5, 2020         | December 8, 2019        | February 5, 2020      | 0%                  | 0 days         | 3 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 237 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | February 6, 2020        | April 5, 2020            | February 21, 2020       | April 20, 2020        | 0%                  | 0 days         | 0.5 days                   | 15 days         |      |                  |      |      |      |      |    |    |    |  |
| 238 | Prepare AIP and ICE certification (Final)                                       | 20 days         | 20 days            | NA                     | NA            | April 6, 2020           | April 25, 2020           | April 21, 2020          | May 10, 2020          | 0%                  | 15 days        | 0 days                     | 15 days         |      |                  |      |      |      |      |    |    |    |  |
| 239 | Prepare DDA and ICE certification (Draft)                                       | 90 days         | 90 days            | NA                     | NA            | December 8, 2019        | March 6, 2020            | December 8, 2019        | March 6, 2020         | 0%                  | 0 days         | 4 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 240 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 55 days         | 55 days            | NA                     | NA            | March 7, 2020           | April 30, 2020           | March 7, 2020           | April 30, 2020        | 0%                  | 0 days         | 3 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 241 | Prepare DDA and ICE certification (Final)                                       | 10 days         | 10 days            | NA                     | NA            | May 1, 2020             | May 10, 2020             | May 1, 2020             | May 10, 2020          | 0%                  | 0 days         | 0 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 242 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | May 11, 2020            | July 9, 2020             | May 11, 2020            | July 9, 2020          | 0%                  | 0 days         | 3 days                     | 0 days          |      |                  |      |      |      |      |    |    |    |  |
| 243 | <b>Stormwater and Sewage Drainage Works</b>                                     | <b>442 days</b> | <b>442 days</b>    | <b>NA</b>              | <b>NA</b>     | <b>December 8, 2019</b> | <b>February 21, 2021</b> | <b>March 18, 2020</b>   | <b>June 2, 2021</b>   | <b>0%</b>           | <b>84 days</b> | <b>101 days</b>            | <b>101 days</b> |      |                  |      |      |      |      |    |    |    |  |
| 244 | Prepare AIP for Bidge D3 and ICE certification (Draft)                          | 60 days         | 60 days            | NA                     | NA            | December 8, 2019        | February 5, 2020         | March 18, 2020          | May 16, 2020          | 0%                  | 0 days         | 1 day                      | 101 days        |      |                  |      |      |      |      |    |    |    |  |
| 245 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | February 6, 2020        | April 5, 2020            | August 17, 2020         | October 15, 2020      | 0%                  | 0 days         | 0.5 days                   | 193 days        |      |                  |      |      |      |      |    |    |    |  |
| 246 | Prepare AIP for Bidge D3 and ICE certification (Final)                          | 10 days         | 10 days            | NA                     | NA            | April 6, 2020           | April 15, 2020           | October 16, 2020        | October 25, 2020      | 0%                  | 0 days         | 0 days                     | 193 days        |      |                  |      |      |      |      |    |    |    |  |
| 247 | Prepare DDA for Bidge D3 and ICE certification (Draft)                          | 90 days         | 90 days            | NA                     | NA            | April 16, 2020          | July 14, 2020            | October 26, 2020        | January 23, 2021      | 0%                  | 0 days         | 1 day                      | 193 days        |      |                  |      |      |      |      |    |    |    |  |
| 248 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | July 15, 2020           | September 12, 2020       | January 24, 2021        | March 24, 2021        | 0%                  | 0 days         | 0.5 days                   | 193 days        |      |                  |      |      |      |      |    |    |    |  |
| 249 | Prepare DDA for Bidge D3 and ICE certification (Final)                          | 10 days         | 10 days            | NA                     | NA            | September 13, 2020      | September 22, 2020       | March 25, 2021          | April 3, 2021         | 0%                  | 0 days         | 0 days                     | 193 days        |      |                  |      |      |      |      |    |    |    |  |
| 250 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | September 23, 2020      | November 21, 2020        | April 4, 2021           | June 2, 2021          | 0%                  | 176 days       | 0 days                     | 193 days        |      |                  |      |      |      |      |    |    |    |  |
| 251 | Prepare AIP for Underpass, Depressed Road and ICE certification (Draft)         | 60 days         | 60 days            | NA                     | NA            | February 6, 2020        | April 5, 2020            | May 17, 2020            | July 15, 2020         | 0%                  | 0 days         | 1 day                      | 101 days        |      |                  |      |      |      |      |    |    |    |  |
| 252 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | April 6, 2020           | June 4, 2020             | August 17, 2020         | October 15, 2020      | 0%                  | 0 days         | 0.5 days                   | 133 days        |      |                  |      |      |      |      |    |    |    |  |
| 253 | Prepare AIP for Underpass, Depressed Road and ICE certification (Final)         | 10 days         | 10 days            | NA                     | NA            | June 5, 2020            | June 14, 2020            | October 16, 2020        | October 25, 2020      | 0%                  | 0 days         | 0 days                     | 133 days        |      |                  |      |      |      |      |    |    |    |  |
| 254 | Prepare DDA for Underpass, Depressed Road and ICE certification (Draft)         | 90 days         | 90 days            | NA                     | NA            | June 15, 2020           | September 12, 2020       | October 26, 2020        | January 23, 2021      | 0%                  | 0 days         | 1 day                      | 133 days        |      |                  |      |      |      |      |    |    |    |  |
| 255 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | September 13, 2020      | November 11, 2020        | January 24, 2021        | March 24, 2021        | 0%                  | 0 days         | 0.5 days                   | 133 days        |      |                  |      |      |      |      |    |    |    |  |
| 256 | Prepare DDA for Underpass, Depressed Road and ICE certification (Final)         | 10 days         | 10 days            | NA                     | NA            | November 12, 2020       | November 21, 2020        | March 25, 2021          | April 3, 2021         | 0%                  | 0 days         | 0 days                     | 133 days        |      |                  |      |      |      |      |    |    |    |  |
| 257 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                      | 60 days         | 60 days            | NA                     | NA            | November 22, 2020       | January 20, 2021         | April 4, 2021           | June 2, 2021          | 0%                  | 116 days       | 0 days                     | 133 days        |      |                  |      |      |      |      |    |    |    |  |
| 258 | AIP for Water Works - Road L12d (Draft)   | 60 days         | 60 days            | NA                     | NA            | April 6, 2020           | June 4, 2020             | July 16, 2020           | September 13, 2020    | 0%                  | 0 days         | 1 day                      | 101 days        |      |                  |      |      |      |      |    |    |    |  |
| 259 | AIP for Water Works - Road L12d (Final)   | 38 days         | 38 days            | NA                     | NA            | June 5, 2020            | July 12, 2020            | March 5, 2021           | April 11, 2021        | 0%                  | 52 days        | 0.5 days                   | 273 days        |      |                  |      |      |      |      |    |    |    |  |
| 260 | DDA for Water Works - Road L12d (Draft)   | 90 days         | 90 days            | NA                     | NA            | June 5, 2020            | September 2, 2020        | January 12, 2021        | April 11, 2021        | 0%                  | 0 days         | 1 day                      | 221 days        |      |                  |      |      |      |      |    |    |    |  |
| 261 | DDA for Water Works - Road L12d (Final)   | 52 days         | 52 days            | NA                     | NA            | September 3, 2020       | October 24, 2020         | April 12, 2021          | June 2, 2021          | 0%                  | 204 days       | 1 day                      | 221 days        |      |                  |      |      |      |      |    |    |    |  |
| 262 | AIP for Water Works - Waterfront Promenade and at grade Open Space (Draft)      | 60 days         | 60 days            | NA                     | NA            | June 5, 2020            | August 3, 2020           | September 14, 2020      | November 12, 2020     | 0%                  | 0 days         | 1 day                      | 101 days        |      |                  |      |      |      |      |    |    |    |  |
| 263 | AIP for Water Works - Waterfront Promenade and at grade Open Space (Final)      | 38 days         | 38 days            | NA                     | NA            | August 4, 2020          | September 10, 2020       | March 5, 2021           | April 11, 2021        | 0%                  | 52 days        | 0.5 days                   | 213 days        |      |                  |      |      |      |      |    |    |    |  |
| 264 | DDA for Water Works - Waterfront Promenade and at grade Open Space (Draft)      | 90 days         | 90 days            | NA                     | NA            | August 4, 2020          | November 1, 2020         | January 12, 2021        | April 11, 2021        | 0%                  | 0 days         | 1 day                      | 161 days        |      |                  |      |      |      |      |    |    |    |  |
| 265 | DDA for Water Works - Waterfront Promenade and at grade Open Space (Final)      | 52 days         | 52 days            | NA                     | NA            | November 2, 2020        | December 23, 2020        | April 12, 2021          | June 2, 2021          | 0%                  | 144 days       | 1 day                      | 161 days        |      |                  |      |      |      |      |    |    |    |  |
| 266 | AIP for Water Works - Remaining water works (Draft)                             | 60 days         | 60 days            | NA                     | NA            | August 4, 2020          | October 2, 2020          | November 13, 2020       | January 11, 2021      | 0%                  | 0 days         | 1 day                      | 101 days        |      |                  |      |      |      |      |    |    |    |  |
| 267 | AIP for Water Works - Remaining water works (Final)                             | 38 days         | 38 days            | NA                     | NA            | October 3, 2020         | November 9, 2020         | March 5, 2021           | April 11, 2021        | 0%                  | 52 days        | 0.5 days                   | 153 days        |      |                  |      |      |      |      |    |    |    |  |

Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19

█ Task  
█ Manual Task  
█ Duration-only  
█ Baseline Milestone  
█ Summary  
█ External Tasks  
█ Inactive Milestone  
█ Baseline Summary  
█ Critical Split  
█ Start-only  
█ Baseline  
█ Milestone  
█ Manual Summary  
█ External Milestone  
█ Inactive Summary  
█ Critical Progress  
█ Task Progress  
█ Finish-only  
█ Baseline Split  
█ Summary Progress  
█ Project Summary  
█ Inactive Task  
█ Deadline

| ID  | Task Name  | Duration        | Remaining Duration | Actual Start        | Actual Finish | Plan Start              | Plan Finish              | Late Start          | Late Finish              | Physical % Complete | Free Slack      | Time Risk Allowances (TRA) | Total Slack     | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |    |  |
|-----|--|-----------------|--------------------|---------------------|---------------|-------------------------|--------------------------|---------------------|--------------------------|---------------------|-----------------|----------------------------|-----------------|------|------|------|------|------|------|----|--|
|     |  |                 |                    |                     |               |                         |                          |                     |                          |                     |                 |                            |                 | H1   | H2   | H1   | H2   | H1   | H2   | H1 |  |
| 268 | DDA for Water Works - Remaining water works (Draft)                        | 90 days         | 90 days            | NA                  | NA            | October 3, 2020         | December 31, 2020        | January 12, 2021    | April 11, 2021           | 0%                  | 0 days          | 1 day                      | 101 days        |      |      |      |      |      |      |    |  |
| 269 | DDA for Water Works - Remaining water works (Final)                        | 52 days         | 52 days            | NA                  | NA            | January 1, 2021         | February 21, 2021        | April 12, 2021      | June 2, 2021             | 0%                  | 84 days         | 1 day                      | 101 days        |      |      |      |      |      |      |    |  |
| 270 | <b>Water Works</b>   | <b>442 days</b> | <b>442 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>October 17, 2019</b> | <b>December 31, 2020</b> | <b>May 1, 2020</b>  | <b>July 16, 2021</b>     | <b>0%</b>           | <b>197 days</b> |                            | <b>197 days</b> |      |      |      |      |      |      |    |  |
| 271 | Prepare AIP for Bridge D3 and ICE certification (Draft)                    | 60 days         | 60 days            | NA                  | NA            | October 17, 2019        | December 15, 2019        | May 1, 2020         | June 29, 2020            | 0%                  | 0 days          | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 272 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 28 days         | 28 days            | NA                  | NA            | December 16, 2019       | January 12, 2020         | October 28, 2020    | November 24, 2020        | 0%                  | 0 days          | 0.5 days                   | 317 days        |      |      |      |      |      |      |    |  |
| 273 | Prepare AIP for Bridge D3 and ICE certification (Final)                    | 14 days         | 14 days            | NA                  | NA            | January 13, 2020        | January 26, 2020         | November 25, 2020   | December 8, 2020         | 0%                  | 0 days          | 0 days                     | 317 days        |      |      |      |      |      |      |    |  |
| 274 | Prepare DDA for Bridge D3 and ICE certification (Draft)                    | 90 days         | 90 days            | NA                  | NA            | January 27, 2020        | April 25, 2020           | December 9, 2020    | March 8, 2021            | 0%                  | 0 days          | 1 day                      | 317 days        |      |      |      |      |      |      |    |  |
| 275 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | April 26, 2020          | June 24, 2020            | March 9, 2021       | May 7, 2021              | 0%                  | 0 days          | 0.5 days                   | 317 days        |      |      |      |      |      |      |    |  |
| 276 | Prepare DDA for Dridge D3 and ICE certification (Final)                    | 10 days         | 10 days            | NA                  | NA            | June 25, 2020           | July 4, 2020             | May 8, 2021         | May 17, 2021             | 0%                  | 0 days          | 0 days                     | 317 days        |      |      |      |      |      |      |    |  |
| 277 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | July 5, 2020            | September 2, 2020        | May 18, 2021        | July 16, 2021            | 0%                  | 268 days        | 0 days                     | 317 days        |      |      |      |      |      |      |    |  |
| 278 | Prepare AIP for Underpass, Depressed Road and ICE certification (Draft)    | 60 days         | 60 days            | NA                  | NA            | December 16, 2019       | February 13, 2020        | June 30, 2020       | August 28, 2020          | 0%                  | 0 days          | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 279 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | February 14, 2020       | April 13, 2020           | September 30, 2020  | November 28, 2020        | 0%                  | 0 days          | 0.5 days                   | 229 days        |      |      |      |      |      |      |    |  |
| 280 | Prepare AIP for Underpass, Depressed Road and ICE certification (Final)    | 10 days         | 10 days            | NA                  | NA            | April 14, 2020          | April 23, 2020           | November 29, 2020   | December 8, 2020         | 0%                  | 0 days          | 0                          | 229 days        |      |      |      |      |      |      |    |  |
| 281 | Prepare DDA for Underpass, Depressed Road and ICE certification (Draft)    | 90 days         | 90 days            | NA                  | NA            | April 24, 2020          | July 22, 2020            | December 9, 2020    | March 8, 2021            | 0%                  | 0 days          | 1 day                      | 229 days        |      |      |      |      |      |      |    |  |
| 282 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | July 23, 2020           | September 20, 2020       | March 9, 2021       | May 7, 2021              | 0%                  | 0 days          | 0.5 days                   | 229 days        |      |      |      |      |      |      |    |  |
| 283 | Prepare DDA for Underpass, Depressed Road and ICE certification (Final)    | 10 days         | 10 days            | NA                  | NA            | September 21, 2020      | September 30, 2020       | May 8, 2021         | May 17, 2021             | 0%                  | 0 days          | 0 days                     | 229 days        |      |      |      |      |      |      |    |  |
| 284 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | October 1, 2020         | November 29, 2020        | May 18, 2021        | July 16, 2021            | 0%                  | 180 days        | 0 days                     | 229 days        |      |      |      |      |      |      |    |  |
| 285 | AIP for Water Works - Road L12d (Draft)                                    | 60 days         | 60 days            | NA                  | NA            | February 14, 2020       | April 13, 2020           | August 29, 2020     | October 27, 2020         | 0%                  | 0 days          | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 286 | AIP for Water Works - Road L12d (Final)                                    | 38 days         | 38 days            | NA                  | NA            | April 14, 2020          | May 21, 2020             | April 18, 2021      | May 25, 2021             | 0%                  | 52 days         | 0.5 days                   | 369 days        |      |      |      |      |      |      |    |  |
| 287 | DDA for Water Works - Road L12d (Draft)                                    | 90 days         | 90 days            | NA                  | NA            | April 14, 2020          | July 12, 2020            | February 25, 2021   | May 25, 2021             | 0%                  | 0 days          | 1 day                      | 317 days        |      |      |      |      |      |      |    |  |
| 288 | DDA for Water Works - Road L12d (Final)                                    | 52 days         | 52 days            | NA                  | NA            | July 13, 2020           | September 2, 2020        | May 26, 2021        | July 16, 2021            | 0%                  | 268 days        | 1 day                      | 317 days        |      |      |      |      |      |      |    |  |
| 289 | AIP for Water Works - Waterfront Promenade and at grade Open Space (Draft) | 60 days         | 60 days            | NA                  | NA            | April 14, 2020          | June 12, 2020            | October 28, 2020    | December 26, 2020        | 0%                  | 0 days          | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 290 | AIP for Water Works - Waterfront Promenade and at grade Open Space (Final) | 38 days         | 38 days            | NA                  | NA            | June 13, 2020           | July 20, 2020            | April 18, 2021      | May 25, 2021             | 0%                  | 52 days         | 0.5 days                   | 309 days        |      |      |      |      |      |      |    |  |
| 291 | DDA for Water Works - Waterfront Promenade and at grade Open Space (Draft) | 90 days         | 90 days            | NA                  | NA            | June 13, 2020           | September 10, 2020       | February 25, 2021   | May 25, 2021             | 0%                  | 0 days          | 1 day                      | 257 days        |      |      |      |      |      |      |    |  |
| 292 | DDA for Water Works - Waterfront Promenade and at grade Open Space (Final) | 52 days         | 52 days            | NA                  | NA            | September 11, 2020      | November 1, 2020         | May 26, 2021        | July 16, 2021            | 0%                  | 208 days        | 1 day                      | 257 days        |      |      |      |      |      |      |    |  |
| 293 | AIP for Water Works - Remaining water works (Draft)                        | 60 days         | 60 days            | NA                  | NA            | June 13, 2020           | August 11, 2020          | December 27, 2020   | February 24, 2021        | 0%                  | 0 days          | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 294 | AIP for Water Works - Remaining water works (Final)                        | 38 days         | 38 days            | NA                  | NA            | August 12, 2020         | September 18, 2020       | April 18, 2021      | May 25, 2021             | 0%                  | 52 days         | 0.5 days                   | 249 days        |      |      |      |      |      |      |    |  |
| 295 | DDA for Water Works - Remaining water works (Draft)                        | 90 days         | 90 days            | NA                  | NA            | August 12, 2020         | November 9, 2020         | February 25, 2021   | May 25, 2021             | 0%                  | 0 days          | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 296 | DDA for Water Works - Remaining water works (Final)                        | 52 days         | 52 days            | NA                  | NA            | November 10, 2020       | December 31, 2020        | May 26, 2021        | July 16, 2021            | 0%                  | 148 days        | 1 day                      | 197 days        |      |      |      |      |      |      |    |  |
| 297 | <b>Pumping Stations, Box Culverts and Intake Structures</b>                | <b>505 days</b> | <b>409.17 days</b> | <b>May 30, 2019</b> | <b>NA</b>     | <b>May 30, 2019</b>     | <b>October 15, 2020</b>  | <b>May 30, 2019</b> | <b>February 10, 2022</b> | <b>0%</b>           | <b>340 days</b> |                            | <b>483 days</b> |      |      |      |      |      |      |    |  |
| 298 | Prepare AIP for Structures and ICE certification (Draft)                   | 61 days         | 0 days             | May 30, 2019        | July 29, 2019 | May 30, 2019            | July 29, 2019            | May 30, 2019        | July 29, 2019            | 100%                | 0 days          | 1 day                      | 0 days          |      |      |      |      |      |      |    |  |
| 299 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 5 days             | July 30, 2019       | NA            | July 30, 2019           | September 27, 2019       | July 30, 2019       | September 15, 2021       | 92%                 | 0 days          | 0.5 days                   | 719 days        |      |      |      |      |      |      |    |  |
| 300 | Prepare AIP for Structures and ICE certification (Final)                   | 14 days         | 14 days            | NA                  | NA            | September 28, 2019      | October 11, 2019         | September 16, 2021  | September 29, 2021       | 0%                  | 18 days         | 0 days                     | 719 days        |      |      |      |      |      |      |    |  |
| 301 | Prepare DDA for Structures and ICE certification (Draft)                   | 92 days         | 37 days            | July 30, 2019       | NA            | July 30, 2019           | October 29, 2019         | July 30, 2019       | May 30, 2020             | 0%                  | 0 days          | 1 day                      | 214 days        |      |      |      |      |      |      |    |  |
| 302 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | October 30, 2019        | December 28, 2019        | September 30, 2021  | November 28, 2021        | 0%                  | 0 days          | 0.5 days                   | 701 days        |      |      |      |      |      |      |    |  |
| 303 | Prepare DDA for Structures and ICE certification (Final)                   | 14 days         | 14 days            | NA                  | NA            | December 29, 2019       | January 11, 2020         | November 29, 2021   | December 12, 2021        | 0%                  | 0 days          | 0 days                     | 701 days        |      |      |      |      |      |      |    |  |
| 304 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | January 12, 2020        | March 11, 2020           | December 13, 2021   | February 10, 2022        | 0%                  | 558 days        | 0 days                     | 701 days        |      |      |      |      |      |      |    |  |
| 305 | Prepare AIP for E&M and ICE certification (Draft)                          | 60 days         | 5 days             | July 30, 2019       | NA            | July 30, 2019           | September 27, 2019       | July 30, 2019       | May 30, 2020             | 0%                  | 0 days          | 1 day                      | 246 days        |      |      |      |      |      |      |    |  |
| 306 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | September 28, 2019      | November 26, 2019        | April 27, 2021      | June 25, 2021            | 0%                  | 0 days          | 0.5 days                   | 577 days        |      |      |      |      |      |      |    |  |
| 307 | Prepare AIP for E&M and ICE certification (Final)                          | 10 days         | 10 days            | NA                  | NA            | November 27, 2019       | December 6, 2019         | June 26, 2021       | July 5, 2021             | 0%                  | 0 days          | 0 days                     | 577 days        |      |      |      |      |      |      |    |  |
| 308 | Prepare DDA for E&M and ICE certification (Draft)                          | 90 days         | 90 days            | NA                  | NA            | December 7, 2019        | March 5, 2020            | July 6, 2021        | October 3, 2021          | 0%                  | 0 days          | 1 day                      | 577 days        |      |      |      |      |      |      |    |  |
| 309 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                 | 60 days         | 60 days            | NA                  | NA            | March 6, 2020           | May 4, 2020              | October 4, 2021     | December 2, 2021         | 0%                  | 0 days          | 0.5 days                   | 577 days        |      |      |      |      |      |      |    |  |
| 310 | Prepare DDA for E&M and ICE certification (Final)                          | 10 days         | 10 days            | NA                  | NA            | May 5, 2020             | May 14, 2020             | December 3, 2021    | December 12, 2021        | 0%                  | 0 days          | 0 days                     | 577 days        |      |      |      |      |      |      |    |  |

Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19

█ Task  
█ Manual Task  
█ Duration-only  
█ Baseline Milestone  
█ Summary  
█ External Tasks  
█ Inactive Milestone  
█ Baseline Summary

..... Critical Split  
..... Start-only  
..... Baseline  
..... Milestone  
..... Manual Summary  
..... External Milestone  
..... Inactive Summary

█ Task Progress  
█ Finish-only  
█ Baseline Split  
█ Summary Progress  
█ Project Summary  
█ Inactive Task  
█ Deadline

| ID  | Task Name  | Duration        | Remaining Duration | Actual Start        | Actual Finish      | Plan Start               | Plan Finish               | Late Start               | Late Finish             | Physical % Complete | Free Slack     | Time Risk Allowances (TRA) | Total Slack    | 2019 | 2020             | 2021 | 2022 | 2023 | 2024 |    |    |    |    |    |  |
|-----|--|-----------------|--------------------|---------------------|--------------------|--------------------------|---------------------------|--------------------------|-------------------------|---------------------|----------------|----------------------------|----------------|------|------------------|------|------|------|------|----|----|----|----|----|--|
|     |  |                 |                    |                     |                    |                          |                           |                          |                         |                     |                |                            |                | H1   | H2               | H1   | H2   | H1   | H2   | H1 | H2 | H1 | H2 | H1 |  |
| 311 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | May 15, 2020             | July 13, 2020             | December 13, 2021        | February 10, 2022       | 0%                  | 434 days       | 0 days                     | 577 days       |      | Sun September 22 |      |      |      |      |    |    |    |    |    |  |
| 312 | AIP for Box Culvert and Intake Structures (Draft)                                      | 60 days         | 60 days            | NA                  | NA                 | October 30, 2019         | December 28, 2019         | May 31, 2020             | July 29, 2020           | 0%                  | 0 days         | 1 day                      | 214 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 313 | AIP for Box Culvert and Intake Structures (Final)                                      | 38 days         | 38 days            | NA                  | NA                 | December 29, 2019        | February 4, 2020          | November 13, 2021        | December 20, 2021       | 0%                  | 52 days        | 0.5 days                   | 685 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 314 | DDA for Box Culvert and Intake Structures (Draft)                                      | 90 days         | 90 days            | NA                  | NA                 | December 29, 2019        | March 27, 2020            | July 30, 2020            | October 27, 2020        | 0%                  | 0 days         | 1 day                      | 214 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 315 | DDA for Box Culvert and Intake Structures (Final)                                      | 52 days         | 52 days            | NA                  | NA                 | March 28, 2020           | May 18, 2020              | December 21, 2021        | February 10, 2022       | 0%                  | 490 days       | 1 day                      | 633 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 316 | AIP for Remaining Works (Draft)  | 60 days         | 60 days            | NA                  | NA                 | March 28, 2020           | May 26, 2020              | October 28, 2020         | December 26, 2020       | 0%                  | 0 days         | 1 day                      | 214 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 317 | AIP for Remaining Works (Final)  | 38 days         | 38 days            | NA                  | NA                 | May 27, 2020             | July 3, 2020              | November 13, 2021        | December 20, 2021       | 0%                  | 52 days        | 0.5 days                   | 535 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 318 | DDA for Remaining Works (Draft)  | 90 days         | 90 days            | NA                  | NA                 | May 27, 2020             | August 24, 2020           | September 22, 2021       | December 20, 2021       | 0%                  | 0 days         | 1 day                      | 483 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 319 | DDA for Remaining Works (Final)  | 52 days         | 52 days            | NA                  | NA                 | August 25, 2020          | October 15, 2020          | December 21, 2021        | February 10, 2022       | 0%                  | 340 days       | 1 day                      | 483 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 320 | <b>Elevated Landscape Deck Staircase &amp; Associated Work</b>                         | <b>302 days</b> | <b>173.99 days</b> | <b>May 30, 2019</b> | <b>NA</b>          | <b>May 30, 2019</b>      | <b>March 26, 2020</b>     | <b>May 30, 2019</b>      | <b>May 5, 2020</b>      | <b>0%</b>           | <b>40 days</b> |                            | <b>40 days</b> |      |                  |      |      |      |      |    |    |    |    |    |  |
| 321 | Prepare AIP and ICE certification (Draft)  | 96 days         | 0 days             | May 30, 2019        | September 2, 2019  | May 30, 2019             | September 2, 2019         | May 30, 2019             | September 2, 2019       | 100%                | 0 days         | 3 days                     | 0 days         |      |                  |      |      |      |      |    |    |    |    |    |  |
| 322 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 18 days         | 0 days             | September 3, 2019   | September 20, 2019 | September 3, 2019        | September 20, 2019        | September 3, 2019        | September 20, 2019      | 100%                | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |    |    |    |  |
| 323 | Prepare AIP and ICE certification (Final)  | 14 days         | 0 days             | August 29, 2019     | September 11, 2019 | August 29, 2019          | September 11, 2019        | August 29, 2019          | September 11, 2019      | 100%                | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |    |    |    |  |
| 324 | Prepare DDA and ICE certification (Draft)  | 52 days         | 46.9 days          | September 14, 2019  | NA                 | September 14, 2019       | November 13, 2019         | September 14, 2019       | December 9, 2019        | 10%                 | 0 days         | 1 day                      | 26 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 325 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | November 14, 2019        | January 12, 2020          | December 24, 2019        | February 21, 2020       | 0%                  | 0 days         | 0.5 days                   | 40 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 326 | Prepare DDA for and ICE certification (Final)  | 14 days         | 14 days            | NA                  | NA                 | January 13, 2020         | January 26, 2020          | February 22, 2020        | March 6, 2020           | 0%                  | 0 days         | 0 days                     | 40 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 327 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | January 27, 2020         | March 26, 2020            | March 7, 2020            | May 5, 2020             | 0%                  | 0 days         | 0 days                     | 40 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 328 | <b>Waterfront Promenade and At-grade Open Space</b>                                    | <b>671 days</b> | <b>671 days</b>    | <b>NA</b>           | <b>NA</b>          | <b>November 14, 2019</b> | <b>September 14, 2020</b> | <b>December 10, 2019</b> | <b>October 10, 2021</b> | <b>0%</b>           | <b>0 days</b>  |                            | <b>26 days</b> |      |                  |      |      |      |      |    |    |    |    |    |  |
| 329 | Prepare AIP for Observation Deck with Lift and Staircase and ICE certification (Draft) | 61 days         | 61 days            | NA                  | NA                 | November 14, 2019        | January 13, 2020          | December 10, 2019        | February 8, 2020        | 0%                  | 0 days         | 1 day                      | 26 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 330 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | January 14, 2020         | March 13, 2020            | March 17, 2021           | May 15, 2021            | 0%                  | 0 days         | 0.5 days                   | 428 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 331 | Prepare AIP for Observation Deck with Lift and Staircase and ICE certification (Final) | 14 days         | 14 days            | NA                  | NA                 | March 14, 2020           | March 27, 2020            | May 16, 2021             | May 29, 2021            | 0%                  | 18 days        | 0 days                     | 428 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 332 | Prepare DDA for Observation Deck with Lift and Staircase and ICE certification (Draft) | 92 days         | 92 days            | NA                  | NA                 | January 14, 2020         | April 14, 2020            | February 9, 2020         | May 10, 2020            | 0%                  | 0 days         | 1 day                      | 26 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 333 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | April 15, 2020           | June 13, 2020             | May 30, 2021             | July 28, 2021           | 0%                  | 0 days         | 0.5 days                   | 410 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 334 | Prepare DDA for Observation Deck with Lift and Staircase and ICE certification (Final) | 14 days         | 14 days            | NA                  | NA                 | June 14, 2020            | June 27, 2020             | July 29, 2021            | August 11, 2021         | 0%                  | 0 days         | 0 days                     | 410 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 335 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | June 28, 2020            | August 26, 2020           | August 12, 2021          | October 10, 2021        | 0%                  | 384 days       | 0 days                     | 410 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 336 | Prepare AIP for Remaining Works at Waterfront Promenade and ICE certification (Draft)  | 60 days         | 60 days            | NA                  | NA                 | January 14, 2020         | March 13, 2020            | September 24, 2020       | November 22, 2020       | 0%                  | 0 days         | 1 day                      | 254 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 337 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | March 14, 2020           | May 12, 2020              | December 25, 2020        | February 22, 2021       | 0%                  | 0 days         | 0.5 days                   | 286 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 338 | Prepare AIP for Remaining Works at Waterfront Promenade and ICE certification (Final)  | 10 days         | 10 days            | NA                  | NA                 | May 13, 2020             | May 22, 2020              | February 23, 2021        | March 4, 2021           | 0%                  | 0 days         | 0 days                     | 286 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 339 | Prepare DDA for Remaining Works at Waterfront Promenade and ICE certification (Draft)  | 90 days         | 90 days            | NA                  | NA                 | May 23, 2020             | August 20, 2020           | March 5, 2021            | June 2, 2021            | 0%                  | 0 days         | 1 day                      | 286 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 340 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | August 21, 2020          | October 19, 2020          | June 3, 2021             | August 1, 2021          | 0%                  | 0 days         | 0.5 days                   | 286 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 341 | Prepare DDA for Remaining Works at Waterfront Promenade and ICE certification (Final)  | 10 days         | 10 days            | NA                  | NA                 | October 20, 2020         | October 29, 2020          | August 2, 2021           | August 11, 2021         | 0%                  | 0 days         | 0 days                     | 286 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 342 | Submit & endorse by PM and Statutory Authorities/Gov. Dept                             | 60 days         | 60 days            | NA                  | NA                 | October 30, 2020         | December 28, 2020         | August 12, 2021          | October 10, 2021        | 0%                  | 260 days       | 0 days                     | 286 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 343 | AIP for Cladding Desing of Landscape Deck, Lifts and associated Works (Draft)          | 60 days         | 60 days            | NA                  | NA                 | October 28, 2020         | December 26, 2020         | November 23, 2020        | January 21, 2021        | 0%                  | 0 days         | 1 day                      | 26 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 344 | AIP for Cladding Desing of Landscape Deck, Lifts and associated Works (Final)          | 38 days         | 38 days            | NA                  | NA                 | December 27, 2020        | February 2, 2021          | July 13, 2021            | August 19, 2021         | 0%                  | 52 days        | 0.5 days                   | 198 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 345 | DDA for Cladding Desing of Landscape Deck, Lifts and associated Works (Draft)          | 90 days         | 90 days            | NA                  | NA                 | December 27, 2020        | March 26, 2021            | May 22, 2021             | August 19, 2021         | 0%                  | 0 days         | 1 day                      | 146 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 346 | DDA for Cladding Desing of Landscape Deck, Lifts and associated Works (Final)          | 52 days         | 52 days            | NA                  | NA                 | March 27, 2021           | May 17, 2021              | August 20, 2021          | October 10, 2021        | 0%                  | 120 days       | 1 day                      | 146 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 347 | AIP for Water Works - Waterfront Promenade and at grade Open Space (Draft)             | 60 days         | 60 days            | NA                  | NA                 | December 27, 2020        | February 24, 2021         | January 22, 2021         | March 22, 2021          | 0%                  | 0 days         | 1 day                      | 26 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 348 | AIP for Water Works - Waterfront Promenade and at grade Open Space (Final)             | 38 days         | 38 days            | NA                  | NA                 | February 25, 2021        | April 3, 2021             | July 13, 2021            | August 19, 2021         | 0%                  | 52 days        | 0.5 days                   | 138 days       |      |                  |      |      |      |      |    |    |    |    |    |  |
| 349 | DDA for Water Works - Waterfront Promenade and at grade Open Space (Draft)             | 90 days         | 90 days            | NA                  | NA                 | February 25, 2021        | May 25, 2021              | May 22, 2021             | August 19, 2021         | 0%                  | 0 days         | 1 day                      | 86 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 350 | DDA for Water Works - Waterfront Promenade and at grade Open Space (Final)             | 52 days         | 52 days            | NA                  | NA                 | May 26, 2021             | July 16, 2021             | August 20, 2021          | October 10, 2021        | 0%                  | 60 days        | 1 day                      | 86 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 351 | AIP for Balustrade and Railing of Promenade, Open Space and Associated Works (Draft)   | 60 days         | 60 days            | NA                  | NA                 | February 25, 2021        | April 25, 2021            | March 23, 2021           | May 21, 2021            | 0%                  | 0 days         | 1 day                      | 26 days        |      |                  |      |      |      |      |    |    |    |    |    |  |
| 352 | AIP for Balustrade and Railing of Promenade, Open Space and Associated Works (Final)   | 38 days         | 38 days            | NA                  | NA                 | April 26, 2021           | June 2, 2021              | July 13, 2021            | August 19, 2021         | 0%                  | 52 days        | 0.5 days                   | 78 days        |      |                  |      |      |      |      |    |    |    |    |    |  |

Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19  
 Critical Split: Split  
 Critical Progress: Task Progress  
 Task: Task  
 Manual Task: Manual Task  
 Start-only: Start-only  
 Finish-only: Finish-only  
 Duration-only: Duration-only  
 Baseline: Baseline  
 Baseline Split: Baseline Split  
 Baseline Milestone: Baseline Milestone  
 Milestone: Milestone  
 Summary: Summary  
 Manual Summary: Manual Summary  
 Project Summary: Project Summary  
 External Tasks: External Tasks  
 External Milestone: External Milestone  
 Inactive Task: Inactive Task  
 Inactive Milestone: Inactive Milestone  
 Inactive Summary: Inactive Summary  
 Deadline: Deadline  
 Baseline Summary: Baseline Summary







| ID  | Task Name  | Duration        | Remaining Duration | Actual Start | Actual Finish | Plan Start                | Plan Finish             | Late Start               | Late Finish              | Physical % Complete | Free Slack     | Time Risk Allowances (TRA) | Total Slack    | 2019 | 2020             | 2021 | 2022 | 2023 | 2024 |    |    |  |
|-----|--|-----------------|--------------------|--------------|---------------|---------------------------|-------------------------|--------------------------|--------------------------|---------------------|----------------|----------------------------|----------------|------|------------------|------|------|------|------|----|----|--|
|     |  |                 |                    |              |               |                           |                         |                          |                          |                     |                |                            |                | H1   | H2               | H1   | H2   | H1   | H2   | H1 | H2 |  |
| 416 | Allow Access between CH1000 and CH1087 for EMSD Thied District Cooling System for Associated Pipeline Laying (Assume the DCS Pipeline Lay within CH1010 and Ch1087 Area) | 0 days          | 0 days             | NA           | NA            | January 5, 2021           | January 5, 2021         | February 25, 2021        | February 25, 2021        | 0%                  | 26 days        |                            | 51 days        |      | Sun September 22 |      |      |      |      |    |    |  |
| 417 | Between CH1000 and CH1087 Area Handover Back from EMSD third District Cooling System Contractor  | 0 days          | 0 days             | NA           | NA            | July 30, 2021             | July 30, 2021           | August 24, 2021          | August 24, 2021          | 0%                  | 25 days        |                            | 25 days        |      |                  |      |      |      |      |    |    |  |
| 418 | Utility ducting laying (by others)   | 26 days         | 26 days            | NA           | NA            | August 24, 2021           | September 23, 2021      | August 24, 2021          | September 23, 2021       | 0%                  | 0 days         | 2 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 419 | Trim road formation  | 3 days          | 3 days             | NA           | NA            | September 24, 2021        | September 27, 2021      | September 24, 2021       | September 27, 2021       | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 420 | Lay sub base   | 7 days          | 7 days             | NA           | NA            | September 28, 2021        | October 6, 2021         | September 28, 2021       | October 6, 2021          | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 421 | Lay kerb   | 12 days         | 12 days            | NA           | NA            | October 7, 2021           | October 21, 2021        | October 7, 2021          | October 21, 2021         | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 422 | Construct pedestrian street/ footpath  | 7 days          | 7 days             | NA           | NA            | October 22, 2021          | October 29, 2021        | October 22, 2021         | October 29, 2021         | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 423 | Install central median   | 10 days         | 10 days            | NA           | NA            | October 30, 2021          | November 10, 2021       | October 30, 2021         | November 10, 2021        | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 424 | Concrete infill between profile barrier  | 4 days          | 4 days             | NA           | NA            | November 11, 2021         | November 15, 2021       | November 11, 2021        | November 15, 2021        | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 425 | Road pavement  | 5 days          | 5 days             | NA           | NA            | November 16, 2021         | November 20, 2021       | November 16, 2021        | November 20, 2021        | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 426 | Install street furniture   | 7 days          | 7 days             | NA           | NA            | November 22, 2021         | November 29, 2021       | February 22, 2022        | March 1, 2022            | 0%                  | 73 days        | 0 days                     | 73 days        |      |                  |      |      |      |      |    |    |  |
| 427 | <b>Bridge D3 (Approach Ramp and Bridge) CH1087-1444.7</b>  | <b>812 days</b> | <b>812 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>May 16, 2019</b>       | <b>February 7, 2022</b> | <b>December 28, 2019</b> | <b>March 1, 2022</b>     | <b>0%</b>           | <b>19 days</b> |                            | <b>19 days</b> |      |                  |      |      |      |      |    |    |  |
| 428 | <b>North Approach Ramp (Fronting CKR) CH1087-1189.4 - 7 bays</b>   | <b>306 days</b> | <b>306 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>September 23, 2019</b> | <b>October 3, 2020</b>  | <b>December 28, 2019</b> | <b>April 17, 2021</b>    | <b>0%</b>           | <b>79 days</b> |                            | <b>79 days</b> |      |                  |      |      |      |      |    |    |  |
| 429 | Procurement of Movement Joints for Bridge Works  | 90 days         | 90 days            | NA           | NA            | January 11, 2020          | April 9, 2020           | March 4, 2020            | June 1, 2020             | 0%                  | 49 days        |                            | 53 days        |      |                  |      |      |      |      |    |    |  |
| 430 | Ground Monitoring Works  | 14 days         | 14 days            | NA           | NA            | September 23, 2019        | October 6, 2019         | December 28, 2019        | January 10, 2020         | 0%                  | 0 days         | 0 days                     | 96 days        |      |                  |      |      |      |      |    |    |  |
| 431 | Mobilization of plant and material   | 10 days         | 10 days            | NA           | NA            | January 11, 2020          | January 22, 2020        | January 11, 2020         | January 22, 2020         | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 432 | Foundation Construction  | 64 days         | 64 days            | NA           | NA            | January 23, 2020          | April 14, 2020          | January 23, 2020         | April 14, 2020           | 0%                  | 0 days         | 3 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 433 | Drive sheetpile (~200m) Prod. Rate: 10m/d/team   | 20 days         | 20 days            | NA           | NA            | April 15, 2020            | May 10, 2020            | April 18, 2020           | May 13, 2020             | 0%                  | 0 days         | 1 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 434 | Excavation ~1,876m3 & lateral support. Prod. Rate: 160m3/day/team (Bay 1 to 7)   | 12 days         | 12 days            | NA           | NA            | May 11, 2020              | May 24, 2020            | May 14, 2020             | May 27, 2020             | 0%                  | 0 days         | 1 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 435 | Blinding layer. Prod. Rate: 2bays/day  | 4 days          | 4 days             | NA           | NA            | May 25, 2020              | May 28, 2020            | May 28, 2020             | June 1, 2020             | 0%                  | 0 days         | 0 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 436 | <b>Base slab Prod. Rate: 8d/bay/team</b>   | <b>56 days</b>  | <b>56 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>May 29, 2020</b>       | <b>August 4, 2020</b>   | <b>June 2, 2020</b>      | <b>March 15, 2021</b>    | <b>0%</b>           | <b>3 days</b>  | <b>3 days</b>              | <b>3 days</b>  |      |                  |      |      |      |      |    |    |  |
| 437 | Base slab (Bay 2 & 4) - 1 team   | 16 days         | 16 days            | NA           | NA            | May 29, 2020              | June 16, 2020           | June 2, 2020             | June 19, 2020            | 0%                  | 0 days         | 1 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 438 | Base slab (Bay 1 & 3) - 1 team   | 16 days         | 16 days            | NA           | NA            | June 17, 2020             | July 7, 2020            | June 20, 2020            | July 10, 2020            | 0%                  | 0 days         | 1 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 439 | Base slab (Bay 5 & 7) - 1 team   | 16 days         | 16 days            | NA           | NA            | July 8, 2020              | July 25, 2020           | January 25, 2021         | February 11, 2021        | 0%                  | 0 days         | 0 days                     | 166 days       |      |                  |      |      |      |      |    |    |  |
| 440 | Base slab (Bay 6) - 1 team   | 8 days          | 8 days             | NA           | NA            | July 27, 2020             | August 4, 2020          | March 6, 2021            | March 15, 2021           | 0%                  | 24 days        | 0 days                     | 182 days       |      |                  |      |      |      |      |    |    |  |
| 441 | <b>Wall. Prod. Rate: 12d/bay/team</b>  | <b>74 days</b>  | <b>74 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>July 8, 2020</b>       | <b>October 3, 2020</b>  | <b>July 11, 2020</b>     | <b>April 17, 2021</b>    | <b>0%</b>           | <b>3 days</b>  | <b>3 days</b>              | <b>3 days</b>  |      |                  |      |      |      |      |    |    |  |
| 442 | Wall (Bay 2 & 4) - 2 teams   | 12 days         | 12 days            | NA           | NA            | July 8, 2020              | July 21, 2020           | July 11, 2020            | July 24, 2020            | 0%                  | 0 days         | 1 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 443 | Wall (Bay 1 & 3) 2 teams (KD1)   | 12 days         | 12 days            | NA           | NA            | July 22, 2020             | August 4, 2020          | July 25, 2020            | August 7, 2020           | 0%                  | 0 days         | 1 days                     | 3 days         |      |                  |      |      |      |      |    |    |  |
| 444 | Wall ( Bay 5 & 7) - 1 team   | 24 days         | 24 days            | NA           | NA            | August 5, 2020            | September 1, 2020       | February 16, 2021        | March 15, 2021           | 0%                  | 0 days         | 0.5 days                   | 158 days       |      |                  |      |      |      |      |    |    |  |
| 445 | Wall (Bay 6) - 1 team (KD2)  | 12 days         | 12 days            | NA           | NA            | September 2, 2020         | September 15, 2020      | March 16, 2021           | March 29, 2021           | 0%                  | 0 days         | 0 days                     | 158 days       |      |                  |      |      |      |      |    |    |  |
| 446 | Backfill and extract sheet pile  | 14 days         | 14 days            | NA           | NA            | September 16, 2020        | October 3, 2020         | March 30, 2021           | April 17, 2021           | 0%                  | 144 days       | 0 days                     | 158 days       |      |                  |      |      |      |      |    |    |  |
| 447 | <b>North Approach Ramp (Fronting KTSP) CH1087-1189.4 - 7 bays</b>  | <b>608 days</b> | <b>608 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>October 7, 2019</b>    | <b>October 23, 2021</b> | <b>April 1, 2020</b>     | <b>February 21, 2022</b> | <b>0%</b>           | <b>97 days</b> |                            | <b>97 days</b> |      |                  |      |      |      |      |    |    |  |
| 448 | Ground Monitoring Works  | 14 days         | 14 days            | NA           | NA            | October 7, 2019           | October 20, 2019        | April 1, 2020            | April 14, 2020           | 0%                  | 0 days         | 0 days                     | 177 days       |      |                  |      |      |      |      |    |    |  |
| 449 | Mobilization of plant and materials  | 19 days         | 19 days            | NA           | NA            | April 15, 2020            | May 8, 2020             | April 15, 2020           | May 8, 2020              | 0%                  | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 450 | Foundation Construction  | 94 days         | 94 days            | NA           | NA            | May 9, 2020               | August 28, 2020         | May 9, 2020              | August 28, 2020          | 0%                  | 0 days         | 4 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 451 | Drive sheetpile (~200m) Prod. Rate: 10m/d/team   | 24 days         | 24 days            | NA           | NA            | August 29, 2020           | September 25, 2020      | August 29, 2020          | September 25, 2020       | 0%                  | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 452 | Excavation ~1,996m3 & lateral support. Prod. Rate: 160m3/day/team  | 18 days         | 18 days            | NA           | NA            | September 26, 2020        | October 19, 2020        | September 26, 2020       | October 19, 2020         | 0%                  | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 453 | Blinding layer. Prod. Rate: 2bays/day  | 13 days         | 13 days            | NA           | NA            | October 20, 2020          | November 4, 2020        | October 20, 2020         | November 4, 2020         | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 454 | Base slab (Bay 1 to 7) Prod Rate: 8d/bay/team- 1 team  | 64 days         | 64 days            | NA           | NA            | November 5, 2020          | January 21, 2021        | November 5, 2020         | January 21, 2021         | 0%                  | 0 days         | 3 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 455 | Wall (Bay 1 to 7) 12d/bay/team - 1 team (KD3)  | 95 days         | 95 days            | NA           | NA            | January 22, 2021          | May 21, 2021            | January 22, 2021         | May 21, 2021             | 0%                  | 0 days         | 4 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 456 | Backfilling ~8,372.91m3 within approach ramp to formation level (160m3/day) considered time for SRT  | 53 days         | 53 days            | NA           | NA            | May 22, 2021              | July 24, 2021           | May 22, 2021             | July 24, 2021            | 0%                  | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 457 | Placing of precast planting channel along approach ramp  | 24 days         | 24 days            | NA           | NA            | July 27, 2021             | August 23, 2021         | July 27, 2021            | August 23, 2021          | 0%                  | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 458 | Utility ducting laying (by others)   | 26 days         | 26 days            | NA           | NA            | July 26, 2021             | August 24, 2021         | July 26, 2021            | August 24, 2021          | 0%                  | 0 days         | 1 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 459 | Construct pedestrian street/ footpath  | 5 days          | 5 days             | NA           | NA            | August 25, 2021           | August 30, 2021         | August 25, 2021          | August 30, 2021          | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 460 | Install central median   | 6 days          | 6 days             | NA           | NA            | August 31, 2021           | September 6, 2021       | August 31, 2021          | September 6, 2021        | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 461 | Concrete infill between profile barrier  | 5 days          | 5 days             | NA           | NA            | September 7, 2021         | September 11, 2021      | September 7, 2021        | September 11, 2021       | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 462 | Lay sub base   | 4 days          | 4 days             | NA           | NA            | September 13, 2021        | September 16, 2021      | September 13, 2021       | September 16, 2021       | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 463 | Road pavement  | 5 days          | 5 days             | NA           | NA            | September 17, 2021        | September 23, 2021      | September 17, 2021       | September 23, 2021       | 0%                  | 0 days         | 0 days                     | 0 days         |      |                  |      |      |      |      |    |    |  |
| 464 | Install railing on top of retaining wall & street furniture  | 24 days         | 24 days            | NA           | NA            | September 24, 2021        | October 23, 2021        | January 21, 2022         | February 21, 2022        | 0%                  | 24 days        | 0.5 days                   | 97 days        |      |                  |      |      |      |      |    |    |  |
| 465 | <b>Part 3G - CH1189.4 to CH1229 North Abutment</b>   | <b>286 days</b> | <b>286 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>April 15, 2020</b>     | <b>March 29, 2021</b>   | <b>May 4, 2020</b>       | <b>April 17, 2021</b>    | <b>0%</b>           | <b>14 days</b> |                            | <b>14 days</b> |      |                  |      |      |      |      |    |    |  |
| 466 | Pre-drilling Works   | 14 days         | 14 days            | NA           | NA            | April 15, 2020            | April 28, 2020          | May 4, 2020              | May 17, 2020             | 0%                  | 0 days         | 1 days                     | 19 days        |      |                  |      |      |      |      |    |    |  |
| 467 | Bored pile (8 numbers). Prod. Rate: 10d/pile/rig.  | 80 days         | 80 days            | NA           | NA            | April 29, 2020            | August 4, 2020          | May 18, 2020             | August 20, 2020          | 0%                  | 0 days         | 2 days                     | 14 days        |      |                  |      |      |      |      |    |    |  |
| 468 | Pile Testing (28d curing & 14 test) - 1 full-core to be carried out  | 42 days         | 42 days            | NA           | NA            | August 5, 2020            | September 22, 2020      | August 21, 2020          | October 10, 2020         | 0%                  | 0 days         | 2 days                     | 14 days        |      |                  |      |      |      |      |    |    |  |
| 469 | Proof-drilling Works   | 7 days          | 7 days             | NA           | NA            | August 5, 2020            | August 11, 2020         | October 4, 2020          | October 10, 2020         | 0%                  | 42 days        | 0 days                     | 60 days        |      |                  |      |      |      |      |    |    |  |
| 470 | Pile Loading Test  | 16 days         | 16 days            | NA           | NA            | September 23, 2020        | October 8, 2020         | October 11, 2020         | October 26, 2020         | 0%                  | 0 days         | 1 days                     | 18 days        |      |                  |      |      |      |      |    |    |  |
| 471 | Drive sheetpile (~90m) Prod. Rate: 10m/d/team  | 9 days          | 9 days             | NA           | NA            | October 9, 2020           | October 19, 2020        | October 27, 2020         | November 5, 2020         | 0%                  | 0 days         | 0 days                     | 14 days        |      |                  |      |      |      |      |    |    |  |
| 472 | Excavation ~780m3 & lateral support. Prod. Rate: 160m3/day/team  | 6 days          | 6 days             | NA           | NA            | October 20, 2020          | October 27, 2020        | November 6, 2020         | November 12, 2020        | 0%                  |                |                            |                |      |                  |      |      |      |      |    |    |  |

| ID  | Task Name  | Duration        | Remaining Duration | Actual Start | Actual Finish | Plan Start              | Plan Finish              | Late Start              | Late Finish                | Physical % Complete | Free Slack     | Time Risk Allowances (TRA) | Total Slack    | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |    |  |
|-----|--|-----------------|--------------------|--------------|---------------|-------------------------|--------------------------|-------------------------|----------------------------|---------------------|----------------|----------------------------|----------------|------|------|------|------|------|------|----|--|
|     |  |                 |                    |              |               |                         |                          |                         |                            |                     |                |                            |                | H1   | H2   | H1   | H2   | H1   | H2   | H1 |  |
| 475 | Wall (3.85m thk). Prod. Rate: 18d/bay/team                       | 30 days         | 30 days            | NA           | NA            | November 21, 2020       | December 28, 2020        | December 8, 2020        | January 14, 2021           | 0%                  | 0 days         | 1 days                     | 14 days        |      |      |      |      |      |      |    |  |
| 476 | Wall (0.5m thk). Prod. Rate: 14d/bay/team (KD2)                  | 74 days         | 74 days            | NA           | NA            | December 29, 2020       | March 29, 2021           | January 15, 2021        | April 17, 2021             | 0%                  | 0 days         | 0 days                     | 14 days        |      |      |      |      |      |      |    |  |
| 477 | Backfill and extract sheet pile                                  | 7 days          | 7 days             | NA           | NA            | December 29, 2020       | January 6, 2021          | March 27, 2021          | April 7, 2021              | 0%                  | 0 days         | 0 days                     | 72 days        |      |      |      |      |      |      |    |  |
| 478 | Install bridge bearing   | 7 days          | 7 days             | NA           | NA            | January 7, 2021         | January 14, 2021         | April 8, 2021           | April 15, 2021             | 0%                  | 61 days        | 0 days                     | 72 days        |      |      |      |      |      |      |    |  |
| 479 | <b>Part 3C - CH1229 to CH1279</b>                                | <b>573 days</b> | <b>573 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>January 11, 2020</b> | <b>December 14, 2021</b> | <b>January 20, 2020</b> | <b>December 29, 2021</b>   | <b>0%</b>           | <b>7 days</b>  | <b>7 days</b>              | <b>7 days</b>  |      |      |      |      |      |      |    |  |
| 480 | Mobilization of plant and material                               | 6 days          | 6 days             | NA           | NA            | January 11, 2020        | January 17, 2020         | January 20, 2020        | January 29, 2020           | 0%                  | 0 days         | 1 days                     | 7 days         |      |      |      |      |      |      |    |  |
| 481 | Pre-drilling Works   | 14 days         | 14 days            | NA           | NA            | March 21, 2020          | April 7, 2020            | May 14, 2020            | May 29, 2020               | 0%                  | 0 days         | 0 days                     | 40 days        |      |      |      |      |      |      |    |  |
| 482 | Bored pile (3 numbers) @ CH1229. Prod. Rate: 12d/pile/rig.       | 36 days         | 36 days            | NA           | NA            | March 21, 2020          | May 8, 2020              | May 14, 2020            | June 24, 2020              | 0%                  | 0 days         | 0.5 days                   | 40 days        |      |      |      |      |      |      |    |  |
| 483 | Pile Testing (14d curing & 14 test)                              | 28 days         | 28 days            | NA           | NA            | May 9, 2020             | June 10, 2020            | June 26, 2020           | July 29, 2020              | 0%                  | 0 days         | 0.5 days                   | 40 days        |      |      |      |      |      |      |    |  |
| 484 | Proof-drilling Works   | 7 days          | 7 days             | NA           | NA            | May 9, 2020             | May 15, 2020             | July 23, 2020           | July 29, 2020              | 0%                  | 26 days        | 0 days                     | 75 days        |      |      |      |      |      |      |    |  |
| 485 | Pile Loading Test  | 14 days         | 14 days            | NA           | NA            | June 11, 2020           | June 24, 2020            | July 30, 2020           | August 12, 2020            | 0%                  | 1 day          | 0 days                     | 49 days        |      |      |      |      |      |      |    |  |
| 486 | <b>Pile Cap @ CH1229</b>   | <b>64 days</b>  | <b>64 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>June 26, 2020</b>    | <b>September 9, 2020</b> | <b>August 13, 2020</b>  | <b>September 23, 20...</b> | <b>0%</b>           | <b>12 days</b> | <b>12 days</b>             | <b>12 days</b> |      |      |      |      |      |      |    |  |
| 487 | Drive sheetpile (~75m). Prod. Rate: 10m/day/side/team            | 8 days          | 8 days             | NA           | NA            | June 26, 2020           | July 6, 2020             | August 13, 2020         | August 21, 2020            | 0%                  | 0 days         | 0 days                     | 40 days        |      |      |      |      |      |      |    |  |
| 488 | Excavation ~75m3 & lateral support. Prod. Rate: 160m3/day/team   | 5 days          | 5 days             | NA           | NA            | July 7, 2020            | July 11, 2020            | August 22, 2020         | August 27, 2020            | 0%                  | 0 days         | 0 days                     | 40 days        |      |      |      |      |      |      |    |  |
| 489 | Blinding layer   | 1 day           | 1 day              | NA           | NA            | July 13, 2020           | July 13, 2020            | August 28, 2020         | August 28, 2020            | 0%                  | 28 days        | 0 days                     | 40 days        |      |      |      |      |      |      |    |  |
| 490 | Pilecap structure  | 14 days         | 14 days            | NA           | NA            | August 15, 2020         | August 31, 2020          | August 29, 2020         | September 14, 2020         | 0%                  | 0 days         | 1 days                     | 12 days        |      |      |      |      |      |      |    |  |
| 491 | Backfill and extract sheet pile                                  | 8 days          | 8 days             | NA           | NA            | September 1, 2020       | September 9, 2020        | September 15, 2020      | September 23, 2020         | 0%                  | 0 days         | 0 days                     | 12 days        |      |      |      |      |      |      |    |  |
| 492 | Pier @ CH1229  | 48 days         | 48 days            | NA           | NA            | September 10, 2020      | November 7, 2020         | September 24, 2020      | November 21, 2020          | 0%                  | 0 days         | 2 days                     | 12 days        |      |      |      |      |      |      |    |  |
| 493 | Pre-drilling Works   | 14 days         | 14 days            | NA           | NA            | January 18, 2020        | January 31, 2020         | January 30, 2020        | February 12, 2020          | 0%                  | 0 days         | 1 days                     | 12 days        |      |      |      |      |      |      |    |  |
| 494 | Bored pile (3 numbers) @ CH1269. Prod. Rate: 10d/pile/rig.       | 30 days         | 30 days            | NA           | NA            | February 1, 2020        | March 6, 2020            | February 13, 2020       | March 18, 2020             | 0%                  | 0 days         | 0 days                     | 10 days        |      |      |      |      |      |      |    |  |
| 495 | Pile Testing (14d curing & 14 test)                              | 28 days         | 28 days            | NA           | NA            | March 7, 2020           | April 9, 2020            | April 21, 2020          | May 25, 2020               | 0%                  | 0 days         | 0.5 days                   | 34 days        |      |      |      |      |      |      |    |  |
| 496 | Proof-drilling Works   | 7 days          | 7 days             | NA           | NA            | March 7, 2020           | March 13, 2020           | May 19, 2020            | May 25, 2020               | 0%                  | 27 days        | 0 days                     | 73 days        |      |      |      |      |      |      |    |  |
| 497 | Pile Loading Test  | 14 days         | 14 days            | NA           | NA            | April 10, 2020          | April 23, 2020           | May 26, 2020            | June 8, 2020               | 0%                  | 0 days         | 0 days                     | 46 days        |      |      |      |      |      |      |    |  |
| 498 | <b>Pile Cap @ CH1269</b>   | <b>42 days</b>  | <b>42 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>April 24, 2020</b>   | <b>June 13, 2020</b>     | <b>June 9, 2020</b>     | <b>July 29, 2020</b>       | <b>0%</b>           | <b>37 days</b> | <b>37 days</b>             | <b>37 days</b> |      |      |      |      |      |      |    |  |
| 499 | Drive sheetpile (~75m). Prod. Rate: 10m/day/side/team            | 8 days          | 8 days             | NA           | NA            | April 24, 2020          | May 5, 2020              | June 9, 2020            | June 17, 2020              | 0%                  | 0 days         | 0 days                     | 37 days        |      |      |      |      |      |      |    |  |
| 500 | Excavation ~1677m3 & lateral support. Prod. Rate: 160m3/day/team | 11 days         | 11 days            | NA           | NA            | May 6, 2020             | May 18, 2020             | June 18, 2020           | July 2, 2020               | 0%                  | 0 days         | 0 days                     | 37 days        |      |      |      |      |      |      |    |  |
| 501 | Blinding layer   | 1 day           | 1 day              | NA           | NA            | May 19, 2020            | May 19, 2020             | July 3, 2020            | July 3, 2020               | 0%                  | 0 days         | 0 days                     | 37 days        |      |      |      |      |      |      |    |  |
| 502 | Pile Cap structure   | 14 days         | 14 days            | NA           | NA            | May 20, 2020            | June 4, 2020             | July 4, 2020            | July 20, 2020              | 0%                  | 0 days         | 0 days                     | 37 days        |      |      |      |      |      |      |    |  |
| 503 | Backfill and extract sheet pile                                  | 8 days          | 8 days             | NA           | NA            | June 5, 2020            | June 13, 2020            | July 21, 2020           | July 29, 2020              | 0%                  | 0 days         | 0 days                     | 37 days        |      |      |      |      |      |      |    |  |
| 504 | Pier @ CH1269  | 48 days         | 48 days            | NA           | NA            | June 15, 2020           | August 11, 2020          | July 30, 2020           | September 23, 2020         | 0%                  | 25 days        | 0 days                     | 37 days        |      |      |      |      |      |      |    |  |
| 505 | <b>Bridge deck between CH1229-1269 [DB-SQ1]</b>                  | <b>116 days</b> | <b>116 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>November 9, 2020</b> | <b>March 30, 2021</b>    | <b>January 22, 2021</b> | <b>April 15, 2021</b>      | <b>0%</b>           | <b>11 days</b> | <b>11 days</b>             | <b>11 days</b> |      |      |      |      |      |      |    |  |
| 506 | Falsework erection   | 7 days          | 7 days             | NA           | NA            | November 9, 2020        | November 16, 2020        | January 22, 2021        | January 29, 2021           | 0%                  | 50 days        | 0 days                     | 61 days        |      |      |      |      |      |      |    |  |
| 507 | Structure deck   | 28 days         | 28 days            | NA           | NA            | January 19, 2021        | February 23, 2021        | February 1, 2021        | March 8, 2021              | 0%                  | 0 days         | 1 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 508 | Prestressing   | 16 days         | 16 days            | NA           | NA            | March 12, 2021          | March 30, 2021           | March 25, 2021          | April 15, 2021             | 0%                  | 0 days         | 1 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 509 | Median barrier, utility through, parapet                         | 45 days         | 45 days            | NA           | NA            | March 31, 2021          | May 27, 2021             | May 10, 2021            | July 3, 2021               | 0%                  | 0 days         | 0.5 days                   | 30 days        |      |      |      |      |      |      |    |  |
| 510 | Utility ducting laying (by others)                               | 14 days         | 14 days            | NA           | NA            | May 28, 2021            | June 12, 2021            | September 25, 2021      | October 12, 2021           | 0%                  | 65 days        | 0 days                     | 100 days       |      |      |      |      |      |      |    |  |
| 511 | Street furniture (KD6)   | 21 days         | 21 days            | NA           | NA            | November 20, 2021       | December 14, 2021        | December 3, 2021        | December 29, 2021          | 0%                  | 0 days         | 2 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 512 | <b>Bridge deck between CH1189-1229 [DB-T2-SQ2]</b>               | <b>64 days</b>  | <b>64 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>March 31, 2021</b>   | <b>June 19, 2021</b>     | <b>April 16, 2021</b>   | <b>July 3, 2021</b>        | <b>0%</b>           | <b>11 days</b> | <b>11 days</b>             | <b>11 days</b> |      |      |      |      |      |      |    |  |
| 513 | Falsework erection   | 7 days          | 7 days             | NA           | NA            | March 31, 2021          | April 10, 2021           | April 16, 2021          | April 23, 2021             | 0%                  | 0 days         | 0 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 514 | Structure deck   | 28 days         | 28 days            | NA           | NA            | April 12, 2021          | May 14, 2021             | April 24, 2021          | May 28, 2021               | 0%                  | 0 days         | 1 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 515 | Prestressing   | 15 days         | 15 days            | NA           | NA            | June 2, 2021            | June 19, 2021            | June 16, 2021           | July 3, 2021               | 0%                  | 0 days         | 1 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 516 | Median barrier, utility through, parapet                         | 46 days         | 46 days            | NA           | NA            | June 21, 2021           | August 13, 2021          | July 5, 2021            | August 26, 2021            | 0%                  | 0 days         | 2 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 517 | Utility ducting laying (by others)                               | 14 days         | 14 days            | NA           | NA            | August 14, 2021         | August 30, 2021          | September 25, 2021      | October 12, 2021           | 0%                  | 0 days         | 0 days                     | 35 days        |      |      |      |      |      |      |    |  |
| 518 | Street furniture   | 21 days         | 21 days            | NA           | NA            | August 31, 2021         | September 24, 2021       | October 13, 2021        | November 6, 2021           | 0%                  | 24 days        | 0 days                     | 35 days        |      |      |      |      |      |      |    |  |
| 519 | <b>Part 3D - CH1279 to CH1311</b>                                | <b>257 days</b> | <b>257 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>January 9, 2021</b>  | <b>November 19, 2021</b> | <b>January 22, 2021</b> | <b>December 2, 2021</b>    | <b>0%</b>           | <b>11 days</b> | <b>11 days</b>             | <b>11 days</b> |      |      |      |      |      |      |    |  |
| 520 | <b>Bridge deck between CH1269-1314 [DB-SQ1]</b>                  | <b>73 days</b>  | <b>73 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>January 9, 2021</b>  | <b>April 10, 2021</b>    | <b>January 22, 2021</b> | <b>April 23, 2021</b>      | <b>0%</b>           | <b>11 days</b> | <b>11 days</b>             | <b>11 days</b> |      |      |      |      |      |      |    |  |
| 521 | Falsework erection   | 8 days          | 8 days             | NA           | NA            | January 9, 2021         | January 18, 2021         | January 22, 2021        | January 30, 2021           | 0%                  | 0 days         | 0 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 522 | Structure deck   | 28 days         | 28 days            | NA           | NA            | January 19, 2021        | February 23, 2021        | February 1, 2021        | March 8, 2021              | 0%                  | 0 days         | 1 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 523 | Prestressing   | 23 days         | 23 days            | NA           | NA            | March 12, 2021          | April 10, 2021           | March 25, 2021          | April 23, 2021             | 0%                  | 0 days         | 0 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 524 | Median barrier, utility through, parapet                         | 45 days         | 45 days            | NA           | NA            | August 14, 2021         | October 7, 2021          | August 27, 2021         | October 21, 2021           | 0%                  | 0 days         | 2 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 525 | Utility ducting laying (by others)                               | 14 days         | 14 days            | NA           | NA            | October 8, 2021         | October 25, 2021         | October 22, 2021        | November 6, 2021           | 0%                  | 0 days         | 1 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 526 | Street furniture (KD6)   | 22 days         | 22 days            | NA           | NA            | October 26, 2021        | November 19, 2021        | November 8, 2021        | December 2, 2021           | 0%                  | 0 days         | 0 days                     | 11 days        |      |      |      |      |      |      |    |  |
| 527 | <b>Part 3E - CH1311 to CH1372</b>                                | <b>407 days</b> | <b>407 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>March 7, 2020</b>    | <b>July 22, 2021</b>     | <b>March 19, 2020</b>   | <b>October 23, 2021</b>    | <b>0%</b>           | <b>10 days</b> | <b>10 days</b>             | <b>10 days</b> |      |      |      |      |      |      |    |  |
| 528 | Pre-drilling Works   | 14 days         | 14 days            | NA           | NA            | March 7, 2020           | March 20, 2020           | March 19, 2020          | April 1, 2020              | 0%                  | 0 days         | 0                          | 12 days        |      |      |      |      |      |      |    |  |
| 529 | Bored pile (5 numbers) @ CH1314. Prod. Rate: 10d/pile/rig.       | 50 days         | 50 days            | NA           | NA            | March 21, 2020          | May 25, 2020             | April 2, 2020           | June 5, 2020               | 0%                  | 0 days         | 1 days                     | 10 days        |      |      |      |      |      |      |    |  |
| 530 | Pile Testing (14d curing & 14 test)                              | 28 days         | 28 days            | NA           | NA            | May 26, 2020            | June 27, 2020            | June 6, 2020            | July 10, 2020              | 0%                  | 0 days         | 1 days                     | 10 days        |      |      |      |      |      |      |    |  |
| 531 | Proof-drilling Works   | 7 days          | 7 days             | NA           | NA            | May 26, 2020            | June 1, 2020             | July 4, 2020            | July 10, 2020              | 0%                  | 26 days        | 0 days                     | 39 days        |      |      |      |      |      |      |    |  |
| 532 | Pile Loading Test  | 14 days         | 14 days            | NA           | NA            | June 28, 2020           | July 11, 2020            | July 11, 2020           | July 24, 2020              | 0%                  | 1 day          | 1 days                     | 13 days        |      |      |      |      |      |      |    |  |
| 533 | <b>Pile Cap @ CH1314</b>   | <b>37 days</b>  | <b>37 days</b>     |              |               |                         |                          |                         |                            |                     |                |                            |                |      |      |      |      |      |      |    |  |

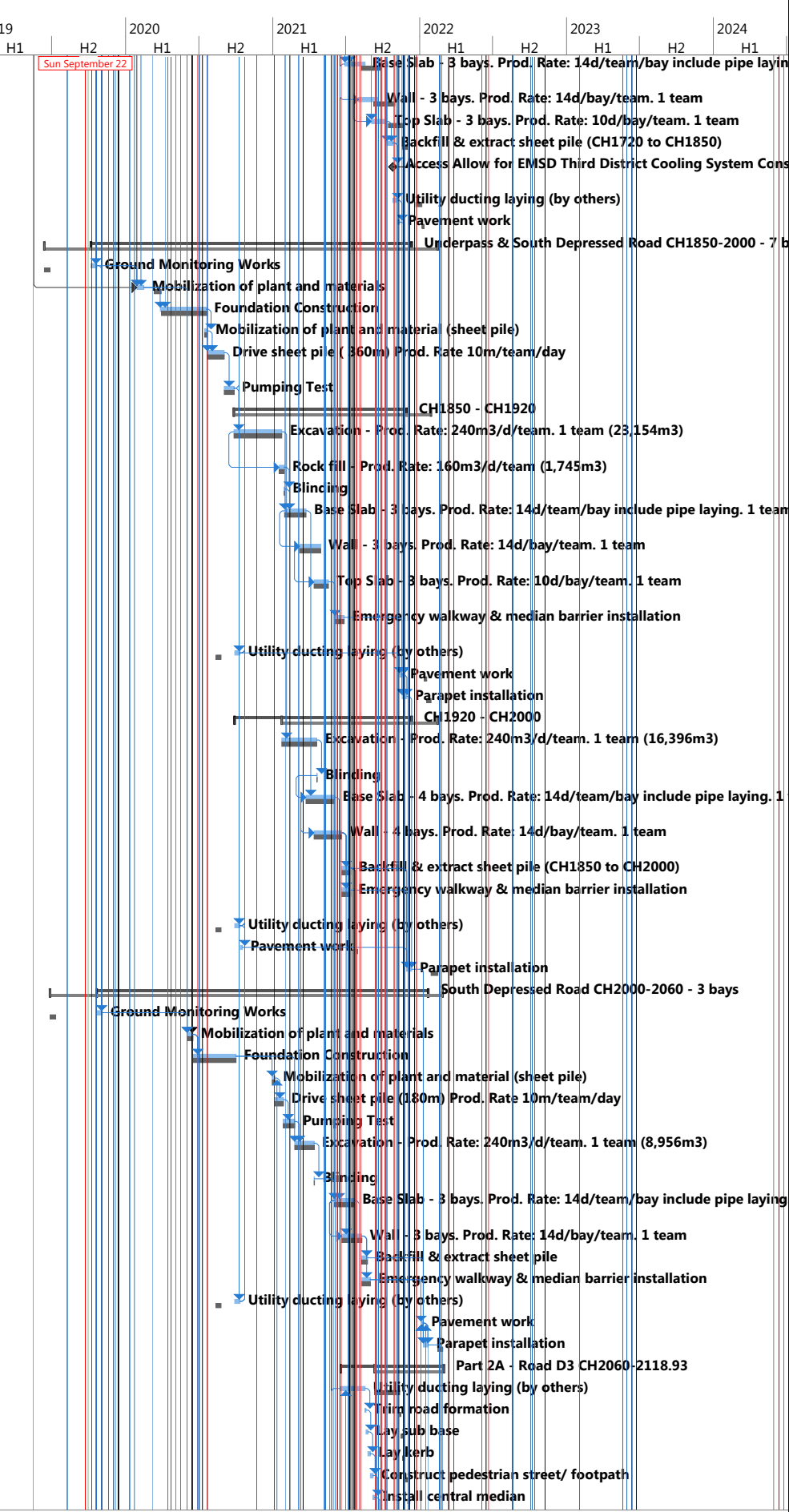




| ID  | Task Name   | Duration        | Remaining Duration | Actual Start             | Actual Finish      | Plan Start                 | Plan Finish              | Late Start               | Late Finish               | Physical % Complete | Free Slack      | Time Risk Allowances (TRA) | Total Slack     | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |    |    |  |  |
|-----|---|-----------------|--------------------|--------------------------|--------------------|----------------------------|--------------------------|--------------------------|---------------------------|---------------------|-----------------|----------------------------|-----------------|------|------|------|------|------|------|----|----|--|--|
|     |   |                 |                    |                          |                    |                            |                          |                          |                           |                     |                 |                            |                 | H1   | H2   | H1   | H2   | H1   | H2   | H1 | H2 |  |  |
| 597 | Lay sub base  | 4 days          | 4 days             | NA                       | NA                 | December 22, 2021          | December 28, 2021        | January 17, 2022         | January 20, 2022          | 0%                  | 0 days          | 0 days                     | 19 days         |      |      |      |      |      |      |    |    |  |  |
| 598 | Road pavement   | 7 days          | 7 days             | NA                       | NA                 | December 29, 2021          | January 6, 2022          | January 21, 2022         | January 28, 2022          | 0%                  | 0 days          | 0 days                     | 19 days         |      |      |      |      |      |      |    |    |  |  |
| 599 | Install railing on top of retaining wall  | 24 days         | 24 days            | NA                       | NA                 | January 7, 2022            | February 7, 2022         | January 29, 2022         | March 1, 2022             | 0%                  | 19 days         | 0.5 days                   | 19 days         |      |      |      |      |      |      |    |    |  |  |
| 600 | <b>Part 1 - Road D3 CH1444.7-1560</b>   | <b>69 days</b>  | <b>69 days</b>     | <b>NA</b>                | <b>NA</b>          | <b>December 4, 2021</b>    | <b>March 1, 2022</b>     | <b>December 4, 2021</b>  | <b>March 1, 2022</b>      | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |      |      |      |      |      |    |    |  |  |
| 601 | Trim road formation   | 3 days          | 3 days             | NA                       | NA                 | December 4, 2021           | December 7, 2021         | December 4, 2021         | December 7, 2021          | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 602 | Utility ducting laying (by others)  | 14 days         | 14 days            | NA                       | NA                 | December 8, 2021           | December 23, 2021        | December 8, 2021         | December 23, 2021         | 0%                  | 0 days          | 1 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 603 | Lay sub base  | 12 days         | 12 days            | NA                       | NA                 | December 24, 2021          | January 10, 2022         | December 24, 2021        | January 10, 2022          | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 604 | Lay kerb  | 7 days          | 7 days             | NA                       | NA                 | January 11, 2022           | January 18, 2022         | January 11, 2022         | January 18, 2022          | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 605 | Construct pedestrian street/ footpath   | 10 days         | 10 days            | NA                       | NA                 | January 19, 2022           | January 30, 2022         | January 19, 2022         | January 31, 2022          | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 606 | Install central median  | 7 days          | 7 days             | NA                       | NA                 | January 31, 2022           | February 10, 2022        | January 31, 2022         | February 10, 2022         | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 607 | Concrete infill between profile barrier   | 5 days          | 5 days             | NA                       | NA                 | February 11, 2022          | February 16, 2022        | February 11, 2022        | February 16, 2022         | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 608 | Road pavement   | 5 days          | 5 days             | NA                       | NA                 | February 17, 2022          | February 22, 2022        | February 17, 2022        | February 22, 2022         | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 609 | Install street furniture  | 6 days          | 6 days             | NA                       | NA                 | February 23, 2022          | March 1, 2022            | February 23, 2022        | March 1, 2022             | 0%                  | 0 days          | 0 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 610 | <b>Underpass and Depressed Road</b>   | <b>739 days</b> | <b>733.65 days</b> | <b>September 3, 2019</b> | <b>NA</b>          | <b>September 3, 2019</b>   | <b>March 1, 2022</b>     | <b>September 3, 2019</b> | <b>May 29, 2024</b>       | <b>0%</b>           | <b>668 days</b> | <b>0 days</b>              | <b>668 days</b> |      |      |      |      |      |      |    |    |  |  |
| 611 | <b>North Depressed Rd (CH1560-1720) - 8 bays</b>  | <b>413 days</b> | <b>401.77 days</b> | <b>September 3, 2019</b> | <b>NA</b>          | <b>September 3, 2019</b>   | <b>January 22, 2021</b>  | <b>September 3, 2019</b> | <b>March 1, 2022</b>      | <b>0%</b>           | <b>326 days</b> | <b>0 days</b>              | <b>326 days</b> |      |      |      |      |      |      |    |    |  |  |
| 612 | Ground Monitoring Works   | 17 days         | 0 days             | September 3, 2019        | September 19, 2019 | September 3, 2019          | September 19, 2019       | September 3, 2019        | September 19, 2019        | 100%                | 0 days          | 2 days                     | 0 days          |      |      |      |      |      |      |    |    |  |  |
| 613 | Mobilization  | 7 days          | 7 days             | NA                       | NA                 | October 8, 2019            | October 15, 2019         | June 15, 2020            | June 22, 2020             | 0%                  | 0 days          | 0 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 614 | Complete the Diveration of Existing Overhang Cable along the North Depressed Rd               | 0 days          | 0 days             | NA                       | NA                 | October 15, 2019           | October 15, 2019         | June 23, 2020            | June 23, 2020             | 0%                  | 1 day           | 0 days                     | 252 days        |      |      |      |      |      |      |    |    |  |  |
| 615 | Drive Sheet Pile (380m) Prod. Rate 10m/team/day   | 38 days         | 38 days            | NA                       | NA                 | October 16, 2019           | November 28, 2019        | June 23, 2020            | August 7, 2020            | 0%                  | 0 days          | 1 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 616 | Pumping Test  | 21 days         | 21 days            | NA                       | NA                 | November 29, 2019          | December 23, 2019        | August 8, 2020           | September 1, 2020         | 0%                  | 0 days          | 1 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 617 | <b>CH1560 - CH1640</b>  | <b>264 days</b> | <b>264 days</b>    | <b>NA</b>                | <b>NA</b>          | <b>December 24, 2019</b>   | <b>November 14, 2020</b> | <b>September 2, 2020</b> | <b>September 16, 2021</b> | <b>0%</b>           | <b>203 days</b> | <b>0 days</b>              | <b>203 days</b> |      |      |      |      |      |      |    |    |  |  |
| 618 | Excavation - Prod Rate: 240m3/d/team. (~26,663m3). 1 team                                     | 112 days        | 112 days           | NA                       | NA                 | December 24, 2019          | May 15, 2020             | September 2, 2020        | January 16, 2021          | 0%                  | 0 days          | 1 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 619 | Rock fill - Prod. Rate: 160m3/d/team (1,807m3)  | 12 days         | 12 days            | NA                       | NA                 | May 14, 2020               | May 27, 2020             | January 15, 2021         | January 28, 2021          | 0%                  | 0 days          | 1 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 620 | Blinding  | 1 day           | 1 day              | NA                       | NA                 | May 28, 2020               | May 28, 2020             | January 29, 2021         | January 29, 2021          | 0%                  | 0 days          | 0 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 621 | Base Slab - 4 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team                      | 56 days         | 56 days            | NA                       | NA                 | May 29, 2020               | August 4, 2020           | January 30, 2021         | April 12, 2021            | 0%                  | 0 days          | 3 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 622 | Wall - 4 bays. Prod. Rate: 14d/bay/team. 1 team   | 56 days         | 56 days            | NA                       | NA                 | July 3, 2020               | September 5, 2020        | June 26, 2021            | August 31, 2021           | 0%                  | 0 days          | 3 days                     | 292 days        |      |      |      |      |      |      |    |    |  |  |
| 623 | Emergency walkway & median barrier installation   | 18 days         | 18 days            | NA                       | NA                 | September 7, 2020          | September 26, 2020       | October 11, 2021         | November 1, 2021          | 0%                  | 0 days          | 0 days                     | 324 days        |      |      |      |      |      |      |    |    |  |  |
| 624 | Utility ducting laying (by others)  | 10 days         | 10 days            | NA                       | NA                 | September 28, 2020         | October 10, 2020         | November 2, 2021         | November 12, 2021         | 0%                  | 0 days          | 0 days                     | 324 days        |      |      |      |      |      |      |    |    |  |  |
| 625 | Pavement work   | 5 days          | 5 days             | NA                       | NA                 | October 12, 2020           | October 16, 2020         | November 13, 2021        | November 18, 2021         | 0%                  | 0 days          | 0 days                     | 324 days        |      |      |      |      |      |      |    |    |  |  |
| 626 | Parapet installation  | 24 days         | 24 days            | NA                       | NA                 | October 17, 2020           | November 14, 2020        | November 19, 2021        | December 16, 2021         | 0%                  | 32 days         | 0.5 days                   | 324 days        |      |      |      |      |      |      |    |    |  |  |
| 627 | <b>CH1640 - CH1720</b>  | <b>208 days</b> | <b>208 days</b>    | <b>NA</b>                | <b>NA</b>          | <b>May 16, 2020</b>        | <b>January 22, 2021</b>  | <b>January 18, 2021</b>  | <b>March 1, 2022</b>      | <b>0%</b>           | <b>203 days</b> | <b>0 days</b>              | <b>203 days</b> |      |      |      |      |      |      |    |    |  |  |
| 628 | Excavation - Prod Rate: 240m3/d/team. 1 team (10,926m3) (Remaining)                           | 46 days         | 46 days            | NA                       | NA                 | May 16, 2020               | July 10, 2020            | January 18, 2021         | March 15, 2021            | 0%                  | 0 days          | 1 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 629 | Rock fill - Prod. Rate: 160m3/d/team (2,203m3)  | 20 days         | 20 days            | NA                       | NA                 | July 11, 2020              | August 3, 2020           | March 16, 2021           | April 10, 2021            | 0%                  | 0 days          | 1 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 630 | Blinding  | 1 day           | 1 day              | NA                       | NA                 | August 4, 2020             | August 4, 2020           | April 12, 2021           | April 12, 2021            | 0%                  | 0 days          | 0 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 631 | Base Slab - 4 bays . Prod. Rate: 14d/team/bay include pipe laying. 1 team                     | 56 days         | 56 days            | NA                       | NA                 | August 5, 2020             | October 10, 2020         | April 13, 2021           | June 19, 2021             | 0%                  | 0 days          | 2 days                     | 203 days        |      |      |      |      |      |      |    |    |  |  |
| 632 | Wall - 4 bays. Prod. Rate: 14d/bay/team. 1 team   | 56 days         | 56 days            | NA                       | NA                 | September 7, 2020          | November 13, 2020        | September 1, 2021        | November 8, 2021          | 0%                  | 0 days          | 2 days                     | 292 days        |      |      |      |      |      |      |    |    |  |  |
| 633 | Backfill & extract sheet pile (CH1560 to CH1720)  | 12 days         | 12 days            | NA                       | NA                 | November 14, 2020          | November 27, 2020        | December 3, 2021         | December 16, 2021         | 0%                  | 21 days         | 1 day                      | 313 days        |      |      |      |      |      |      |    |    |  |  |
| 634 | Access Allow for EMSD Third District Cooling System Constructor for CH1560-CH1720 Pipe Laying | 0 days          | 0 days             | NA                       | NA                 | November 27, 2020          | November 27, 2020        | March 1, 2022            | March 1, 2022             | 0%                  | 459 days        | 0 days                     | 459 days        |      |      |      |      |      |      |    |    |  |  |
| 635 | Emergency walkway & median barrier installation   | 18 days         | 18 days            | NA                       | NA                 | November 14, 2020          | December 4, 2020         | November 9, 2021         | November 29, 2021         | 0%                  | 0 days          | 0 days                     | 292 days        |      |      |      |      |      |      |    |    |  |  |
| 636 | Utility ducting laying (by others)  | 10 days         | 10 days            | NA                       | NA                 | December 5, 2020           | December 16, 2020        | November 30, 2021        | December 10, 2021         | 0%                  | 0 days          | 0 days                     | 292 days        |      |      |      |      |      |      |    |    |  |  |
| 637 | Pavement work   | 5 days          | 5 days             | NA                       | NA                 | December 17, 2020          | December 22, 2020        | December 11, 2021        | December 16, 2021         | 0%                  | 0 days          | 0 days                     | 292 days        |      |      |      |      |      |      |    |    |  |  |
| 638 | Parapet installation  | 24 days         | 24 days            | NA                       | NA                 | December 23, 2020          | January 22, 2021         | December 17, 2021        | January 17, 2022          | 0%                  | 243 days        | 0.5 days                   | 292 days        |      |      |      |      |      |      |    |    |  |  |
| 639 | <b>Underpass (CH1720-1850) - 7 bays</b>   | <b>635 days</b> | <b>635 days</b>    | <b>NA</b>                | <b>NA</b>          | <b>September 23, 20...</b> | <b>November 11, 2021</b> | <b>March 19, 2020</b>    | <b>May 29, 2024</b>       | <b>0%</b>           | <b>145 days</b> | <b>0 days</b>              | <b>145 days</b> |      |      |      |      |      |      |    |    |  |  |
| 640 | Ground Monitoring Works   | 14 days         | 14 days            | NA                       | NA                 | September 23, 2019         | October 6, 2019          | March 19, 2020           | April 1, 2020             | 0%                  | 0 days          | 0 days                     | 178 days        |      |      |      |      |      |      |    |    |  |  |
| 641 | Drive sheet pile (330m) Prod. Rate 10m/team/day   | 33 days         | 33 days            | NA                       | NA                 | November 29, 2019          | January 9, 2020          | September 26, 2020       | November 6, 2020          | 0%                  | 212 days        | 0 days                     | 245 days        |      |      |      |      |      |      |    |    |  |  |
| 642 | Pumping Test  | 21 days         | 21 days            | NA                       | NA                 | September 26, 2020         | October 22, 2020         | November 7, 2020         | December 1, 2020          | 0%                  | 0 days          | 1 days                     | 33 days         |      |      |      |      |      |      |    |    |  |  |
| 643 | <b>CH1720 - CH1800</b>  | <b>255 days</b> | <b>255 days</b>    | <b>NA</b>                | <b>NA</b>          | <b>September 28, 20...</b> | <b>August 9, 2021</b>    | <b>December 2, 2020</b>  | <b>May 29, 2024</b>       | <b>0%</b>           | <b>53 days</b>  | <b>0 days</b>              | <b>53 days</b>  |      |      |      |      |      |      |    |    |  |  |
| 644 | Excavation - Prod Rate: 240m3/d/team. 1 team (27,220m3)                                       | 114 days        | 114 days           | NA                       | NA                 | October 23, 2020           | March 12, 2021           | December 2, 2020         | April 23, 2021            | 0%                  | 0 days          | 5 days                     | 33 days         |      |      |      |      |      |      |    |    |  |  |
| 645 | Rock fill - Prod. Rate: 160m3/d/team (1,944m3)  | 13 days         | 13 days            | NA                       | NA                 | March 3, 2021              | March 17, 2021           | June 3, 2021             | June 18, 2021             | 0%                  | 0 days          | 0 days                     | 74 days         |      |      |      |      |      |      |    |    |  |  |
| 646 | Blinding  | 1 day           | 1 day              | NA                       | NA                 | March 18, 2021             | March 18, 2021           | June 19, 2021            | June 19, 2021             | 0%                  | 0 days          | 0 days                     | 74 days         |      |      |      |      |      |      |    |    |  |  |
| 647 | Base Slab - 4 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team                      | 56 days         | 56 days            | NA                       | NA                 | March 19, 2021             | May 28, 2021             | June 21, 2021            | August 25, 2021           | 0%                  | 0 days          | 1 day                      | 74 days         |      |      |      |      |      |      |    |    |  |  |
| 648 | Wall - 4 bays. Prod. Rate: 14d/bay/team. 1 team   | 56 days         | 56 days            | NA                       | NA                 | April 24, 2021             | July 2, 2021             | August 12, 2021          | October 19, 2021          | 0%                  | 0 days          | 1 day                      | 90 days         |      |      |      |      |      |      |    |    |  |  |
| 649 | Top Slab - 4 bays. Prod. Rate: 10d/bay/team. 1 team   | 40 days         | 40 days            | NA                       | NA                 | May 29, 2021               | July 16, 2021            | September 14, 2021       | November 2, 2021          | 0%                  | 41 days         | 0.5 days                   | 90 days         |      |      |      |      |      |      |    |    |  |  |
| 650 | Emergency walkway & median barrier installation   | 18 days         | 18 days            | NA                       | NA                 | July 20, 2021              | August 9, 2021           | May 8, 2024              | May 29, 2024              | 0%                  | 834 days        | 0 days                     | 834 days        |      |      |      |      |      |      |    |    |  |  |
| 651 | Utility ducting laying (by others)  | 10 days         | 10 days            | NA                       | NA                 | September 28, 2020         | October 10, 2020         | November 2, 2021         | November 12, 2021         | 0%                  | 0 days          | 0 days                     | 324 days        | </   |      |      |      |      |      |    |    |  |  |



| ID  | Task Name  | Duration | Remaining Duration | Actual Start | Actual Finish | Plan Start         | Plan Finish        | Late Start         | Late Finish        | Physical % Complete | Free Slack | Time Risk Allowances (TRA) | Total Slack | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |    |  |
|-----|--|----------|--------------------|--------------|---------------|--------------------|--------------------|--------------------|--------------------|---------------------|------------|----------------------------|-------------|------|------|------|------|------|------|----|--|
|     |  |          |                    |              |               |                    |                    |                    |                    |                     |            |                            |             | H1   | H2   | H1   | H2   | H1   | H2   | H1 |  |
| 657 | Base Slab - 3 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team                     | 42 days  | 42 days            | NA           | NA            | June 29, 2021      | August 17, 2021    | August 26, 2021    | October 16, 2021   | 0%                  | 0 days     | 2 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 658 | Wall - 3 bays. Prod. Rate: 14d/bay/team. 1 team  | 42 days  | 42 days            | NA           | NA            | August 2, 2021     | September 18, 2021 | September 29, 2021 | November 18, 2021  | 0%                  | 0 days     | 1 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 659 | Top Slab - 3 bays. Prod. Rate: 10d/bay/team. 1 team  | 30 days  | 30 days            | NA           | NA            | September 3, 2021  | October 9, 2021    | November 3, 2021   | December 7, 2021   | 0%                  | 0 days     | 1 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 660 | Backfill & extract sheet pile (CH1720 to CH1850)   | 12 days  | 12 days            | NA           | NA            | October 11, 2021   | October 25, 2021   | December 8, 2021   | December 21, 2021  | 0%                  | 0 days     | 0 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 661 | Access Allow for EMSD Third District Cooling System Contractor for CH1720-CH1850 Pipe Laying | 0 days   | 0 days             | NA           | NA            | October 25, 2021   | October 25, 2021   | March 1, 2022      | March 1, 2022      | 0%                  | 127 days   |                            | 127 days    |      |      |      |      |      |      |    |  |
| 662 | Utility ducting laying (by others)   | 10 days  | 10 days            | NA           | NA            | October 26, 2021   | November 5, 2021   | December 22, 2021  | January 5, 2022    | 0%                  | 0 days     | 1 day                      | 49 days     |      |      |      |      |      |      |    |  |
| 663 | Pavement work  | 5 days   | 5 days             | NA           | NA            | November 6, 2021   | November 11, 2021  | January 6, 2022    | January 11, 2022   | 0%                  | 0 days     | 1 day                      | 49 days     |      |      |      |      |      |      |    |  |
| 664 | Underpass & South Depressed Road CH1850-2000 - 7 bays  | 650 days | 650 days           | NA           | NA            | October 7, 2019    | December 11, 2021  | April 2, 2020      | February 14, 2022  | 0%                  | 49 days    |                            | 49 days     |      |      |      |      |      |      |    |  |
| 665 | Ground Monitoring Works  | 14 days  | 14 days            | NA           | NA            | October 7, 2019    | October 20, 2019   | April 2, 2020      | April 15, 2020     | 0%                  | 0 days     | 0 days                     | 178 days    |      |      |      |      |      |      |    |  |
| 666 | Mobilization of plant and materials  | 15 days  | 15 days            | NA           | NA            | January 29, 2020   | February 14, 2020  | April 16, 2020     | May 5, 2020        | 0%                  | 35 days    | 0 days                     | 63 days     |      |      |      |      |      |      |    |  |
| 667 | Foundation Construction  | 90 days  | 90 days            | NA           | NA            | March 27, 2020     | July 18, 2020      | May 6, 2020        | August 20, 2020    | 0%                  | 0 days     | 1 day                      | 28 days     |      |      |      |      |      |      |    |  |
| 668 | Mobilization of plant and material (sheet pile)  | 6 days   | 6 days             | NA           | NA            | July 15, 2020      | July 21, 2020      | August 17, 2020    | August 22, 2020    | 0%                  | 0 days     | 0 days                     | 28 days     |      |      |      |      |      |      |    |  |
| 669 | Drive sheet pile (360m) Prod. Rate 10m/team/day  | 36 days  | 36 days            | NA           | NA            | July 22, 2020      | September 1, 2020  | August 24, 2020    | October 6, 2020    | 0%                  | 0 days     | 0.5 days                   | 28 days     |      |      |      |      |      |      |    |  |
| 670 | Pumping Test   | 21 days  | 21 days            | NA           | NA            | September 2, 2020  | September 25, 2020 | October 7, 2020    | October 31, 2020   | 0%                  | 0 days     | 0 days                     | 28 days     |      |      |      |      |      |      |    |  |
| 671 | CH1850 - CH1920  | 349 days | 349 days           | NA           | NA            | September 26, 2020 | November 29, 2021  | November 2, 2020   | January 28, 2022   | 0%                  | 28 days    |                            | 28 days     |      |      |      |      |      |      |    |  |
| 672 | Excavation - Prod. Rate: 240m3/d/team. 1 team (23,154m3)                                     | 96 days  | 96 days            | NA           | NA            | September 26, 2020 | January 22, 2021   | November 2, 2020   | February 27, 2021  | 0%                  | 0 days     | 1 day                      | 28 days     |      |      |      |      |      |      |    |  |
| 673 | Rock fill - Prod. Rate: 160m3/d/team (1,745m3)   | 11 days  | 11 days            | NA           | NA            | January 16, 2021   | January 28, 2021   | February 22, 2021  | March 5, 2021      | 0%                  | 0 days     | 0 days                     | 28 days     |      |      |      |      |      |      |    |  |
| 674 | Blinding   | 1 day    | 1 day              | NA           | NA            | January 29, 2021   | January 29, 2021   | March 6, 2021      | March 6, 2021      | 0%                  | 0 days     | 0 days                     | 28 days     |      |      |      |      |      |      |    |  |
| 675 | Base Slab - 3 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team                     | 42 days  | 42 days            | NA           | NA            | January 30, 2021   | March 23, 2021     | March 8, 2021      | April 28, 2021     | 0%                  | 0 days     | 0.5 days                   | 28 days     |      |      |      |      |      |      |    |  |
| 676 | Wall - 3 bays. Prod. Rate: 14d/bay/team. 1 team  | 42 days  | 42 days            | NA           | NA            | March 8, 2021      | April 28, 2021     | September 29, 2021 | November 18, 2021  | 0%                  | 0 days     | 0.5 days                   | 168 days    |      |      |      |      |      |      |    |  |
| 677 | Top Slab - 3 bays. Prod. Rate: 10d/bay/team. 1 team  | 30 days  | 30 days            | NA           | NA            | April 13, 2021     | May 18, 2021       | November 3, 2021   | December 7, 2021   | 0%                  | 0 days     | 0.5 days                   | 168 days    |      |      |      |      |      |      |    |  |
| 678 | Emergency walkway & median barrier installation  | 18 days  | 18 days            | NA           | NA            | June 5, 2021       | June 26, 2021      | December 24, 2021  | January 17, 2022   | 0%                  | 119 days   | 0 days                     | 168 days    |      |      |      |      |      |      |    |  |
| 679 | Utility ducting laying (by others)   | 10 days  | 10 days            | NA           | NA            | September 28, 2020 | October 10, 2020   | November 2, 2021   | November 12, 2021  | 0%                  | 0 days     | 0 days                     | 324 days    |      |      |      |      |      |      |    |  |
| 680 | Pavement work  | 5 days   | 5 days             | NA           | NA            | November 12, 2021  | November 17, 2021  | January 12, 2022   | January 17, 2022   | 0%                  | 0 days     | 0 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 681 | Parapet installation   | 10 days  | 10 days            | NA           | NA            | November 18, 2021  | November 29, 2021  | January 18, 2022   | January 28, 2022   | 0%                  | 0 days     | 0 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 682 | CH1920 - CH2000  | 359 days | 359 days           | NA           | NA            | September 28, 2020 | December 11, 2021  | April 14, 2021     | February 14, 2022  | 0%                  | 49 days    |                            | 49 days     |      |      |      |      |      |      |    |  |
| 683 | Excavation - Prod. Rate: 240m3/d/team. 1 team (16,396m3)                                     | 68 days  | 68 days            | NA           | NA            | January 23, 2021   | April 19, 2021     | April 14, 2021     | July 6, 2021       | 0%                  | 0 days     | 1 day                      | 63 days     |      |      |      |      |      |      |    |  |
| 684 | Blinding   | 1 day    | 1 day              | NA           | NA            | April 20, 2021     | April 20, 2021     | July 7, 2021       | July 7, 2021       | 0%                  | 0 days     | 0 days                     | 63 days     |      |      |      |      |      |      |    |  |
| 685 | Base Slab - 4 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team                     | 56 days  | 56 days            | NA           | NA            | March 24, 2021     | June 2, 2021       | April 29, 2021     | July 7, 2021       | 0%                  | 0 days     | 1 day                      | 28 days     |      |      |      |      |      |      |    |  |
| 686 | Wall - 4 bays. Prod. Rate: 14d/bay/team. 1 team  | 56 days  | 56 days            | NA           | NA            | April 13, 2021     | June 19, 2021      | July 10, 2021      | September 13, 2021 | 0%                  | 0 days     | 1 day                      | 72 days     |      |      |      |      |      |      |    |  |
| 687 | Backfill & extract sheet pile (CH1850 to CH2000)   | 18 days  | 18 days            | NA           | NA            | June 21, 2021      | July 12, 2021      | September 14, 2021 | October 6, 2021    | 0%                  | 0 days     | 0 days                     | 72 days     |      |      |      |      |      |      |    |  |
| 688 | Emergency walkway & median barrier installation  | 18 days  | 18 days            | NA           | NA            | June 21, 2021      | July 12, 2021      | January 8, 2022    | January 28, 2022   | 0%                  | 117 days   | 0 days                     | 166 days    |      |      |      |      |      |      |    |  |
| 689 | Utility ducting laying (by others)   | 10 days  | 10 days            | NA           | NA            | September 28, 2020 | October 10, 2020   | November 2, 2021   | November 12, 2021  | 0%                  | 0 days     | 0 days                     | 324 days    |      |      |      |      |      |      |    |  |
| 690 | Pavement work  | 5 days   | 5 days             | NA           | NA            | October 12, 2020   | October 16, 2020   | January 24, 2022   | January 28, 2022   | 0%                  | 333 days   | 0 days                     | 382 days    |      |      |      |      |      |      |    |  |
| 691 | Parapet installation   | 11 days  | 11 days            | NA           | NA            | November 30, 2021  | December 11, 2021  | January 29, 2022   | February 14, 2022  | 0%                  | 21 days    | 0 days                     | 49 days     |      |      |      |      |      |      |    |  |
| 692 | South Depressed Road CH2000-2060 - 3 bays  | 671 days | 671 days           | NA           | NA            | October 21, 2019   | January 21, 2022   | May 30, 2020       | February 26, 2022  | 0%                  | 28 days    |                            | 28 days     |      |      |      |      |      |      |    |  |
| 693 | Ground Monitoring Works  | 14 days  | 14 days            | NA           | NA            | October 21, 2019   | November 3, 2019   | May 30, 2020       | June 12, 2020      | 0%                  | 211 days   | 0 days                     | 222 days    |      |      |      |      |      |      |    |  |
| 694 | Mobilization of plant and materials  | 12 days  | 12 days            | NA           | NA            | June 2, 2020       | June 15, 2020      | June 13, 2020      | June 27, 2020      | 0%                  | 0 days     | 0 days                     | 10 days     |      |      |      |      |      |      |    |  |
| 695 | Foundation Construction  | 90 days  | 90 days            | NA           | NA            | June 16, 2020      | September 30, 2020 | December 18, 2020  | April 12, 2021     | 0%                  | 72 days    | 0.5 days                   | 154 days    |      |      |      |      |      |      |    |  |
| 696 | Mobilization of plant and material (sheet pile)  | 5 days   | 5 days             | NA           | NA            | December 30, 2020  | January 5, 2021    | April 13, 2021     | April 17, 2021     | 0%                  | 0 days     | 0 days                     | 82 days     |      |      |      |      |      |      |    |  |
| 697 | Drive sheet pile (180m) Prod. Rate 10m/team/day  | 18 days  | 18 days            | NA           | NA            | January 6, 2021    | January 26, 2021   | April 19, 2021     | May 10, 2021       | 0%                  | 0 days     | 0 days                     | 82 days     |      |      |      |      |      |      |    |  |
| 698 | Pumping Test   | 21 days  | 21 days            | NA           | NA            | January 27, 2021   | February 23, 2021  | May 11, 2021       | June 4, 2021       | 0%                  | 0 days     | 0 days                     | 82 days     |      |      |      |      |      |      |    |  |
| 699 | Excavation - Prod. Rate: 240m3/d/team. 1 team (8,956m3)                                      | 38 days  | 38 days            | NA           | NA            | February 24, 2021  | April 12, 2021     | June 5, 2021       | July 21, 2021      | 0%                  | 0 days     | 0.5 days                   | 82 days     |      |      |      |      |      |      |    |  |
| 700 | Blinding   | 1 day    | 1 day              | NA           | NA            | April 13, 2021     | April 13, 2021     | July 22, 2021      | July 22, 2021      | 0%                  | 41 days    | 0 days                     | 82 days     |      |      |      |      |      |      |    |  |
| 701 | Base Slab - 3 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team                     | 40 days  | 40 days            | NA           | NA            | June 3, 2021       | July 21, 2021      | July 23, 2021      | September 7, 2021  | 0%                  | 0 days     | 0.5 days                   | 41 days     |      |      |      |      |      |      |    |  |
| 702 | Wall - 3 bays. Prod. Rate: 14d/bay/team. 1 team  | 42 days  | 42 days            | NA           | NA            | June 21, 2021      | August 9, 2021     | November 24, 2021  | January 14, 2022   | 0%                  | 0 days     | 0.5 days                   | 130 days    |      |      |      |      |      |      |    |  |
| 703 | Backfill & extract sheet pile  | 12 days  | 12 days            | NA           | NA            | August 10, 2021    | August 23, 2021    | January 28, 2022   | February 14, 2022  | 0%                  | 113 days   | 0 days                     | 141 days    |      |      |      |      |      |      |    |  |
| 704 | Emergency walkway & median barrier installation  | 18 days  | 18 days            | NA           | NA            | August 10, 2021    | August 30, 2021    | January 15, 2022   | February 8, 2022   | 0%                  | 102 days   | 0 days                     | 130 days    |      |      |      |      |      |      |    |  |
| 705 | Utility ducting laying (by others)   | 10 days  | 10 days            | NA           | NA            | September 28, 2020 | October 10, 2020   | November 2, 2021   | November 12, 2021  | 0%                  | 0 days     | 0 days                     | 324 days    |      |      |      |      |      |      |    |  |
| 706 | Pavement work  | 5 days   | 5 days             | NA           | NA            | January 4, 2022    | January 8, 2022    | February 9, 2022   | February 14, 2022  | 0%                  | 0 days     | 0 days                     | 28 days     |      |      |      |      |      |      |    |  |
| 707 | Parapet installation   | 11 days  | 11 days            | NA           | NA            | January 10, 2022   | January 21, 2022   | February 15, 2022  | February 26, 2022  | 0%                  | 27 days    | 0 days                     | 28 days     |      |      |      |      |      |      |    |  |
| 708 | Part 2A - Road D3 CH2060-2118.93   | 208 days | 208 days           | NA           | NA            | June 19, 2021      | February 28, 2022  | November 22, 2021  | March 1, 2022      | 0%                  | 1 day      |                            | 1 day       |      |      |      |      |      |      |    |  |
| 709 | Utility ducting laying (by others)   | 50 days  | 50 days            | NA           | NA            | June 19, 2021      | August 17, 2021    | November 22, 2021  | January 21, 2022   | 0%                  | 0 days     | 0 days                     | 129 days    |      |      |      |      |      |      |    |  |
| 710 | Trim road formation  | 2 days   | 2 days             | NA           | NA            | August 18, 2021    | August 19, 2021    | January 22, 2022   | January 24, 2022   | 0%                  | 0 days     | 0 days                     | 129 days    |      |      |      |      |      |      |    |  |
| 711 | Lay sub base   | 4 days   | 4 days             | NA           | NA            | August 20, 2021    | August 24, 2021    | January 25, 2022   | January 28, 2022   | 0%                  | 0 days     | 0 days                     | 129 days    |      |      |      |      |      |      |    |  |
| 712 | Lay kerb   | 5 days   | 5 days             | NA           | NA            | August 25, 2021    | August 30, 2021    | January 29, 2022   | February 7, 2022   | 0%                  | 0 days     | 0 days                     | 129 days    |      |      |      |      |      |      |    |  |
| 713 | Construct pedestrian street/ footpath  | 6 days   | 6 days             | NA           | NA            | August 31, 2021    | September 6, 2021  | February 8, 2022   | February 14, 2022  | 0%                  | 0 days     | 0 days                     | 129 days    |      |      |      |      |      |      |    |  |
| 714 | Install central median   | 4 days   | 4 days             | NA           | NA            | September 7, 2021  | September 10, 2021 | February 15, 2022  | February 18, 2022  | 0%                  | 0 days     | 0 days                     | 129 days    |      |      |      |      |      |      |    |  |



Title: Revised Programme- ED/2018/01 with Progress Update as of 22-Sep-19

█ Critical Task █ Task █ Manual Task █

| ID  | Task Name   | Duration         | Remaining Duration | Actual Start        | Actual Finish | Plan Start               | Plan Finish              | Late Start              | Late Finish             | Physical % Complete | Free Slack      | Time Risk Allowances (TRA) | Total Slack     | 2019 | 2020             | 2021 | 2022 | 2023 | 2024 |    |    |  |
|-----|---|------------------|--------------------|---------------------|---------------|--------------------------|--------------------------|-------------------------|-------------------------|---------------------|-----------------|----------------------------|-----------------|------|------------------|------|------|------|------|----|----|--|
|     |   |                  |                    |                     |               |                          |                          |                         |                         |                     |                 |                            |                 | H1   | H2               | H1   | H2   | H1   | H2   | H1 | H2 |  |
| 715 | Concrete infill between profile barrier                               | 2 days           | 2 days             | NA                  | NA            | September 11, 2021       | September 13, 2021       | February 19, 2022       | February 21, 2022       | 0%                  | 95 days         | 0 days                     | 129 days        |      | Sun September 22 |      |      |      |      |    |    |  |
| 716 | Road pavement   | 5 days           | 5 days             | NA                  | NA            | January 10, 2022         | January 14, 2022         | February 22, 2022       | February 26, 2022       | 0%                  | 33 days         | 0 days                     | 34 days         |      |                  |      |      |      |      |    |    |  |
| 717 | Install street furniture  | 2 days           | 2 days             | NA                  | NA            | February 26, 2022        | February 28, 2022        | February 28, 2022       | March 1, 2022           | 0%                  | 1 day           | 0 days                     | 1 day           |      |                  |      |      |      |      |    |    |  |
| 718 | Planned Completion for Section 1                                      | 0 days           | 0 days             | NA                  | NA            | March 1, 2022            | March 1, 2022            | March 1, 2022           | March 1, 2022           | 0%                  | 0 days          | 0 days                     | 0 days          |      |                  |      |      |      |      |    |    |  |
| 719 | <b>Section 2</b>  | <b>325 days</b>  | <b>325 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>April 22, 2020</b>    | <b>May 26, 2021</b>      | <b>May 14, 2020</b>     | <b>June 2, 2021</b>     | <b>0%</b>           | <b>6 days</b>   | <b>0 days</b>              | <b>6 days</b>   |      |                  |      |      |      |      |    |    |  |
| 720 | Construction of Precast Box Culvert (at fabrication yard)             | 130 days         | 130 days           | NA                  | NA            | April 22, 2020           | September 24, 2020       | May 14, 2020            | October 16, 2020        | 0%                  | 7 days          | 1 day                      | 17 days         |      |                  |      |      |      |      |    |    |  |
| 721 | <b>DCS Seawater Intake Box Culvert (Precast)</b>                      | <b>243 days</b>  | <b>243 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>July 30, 2020</b>     | <b>May 25, 2021</b>      | <b>August 11, 2020</b>  | <b>June 1, 2021</b>     | <b>0%</b>           | <b>6 days</b>   | <b>0 days</b>              | <b>6 days</b>   |      |                  |      |      |      |      |    |    |  |
| 722 | <b>Part 2A - CHB.30-83 (53m)</b>                                      | <b>126 days</b>  | <b>126 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>July 30, 2020</b>     | <b>December 29, 2020</b> | <b>August 11, 2020</b>  | <b>January 11, 2021</b> | <b>0%</b>           | <b>10 days</b>  | <b>0 days</b>              | <b>10 days</b>  |      |                  |      |      |      |      |    |    |  |
| 723 | Temporary ELS & Excavation  | 30 days          | 30 days            | NA                  | NA            | July 30, 2020            | August 28, 2020          | August 11, 2020         | September 9, 2020       | 0%                  | 0 days          | 1 days                     | 12 days         |      |                  |      |      |      |      |    |    |  |
| 724 | Trim formation layer  | 30 days          | 30 days            | NA                  | NA            | August 29, 2020          | October 5, 2020          | September 10, 2020      | October 16, 2020        | 0%                  | 0 days          | 1 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 725 | Lowering precast box culvert (7 cells)                                | 44 days          | 44 days            | NA                  | NA            | October 6, 2020          | November 26, 2020        | October 17, 2020        | December 8, 2020        | 0%                  | 0 days          | 2 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 726 | Remove struts and backfilling   | 26 days          | 26 days            | NA                  | NA            | November 27, 2020        | December 29, 2020        | December 9, 2020        | January 11, 2021        | 0%                  | 0 days          | 1 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 727 | <b>Part 1 - CHB.5-30 (25m)</b>  | <b>117 days</b>  | <b>117 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>December 30, 2020</b> | <b>May 25, 2021</b>      | <b>January 12, 2021</b> | <b>June 1, 2021</b>     | <b>0%</b>           | <b>6 days</b>   | <b>0 days</b>              | <b>6 days</b>   |      |                  |      |      |      |      |    |    |  |
| 728 | Temporary ELS & Excavation  | 31 days          | 31 days            | NA                  | NA            | December 30, 2020        | February 4, 2021         | January 12, 2021        | February 19, 2021       | 0%                  | 0 days          | 1 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 729 | Trim formation layer  | 26 days          | 26 days            | NA                  | NA            | February 5, 2021         | March 10, 2021           | February 20, 2021       | March 22, 2021          | 0%                  | 0 days          | 1 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 730 | Lowering precast box culvert (3 cells)                                | 40 days          | 40 days            | NA                  | NA            | March 11, 2021           | April 29, 2021           | March 23, 2021          | May 12, 2021            | 0%                  | 4 days          | 2 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 731 | Remove struts and backfilling   | 16 days          | 16 days            | NA                  | NA            | May 6, 2021              | May 25, 2021             | May 13, 2021            | June 1, 2021            | 0%                  | 0 days          | 1 days                     | 6 days          |      |                  |      |      |      |      |    |    |  |
| 732 | Planned Completion for Section 2                                      | 1 day            | 1 day              | NA                  | NA            | May 26, 2021             | May 26, 2021             | June 2, 2021            | June 2, 2021            | 0%                  | 0 days          | 0 days                     | 6 days          |      |                  |      |      |      |      |    |    |  |
| 733 | <b>Section 3</b>  | <b>408 days</b>  | <b>408 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>June 16, 2020</b>     | <b>October 28, 2021</b>  | <b>June 20, 2020</b>    | <b>May 29, 2024</b>     | <b>0%</b>           | <b>4 days</b>   | <b>0 days</b>              | <b>4 days</b>   |      |                  |      |      |      |      |    |    |  |
| 734 | <b>Part 2C - Lift LT3 &amp; LT4</b>                                   | <b>291 days</b>  | <b>291 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>June 16, 2020</b>     | <b>June 8, 2021</b>      | <b>June 20, 2020</b>    | <b>May 29, 2024</b>     | <b>0%</b>           | <b>4 days</b>   | <b>0 days</b>              | <b>4 days</b>   |      |                  |      |      |      |      |    |    |  |
| 735 | Mobilization of plant and materials                                   | 22 days          | 22 days            | NA                  | NA            | June 16, 2020            | July 13, 2020            | June 20, 2020           | July 17, 2020           | 0%                  | 0 days          | 1 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 736 | Foundation Construction   | 49 days          | 49 days            | NA                  | NA            | July 14, 2020            | September 8, 2020        | July 18, 2020           | September 12, 2020      | 0%                  | 0 days          | 2 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 737 | Slab and shaft  | 33 days          | 33 days            | NA                  | NA            | September 9, 2020        | October 19, 2020         | September 14, 2020      | October 23, 2020        | 0%                  | 0 days          | 1 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 738 | E & M installation  | 65 days          | 65 days            | NA                  | NA            | February 23, 2021        | May 13, 2021             | February 27, 2021       | May 18, 2021            | 0%                  | 0 days          | 3 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 739 | Lift installation (LT3 & LT4)   | 101 days         | 101 days           | NA                  | NA            | October 20, 2020         | February 22, 2021        | October 24, 2020        | February 26, 2021       | 0%                  | 0 days          | 5 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 740 | CLP Meter Installation  | 0 days           | 0 days             | NA                  | NA            | February 1, 2021         | February 1, 2021         | May 29, 2024            | May 29, 2024            | 0%                  | 1214 d...       | 0 days                     | 1214 d...       |      |                  |      |      |      |      |    |    |  |
| 741 | EMSD Submission Form 5 for Lift Inspection                            | 0 days           | 0 days             | NA                  | NA            | March 1, 2021            | March 1, 2021            | October 5, 2021         | October 5, 2021         | 0%                  | 0 days          | 0 days                     | 218 days        |      |                  |      |      |      |      |    |    |  |
| 742 | EMSD Lift Inspection  | 0 days           | 0 days             | NA                  | NA            | March 14, 2021           | March 14, 2021           | October 19, 2021        | October 19, 2021        | 0%                  | 0 days          | 0 days                     | 218 days        |      |                  |      |      |      |      |    |    |  |
| 743 | Issuance of Lift Use Permit   | 0 days           | 0 days             | NA                  | NA            | March 29, 2021           | March 29, 2021           | November 2, 2021        | November 2, 2021        | 0%                  | 213 days        | 0 days                     | 218 days        |      |                  |      |      |      |      |    |    |  |
| 744 | Testing & commissioning   | 21 days          | 21 days            | NA                  | NA            | May 14, 2021             | June 8, 2021             | May 20, 2021            | June 12, 2021           | 0%                  | 0 days          | 1 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 745 | Footpath  | 27 days          | 27 days            | NA                  | NA            | June 9, 2021             | July 12, 2021            | June 15, 2021           | July 16, 2021           | 0%                  | 0 days          | 1 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 746 | Open Space within Part 2C   | 90 days          | 90 days            | NA                  | NA            | July 13, 2021            | October 28, 2021         | July 17, 2021           | November 2, 2021        | 0%                  | 0 days          | 4 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 747 | Planned Completion for Section 3                                      | 0 days           | 0 days             | NA                  | NA            | October 28, 2021         | October 28, 2021         | November 2, 2021        | November 2, 2021        | 0%                  | 0 days          | 0 days                     | 4 days          |      |                  |      |      |      |      |    |    |  |
| 748 | <b>Section 4 (Subject to Excision)</b>                                | <b>185 days</b>  | <b>185 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>October 3, 2022</b>   | <b>May 17, 2023</b>      | <b>October 15, 2022</b> | <b>May 30, 2023</b>     | <b>0%</b>           | <b>10 days</b>  | <b>0 days</b>              | <b>10 days</b>  |      |                  |      |      |      |      |    |    |  |
| 749 | Part 2E - Abandon of existing DCS                                     | 185 days         | 185 days           | NA                  | NA            | October 3, 2022          | May 17, 2023             | October 15, 2022        | May 30, 2023            | 0%                  | 0 days          | 9 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 750 | Planned Completion for Section 4                                      | 0 days           | 0 days             | NA                  | NA            | May 17, 2023             | May 17, 2023             | May 30, 2023            | May 30, 2023            | 0%                  | 0 days          | 0 days                     | 10 days         |      |                  |      |      |      |      |    |    |  |
| 751 | <b>Section 5</b>  | <b>303 days</b>  | <b>303 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>June 20, 2020</b>     | <b>June 28, 2021</b>     | <b>June 27, 2020</b>    | <b>July 5, 2021</b>     | <b>0%</b>           | <b>5 days</b>   | <b>0 days</b>              | <b>5 days</b>   |      |                  |      |      |      |      |    |    |  |
| 752 | <b>Noise barrier fronting to 4B5 at Rd D3A &amp; Bus Lay By ~120m</b> | <b>303 days</b>  | <b>303 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>June 20, 2020</b>     | <b>June 28, 2021</b>     | <b>June 27, 2020</b>    | <b>July 5, 2021</b>     | <b>0%</b>           | <b>5 days</b>   | <b>0 days</b>              | <b>5 days</b>   |      |                  |      |      |      |      |    |    |  |
| 753 | ELS & Excavation  | 33 days          | 33 days            | NA                  | NA            | June 20, 2020            | July 30, 2020            | June 27, 2020           | August 5, 2020          | 0%                  | 0 days          | 2 days                     | 5 days          |      |                  |      |      |      |      |    |    |  |
| 754 | Noise barrier foundation  | 94 days          | 94 days            | NA                  | NA            | July 31, 2020            | November 20, 2020        | August 6, 2020          | November 26, 2020       | 0%                  | 0 days          | 4 days                     | 5 days          |      |                  |      |      |      |      |    |    |  |
| 755 | Frame & Panel installation (Night Work)                               | 176 days         | 176 days           | NA                  | NA            | November 21, 2020        | June 28, 2021            | November 27, 2020       | July 5, 2021            | 0%                  | 0 days          | 8 days                     | 5 days          |      |                  |      |      |      |      |    |    |  |
| 756 | Planned Completion for Section 5                                      | 0 days           | 0 days             | NA                  | NA            | June 28, 2021            | June 28, 2021            | July 5, 2021            | July 5, 2021            | 0%                  | 0 days          | 0 days                     | 5 days          |      |                  |      |      |      |      |    |    |  |
| 757 | <b>Section 6</b>  | <b>1202 days</b> | <b>1198.4 days</b> | <b>May 16, 2019</b> | <b>NA</b>     | <b>May 16, 2019</b>      | <b>May 30, 2023</b>      | <b>May 16, 2019</b>     | <b>May 29, 2024</b>     | <b>0%</b>           | <b>297 days</b> | <b>0 days</b>              | <b>297 days</b> |      |                  |      |      |      |      |    |    |  |
| 758 | <b>Fencing (15m/d) &amp; Hoarding Erection (10m/d)</b>                | <b>919 days</b>  | <b>919 days</b>    | <b>NA</b>           | <b>NA</b>     | <b>October 8, 2019</b>   | <b>November 8, 2022</b>  | <b>November 9, 2019</b> | <b>May 29, 2024</b>     | <b>0%</b>           | <b>28 days</b>  | <b>0 days</b>              | <b>28 days</b>  |      |                  |      |      |      |      |    |    |  |
| 759 | Fencing - Part 1 (~768m)  | 51 days          | 51 days            | NA                  | NA            | October 21, 2019         | December 18, 2019        | November 9, 2019        | January 10, 2020        | 0%                  | 17 days         | 1 day                      | 17 days         |      |                  |      |      |      |      |    |    |  |
| 760 | Hoarding - Part 1 (~57m)  | 6 days           | 6 days             | NA                  | NA            | November 19, 2019        | November 25, 2019        | January 4, 2020         | January 10, 2020        | 0%                  | 0 days          | 0 days                     | 37 days         |      |                  |      |      |      |      |    |    |  |
| 761 | Fencing - Part 2A (~458m) - 4 team                                    | 12 days          | 12 days            | NA                  | NA            | June 2, 2020             | June 15, 2020            | June 12, 2020           | June 26, 2020           | 0%                  | 4 days          | 1 days                     | 9 days          |      |                  |      |      |      |      |    |    |  |
| 762 | Hoarding - Part 2A (~379m) - 4 team                                   | 12 days          | 12 days            | NA                  | NA            | June 2, 2020             | June 15, 2020            | June 12, 2020           | June 26, 2020           | 0%                  | 4 days          | 1 days                     | 9 days          |      |                  |      |      |      |      |    |    |  |
| 763 | Fencing - Part 2B (~132m)   | 9 days           | 9 days             | NA                  | NA            | February 1, 2021         | February 10, 2021        | June 15, 2022           | June 24, 2022           | 0%                  | 347 days        | 0 days                     | 404 days        |      |                  |      |      |      |      |    |    |  |
| 764 | Hoarding - Part 2C (~106m)  | 9 days           | 9 days             | NA                  | NA            | June 2, 2020             | June 11, 2020            | June 10, 2020           | June 19, 2020           | 0%                  | 3 days          | 1 days                     | 7 days          |      |                  |      |      |      |      |    |    |  |
| 765 | Hoarding - Part 2E (~37m)   | 4 days           | 4 days             | NA                  | NA            | October 3, 2022          | October 7, 2022          | January 27, 2023        | January 31, 2023        | 0%                  | 0 days          | 0 days                     | 95 days         |      |                  |      |      |      |      |    |    |  |
| 766 | Fencing - Part 3A (~326m)   | 22 days          | 22 days            | NA                  | NA            | October 14, 2022         | November 8, 2022         | February 7, 2023        | March 3, 2023           | 0%                  | 0 days          | 0.5 days                   | 95 days         |      |                  |      |      |      |      |    |    |  |
| 767 | Fencing - Part 3D (~29m)  | 2 days           | 2 days             | NA                  | NA            | December 2, 2019         | December 3, 2019         | January 21, 2020        | January 22, 2020        | 0%                  | 40 days         | 0 days                     | 40 days         |      |                  |      |      |      |      |    |    |  |
| 768 | Fencing - Part 3E (~23m)  | 2 days           | 2 days             | NA                  | NA            | December 7, 2019         | December 9, 2019         | March 17, 2020          | March 18, 2020          | 0%                  | 70 days         | 0 days                     | 80 days         |      |                  |      |      |      |      |    |    |  |
| 769 | Fencing - Part 3F (~62m)  | 5 days           | 5 days             | NA                  | NA            | October 8, 2022          | October 13, 2022         | February 1, 2023        | February 6, 2023        | 0%                  | 0 days          | 0 days                     | 95 days         |      |                  |      |      |      |      |    |    |  |
| 770 | Fencing - Part 3G (~69m)  | 5 days           | 5 days             | NA                  | NA            | December 2, 2019         | December 6, 2019         | March 11, 2020          | March 16, 2020          | 0%                  | 0 days          | 0 days                     | 80 days         |      |                  |      |      |      |      |    |    |  |
| 771 | Fencing - Part 3I (~19m)  | 2 days           | 2 days             | NA                  | NA            | December                 |                          |                         |                         |                     |                 |                            |                 |      |                  |      |      |      |      |    |    |  |



| ID  | Task Name   | Duration | Remaining Duration | Actual Start    | Actual Finish   | Plan Start         | Plan Finish        | Late Start         | Late Finish        | Physical % Complete | Free Slack | Time Risk Allowances (TRA) | Total Slack | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |    |
|-----|---|----------|--------------------|-----------------|-----------------|--------------------|--------------------|--------------------|--------------------|---------------------|------------|----------------------------|-------------|------|------|------|------|------|------|----|
| 780 | Asbestos Survey (PS Cl. 2.04(9))  | 8 days   | 0 days             | August 16, 2019 | August 23, 2019 | August 16, 2019    | August 23, 2019    | August 16, 2019    | August 23, 2019    | 100%                | 0 days     | 0 days                     | 0 days      | H1   | H2   | H1   | H2   | H1   | H2   | H1 |
| 781 | Demolish of abandoned Fire Service Station  | 50 days  | 50 days            | NA              | NA              | November 28, 2019  | January 31, 2020   | March 10, 2020     | May 13, 2020       | 0%                  | 65 days    | 1 day                      | 82 days     |      |      |      |      |      |      |    |
| 782 | Ground Investigation  | 50 days  | 50 days            | NA              | NA              | November 26, 2019  | January 29, 2020   | May 11, 2020       | July 9, 2020       | 0%                  | 131 days   | 0.5 days                   | 131 days    |      |      |      |      |      |      |    |
| 783 | GI Work   | 50 days  | 50 days            | NA              | NA              | November 26, 2019  | January 29, 2020   | May 11, 2020       | July 9, 2020       | 0%                  | 131 days   | 0.5 days                   | 131 days    |      |      |      |      |      |      |    |
| 784 | Rising Main   | 765 days | 765 days           | NA              | NA              | July 10, 2020      | February 1, 2023   | July 10, 2020      | May 30, 2023       | 0%                  | 0 days     | 0 days                     | 0 days      |      |      |      |      |      |      |    |
| 785 | Part 1 - CHA660-1097.77 - 2x160mm dia (~438m)   | 146 days | 146 days           | NA              | NA              | July 10, 2020      | January 2, 2021    | July 10, 2020      | January 2, 2021    | 0%                  | 0 days     | 7 days                     | 0 days      |      |      |      |      |      |      |    |
| 786 | Part 9A - CHA32-71 - 2x160mm dia (~39m) (KD5)   | 211 days | 211 days           | NA              | NA              | January 4, 2021    | September 17, 2021 | January 4, 2021    | September 17, 2021 | 0%                  | 0 days     | 30 days                    | 0 days      |      |      |      |      |      |      |    |
| 787 | Part 9B Rising Main   | 211 days | 211 days           | NA              | NA              | January 4, 2021    | September 17, 2021 | March 11, 2021     | November 23, 2021  | 0%                  | 49 days    | 30 days                    | 54 days     |      |      |      |      |      |      |    |
| 788 | Part 3B - CHA418-443 - 2x160mm dia (~25m) (KD7)   | 365 days | 365 days           | NA              | NA              | March 5, 2021      | May 27, 2022       | March 11, 2021     | June 2, 2022       | 0%                  | 0 days     | 50 days                    | 5 days      |      |      |      |      |      |      |    |
| 789 | Part 9 - CHA0-363 & 71-363 - 2x160mm dia. (~324m) (KD4)   | 126 days | 126 days           | NA              | NA              | August 31, 2021    | January 31, 2022   | August 31, 2021    | January 31, 2022   | 0%                  | 0 days     | 15 days                    | 0 days      |      |      |      |      |      |      |    |
| 790 | Part 8 - CHA363-418&443-452 - 2x160mm dia (~64m)  | 150 days | 150 days           | NA              | NA              | February 4, 2022   | August 4, 2022     | September 2, 2022  | March 3, 2023      | 0%                  | 79 days    | 0 days                     | 174 days    |      |      |      |      |      |      |    |
| 791 | Part 3A - CH452-660 - 2x160mm dia (~208m)   | 69 days  | 69 days            | NA              | NA              | November 9, 2022   | February 1, 2023   | March 4, 2023      | May 30, 2023       | 0%                  | 0 days     | 1 day                      | 95 days     |      |      |      |      |      |      |    |
| 792 | Allow Access for EMSD third District Cooling System Contractor for DCS Pipeline Laying at Parts 3A, 3B, 8, 9 and 9A | 0 days   | 0 days             | NA              | NA              | February 1, 2023   | February 1, 2023   | May 30, 2023       | May 30, 2023       | 0%                  | 118 days   |                            | 118 days    |      |      |      |      |      |      |    |
| 793 | Underground Drainage  | 416 days | 416 days           | NA              | NA              | February 16, 2021  | July 11, 2022      | March 5, 2021      | September 24, 2022 | 0%                  | 15 days    |                            | 15 days     |      |      |      |      |      |      |    |
| 794 | Procurement of Stormwater Drainage Pipes  | 90 days  | 90 days            | NA              | NA              | February 16, 2021  | May 16, 2021       | March 5, 2021      | June 2, 2021       | 0%                  | 0 days     |                            | 17 days     |      |      |      |      |      |      |    |
| 795 | Stormwater Drainage   | 308 days | 308 days           | NA              | NA              | May 17, 2021       | May 28, 2022       | June 3, 2021       | September 24, 2022 | 0%                  | 14 days    |                            | 14 days     |      |      |      |      |      |      |    |
| 796 | CH1000 - CH1087 (~92.5m, 2 M/H)   | 16 days  | 16 days            | NA              | NA              | November 24, 2021  | December 11, 2021  | November 24, 2021  | December 11, 2021  | 0%                  | 0 days     | 1 days                     | 0 days      |      |      |      |      |      |      |    |
| 797 | CH1087 - CH1189.4 (~210m, 9 M/H)  | 24 days  | 24 days            | NA              | NA              | June 3, 2021       | July 2, 2021       | June 3, 2021       | July 2, 2021       | 0%                  | 0 days     | 1 days                     | 0 days      |      |      |      |      |      |      |    |
| 798 | CH1189.4 - CH1394 (~167m, 3 MH) - Bridge D3   | 24 days  | 24 days            | NA              | NA              | May 29, 2021       | June 26, 2021      | September 11, 2021 | October 11, 2021   | 0%                  | 18 days    | 0.5 days                   | 88 days     |      |      |      |      |      |      |    |
| 799 | CH1394 - CH1444.7 (~40m, 3 M/H) - S. Ramp   | 21 days  | 21 days            | NA              | NA              | July 20, 2021      | August 12, 2021    | October 12, 2021   | November 5, 2021   | 0%                  | 70 days    | 0 days                     | 70 days     |      |      |      |      |      |      |    |
| 800 | CH1444.7 - CH1560 (~222m, 10 M/H) - Rd D3   | 35 days  | 35 days            | NA              | NA              | May 20, 2021       | June 30, 2021      | October 25, 2021   | December 3, 2021   | 0%                  | 130 days   | 0.5 days                   | 130 days    |      |      |      |      |      |      |    |
| 801 | CH1560 - CH1720 (~239m, 8 M/H) - N.D. Rd  | 14 days  | 14 days            | NA              | NA              | May 17, 2021       | June 2, 2021       | April 19, 2022     | May 4, 2022        | 0%                  | 0 days     | 0 days                     | 273 days    |      |      |      |      |      |      |    |
| 802 | CH1720 - CH1920 (~450.7m, 13 M/H) Underpass   | 90 days  | 90 days            | NA              | NA              | June 3, 2021       | September 17, 2021 | May 5, 2022        | August 19, 2022    | 0%                  | 0 days     | 1 day                      | 273 days    |      |      |      |      |      |      |    |
| 803 | CH1920 - CH2000 (~160m, 6 M/H) S.D. Rd  | 14 days  | 14 days            | NA              | NA              | September 18, 2021 | October 6, 2021    | August 20, 2022    | September 5, 2022  | 0%                  | 0 days     | 0 days                     | 273 days    |      |      |      |      |      |      |    |
| 804 | CH2000 - CH2060 (~84m, 2 M/H) - S.D. Rd   | 14 days  | 14 days            | NA              | NA              | October 7, 2021    | October 23, 2021   | September 6, 2022  | September 22, 2022 | 0%                  | 0 days     | 0 days                     | 273 days    |      |      |      |      |      |      |    |
| 805 | CH2060 - CH2118.93 (~50.7m, 2 M/H) - Rd D3  | 14 days  | 14 days            | NA              | NA              | June 19, 2021      | July 6, 2021       | September 8, 2022  | September 24, 2022 | 0%                  | 0 days     | 0 days                     | 366 days    |      |      |      |      |      |      |    |
| 806 | CH100 - CH147 (~169m, 5 M/H) - L12 Road   | 35 days  | 35 days            | NA              | NA              | April 19, 2022     | May 28, 2022       | June 25, 2022      | August 5, 2022     | 0%                  | 0 days     | 0.5 days                   | 57 days     |      |      |      |      |      |      |    |
| 807 | Open Space & Promenade (~457m, 11 M/H)  | 70 days  | 70 days            | NA              | NA              | January 19, 2022   | April 14, 2022     | March 30, 2022     | June 24, 2022      | 0%                  | 0 days     | 1 day                      | 57 days     |      |      |      |      |      |      |    |
| 808 | Sewerage Drainage   | 392 days | 392 days           | NA              | NA              | March 16, 2021     | July 11, 2022      | April 4, 2021      | September 16, 2022 | 0%                  | 15 days    |                            | 15 days     |      |      |      |      |      |      |    |
| 809 | Procurement of Sewerage Pipes   | 90 days  | 90 days            | NA              | NA              | March 16, 2021     | June 13, 2021      | April 4, 2021      | July 2, 2021       | 0%                  | 19 days    |                            | 19 days     |      |      |      |      |      |      |    |
| 810 | CH1000 - CH1087 (~68m, 3 M/H)   | 18 days  | 18 days            | NA              | NA              | November 22, 2021  | December 11, 2021  | November 22, 2021  | December 11, 2021  | 0%                  | 0 days     | 1 days                     | 0 days      |      |      |      |      |      |      |    |
| 811 | CH1087 - CH1189.4 (~47m, 1 no M/H)  | 12 days  | 12 days            | NA              | NA              | July 3, 2021       | July 16, 2021      | July 3, 2021       | July 16, 2021      | 0%                  | 0 days     | 1 days                     | 0 days      |      |      |      |      |      |      |    |
| 812 | CH100 - CH147 (~156m, 6 M/H) - L12 Road   | 35 days  | 35 days            | NA              | NA              | May 30, 2022       | July 11, 2022      | August 6, 2022     | September 16, 2022 | 0%                  | 0 days     | 0.5 days                   | 57 days     |      |      |      |      |      |      |    |
| 813 | Underground Watermain   | 392 days | 392 days           | NA              | NA              | May 29, 2021       | September 19, 2022 | July 16, 2021      | October 14, 2022   | 0%                  | 20 days    |                            | 20 days     |      |      |      |      |      |      |    |
| 814 | Fresh Watermain   | 310 days | 310 days           | NA              | NA              | May 29, 2021       | June 13, 2022      | July 17, 2021      | September 22, 2022 | 0%                  | 40 days    |                            | 40 days     |      |      |      |      |      |      |    |
| 815 | CH1000 - CH1087 (~191m) Rd D3   | 20 days  | 20 days            | NA              | NA              | August 31, 2021    | September 23, 2021 | August 31, 2021    | September 23, 2021 | 0%                  | 0 days     | 1 days                     | 0 days      |      |      |      |      |      |      |    |
| 816 | CH1087 - CH1189.4 (~212m) - N. Ramp   | 4 days   | 4 days             | NA              | NA              | July 17, 2021      | July 21, 2021      | July 17, 2021      | July 21, 2021      | 0%                  | 0 days     | 0 days                     | 0 days      |      |      |      |      |      |      |    |
| 817 | CH1189.4 - CH1394 (~409.2m) - Bridge D3   | 40 days  | 40 days            | NA              | NA              | May 29, 2021       | July 16, 2021      | August 21, 2021    | October 8, 2021    | 0%                  | 0 days     | 0.5 days                   | 70 days     |      |      |      |      |      |      |    |
| 818 | CH1394 - CH1444.7 (~101.4m) - S. Ramp   | 10 days  | 10 days            | NA              | NA              | June 1, 2021       | June 11, 2021      | October 9, 2021    | October 21, 2021   | 0%                  | 0 days     | 0 days                     | 108 days    |      |      |      |      |      |      |    |
| 819 | CH1444.7 - CH1560 (~165m) - Rd D3   | 18 days  | 18 days            | NA              | NA              | June 25, 2021      | July 16, 2021      | October 19, 2021   | November 8, 2021   | 0%                  | 0 days     | 0 days                     | 95 days     |      |      |      |      |      |      |    |
| 820 | CH1720 - CH1920 (~25m) - Underpass  | 2 days   | 2 days             | NA              | NA              | September 18, 2021 | September 20, 2021 | September 19, 2022 | September 20, 2022 | 0%                  | 0 days     | 0 days                     | 297 days    |      |      |      |      |      |      |    |
| 821 | CH2060 - CH2118.93 (~47m) - Rd D3   | 2 days   | 2 days             | NA              | NA              | July 2, 2021       | July 3, 2021       | September 21, 2022 | September 22, 2022 | 0%                  | 69 days    | 0 days                     | 366 days    |      |      |      |      |      |      |    |
| 822 | CH100 - CH147 (~280m) - L12 Road  | 28 days  | 28 days            | NA              | NA              | May 11, 2022       | June 13, 2022      | July 5, 2022       | August 5, 2022     | 0%                  | 0 days     | 0.5 days                   | 45 days     |      |      |      |      |      |      |    |
| 823 | Open Space & Promenade (~1,093m)  | 110 days | 110 days           | NA              | NA              | December 22, 2021  | May 10, 2022       | January 18, 2022   | June 2, 2022       | 0%                  | 0 days     | 1 day                      | 20 days     |      |      |      |      |      |      |    |
| 824 | Salt Watermain  | 390 days | 390 days           | NA              | NA              | June 1, 2021       | September 19, 2022 | July 22, 2021      | October 14, 2022   | 0%                  | 20 days    |                            | 20 days     |      |      |      |      |      |      |    |
| 825 | CH1000 - CH1087 (~157m) Rd D3   | 15 days  | 15 days            | NA              | NA              | August 31, 2021    | September 16, 2021 | August 31, 2021    | September 16, 2021 | 0%                  | 0 days     | 1 days                     | 0 days      |      |      |      |      |      |      |    |
| 826 | CH1087 - CH1189.4 (~218m) - N. Ramp   | 4 days   | 4 days             | NA              | NA              | July 22, 2021      | July 26, 2021      | July 22, 2021      | July 26, 2021      | 0%                  | 0 days     | 0 days                     | 0 days      |      |      |      |      |      |      |    |
| 827 | CH1189.4 - CH1394 (~409.2m) - Bridge D3   | 40 days  | 40 days            | NA              | NA              | June 1, 2021       | July 19, 2021      | August 24, 2021    | October 11, 2021   | 0%                  | 0 days     | 0.5 days                   | 70 days     |      |      |      |      |      |      |    |
| 828 | CH1394 - CH1444.7 (~101.4m) - S. Ramp   | 10 days  | 10 days            | NA              | NA              | June 12, 2021      | June 24, 2021      | October 22, 2021   | November 2, 2021   | 0%                  | 0 days     | 0 days                     | 108 days    |      |      |      |      |      |      |    |
| 829 | CH1444.7 - CH1560 (~165m) - Rd D3   | 18 days  | 18 days            | NA              | NA              | July 17, 2021      | August 6, 2021     | November 9, 2021   | November 29, 2021  | 0%                  | 0 days     | 0 days                     | 95 days     |      |      |      |      |      |      |    |
| 830 | CH1720 - CH1920 (~25m) - Underpass  | 2 days   | 2 days             | NA              | NA              | September 21, 2021 | September 23, 2021 | September 21, 2022 | September 22, 2022 | 0%                  | 0 days     | 0 days                     | 297 days    |      |      |      |      |      |      |    |
| 831 | CH2060 - CH2118.93 (~47m) - Rd D3   | 2 days   | 2 days             | NA              | NA              | September 24, 2021 | September 25, 2021 | September 23, 2022 | September 24, 2022 | 0%                  | 24 days    | 0 days                     | 297 days    |      |      |      |      |      |      |    |
| 832 | CH100 - CH147 (~455m) - L12 Road  | 45 days  | 45 days            | NA              | NA              | June 14, 2022      | August 5, 2022     | August 6, 2022     | September 28, 2022 | 0%                  | 0 days     | 0.5 days                   | 45 days     |      |      |      |      |      |      |    |
| 833 | Open Space & Promenade (~1,093m)  | 110 days | 110 days           | NA              | NA              | May 11, 2022       | September 19, 2022 | June 4, 2022       | October 14, 2022   | 0%                  | 0 days     | 1 day                      | 20 days     |      |      |      |      |      |      |    |
| 834 | Irrigation System   | 337 days | 337 days           | NA              | NA              | June 25, 2021      | August 10, 2022    | July 16, 2021      | October 5, 2022    | 0%                  | 17 days    |                            | 17 days     |      |      |      |      |      |      |    |
| 835 | CH1000 - CH1087 (~87m) Rd D3  | 5 days   | 5 days             | NA              | NA              | September 17, 2021 | September 23, 2021 | September 17, 2021 | September 23, 2021 | 0%                  | 0 days     | 0 days                     | 0 days      |      |      |      |      |      |      |    |
| 836 | CH1087 - CH1189.4 (~205m) - N. Ramp   | 9 days   | 9 days             | NA              | NA              | July 16, 2021      | July 26, 2021      | July 16, 2021      | July 26, 2021      | 0%                  | 0 days     | 0 days                     | 0 days      |      |      |      |      |      |      |    |
| 837 | CH1189.4 - CH1394 (~409.2m) - Bridge D3   | 7 days   | 7 days             | NA              | NA              | June 25, 2021      | July 3, 2021       | October 4, 2021    | October 11, 2021   | 0%                  | 13 days    | 0 days                     | 83 days     |      |      |      |      |      |      |    |
| 838 | CH1394 - CH1444.7 (~101.4m) - S. Ramp   | 3 days   | 3 days             | NA              | NA              | June 25, 2021      | June 28, 2021      | November 3, 2021   | November 5, 2021   | 0%                  | 108 days   | 0 days                     | 108 days    |      |      |      |      |      |      |    |
| 839 | CH1444.7 - CH1560 (~175m) -   |          |                    |                 |                 |                    |                    |                    |                    |                     |            |                            |             |      |      |      |      |      |      |    |

| ID  | Task Name                                       | Duration        | Remaining Duration | Actual Start | Actual Finish | Plan Start                 | Plan Finish               | Late Start                | Late Finish              | Physical % Complete | Free Slack      | Time Risk Allowances (TRA) | Total Slack     | 2019 | 2020             | 2021 | 2022 | 2023 | 2024 |    |  |
|-----|---|-----------------|--------------------|--------------|---------------|----------------------------|---------------------------|---------------------------|--------------------------|---------------------|-----------------|----------------------------|-----------------|------|------------------|------|------|------|------|----|--|
|     |   |                 |                    |              |               |                            |                           |                           |                          |                     |                 |                            |                 | H1   | H2               | H1   | H2   | H1   | H2   | H1 |  |
| 841 | CH2000 - CH2060 (~60m) - S.D. Rd                | 2 days          | 2 days             | NA           | NA            | October 25, 2021           | October 26, 2021          | September 23, 2022        | September 24, 2022       | 0%                  | 0 days          | 0 days                     | 273 days        |      | Sun September 22 |      |      |      |      |    |  |
| 842 | CH2060 - CH2118.93 (~100m) - Rd D3              | 3 days          | 3 days             | NA           | NA            | October 27, 2021           | October 29, 2021          | September 26, 2022        | September 28, 2022       | 0%                  | 228 days        | 0 days                     | 273 days        |      |                  |      |      |      |      |    |  |
| 843 | CH100 - CH147 (~173m) - L12 Road                | 4 days          | 4 days             | NA           | NA            | August 6, 2022             | August 10, 2022           | September 29, 2022        | October 5, 2022          | 0%                  | 0 days          | 0 days                     | 45 days         |      |                  |      |      |      |      |    |  |
| 844 | <b>Underground pump house next to underpass</b> | <b>168 days</b> | <b>168 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>June 29, 2021</b>       | <b>January 18, 2022</b>   | <b>August 7, 2021</b>     | <b>March 1, 2022</b>     | <b>0%</b>           | <b>33 days</b>  | <b>0 days</b>              | <b>33 days</b>  |      |                  |      |      |      |      |    |  |
| 845 | Underground pump house structure                | 90 days         | 90 days            | NA           | NA            | June 29, 2021              | October 15, 2021          | August 7, 2021            | November 23, 2021        | 0%                  | 0 days          | 4 days                     | 33 days         |      |                  |      |      |      |      |    |  |
| 846 | E&M installation                                | 60 days         | 60 days            | NA           | NA            | October 16, 2021           | December 24, 2021         | November 24, 2021         | February 8, 2022         | 0%                  | 0 days          | 3 days                     | 33 days         |      |                  |      |      |      |      |    |  |
| 847 | Testing and Commissioning                       | 18 days         | 18 days            | NA           | NA            | December 28, 2021          | January 18, 2022          | February 9, 2022          | March 1, 2022            | 0%                  | 33 days         | 1 days                     | 33 days         |      |                  |      |      |      |      |    |  |
| 848 | <b>Salt Water Pumping Station</b>               | <b>689 days</b> | <b>689 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>September 15, 20...</b> | <b>January 6, 2023</b>    | <b>July 23, 2022</b>      | <b>May 30, 2023</b>      | <b>0%</b>           | <b>114 days</b> | <b>0 days</b>              | <b>114 days</b> |      |                  |      |      |      |      |    |  |
| 849 | ELS & Excavation                                | 60 days         | 60 days            | NA           | NA            | July 13, 2021              | September 20, 2021        | July 23, 2022             | October 3, 2022          | 0%                  | 14 days         | 1 day                      | 307 days        |      |                  |      |      |      |      |    |  |
| 850 | Structure                                       | 90 days         | 90 days            | NA           | NA            | October 9, 2021            | January 26, 2022          | October 5, 2022           | January 18, 2023         | 0%                  | 0 days          | 1 day                      | 293 days        |      |                  |      |      |      |      |    |  |
| 851 | Finishing work and fitting out                  | 60 days         | 60 days            | NA           | NA            | January 27, 2022           | April 11, 2022            | January 30, 2023          | April 13, 2023           | 0%                  | 0 days          | 1 day                      | 299 days        |      |                  |      |      |      |      |    |  |
| 852 | Ironmongery work                                | 24 days         | 24 days            | NA           | NA            | April 12, 2022             | May 12, 2022              | April 14, 2023            | May 12, 2023             | 0%                  | 6 days          | 0.5 days                   | 299 days        |      |                  |      |      |      |      |    |  |
| 853 | E&M installation & ABWF work                    | 90 days         | 90 days            | NA           | NA            | January 27, 2022           | May 19, 2022              | January 19, 2023          | May 12, 2023             | 0%                  | 0 days          | 1 day                      | 293 days        |      |                  |      |      |      |      |    |  |
| 854 | Testing and Commissioning                       | 14 days         | 14 days            | NA           | NA            | May 20, 2022               | June 6, 2022              | May 13, 2023              | May 30, 2023             | 0%                  | 293 days        | 0 days                     | 293 days        |      |                  |      |      |      |      |    |  |
| 855 | WSD Form 542 Submission                         | 0 days          | 0 days             | NA           | NA            | September 15, 2020         | September 15, 2020        | May 1, 2023               | May 1, 2023              | 0%                  | 193 days        | 0 days                     | 958 days        |      |                  |      |      |      |      |    |  |
| 856 | WSD Form 46 Part I & II Submission              | 0 days          | 0 days             | NA           | NA            | March 27, 2021             | March 27, 2021            | May 1, 2023               | May 1, 2023              | 0%                  | 353 days        | 0 days                     | 765 days        |      |                  |      |      |      |      |    |  |
| 857 | WSD Form 46 Part 46 Part IV Submission          | 0 days          | 0 days             | NA           | NA            | March 15, 2022             | March 15, 2022            | May 1, 2023               | May 1, 2023              | 0%                  | 268 days        | 0 days                     | 412 days        |      |                  |      |      |      |      |    |  |
| 858 | CLP Meter Installation                          | 0 days          | 0 days             | NA           | NA            | June 19, 2022              | June 19, 2022             | May 1, 2023               | May 1, 2023              | 0%                  | 172 days        | 0 days                     | 316 days        |      |                  |      |      |      |      |    |  |
| 859 | FSD Form 501 Submission for FS Inspection       | 0 days          | 0 days             | NA           | NA            | December 8, 2022           | December 8, 2022          | May 1, 2023               | May 1, 2023              | 0%                  | 0 days          | 0 days                     | 144 days        |      |                  |      |      |      |      |    |  |
| 860 | FSD Inspection                                  | 0 days          | 0 days             | NA           | NA            | December 22, 2022          | December 22, 2022         | May 16, 2023              | May 16, 2023             | 0%                  | 0 days          | 0 days                     | 144 days        |      |                  |      |      |      |      |    |  |
| 861 | Issuance of FS Certificate                      | 0 days          | 0 days             | NA           | NA            | January 6, 2023            | January 6, 2023           | May 30, 2023              | May 30, 2023             | 0%                  | 144 days        | 0 days                     | 144 days        |      |                  |      |      |      |      |    |  |
| 862 | <b>Sewage Pumping Station</b>                   | <b>689 days</b> | <b>689 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>September 15, 20...</b> | <b>January 6, 2023</b>    | <b>November 26, 2021</b>  | <b>May 30, 2023</b>      | <b>0%</b>           | <b>114 days</b> | <b>0 days</b>              | <b>114 days</b> |      |                  |      |      |      |      |    |  |
| 863 | ELS & Excavation                                | 60 days         | 60 days            | NA           | NA            | July 13, 2021              | September 20, 2021        | November 26, 2021         | February 10, 2022        | 0%                  | 0 days          | 1 day                      | 114 days        |      |                  |      |      |      |      |    |  |
| 864 | Structure                                       | 90 days         | 90 days            | NA           | NA            | September 21, 2021         | January 10, 2022          | February 11, 2022         | May 31, 2022             | 0%                  | 0 days          | 1 day                      | 114 days        |      |                  |      |      |      |      |    |  |
| 865 | Finishing work and fitting out                  | 60 days         | 60 days            | NA           | NA            | January 11, 2022           | March 24, 2022            | June 9, 2022              | August 18, 2022          | 0%                  | 0 days          | 1 day                      | 120 days        |      |                  |      |      |      |      |    |  |
| 866 | Ironmongery work                                | 24 days         | 24 days            | NA           | NA            | March 25, 2022             | April 26, 2022            | August 19, 2022           | September 16, 2022       | 0%                  | 63 days         | 0.5 days                   | 120 days        |      |                  |      |      |      |      |    |  |
| 867 | E&M installation & ABWF work                    | 90 days         | 90 days            | NA           | NA            | January 11, 2022           | May 3, 2022               | June 1, 2022              | September 16, 2022       | 0%                  | 39 days         | 1 day                      | 114 days        |      |                  |      |      |      |      |    |  |
| 868 | Testing and Commissioning                       | 14 days         | 14 days            | NA           | NA            | July 12, 2022              | July 27, 2022             | September 17, 2022        | October 5, 2022          | 0%                  | 12 days         | 0 days                     | 57 days         |      |                  |      |      |      |      |    |  |
| 869 | WSD Form 542 Submission                         | 0 days          | 0 days             | NA           | NA            | September 15, 2020         | September 15, 2020        | May 1, 2023               | May 1, 2023              | 0%                  | 193 days        | 0 days                     | 958 days        |      |                  |      |      |      |      |    |  |
| 870 | WSD Form 46 Part I & II Submission              | 0 days          | 0 days             | NA           | NA            | March 27, 2021             | March 27, 2021            | May 1, 2023               | May 1, 2023              | 0%                  | 353 days        | 0 days                     | 765 days        |      |                  |      |      |      |      |    |  |
| 871 | WSD Form 46 Part 46 Part IV Submission          | 0 days          | 0 days             | NA           | NA            | March 15, 2022             | March 15, 2022            | May 1, 2023               | May 1, 2023              | 0%                  | 268 days        | 0 days                     | 412 days        |      |                  |      |      |      |      |    |  |
| 872 | CLP Meter Installation                          | 0 days          | 0 days             | NA           | NA            | June 19, 2022              | June 19, 2022             | May 1, 2023               | May 1, 2023              | 0%                  | 172 days        | 0 days                     | 316 days        |      |                  |      |      |      |      |    |  |
| 873 | FSD Form 501 Submission for FS Inspection       | 0 days          | 0 days             | NA           | NA            | December 8, 2022           | December 8, 2022          | May 1, 2023               | May 1, 2023              | 0%                  | 0 days          | 0 days                     | 144 days        |      |                  |      |      |      |      |    |  |
| 874 | FSD Inspection                                  | 0 days          | 0 days             | NA           | NA            | December 22, 2022          | December 22, 2022         | May 16, 2023              | May 16, 2023             | 0%                  | 0 days          | 0 days                     | 144 days        |      |                  |      |      |      |      |    |  |
| 875 | Issuance of FS Certificate                      | 0 days          | 0 days             | NA           | NA            | January 6, 2023            | January 6, 2023           | May 30, 2023              | May 30, 2023             | 0%                  | 144 days        | 0 days                     | 144 days        |      |                  |      |      |      |      |    |  |
| 876 | <b>Seawater Intake Box Culvert (~169m)</b>      | <b>812 days</b> | <b>812 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>March 20, 2020</b>      | <b>December 10, 2022</b>  | <b>April 22, 2020</b>     | <b>December 10, 2022</b> | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |  |
| 877 | <b>Part 4 - CHA.0-79 (79m)</b>                  | <b>440 days</b> | <b>440 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>June 24, 2021</b>       | <b>December 10, 2022</b>  | <b>June 24, 2021</b>      | <b>December 10, 2022</b> | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |  |
| 878 | Temporary ELS & Excavation                      | 24 days         | 24 days            | NA           | NA            | June 24, 2021              | July 22, 2021             | June 24, 2021             | July 22, 2021            | 0%                  | 0 days          | 1 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 879 | Base Slab (12d/bay)                             | 96 days         | 96 days            | NA           | NA            | July 23, 2021              | November 15, 2021         | July 23, 2021             | November 15, 2021        | 0%                  | 0 days          | 5 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 880 | Wall (14d/bay)                                  | 112 days        | 112 days           | NA           | NA            | September 20, 2021         | February 7, 2022          | September 20, 2021        | February 7, 2022         | 0%                  | 0 days          | 5 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 881 | Top Slab (20d/bay)                              | 160 days        | 160 days           | NA           | NA            | February 8, 2022           | August 19, 2022           | February 8, 2022          | August 19, 2022          | 0%                  | 0 days          | 8 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 882 | Remove struts and backfilling                   | 18 days         | 18 days            | NA           | NA            | August 20, 2022            | September 9, 2022         | August 20, 2022           | September 9, 2022        | 0%                  | 0 days          | 1 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 883 | <b>Precast Installation</b>                     | <b>76 days</b>  | <b>76 days</b>     | <b>NA</b>    | <b>NA</b>     | <b>September 12, 20...</b> | <b>September 12, 2022</b> | <b>September 12, 2022</b> | <b>December 10, 2022</b> | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |  |
| 884 | Piling platform erection                        | 26 days         | 26 days            | NA           | NA            | September 12, 2022         | October 13, 2022          | September 12, 2022        | October 13, 2022         | 0%                  | 0 days          | 1 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 885 | Pipe pile installation                          | 14 days         | 14 days            | NA           | NA            | October 14, 2022           | October 29, 2022          | October 14, 2022          | October 29, 2022         | 0%                  | 0 days          | 1 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 886 | Remove of piling platform & existing seawall    | 21 days         | 21 days            | NA           | NA            | October 31, 2022           | November 23, 2022         | October 31, 2022          | November 23, 2022        | 0%                  | 0 days          | 1 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 887 | Install precast seawall intake                  | 5 days          | 5 days             | NA           | NA            | November 24, 2022          | November 29, 2022         | November 24, 2022         | November 29, 2022        | 0%                  | 0 days          | 0 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 888 | Reinstate seawall                               | 10 days         | 10 days            | NA           | NA            | November 30, 2022          | December 10, 2022         | November 30, 2022         | December 10, 2022        | 0%                  | 0 days          | 0 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 889 | <b>Part 10 - CHA79-89 (10m)</b>                 | <b>348 days</b> | <b>348 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>April 22, 2020</b>      | <b>June 23, 2021</b>      | <b>April 1, 2021</b>      | <b>June 23, 2021</b>     | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |  |
| 890 | Temporary ELS & Excavation                      | 14 days         | 14 days            | NA           | NA            | April 22, 2020             | May 9, 2020               | April 1, 2021             | April 20, 2021           | 0%                  | 82 days         | 0 days                     | 282 days        |      |                  |      |      |      |      |    |  |
| 891 | Base Slab (12d/bay)                             | 12 days         | 12 days            | NA           | NA            | August 17, 2020            | August 29, 2020           | April 21, 2021            | May 5, 2021              | 0%                  | 54 days         | 0 days                     | 200 days        |      |                  |      |      |      |      |    |  |
| 892 | Wall (14d/bay)                                  | 14 days         | 14 days            | NA           | NA            | November 5, 2020           | November 20, 2020         | May 6, 2021               | May 22, 2021             | 0%                  | 146 days        | 0 days                     | 146 days        |      |                  |      |      |      |      |    |  |
| 893 | Top Slab (20d/bay)                              | 20 days         | 20 days            | NA           | NA            | May 24, 2021               | June 16, 2021             | May 24, 2021              | June 16, 2021            | 0%                  | 0 days          | 1 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 894 | Remove struts and backfilling                   | 6 days          | 6 days             | NA           | NA            | June 17, 2021              | June 23, 2021             | June 17, 2021             | June 23, 2021            | 0%                  | 0 days          | 0 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 895 | <b>Part 1 - CH89-169 (80m)</b>                  | <b>366 days</b> | <b>366 days</b>    | <b>NA</b>    | <b>NA</b>     | <b>March 20, 2020</b>      | <b>June 16, 2021</b>      | <b>April 22, 2020</b>     | <b>June 16, 2021</b>     | <b>0%</b>           | <b>0 days</b>   | <b>0 days</b>              | <b>0 days</b>   |      |                  |      |      |      |      |    |  |
| 896 | Temporary ELS & Excavation                      | 24 days         | 24 days            | NA           | NA            | March 20, 2020             | April 21, 2020            | March 4, 2021             | March 31, 2021           | 0%                  | 0 days          | 0.5 days                   | 282 days        |      |                  |      |      |      |      |    |  |
| 897 | Base Slab (12d/bay)                             | 96 days         | 96 days            | NA           | NA            | April 22, 2020             | August 15, 2020           | April 22, 2020            | August 15, 2020          | 0%                  | 0 days          | 4 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 898 | Wall (14d/bay)                                  | 112 days        | 112 days           | NA           | NA            | June 22, 2020              | November 4, 2020          | June 22, 2020             | November 4, 2020         | 0%                  | 0 days          | 5 days                     | 0 days          |      |                  |      |      |      |      |    |  |
| 899 | Top Slab (20d/bay)                              | 160 days        | 160 days           | NA           | NA            | November 5, 2020           | May 22, 2021</            |                           |                          |                     |                 |                            |                 |      |                  |      |      |      |      |    |  |







**Appendix C – Environmental monitoring schedules**

Contract No. EDO 15/2018 Environmental Monitoring at Kai Tak Development Stage 4 Infrastructure at the former runway and south apron  
Environmental Monitoring and Weekly Site Inspection Schedule for October 2020

October 2020

| Sun | Mon   | Tue | Wed  | Thu  | Fri  | Sat  |
|-----|---|-----|--|--|--|--|
|     |   |     |  | 1  | 2  | 3  |
| 4   | 5<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 6   | 7  | 8<br>Weekly Site Inspection  | 9  | 10<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7 |
| 11  | 12  | 13  | 14<br>Weekly Site Inspection + SSMC meeting  | 15   | 16<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 17   |
| 18  | 19  | 20  | 21   | 22<br>Weekly Site Inspection<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 23   | 24   |
| 25  | 26  | 27  | 28<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 29<br>Weekly Site Inspection   | 30   | 31   |

NOTE:

- 1) Site inspection schedule and Impact monitoring schedule may be changed due to unforeseen circumstance (e.g. adverse weather).

**Air Quality Monitoring Station**

AM3 - Sky Tower

AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

AM7 - Hong Kong Children's Hospital

**Noise Quality Monitoring Station**

M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

M12 - Hong Kong Children's Hospital

Contract No. EDO 15/2018 Environmental Monitoring at Kai Tak Development Stage 4 Infrastructure at the former runway and south apron

Propose Environmental Monitoring and Weekly Site Inspection Schedule for November 2020

November 2020

| Sun | Mon   | Tue   | Wed | Thu  | Fri  | Sat  |
|-----|---|---|-----|--|--|--|
| 1   | 2   | 3<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 4   | 5<br>Weekly Site Inspection  | 6  | 7  |
| 8   | 9<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 10  | 11  | 12<br>Weekly Site Inspection + SSMC meeting  | 13   | 14<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7 |
| 15  | 16  | 17  | 18  | 19<br>Weekly Site Inspection   | 20<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 21   |
| 22  | 23  | 24  | 25  | 26<br>Weekly Site Inspection<br>24-hr TSP: AM3, AM4(A), AM7<br>1-hr X3 TSP: AM3, AM4(A), AM7<br>30-min Noise: M11, M12 | 27   | 28   |
| 29  | 30  |   |     |  |  |  |

NOTE:

1) Site inspection schedule and Impact monitoring schedule may be changed due to unforeseen circumstance (e.g. adverse weather).

**Air Quality Monitoring Station**

AM3 - Sky Tower

AM4(A) - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

AM7 - Hong Kong Children's Hospital

**Noise Quality Monitoring Station**

M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop

M12 - Hong Kong Children's Hospital

**Appendix D – Photographic records**



Impact Air Quality Monitoring



Measurement setup at AM3



Measurement setup at AM4(A)



Measurement setup at AM7

Impact Noise Monitoring



Measurement setup at M11



Measurement setup at M12



Weather Station at the rooftop of Hong Kong Children's Hospital



**Appendix E – Calibration certificates, catalogue of air quality  
monitoring equipment**

## Catalogue of High Volume Sampler (HVS)



### TSP MFC

Total Suspended Particulate, Mass Flow Controlled



**MFC TSP**  
Ambient Air Sampler

The TE-5170 is a high volume ambient Total Suspended Particulate (TSP) air sampler featuring a mass flow controller (MFC) for accurate and consistent particulate sampling. The mass flow controller adjust the motor speed as the filter media collects particulate to maintain a constant flow rate throughout the entire sample duration. The system utilizes a stainless steel filter holder for use with standard 8" x 10" filter paper. The anodized aluminum shelter and robust electrical components allow the system to operate a continuous 24 hour sample.

**ABOUT US:** Tisch Environmental Inc. Tisch Environmental is the benchmark for high volume air sampling, particulate, metals, volatiles, and specialty monitoring equipment. Since the company's inception in 1953 as General Metal Works, our product line has expanded from the first high volume air sampler to include high-tech and custom samplers. Our clients are professionals from every sector of the regulatory and industrial markets.

- ✔ Meets EPA CFR, Appendix B to Part 50
- ✔ Total Suspended Particulate(TSP)
- ✔ Mass Flow Controlled
- ✔ 7-Day Mechanical Timer
- ✔ Elapsed Time Indicator
- ✔ Aluminum Outdoor Shelter
- ✔ Brush Style Motor
- ✔ Dickson Chart Recorder, 24 Hour
- ✔ Stainless Steel Filter Holder
- ✔ 36-60 CFM
- ✔ Made In USA

Copyright © 2014 Tisch International All Rights Reserved  
www.tischinternational.com



www.tisch-env.com

Tisch Environmental  
145 S. Miami Ave  
Cleveland, OH 45002  
513-467-9000  
sales@tisch-env.com



## TSP MFC

MFC TSP Ambient Air Sampler

### General System Specifications

**Particulate Size:**Total Suspended Particulate (TSP)  
**EPA Designation:** CFR 40 Part 50 Appendix B  
**Flow Controller:** Mass Flow Controller  
**Motor Style:**Brush Style Motor Assembly  
**Pressure Recorder:**Dickson Chart Recorder, 24 hour  
**Timer:**7 Day Mechanical  
**Elapsed Time Indicator:**Mechanical, Hours and Tenths  
**Flow Range:**39-60CFM, 1.09M<sup>3</sup>M-1.68M<sup>3</sup>M  
**Housing:**Anodized Aluminum  
**Filter Holder:**Stainless Steel, 8" x 10"  
**4" Recorder Charts:** Box of 100  
**Filter Holder:** 8" x 10" Stainless Steel with hold down frame

### Applications

US EPA Reference Method Sampling, CFR Appendix J Part 50 Regulatory Compliance  
 Institutional Studies  
 Construction Sites  
 Bridge and Water Tower Painting Sites  
 Fence Line Monitoring  
 Industrial Monitoring  
 Landfill Monitoring  
 Public Health Applications

### Optional Equipment

TE-3000 Filter Holder Cartridge  
 TE-G653 8" x 10" Glass Fiber Filter Media  
 TE-33384 Motor Brush Set (110volt)  
 TE-33378 Motor Brush Set (220volt)  
 TE-116311 Replacement Motor (110volt)  
 TE-116312 Replacement Motor (220volt)  
 TE-106 Recorder Charts  
 TE-160 Recorder Pen Points  
 TE-5018 Gasket 8" x 10"

### Available Models

TE-5170 TSP MFC, 110 Volt 60 Hertz, 8 Amps  
 TE-5170X TSP MFC, 220 Volt 50 Hertz 4 Amps  
 TE-5170XZ TSP MFC, 220 Volts 60 Hertz, 4 Amps

### Calibration Equipment

TE-5028 -Variable Flow Calibration Kit  
 TE-HVC-V Xcalibrator HiVol Calibrator

### Physical Specifications

**Weight:** 75lbs, Shelter  
**Shipping Dimensions:** 46"W x 23"L x 20" H, Shelter  
 19"W x 19"L x 20"H, Lid  
**Assembled Dimensions:** 28"W x 28"L x 61"H

Copyright © 2014 Tisch International All Rights Reserved  
www.tischinternational.com

www.tisch-env.com



## Calibration Certificate of HVS

### Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2020082902 Date of calibration : 29/08/2020

Location : Sky Tower Sampler : TE-5170X

**Calibration Data**

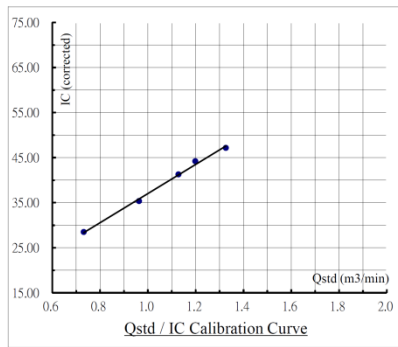
Ambient barometric pressure, Pa = 753.1 ( mmHg ) Ambient temperature, Ta = 306.35 ( deg K )  
Qstd Slope, m = 2.04882 Qstd Intercept, b = -0.011270

**Calibration Curve**

| Plate No. | H <sub>2</sub> O ( in ) | Qstd ( m <sup>3</sup> / min ) | I ( chart ) | IC ( corrected ) |
|-----------|-------------------------|-------------------------------|-------------|------------------|
| 18        | 7.60                    | 1.327                         | 48.0        | 47.13            |
| 13        | 6.20                    | 1.199                         | 45.0        | 44.18            |
| 10        | 5.50                    | 1.129                         | 42.0        | 41.23            |
| 7         | 4.00                    | 0.964                         | 36.0        | 35.34            |
| 5         | 2.30                    | 0.732                         | 29.0        | 28.47            |

**Subsequent calculation of sampler flow**

| Method           | Calibration equation   | Slope, m | Intercept, b | Corr. coeff., r |
|------------------|--|----------|--------------|-----------------|
| Dickson recorder | $Qstd = 1 / m [ ( I ) ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$ | 32.299   | 4.7040       | 0.9977          |



Calibration curve requirements : (A).  $r > 0.990$  ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$   
 $IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$   
 $FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$

Calibrated by : [Signature] Checked by : [Signature]  
 Name : ( Chan Kwok Ho ) Name : ( Wong Yin Tong )

Form No. INS-HVS-CAL.d4 16-01-2020

### Air Sampler Calibration Curve Plotting & Calculation (Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2020102702 Date of calibration : 27/10/2020

Location : Sky Tower Sampler : TE-5170X

**Calibration Data**

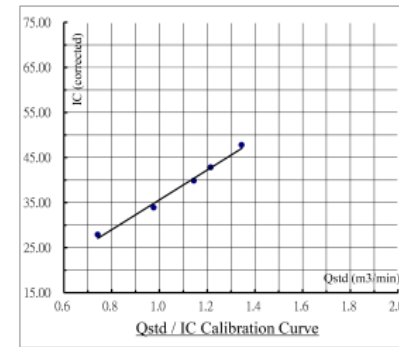
Ambient barometric pressure, Pa = 759.1 ( mmHg ) Ambient temperature, Ta = 300.35 ( deg K )  
Qstd Slope, m = 2.04882 Qstd Intercept, b = -0.011270

**Calibration Curve**

| Plate No. | H <sub>2</sub> O ( in ) | Qstd ( m <sup>3</sup> / min ) | I ( chart ) | IC ( corrected ) |
|-----------|-------------------------|-------------------------------|-------------|------------------|
| 18        | 7.60                    | 1.345                         | 48.0        | 47.78            |
| 13        | 6.20                    | 1.215                         | 43.0        | 42.81            |
| 10        | 5.50                    | 1.145                         | 40.0        | 39.82            |
| 7         | 4.00                    | 0.977                         | 34.0        | 33.85            |
| 5         | 2.30                    | 0.742                         | 28.0        | 27.87            |

**Subsequent calculation of sampler flow**

| Method           | Calibration equation   | Slope, m | Intercept, b | Corr. coeff., r |
|------------------|--|----------|--------------|-----------------|
| Dickson recorder | $Qstd = 1 / m [ ( I ) ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$ | 33.119   | 2.4984       | 0.9947          |



Calibration curve requirements : (A).  $r > 0.990$  ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$   
 $IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$   
 $FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$

Calibrated by : [Signature] Checked by : [Signature]  
 Name : ( Poon Tsz Wing ) Name : ( Wong Yin Tong )

Form No. INS-HVS-CAL.d4 16-01-2020

## Calibration Certificate of HVS

### Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2020082901      Date of calibration : 29/08/2020  
 The Hong Kong Society for the Blind's  
 Location : Factory cum Sheltered Workshop      Sampler : TE-5170X

**Calibration Data**

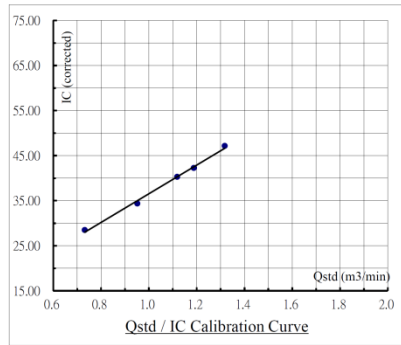
Ambient barometric pressure, Pa = 753.1 ( mmHg )      Ambient temperature, Ta = 306.35 ( deg K )  
 Qstd Slope, m = 2.04882      Qstd Intercept, b = -0.011270

**Calibration Curve**

| Plate No. | H <sub>2</sub> O ( in ) | Qstd ( m <sup>3</sup> / min ) | I ( chart ) | IC ( corrected ) |
|-----------|-------------------------|-------------------------------|-------------|------------------|
| 18        | 7.50                    | 1.318                         | 48.0        | 47.13            |
| 13        | 6.10                    | 1.189                         | 43.0        | 42.22            |
| 10        | 5.40                    | 1.119                         | 41.0        | 40.25            |
| 7         | 3.90                    | 0.952                         | 35.0        | 34.36            |
| 5         | 2.30                    | 0.732                         | 29.0        | 28.47            |

**Subsequent calculation of sampler flow**

| Method           | Calibration equation   | Slope, m | Intercept, b | Corr. coeff., r |
|------------------|--|----------|--------------|-----------------|
| Dickson recorder | $Qstd = 1 / m [ ( I ) ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$ | 31.794   | 4.7211       | 0.9977          |



Calibration curve requirements : (A).  $r > 0.990$ ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .  
 $IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .  
 $FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by :       Checked by :   
 Name : ( Chan Kwok Ho )      Name : ( Wong Yin Tong )

Form No. INS-HVS-CAL.d4 16.01.2020

### Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2020102701      Date of calibration : 27/10/2020  
 The Hong Kong Society for the Blind's  
 Location : Factory cum Sheltered Workshop      Sampler : TE-5170X

**Calibration Data**

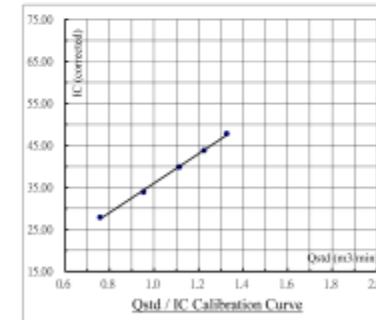
Ambient barometric pressure, Pa = 759.1 ( mmHg )      Ambient temperature, Ta = 300.35 ( deg K )  
 Qstd Slope, m = 2.04882      Qstd Intercept, b = -0.011270

**Calibration Curve**

| Plate No. | H <sub>2</sub> O ( in ) | Qstd ( m <sup>3</sup> / min ) | I ( chart ) | IC ( corrected ) |
|-----------|-------------------------|-------------------------------|-------------|------------------|
| 18        | 7.40                    | 1.327                         | 48.0        | 47.78            |
| 13        | 6.30                    | 1.225                         | 44.0        | 43.80            |
| 10        | 5.20                    | 1.114                         | 40.0        | 39.82            |
| 7         | 3.80                    | 0.953                         | 34.0        | 33.85            |
| 5         | 2.40                    | 0.758                         | 28.0        | 27.87            |

**Subsequent calculation of sampler flow**

| Method           | Calibration equation   | Slope, m | Intercept, b | Corr. coeff., r |
|------------------|--|----------|--------------|-----------------|
| Dickson recorder | $Qstd = 1 / m [ ( I ) ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$ | 35.101   | 0.8769       | 0.9990          |



Calibration curve requirements : (A).  $r > 0.990$ ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .  
 $IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .  
 $FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by :       Checked by :   
 Name : ( Poon Tsz Wing )      Name : ( Wong Yin Tong )

Form No. INS-HVS-CAL.d4 16.01.2020

## Calibration Certificate of HVS

### Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2020082903      Date of calibration : 29/08/2020

Location : Hong Kong Children's Hospital      Sampler : TE-5170X

**Calibration Data**

Ambient barometric pressure, Pa = 760.6 ( mmHg )      Ambient temperature, Ta = 306.35 ( deg K )

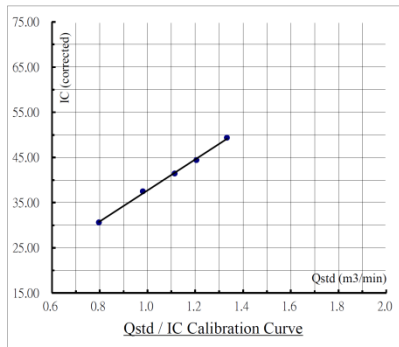
Qstd Slope, m = 2.04882      Qstd Intercept, b = -0.011270

**Calibration Curve**

| Plate No. | H <sub>2</sub> O ( in ) | Qstd ( m <sup>3</sup> / min ) | I ( chart ) | IC ( corrected ) |
|-----------|-------------------------|-------------------------------|-------------|------------------|
| 18        | 7.60                    | 1.333                         | 50.0        | 49.33            |
| 13        | 6.20                    | 1.205                         | 45.0        | 44.40            |
| 10        | 5.30                    | 1.114                         | 42.0        | 41.44            |
| 7         | 4.10                    | 0.981                         | 38.0        | 37.49            |
| 5         | 2.70                    | 0.797                         | 31.0        | 30.59            |

**Subsequent calculation of sampler flow**

| Method           | Calibration equation   | Slope, m | Intercept, b | Corr. coeff., r |
|------------------|--|----------|--------------|-----------------|
| Dickson recorder | $Qstd = 1 / m [ ( 1 ) ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$ | 34.319   | 3.3791       | 0.9990          |



Calibration curve requirements : (A).  $r > 0.990$ ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .

$IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .

$FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by :       Checked by :   
 Name : ( Chan Kwok Ho )      Name : ( Wong Yin Tong )

Form No. INS-HVS-CAL.d4 16-01-2020

### Air Sampler Calibration Curve Plotting & Calculation

(Dickson recorder)

Calibration curve ref. No. : ATSPC-01-2020102703      Date of calibration : 27/10/2020

Location : Hong Kong Children's Hospital      Sampler : TE-5170X

**Calibration Data**

Ambient barometric pressure, Pa = 759.1 ( mmHg )      Ambient temperature, Ta = 300.35 ( deg K )

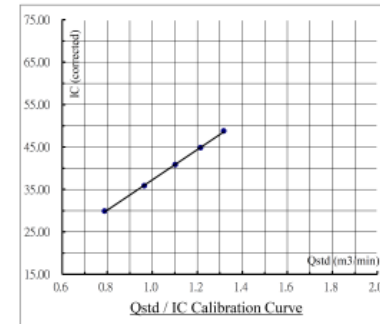
Qstd Slope, m = 2.04882      Qstd Intercept, b = -0.011270

**Calibration Curve**

| Plate No. | H <sub>2</sub> O ( in ) | Qstd ( m <sup>3</sup> / min ) | I ( chart ) | IC ( corrected ) |
|-----------|-------------------------|-------------------------------|-------------|------------------|
| 18        | 7.30                    | 1.318                         | 49.0        | 48.78            |
| 13        | 6.20                    | 1.215                         | 45.0        | 44.80            |
| 10        | 5.10                    | 1.103                         | 41.0        | 40.82            |
| 7         | 3.90                    | 0.965                         | 36.0        | 35.84            |
| 5         | 2.60                    | 0.789                         | 30.0        | 29.87            |

**Subsequent calculation of sampler flow**

| Method           | Calibration equation   | Slope, m | Intercept, b | Corr. coeff., r |
|------------------|--|----------|--------------|-----------------|
| Dickson recorder | $Qstd = 1 / m [ ( 1 ) ( \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ) - b ]$ | 35.681   | 1.5579       | 0.9998          |



Calibration curve requirements : (A).  $r > 0.990$ ; (B). At least 3 Qstd numbers are in the TSP range ( 1.1 - 1.7 m<sup>3</sup> / min ).

Remark :  $Qstd ( m^3 / min ) = 1/m [ \text{Sqrt} ( H_2O ( Pa / 760 ) ( 298 / Ta ) ) - b ]$ .

$IC ( corrected ) = I [ \text{Sqrt} ( ( Pa / 760 ) ( 298 / Ta ) ) ]$ .

$FLOW ( corrected ) = \text{Sqrt} ( FLOW ( mano ) ( Pa / 760 ) ( 298 / Ta ) )$ .

Calibrated by :       Checked by :   
 Name : ( Poon Tsz Wing )      Name : ( Wong Yin Tong )

Form No. INS-HVS-CAL.d4 16-01-2020

# Calibration Certificate for Calibrator



|                                    |
|------------------------------------|
| <b>RECALIBRATION<br/>DUE DATE:</b> |
| <b>July 17, 2021</b>               |

## Certificate of Calibration

| Calibration Certification Information |                        |           |       |
|---------------------------------------|------------------------|-----------|-------|
| Cal. Date: July 17, 2020              | Rootsmeter S/N: 438320 | Ta: 296   | °K    |
| Operator: Jim Tisch                   |                        | Pa: 753.4 | mm Hg |
| Calibration Model #: TE-5025A         | Calibrator S/N: 0006   |           |       |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|-----|----------------|-----------------|------------|-------------|------------|-------------|
| 1   | 1              | 2               | 1          | 1.4300      | 3.2        | 2.00        |
| 2   | 3              | 4               | 1          | 1.0100      | 6.4        | 4.00        |
| 3   | 5              | 6               | 1          | 0.9010      | 7.9        | 5.00        |
| 4   | 7              | 8               | 1          | 0.8570      | 8.8        | 5.50        |
| 5   | 9              | 10              | 1          | 0.7090      | 12.8       | 8.00        |

| Data Tabulation |               |  |           |             |   |
|-----------------|---------------|--|-----------|-------------|---|
| Vstd (m3)       | Qstd (x-axis) | $\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis) | Va        | Qa (x-axis) | $\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis) |
| 0.9937          | 0.6949        | 1.4128   | 0.9958    | 0.6963      | 0.8865  |
| 0.9895          | 0.9797        | 1.9980   | 0.9915    | 0.9817      | 1.2536  |
| 0.9875          | 1.0960        | 2.2338   | 0.9895    | 1.0982      | 1.4016  |
| 0.9863          | 1.1509        | 2.3428   | 0.9883    | 1.1532      | 1.4700  |
| 0.9810          | 1.3837        | 2.8255   | 0.9830    | 1.3865      | 1.7729  |
| <b>QSTD</b>     | m=            | <b>2.04882</b>   | <b>QA</b> | m=          | <b>1.28293</b>  |
|                 | b=            | <b>-0.01127</b>  |           | b=          | <b>-0.00707</b>   |
|                 | r=            | <b>0.99999</b>   |           | r=          | <b>0.99999</b>  |

| Calculations   |   |
|--|---|
| Vstd= ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)  | Va= ΔVol((Pa-ΔP)/Pa)  |
| Qstd= Vstd/ΔTime   | Qa= Va/ΔTime  |
| For subsequent flow rate calculations:   |   |
| Qstd= 1/m $\left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)} - b \right)$ | Qa= 1/m $\left( \sqrt{\Delta H \left( \frac{Ta}{Pa} \right)} - b \right)$ |

| Standard Conditions                       |
|---|
| Tstd: 298.15 °K                           |
| Pstd: 760 mm Hg                           |
| Key                                       |
| ΔH: calibrator manometer reading (in H2O) |
| ΔP: rootsmeter manometer reading (mm Hg)  |
| Ta: actual absolute temperature (°K)      |
| Pa: actual barometric pressure (mm Hg)    |
| b: intercept                              |
| m: slope                                  |

| RECALIBRATION  |
|--|
| US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30 |

Tisch Environmental, Inc.  
145 South Miami Avenue  
Village of Cleves, OH 45002

[www.tisch-env.com](http://www.tisch-env.com)  
TOLL FREE: (877)263-7610  
FAX: (513)467-9009



## Catalogue of Dust Meter (TSI Sidepak AM510)

The SidePak AM510 monitor's easy-to-read display shows your data as both real-time aerosol mass-concentration and 8-hour time-weighted average (TWA). With its convenient data logging and long battery life, the AMS10 is also ideal for extended sampling. The easy-to-use TrakPro Data Analysis Software lets you create effective graphs and reports.

### User Friendly

- + Small, lightweight and quiet to maximize worker acceptance
- + Rugged design with secure belt clip
- + Easy-to-understand user interface with only four keys
- + Lockable keypad prevents tampering while sampling
- + User-adjustable sample flow rate
- + Define, label and store multiple calibration constants
- + Easy-to-read LCD display
- + Convenient, threaded tripod socket accommodates area sampling

### Advanced Features

- + Smart Battery Management System provides precise run time information, maximizes battery capacity and speeds charging
- + Integrated pump allows use of size-selective aerosol inlet conditioners
- + Built-in impactors let you choose "none," 1.0, 2.5 or 10-micron cut off
- + 10-mm Dorr-Oliver cyclone for respirable sampling
- + Display shows real-time concentrations (mg/m<sup>3</sup>) and "on-the-fly" TWA as you data log
- + Display statistics: max, min and average readings, elapsed time and 8-hour TWA

### Quick and Easy Reports

- + Convenient preprogramming for occupational exposure sampling
- + Data log for long periods and store multiple tests
- + Analyze data, print graphs and create reports with TrakPro Data Analysis Software
- + USB port lets you conveniently connect to your computer

### Power to Spare

- + Long-lasting NiMH rechargeable battery packs eliminate "memory" issues
- + Choice of rechargeable NiMH smart battery packs or AA-cell pack

### Model AM510

#### SidePak Personal Aerosol Monitor

#### Sensitivity

Sensor Type 90° light scattering, 670 nm laser diode  
 Aerosol Concentration Range 0.001 to 20 mg/m<sup>3</sup> (calibrated to respirable fraction of ISO 12103-1, A1 test dust)  
 Particle Size Range 0.1 to 10 micrometer (µm)  
 Minimum Resolution 0.001 mg/m<sup>3</sup>  
 Zero stability ±0.001 mg/m<sup>3</sup> over 24 hours using 10-second time-constant  
 Temperature Coefficient Approximately +0.0005 mg/m<sup>3</sup> per °C (for variations from temperature at which instrument was last zeroed)

#### Flow Rate

Range User-adjustable, 0.7 to 1.8 liters/min (L/min)

#### Temperature Range

Operating Range 32 to 120°F (0 to 50°C)  
 Storage Range -4 to 140°F (-20 to 60°C)

#### Operational Humidity

0 to 95% RH, non-condensing

#### Time Constant (LCD display)

Range User-adjustable, 1 to 60 seconds

#### Data Logging

Data Points Approx. 31,000  
 Logging Interval User-adjustable, 1 second to 1 hour

#### User-Select Calibration Factors

Factory Setting 1.0 (non-adjustable)  
 User-defined Settings 3, with user-defined labels  
 Range 0.1 to 10.0, user-adjustable

#### Physical

External Dimensions 4.2 x 3.7 x 2.8 in. (106 x 92 x 70 mm) with 801723, 801724, 801729 or 801743 battery  
 5.1 x 3.7 x 2.8 in. (130 x 92 x 70 mm) with 801708, 801722, 801728, 801735, or 801736 battery  
 Weight 16 oz (0.46 kg) with 801723, 801724, 801729 or 801743 battery  
 19 oz (0.54 kg) with 801708, 01722, 801728, 801735, or 801736 battery  
 Display 2 line x 12 character LCD  
 Tripod Socket 1/4"-20 female thread

#### Power Supply/Charger (P/N 2613210)

Input Voltage Range 100 to 240 VAC, 50 to 60 Hz  
 Output Voltage 9 VDC @ 1.0 A

### Maintenance

Factory Clean/Calibrate Recommended annually  
 User Zero Calibration Before each use  
 User Flow Calibration As needed

### Communications Interface

Type USB 1.1  
 Connector, Instrument USB Mini-B (socket)

### Minimum Computer Requirements for TrakPro™ Data Analysis Software

Communications Port Universal Serial Bus (USB) v 1.1 or higher  
 Operating System Microsoft Windows® XP, or 7 (32-bit or 64-bit) operating systems

### Battery Performance

| Battery Options  | Charge Time (hrs)* | Intrinsic Safety Rating | Run Time (hrs @ 1.7 L/min) |
|--|--------------------|-------------------------|----------------------------|
| 1600 mAh NiMH Pack, 4.8 V (P/N 801723)   | 3.0                | No                      | 7.1                        |
| 1650 mAh NiMH Pack, 4.8V (P/N 801724, 801729 or 801743)                                | 3.5                | CSA**                   | 7.5                        |
| 2700 mAh NiMH Pack, 4.8 V (P/N 801722 or 801728)                                       | 5.5                | No                      | 12.0                       |
| 2700 mAh NiMH Pack, 4.8 V (P/N 801735)   | 5.5                | No                      | 12.0                       |
| 6-Cell AA-size Alkaline Pack*** (P/N 801708 or 801736 with six user-supplied AA cells) | N/A                | No                      | 22.5                       |

\*Of a fully depleted battery  
 \*\*All dust plugs and dust gaskets must be installed.  
 \*\*\*Using Energizer AA-size, E91 alkaline batteries.

### Battery Level Indicator

The Smart Battery Management System™ technology utilizes a built-in "gauge" in the SidePak™ battery packs. The gauge monitors battery capacity and calculates run time information by dividing capacity of the battery (mAh) by the instantaneous current consumed by the instrument (mA). This calculation is correct for current operating conditions and can change due to current (mA) consumption or changes in battery capacity.



## Calibration Certificate of Dust Meter (TSI Sidepak AM510)

**CERTIFICATE OF CALIBRATION AND TESTING**  
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

|                        |                          |               |          |
|------------------------|--------------------------|---------------|----------|
| Environment Conditions |                          | Model         | AM510    |
| Temperature            | 73.70 (23.2) °F (°C)     | Serial Number | 11208032 |
| Relative Humidity      | 25.0 %RH                 |               |          |
| Barometric Pressure    | 29.20 (988.8) inHg (hPa) |               |          |

As Left       In Tolerance  
 As Found       Out of Tolerance

**Concentration Linearity Plot**  

System ID: DT1101-02

| CONCENTRATION |          |          |                 |   |          |          |                 | Unit: mg/m <sup>3</sup> |
|---------------|----------|----------|-----------------|---|----------|----------|-----------------|-------------------------|
| #             | STANDARD | MEASURED | ALLOWABLE RANGE | # | STANDARD | MEASURED | ALLOWABLE RANGE |                         |
| 1             | 1.742    | 1.689    | 1.568-1.916     | 3 | 0.069    | 0.068    | 0.048-0.090     |                         |
| 2             | 0.252    | 0.239    | 0.214-0.290     | 4 | 14.934   | 14.818   | 13.441-16.427   |                         |

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 4:1

|                      |           |           |          |                      |           |           |          |
|----------------------|-----------|-----------|----------|----------------------|-----------|-----------|----------|
| Measurement Variable | System ID | Last Cal. | Cal. Due | Measurement Variable | System ID | Last Cal. | Cal. Due |
| DC Voltage           | E003314   | 01-15-20  | 01-31-21 | DC Voltage           | E003315   | 01-15-20  | 01-31-21 |
| Photometer           | E005612   | 02-25-20  | 08-31-20 | Microbalance         | M001324   | 10-03-18  | 10-31-20 |
| Pressure             | E003511   | 10-04-19  | 10-31-20 | Flowmeter            | E005140   | 01-09-20  | 01-31-21 |

Calibrated

May 6, 2020  
 Date

### Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. AS0200201-3      Report Issue Date 27/01/2020  
 Date of performance check 20/01/2020

**Objective:**

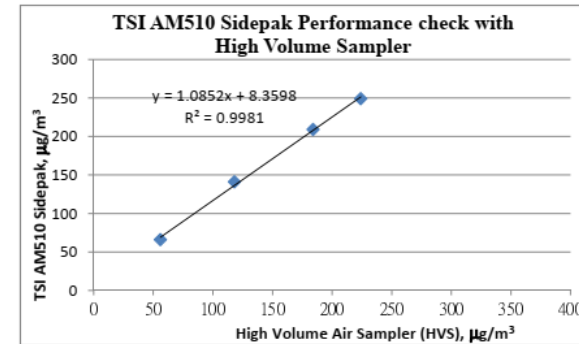
A dust meter, TSI AM510 Sidepak, and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

**Equipment Used:**

| Equipment   | Manufacturer and Model | Serial Number |
|---|------------------------|---------------|
| Personal Aerosol Monitor                                  | TSI AM510 Sidepak      | 11208032      |
| Total Suspended Particulate High Volume Air Sampler (HVS) | GS2310                 | 10346         |

**Result:**


| Equipment                     | Measurement Result, µg/m <sup>3</sup> |     |     |     |
|-------------------------------|---------------------------------------|-----|-----|-----|
| TSI AM510 Sidepak             | 66                                    | 141 | 209 | 249 |
| High Volume Air Sampler (HVS) | 56                                    | 118 | 184 | 224 |



Tested by :      Checked by :   
 Name : ( Chan Kwok Ho )      Name : ( Wong Yin Tong )



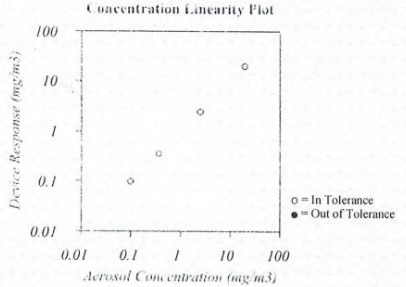
## Calibration Certificate of Dust Meter (TSI Sidepak AM510)



**CERTIFICATE OF CALIBRATION AND TESTING**  
 TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

|                        |                          |               |                 |
|------------------------|--------------------------|---------------|-----------------|
| Environment Conditions |                          | Model         | <b>AM510</b>    |
| Temperature            | 74.13 (23.4) °F (°C)     | Serial Number | <b>11506014</b> |
| Relative Humidity      | 23.6 %RH                 |               |                 |
| Barometric Pressure    | 29.22 (989.5) inHg (hPa) |               |                 |

As Left       In Tolerance  
 As Found       Out of Tolerance



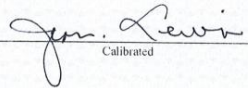
System ID: DTH101-02

| CONCENTRATION |          |          |                 |   |          |          |                 |
|---------------|----------|----------|-----------------|---|----------|----------|-----------------|
| #             | STANDARD | MEASURED | ALLOWABLE RANGE | # | STANDARD | MEASURED | ALLOWABLE RANGE |
| 1             | 2.409    | 2.413    | 2.168-2.650     | 3 | 0.098    | 0.097    | 0.069-0.127     |
| 2             | 0.358    | 0.356    | 6.304-0.412     | 4 | 19.085   | 19.713   | 17.176-20.994   |

Unit: mg/m<sup>3</sup>

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using amey oil and has been nominally adjusted to respirable mass per standard ISO 12103-1. All test dust (Arizona dust). Our calibration ratio is greater than 4:1

|                      |           |           |          |                      |           |           |          |
|----------------------|-----------|-----------|----------|----------------------|-----------|-----------|----------|
| Measurement Variable | System ID | Last Cal. | Cal. Due | Measurement Variable | System ID | Last Cal. | Cal. Due |
| DC Voltage           | E003314   | 01-15-20  | 01-31-21 | DC Voltage           | E003315   | 01-15-20  | 01-31-21 |
| Photometer           | E005612   | 08-29-19  | 02-29-20 | Microbalance         | M001324   | 10-03-18  | 10-31-20 |
| Pressure             | E003511   | 10-04-19  | 10-31-20 | Flowmeter            | E003769   | 04-03-19  | 04-30-20 |

  
 Calibrated

January 29, 2020  
 Date

### Personal Aerosol Monitor Performance check with High Volume Sampler

Performance Check ref. No. : AS0200201-2      Report Issue Date: 27/01/2020  
 Date of performance check : 20/01/2020

**Objective:**

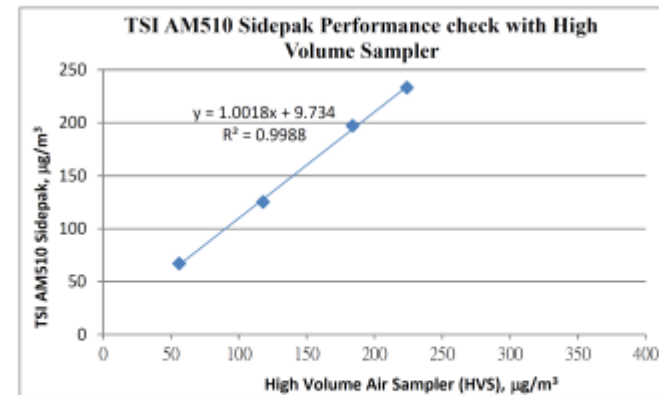
A dust meter, TSI AM510 Sidepak, and a Total Suspended Particulate High Volume Air Sampler (HVS) were placed together to measure the Total Suspended Particulate (TSP) concentrations simultaneously to check the performance.

**Equipment Used:**

| Equipment   | Manufacturer and Model | Serial Number |
|---|------------------------|---------------|
| Personal Aerosol Monitor                                  | TSI AM510 Sidepak      | 11506014      |
| Total Suspended Particulate High Volume Air Sampler (HVS) | GS2310                 | 10346         |

**Results:**

| Equipment                     | Measurement Result, µg/m <sup>3</sup> |     |     |     |
|-------------------------------|---------------------------------------|-----|-----|-----|
| TSI AM510 Sidepak             | 67                                    | 125 | 197 | 233 |
| High Volume Air Sampler (HVS) | 56                                    | 118 | 184 | 224 |



Tested by :

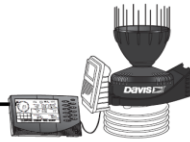
Name : ( Chan Kwok Ho )

Checked by :

Name : ( Wong Yin Tong )

# Catalogue of Weather Station

## Cabled Vantage Pro2™ & Vantage Pro2 Plus™ Stations



**6152C  
6162C**  
**Vantage Pro2™**

The Vantage Pro2™ (# 6152C) and Vantage Pro2™ Plus (# 6162C) cabled weather stations include two components: the Integrated Sensor Suite (ISS) and the console. The ISS contains the sensor interface module (SIM), rain collector, an anemometer, and a passive radiation shield. The Vantage Pro2 console provides the user interface, data display, and calculations. The Vantage Pro2 Plus weather station includes two additional sensors that are optional on the Vantage Pro2 and purchased separately: the UV Sensor and the Solar Radiation Sensor. The console and ISS are powered by an AC-power adapter connected to the console. Batteries can be installed in the console to provide a backup power supply. Use WeatherLink® to let your weather station interface with a computer, log data, and upload weather information to the Internet. The 6152C and 6162C models rely on passive shielding to reduce solar-radiation induced temperature errors in the outside temperature sensor readings.

### Integrated Sensor Suite (ISS)

|                           |   |
|---------------------------|---|
| Operating Temperature     | -40° to +150°F (-40° to +65°C)  |
| Non-operating Temperature | -40° to +158°F (-40° to +70°C)  |
| Current Draw              | 5 mA (average) at 4 to 6 VDC for ISS only. 10 mA average for both console and ISS |
| Connectors, Sensor        | Modular RJ-11   |
| Cable Type                | 4-conductor, 26 AWG   |
| Cable Length, Anemometer  | 40' (12 m) (included); 240' (73 m) (maximum recommended)                          |

Note: Maximum displayable wind decreases as the length of cable increases. At 140' (42 m) of cable, the maximum wind speed displayed is 135 mph (61 m/s); at 240' (73 m), the maximum wind speed displayed is 100 mph (34 m/s).

|                               |  |
|-------------------------------|--|
| Wind Speed Sensor             | Solid state magnetic sensor  |
| Wind Direction Sensor         | Wind vane with potentiometer   |
| Rain Collector Type           | Tipping bucket, 0.01" per tip (0.2 mm with metric rain adapter), 33.2 in <sup>2</sup> (214 cm <sup>2</sup> ) collection area |
| Temperature Sensor Type       | PN Junction Silicon Diode  |
| Relative Humidity Sensor Type | Film capacitor element   |
| Housing Material              | UV-resistant ABS, polypropylene  |
| Sensor Inputs                 |  |
| RF Filtering                  | RC low-pass filter on each signal line   |

ISS Dimensions(not including anemometer or bird spikes):

|   |   |
|---|---|
| Vantage Pro2 with Standard Rad Shield           | 14.0" x 9.4" x 14.5" (356 mm x 239 mm x 368 mm) |
| Vantage Pro2 with Fan-Aspirated Rad Shield      | 20.8" x 9.4" x 16.0" (528 mm x 239 mm x 406 mm) |
| Vantage Pro2 Plus with Standard Rad Shield      | 14.3" x 9.7" x 14.5" (363 mm x 246 mm x 368 mm) |
| Vantage Pro2 Plus with Fan-Aspirated Rad Shield | 21.1" x 9.7" x 16.0" (536 mm x 246 mm x 406 mm) |

**DAVIS** **® Davis Instruments** 3465 Diablo Ave., Hayward, CA 94545-2778 USA  
(510) 732-9229 • FAX (510) 670-0589 • sales@davisinstruments.com • www.davisinstruments.com

DS6152C, 6162C Rev. W 12/7/18

1

**7**  
**Vantage Pro2™**

### Ultra Violet (UV) Radiation Index (requires UV sensor)

|                       |   |
|-----------------------|---|
| Resolution and Units  | 0.1 Index   |
| Range                 | 0 to 16 Index   |
| Accuracy              | ±5% of full scale (Reference: Yankee UVB-1 at UV index 10 (Extremely High)) |
| Cosine Response       | ±4% FS (0° to 90° zenith angle)   |
| Update Interval       | 50 seconds to 1 minute (5 minutes when dark)                                |
| Current Graph Data    | Instant Reading and Hourly Average; Daily, Monthly High                     |
| Historical Graph Data | Hourly Average, Daily, Monthly Highs  |
| Alarm                 | High Threshold from Instant Calculation                                     |

### Wind

|                                |   |
|--------------------------------|---|
| <b>Wind Chill (Calculated)</b> |   |
| Resolution and Units           | 1°F or 1°C (user-selectable); °C is converted from °F and rounded to the nearest 1°C  |
| Range                          | -110° to +135°F (-79° to +57°C)   |
| Accuracy                       | ±2°F (±1°C) (typical)   |
| Update Interval                | 10 to 12 seconds  |
| Source                         | United States National Weather Service (NWS)/NOAA   |
| Equation Used                  | Osczevski (1995) (adopted by US NWS in 2001)  |
| Variables Used                 | Instant Outside Temperature and 10-min. Avg. Wind Speed   |
| Current Display Data           | Instant Calculation   |
| Current Graph Data             | Instant Calculation; Hourly, Daily and Monthly Low  |
| Historical Graph Data          | Hourly, Daily and Monthly Lows  |
| Alarm                          | Low Threshold from Instant Calculation  |
| <b>Wind Direction</b>          |   |
| Range                          | 1 - 360°  |
| Display Resolution             | 16 points (22.5°) on compass rose, 1° in numeric display  |
| Accuracy                       | ±3°   |
| Update Interval                | 2.5 to 3 seconds  |
| Current Graph Data             | Instant Reading (user adjustable); 10-min. Dominant; Hourly, Daily, Monthly Dominant  |
| Historical Graph Data          | Past 6 10-min. Dominants on compass rose only; Hourly, Daily, Monthly Dominants   |
| <b>Wind Speed</b>              |   |
| Resolution and Units           | 1 mph, 1 km/h, 0.4 m/s, or 1 knot (user-selectable) Measured in mph; other units are converted from mph and rounded to nearest 1 km/hr, 0.1 m/s, or 1 knot. |
| Range                          | 0 to 200 mph, 0 to 173 knots, 0 to 89 m/s, 0 to 322 km/h  |
| Update Interval                | Instant Reading: 2.5 to 3 seconds, 10-minute Average: 1 minute  |
| Accuracy                       | ±2 mph (2 kts, 3.2 km/h, 0.9 m/s) or ±5%, whichever is greater  |
| Maximum Cable Length           | 540' (165 m) (Note that maximum wind speed reading decreases as length of cable from anemometer to ISS increases.)  |
| Current Display Data           | Instant   |
| Current Graph Data             | Instant Reading; 10-minute and Hourly Average; Hourly High; Daily, Monthly and Yearly High with Direction of High   |
| Historical Graph Data          | 10-min. and Hourly Averages; Hourly Highs; Daily, Monthly and Yearly Highs with Direction of Highs  |
| Alarms                         | High Thresholds from Instant Reading and 10-minute Average  |

## Calibration Certificate of Weather Station



### Calibration Certificate

**Certificate No.: CC0202006**

**1. Description**

|                          |   |
|--------------------------|---|
| Calibration item :       | a) Temperature<br>b) Relative humidity<br>c) Wind speed<br>d) Wind direction<br>e) Atmospheric pressure |
| Equipment description :  | Weather Station   |
| Manufacturer :           | Davis Vantage Pro 2   |
| Type / Model No. :       | 6312CEU   |
| Serial No. :             | AY170606003   |
| Assigned equipment no. : | N/A   |
| Adjustment :             | N/A   |
| Remark :                 | Received with good condition  |

**2. Customer information**

|                   |                                  |
|-------------------|----------------------------------|
| Customer :        | Castco Testing Centre Limited    |
| Address :         | 33, On Kui Street, Fanling, N.T. |
| Date of receipt : | 26 June 2020                     |

**3. Date of performance of the calibration**

|                       |              |
|-----------------------|--------------|
| Date of calibration : | 29 June 2020 |
|-----------------------|--------------|

Approved Signatory:  
Warren Yeung *Warren Yeung*

Company Chop:  
Certificate issue date: 30 June 2020



1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD
2. The certificate is issued subject to the latest Term and Condition, available accessible at our web site

Cal Lab Limited  
Address: Room 2103, Technology Plaza, 29-35 She Tsui Road, Tuen Wan, NT, Hong Kong  
Tel: (852)25680106 Fax: (852)30116194 Email: info@calab.com.hk Website: calab.com.hk



**4. Result of Calibration**

**a) Temperature**

| Reference reading ; °C | Reading ; °C | Error of indication ; °C |
|------------------------|--------------|--------------------------|
| 15.0                   | 15           | 0.0                      |
| 25.0                   | 25           | 0.0                      |
| 35.0                   | 35           | 0.0                      |

Estimated expanded uncertainty: 0.6 °C

Technical Requirement: N/A

**b) Relative Humidity**

Temperature setting of humidity chamber : 23 °C

| Reference reading ; % RH | Reading ; % RH | Error of indication ; % RH |
|--------------------------|----------------|----------------------------|
| 40.0                     | 40             | 0.0                        |
| 60.0                     | 61             | 1.0                        |
| 80.0                     | 81             | 1.0                        |

Estimated expanded uncertainty: 2.5 %RH

Technical Requirement: N/A

**c) Wind Speed**

| Reference reading ; m/s | Measured reading ; m/s | Error of indication ; % |
|-------------------------|------------------------|-------------------------|
| 0.0                     | 0.0                    | N/A                     |
| 5.0                     | 4.8                    | -4.0                    |
| 10.0                    | 9.9                    | -1.0                    |
| 15.0                    | 14.8                   | -1.3                    |

Estimated expanded uncertainty: 0.5 m/s

Technical Requirement: +/-5% or 1 m/s

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD
2. The certificate is issued subject to the latest Term and Condition, available accessible at our web site

Cal Lab Limited  
Address: Room 2103, Technology Plaza, 29-35 She Tsui Road, Tuen Wan, NT, Hong Kong  
Tel: (852)25680106 Fax: (852)30116194 Email: info@calab.com.hk Website: calab.com.hk



## Calibration Certificate of Weather Station



### d) Wind direction

| Reference reading | Measured reading | Error of indication |
|-------------------|------------------|---------------------|
| 0°                | 0°               | 0°                  |
| 45°               | 45°              | 0°                  |
| 90°               | 90°              | 0°                  |
| 135°              | 135°             | 0°                  |
| 180°              | 180°             | 0°                  |
| 225°              | 225°             | 0°                  |
| 270°              | 270°             | 0°                  |
| 315°              | 315°             | 0°                  |

Estimated expanded uncertainty: 5°      Technical Requirement: N/A

Note: The arrow head was adjusted to the magnetic north before performing calibration.

### e) Atmospheric pressure

| Reference reading (hPa) | Measured reading (hPa) | Error of indication (hPa) |
|-------------------------|------------------------|---------------------------|
| 950.0                   | 950.9                  | 0.9                       |
| 1000.0                  | 1000.8                 | 0.8                       |
| 1050.0                  | 1051.8                 | 0.8                       |

Estimated expanded uncertainty: 2.0 %      Technical Requirement: N/A

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD
2. The certificate is issued subject to the latest Term and Condition, available accessible at our web site

Page 3 of 4  
cc0202006

Cal Lab Limited  
Address: Room 2103, Technology Plaza, 29-35 Sha Tsui Road, Tuen Wan, NT, Hong Kong  
Tel: (852)25680106 Fax: (852)30116194 Email: info@callab.com.hk Website: callab.com.hk



### 5. Reference method for calibration

|                      |               |
|----------------------|---------------|
| Temperature          | JIF 1183-2007 |
| Relative humidity    | JIG 1076-2001 |
| Wind Speed           | SOP-251       |
| Wind Direction       | SOP-252       |
| Atmospheric pressure | JIG 875-2015  |

### 6. Environment condition of calibration

|                         |         |
|-------------------------|---------|
| Temperature ; °C        | 23.4 °C |
| Relative humidity ; %RH | 50 %RH  |

### 7. Reference equipment used in the calibration

| Item                            | Model      | Serial No.             | Expiry date | Traceable to |
|---------------------------------|------------|------------------------|-------------|--------------|
| Platinum resistance thermometer | KPPRHT-A-1 | KCI I-1095, KCI P-1095 | 4 Mar 2022  | SMQ          |
| Humidity sensor                 | KPPRHT-A-1 | KCI I-1095, KCI P-1095 | 4 Mar 2022  | SMQ          |
| Reference barometer             | BY-2003P   | E0160521               | 18 Feb 2021 | SMQ          |
| Reference anemometer            | 405-V1     | 41543692               | 1 Jan 2021  | SMQ          |

- Note1: The estimated expanded uncertainties have been calculated in "evaluation and expression of uncertainty in measurement" and give an internal estimate to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.
- Note2: The standard [i] and instrument used in the calibration are traceable to national or international recognized standard and are calibrated on a schedule to maintain the accuracy and good condition.
- Note3: The result 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.
- Note4: The result shown in this calibration certificate relate only to the item calibrated, and the result only applies to the calibration item as received.

Calibrated by:       Date: 30 June 2020

Checked by:       Date: 30 June 2020

\*\*\* End of Certificate \*\*\*

CT-0ND-02

1. The certificate shall not reproduced except in full without the written approval of CAL LAB LTD
2. The certificate is issued subject to the latest Term and Condition, available accessible at our web site

Page 4 of 4  
cc0202006

Cal Lab Limited  
Address: Room 2103, Technology Plaza, 29-35 Sha Tsui Road, Tuen Wan, NT, Hong Kong  
Tel: (852)25680106 Fax: (852)30116194 Email: info@callab.com.hk Website: callab.com.hk

**Appendix F – Weather information**

## General Information

| Date       | Absolute Daily Min Temperature (°C) | Absolute Daily Max Temperature (°C) | Total Rainfall (mm) |
|------------|-------------------------------------|-------------------------------------|---------------------|
| 01/10/2020 | 25.3                                | 28.8                                | 0.1                 |
| 02/10/2020 | 26.2                                | 30.4                                | 0.0                 |
| 03/10/2020 | 26.7                                | 31.9                                | 0.0                 |
| 04/10/2020 | 26.8                                | 31.4                                | 0.0                 |
| 05/10/2020 | 25                                  | 30.6                                | 106.1               |
| 06/10/2020 | 24.9                                | 27.4                                | 2.7                 |
| 07/10/2020 | 24.1                                | 26.3                                | 0.0                 |
| 08/10/2020 | 23.1                                | 28.8                                | 0.0                 |
| 09/10/2020 | 23.3                                | 30.0                                | Trace               |
| 10/10/2020 | 23.3                                | 29.7                                | Trace               |
| 11/10/2020 | 24.7                                | 30.4                                | 0.0                 |
| 12/10/2020 | 25.6                                | 30.9                                | 0.6                 |
| 13/10/2020 | 23.8                                | 26.5                                | 26.0                |
| 14/10/2020 | 24.3                                | 26.4                                | 1.2                 |
| 15/10/2020 | 24.8                                | 29.4                                | 0.0                 |
| 16/10/2020 | 25.1                                | 31.4                                | Trace               |
| 17/10/2020 | 23.8                                | 28.9                                | 0.2                 |
| 18/10/2020 | 22.2                                | 28.5                                | 0.7                 |
| 19/10/2020 | 22.3                                | 27.9                                | 0.0                 |
| 20/10/2020 | 22.1                                | 29.0                                | 0.0                 |
| 21/10/2020 | 21.7                                | 28.4                                | 0.0                 |
| 22/10/2020 | 22.8                                | 28.3                                | 0.0                 |
| 23/10/2020 | 21.9                                | 24.8                                | 0.0                 |
| 24/10/2020 | 22.3                                | 26.3                                | Trace               |
| 25/10/2020 | 23.0                                | 28.1                                | 0.0                 |
| 26/10/2020 | 22.8                                | 28.1                                | 0.0                 |
| 27/10/2020 | 22.9                                | 28.6                                | 0.0                 |
| 28/10/2020 | 22.6                                | 26.7                                | 4.7                 |
| 29/10/2020 | 22.6                                | 26.7                                | 0.1                 |
| 30/10/2020 | 23.2                                | 27.0                                | Trace               |
| 31/10/2020 | 22.0                                | 26.0                                | 0.0                 |

NOTE1: The above weather information was obtained from manned weather station of Hong Kong Observatory.

NOTE2: Trace means rainfall less than 0.05 mm

<https://www.hko.gov.hk/en/cis/dailyExtract.htm?y=2020&m=10>

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 01/10/2020 | 0:00  | 1.8              | 112.5          | 02/10/2020 | 0:00  | 0.4              | 45             | 03/10/2020 | 0:00  | 0.4              | 45             | 04/10/2020 | 0:00  | 0.4              | 135            |
| 01/10/2020 | 1:00  | 1.8              | 112.5          | 02/10/2020 | 1:00  | 0.9              | 112.5          | 03/10/2020 | 1:00  | 0.4              | 90             | 04/10/2020 | 1:00  | 0.4              | 157.5          |
| 01/10/2020 | 2:00  | 1.3              | 112.5          | 02/10/2020 | 2:00  | 1.3              | 135            | 03/10/2020 | 2:00  | 0                | 90             | 04/10/2020 | 2:00  | 0.4              | 157.5          |
| 01/10/2020 | 3:00  | 1.8              | 67.5           | 02/10/2020 | 3:00  | 1.8              | 45             | 03/10/2020 | 3:00  | 0                | 0              | 04/10/2020 | 3:00  | 0.4              | 112.5          |
| 01/10/2020 | 4:00  | 1.8              | 90             | 02/10/2020 | 4:00  | 2.2              | 45             | 03/10/2020 | 4:00  | 0.4              | 22.5           | 04/10/2020 | 4:00  | 0.4              | 112.5          |
| 01/10/2020 | 5:00  | 0.9              | 180            | 02/10/2020 | 5:00  | 1.8              | 45             | 03/10/2020 | 5:00  | 0.4              | 112.5          | 04/10/2020 | 5:00  | 0.9              | 112.5          |
| 01/10/2020 | 6:00  | 1.3              | 45             | 02/10/2020 | 6:00  | 1.8              | 67.5           | 03/10/2020 | 6:00  | 0.9              | 45             | 04/10/2020 | 6:00  | 0.4              | 112.5          |
| 01/10/2020 | 7:00  | 0.4              | 45             | 02/10/2020 | 7:00  | 2.2              | 45             | 03/10/2020 | 7:00  | 0.9              | 157.5          | 04/10/2020 | 7:00  | 0                | 90             |
| 01/10/2020 | 8:00  | 0.9              | 22.5           | 02/10/2020 | 8:00  | 1.8              | 90             | 03/10/2020 | 8:00  | 0.9              | 112.5          | 04/10/2020 | 8:00  | 0.4              | 157.5          |
| 01/10/2020 | 9:00  | 0.9              | 22.5           | 02/10/2020 | 9:00  | 1.3              | 22.5           | 03/10/2020 | 9:00  | 0.9              | 67.5           | 04/10/2020 | 9:00  | 1.3              | 90             |
| 01/10/2020 | 10:00 | 1.3              | 45             | 02/10/2020 | 10:00 | 2.2              | 45             | 03/10/2020 | 10:00 | 0.9              | 135            | 04/10/2020 | 10:00 | 0.4              | 135            |
| 01/10/2020 | 11:00 | 0.3              | 112.5          | 02/10/2020 | 11:00 | 0.9              | 67.5           | 03/10/2020 | 11:00 | 1.8              | 45             | 04/10/2020 | 11:00 | 0.9              | 90             |
| 01/10/2020 | 12:00 | 1.8              | 67.5           | 02/10/2020 | 12:00 | 1.3              | 135            | 03/10/2020 | 12:00 | 1.8              | 135            | 04/10/2020 | 12:00 | 1.8              | 90             |
| 01/10/2020 | 13:00 | 1.8              | 90             | 02/10/2020 | 13:00 | 2.2              | 112.5          | 03/10/2020 | 13:00 | 1.3              | 90             | 04/10/2020 | 13:00 | 1.8              | 112.5          |
| 01/10/2020 | 14:00 | 1.3              | 45             | 02/10/2020 | 14:00 | 2.2              | 90             | 03/10/2020 | 14:00 | 1.3              | 90             | 04/10/2020 | 14:00 | 1.3              | 135            |
| 01/10/2020 | 15:00 | 1.3              | 22.5           | 02/10/2020 | 15:00 | 1.8              | 135            | 03/10/2020 | 15:00 | 1.3              | 90             | 04/10/2020 | 15:00 | 0.9              | 112.5          |
| 01/10/2020 | 16:00 | 0.9              | 180            | 02/10/2020 | 16:00 | 1.3              | 90             | 03/10/2020 | 16:00 | 0.9              | 90             | 04/10/2020 | 16:00 | 0.9              | 135            |
| 01/10/2020 | 17:00 | 0.9              | 135            | 02/10/2020 | 17:00 | 2.2              | 90             | 03/10/2020 | 17:00 | 1.3              | 90             | 04/10/2020 | 17:00 | 0.4              | 135            |
| 01/10/2020 | 18:00 | 1.9              | 45             | 02/10/2020 | 18:00 | 1.8              | 90             | 03/10/2020 | 18:00 | 1.3              | 90             | 04/10/2020 | 18:00 | 0                | 270            |
| 01/10/2020 | 19:00 | 1.3              | 45             | 02/10/2020 | 19:00 | 1.3              | 112.5          | 03/10/2020 | 19:00 | 0.9              | 112.5          | 04/10/2020 | 19:00 | 0.4              | 157.5          |
| 01/10/2020 | 20:00 | 1.8              | 0              | 02/10/2020 | 20:00 | 0.9              | 135            | 03/10/2020 | 20:00 | 0.9              | 135            | 04/10/2020 | 20:00 | 0.4              | 225            |
| 01/10/2020 | 21:00 | 0.9              | 67.5           | 02/10/2020 | 21:00 | 0.9              | 112.5          | 03/10/2020 | 21:00 | 0.9              | 112.5          | 04/10/2020 | 21:00 | 0                | 27             |
| 01/10/2020 | 22:00 | 1.3              | 135            | 02/10/2020 | 22:00 | 1.3              | 112.5          | 03/10/2020 | 22:00 | 0.9              | 112.5          | 04/10/2020 | 22:00 | 0.4              | 135            |
| 01/10/2020 | 23:00 | 0.9              | 270            | 02/10/2020 | 23:00 | 1.3              | 67.5           | 03/10/2020 | 23:00 | 0.9              | 112.5          | 04/10/2020 | 23:00 | 0.4              | 247.5          |

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 05/10/2020 | 0:00  | 0                | 247.5          | 06/10/2020 | 0:00  | 1.3              | 90             | 07/10/2020 | 0:00  | 0.9              | 22.5           | 08/10/2020 | 0:00  | 0                | 157.5          |
| 05/10/2020 | 1:00  | 0                | 157.5          | 06/10/2020 | 1:00  | 1.3              | 90             | 07/10/2020 | 1:00  | 0.4              | 0              | 08/10/2020 | 1:00  | 0.4              | 45             |
| 05/10/2020 | 2:00  | 0.4              | 135            | 06/10/2020 | 2:00  | 0.9              | 247.5          | 07/10/2020 | 2:00  | 0                | 67.5           | 08/10/2020 | 2:00  | 0.9              | 45             |
| 05/10/2020 | 3:00  | 0.4              | 0              | 06/10/2020 | 3:00  | 1.3              | 67.5           | 07/10/2020 | 3:00  | 0.9              | 0              | 08/10/2020 | 3:00  | 0.4              | 22.5           |
| 05/10/2020 | 4:00  | 0.4              | 67.5           | 06/10/2020 | 4:00  | 0.4              | 22.5           | 07/10/2020 | 4:00  | 0.9              | 45             | 08/10/2020 | 4:00  | 0.9              | 0              |
| 05/10/2020 | 5:00  | 0.4              | 67.5           | 06/10/2020 | 5:00  | 1.3              | 270            | 07/10/2020 | 5:00  | 0.4              | 0              | 08/10/2020 | 5:00  | 1.3              | 22.5           |
| 05/10/2020 | 6:00  | 0                | 135            | 06/10/2020 | 6:00  | 1.8              | 0              | 07/10/2020 | 6:00  | 0                | 337.5          | 08/10/2020 | 6:00  | 0.9              | 0              |
| 05/10/2020 | 7:00  | 0.4              | 135            | 06/10/2020 | 7:00  | 1.3              | 67.5           | 07/10/2020 | 7:00  | 0.4              | 337.5          | 08/10/2020 | 7:00  | 0.4              | 22.5           |
| 05/10/2020 | 8:00  | 1.3              | 67.5           | 06/10/2020 | 8:00  | 1.8              | 45             | 07/10/2020 | 8:00  | 0.4              | 135            | 08/10/2020 | 8:00  | 0.9              | 225            |
| 05/10/2020 | 9:00  | 1.3              | 22.5           | 06/10/2020 | 9:00  | 1.3              | 67.5           | 07/10/2020 | 9:00  | 0.9              | 0              | 08/10/2020 | 9:00  | 0.9              | 337.5          |
| 05/10/2020 | 10:00 | 1.8              | 90             | 06/10/2020 | 10:00 | 0.4              | 67.5           | 07/10/2020 | 10:00 | 0.4              | 90             | 08/10/2020 | 10:00 | 0.9              | 292.5          |
| 05/10/2020 | 11:00 | 1.3              | 22.5           | 06/10/2020 | 11:00 | 1.8              | 67.5           | 07/10/2020 | 11:00 | 1.3              | 67.5           | 08/10/2020 | 11:00 | 2.7              | 22.5           |
| 05/10/2020 | 12:00 | 1.3              | 0              | 06/10/2020 | 12:00 | 1.3              | 22.5           | 07/10/2020 | 12:00 | 1.8              | 22.5           | 08/10/2020 | 12:00 | 2.2              | 90             |
| 05/10/2020 | 13:00 | 1.8              | 90             | 06/10/2020 | 13:00 | 1.3              | 292.5          | 07/10/2020 | 13:00 | 1.3              | 337.5          | 08/10/2020 | 13:00 | 1.8              | 0              |
| 05/10/2020 | 14:00 | 1.8              | 22.5           | 06/10/2020 | 14:00 | 1.3              | 22.5           | 07/10/2020 | 14:00 | 0.9              | 67.5           | 08/10/2020 | 14:00 | 1.3              | 0              |
| 05/10/2020 | 15:00 | 2.2              | 90             | 06/10/2020 | 15:00 | 0.9              | 225            | 07/10/2020 | 15:00 | 0.9              | 90             | 08/10/2020 | 15:00 | 0.9              | 22.5           |
| 05/10/2020 | 16:00 | 1.8              | 112.5          | 06/10/2020 | 16:00 | 0.9              | 0              | 07/10/2020 | 16:00 | 1.3              | 45             | 08/10/2020 | 16:00 | 0.9              | 0              |
| 05/10/2020 | 17:00 | 2.2              | 90             | 06/10/2020 | 17:00 | 0.9              | 0              | 07/10/2020 | 17:00 | 0.9              | 22.5           | 08/10/2020 | 17:00 | 1.3              | 67.5           |
| 05/10/2020 | 18:00 | 1.8              | 45             | 06/10/2020 | 18:00 | 0.4              | 315            | 07/10/2020 | 18:00 | 0.9              | 22.5           | 08/10/2020 | 18:00 | 0.9              | 67.5           |
| 05/10/2020 | 19:00 | 1.3              | 112.5          | 06/10/2020 | 19:00 | 0.4              | 315            | 07/10/2020 | 19:00 | 0.9              | 67.5           | 08/10/2020 | 19:00 | 0.4              | 67.5           |
| 05/10/2020 | 20:00 | 1.8              | 90             | 06/10/2020 | 20:00 | 0.4              | 67.5           | 07/10/2020 | 20:00 | 0.9              | 45             | 08/10/2020 | 20:00 | 0.4              | 22.5           |
| 05/10/2020 | 21:00 | 1.8              | 90             | 06/10/2020 | 21:00 | 0                | 270            | 07/10/2020 | 21:00 | 0.4              | 45             | 08/10/2020 | 21:00 | 1.3              | 0              |
| 05/10/2020 | 22:00 | 1.8              | 112.5          | 06/10/2020 | 22:00 | 0.9              | 22.5           | 07/10/2020 | 22:00 | 0.9              | 0              | 08/10/2020 | 22:00 | 0.4              | 270            |
| 05/10/2020 | 23:00 | 1.3              | 112.5          | 06/10/2020 | 23:00 | 0.4              | 90             | 07/10/2020 | 23:00 | 0.4              | 135            | 08/10/2020 | 23:00 | 0.4              | 135            |



Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 09/10/2020 | 0:00  | 0.4              | 90             | 10/10/2020 | 0:00  | 0.4              | 247.5          | 11/10/2020 | 0:00  | 0.4              | 22.5           | 12/10/2020 | 0:00  | 0.9              | 0              |
| 09/10/2020 | 1:00  | 0.9              | 45             | 10/10/2020 | 1:00  | 0.4              | 270            | 11/10/2020 | 1:00  | 0.9              | 112.5          | 12/10/2020 | 1:00  | 1.3              | 45             |
| 09/10/2020 | 2:00  | 0.4              | 45             | 10/10/2020 | 2:00  | 1.3              | 22.5           | 11/10/2020 | 2:00  | 0.9              | 22.5           | 12/10/2020 | 2:00  | 0.9              | 112.5          |
| 09/10/2020 | 3:00  | 0.4              | 270            | 10/10/2020 | 3:00  | 1.3              | 22.5           | 11/10/2020 | 3:00  | 1.3              | 22.5           | 12/10/2020 | 3:00  | 1.3              | 67.5           |
| 09/10/2020 | 4:00  | 0.4              | 112.5          | 10/10/2020 | 4:00  | 0.4              | 292.5          | 11/10/2020 | 4:00  | 0.9              | 337.5          | 12/10/2020 | 4:00  | 1.8              | 90             |
| 09/10/2020 | 5:00  | 0.4              | 247.5          | 10/10/2020 | 5:00  | 1.3              | 67.5           | 11/10/2020 | 5:00  | 0.9              | 135            | 12/10/2020 | 5:00  | 0.9              | 22.5           |
| 09/10/2020 | 6:00  | 0.9              | 22.5           | 10/10/2020 | 6:00  | 0.4              | 337.5          | 11/10/2020 | 6:00  | 1.8              | 22.5           | 12/10/2020 | 6:00  | 0.9              | 315            |
| 09/10/2020 | 7:00  | 0                | 135            | 10/10/2020 | 7:00  | 0.9              | 0              | 11/10/2020 | 7:00  | 1.8              | 22.5           | 12/10/2020 | 7:00  | 1.3              | 22.5           |
| 09/10/2020 | 8:00  | 1.8              | 22.5           | 10/10/2020 | 8:00  | 0                | 225            | 11/10/2020 | 8:00  | 1.3              | 45             | 12/10/2020 | 8:00  | 1.8              | 135            |
| 09/10/2020 | 9:00  | 0.4              | 90             | 10/10/2020 | 9:00  | 1.3              | 337.5          | 11/10/2020 | 9:00  | 0.9              | 67.5           | 12/10/2020 | 9:00  | 1.3              | 135            |
| 09/10/2020 | 10:00 | 1.3              | 135            | 10/10/2020 | 10:00 | 1.3              | 22.5           | 11/10/2020 | 10:00 | 1.8              | 22.5           | 12/10/2020 | 10:00 | 1.8              | 22.5           |
| 09/10/2020 | 11:00 | 1.3              | 157.5          | 10/10/2020 | 11:00 | 1.3              | 90             | 11/10/2020 | 11:00 | 0.9              | 112.5          | 12/10/2020 | 11:00 | 1.8              | 22.5           |
| 09/10/2020 | 12:00 | 0.9              | 22.5           | 10/10/2020 | 12:00 | 1.3              | 22.5           | 11/10/2020 | 12:00 | 0.4              | 112.5          | 12/10/2020 | 12:00 | 0.9              | 0              |
| 09/10/2020 | 13:00 | 1.3              | 0              | 10/10/2020 | 13:00 | 0.9              | 0              | 11/10/2020 | 13:00 | 1.3              | 90             | 12/10/2020 | 13:00 | 1.3              | 112.5          |
| 09/10/2020 | 14:00 | 1.3              | 0              | 10/10/2020 | 14:00 | 0.9              | 135            | 11/10/2020 | 14:00 | 1.8              | 90             | 12/10/2020 | 14:00 | 1.3              | 90             |
| 09/10/2020 | 15:00 | 0.4              | 202.5          | 10/10/2020 | 15:00 | 0.9              | 135            | 11/10/2020 | 15:00 | 1.3              | 67.5           | 12/10/2020 | 15:00 | 1.3              | 67.5           |
| 09/10/2020 | 16:00 | 1.3              | 0              | 10/10/2020 | 16:00 | 0.9              | 225            | 11/10/2020 | 16:00 | 0.9              | 90             | 12/10/2020 | 16:00 | 1.8              | 112.5          |
| 09/10/2020 | 17:00 | 0.9              | 315            | 10/10/2020 | 17:00 | 0.9              | 337.5          | 11/10/2020 | 17:00 | 1.3              | 90             | 12/10/2020 | 17:00 | 1.3              | 45             |
| 09/10/2020 | 18:00 | 0.4              | 67.5           | 10/10/2020 | 18:00 | 0.9              | 67.5           | 11/10/2020 | 18:00 | 1.3              | 90             | 12/10/2020 | 18:00 | 1.8              | 22.5           |
| 09/10/2020 | 19:00 | 0.9              | 0              | 10/10/2020 | 19:00 | 0.4              | 135            | 11/10/2020 | 19:00 | 0.9              | 22.5           | 12/10/2020 | 19:00 | 0.9              | 0              |
| 09/10/2020 | 20:00 | 0.4              | 90             | 10/10/2020 | 20:00 | 0.4              | 90             | 11/10/2020 | 20:00 | 1.8              | 45             | 12/10/2020 | 20:00 | 1.3              | 0              |
| 09/10/2020 | 21:00 | 0.4              | 22.5           | 10/10/2020 | 21:00 | 0.4              | 135            | 11/10/2020 | 21:00 | 0.4              | 112.5          | 12/10/2020 | 21:00 | 0.9              | 45             |
| 09/10/2020 | 22:00 | 0.9              | 22.5           | 10/10/2020 | 22:00 | 0.4              | 157.5          | 11/10/2020 | 22:00 | 0.9              | 45             | 12/10/2020 | 22:00 | 1.3              | 0              |
| 09/10/2020 | 23:00 | 1.3              | 45             | 10/10/2020 | 23:00 | 0.4              | 337.5          | 11/10/2020 | 23:00 | 0.9              | 135            | 12/10/2020 | 23:00 | 2.2              | 90             |

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 13/10/2020 | 0:00  | 1.8              | 45             | 14/10/2020 | 0:00  | 2.7              | 45             | 15/10/2020 | 0:00  | 3.1              | 45             | 16/10/2020 | 0:00  | 2.2              | 67.5           |
| 13/10/2020 | 1:00  | 1.3              | 90             | 14/10/2020 | 1:00  | 3.1              | 67.5           | 15/10/2020 | 1:00  | 2.2              | 67.5           | 16/10/2020 | 1:00  | 1.3              | 0              |
| 13/10/2020 | 2:00  | 0.9              | 202.5          | 14/10/2020 | 2:00  | 2.7              | 67.5           | 15/10/2020 | 2:00  | 2.2              | 67.5           | 16/10/2020 | 2:00  | 0.9              | 112.5          |
| 13/10/2020 | 3:00  | 2.7              | 112.5          | 14/10/2020 | 3:00  | 4                | 45             | 15/10/2020 | 3:00  | 3.6              | 67.5           | 16/10/2020 | 3:00  | 0.9              | 45             |
| 13/10/2020 | 4:00  | 1.8              | 45             | 14/10/2020 | 4:00  | 4                | 67.5           | 15/10/2020 | 4:00  | 1.8              | 67.5           | 16/10/2020 | 4:00  | 0.9              | 135            |
| 13/10/2020 | 5:00  | 2.7              | 45             | 14/10/2020 | 5:00  | 4                | 45             | 15/10/2020 | 5:00  | 2.7              | 90             | 16/10/2020 | 5:00  | 1.3              | 67.5           |
| 13/10/2020 | 6:00  | 1.8              | 270            | 14/10/2020 | 6:00  | 3.6              | 45             | 15/10/2020 | 6:00  | 3.1              | 67.5           | 16/10/2020 | 6:00  | 1.8              | 90             |
| 13/10/2020 | 7:00  | 2.7              | 22.5           | 14/10/2020 | 7:00  | 3.1              | 90             | 15/10/2020 | 7:00  | 0.9              | 67.5           | 16/10/2020 | 7:00  | 1.3              | 0              |
| 13/10/2020 | 8:00  | 3.1              | 90             | 14/10/2020 | 8:00  | 3.6              | 45             | 15/10/2020 | 8:00  | 2.7              | 67.5           | 16/10/2020 | 8:00  | 1.3              | 337.5          |
| 13/10/2020 | 9:00  | 2.2              | 90             | 14/10/2020 | 9:00  | 4                | 67.5           | 15/10/2020 | 9:00  | 2.7              | 67.5           | 16/10/2020 | 9:00  | 1.8              | 22.5           |
| 13/10/2020 | 10:00 | 2.2              | 135            | 14/10/2020 | 10:00 | 4.5              | 67.5           | 15/10/2020 | 10:00 | 1.3              | 90             | 16/10/2020 | 10:00 | 1.3              | 337.5          |
| 13/10/2020 | 11:00 | 2.7              | 45             | 14/10/2020 | 11:00 | 3.6              | 67.5           | 15/10/2020 | 11:00 | 3.6              | 67.5           | 16/10/2020 | 11:00 | 1.3              | 90             |
| 13/10/2020 | 12:00 | 1.8              | 247.5          | 14/10/2020 | 12:00 | 3.1              | 45             | 15/10/2020 | 12:00 | 3.1              | 67.5           | 16/10/2020 | 12:00 | 1.3              | 157.5          |
| 13/10/2020 | 13:00 | 3.1              | 67.5           | 14/10/2020 | 13:00 | 3.1              | 67.5           | 15/10/2020 | 13:00 | 1.8              | 157.5          | 16/10/2020 | 13:00 | 2.2              | 22.5           |
| 13/10/2020 | 14:00 | 3.1              | 67.5           | 14/10/2020 | 14:00 | 3.1              | 45             | 15/10/2020 | 14:00 | 1.3              | 112.5          | 16/10/2020 | 14:00 | 1.3              | 90             |
| 13/10/2020 | 15:00 | 2.7              | 67.5           | 14/10/2020 | 15:00 | 2.7              | 90             | 15/10/2020 | 15:00 | 0.9              | 90             | 16/10/2020 | 15:00 | 1.8              | 0              |
| 13/10/2020 | 16:00 | 3.1              | 67.5           | 14/10/2020 | 16:00 | 2.7              | 67.5           | 15/10/2020 | 16:00 | 0.9              | 112.5          | 16/10/2020 | 16:00 | 0.9              | 135            |
| 13/10/2020 | 17:00 | 3.6              | 67.5           | 14/10/2020 | 17:00 | 2.2              | 45             | 15/10/2020 | 17:00 | 1.3              | 22.5           | 16/10/2020 | 17:00 | 1.3              | 135            |
| 13/10/2020 | 18:00 | 3.1              | 45             | 14/10/2020 | 18:00 | 3.1              | 0              | 15/10/2020 | 18:00 | 1.3              | 112.5          | 16/10/2020 | 18:00 | 1.8              | 67.5           |
| 13/10/2020 | 19:00 | 3.6              | 0              | 14/10/2020 | 19:00 | 2.2              | 45             | 15/10/2020 | 19:00 | 0.9              | 112.5          | 16/10/2020 | 19:00 | 1.8              | 67.5           |
| 13/10/2020 | 20:00 | 3.6              | 45             | 14/10/2020 | 20:00 | 1.8              | 45             | 15/10/2020 | 20:00 | 0.9              | 22.5           | 16/10/2020 | 20:00 | 1.8              | 67.5           |
| 13/10/2020 | 21:00 | 3.6              | 112.5          | 14/10/2020 | 21:00 | 2.2              | 45             | 15/10/2020 | 21:00 | 1.8              | 67.5           | 16/10/2020 | 21:00 | 1.8              | 67.5           |
| 13/10/2020 | 22:00 | 3.6              | 67.5           | 14/10/2020 | 22:00 | 2.7              | 67.5           | 15/10/2020 | 22:00 | 2.2              | 90             | 16/10/2020 | 22:00 | 1.3              | 67.5           |
| 13/10/2020 | 23:00 | 2.7              | 67.5           | 14/10/2020 | 23:00 | 3.6              | 90             | 15/10/2020 | 23:00 | 2.7              | 67.5           | 16/10/2020 | 23:00 | 1.3              | 90             |

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 17/10/2020 | 0:00  | 0.4              | 45             | 18/10/2020 | 0:00  | 0.9              | 22.5           | 19/10/2020 | 0:00  | 0.9              | 0              | 20/10/2020 | 0:00  | 1.3              | 45             |
| 17/10/2020 | 1:00  | 0.4              | 0              | 18/10/2020 | 1:00  | 1.3              | 22.5           | 19/10/2020 | 1:00  | 0.4              | 315            | 20/10/2020 | 1:00  | 1.3              | 22.5           |
| 17/10/2020 | 2:00  | 0.4              | 0              | 18/10/2020 | 2:00  | 1.3              | 315            | 19/10/2020 | 2:00  | 0.4              | 22.5           | 20/10/2020 | 2:00  | 0.4              | 22.5           |
| 17/10/2020 | 3:00  | 0.4              | 180            | 18/10/2020 | 3:00  | 1.3              | 135            | 19/10/2020 | 3:00  | 0                | 292.5          | 20/10/2020 | 3:00  | 0                | 337.5          |
| 17/10/2020 | 4:00  | 0.4              | 270            | 18/10/2020 | 4:00  | 1.3              | 0              | 19/10/2020 | 4:00  | 0.4              | 0              | 20/10/2020 | 4:00  | 0.4              | 22.5           |
| 17/10/2020 | 5:00  | 0.9              | 22.5           | 18/10/2020 | 5:00  | 1.3              | 22.5           | 19/10/2020 | 5:00  | 0.4              | 45             | 20/10/2020 | 5:00  | 0.4              | 0              |
| 17/10/2020 | 6:00  | 0.9              | 22.5           | 18/10/2020 | 6:00  | 0.4              | 247.5          | 19/10/2020 | 6:00  | 0.9              | 90             | 20/10/2020 | 6:00  | 0                | 225            |
| 17/10/2020 | 7:00  | 0.9              | 22.5           | 18/10/2020 | 7:00  | 0.4              | 247.5          | 19/10/2020 | 7:00  | 0.4              | 337.5          | 20/10/2020 | 7:00  | 0                | 225            |
| 17/10/2020 | 8:00  | 0.9              | 67.5           | 18/10/2020 | 8:00  | 0.4              | 0              | 19/10/2020 | 8:00  | 0.4              | 45             | 20/10/2020 | 8:00  | 0.4              | 135            |
| 17/10/2020 | 9:00  | 1.8              | 0              | 18/10/2020 | 9:00  | 1.3              | 22.5           | 19/10/2020 | 9:00  | 0.4              | 67.5           | 20/10/2020 | 9:00  | 0.9              | 22.5           |
| 17/10/2020 | 10:00 | 1.8              | 67.5           | 18/10/2020 | 10:00 | 2.2              | 0              | 19/10/2020 | 10:00 | 0.9              | 247.5          | 20/10/2020 | 10:00 | 1.3              | 67.5           |
| 17/10/2020 | 11:00 | 1.8              | 90             | 18/10/2020 | 11:00 | 1.3              | 67.5           | 19/10/2020 | 11:00 | 1.3              | 22.5           | 20/10/2020 | 11:00 | 2.2              | 22.5           |
| 17/10/2020 | 12:00 | 1.8              | 0              | 18/10/2020 | 12:00 | 1.8              | 45             | 19/10/2020 | 12:00 | 1.3              | 22.5           | 20/10/2020 | 12:00 | 1.3              | 67.5           |
| 17/10/2020 | 13:00 | 1.8              | 0              | 18/10/2020 | 13:00 | 0.9              | 337.5          | 19/10/2020 | 13:00 | 0.9              | 67.5           | 20/10/2020 | 13:00 | 1.3              | 90             |
| 17/10/2020 | 14:00 | 2.2              | 22.5           | 18/10/2020 | 14:00 | 1.3              | 90             | 19/10/2020 | 14:00 | 0.9              | 45             | 20/10/2020 | 14:00 | 0.9              | 67.5           |
| 17/10/2020 | 15:00 | 1.8              | 22.5           | 18/10/2020 | 15:00 | 0.9              | 112.5          | 19/10/2020 | 15:00 | 1.3              | 22.5           | 20/10/2020 | 15:00 | 0.4              | 22.5           |
| 17/10/2020 | 16:00 | 1.3              | 90             | 18/10/2020 | 16:00 | 1.3              | 90             | 19/10/2020 | 16:00 | 0.9              | 67.5           | 20/10/2020 | 16:00 | 0.4              | 135            |
| 17/10/2020 | 17:00 | 1.3              | 90             | 18/10/2020 | 17:00 | 1.3              | 67.5           | 19/10/2020 | 17:00 | 1.3              | 45             | 20/10/2020 | 17:00 | 1.3              | 90             |
| 17/10/2020 | 18:00 | 0.9              | 270            | 18/10/2020 | 18:00 | 1.8              | 90             | 19/10/2020 | 18:00 | 1.3              | 22.5           | 20/10/2020 | 18:00 | 0.4              | 112.5          |
| 17/10/2020 | 19:00 | 1.3              | 45             | 18/10/2020 | 19:00 | 1.3              | 112.5          | 19/10/2020 | 19:00 | 1.3              | 45             | 20/10/2020 | 19:00 | 0.9              | 112.5          |
| 17/10/2020 | 20:00 | 1.3              | 0              | 18/10/2020 | 20:00 | 1.3              | 90             | 19/10/2020 | 20:00 | 0.9              | 292.5          | 20/10/2020 | 20:00 | 0.4              | 90             |
| 17/10/2020 | 21:00 | 0.9              | 0              | 18/10/2020 | 21:00 | 0.9              | 112.5          | 19/10/2020 | 21:00 | 0.4              | 202.5          | 20/10/2020 | 21:00 | 0.4              | 315            |
| 17/10/2020 | 22:00 | 0.9              | 0              | 18/10/2020 | 22:00 | 0                | 225            | 19/10/2020 | 22:00 | 0                | 22.5           | 20/10/2020 | 22:00 | 1.3              | 0              |
| 17/10/2020 | 23:00 | 1.8              | 22.5           | 18/10/2020 | 23:00 | 0                | 225            | 19/10/2020 | 23:00 | 0.9              | 22.5           | 20/10/2020 | 23:00 | 0.9              | 22.5           |

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 21/10/2020 | 0:00  | 1.8              | 0              | 22/10/2020 | 0:00  | 0.9              | 247.5          | 23/10/2020 | 0:00  | 0.9              | 0              | 24/10/2020 | 0:00  | 1.3              | 22.5           |
| 21/10/2020 | 1:00  | 0.4              | 0              | 22/10/2020 | 1:00  | 1.3              | 315            | 23/10/2020 | 1:00  | 0.9              | 112.5          | 24/10/2020 | 1:00  | 1.3              | 22.5           |
| 21/10/2020 | 2:00  | 0.9              | 292.5          | 22/10/2020 | 2:00  | 1.3              | 135            | 23/10/2020 | 2:00  | 0.9              | 45             | 24/10/2020 | 2:00  | 0.9              | 45             |
| 21/10/2020 | 3:00  | 1.3              | 112.5          | 22/10/2020 | 3:00  | 0.9              | 90             | 23/10/2020 | 3:00  | 0.4              | 202.5          | 24/10/2020 | 3:00  | 1.3              | 22.5           |
| 21/10/2020 | 4:00  | 0.4              | 337.5          | 22/10/2020 | 4:00  | 0.9              | 135            | 23/10/2020 | 4:00  | 0.4              | 315            | 24/10/2020 | 4:00  | 1.3              | 22.5           |
| 21/10/2020 | 5:00  | 0.9              | 180            | 22/10/2020 | 5:00  | 0.9              | 0              | 23/10/2020 | 5:00  | 0.4              | 90             | 24/10/2020 | 5:00  | 0.4              | 45             |
| 21/10/2020 | 6:00  | 1.3              | 45             | 22/10/2020 | 6:00  | 1.3              | 22.5           | 23/10/2020 | 6:00  | 0.4              | 225            | 24/10/2020 | 6:00  | 1.3              | 0              |
| 21/10/2020 | 7:00  | 0.4              | 45             | 22/10/2020 | 7:00  | 1.8              | 112.5          | 23/10/2020 | 7:00  | 0.4              | 45             | 24/10/2020 | 7:00  | 1.3              | 315            |
| 21/10/2020 | 8:00  | 0.9              | 67.5           | 22/10/2020 | 8:00  | 0.9              | 157.5          | 23/10/2020 | 8:00  | 0.4              | 112.5          | 24/10/2020 | 8:00  | 1.3              | 22.5           |
| 21/10/2020 | 9:00  | 0.9              | 22.5           | 22/10/2020 | 9:00  | 1.3              | 45             | 23/10/2020 | 9:00  | 0.9              | 67.5           | 24/10/2020 | 9:00  | 1.3              | 67.5           |
| 21/10/2020 | 10:00 | 1.3              | 45             | 22/10/2020 | 10:00 | 0.9              | 247.5          | 23/10/2020 | 10:00 | 0.4              | 67.5           | 24/10/2020 | 10:00 | 1.3              | 22.5           |
| 21/10/2020 | 11:00 | 1.3              | 67.5           | 22/10/2020 | 11:00 | 0.9              | 270            | 23/10/2020 | 11:00 | 0.9              | 90             | 24/10/2020 | 11:00 | 1.8              | 45             |
| 21/10/2020 | 12:00 | 1.8              | 22.5           | 22/10/2020 | 12:00 | 0.9              | 45             | 23/10/2020 | 12:00 | 0.9              | 67.5           | 24/10/2020 | 12:00 | 1.8              | 22.5           |
| 21/10/2020 | 13:00 | 1.3              | 67.5           | 22/10/2020 | 13:00 | 1.3              | 225            | 23/10/2020 | 13:00 | 0.4              | 90             | 24/10/2020 | 13:00 | 2.2              | 22.5           |
| 21/10/2020 | 14:00 | 1.3              | 45             | 22/10/2020 | 14:00 | 1.3              | 67.5           | 23/10/2020 | 14:00 | 0.4              | 135            | 24/10/2020 | 14:00 | 2.2              | 22.5           |
| 21/10/2020 | 15:00 | 1.3              | 22.5           | 22/10/2020 | 15:00 | 0.9              | 45             | 23/10/2020 | 15:00 | 0.9              | 315            | 24/10/2020 | 15:00 | 1.3              | 22.5           |
| 21/10/2020 | 16:00 | 0.9              | 180            | 22/10/2020 | 16:00 | 1.3              | 22.5           | 23/10/2020 | 16:00 | 0.4              | 292.5          | 24/10/2020 | 16:00 | 1.3              | 90             |
| 21/10/2020 | 17:00 | 0.9              | 270            | 22/10/2020 | 17:00 | 1.8              | 22.5           | 23/10/2020 | 17:00 | 0.9              | 180            | 24/10/2020 | 17:00 | 0.9              | 45             |
| 21/10/2020 | 18:00 | 0.4              | 45             | 22/10/2020 | 18:00 | 0.9              | 22.5           | 23/10/2020 | 18:00 | 0.4              | 112.5          | 24/10/2020 | 18:00 | 1.8              | 67.5           |
| 21/10/2020 | 19:00 | 1.3              | 45             | 22/10/2020 | 19:00 | 1.8              | 22.5           | 23/10/2020 | 19:00 | 0.9              | 67.5           | 24/10/2020 | 19:00 | 1.3              | 337.5          |
| 21/10/2020 | 20:00 | 1.8              | 0              | 22/10/2020 | 20:00 | 2.2              | 67.5           | 23/10/2020 | 20:00 | 0.9              | 45             | 24/10/2020 | 20:00 | 1.3              | 22.5           |
| 21/10/2020 | 21:00 | 0.9              | 67.5           | 22/10/2020 | 21:00 | 2.2              | 337.5          | 23/10/2020 | 21:00 | 1.8              | 0              | 24/10/2020 | 21:00 | 2.2              | 90             |
| 21/10/2020 | 22:00 | 0.9              | 292.5          | 22/10/2020 | 22:00 | 1.8              | 67.5           | 23/10/2020 | 22:00 | 1.3              | 67.5           | 24/10/2020 | 22:00 | 1.8              | 112.5          |
| 21/10/2020 | 23:00 | 0.4              | 225            | 22/10/2020 | 23:00 | 0.9              | 112.5          | 23/10/2020 | 23:00 | 1.3              | 0              | 24/10/2020 | 23:00 | 1.8              | 90             |

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|
| 25/10/2020 | 0:00  | 1.3              | 90             | 26/10/2020 | 0:00  | 0.9              | 112.5          | 27/10/2020 | 0:00  | 1.3              | 112.5          | 28/10/2020 | 0:00  | 1.8              | 22.5           |
| 25/10/2020 | 1:00  | 1.8              | 90             | 26/10/2020 | 1:00  | 0.9              | 112.5          | 27/10/2020 | 1:00  | 1.3              | 112.5          | 28/10/2020 | 1:00  | 1.8              | 45             |
| 25/10/2020 | 2:00  | 2.2              | 90             | 26/10/2020 | 2:00  | 0.9              | 135            | 27/10/2020 | 2:00  | 2.2              | 90             | 28/10/2020 | 2:00  | 1.8              | 45             |
| 25/10/2020 | 3:00  | 1.8              | 90             | 26/10/2020 | 3:00  | 1.3              | 112.5          | 27/10/2020 | 3:00  | 2.2              | 45             | 28/10/2020 | 3:00  | 1.3              | 90             |
| 25/10/2020 | 4:00  | 2.2              | 67.5           | 26/10/2020 | 4:00  | 0.9              | 112.5          | 27/10/2020 | 4:00  | 2.2              | 90             | 28/10/2020 | 4:00  | 1.8              | 0              |
| 25/10/2020 | 5:00  | 1.3              | 90             | 26/10/2020 | 5:00  | 0.9              | 90             | 27/10/2020 | 5:00  | 0.9              | 112.5          | 28/10/2020 | 5:00  | 1.8              | 90             |
| 25/10/2020 | 6:00  | 1.8              | 90             | 26/10/2020 | 6:00  | 0.9              | 0              | 27/10/2020 | 6:00  | 1.8              | 90             | 28/10/2020 | 6:00  | 0.9              | 90             |
| 25/10/2020 | 7:00  | 0.9              | 135            | 26/10/2020 | 7:00  | 0.9              | 45             | 27/10/2020 | 7:00  | 1.3              | 315            | 28/10/2020 | 7:00  | 1.3              | 67.5           |
| 25/10/2020 | 8:00  | 1.3              | 112.5          | 26/10/2020 | 8:00  | 0.9              | 22.5           | 27/10/2020 | 8:00  | 1.3              | 292.5          | 28/10/2020 | 8:00  | 1.3              | 157.5          |
| 25/10/2020 | 9:00  | 1.3              | 90             | 26/10/2020 | 9:00  | 0.9              | 112.5          | 27/10/2020 | 9:00  | 1.3              | 135            | 28/10/2020 | 9:00  | 1.3              | 135            |
| 25/10/2020 | 10:00 | 1.3              | 112.5          | 26/10/2020 | 10:00 | 1.3              | 112.5          | 27/10/2020 | 10:00 | 1.3              | 112.5          | 28/10/2020 | 10:00 | 0.9              | 90             |
| 25/10/2020 | 11:00 | 1.3              | 67.5           | 26/10/2020 | 11:00 | 1.8              | 112.5          | 27/10/2020 | 11:00 | 0.9              | 112.5          | 28/10/2020 | 11:00 | 1.3              | 157.5          |
| 25/10/2020 | 12:00 | 1.3              | 112.5          | 26/10/2020 | 12:00 | 1.3              | 112.5          | 27/10/2020 | 12:00 | 1.3              | 112.5          | 28/10/2020 | 12:00 | 1.3              | 112.5          |
| 25/10/2020 | 13:00 | 1.3              | 112.5          | 26/10/2020 | 13:00 | 2.2              | 90             | 27/10/2020 | 13:00 | 1.3              | 112.5          | 28/10/2020 | 13:00 | 1.3              | 0              |
| 25/10/2020 | 14:00 | 1.3              | 90             | 26/10/2020 | 14:00 | 1.8              | 90             | 27/10/2020 | 14:00 | 1.8              | 67.5           | 28/10/2020 | 14:00 | 1.3              | 0              |
| 25/10/2020 | 15:00 | 0.9              | 337.5          | 26/10/2020 | 15:00 | 1.3              | 112.5          | 27/10/2020 | 15:00 | 1.3              | 112.5          | 28/10/2020 | 15:00 | 0.4              | 202.5          |
| 25/10/2020 | 16:00 | 0.9              | 90             | 26/10/2020 | 16:00 | 1.3              | 90             | 27/10/2020 | 16:00 | 1.3              | 90             | 28/10/2020 | 16:00 | 1.3              | 0              |
| 25/10/2020 | 17:00 | 1.3              | 112.5          | 26/10/2020 | 17:00 | 0.9              | 315            | 27/10/2020 | 17:00 | 1.8              | 0              | 28/10/2020 | 17:00 | 0.9              | 315            |
| 25/10/2020 | 18:00 | 0.9              | 180            | 26/10/2020 | 18:00 | 0.9              | 90             | 27/10/2020 | 18:00 | 0.9              | 67.5           | 28/10/2020 | 18:00 | 0.4              | 67.5           |
| 25/10/2020 | 19:00 | 0.9              | 112.5          | 26/10/2020 | 19:00 | 1.3              | 90             | 27/10/2020 | 19:00 | 2.2              | 90             | 28/10/2020 | 19:00 | 0.9              | 0              |
| 25/10/2020 | 20:00 | 0.9              | 90             | 26/10/2020 | 20:00 | 0.9              | 90             | 27/10/2020 | 20:00 | 1.3              | 90             | 28/10/2020 | 20:00 | 0.4              | 22.5           |
| 25/10/2020 | 21:00 | 0.9              | 90             | 26/10/2020 | 21:00 | 0.9              | 112.5          | 27/10/2020 | 21:00 | 1.8              | 67.5           | 28/10/2020 | 21:00 | 1.3              | 0              |
| 25/10/2020 | 22:00 | 0.4              | 135            | 26/10/2020 | 22:00 | 1.3              | 90             | 27/10/2020 | 22:00 | 1.8              | 45             | 28/10/2020 | 22:00 | 0.4              | 112.5          |
| 25/10/2020 | 23:00 | 0.9              | 315            | 26/10/2020 | 23:00 | 0.9              | 90             | 27/10/2020 | 23:00 | 1.8              | 45             | 28/10/2020 | 23:00 | 0.4              | 135            |

Mean Wind Speed and Wind Direction recorded by the weather station setup at the rooftop of Hong Kong Children's Hospital

| Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date       | Time  | Wind Speed (m/s) | Wind Direction | Date | Time | Wind Speed (m/s) | Wind Direction |
|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------------|-------|------------------|----------------|------|------|------------------|----------------|
| 29/10/2020 | 0:00  | 0.4              | 247.5          | 30/10/2020 | 0:00  | 1.3              | 90             | 31/10/2020 | 0:00  | 0.9              | 22.5           |      |      |                  |                |
| 29/10/2020 | 1:00  | 0.4              | 270            | 30/10/2020 | 1:00  | 0.9              | 22.5           | 31/10/2020 | 1:00  | 0.4              | 0              |      |      |                  |                |
| 29/10/2020 | 2:00  | 1.3              | 22.5           | 30/10/2020 | 2:00  | 1.3              | 112.5          | 31/10/2020 | 2:00  | 0                | 67.5           |      |      |                  |                |
| 29/10/2020 | 3:00  | 1.3              | 22.5           | 30/10/2020 | 3:00  | 0.4              | 90             | 31/10/2020 | 3:00  | 1.3              | 22.5           |      |      |                  |                |
| 29/10/2020 | 4:00  | 0.4              | 22.5           | 30/10/2020 | 4:00  | 0.9              | 135            | 31/10/2020 | 4:00  | 0.9              | 45             |      |      |                  |                |
| 29/10/2020 | 5:00  | 1.3              | 67.5           | 30/10/2020 | 5:00  | 0.4              | 22.5           | 31/10/2020 | 5:00  | 0.4              | 22.5           |      |      |                  |                |
| 29/10/2020 | 6:00  | 0.4              | 337.5          | 30/10/2020 | 6:00  | 0.9              | 90             | 31/10/2020 | 6:00  | 0                | 337.5          |      |      |                  |                |
| 29/10/2020 | 7:00  | 0.9              | 0              | 30/10/2020 | 7:00  | 0.4              | 67.5           | 31/10/2020 | 7:00  | 0.4              | 337.5          |      |      |                  |                |
| 29/10/2020 | 8:00  | 0.4              | 225            | 30/10/2020 | 8:00  | 0.4              | 67.5           | 31/10/2020 | 8:00  | 0.9              | 135            |      |      |                  |                |
| 29/10/2020 | 9:00  | 1.3              | 0              | 30/10/2020 | 9:00  | 1.3              | 135            | 31/10/2020 | 9:00  | 0.9              | 0              |      |      |                  |                |
| 29/10/2020 | 10:00 | 0.9              | 22.5           | 30/10/2020 | 10:00 | 0.4              | 112.5          | 31/10/2020 | 10:00 | 0.4              | 67.5           |      |      |                  |                |
| 29/10/2020 | 11:00 | 1.3              | 90             | 30/10/2020 | 11:00 | 0.4              | 90             | 31/10/2020 | 11:00 | 1.3              | 22.5           |      |      |                  |                |
| 29/10/2020 | 12:00 | 1.3              | 67.5           | 30/10/2020 | 12:00 | 0.4              | 90             | 31/10/2020 | 12:00 | 1.8              | 67.5           |      |      |                  |                |
| 29/10/2020 | 13:00 | 1.3              | 0              | 30/10/2020 | 13:00 | 0.9              | 135            | 31/10/2020 | 13:00 | 1.3              | 270            |      |      |                  |                |
| 29/10/2020 | 14:00 | 0.9              | 135            | 30/10/2020 | 14:00 | 0.4              | 202.5          | 31/10/2020 | 14:00 | 1.3              | 112.5          |      |      |                  |                |
| 29/10/2020 | 15:00 | 0.9              | 135            | 30/10/2020 | 15:00 | 0.4              | 67.5           | 31/10/2020 | 15:00 | 1.3              | 90             |      |      |                  |                |
| 29/10/2020 | 16:00 | 0.9              | 225            | 30/10/2020 | 16:00 | 0.9              | 67.5           | 31/10/2020 | 16:00 | 1.3              | 45             |      |      |                  |                |
| 29/10/2020 | 17:00 | 0.9              | 112.5          | 30/10/2020 | 17:00 | 0.9              | 22.5           | 31/10/2020 | 17:00 | 0.9              | 22.5           |      |      |                  |                |
| 29/10/2020 | 18:00 | 1.3              | 22.5           | 30/10/2020 | 18:00 | 0.4              | 22.5           | 31/10/2020 | 18:00 | 1.3              | 22.5           |      |      |                  |                |
| 29/10/2020 | 19:00 | 1.3              | 45             | 30/10/2020 | 19:00 | 0.4              | 67.5           | 31/10/2020 | 19:00 | 0.9              | 112.5          |      |      |                  |                |
| 29/10/2020 | 20:00 | 0.9              | 292.5          | 30/10/2020 | 20:00 | 0.4              | 112.5          | 31/10/2020 | 20:00 | 0.9              | 45             |      |      |                  |                |
| 29/10/2020 | 21:00 | 0.9              | 202.5          | 30/10/2020 | 21:00 | 0.9              | 22.5           | 31/10/2020 | 21:00 | 0.4              | 22.5           |      |      |                  |                |
| 29/10/2020 | 22:00 | 0.4              | 67.5           | 30/10/2020 | 22:00 | 0.4              | 247.5          | 31/10/2020 | 22:00 | 0.4              | 90             |      |      |                  |                |
| 29/10/2020 | 23:00 | 0.9              | 22.5           | 30/10/2020 | 23:00 | 1.3              | 112.5          | 31/10/2020 | 23:00 | 0.4              | 45             |      |      |                  |                |

**Appendix G – 24-hr TSP monitoring results and graphical presentation**

Location: AM3 – Sky Tower

| Start Date | Weather | Air Temp. (°C) | Atmospheric Pressure (hPa) | Filter weight (g) |         | Particulate weight (g) | Elapse Time |         | Sampling Time (min) | Flow Rate (cfm) |       | Av. Flow (m <sup>3</sup> /min) | Total vol. (m <sup>3</sup> ) | Conc. (µg/m <sup>3</sup> ) |
|------------|---------|----------------|----------------------------|-------------------|---------|------------------------|-------------|---------|---------------------|-----------------|-------|--------------------------------|------------------------------|----------------------------|
|            |         |                |                            | Initial           | Final   |                        | Initial     | Final   |                     | Initial         | Final |                                |                              |                            |
| 5/10/2020  | Cloudy  | 29.5           | 1011.2                     | 15.1929           | 15.3007 | 0.1078                 | 1660.61     | 1684.63 | 1441                | 51              | 51    | 1.42                           | 2046                         | 53                         |
| 10/10/2020 | Sunny   | 28.6           | 1012.8                     | 18.1480           | 18.2814 | 0.1334                 | 1685.73     | 1709.76 | 1442                | 54              | 54    | 1.52                           | 2185                         | 61                         |
| 16/10/2020 | Sunny   | 30.1           | 1013.6                     | 15.0693           | 15.2203 | 0.1510                 | 1710.13     | 1734.15 | 1441                | 52              | 52    | 1.45                           | 2091                         | 72                         |
| 22/10/2020 | Sunny   | 25.0           | 1009.4                     | 15.0884           | 15.2412 | 0.1528                 | 1734.22     | 1758.24 | 1441                | 54              | 54    | 1.52                           | 2195                         | 70                         |
| 28/10/2020 | Cloudy  | 26.8           | 1017.3                     | 15.0943           | 15.2220 | 0.1277                 | 1760.51     | 1784.54 | 1442                | 54              | 54    | 1.55                           | 2240                         | 57                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Maximum                      | 72                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Minimum                      | 53                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Average                      | 63                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Action Level                 | 182                        |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Limit Level                  | 260                        |

Location: AM4(A) – The Hong Kong Society for the Blind’s Factory cum Sheltered Workshop

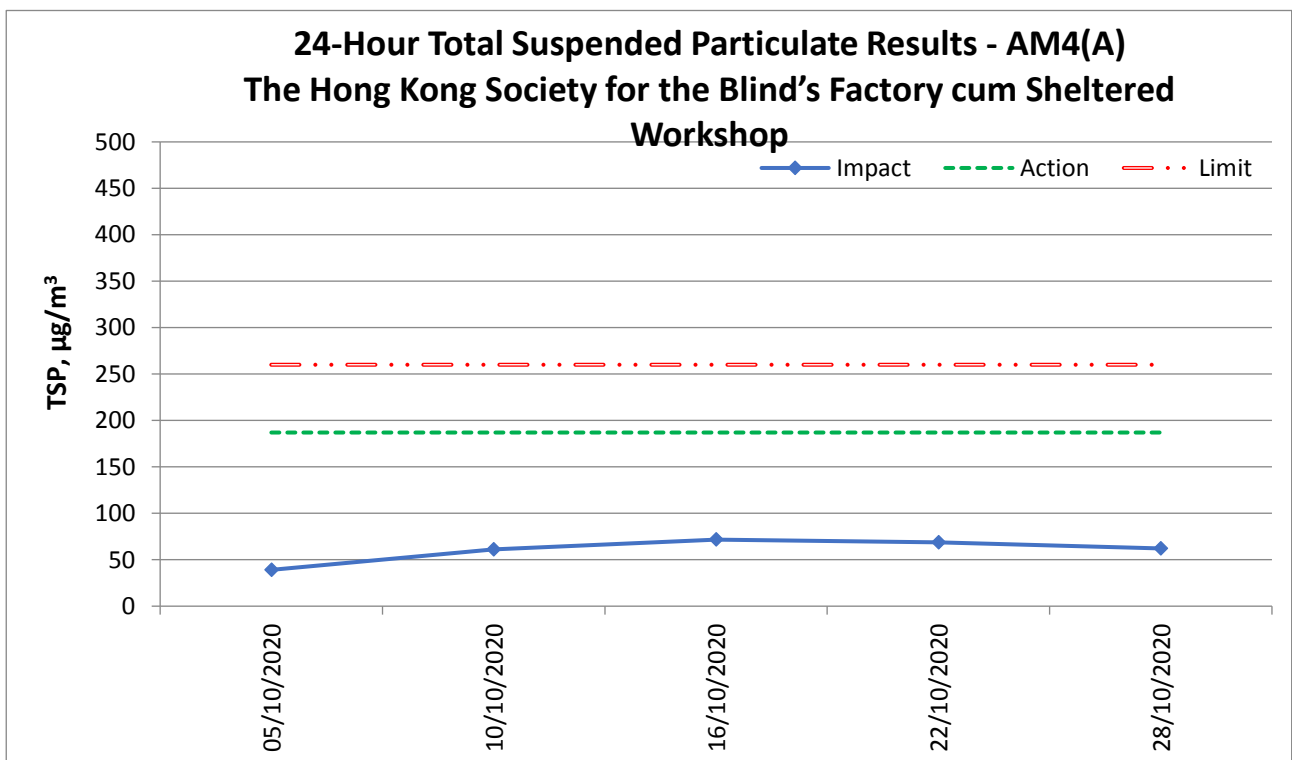
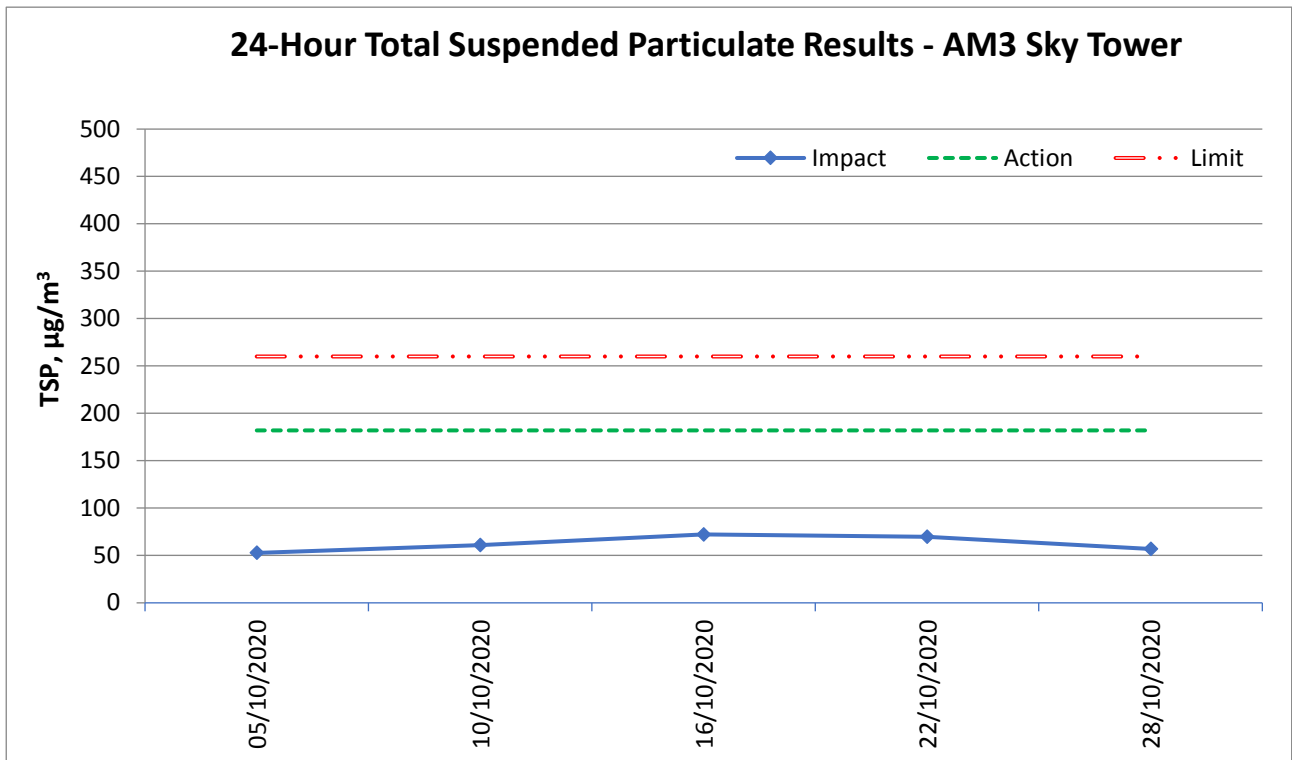
| Start Date | Weather | Air Temp. (°C) | Atmospheric Pressure (hPa) | Filter weight (g) |         | Particulate weight (g) | Elapse Time |         | Sampling Time (min) | Flow Rate (cfm) |       | Av. Flow (m <sup>3</sup> /min) | Total vol. (m <sup>3</sup> ) | Conc. (µg/m <sup>3</sup> ) |
|------------|---------|----------------|----------------------------|-------------------|---------|------------------------|-------------|---------|---------------------|-----------------|-------|--------------------------------|------------------------------|----------------------------|
|            |         |                |                            | Initial           | Final   |                        | Initial     | Final   |                     | Initial         | Final |                                |                              |                            |
| 5/10/2020  | Cloudy  | 29.5           | 1011.2                     | 15.0929           | 15.1654 | 0.0725                 | 1639.22     | 1663.25 | 1442                | 46              | 46    | 1.29                           | 1854                         | 39                         |
| 10/10/2020 | Sunny   | 28.6           | 1012.8                     | 18.242            | 18.3553 | 0.1133                 | 1664.78     | 1688.8  | 1441                | 46              | 46    | 1.29                           | 1858                         | 61                         |
| 16/10/2020 | Sunny   | 30.1           | 1013.6                     | 18.1704           | 18.3032 | 0.1328                 | 1689.37     | 1713.38 | 1441                | 46              | 46    | 1.29                           | 1853                         | 72                         |
| 22/10/2020 | Sunny   | 25.0           | 1009.4                     | 18.222            | 18.3565 | 0.1345                 | 1714.47     | 1738.49 | 1441                | 48              | 48    | 1.36                           | 1958                         | 69                         |
| 28/10/2020 | Cloudy  | 26.8           | 1017.3                     | 15.0747           | 15.1949 | 0.1202                 | 1739.93     | 1763.97 | 1442                | 48              | 48    | 1.34                           | 1934                         | 62                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Maximum                      | 72                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Minimum                      | 39                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Average                      | 60                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Action Level                 | 187                        |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Limit Level                  | 260                        |



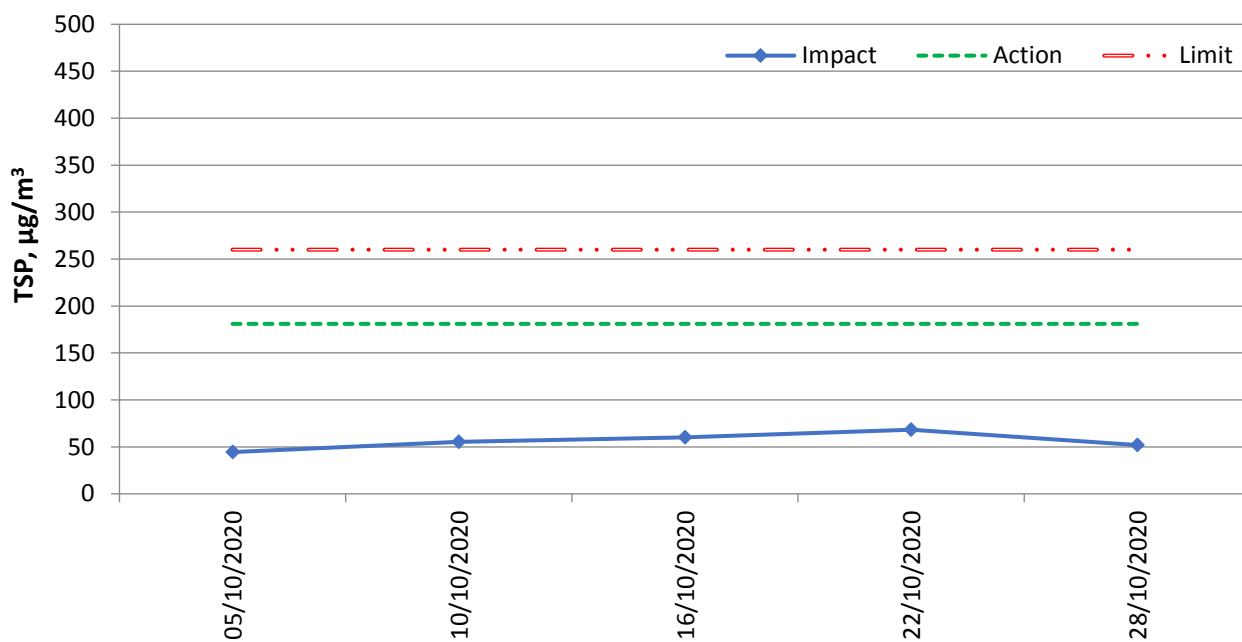
Location: AM7 – Hong Kong Children’s Hospital

| Start Date | Weather | Air Temp. (°C) | Atmospheric Pressure (hPa) | Filter weight (g) |         | Particulate weight (g) | Elapse Time |         | Sampling Time (min) | Flow Rate (cfm) |       | Av. Flow (m <sup>3</sup> /min) | Total vol. (m <sup>3</sup> ) | Conc. (µg/m <sup>3</sup> ) |
|------------|---------|----------------|----------------------------|-------------------|---------|------------------------|-------------|---------|---------------------|-----------------|-------|--------------------------------|------------------------------|----------------------------|
|            |         |                |                            | Initial           | Final   |                        | Initial     | Final   |                     | Initial         | Final |                                |                              |                            |
| 5/10/2020  | Cloudy  | 29.5           | 1011.2                     | 15.0481           | 15.1269 | 0.0788                 | 6492.01     | 6516.04 | 1442                | 46              | 46    | 1.23                           | 1774                         | 44                         |
| 10/10/2020 | Sunny   | 28.6           | 1012.8                     | 15.1432           | 15.2392 | 0.096                  | 6516.44     | 6540.45 | 1441                | 45              | 45    | 1.20                           | 1735                         | 55                         |
| 16/10/2020 | Sunny   | 30.1           | 1013.6                     | 15.3841           | 15.4956 | 0.1115                 | 6540.86     | 6564.88 | 1441                | 48              | 48    | 1.29                           | 1857                         | 60                         |
| 22/10/2020 | Sunny   | 25.0           | 1009.4                     | 15.1546           | 15.2823 | 0.1277                 | 6564.99     | 6589.02 | 1442                | 48              | 48    | 1.30                           | 1871                         | 68                         |
| 28/10/2020 | Cloudy  | 26.8           | 1017.3                     | 18.1952           | 18.2883 | 0.0931                 | 6589.31     | 6613.34 | 1442                | 46              | 46    | 1.24                           | 1794                         | 52                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Maximum                      | 68                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Minimum                      | 44                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Average                      | 56                         |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Action Level                 | 181                        |
|            |         |                |                            |                   |         |                        |             |         |                     |                 |       |                                | Limit Level                  | 260                        |

**24-hour average TSP**



### 24-Hour Total Suspended Particulate Results - AM7 Hong Kong Children's Hospital



## **Appendix H – 1-hr TSP monitoring results and graphical presentation**

Location:  
**AM3 -  
 Sky Tower**

| Date         | Measurement Period |   |       | 1-hr TSP concentration,<br>μg/m <sup>3</sup> | Weather |
|--------------|--------------------|---|-------|--|---------|
| 5/10/2020    | 9:00               | - | 10:00 | 70   | Cloudy  |
|              | 10:00              | - | 11:00 | 73   |         |
|              | 11:00              | - | 12:00 | 75   |         |
| 10/10/2020   | 9:00               | - | 10:00 | 78   | Sunny   |
|              | 10:00              | - | 11:00 | 78   |         |
|              | 11:00              | - | 12:00 | 83   |         |
| 16/10/2020   | 9:00               | - | 10:00 | 89   | Sunny   |
|              | 10:00              | - | 11:00 | 92   |         |
|              | 11:00              | - | 12:00 | 94   |         |
| 22/10/2020   | 9:00               | - | 10:00 | 88   | Sunny   |
|              | 10:00              | - | 11:00 | 88   |         |
|              | 11:00              | - | 12:00 | 93   |         |
| 28/10/2020   | 13:00              | - | 14:00 | 84   | Cloudy  |
|              | 14:00              | - | 15:00 | 85   |         |
|              | 15:00              | - | 16:00 | 89   |         |
| Maximum      |                    |   |       | 94   |         |
| Minimum      |                    |   |       | 70   |         |
| Average      |                    |   |       | 84   |         |
| Action Level |                    |   |       | 297  |         |
| Limit Level  |                    |   |       | 500  |         |

Location:  
**AM4(A) -  
The Hong Kong  
Society for the  
Blind's Factory  
cum Sheltered  
Workshop**

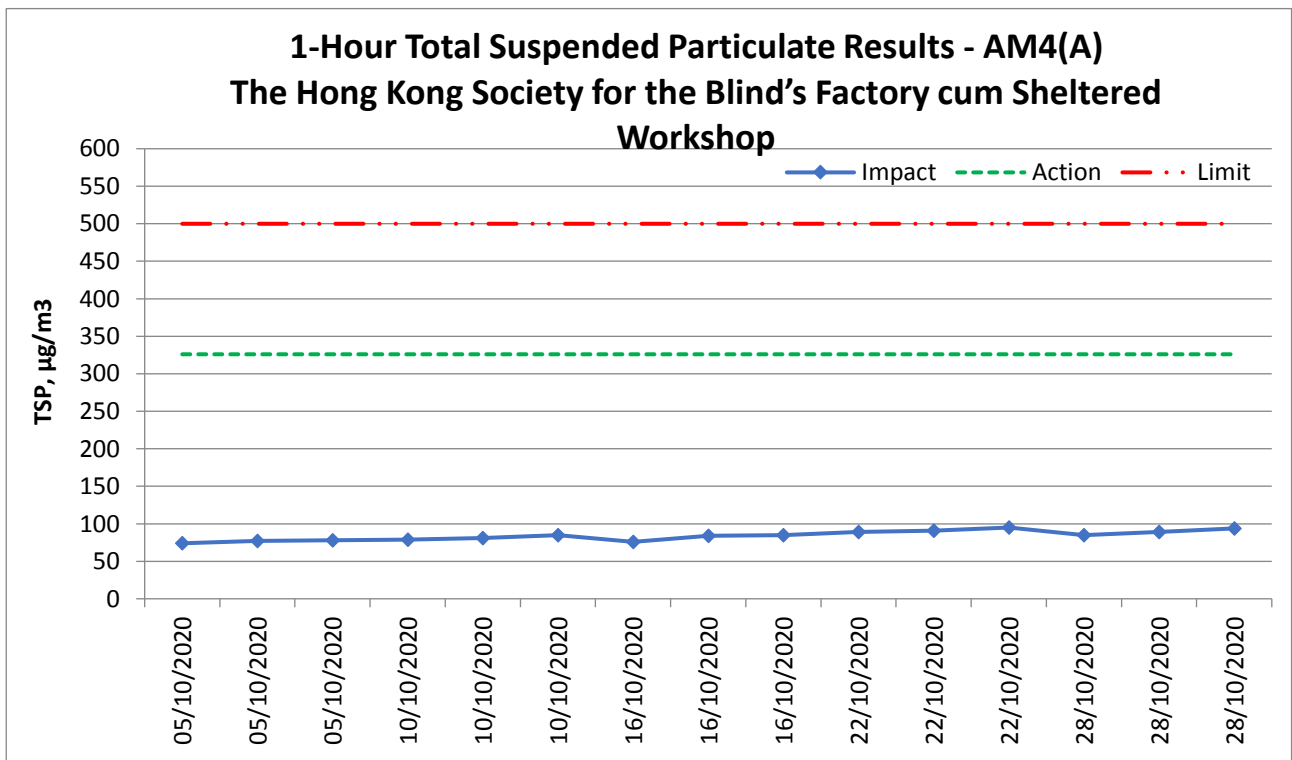
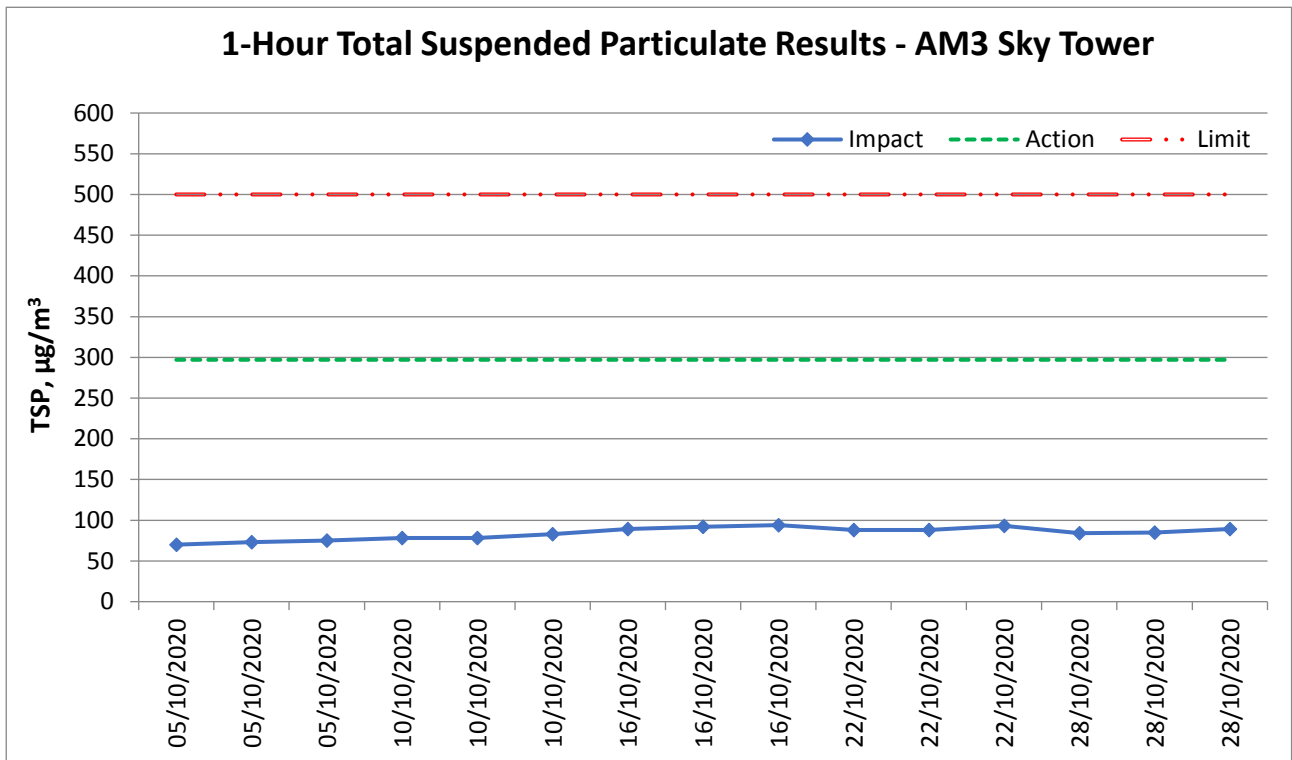
| Date         | Measurement Period |   |       | 1-hr TSP concentration,<br>$\mu\text{g}/\text{m}^3$ | Weather |
|--------------|--------------------|---|-------|---|---------|
| 5/10/2020    | 9:00               | - | 10:00 | 74  | Cloudy  |
| 5/10/2020    | 10:00              | - | 11:00 | 77  |         |
| 5/10/2020    | 11:00              | - | 12:00 | 78  |         |
| 10/10/2020   | 9:00               | - | 10:00 | 79  | Sunny   |
| 10/10/2020   | 10:00              | - | 11:00 | 81  |         |
| 10/10/2020   | 11:00              | - | 12:00 | 85  |         |
| 16/10/2020   | 13:00              | - | 14:00 | 76  | Sunny   |
| 16/10/2020   | 14:00              | - | 15:00 | 84  |         |
| 16/10/2020   | 15:00              | - | 16:00 | 85  |         |
| 22/10/2020   | 13:00              | - | 14:00 | 89  | Sunny   |
| 22/10/2020   | 14:00              | - | 15:00 | 91  |         |
| 22/10/2020   | 15:00              | - | 16:00 | 95  |         |
| 28/10/2020   | 9:00               | - | 10:00 | 85  | Cloudy  |
| 28/10/2020   | 10:00              | - | 11:00 | 89  |         |
| 28/10/2020   | 11:00              | - | 12:00 | 94  |         |
| Maximum      |                    |   |       | 95  |         |
| Minimum      |                    |   |       | 74  |         |
| Average      |                    |   |       | 84  |         |
| Action Level |                    |   |       | 326   |         |
| Limit Level  |                    |   |       | 500   |         |

Location:  
**AM7 -  
 Hong  
 Children's  
 Hospital**

**Kong**

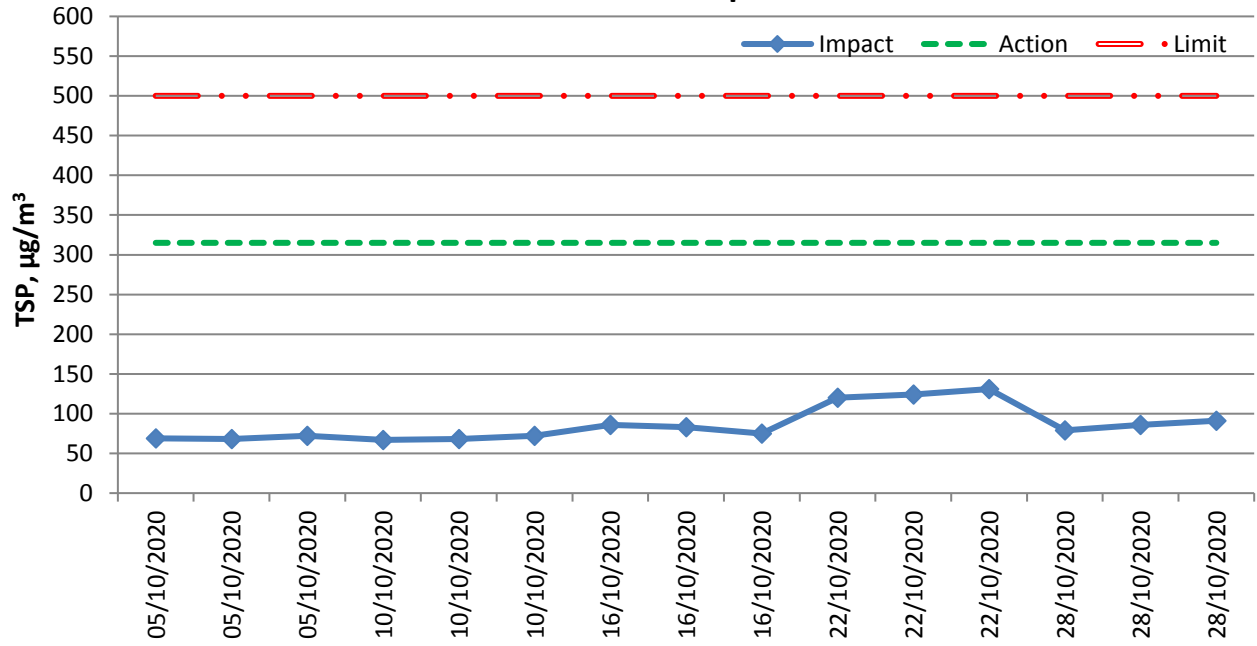
| Date         | Measurement Period |   |       | 1-hr TSP concentration,<br>μg/m <sup>3</sup> | Weather |
|--------------|--------------------|---|-------|--|---------|
|              |                    | - |       |  |         |
| 5/10/2020    | 13:00              | - | 14:00 | 69   | Cloudy  |
|              | 14:00              | - | 15:00 | 68   |         |
|              | 15:00              | - | 16:00 | 72   |         |
| 10/10/2020   | 13:00              | - | 14:00 | 67   | Sunny   |
|              | 14:00              | - | 15:00 | 68   |         |
|              | 15:00              | - | 16:00 | 72   |         |
| 16/10/2020   | 14:10              | - | 15:10 | 86   | Sunny   |
|              | 15:10              | - | 16:10 | 83   |         |
|              | 16:10              | - | 17:10 | 75   |         |
| 22/10/2020   | 9:00               | - | 10:00 | 120  | Sunny   |
|              | 10:00              | - | 11:00 | 124  |         |
|              | 11:00              | - | 12:00 | 131  |         |
| 28/10/2020   | 9:00               | - | 10:00 | 79   | Cloudy  |
|              | 10:00              | - | 11:00 | 86   |         |
|              | 11:00              | - | 12:00 | 91   |         |
| Maximum      |                    |   |       | 131  |         |
| Minimum      |                    |   |       | 67   |         |
| Average      |                    |   |       | 86   |         |
| Action Level |                    |   |       | 315  |         |
| Limit Level  |                    |   |       | 500  |         |

**1-hour average TSP**





### 1-Hour Total Suspended Particulate Results - AM7 Hong Kong Children's Hospital



**Appendix I – Event and Action Plan for air quality**

| Event   | Action   |  |  |   |
|---|--|--|--|---|
|   | ET   | IEC  | Supervisor / ER  | Contractor  |
| Action Level being exceeded by one sampling                     | <ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and Supervisor /ER;</li> <li>3. Repeat measurement to confirm finding.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>   |
| Action Level being exceeded by two or more consecutive sampling | <ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and Supervisor /ER;</li> <li>3. Increase monitoring frequency to daily;</li> <li>4. Discuss with IEC and Contractor on remedial actions required;</li> <li>5. Assess the effectiveness of Contractor's remedial actions;</li> <li>6. If exceedance continues, arrange meeting with IEC and Supervisor /ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the Supervisor /ER on the effectiveness of the proposed remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. Conduct meeting with ET and IEC if exceedance continues.</li> </ol> | <ol style="list-style-type: none"> <li>1. Discuss with ET and IEC on proper remedial actions;</li> <li>2. Submit proposals for remedial actions to Supervisor /ER and IEC within three working day of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol> |
| Limit Level being exceeded by one sampling                      | <ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC, Supervisor /ER, and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Assess effectiveness of</li> </ol>   | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss possible remedial measures with ET and Contractor;</li> <li>4. Advise the Supervisor /ER</li> </ol>  | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be</li> </ol>  | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposal for remedial actions to Supervisor /ER and IEC</li> </ol>  |

| Event  | Action   |  |   |  |
|--|--|--|---|--|
|  | ET   | IEC  | Supervisor / ER   | Contractor   |
|  | Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results.  | on the effectiveness of the proposed remedial measures.  | 4. Supervise implementation of remedial measures;<br>5. Conduct meeting with ET and IEC if exceedance continues.  | within three working days of notification;<br>4. Implement the agreed proposals.   |
| Limit Level being exceeded by two or more consecutive sampling | <ol style="list-style-type: none"> <li>1. Notify IEC, Supervisor /ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Arrange meeting with IEC, Supervisor /ER and Contractor to discuss the remedial action to be taken;</li> <li>6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and Supervisor /ER informed of the results;</li> <li>7. If exceedance stop, cease additional monitoring.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with Supervisor /ER, ET, and Contractor on the potential remedial actions;</li> <li>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly.</li> </ol> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> </ol> | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposal for remedial actions to Supervisor /ER and IEC within three working days of notification;</li> <li>4. Implement the agreed proposals;</li> <li>5. Submit further remedial actions if problem still not under control;</li> <li>6. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.</li> </ol> |

# **Appendix J – Calibration certificates, catalogue of noise monitoring equipment**

# Catalogue of Sound Level Meter

## Specifications

|                       | NL-52  | NL-42  |
|-----------------------|--|--|
| Applicable standards  | IEC 61672-1: 2002 Class 1<br>ANSI S1.4-1983 Type 1<br>ANSI S1.4A-1985 Type 1<br>ANSI S1.43-1997 Type 1<br>JIS C 1509-1: 2005 Class 1   | IEC 61672-1: 2002 Class 2<br>ANSI S1.4-1983 Type 2<br>ANSI S1.4A-1985 Type 2<br>ANSI S1.43-1997 Type 2<br>JIS C 1509-1: 2005 Class 2   |
| Measurement functions | Simultaneous measurement of the following items, with selected time weighting and frequency weighting<br>WEEE Directives, Chinese RoHS (export model for China only)   |  |
| Processing (main ch)  | Instantaneous sound pressure level: $L_p$<br>Equivalent continuous sound pressure level: $L_{eq}$<br>Sound exposure level: $L_E$<br>Maximum sound pressure level: $L_{max}$<br>Minimum sound pressure level: $L_{min}$<br>Percentage sound levels: $L_N$ (0.1 to 99.9 %, 0.1-increment steps, max. 5 values)   |  |
| Processing (sub ch)   | Instantaneous sound pressure level: $L_p$  |  |
| Additional processing | In addition to main processing items, one of the following can be selected for simultaneous processing:<br>C-weighted equivalent continuous sound level: $L_{Ceq}$<br>C-weighted peak sound level: $L_{Cpeak}$<br>Z-weighted peak sound level: $L_{Zpeak}$<br>1-time-weighted equivalent continuous sound level: $L_{A1eq}^{*2}$<br>Maximum 1-time-weighted equivalent continuous sound level: $L_{A1max}^{*2}$<br>The power average of the maximum level of each 5 second interval: $L_{A1av}^{*5}$<br>The frequency weighting for the additional processing synchronizes with the frequency weighting of the sub-channel, so when the sub-channel has A-weighting, $L_{A1av}^{*5}$ can be selected.<br>When C-weighting (Z-weighting) is selected, the additional processing $L_{Ceq}$ and $L_{Cpeak}$ ( $L_{Zpeak}$ ) are selectable. |  |
| Measuring time        | 10 s, 1, 5, 10, 15, 30 m, 1, 8, 24 h, and manual (maximum 24 h)  |  |
| Microphone            | Type UC-59 UC-52<br>Sensitivity level -27 dB -33 dB  |  |
| Measurement range     | A-weighting: 25 dB to 138 dB<br>C-weighting: 33 dB to 138 dB<br>Z-weighting: 38 dB to 138 dB<br>C-weighting peak sound level: 55 dB to 141 dB<br>Z-weighting peak sound level: 60 dB to 141 dB   |  |
| Inherent noise        | A-weighting 17 dB or less<br>C-weighting 25 dB or less<br>Z-weighting 30 dB or less  | 19 dB or less<br>27 dB or less<br>32 dB or less  |
| Frequency range       | 20 Hz to 20 kHz 20 Hz to 8 kHz   |  |
| Frequency weighting   | A, C, and Z  |  |
| Time weighting        | F (Fast) and S (Slow)  |  |
| Level range           | Single range (Linearity range: 113 dB)<br>Bar graph display range max. Max. 110 dB (20 to 130 dB)<br>Switching of bar graph display Set the upper/lower limit in 10 dB increments.   |  |
| RMS detection circuit | Digital processing method  |  |
| Sampling cycle        | 20.8 $\mu$ s ( $L_p$ , $L_{eq}$ , $L_E$ , $L_{max}$ , $L_{min}$ , $L_{peak}$ : sampling frequency: 48 kHz)<br>100 ms ( $L_N$ )   |  |
| Calibration           | Measurement Law: electrical calibration performed according to IEC and JIS standards, using internally generated signals; acoustic calibration performed with the NC-74.   |  |
| Correction functions  | Windscreen correction:<br>Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed.<br>Diffuse sound field correction:<br>Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.  |  |
| Delay time            | The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.  |  |
| Back erase function   | When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.  |  |
| Display               | Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel)<br>Numerical display update frequency: 1 s * Bar graph update frequency: 100 ms   |  |
| Store                 | Manual<br>Number of data Internal memory: max. 1000 sets<br>SD Card: depends on the capacity of the SD Card *1   | Auto *2<br>Instantaneous values ( $L_p$ mode) and processed values ( $L_{eq}$ mode) are stored continuously and automatically at preset intervals.<br>LP sampling cycle 100 ms, 200 ms, 1 s, $L_{eq}$ 1s<br>Leq sampling cycle 10 s, 1, 5, 10, 15, 30 ms, 1, 8, 24 h<br>Measurement Time Max. 1000 h (depends on the capacity of the SD Card) *1 |

\* Windows is a trademark of Microsoft Corporation.  
\* Specifications subject to change without notice.

Distributed by:

This product is environment-friendly. It does not include toxic chemicals on our policy.  
This product is certified as an International Protection rating of IP54 (dust protected and resistant to splashing water).  
This leaflet is printed with environmentally friendly vegetable-based ink on recycled paper.

1011-4 212 P.D

|  |  |
|--|--|
| Data recall                                | Allows viewing of stored data  |
| Setup memory                               | Up to five setup configurations can be saved in internal memory, for later recall<br>Start up via file settings previously stored on SD card possible                                |
| Waveform recording *3                      |  |
| File format                                | Uncompressed waveform WAVE file  |
| Sampling frequency                         | Select 48 kHz, 24 kHz or 12 kHz  |
| Data length                                | Select 24 bit or 16 bit  |
| Outputs                                    |  |
| DC output                                  | Output DC signals using a frequency weighting characteristic selected by processing  |
| Output voltage                             | 2.5 V, 25 mV / dB at bar graph display full scale  |
| AC output                                  | Output AC signals using a frequency weighting characteristic selected by processing or by A, C, Z-weighting.   |
| Output voltage                             | 1 V (rms values) at bar graph display full scale   |
| Comparator output *2                       | Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).   |
| USB *3                                     | Allows USB to be connected to a computer and recognized as a removable disk<br>Allows USB to be controlled via communication commands  |
| RS-232C communication                      | Allows for RS-232C communication via use of a dedicated cable  |
| Data continuous output *2                  |  |
| Type of data                               | Instantaneous value $L_p$<br>Processed value $L_{eq}$ , $L_{max}$ , $L_{min}$ , $L_{peak}$   |
| Output interval                            | 100 ms   |
| Print out                                  | Printing of measurement results on dedicated printer DPU-414   |
| Power requirements                         | Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply  |
| Battery life (23 °C)                       | Alkaline battery LR6 (AA): 26 h NI-MH secondary battery: 25 h<br>At the maximum: * Depends on the setting  |
| AC adapter                                 | NC-98C (NC-34 for previous models cannot be used)  |
| External power voltage                     | 5 to 7 V (rated voltage: 6 V)  |
| Current consumption                        | Approximately 90 mA (normal operation, rated voltage)  |
| Ambient conditions                         | Temperature -10 to +50 °C<br>Humidity 10 to 90 % RH (non-condensing)   |
| Dustproof / water-resistant performance *4 | IP code: IP54 (except for microphone)<br>See precautions regarding waterproofing   |
| Dimensions, weight                         | Approx. 250 (H) x 76 (W) x 33 mm (D), approx. 400 g (with batteries)   |
| Supplied accessories                       | Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MB x 1 (NX-42EX preinstalled model only) |

## Options

|  | Product name | Product number   |
|--|--------------|------------------|
| Extended function program (Inst. on 512 MB SD card)  |              | NX-42EX          |
| Waveform recording program *2 (Inst. on 2 GB SD card)  |              | NX-42WR          |
| Octave, 1/3 octave real-time analysis program *2 (Inst. on 512 MB SD card)   |              | NX-42RT          |
| FFT analysis program *2 (Inst. on 512 MB SD card)  |              | NX-42FT          |
| Data management software for environmental measurement   |              | AS-60            |
| Data management software for environmental measurement (Includes the octave and 1/3 octave data management software) |              | AS-60RT          |
| Data management software for environmental measurement (Includes the vibration level data management software)       |              | AS-60VM          |
| Waveform analysis software   |              | CAT-WAVE         |
| SD Card 512 MB   |              | SD-512M          |
| SD Card 2 GB   |              | SD-2G            |
| AC adapter (100 V to 240 V)  |              | NC-98C           |
| Battery pack   |              | BP-21            |
| Microphone extension cables  |              | EC-04 (from 2 m) |
| BNC-Pin output code  |              | CC-24            |
| Comparator output cable  |              | CC-42C           |
| Printer  |              | DPU-414          |
| Printer cable  |              | CC-42P           |
| RS 232C serial I/O cable   |              | CC-42R           |
| USB cable  |              | —                |
| Sound calibrator   |              | NC-74            |
| All-weather windscreen   |              | WS-15            |
| Windscreen mounting adapter  |              | WS-15006         |
| Rain-protection windscreen   |              | WS-16            |
| Sound level meter tripod   |              | ST-80            |
| All-weather windscreen tripod  |              | ST-81            |

\*1 Use Rion fully guaranteed products. \*2 NX-42EX required (sold separately). \*3 NX-42WR required (sold separately).  
\*4 Protection against harmful dust and water splashing from any direction.

### Precautions regarding waterproofing

Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.  
To maintain the water and dust proof rating, internal packing replacement is required every two years (at cost).



**RION CO., LTD.**  
http://www.rion.co.jp/english/

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan  
Tel: +81-42-359-7888 Fax: +81-42-359-7442

# Calibration Certificate of Sound Level Meter



**中国赛宝实验室计量检测中心**  
(工业和信息化部电子第五研究所计量检测中心)  
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

## 校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB20001172-0003  
Certificate No.



|                      |                                      |                                  |                 |
|----------------------|--------------------------------------|----------------------------------|-----------------|
| 委托单位:<br>Client      | Castco Testing Centre Limited        |                                  |                 |
| 仪器名称:<br>Description | Sound Level Meter                    |                                  |                 |
| 型号规格:<br>Model/Type  | NL-52                                |                                  |                 |
| 制造商:<br>Manufacturer | RION                                 |                                  |                 |
| 机身号:<br>Serial No.   | 00976203                             |                                  |                 |
| 管理号:<br>Asset No.    | AAST-SLM-10                          |                                  |                 |
| 接收日期:<br>Rec. Date   | 2020-07-15                           | 校准日期:<br>Cal. Date               | 2020-07-20      |
| 签发日期:<br>App. Date   | 2020-07-20                           | 建议校准周期:<br>Reference Cal. Period | 12个月(12 Months) |
| 结论:<br>Conclusion    | 所校准项目合格(Passed at Calibration Items) |                                  |                 |

校准:  
Calibrated by

签发:  
Approved by

核验:  
Inspected by

印章:  
Stamp

赛宝计量检测中心  
广州总部地址: 广州天河区东苑庄路110号  
客服电话: 020-87237633 传真: 020-87236189  
投诉电话: 020-87236896  
邮件: cal@ceprei.com  
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre  
H.Q. Addr: No.110,Dongyuanzhuang Road,Tianhe District,Guangzhou  
Service Tel: 020-87237633 Fax: 020-87236189  
Complaint Tel: 020-87236896  
Email: cal@ceprei.com  
Website: www.ceprei-cal.com

证书编号(Certificate No.): 2HB20001172-0003

## 说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025的要求, 获得中国合格评定国家认可委员会(CNAS)认可, 认可证书号为: CNAS L13344。  
This laboratory quality management system meets the ISO/IEC 17025 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

2. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):  
\* JJG 188-2017 声级计检定规程: Sound pressure level: (20~130)dB; Frequency Weighting: (20~130)dB@(10 Hz~20kHz).  
\* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited).

3. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

| 名称<br>(Description) | 证书号/有效期/溯源单位<br>(Certificate No./Due Date/Traceability to) | 技术指标<br>(Specification)  |
|---------------------|--|--|
| 数字多用表               | 4GC19040017-0001/2020-11-03/赛宝                             | DCV: ±0.0035%; ACV: ±0.06%; DCI: ±0.05%;<br>; ACI: ±0.1%; R: ±0.01%; f: ±0.01% |
| 步进衰减器               | 4GC20000158-0012/2021-04-29/赛宝                             | ±3dB   |
| 标准传声器               | GFJGJL1001200310164/2021-02-26/航空304所                      | U=(0.05-0.12)dB (k=2)  |
| 声校准器                | 4GC19040146-0209/2020-12-29/赛宝                             | 1级   |
| 正弦信号发生器             | 4GC19040057-0001/2020-11-05/赛宝                             | f: ±1mHz; 失真度: <-70dB  |
| PULSE分析系统           | 4GC2000009-0001/2021-01-08/赛宝                              | 频率: U <sub>ref</sub> =0.001%, k=2; 电压: U <sub>ref</sub> =0.04%, k=2            |
| 前置放大器               | GFJGJL1001200310165/2021-02-26/航空304所                      | U=0.3dB (k=2)  |

4. 校准地点(The calibration place):  
广州市天河区东莞庄路110号401楼振动声学室

5. 环境条件(Environmental conditions):  
温度(Temperature): 24°C 相对湿度(Relative Humidity): 60%

6. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。  
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.

7. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用"。本证书报告的判定规则和结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。  
"P" and "Pass" in this certificate stand for "Low Limit: the measured value ≤ High Limit", "F" and "Fail" stand for "the measured value < Low Limit or the measured value > High Limit", "N/A" stands for "Not Applicable". The judgment rules and conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

8. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的建议校准周期。  
The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1. 本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2. 本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)



# Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB20001172-0003

### 1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中校准结果准确度的因素和缺陷。

There are no factor and defect that affect the calibration result accuracy of the certificate.

### 2 指示声级调整 (Indication SPL Calibration)

频率(Frequency)=1000Hz

| 传声器型号<br>(Microphone Type) | 传声器编号<br>(Microphone SN.) | 放大器型号<br>(Preamplifier Type) | 放大器编号<br>(Preamplifier SN.) |
|----------------------------|---------------------------|------------------------------|-----------------------------|
| UC-59                      | 12132                     | NH-25                        | 76320                       |

| 声校准器型号<br>(Calibrator Type) | 标准声压级<br>(Reference SPL)<br>(dB) | 校准前示值<br>(Before Calibration)<br>(dB) | 校准后示值<br>(After Calibration)<br>(dB) | U<br>(k=2)<br>(dB) |
|-----------------------------|----------------------------------|---------------------------------------|--------------------------------------|--------------------|
| 4231                        | 94.0                             | 94.0                                  | 94.0                                 | 0.2                |

### 3 级线性 (Level Linearity)

#### 3.1 参考级量程 (Reference Range)

频率(Frequency): 8000Hz

|   |         |
|---|---------|
| 起始点指示声级(Sound Level Indication of Start Point):                       | 90.0 dB |
| 起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):     | -0.2 dB |
| U (k=2)   | 0.6 dB  |
| 上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB): | -0.2 dB |
| U (k=2)   | 0.6 dB  |
| 起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):     | -0.2 dB |
| U (k=2)   | 0.6 dB  |
| 下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB): | -0.2 dB |
| U (k=2)   | 0.6 dB  |

#### 3.2 其它级量程 (Other Range)

频率(Frequency): 1000Hz

|   |         |
|---|---------|
| 起始点指示声级(Sound Level Indication of Start Point):                       | 90.0 dB |
| 起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):     | -0.2 dB |
| U (k=2)   | 0.4 dB  |
| 上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB): | -0.2 dB |
| U (k=2)   | 0.4 dB  |
| 起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):     | -0.2 dB |
| U (k=2)   | 0.4 dB  |
| 下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB): | -0.1 dB |
| U (k=2)   | 0.4 dB  |

数据页(Data sheet) ID: U071288

第 5 页,共 8 页  
Page of



证书编号(Certificate No.): 2HB20001172-0003

### 4 A计权特性(A-Weighting Characteristic)

| 频率<br>(Frequency)<br>(Hz) | 实测值<br>(Actual)<br>(dB) | 理论值<br>(Theoretical value)<br>(dB) | 误差<br>(Error)<br>(dB) | 允许误差<br>(Limit)<br>(dB) | 结论<br>(Pass/Fail)<br>(P/F) | U<br>(k=2)<br>(dB) |
|---------------------------|-------------------------|------------------------------------|-----------------------|-------------------------|----------------------------|--------------------|
| 20                        | -50.7                   | -50.5                              | -0.2                  | ±2.0                    | P                          | 0.5                |
| 25                        | -45.0                   | -44.7                              | -0.3                  | +2.0 ~ -1.5             | P                          | 0.5                |
| 31.5                      | -39.5                   | -39.4                              | -0.1                  | ±1.5                    | P                          | 0.5                |
| 40                        | -34.5                   | -34.6                              | 0.1                   | ±1.0                    | P                          | 0.5                |
| 50                        | -30.2                   | -30.2                              | 0.0                   | ±1.0                    | P                          | 0.5                |
| 63                        | -26.1                   | -26.2                              | 0.1                   | ±1.0                    | P                          | 0.5                |
| 80                        | -22.4                   | -22.5                              | 0.1                   | ±1.0                    | P                          | 0.5                |
| 100                       | -19.1                   | -19.1                              | 0.0                   | ±1.0                    | P                          | 0.5                |
| 125                       | -16.1                   | -16.1                              | 0.0                   | ±1.0                    | P                          | 0.5                |
| 160                       | -13.2                   | -13.4                              | 0.2                   | ±1.0                    | P                          | 0.5                |
| 200                       | -10.8                   | -10.9                              | 0.1                   | ±1.0                    | P                          | 0.5                |
| 250                       | -8.6                    | -8.6                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 315                       | -6.6                    | -6.6                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 400                       | -4.7                    | -4.8                               | 0.1                   | ±1.0                    | P                          | 0.4                |
| 500                       | -3.2                    | -3.2                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 630                       | -1.8                    | -1.9                               | 0.1                   | ±1.0                    | P                          | 0.4                |
| 800                       | -0.8                    | -0.8                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 1000(Ref)                 | 0.0                     | 0.0                                | 0.0                   | ±0.7                    | P                          | 0.4                |
| 1250                      | 0.6                     | 0.6                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 1600                      | 0.9                     | 1.0                                | -0.1                  | ±1.0                    | P                          | 0.6                |
| 2000                      | 1.1                     | 1.2                                | -0.1                  | ±1.0                    | P                          | 0.6                |
| 2500                      | 1.1                     | 1.3                                | -0.2                  | ±1.0                    | P                          | 0.6                |
| 3150                      | 1.0                     | 1.2                                | -0.2                  | ±1.0                    | P                          | 0.6                |
| 4000                      | 0.7                     | 1.0                                | -0.3                  | ±1.0                    | P                          | 0.6                |
| 5000                      | 0.3                     | 0.5                                | -0.2                  | ±1.5                    | P                          | 0.6                |
| 6300                      | -0.2                    | -0.1                               | -0.1                  | +1.5 ~ -2.0             | P                          | 0.6                |
| 8000                      | -1.1                    | -1.1                               | 0.0                   | +1.5 ~ -2.5             | P                          | 0.6                |
| 10000                     | -2.3                    | -2.5                               | 0.2                   | +2.0 ~ -3.0             | P                          | 0.6                |
| 12500                     | -4.3                    | -4.3                               | 0.0                   | +2.0 ~ -5.0             | P                          | 1.0                |
| 16000                     | -8.5                    | -6.6                               | -1.9                  | +2.5 ~ -16.0            | P                          | 1.0                |
| 20000                     | -18.4                   | -9.3                               | -9.1                  | +3.0 ~ -∞               | P                          | 1.0                |

第 6 页,共 8 页  
Page of

数据页(Data sheet) ID: U071288



## Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB20001172-0003

### 5 C计权特性(C-Weighting Characteristic)

| 频率<br>(Frequency)<br>(Hz) | 实测值<br>(Actual)<br>(dB) | 理论值<br>(Theoretical value)<br>(dB) | 误差<br>(Error)<br>(dB) | 允许误差<br>(Limit)<br>(dB) | 结论<br>(Pass/Fail)<br>(P/F) | U<br>(k=2)<br>(dB) |
|---------------------------|-------------------------|------------------------------------|-----------------------|-------------------------|----------------------------|--------------------|
| 20                        | -6.6                    | -6.2                               | -0.4                  | ±2.0                    | P                          | 0.5                |
| 25                        | -4.6                    | -4.4                               | -0.2                  | +2.0 ~ -1.5             | P                          | 0.5                |
| 31.5                      | -3.1                    | -3.0                               | -0.1                  | ±1.5                    | P                          | 0.5                |
| 40                        | -1.9                    | -2.0                               | 0.1                   | ±1.0                    | P                          | 0.5                |
| 50                        | -1.3                    | -1.3                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 63                        | -0.8                    | -0.8                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 80                        | -0.4                    | -0.5                               | 0.1                   | ±1.0                    | P                          | 0.5                |
| 100                       | -0.2                    | -0.3                               | 0.1                   | ±1.0                    | P                          | 0.5                |
| 125                       | -0.1                    | -0.2                               | 0.1                   | ±1.0                    | P                          | 0.5                |
| 160                       | 0.0                     | -0.1                               | 0.1                   | ±1.0                    | P                          | 0.5                |
| 200                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.5                |
| 250                       | 0.1                     | 0.0                                | 0.1                   | ±1.0                    | P                          | 0.5                |
| 315                       | 0.1                     | 0.0                                | 0.1                   | ±1.0                    | P                          | 0.4                |
| 400                       | 0.1                     | 0.0                                | 0.1                   | ±1.0                    | P                          | 0.4                |
| 500                       | 0.1                     | 0.0                                | 0.1                   | ±1.0                    | P                          | 0.4                |
| 630                       | 0.1                     | 0.0                                | 0.1                   | ±1.0                    | P                          | 0.4                |
| 800                       | 0.1                     | 0.0                                | 0.1                   | ±1.0                    | P                          | 0.4                |
| 1000(Ref.)                | 0.0                     | 0.0                                | 0.0                   | ±0.7                    | P                          | 0.4                |
| 1250                      | -0.1                    | 0.0                                | -0.1                  | ±1.0                    | P                          | 0.6                |
| 1600                      | -0.2                    | -0.1                               | -0.1                  | ±1.0                    | P                          | 0.6                |
| 2000                      | -0.3                    | -0.2                               | -0.1                  | ±1.0                    | P                          | 0.6                |
| 2500                      | -0.5                    | -0.3                               | -0.2                  | ±1.0                    | P                          | 0.6                |
| 3150                      | -0.7                    | -0.5                               | -0.2                  | ±1.0                    | P                          | 0.6                |
| 4000                      | -1.1                    | -0.8                               | -0.3                  | ±1.0                    | P                          | 0.6                |
| 5000                      | -1.5                    | -1.3                               | -0.2                  | ±1.5                    | P                          | 0.6                |
| 6300                      | -2.1                    | -2.0                               | -0.1                  | +1.5 ~ -2.0             | P                          | 0.6                |
| 8000                      | -3.0                    | -3.0                               | 0.0                   | +1.5 ~ -2.5             | P                          | 0.6                |
| 10000                     | -4.2                    | -4.4                               | 0.2                   | +2.0 ~ -3.0             | P                          | 0.6                |
| 12500                     | -6.2                    | -6.2                               | 0.0                   | +2.0 ~ -5.0             | P                          | 1.0                |
| 16000                     | -10.4                   | -8.5                               | -1.9                  | +2.5 ~ -16.0            | P                          | 1.0                |
| 20000                     | -20.4                   | -11.2                              | -9.2                  | +3.0 ~ ∞                | P                          | 1.0                |

数据页(Data sheet) ID: U071288

第 7 页,共 8 页  
Page of



证书编号(Certificate No.): 2HB20001172-0003

### 6 自生噪声 (Autogenous noise)

| 计权<br>(Weighting) | 实测值<br>(Actual)<br>(dB) |
|-------------------|-------------------------|
| A                 | 24.0                    |

以下空白/No data hereafter



第 8 页,共 8 页  
Page of

数据页(Data sheet) ID: U071288

# Calibration Certificate of Sound Level Meter



**中国赛宝实验室计量检测中心**  
(工业和信息化部电子第五研究所计量检测中心)  
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

## 校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB20001172-0004  
Certificate No.



|                      |                                      |  |
|----------------------|--------------------------------------|--|
| 委托单位:<br>Client      | Castco Testing Centre Limited        |  |
| 仪器名称:<br>Description | Sound Level Meter                    |  |
| 型号规格:<br>Model/Type  | NL-52                                |  |
| 制造商:<br>Manufacturer | RION                                 |  |
| 机身号:<br>Serial No.   | 00976204                             |  |
| 管理号:<br>Asset No.    | AAST-SLM-11                          |  |
| 接收日期:<br>Rec. Date   | 2020-07-15                           | 校准日期:<br>Cal. Date 2020-07-20                    |
| 签发日期:<br>App. Date   | 2020-07-20                           | 建议校准周期:<br>Reference Cal. Period 12个月(12 Months) |
| 结论:<br>Conclusion    | 所校准项目合格(Passed at Calibration Items) |  |

校准:  
Calibrated by

签发:  
Approved by

核验:  
Inspected by

印章:  
Stamp

赛宝计量检测中心  
广州总部地址: 广州天河区东莞庄路110号  
客服电话: 020-87237633 传真: 020-87236189  
投诉电话: 020-87236896  
邮件: cal@ceprei.com  
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre  
H.Q. Addr: No.110,Dongguanhuang Road,Tianhe District,Guangzhou  
Service Tel: 020-87237633 Fax: 020-87236189  
Complaint Tel: 020-87236896  
Email: cal@ceprei.com  
Website: www.ceprei-cal.com

证书编号(Certificate No.): 2HB20001172-0004

## 说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025的要求, 获得中国合格评定国家认可委员会(CNAS)认可, 认可证书号为: CNAS L13344。  
This laboratory quality management system meets the ISO/IEC 17025 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.
2. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):  
\* JJG 188-2017 声级计检定规程: Sound pressure level: (20~130)dB; Frequency Weighting: (20~130)dB@(10 Hz~20kHz).  
\* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited).

3. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

| 名称<br>(Description) | 证书号/有效期/溯源单位<br>(Certificate No./Due Date/Traceability to) | 技术指标<br>(Specification)   |
|---------------------|--|---|
| 数字多用表               | 4GC19040017-0001/2020-11-03/赛宝                             | DCV: ±0.0035%; ACV: ±0.06%; DCI: ±0.05%; ACI: ±0.1%; R: ±0.01%; f: ±0.01% |
| 步进衰减器               | 4GC20000158-0012/2021-04-29/赛宝                             | ±3dB  |
| 标准传声器               | GFJGJL1001200310164/2021-02-26/航空304所                      | U=(0.05-0.12)dB (k=2)   |
| 声校准器                | 4GC19040146-0209/2020-12-29/赛宝                             | 1级  |
| 正弦信号发生器             | 4GC19040057-0001/2020-11-05/赛宝                             | f: ±1mHz; 失真度: <-70dB   |
| PULSE分析系统           | 4GC20000009-0001/2021-01-08/赛宝                             | 频率: U <sub>ref</sub> =0.001%, k=2; 电压: U <sub>ref</sub> =0.04%, k=2       |
| 前置放大器               | GFJGJL1001200310165/2021-02-26/航空304所                      | U=0.3dB (k=2)   |

4. 校准地点(The calibration place):  
广州市天河区东莞庄路110号401楼振动声学室
5. 环境条件(Environmental conditions):  
温度(Temperature): 24°C 相对湿度(Relative Humidity): 60%
6. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。  
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.
7. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用"。本证书报告的判定规则和结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。  
"P" and "Pass" in this certificate stand for "Low Limit≤the measured value ≤High Limit", "F" and "Fail" stand for "the measured value < Low Limit or the measured value > High Limit", "N/A" stands for "Not Applicable". The judgment rules and conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.
8. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的建议校准周期。  
The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1. 本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2. 本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)



# Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB20001172-0004

### 1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中校准结果准确度的因素和缺陷。

There are no factor and defect that affect the calibration result accuracy of the certificate.

### 2 指示声级调整 (Indication SPL Calibration)

频率(Frequency)=1000Hz

| 传声器型号<br>(Microphone Type) | 传声器编号<br>(Microphone SN.) | 放大器型号<br>(Preamplifier Type) | 放大器编号<br>(Preamplifier SN.) |
|----------------------------|---------------------------|------------------------------|-----------------------------|
| UC-59                      | 12133                     | NH-25                        | 76321                       |

| 声校准器型号<br>(Calibrator Type) | 标准声压级<br>(Reference SPL)<br>(dB) | 校准前示值<br>(Before Calibration)<br>(dB) | 校准后示值<br>(After Calibration)<br>(dB) | U<br>(k=2)<br>(dB) |
|-----------------------------|----------------------------------|---------------------------------------|--------------------------------------|--------------------|
| 4231                        | 94.0                             | 93.9                                  | 94.0                                 | 0.2                |

### 3 级线性 (Level Linearity)

#### 3.1 参考级量程 (Reference Range)

频率(Frequency): 8000Hz

|   |         |
|---|---------|
| 起始点指示声级(Sound Level Indication of Start Point):                       | 90.0 dB |
| 起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):     | -0.1 dB |
| U (k=2)   | 0.6 dB  |
| 上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB): | -0.1 dB |
| U (k=2)   | 0.6 dB  |
| 起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):     | -0.1 dB |
| U (k=2)   | 0.6 dB  |
| 下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB): | -0.1 dB |
| U (k=2)   | 0.6 dB  |

#### 3.2 其它级量程 (Other Range)

频率(Frequency): 1000Hz

|   |         |
|---|---------|
| 起始点指示声级(Sound Level Indication of Start Point):                       | 90.0 dB |
| 起始点以上间隔10dB点的最大误差(Maximum Error for each 10dB above Start Point):     | -0.2 dB |
| U (k=2)   | 0.4 dB  |
| 上限以下5dB间隔1dB点的最大误差(Maximum Error for each 1dB below Upper Limit 5dB): | -0.2 dB |
| U (k=2)   | 0.4 dB  |
| 起始点以下间隔10dB点的最大误差(Maximum Error for each 10dB below Start Point):     | -0.1 dB |
| U (k=2)   | 0.4 dB  |
| 下限以上5dB间隔1dB点的最大误差(Maximum Error for each 1dB above Lower Limit 5dB): | -0.1 dB |
| U (k=2)   | 0.4 dB  |

数据页(Data sheet) ID: U071288

第 5 页,共 8 页  
Page of



证书编号(Certificate No.): 2HB20001172-0004

### 4 A计权特性(A-Weighting Characteristic)

| 频率<br>(Frequency)<br>(Hz) | 实测值<br>(Actual)<br>(dB) | 理论值<br>(Theoretical value)<br>(dB) | 误差<br>(Error)<br>(dB) | 允许误差<br>(Limit)<br>(dB) | 结论<br>(Pass/Fail)<br>(P/F) | U<br>(k=2)<br>(dB) |
|---------------------------|-------------------------|------------------------------------|-----------------------|-------------------------|----------------------------|--------------------|
| 20                        | -50.6                   | -50.5                              | -0.1                  | ±2.0                    | P                          | 0.5                |
| 25                        | -44.9                   | -44.7                              | -0.2                  | +2.0 ~ -1.5             | P                          | 0.5                |
| 31.5                      | -39.8                   | -39.4                              | -0.4                  | ±1.5                    | P                          | 0.5                |
| 40                        | -34.6                   | -34.6                              | 0.0                   | ±1.0                    | P                          | 0.5                |
| 50                        | -30.4                   | -30.2                              | -0.2                  | ±1.0                    | P                          | 0.5                |
| 63                        | -26.3                   | -26.2                              | -0.1                  | ±1.0                    | P                          | 0.5                |
| 80                        | -22.4                   | -22.5                              | 0.1                   | ±1.0                    | P                          | 0.5                |
| 100                       | -19.1                   | -19.1                              | 0.0                   | ±1.0                    | P                          | 0.5                |
| 125                       | -16.2                   | -16.1                              | -0.1                  | ±1.0                    | P                          | 0.5                |
| 160                       | -13.2                   | -13.4                              | 0.2                   | ±1.0                    | P                          | 0.5                |
| 200                       | -10.8                   | -10.9                              | 0.1                   | ±1.0                    | P                          | 0.5                |
| 250                       | -8.7                    | -8.6                               | -0.1                  | ±1.0                    | P                          | 0.5                |
| 315                       | -6.7                    | -6.6                               | -0.1                  | ±1.0                    | P                          | 0.4                |
| 400                       | -4.8                    | -4.8                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 500                       | -3.2                    | -3.2                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 630                       | -1.9                    | -1.9                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 800                       | -0.8                    | -0.8                               | 0.0                   | ±1.0                    | P                          | 0.4                |
| 1000(Ref)                 | 0.0                     | 0.0                                | 0.0                   | ±0.7                    | P                          | 0.4                |
| 1250                      | 0.6                     | 0.6                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 1600                      | 1.0                     | 1.0                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 2000                      | 1.2                     | 1.2                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 2500                      | 1.3                     | 1.3                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 3150                      | 1.2                     | 1.2                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 4000                      | 1.0                     | 1.0                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 5000                      | 0.6                     | 0.5                                | 0.1                   | ±1.5                    | P                          | 0.6                |
| 6300                      | 0.0                     | -0.1                               | 0.1                   | +1.5 ~ -2.0             | P                          | 0.6                |
| 8000                      | -1.0                    | -1.1                               | 0.1                   | +1.5 ~ -2.5             | P                          | 0.6                |
| 10000                     | -2.4                    | -2.5                               | 0.1                   | +2.0 ~ -3.0             | P                          | 0.6                |
| 12500                     | -4.4                    | -4.3                               | -0.1                  | +2.0 ~ -5.0             | P                          | 1.0                |
| 16000                     | -7.9                    | -6.6                               | -1.3                  | +2.5 ~ -16.0            | P                          | 1.0                |
| 20000                     | -14.2                   | -9.3                               | -4.9                  | +3.0 ~ -∞               | P                          | 1.0                |

第 6 页,共 8 页  
Page of

数据页(Data sheet) ID: U071288

## Calibration Certificate of Sound Level Meter



证书编号(Certificate No.): 2HB20001172-0004

### 5 C计权特性(C-Weighting Characteristic)

| 频率<br>(Frequency)<br>(Hz) | 实测值<br>(Actual)<br>(dB) | 理论值<br>(Theoretical value)<br>(dB) | 误差<br>(Error)<br>(dB) | 允许误差<br>(Limit)<br>(dB) | 结论<br>(Pass/Fail)<br>(P/F) | U<br>(k=2)<br>(dB) |
|---------------------------|-------------------------|------------------------------------|-----------------------|-------------------------|----------------------------|--------------------|
| 20                        | -6.4                    | -6.2                               | -0.2                  | ±2.0                    | P                          | 0.5                |
| 25                        | -4.5                    | -4.4                               | -0.1                  | +2.0 ~ -1.5             | P                          | 0.5                |
| 31.5                      | -3.1                    | -3.0                               | -0.1                  | ±1.5                    | P                          | 0.5                |
| 40                        | -2.1                    | -2.0                               | -0.1                  | ±1.0                    | P                          | 0.5                |
| 50                        | -1.3                    | -1.3                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 63                        | -0.9                    | -0.8                               | -0.1                  | ±1.0                    | P                          | 0.5                |
| 80                        | -0.5                    | -0.5                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 100                       | -0.3                    | -0.3                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 125                       | -0.1                    | -0.2                               | 0.1                   | ±1.0                    | P                          | 0.5                |
| 160                       | -0.1                    | -0.1                               | 0.0                   | ±1.0                    | P                          | 0.5                |
| 200                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.5                |
| 250                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.5                |
| 315                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.4                |
| 400                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.4                |
| 500                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.4                |
| 630                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.4                |
| 800                       | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.4                |
| 1000(Ref.)                | 0.0                     | 0.0                                | 0.0                   | ±0.7                    | P                          | 0.4                |
| 1250                      | 0.0                     | 0.0                                | 0.0                   | ±1.0                    | P                          | 0.6                |
| 1600                      | -0.1                    | -0.1                               | 0.0                   | ±1.0                    | P                          | 0.6                |
| 2000                      | -0.1                    | -0.2                               | 0.1                   | ±1.0                    | P                          | 0.6                |
| 2500                      | -0.3                    | -0.3                               | 0.0                   | ±1.0                    | P                          | 0.6                |
| 3150                      | -0.5                    | -0.5                               | 0.0                   | ±1.0                    | P                          | 0.6                |
| 4000                      | -0.8                    | -0.8                               | 0.0                   | ±1.0                    | P                          | 0.6                |
| 5000                      | -1.2                    | -1.3                               | 0.1                   | ±1.5                    | P                          | 0.6                |
| 6300                      | -1.9                    | -2.0                               | 0.1                   | +1.5 ~ -2.0             | P                          | 0.6                |
| 8000                      | -2.9                    | -3.0                               | 0.1                   | +1.5 ~ -2.5             | P                          | 0.6                |
| 10000                     | -4.3                    | -4.4                               | 0.1                   | +2.0 ~ -3.0             | P                          | 0.6                |
| 12500                     | -6.4                    | -6.2                               | -0.2                  | +2.0 ~ -5.0             | P                          | 1.0                |
| 16000                     | -9.9                    | -8.5                               | -1.4                  | +2.5 ~ -16.0            | P                          | 1.0                |
| 20000                     | -16.2                   | -11.2                              | -5.0                  | +3.0 ~ ∞                | P                          | 1.0                |

数据页(Data sheet) ID: U071288

第 7 页,共 8 页  
Page of



证书编号(Certificate No.): 2HB20001172-0004

### 6 自生噪声 (Autogenous noise)

| 计权<br>(Weighting) | 实测值<br>(Actual)<br>(dB) |
|-------------------|-------------------------|
| A                 | 23.8                    |

以下空白/No data hereafter



第 8 页,共 8 页  
Page of

数据页(Data sheet) ID: U071288

## Catalogue of Sound Calibrator

For microphone calibration **NC-74**

### How to use

Carefully insert the microphone all the way into the coupler of the NC-74. Then simply turn the power on to apply a constant sound pressure level to the diaphragm of the microphone.

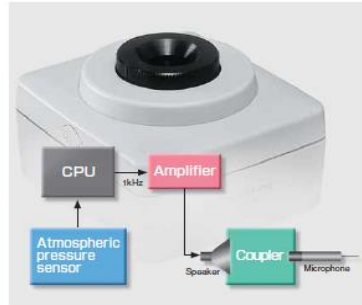


Usage example (NL series)

The performance of the NC-74 is suitable for calibration of high-precision sound level meters. The unit is compact, lightweight, and easy to use. Two IEC LR6 (size AA) alkaline batteries will power the unit for more than 30 hours of continuous use at room temperature.

### Atmospheric pressure compensation principle

The NC-74 incorporates a sensor that detects atmospheric pressure. Based on the information provided by the sensor, the CPU controls the signal amplitude. This allows the unit to always provide the correct output for achieving constant sound pressure level, regardless of fluctuations in atmospheric pressure.



### Using the 1/2-inch adapter

To allow calibration of sound level meter microphones with 1 inch diameter, the 1/2-inch microphone adapter can be removed. 1/2-inch microphones are calibrated with the adapter in place.



### Specifications

|                                |   |  |
|--------------------------------|---|--|
| Applicable standards           | IEC 60942:2003 Class 1<br>JIS C 1616:2004 Class 1   |  |
| Suitable microphones           | 1-inch microphones  | IEC 61094-1 Type L81P<br>UC-27<br>UC-28<br>UC-34   |
|                                | 1/2-inch microphones  | IEC 61094-1 Type L82aP<br>UC-69<br>UC-67<br>UC-62A<br>UC-60<br>UC-26<br>UC-30<br>UC-31<br>UC-33P |
| Nominal sound pressure level   | 94 dB   |  |
| Sound pressure level tolerance | ±1.3 dB   |  |
| Nominal frequency              | 1 kHz   |  |
| Frequency tolerance            | ±1.0 % or less  |  |
| Power requirements             | IEC LR6 (size AA) alkaline battery × 2  |  |
| Dimensions, mass               | Approx. 49 (H) × 80 (W) × 74 (D) mm<br>Approx. 200 g (including batteries)                      |  |
| Supplied accessories           | Case × 1<br>IEC LR6 (size AA) alkaline battery × 2<br>1/2-inch microphone adapter NC-74-002 × 1 |  |



ISO 14001 RION CO., LTD.  
ISO 9001 RION CO., LTD.

\* Specification subject to change without notice.

**RION CO., LTD.**

3-20-41, Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan  
Tel: +81-42-359-7888 Fax: +81-42-359-7442  
http://www.rion.co.jp/english/

Distributed by:



Printed in Japan: 0510-1 0807.P-MP

## Calibration Certificate of Sound Calibrator



中国赛宝实验室计量检测中心  
(工业和信息化部电子第五研究所计量检测中心)  
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

## 校准证书 CALIBRATION CERTIFICATE

证书编号: ZHB20001561-0002

Certificate No.



委托单位:  
Client

Custoo Testing Centre Limited

仪器名称:  
Description

Sound Level Calibrator

型号规格:  
Model/Type

NC-74

制造商:  
Manufacturer

RION

机身号:  
Serial No.

34678556

管理号:  
Asset No.

AAST-SLC-06

接收日期:  
Rec. Date

2020-09-08

校准日期:  
Cal. Date

2020-09-12

签发日期:  
App. Date

2020-09-12

建议校准周期:  
Reference Cal. Period

12个月(12 months)

结论:  
Conclusion

所校准项目合格(Passed at Calibration Items)

CEPREI

校准:  
Calibrated by

陈卓辉

核验:  
Inspected by

钟灏

签发:  
Approved by

陈木力

印章:  
Stamp

赛宝计量检测中心  
广州总部地址: 广州天河区东圃路119号  
客服电话: 020-87237633 传真: 020-87236189  
投诉电话: 020-87238886  
邮件: cal@ceppei.com  
网站: www.ceppei-cal.com

CEPREI Calibration and Testing Centre  
ILAC Add: No.119,Dongganshuang Road, Tianhe District, Guangzhou  
Service Tel: 020-87237633 Fax: 020-87236189  
Complain Tel: 020-87238886  
Email: cal@ceppei.com  
Website: www.ceppei-cal.com

第 1 页,共 5 页  
Page of



# Calibration Certificate of Sound Calibrator

证书编号(Certificate No.): 2019120011561-0002

## 说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025:2017标准的要求，获得中国合格评定国家认可委员会（CNAS）认可，认可证书号为：CNAS L13344。  
This laboratory quality management system meets the ISO/IEC 17025:2017 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

2. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):  
\* JJG 176-2005 声校准器检定规程; Sound Pressure Level: 94dB, 104dB, 114dB, 124dB(63Hz~8kHz); 94dB, 104dB, 114dB,(31.5Hz~16kHz); Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0~10%, (20Hz~20 kHz).

4. 请仔细阅读本CNAS网站中证书编号为L13344的证书附件，超出范围的内容未被认可。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited.)

3. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

| 名称<br>(Description) | 证书号/有效期至/溯源单位<br>(Certificate No./Due Date/Traceability to) | 技术指标<br>(Specification)  | 测量范围<br>(Measuring Range) |
|---------------------|---|--|---------------------------|
| PULSE分析系统           | LSys2020-02491/2021-04-26/中国计量院                             | 频率: $f_{\text{up}}=0.001\%$ , $f_{\text{d}}=2$ ; 电压: $U_{\text{up}}=0.04\%$ , $U_{\text{d}}=2$ | 频率: 0.001Hz~51.2kHz       |
| 标准扬声器               | GFJGIL1001200310164/2021-02-26/航空304所                       | $U=0.05-0.12\text{dB}$ (k=2)   | 20Hz~20kHz                |
| 前置放大器               | GFJGIL1001200310165/2021-02-26/航空304所                       | $U=0.3\text{dB}$ (k=2)   | 10~20000 Hz               |

4. 校准地点(The calibration place):  
广州市天河区东莞庄路110号401楼声学实验室

5. 环境条件(Environmental conditions):  
温度(Temperature): 24°C 相对湿度(Relative Humidity): 60%

6. 本证书中给出的扩展不确定度依据JJF 1059.1-2012《测量不确定度的评定与表示》评定，由合成标准不确定度乘以包含概率约为95%时对应的包含因子k得到。  
The extended uncertainty given in this certificate is evaluated according to JJF 1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor k which corresponding to the coverage probability about 95%.

7. 证书中“P”、“合格”代表“测量结果在允许范围内”，“F”、“不合格”代表“测量结果不在允许范围内”，“NA”代表“不适用”。本证书报告的判定规则和结论仅供参考，使用人员应结合实际测量的要求合理使用，如考虑测量结果测量不确定度的影响等。  
“P” and “Pass” in this certificate stand for “Low Limit: the measured value < High Limit”, “F” and “Fail” stand for “the measured value > Low Limit or the measured value > High Limit”, “NA” stands for “Not Applicable”. The judgment rules and conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the aspect of measurement uncertainty, etc.

8. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议，供委托方参考。委托方可以根据实际使用情况自行决定样品的建议校准周期。  
The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1. 本证书未经本机构书面授权，不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2. 本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)

第 3 页, 共 5 页  
Page of



证书编号(Certificate No.): 2019120011561-0002

1. 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中校准结果准确性的因素和缺陷。

There are no factor and defect that affect the calibration result accuracy of the certificate.

2. 声压级 (Sound Pressure Level)

| 规定声压级<br>(Prescribed SPL) | 测量声压级<br>(Measured SPL) | 声压级差的绝对值<br>(Absolute value of SPL) | 允许范围<br>(Limit) | 结论<br>(Pass/Fail) | U<br>(dB) |
|---------------------------|-------------------------|-------------------------------------|-----------------|-------------------|-----------|
| 94                        | 94.05                   | 0.05                                | ≤0.40           | P                 | 0.10      |

3. 频率 (Frequency)

| 规定频率<br>(Prescribed Fre.) | 测量频率<br>(Measured Fre.) | 频率误差的绝对值<br>(Absolute value of Fre.) | 允许范围<br>(Limit) | 结论<br>(Pass/Fail) | U<br>(%) |
|---------------------------|-------------------------|--------------------------------------|-----------------|-------------------|----------|
| 1000                      | 1003.7                  | 0.37                                 | ≤1.00           | P                 | 0.10     |

4. 总失真 (Distortion)

| 规定声压级<br>(Prescribed SPL) | 规定频率<br>(Measured Fre.) | 总失真<br>(Distortion) | 允许范围<br>(Limit) | 结论<br>(Pass/Fail) | U<br>(%) |
|---------------------------|-------------------------|---------------------|-----------------|-------------------|----------|
| 94                        | 1000                    | 0.96                | ≤3.00           | P                 | 5.0      |

CEPREI

CEPREI

数据页(Data sheet) ID: U013393

第 5 页, 共 5 页  
Page of

# Calibration Certificate of Sound Calibrator



中国赛宝实验室计量检测中心  
(工业和信息化部电子第五研究所计量检测中心)  
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

## 校准证书 CALIBRATION CERTIFICATE

证书编号: 2HB20001172-0006  
Certificate No.



|                      |                                      |                                  |                 |
|----------------------|--------------------------------------|----------------------------------|-----------------|
| 委托单位:<br>Client      | Castco Testing Centre Limited        |                                  |                 |
| 仪器名称:<br>Description | Sound Level Calibrator               |                                  |                 |
| 型号规格:<br>Model/Type  | NC-74                                |                                  |                 |
| 制造商:<br>Manufacturer | RION                                 |                                  |                 |
| 机身号:<br>Serial No.   | 34178129                             |                                  |                 |
| 管理号:<br>Asset No.    | AAST-SLC-05                          |                                  |                 |
| 接收日期:<br>Rec. Date   | 2020-07-15                           | 校准日期:<br>Cal. Date               | 2020-07-20      |
| 签发日期:<br>App. Date   | 2020-07-21                           | 建议校准周期:<br>Reference Cal. Period | 12个月(12 Months) |
| 结论:<br>Conclusion    | 所校准项目合格(Passed at Calibration Items) |                                  |                 |

校准:  
Calibrated by

签发:  
Approved by

核验:  
Inspected by

印章:  
Stamp

赛宝计量检测中心  
广州总部地址: 广州天河区东莞庄路110号  
客服电话: 020-87237633 传真: 020-87236189  
投诉电话: 020-87236896  
邮箱: cal@ceprei.com  
网址: www.ceprei-cal.com

CEPREI Calibration and Testing Centre  
H.Q. Addr: No.110,Dongguan Zhuang Road,Tianhe District,Guangzhou  
Service Tel: 020-87237633 Fax: 020-87236189  
Complaint Tel: 020-87236896  
Email: cal@ceprei.com  
Website: www.ceprei-cal.com

证书编号(Certificate No.): 2HB20001172-0006

## 说明 DIRECTIONS

1. 本机构质量管理体系符合ISO/IEC 17025的要求, 获得中国合格评定国家认可委员会(CNAS)认可, 认可证书号为: CNAS L13344。  
This laboratory quality management system meets the ISO/IEC 17025 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L13344.

2. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes):  
\* JJG 176-2005 声校准器检定规程: Sound Pressure Level: 94dB, 104dB, 114dB, 124dB(63Hz~8kHz); 94dB、104dB、114dB(31.5Hz~16kHz); Frequency: 31.5Hz~16kHz; Harmonic Distortion: 0~10%, (20Hz~20 kHz).  
\* 详细内容请查看CNAS网站中注册编号为L13344的证书附件, 超出范围的内容未被认可。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited).

3. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

| 名称<br>(Description) | 证书号/有效期/溯源单位<br>(Certificate No./Due Date/Traceability to) | 技术指标<br>(Specification)                           |
|---------------------|--|---|
| 标准传声器<br>304所       | GFJGJL1001200310164/2021-02-26/航空                          | $U=(0.05-0.12)dB (k=2)$                           |
| 前置放大器<br>304所       | GFJGJL1001200310165/2021-02-26/航空                          | $U=0.3dB (k=2)$                                   |
| PULSE分析系统           | 4GC20000024-0064/2021-02-12/赛宝                             | 频率: $U_{up}=0.001\%,k=2$ ;电压: $U_{up}=0.04\%,k=2$ |

4. 校准地点(The calibration place):  
广州市天河区东莞庄路110号401楼振动声学室

5. 环境条件(Environmental conditions):  
温度(Temperature): 24°C 相对湿度(Relative Humidity): 60%

6. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度的评定与表示》评定, 由合成标准不确定度乘以包含概率约为95%时对应的包含因子 $k$ 得到。  
The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor  $k$  which corresponding to the coverage probability about 95%.

7. 证书中"P"、"合格"代表"测量结果在允许范围内", "F"、"不合格"代表"测量结果不在允许范围内", "N/A"代表"不适用"。本证书报告的判定规则和结论仅供参考, 使用人员应结合实际测量的要求合理使用, 如考虑测量结果测量不确定度的影响等。  
"P" and "Pass" in this certificate stand for "Low Limit: the measured value  $\leq$  High Limit", "F" and "Fail" stand for "the measured value  $<$  Low Limit or the measured value  $>$  High Limit", "N/A" stands for "Not Applicable". The judgment rules and conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

8. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议, 供委托方参考。委托方可以根据实际使用情况自行决定样品的建议校准周期。  
The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1. 本证书未经本机构书面授权, 不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2. 本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)



# Calibration Certificate of Sound Calibrator



证书编号(Certificate No.): 2HB20001172-0006

## 1 外观与工作正常性检查 (Appearance and Function Check)

无影响证书中校准结果准确度的因素和缺陷。

There are no factor and defect that affect the calibration result accuracy of the certificate.

## 2 声压级 (Sound Pressure Level)

| 规定声压级<br>(Prescribed SPL) | 测量声压级<br>(Measured SPL) | 声压级差的绝对值<br>(Absolute value of SPL) | 允许范围<br>(Limit) | 结论<br>(Pass/Fail) | $U$<br>(k=2) |
|---------------------------|-------------------------|-------------------------------------|-----------------|-------------------|--------------|
| (dB)                      | (dB)                    | (dB)                                | (dB)            |                   | (dB)         |
| 94                        | 94.38                   | 0.38                                | ≤0.40           | P                 | 0.10         |

## 3 频率 (Frequency)

| 规定频率<br>(Prescribed Fre.) | 测量频率<br>(Measured Fre.) | 频率误差的绝对值<br>(Absolute value of Fre.) | 允许范围<br>(Limit) | 结论<br>(Pass/Fail) | $U_{rel}$<br>(k=2) |
|---------------------------|-------------------------|--------------------------------------|-----------------|-------------------|--------------------|
| (Hz)                      | (Hz)                    | (%)                                  | (%)             |                   | (%)                |
| 1000                      | 1002.0                  | 0.20                                 | ≤1.00           | P                 | 0.10               |

## 4 总失真 (Distortion)

| 规定声压级<br>(Prescribed SPL) | 规定频率<br>(Measured Fre.) | 总失真<br>(Distortion) | 允许范围<br>(Limit) | 结论<br>(Pass/Fail) | $U_{rel}$<br>(k=2) |
|---------------------------|-------------------------|---------------------|-----------------|-------------------|--------------------|
| (dB)                      | (Hz)                    | (%)                 | (%)             |                   | (%)                |
| 94                        | 1000                    | 2.48                | ≤3.00           | P                 | 5.0                |

以下空白/No data hereafter

CEPREI

数据页(Data sheet) ID: U013393

第 5 页,共 5 页  
Page of

# Catalogue of Air Flow Meter (TSI TA440)

## SPECIFICATIONS

### THERMAL ANEMOMETERS MODELS TA410, TA430 AND TA440

#### Velocity

|  |  |
|--|--|
| Range (TA410)                          | 0 to 20 m/s (0 to 4,000 ft/min)                                |
| Range (TA430, TA440)                   | 0 to 30 m/s (0 to 6,000 ft/min)                                |
| Accuracy (TA410) <sup>1,2</sup>        | ±5% of reading or ±0.025 m/s (±5 ft/min), whichever is greater |
| Accuracy (TA430, TA440) <sup>1,2</sup> | ±3% of reading or ±0.015 m/s (±3 ft/min), whichever is greater |
| Resolution                             | 0.01 m/s (1 ft/min)  |

#### Duct Size (TA430, TA440)

|            |  |
|------------|--|
| Dimensions | 1 to 635 cm in increments of 0.1 cm (1 to 250 inches in increments of 0.1 in.) |
|------------|--|

#### Volumetric Flow Rate (TA430, TA440)

|       |   |
|-------|---|
| Range | Actual range is a function of velocity, and duct size |
|-------|---|

#### Temperature

|                       |                           |
|-----------------------|---------------------------|
| Range (TA410, TA430)  | -18 to 93°C (0 to 200°F)  |
| Range (TA440)         | -10 to 60°C (14 to 140°F) |
| Accuracy <sup>3</sup> | ±0.3°C (±0.5°F)           |
| Resolution            | 0.1°C (0.1°F)             |

#### Relative Humidity (TA440 only)

|                       |             |
|-----------------------|-------------|
| Range                 | 5 to 95% RH |
| Accuracy <sup>4</sup> | ±3% RH      |
| Resolution            | 0.1% RH     |

#### Wet Bulb Temperature (TA440 only)

|            |                         |
|------------|-------------------------|
| Range      | 5 to 60°C (40 to 140°F) |
| Resolution | 0.1°C (0.1°F)           |

#### Dew Point (TA440 only)

|            |                          |
|------------|--------------------------|
| Range      | -15 to 49°C (5 to 120°F) |
| Resolution | 0.1°C (0.1°F)            |

#### Instrument Temperature Range

|                                      |                           |
|--------------------------------------|---------------------------|
| Operating (Electronics)              | 5 to 45°C (40 to 113°F)   |
| Model TA410, TA430 Operating (Probe) | -18 to 93°C (0 to 200°F)  |
| Model TA440 Operating (Probe)        | -10 to 60°C (14 to 140°F) |
| Storage                              | -20 to 60°C (-4 to 140°F) |

#### Data Storage Capabilities (TA430, TA440)

|       |                                  |
|-------|----------------------------------|
| Range | 12,700+ samples and 100 test IDs |
|-------|----------------------------------|

#### Logging Interval (TA430, TA440)

|       |                    |
|-------|--------------------|
| Range | 1 second to 1 hour |
|-------|--------------------|

Specifications subject to change without notice.

TSI and the TSI logo are registered trademarks, and Airflow, the Airflow logo and LogDat2 are trademarks of TSI Incorporated.



Airflow Instruments, TSI Instruments Ltd.  
Visit our website at [www.airflowinstruments.co.uk](http://www.airflowinstruments.co.uk) for more information.

UK Tel: +44 149 4 459200 Germany Tel: +49 241 523030  
France Tel: +33 491 11 87 64

P/N 2980548 Rev D (A4) ©2014 TSI Incorporated

#### Time Constant (TA430, TA440)

User selectable

#### External Meter Dimensions

8.4 cm x 17.8 cm x 4.4 cm (3.3 in. x 7.0 in. x 1.8 in.)

#### Meter Weight with Batteries

0.27 kg (0.6 lbs.)

#### Meter Probe Dimensions

|                        |                    |
|------------------------|--------------------|
| Probe Length           | 101.6 cm (40 in.)  |
| Probe Diameter of Tip  | 7.0 mm (0.28 in.)  |
| Probe Diameter of Base | 13.0 mm (0.51 in.) |

#### Articulating Probe Dimensions

|                                  |                   |
|----------------------------------|-------------------|
| Articulating Section Length      | 19.7 cm (7.8 in.) |
| Diameter of Articulating Knuckle | 9.5 mm (0.38 in.) |

#### Power Requirements

Four AA-size batteries or AC adapter

|  | TA410    | TA430<br>TA430-A              | TA440<br>TA440-A              |
|--|----------|-------------------------------|-------------------------------|
| Velocity range<br>0 to 20.00 m/s<br>(0 to 4000 ft/min) | +        |                               |                               |
| Velocity range<br>0 to 30.00 m/s<br>(0 to 6000 ft/min) |          | +                             | +                             |
| Temperature  | +        | +                             | +                             |
| Flow   |          | +                             | +                             |
| Humidity, wet bulb,<br>dew point                       |          |                               | +                             |
| Probe  | Straight | Straight or -A<br>articulated | Straight or -A<br>articulated |
| Variable time<br>constant                              |          | +                             | +                             |
| Manual<br>data logging                                 |          | +                             | +                             |
| Auto save<br>data logging                              |          | +                             | +                             |
| Statistics   |          | +                             | +                             |
| Review data  |          | +                             | +                             |
| LogDat2<br>downloading<br>software                     |          | +                             | +                             |
| Free Certificate<br>of Calibration                     | +        | +                             | +                             |

<sup>1</sup> Temperature compensated over an air temperature range of 5 to 65°C (40 to 150°F).


<sup>2</sup> The accuracy statement begins at 30 ft/min through 4000 ft/min (0.15 m/s through 20 m/s) for the Models TA410, and 30 ft/min through 6000 ft/min (0.15 m/s through 30 m/s) for Models TA430 and TA440.

<sup>3</sup> Accuracy with instrument case at 25°C (77°F), add uncertainty of 0.03°C/C (0.05°F/°F) for change in instrument temperature.


<sup>4</sup> Accuracy with probe at 25°C (77°F). Add uncertainty of 0.2% RH/°C (0.1% RH/°F) for change in probe temperature. Includes 1% hysteresis.



# Calibration Certificate of Air Flow Meter




**深圳市计量质量检测研究院**  
Shenzhen Academy of Metrology & Quality Inspection  
**国家高新技术计量站**  
National Hi-Tech Metrology Station



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L6678

## 校准报告

CALIBRATION REPORT



报告编号: 204202268

第 1 页, 共 3 页  
Page 1 of 3 Pages

**客户名称** : Castco Testing Centre Limited  
Name of Customer

**客户地址** : 33, On Kui Street, Fanling, N.T.  
Address of Customer

**计量器具名称** : 风速仪  
Name of Instrument

**器具用途** : 环境监测  
Use of Instrument

**型号/规格** : TA440  
Type/Specification

**出厂编号** : TA4401232005  
Serial No.

**资产编号** : AAST-FLOW-02  
Asset No.

**制造单位** : TSI  
Manufacturer

**校准依据** : 参照JJG (建设) 0001-1992《热球式风速仪》检定规程校准  
Calibrated in Accordance to

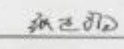
**(校准专用章)**  
Name

**校准日期** : 2020 年 03 月 10 日  
Operation Date

**建议复校日期**: 2021 年 03 月 15 日  
Suggested Recal Date

**签发日期** : 2020 年 03 月 16 日  
Issue Date

**批准人** : 张正海  
Authorized by


**签名** :   
Signature

**核验员** : 于飞  
Checked by

**校准员** : 张嘉琪  
Calibrated by

校准机构备案号: [2012]粤量校F002号  
地址: 广东省深圳市南山区龙珠大道9号  
电话: 0669-755-26941546 0669-755-26941548  
传真: 0669-755-26942013 0669-755-26941547  
邮编: 518055 网址: www.smg.com.cn  
电子邮箱: kfx@smg.com.cn

Register No.: [2012]粤量校F002号  
450 No.9, Longzhu Avenue, Nanshan District, Shenzhen, Guangdong, China  
Mandarin: 0669-755-26941546  
Tel: 0669-755-26941546 0669-755-26941548  
Fax: 0669-755-26942013 0669-755-26941547  
Post Code: 518055 http://www.smg.com.cn  
E-mail: kfx@smg.com.cn



**深圳市计量质量检测研究院**  
Shenzhen Academy of Metrology & Quality Inspection  
**国家高新技术计量站**  
National Hi-Tech Metrology Station

## 校准报告

CALIBRATION REPORT

报告编号: 204202268  
Report No.

第 2 页, 共 3 页  
Page 2 of 3 Pages

校准用主要计量标准装置信息  
Main Standard Devices Used

| 名称<br>Equipment Name | 测量范围<br>Measuring Range | 不确定度/准确度等级/<br>最大允许误差<br>Uncertainty/Accuracy Class/<br>Maximum Permissible Error | 计量标准考核证书号<br>Certificate No. | 有效期至<br>Due Date |
|----------------------|-------------------------|---|------------------------------|------------------|
|                      |                         |   |                              |                  |
|                      |                         |   |                              |                  |
|                      |                         |   |                              |                  |

校准用主要标准器信息  
Main Standards of Measurement Used

| 名称<br>Equipment Name | 测量范围<br>Measuring Range | 不确定度/准确度等级/<br>最大允许误差<br>Uncertainty/Accuracy Class/<br>Maximum Permissible Error | 设备编号<br>Equipment No. | 证书号/溯源单位<br>Certificate No./<br>Traceability to | 有效期至<br>Due Date |
|----------------------|-------------------------|---|-----------------------|---|------------------|
| 皮托静压管                | —                       | $\pm 1.002 \ k=1.001$   | SB4562/01             | GGJ (V) LT2015-0028号/中国计量院                      | 2020-05-05       |
| 风洞                   |                         |   | SB4562                | NSS201901168/广东省计量院                             | 2024-06-26       |
| 数字压力计                |                         |   | SB10930               | RGov2019-2205/中国计量院                             | 2020-09-26       |
|                      |                         |   |                       |   |                  |
|                      |                         |   |                       |   |                  |

附加说明  
Appended Directions

委托日期: 2020 年 03 月 10 日  
Application Date

校准地点: 本院104室  
Operation Location

环境条件: 温度 21.3 °C 相对湿度 60 %  
Operation Environment

符合性及限制使用说明: 参照校准结果使用  
Statement of Compliance and Limitation

# Calibration Certificate of Air Flow Meter



深圳市计量质量检测研究院  
Shenzhen Academy of Metrology & Quality Inspection  
国家高新技术计量站  
National Hi-tech Metrology Station

## 校准报告 CALIBRATION REPORT

报告编号: 204202268  
Report No.

第 3 页, 共 3 页  
Page 3 of 3 Pages

### 校准结果 Results of Calibration

零位: 0.00m/s      满度: —

风速示值:

| 序号 | 标准风速 (m/s) | 仪器指示读数 (m/s) | 修正值 (m/s) |
|----|------------|--------------|-----------|
| 1  | 0.40       | 0.38         | +0.02     |
| 2  | 1.00       | 0.95         | +0.05     |
| 3  | 2.00       | 1.70         | +0.30     |
| 4  | 5.00       | 4.30         | +0.70     |
| 5  | 10.00      | 9.70         | +0.30     |
| 6  | 15.00      | 14.89        | +0.11     |
| 7  | 20.00      | 20.23        | -0.23     |

附加说明:

1. 大气压力: 1018.0hPa
2. 依据JJF1059.1-2012测量不确定度评定与表示, 测量结果的扩展不确定度:  $U_{95}=3.0\%$ ,  $k=2$

以 下 空 白



深圳市计量质量检测研究院  
Shenzhen Academy of Metrology & Quality Inspection  
国家高新技术计量站  
National Hi-tech Metrology Station



## 校准报告 CALIBRATION REPORT



报告编号: 204202267

第 1 页, 共 3 页  
Page 1 of 3 Pages

客户名称 : Castco Testing Centre Limited  
Name of Customer  
客户地址 : 33, On Kui Street, Fanling, N.T.  
Address of Customer  
计量器具名称: 风速仪  
Name of Instrument  
器具用途 : 环境监测  
Use of Instrument  
型号/规格 : TA440  
Type/Specification  
出厂编号 : TA4401706003  
Serial No.  
资产编号 : AAST-FLOW-03  
Asset No.  
制造单位 : TSI  
Manufacturer  
校准依据 : 参照JJG(建设)0001-1992《热球式风速仪》检定规程校准  
Calibrated in Accordance to

(校准专用章)  
Stamp

校准日期 : 2020年03月16日  
Operation Date  
建议复校日期: 2021年03月16日  
Suggested Recal Date  
签发日期 : 2020年03月16日  
Issue Date

批准人: 张正海  
Authorized by  
签名: 张正海  
Signature  
核验员: 于飞  
Checked by  
校准员: 张嘉琪  
Calibrator by

校准机构备案号: [2012]粤量校F002号  
地址: 广东省深圳市福田区龙岭北路42号  
电话: 0086-755-29941696 9096-724-20841530  
传真: 0086-755-29941618 9096-724-20941247  
邮编: 518051 网址: www.smg.com.cn  
电子邮箱: s1@smg.com.cn

Register No.: [2012]粤量校F002号  
Add: No. 42, Langshu Avenue, Nanshan District, Shenzhen, Guangdong, China  
Tel: 0086-755-29941696 9096-724-20841530  
Fax: 0086-755-29941618 9096-724-20941547  
Post Code: 518051 Http://www.smg.com.cn  
E-mail: s1@smg.com.cn

## Calibration Certificate of Air Flow Meter



深圳市计量质量检测研究院  
Shenzhen Academy of Metrology & Quality Inspection  
国家高新技术计量站  
National Hi-tech Metrology Station

### 校准报告 CALIBRATION REPORT

报告编号: 204202267  
Report No.

第 2 页, 共 3 页  
Page 2 of 3 Pages

#### 校准用主要计量标准装置信息 Main Standard Devices Used

| 名称<br>Equipment Name | 测量范围<br>Measuring Range | 不确定度/准确度等级/<br>最大允许误差<br>Uncertainty/Accuracy Class/<br>Maximum Permissible Error | 计量标准考核证书号<br>Certificate No. | 有效期至<br>Due Date |
|----------------------|-------------------------|---|------------------------------|------------------|
|                      |                         |   |                              |                  |
|                      |                         |   |                              |                  |
|                      |                         |   |                              |                  |

#### 校准用主要标准器信息 Main Standards of Measurement Used

| 名称<br>Equipment Name | 测量范围<br>Measuring Range | 不确定度/准确度等级/<br>最大允许误差<br>Uncertainty/Accuracy Class/<br>Maximum Permissible Error | 设备编号<br>Equipment No. | 证书号/溯源单位<br>Certificate No./Traceability to | 有效期至<br>Due Date |
|----------------------|-------------------------|---|-----------------------|---|------------------|
| 皮托管压管                | —                       | $\pm 1.002$ % $\pm 1.001$   | SB4562/01             | QJ (V) LT2015-0028号/中国计量院                   | 2020-05-05       |
| 风洞                   |                         |   | SB4362                | MSS201501168/广东省计量院                         | 2024-06-26       |
| 数字压力计                |                         |   | SB1050                | 390s2010-2205/中国计量院                         | 2020-09-26       |
|                      |                         |   |                       |   |                  |

#### 附加说明 Appended Directions

委托日期: 2020年03月10日  
Application Date  
校准地点: 本院104室  
Operation Location  
环境条件: 温度 21.3℃ 相对湿度 60 %  
Operation Environment  
符合性及限制使用说明: 参照校准结果使用  
Statement of Compliance and Limitation



深圳市计量质量检测研究院  
Shenzhen Academy of Metrology & Quality Inspection  
国家高新技术计量站  
National Hi-tech Metrology Station

### 校准报告 CALIBRATION REPORT

报告编号: 204202267  
Report No.

第 3 页, 共 3 页  
Page 3 of 3 Pages

#### 校准结果 Results of Calibration

零位: 0.00m/s      满度: —

#### 风速示值:

| 序号 | 标准风速 (m/s) | 仪器指示读数 (m/s) | 修正值 (m/s) |
|----|------------|--------------|-----------|
| 1  | 0.40       | 0.38         | +0.02     |
| 2  | 1.00       | 0.93         | +0.07     |
| 3  | 2.00       | 1.90         | +0.10     |
| 4  | 5.00       | 4.75         | +0.25     |
| 5  | 10.00      | 9.90         | +0.10     |
| 6  | 15.00      | 15.06        | -0.06     |
| 7  | 20.00      | 20.18        | -0.18     |

#### 附加说明:

1. 大气压力: 1018.0hPa
2. 依据JJF1059.1-2012测量不确定度评定与表示, 测量结果的扩展不确定度:  $U_{95}$ =3.0%,  $k=2$

以 下 空 白



**Appendix K – Noise monitoring results and graphical presentation**

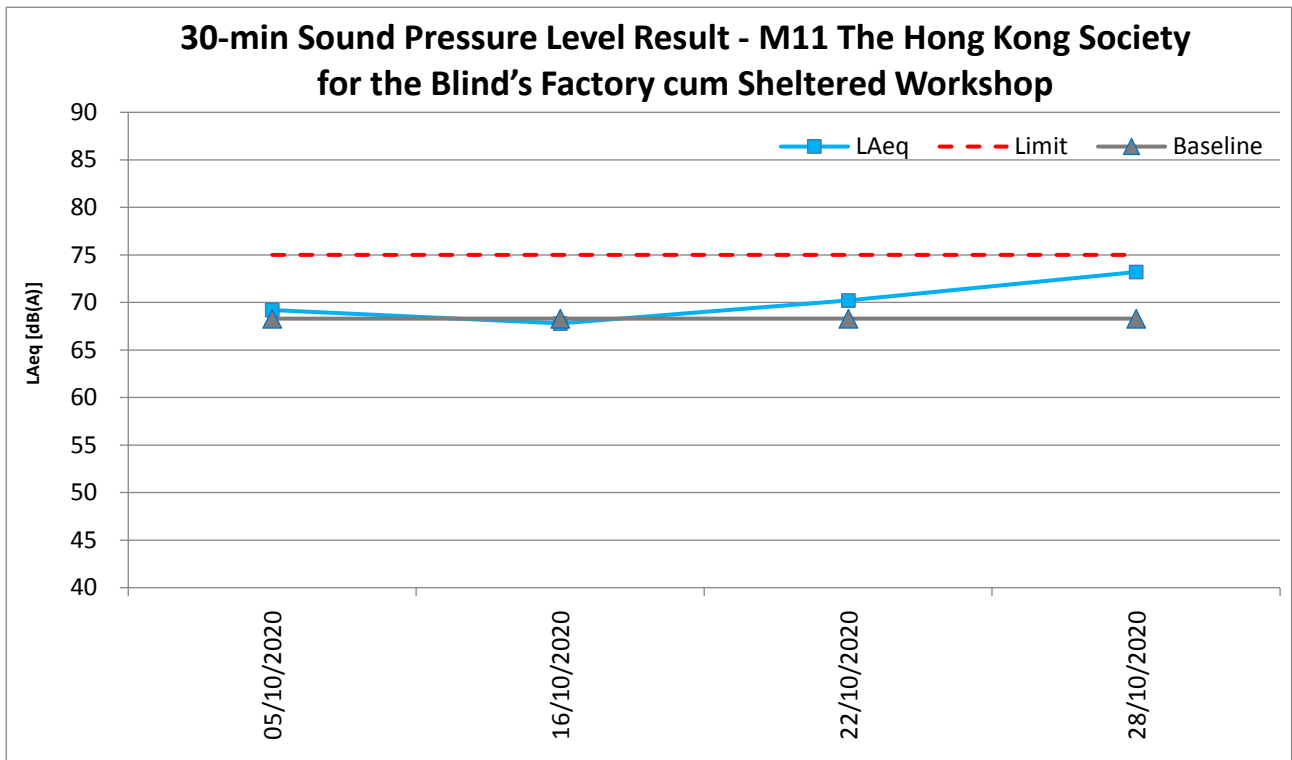
**M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop**

| Date       | Temp (°C) | Weather | Measured Noise Level at M11, dB(A) |   |          |                  |                  |                  |      | Limit |
|------------|-----------|---------|------------------------------------|---|----------|------------------|------------------|------------------|------|-------|
|            |           |         | Time                               |   | Baseline | L <sub>Aeq</sub> | L <sub>A10</sub> | L <sub>A90</sub> |      |       |
| 05/10/2020 | 29.5      | Cloudy  | 10:46                              | - | 11:16    | 68.3             | 69.2             | 72.1             | 63.0 | 75    |
| 16/10/2020 | 30.1      | Sunny   | 14:18                              | - | 14:48    | 68.3             | 67.8             | 69.3             | 65.7 | 75    |
| 22/10/2020 | 25.0      | Sunny   | 14:00                              | - | 14:30    | 68.3             | 70.2             | 72.8             | 65.8 | 75    |
| 28/10/2020 | 26.8      | Cloudy  | 10:56                              | - | 11:26    | 68.3             | 73.2             | 75.5             | 69.6 | 75    |
| Maximum    |           |         |                                    |   |          |                  | 73.2             |                  |      |       |
| Minimum    |           |         |                                    |   |          |                  | 67.8             |                  |      |       |
| Average    |           |         |                                    |   |          |                  | 70.6             |                  |      |       |

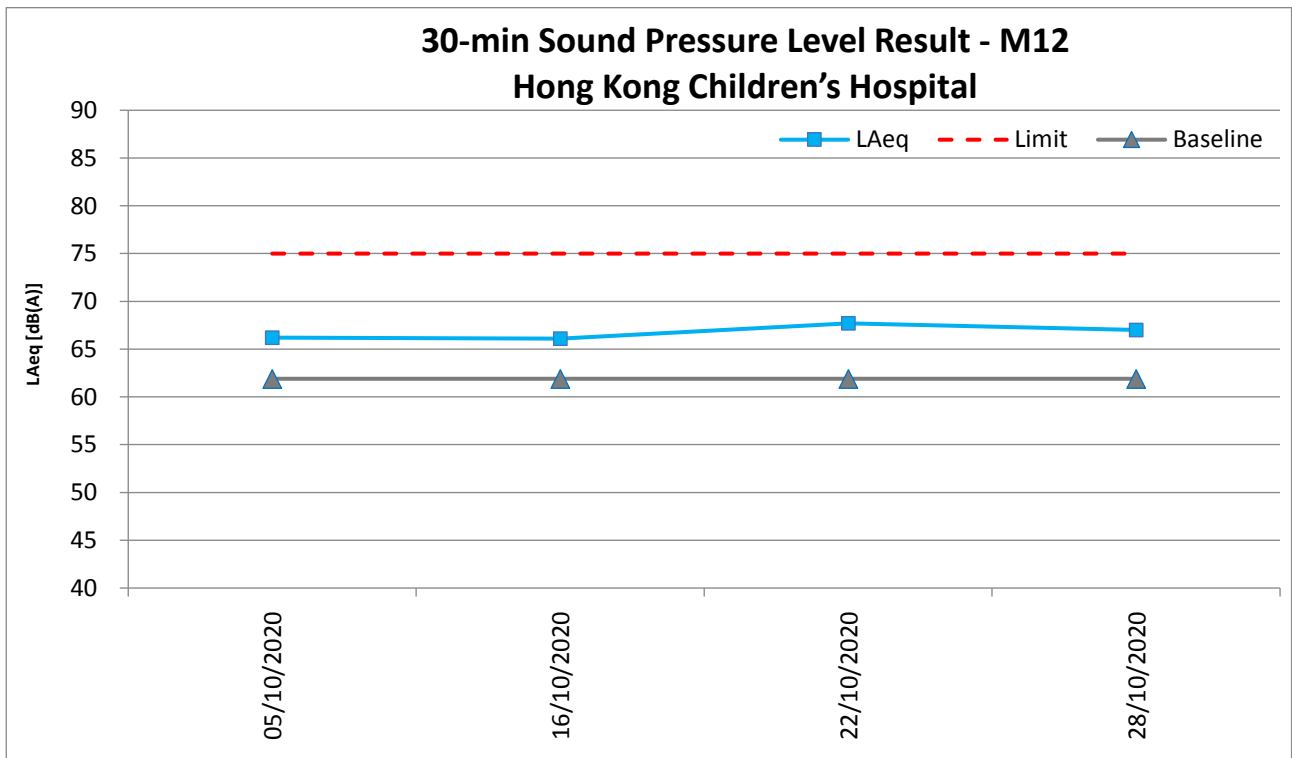
**M12 - Hong Kong Children's Hospital**

| Date       | Temp (°C) | Weather | Measured Noise Level at M12, dB(A) |   |          |                  |                  |                  |      | Limit |
|------------|-----------|---------|------------------------------------|---|----------|------------------|------------------|------------------|------|-------|
|            |           |         | Time                               |   | Baseline | L <sub>Aeq</sub> | L <sub>A10</sub> | L <sub>A90</sub> |      |       |
| 05/10/2020 | 29.5      | Cloudy  | 13:45                              | - | 14:15    | 61.9             | 66.2             | 67.7             | 64.2 | 75    |
| 16/10/2020 | 30.1      | Sunny   | 16:35                              | - | 17:05    | 61.9             | 66.1             | 67.3             | 64.2 | 75    |
| 22/10/2020 | 25.0      | Sunny   | 9:37                               | - | 10:07    | 61.9             | 67.7             | 69.9             | 64.8 | 75    |
| 28/10/2020 | 26.8      | Cloudy  | 11:13                              | - | 11:43    | 61.9             | 67.0             | 69.9             | 62.9 | 75    |
| Maximum    |           |         |                                    |   |          |                  | 67.7             |                  |      |       |
| Minimum    |           |         |                                    |   |          |                  | 66.1             |                  |      |       |
| Average    |           |         |                                    |   |          |                  | 66.8             |                  |      |       |

**L<sub>Aeq</sub>, 30-min graphical results of M11 - The Hong Kong Society for the Blind's Factory cum Sheltered Workshop**



**L<sub>Aeq</sub>, 30-min graphical results of M12 - Hong Kong Children's Hospital**



**Appendix L – Event and Action Plan for noise**

| Event                       | Action   |  |   |  |
|-----------------------------|--|--|---|--|
|                             | ET   | IEC  | Supervisor / ER   | Contractor   |
| Action Level being exceeded | <ol style="list-style-type: none"> <li>1. Notify Supervisor / ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, Supervisor / ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p> | <ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Advise the Supervisor / ER on the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p> | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>                               | <ol style="list-style-type: none"> <li>1. Submit noise mitigation proposal to IEC and Supervisor / ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>   |
| Limit Level being exceeded  | <ol style="list-style-type: none"> <li>1. Inform IEC, Supervisor /ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contract's working procedure;</li> <li>6. Discuss remedial measures required with the IEC, Contractor and Supervisor /ER;</li> <li>7. Assess effectiveness of</li> </ol>                           | <ol style="list-style-type: none"> <li>1. Discuss the potential remedial actions with Supervisor /ER, ET and Contractor;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the Supervisor /ER accordingly.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified.)</p>                  | <ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the</li> </ol> | <ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and Supervisor /ER within 3 working days of notification;</li> <li>3. Implement the agreed proposal;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by the Supervisor /ER until the exceedance is abated.</li> </ol> <p>(The above actions should be</p> |



| Event | Action  |     |   |   |
|-------|---|-----|---|---|
|       | ET  | IEC | Supervisor / ER   | Contractor  |
|       | <p>Contractor's remedial actions and keep IEC, EPD, and Supervisor /ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.<br/>(The above actions should be taken within 2 working days after the exceedance is identified.)</p> |     | <p>exceedance until the exceedance is abated.<br/>(The above actions should be taken within 2 working days after the exceedance is identified.)</p> | <p>taken within 2 working days after the exceedance is identified.)</p> |

**Appendix M – Event and Action Plan for Landscape and Visual Impact**

| Event                          | Action   |   |  |   |
|--------------------------------|--|---|--|---|
|                                | ET   | IEC   | Supervisor / ER  | Contractor  |
| Design Check                   | <ol style="list-style-type: none"> <li>1. Check final design conforms to the requirements of EP and prepare report.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Check report.</li> <li>2. Recommend remedial design if necessary.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Undertake remedial design if necessary.</li> </ol>   |   |
| Non-conformity on one occasion | <ol style="list-style-type: none"> <li>1. Identify Source.</li> <li>2. Inform IEC and Supervisor /ER.</li> <li>3. Discuss remedial actions with IEC, Supervisor /ER and Contractor.</li> <li>4. Monitor remedial actions until rectification has been completed.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Check report.</li> <li>2. Check Contractor's working method.</li> <li>3. Discuss with ET and Contractor on possible remedial measures.</li> <li>4. Advise Supervisor /ER on effectiveness of proposed remedial measures.</li> <li>5. Check implementation of remedial measures.</li> </ol>                | <ol style="list-style-type: none"> <li>1. Notify Contractor.</li> <li>2. Ensure remedial measures are properly implemented.</li> </ol> | <ol style="list-style-type: none"> <li>1. Amend working methods.</li> <li>2. Rectify damage and undertake any necessary replacement.</li> </ol> |
| Repeated Non-conformity        | <ol style="list-style-type: none"> <li>1. Identify Source.</li> <li>2. Inform IEC and Supervisor /ER.</li> <li>3. Increase monitoring frequency.</li> <li>4. Discuss remedial actions with IEC, Supervisor /ER and Contractor.</li> <li>5. Monitor remedial actions until rectification has been completed.</li> <li>6. If non-conformity stops, cease additional monitoring.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check monitoring report.</li> <li>2. Check Contractor's working method.</li> <li>3. Discuss with ET and Contractor on possible remedial measures.</li> <li>4. Advise Supervisor /ER on effectiveness of proposed remedial measures.</li> <li>5. Supervise implementation of remedial measures.</li> </ol> | <ol style="list-style-type: none"> <li>1. Notify Contractor.</li> <li>2. Ensure remedial measures are properly implemented.</li> </ol> | <ol style="list-style-type: none"> <li>1. Amend working methods.</li> <li>2. Rectify damage and undertake any necessary replacement.</li> </ol> |

**Appendix N – Waste Flow Table**

## Appendix F - Monthly Summary Waste Flow Table

Name of Department : CEDD

Contract No.: ED/2018/01

### Monthly Summary Waste Flow Table for October 2020

| 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 (see Note 3) | Chemical Waste | Others, e.g. general refuse |
|                  | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg)                                      | (in '000kg)                 | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| Jan              | 1.030  | --                                  | --                       | --                       | 1.030                    | --                       | --  | --                          | --                    | --             | 0.0070                      |
| Feb              | 3.535  | --                                  | --                       | --                       | 3.535                    | --                       | --  | --                          | --                    | --             | 0.0008                      |
| Mar              | 13.992   | --                                  | --                       | 13.075                   | 0.917                    | 0.933                    | --  | --                          | --                    | --             | 0.0014                      |
| Apr              | 7.335  | --                                  | --                       | 5.557                    | 1.778                    | 18.77                    | --  | --                          | --                    | --             | 0.0127                      |
| May              | 8.024  | --                                  | --                       | 5.642                    | 2.382                    | 0.620                    | --  | 0.111                       | --                    | --             | 0.0264                      |
| Jun              | 5.057  | --                                  | --                       | 3.919                    | 1.138                    | --                       | --  | --                          | --                    | --             | 0.0120                      |
| <b>Sub-total</b> | <b>38.973</b>  | <b>0</b>                            | <b>0</b>                 | <b>28.193</b>            | <b>10.78</b>             | <b>20.323</b>            | <b>0</b>  | <b>0.111</b>                | <b>0</b>              | <b>0</b>       | <b>0.0603</b>               |
| July             | 7.664  | --                                  | --                       | 6.877                    | 0.787                    | 0.262                    | --  | --                          | --                    | --             | 0.0537                      |
| Aug              | 6.549  | --                                  | --                       | 1.686                    | 4.863                    | 0.645                    | --  | --                          | --                    | --             | 0.0306                      |
| Sep              | 15.325   | --                                  | --                       | 5.772                    | 9.553                    | 2.176                    | --  | 0.154                       | --                    | --             | 0.0158                      |
| Oct              | 10.702   | --                                  | --                       | 9.162                    | 1.54                     | 1.516                    | --  | --                          | --                    | --             | 0.0213                      |
| Nov              | --   | --                                  | --                       | --                       | --                       | --                       | --  | --                          | --                    | --             | --                          |
| Dec              | --   | --                                  | --                       | --                       | --                       | --                       | --  | --                          | --                    | --             | --                          |
| <b>Total</b>     | <b>79.213</b>  | <b>0</b>                            | <b>0</b>                 | <b>51.69</b>             | <b>27.523</b>            | <b>24.922</b>            | <b>0</b>  | <b>0.265</b>                | <b>0</b>              | <b>0</b>       | <b>0.1817</b>               |

| Forecast of Total Quantities of C&D Materials to be Generated from the Contract* |                                     |                          |                          |                          |                          |              |                             |                       |                |                             |
|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|-----------------------------|-----------------------|----------------|-----------------------------|
| Total Quantity Generated   | Hard Rock and Large Broken Concrete | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals       | Paper / cardboard packaging | Plastics (see Note 3) | Chemical Waste | Others, e.g. general refuse |
| (in '000m <sup>3</sup> )   | (in '000m <sup>3</sup> )            | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000 kg) | (in '000kg)                 | (in '000kg)           | (in '000kg)    | (in '000m <sup>3</sup> )    |
| <b>195.01</b>  | <b>2.103</b>                        | <b>10.2</b>              | <b>140</b>               | <b>19.81</b>             | <b>25</b>                | <b>200</b>   | <b>0.8</b>                  | <b>--</b>             | <b>--</b>      | <b>3.4</b>                  |

- Notes:
- (1) The performance targets are given in **ER Appendix 8I Clause 14** and the EM&A Manual
  - (2) The waste flow table shall also include C&D materials to be imported for use at the Site
  - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
  - (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m<sup>3</sup> (**ER Part 8 Clause 8.7.5(d)**(ii) refers)
  - (5) Assume inert C&D materials density and non-inert C&D materials are 1.9 m<sup>3</sup>/ton and 1.5 m<sup>3</sup>/ton

**Appendix O – Environmental Licenses and Notification**

本署編號  
Our Ref: 445956  
來函檔號  
Your Ref:  
電話  
Tel. No.: 2755 5518  
圖文傳真  
Fax No.: 2756 8588  
電子郵件  
E-Mail:  
網址  
Homepage: <http://www.epd.gov.hk/>

Environmental Protection Department  
Environmental Compliance Division  
Regional Office (East)  
5<sup>th</sup> Floor, Nan Fung Commercial Centre,  
19 Lam Lok Street, Kowloon Bay,  
Kowloon, Hong Kong.



0049  
環境保護署  
環保法規管理科  
區域辦事處(東)  
香港九龍九龍灣臨樂街  
十九號南豐商業中心五樓

06/06/2019

Penta-Ocean Construction Co. Ltd  
Flat 601, K. Wah Centre, 191 Java Road,  
North Point, Hong Kong

Dear Sirs,

Site /Premises:  
Kai Tak Development - Stage 4 Infrastructure  
at the former runway and south apron

This is to acknowledge receipt of the following submission(s) on 06/06/2019

Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust)  
Regulation  
Ref. Number: 445956

Meanwhile, if you have any further questions, please contact the undersigned.

Yours faithfully,

(Customer Service Counter (RE))  
for Director of Environmental Protection

(內文中文譯本)

執事先生:

工地/處所 (見英文版本)

我們已於 2019 年 6 月 6 日收到你提交的文件, 詳列如下:

- 進行指明工序所需的牌照申請
- 申請批准裝置或改裝火爐、烘爐及煙囪
- 申請露天焚物許可證 —
- 石棉調查報告、石棉消滅計劃, 石棉管理計劃, 及/或開始進行石棉消滅工程通知書
- 空氣污染管制(建造工程塵埃)規例的建造工程通知書
- 一般工程/訂明建造工程的建築噪音許可證申請
- 撞擊式打樁工程的建築噪音許可證申請
- 申請空氣壓縮機的噪音標籤
- 申請手提撞擊式破碎機的噪音標籤
- 水污染管制條例的排污牌照申請
- 申請化學廢物產生者的登記
- 化學廢物處置牌照申請
- 化學廢物收集牌照申請
- 根據條例第 17 條的規定呈報指定(甲類)化學廢物通知書
- 申請批准使用容量超過 450 公升的化學廢物容器
- 廢物進出口許可證申請
- 申請批准使用油污分散劑及類似物質
- 傾物入海許可證申請

如有疑問, 請與代行人查詢

環境保護署署長  
(代 行)

年 月 日



本署檔號  
Our Ref: EP682/286/0141/I  
來函檔號  
Your Ref:  
電話  
Tel. No.: 2117 7539  
圖文傳真  
Fax No.: 2756 8588  
電子郵件  
E-Mail:  
網址  
Homepage: <http://www.epd.gov.hk/>

Environmental Protection Department  
Environmental Compliance Division  
Regional Office (East)

5<sup>th</sup> Floor, Nan Fung Commercial Centre,  
19 Lam Lok Street, Kowloon Bay,  
Kowloon, Hong Kong.



0501  
環境保護署  
環保法規管理科  
區域辦事處(東)  
香港九龍九龍灣臨樂街  
十九號南豐商業中心五樓

**BY REGISTERED POST**

26 SEP 2019

Penta-Ocean Construction Co., Ltd.  
Room 601, K. Wah Centre,  
191 Java Road,  
North Point, Hong Kong



Dear Sir/Madam,

Water Pollution Control Ordinance (Cap. 358)  
Victoria Harbour (Phase Two) Water Control Zone  
Issue of Licence

I refer to your application for a licence made under Section 19/23/23A\* of the Water Pollution Control Ordinance ("the Ordinance"), Chapter 358, for the discharge/deposit from your premises as stated in your application. The licence pursuant to Section 20/23A\* of the Ordinance is enclosed. Your attention is drawn to the details, terms and conditions subject to which the licence is granted. You should note, in particular, the stipulated sampling, treatment and disposal requirements and should also read the notes at the back of the licence.


Please note that granting of this licence to you does not imply that the discharge from your premises is in compliance with the required limits as stipulated in the licence. It is your responsibility to ensure that the terms and conditions of the licence are complied with.

You are reminded that it is an offence to contravene any of the provisions specified in the licence. The offender is liable to a fine of \$200,000 and to imprisonment for 6 months.

If you are aggrieved by any of the terms and conditions of the licence, you may appeal to the Appeal Board by lodging a notice of appeal under Section 29 of the Ordinance in the prescribed manner and form within 21 days after receipt of this licence.

Should you have any enquiry, please feel free to contact LEE Yau-hang, Benson at 2117 7527.

Yours faithfully,

  
(CHAN Wai-lun, William)  
Environmental Protection Officer  
for Director of Environmental Protection

Encl.: Discharge Licence

\* Delete as appropriate

掛號郵件

先生/女士:

《水污染管制條例》(第358章)  
維多利亞港(第二期)水質管制區  
發出排污牌照事宜

你根據香港法例第 358 章《水污染管制條例》(「本條例」)第 19/23/23A\*條就你的申請所述處所排放的污水/沉積物向本署遞交的牌照申請書已經收悉。現寄上根據本條例第 20/23A\*條簽發的牌照。請留意發出牌照的細節、條款及條件,尤須注意有關取樣、處理及排放等事宜的規定,另請細讀牌照背頁的附註。

獲簽發本牌照並不表示從你的處所排出的污水或污染物質已達到牌照所規定的排放限度。你必須採取必要措施,以確保符合牌照中的條款及條件。

請注意,任何人違反牌照的任何條文,均屬違法,可處罰款二十萬元及監禁六個月。

如你對牌照所載的條款及條件感到不滿,可於收到本牌照後 21 天內,按本條例第 29 條的規定,使用訂明的方式及表格,向上訴委員會遞交上訴通知書,提出上訴。

如有查詢,請致電 2117 7527 與本署 李有恒 聯絡。

環境保護署署長  
(環境保護主任)  
(陳偉麟代行)

附件: 排污牌照

\* 將不適用者刪去





|  |
|--|
| Licence No.: WT00034610-2019<br>牌照編號: WT00034610-2019              |
| This Licence is Valid to: 30 September 2024<br>本牌照有效期至: 二〇二四年九月三十日 |

**ENVIRONMENTAL PROTECTION DEPARTMENT**  
**環境保護署**  
**WATER POLLUTION CONTROL ORDINANCE (CAP. 358)**  
**水污染管制條例(第358章)**  
**LICENCE PURSUANT TO SECTION 15/20/23A\***  
**按第15 / 20 / 23A\*條簽發的牌照**

The Director of Environmental Protection ("the Authority") grants this licence under the Water Pollution Control Ordinance ("the Ordinance") on the terms and conditions stated below.

環境保護署署長(「監督」)按下列的條款及條件,根據水污染管制條例(「本條例」)批給此牌照。

26 September 2019

Date  
日期

( CHAN Wai-lun, William )  
For the Authority  
監督( 陳偉麟 代行)

**PART A 甲部 : GENERAL TERMS 一般條款**

|  |   |
|--|---|
| Name of Licensee ("the Licensee")<br>持牌人名稱(「持牌人」)                      | Penta-Ocean Construction Co., Ltd.  |
| Discharge Premises ("the premises")<br>排放處所(「處所」)                      | Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01) (See Annex I)<br>九龍九龍城啟德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤(土木工程拓展署合約編號 ED/2018/01) (參見附件 I) |
| Water Control Zone<br>水質管制區  | Victoria Harbour (Phase Two) Water Control Zone<br>維多利亞港(第二期)水質管制區  |
| Discharge Category<br>排放種類   | Discharge of industrial trade effluent<br>工業污水排放  |
| Nature of Discharge and Wastewater Treatment Facilities<br>排放性質及廢水處理設施 | Effluent, Surface Run-off, and all other wastewater discharges from the premises<br>上址排放的污水、地面徑流水及其他的廢水<br>Screen, pH Adjustment, Sedimentation Tank and Chemical Precipitation<br>隔濾設施, 酸鹼值調節, 沉澱池及化學沉降缸                                       |
| Discharge Point(s)<br>排放點  | Discharge into communal storm water drain<br>排放入公用雨水渠   |
| Sampling Point(s)<br>取樣點   | Discharge outlet(s) of Wastewater Treatment Facility marked S.P. on Annex II attached<br>參見附件 II 中標指 S.P. 的廢水處理設施的出水口   |

\*Delete as appropriate  
將不適用者刪去

Reference No. 參考編號 EP682/286/014/1

**PART B 乙部 : SPECIFIC CONDITIONS 特別條件**

**B1. Limitations on Discharge 排放限制**

The quantity and composition of any discharge from the premises shall not exceed the limits stated in the table below<sup>(Note a)</sup>. All figures are upper limits unless otherwise indicated. All units are expressed as concentration in milligramme per litre unless otherwise stated.

任何源自處所之排放的量和成份不得超過下表所列的限度<sup>(附註a)</sup>。除另予表明外,所有數字均為上限。除另予說明外,所有單位均以毫克/升的濃度表示。

| Determinand 測量物                               | Limit 限度         |
|---|------------------|
| Flow Rate (m <sup>3</sup> / day)<br>流量(立方米/日) | 60               |
| pH (pH units)<br>酸鹼值 (pH 單位)                  | 6-9 <sup>#</sup> |
| Suspended Solids<br>懸浮固體                      | 30               |
| Chemical Oxygen Demand<br>化學需氧量               | 80               |

# Range 上下限

**B2. Self-monitoring and Reporting 自行監測及報告**

- The Licensee shall perform self-monitoring as and when required by the Authority.  
持牌人須在監督要求時進行自行監測。
- The Licensee shall sample the discharge at the Sampling Point(s) and, at his own expense carry out analyses in accordance with the sample type and measurement frequency specified for each determinand named below:-  
持牌人須在取樣點為排放抽取樣本,並依照下列指定的測量物、取樣形式及頻率,自資予以分析。

| Determinand 測量物          | Unit 單位      | Sample Type 取樣形式 | Frequency 頻率        |
|--------------------------|--------------|------------------|---------------------|
| Suspended Solids<br>懸浮固體 | mg/L<br>毫克/升 | Grab<br>隨意取集     | Quarterly<br>每三個月一次 |

Results of these monitoring shall be summarized in a report on a **Monthly/Bi-monthly/Quarterly/Yearly\*** basis and shall be submitted to the Authority.  
所有監測結果須以摘要形式,每一個月/兩個月/三個月/年\*作出報告,並須呈交監督審閱。

\*Delete as appropriate  
將不適用者刪去

## PART C 丙部 : STANDARD CONDITIONS 標準條件

### C1. The Discharge 排放

C1.1 The discharge shall not contain polychlorinated biphenyls (PCB), polyaromatic hydrocarbon (PAH), fumigant, pesticide or toxicant, chlorinated hydrocarbons, flammable or toxic solvents, calcium carbide; any substance likely to damage the sewer or to interfere with any of the treatment processes, or to be harmful to the health and safety of any personnel engaged in the operation or maintenance of a sewerage system; waste liable to form scum or deposits in any part of the drainage or sewerage system, or the waters of Hong Kong; waste liable to form discoloration in any parts of the waters of Hong Kong; sludge, floatable substances or solids larger than 10 mm; and sludge or solid refuse of any kind.

排放不得含有多氯聯苯、聚芳烴、薰蒸劑、殺蟲劑或毒劑、氯化烴、可燃的或有毒的溶劑、碳化鈣；會損毀污水渠結構或干擾任何處理程序的物質，或有損操作及維修排污系統人員健康及安全的任何物質；足以在排水或排污系統，或香港水域任何範圍內形成浮渣或沉積物的廢物；足以在香港水域任何範圍內形成變色的廢物；污泥、漂浮物質或體積超越 10 毫米的固體；及任何種類的污泥或固體垃圾。

C1.2 No discharge shall bypass the wastewater treatment facilities, the Sampling Point(s) or the Discharge Point(s) unless it is unavoidable to prevent loss of life, personal injury or severe property damage or no feasible alternative exists.

除非避免人命傷亡或嚴重財物損失或無其他可行代替辦法，排放不得繞流不經其廢水處理設施，取樣點或排放點。

C1.3 Dilution of the discharge to achieve compliance with the limits contained in this licence is prohibited. 不得將排放稀釋，以求達到本牌照內所訂的限度。

### C2. Flow Measurement 量度流量

The Licensee shall determine the flow rate of the discharge by installing, operating and maintaining a continuous flow measuring device with an accuracy certified by its manufacturer to be within plus or minus 3 percent of the actual flow, and calibrating the flow measuring device regularly according to manufacturer's recommendations. If no such device is installed, the Licensee shall determine the flow rate through using calculation methods agreed by the Authority, by making reference to the amount of water used in the premises being served by mains supply and other sources, less process consumption and any other losses.

持牌人必須設置、操作及保養一個連續性流量計作為測定排放的流量率之方法，其準確程度須經製造商證實為不超過或低於真正流量的 3%，並應根據製造商建議的方法，定期校準流量計。如沒有設置該設備，持牌人須依照監督同意的計算方法，根據處所由自來水及其他水源供應的總用水量減去工序耗水量及其他耗水量來測定流量率。

### C3. Treatment 處理

C3.1 The Licensee shall provide necessary wastewater treatment facilities, and shall engage personnel with adequate qualification and experience to properly operate and maintain all wastewater treatment facilities at all times. Standby equipment shall be provided to guard against failure of major treatment equipment.

持牌人須提供必需的廢水處理設施，並須僱用有足夠資格及經驗的人士，時常妥善操作及保養所有廢水處理設施。主要處理設施須配有後備裝置，以應付故障發生。

C3.2 In the event of loss of efficiency of operation, or failure of all or part of the wastewater treatment facility, the Licensee shall take all reasonable steps to the extent necessary to maintain compliance with this licence. Such steps shall remain until operation of the wastewater treatment facility is restored or an alternative method of treatment is provided.

倘若部份或整個廢水處理設施操作失靈或發生故障，持牌人須採取所有必要的合理措施，以求達到符合本牌照的規定。此等措施須維持至廢水處理設施恢復如常操作或有其他代替的處理方法可供採用為止。

C3.3 If the wastewater treatment facilities are not properly operated and maintained to the satisfaction of the Authority, the Licensee shall take immediate and effective remedial actions as required by the Authority.

倘若廢水處理設施的操作及保養未能令監督滿意，持牌人須按監督之規定，採取即時及有效的補救行動。

### C4. Disposal 棄置

Sludges, screenings, solids, oil and grease, filter backwash, or other pollutants removed in the course of treatment shall be disposed of in a proper manner<sup>(Note b & c)</sup>.

處理過程中所產生的污泥、隔渣物、固體、油脂、過濾器回洗或其他污染物，必須妥善地棄置<sup>(附註 b 及 c)</sup>。

### C5. Monitoring 監測

C5.1 The Licensee shall provide and maintain suitable and accessible facility such as an inspection chamber, manhole or sampling valve at each Sampling Point to enable duly authorized officer(s) of the Authority to take samples of the discharge at any time from the premises.

持牌人須在每一個取樣點提供及保養適當及可容易到達的設施，例如檢查槽，沙井或取樣閘，以確保獲監督授權的人員隨時可在處所內抽取排放樣本。

C5.2 For self-monitoring, "grab samples" shall be taken during the period when the determinand to be analyzed for is likely to be present in its maximum concentration. "Composite samples" shall include samples taken over daily duration of the discharge.

在自行監測中，「隨意取樣本」須在測量物的濃度很可能是最高的那段時間內抽取。「綜合樣本」須包含在每日排放期間不同時候所抽取的樣本。

C5.3 For self-monitoring, all samples shall be analyzed in accordance with the most updated analytical methods used by the Government Chemist<sup>(Note d)</sup>.

在自行監測中，所有樣本均須按照政府化驗師所採用的最新分析方法予以分析<sup>(附註 d)</sup>。

### C6. Records and Reporting 紀錄及報告

C6.1 The Licensee shall keep the following records in the premises for inspection by duly authorized officer(s) of the Authority:

持牌人須在處所內保存下列紀錄，以備獲監督授權的人員隨時查閱：

(i) records of flow rate, nature and composition of the discharge; 排放流量率、性質及成份的紀錄；

(ii) updated records of all monitoring information, including all laboratory analytical results relating to samples taken, all original chart recordings for continuous flow and pH monitoring; and 所有最新監測資料的紀錄，包括所有關於已取樣本的檢驗分析結果、所有連續性流量及酸鹼值監測記錄圖表的正本；及

(iii) records of all desludging and degreasing operation, and records of corresponding disposal operation.

所有清除污泥和清理隔油池廢物工序的紀錄，及其棄置工序的紀錄。

Copies of all such records shall be submitted to the Authority upon request.

在監督要求時，須向監督呈交所有該等紀錄的副本。

C6.2 The Licensee shall notify and explain to the Authority: Director of Environmental Protection, Regional Office (E), Kowloon City Section by fax (fax no.: 2756 8588) or electronic mail (email address: hotline\_e@epd.gov.hk) within 24 hours upon the occurrence of an accidental discharge or any emergency bypass or an overflow of untreated effluent or an operation upset which places the discharge in a temporary state of non-compliance with this licence. The Licensee shall within 7 days following the incident, submit to the Authority a detailed report in writing on the cause and duration of the non-compliance and steps taken or to be taken to reduce, eliminate, or prevent recurrence of such non-compliance. Reporting in accordance with this Condition does not relieve the Licensee of any obligations imposed by this licence.

倘若有未經處理的污水意外排放、緊急繞流或溢滿的事件或操作失靈，引至排放出現短暫不符合牌照規定的情況，持牌人須在事發後 24 小時內以傳真（傳真號碼：2756 8588）或電郵（電郵地址：hotline\_e@epd.gov.hk）通知監督；環境保護署署長，區域辦事處（東）九龍城區，並予以解釋。持牌人須在事故發生後 7 天內，以書面報告，詳述事件的起因、違反牌照條件的時間及為減少、消除或防止類似事件再次發生所採取或將會採取的措施，送交監督審閱。然而，按照本條件的規定提交報告並不表示持牌人可獲免除承擔本牌照內所載的任何責任。

### C7. Operation Manual 操作手冊

The Licensee shall prepare an operation manual which shall include, as a minimum, operating procedures, inspection programme and repair and maintenance programme for the wastewater treatment facilities. The operation manual shall be kept at the aforesaid wastewater treatment facilities and a copy of the manual shall be submitted to the Authority upon request.

持牌人須擬備廢水處理設施的操作手冊。手冊內容須最低限度包括操作程序、檢查、維修及保養工作計劃表。該手冊須保存在上述廢水處理設施內。持牌人須在監督要求時，呈交手冊副本乙份。

### C8. Notification of Change 更改通知

The Licensee shall notify the Authority: Director of Environmental Protection, Regional Office (E), Kowloon City Section by fax (fax no.: 2756 8588) or electronic mail (email address: hotline\_e@epd.gov.hk)




in writing within 14 days of any changes or proposed changes in the wastewater treatment methods/facilities, the processes of manufacture or the nature of the raw materials used or of any other circumstances which may alter the nature and composition of the discharge or may result in the permanent cessation of the discharge.

倘若持牌人更改或擬更改其廢水處理設施、生產程序、或所用原料的性質、或有其他足以改變其排放的性質及成份或可導致永久性終止排放的事情，必須在 14 日內以傳真（傳真號碼：2756 8588）或電郵（電郵地址：hotline\_e@epd.gov.hk）書面通知監督：環境保護署署長，區域辦事處（東）九龍城區。

**Notes 附註**

- (a) For the purposes of determining compliance with the limits stated in Specific Condition B1, samples shall be taken by the duly authorized officer(s) of the Authority at the Sampling Point(s) or any other points from which the samples so taken are regarded by the duly authorized officer(s) as being representative of the quality of the discharge. When any single sample analyzed for a determinand is proved not complying with corresponding limit set out in the table, the discharge is deemed to have failed to comply with Specific Condition B1.  
為確定排放是否符合特別條件第 B1 項內所列的限度，獲監督授權的人員須在取樣點或在認為可以抽取到具代表性的樣本的任何其他位置抽取樣本。只要在任一個經分析的樣本中，證實任一個測量物不符合表中所列的相應限度時，排放即被視為不符合特別條件第 B1 項。
- (b) An example of proper disposal method for sludge is sending dewatered sludge to landfill for disposal.  
妥善棄置污泥方法中的一個例子是將脫水後的污泥運往堆填區棄置。
- (c) Proper disposal of grease trap waste includes but is not limited to employing registered grease trap waste collector to conduct the disposal work. All registered collectors should have a Certificate of Registration issued by the Environmental Protection Department. The most updated list of the registered collectors can be obtained from the Environmental Protection Department. 妥善的隔油池廢物棄置方法包括卻不限於聘用已登記的隔油池廢物收集商進行有關的棄置工作。所有已登記的隔油池廢物收集商，均領有由環境保護署發出的登記證明書。已登記的隔油池廢物收集商最新名單，可向環境保護署索取。
- (d) The Licensee may make reference to Annex I of the <Technical Memorandum on Effluent Standards> for analytical methods used by the Government Chemist.  
持牌人可參照「流出物標準技術備忘錄」附件 I 有關政府化驗師所採用的分析方法。
- (e) The Licensee shall keep this licence in the premises and make it available at all times for inspection by duly authorized officer(s) of the Authority.  
持牌人須在處所內保存此牌照，以備獲監督授權的人員隨時查閱。
- (f) (i) The Licensee shall allow duly authorized officer(s) of the Authority to enter the premises for the purposes of inspection, sampling, records examination or any other duties authorized by Section 37 and Section 38 of the Ordinance.  
持牌人須准許獲監督授權的人員進入處所內進行檢查、抽取樣本、審查紀錄或執行其他根據本條例第 37 及第 38 條所授權的職務。  
(ii) Where the premises has security measures in force which would require proper identification and clearance before entry, the Licensee shall make necessary arrangements such that upon presentation of evidence of identity and of authorization, duly authorized officer(s) will be permitted to enter, without delay, for the purposes of performing duties.  
倘若由於處所的保安理由而需先行鑑定來人的身份，持牌人必須作出必要的安排，以便獲授權人員在出示身份證明及授權文件後，即可內進執行其職務而不致受延誤。
- (g) (i) For a licence granted under Section 15 of the Ordinance, the Licensee may, not less than 2 months before expiry of the licence, apply under Section 19 of the Ordinance for a new licence. The Authority may grant the licence or otherwise.  
持有根據本條例第 15 條所批給牌照的人士，可於牌照屆滿前不少於 2 個月內，根據本條例第 19 條的規定，申請一面新牌照。監督可批給或拒絕批給牌照。  
(ii) For a licence granted under Section 20 or 23A of the Ordinance, the Licensee may, not more than 4 months and not less than 2 months before expiry of the licence, apply under Section 23 or 23A respectively of the Ordinance for renewal of licence. The Authority may renew the licence or otherwise.  
持有根據本條例第 20 條或第 23 A 條所批給牌照的人士，可於牌照屆滿前不多於 4 個月及不少於 2 個月內，根據本條例的第 23 或 23 A 條的規定，申請牌照續期。監督可將牌照續期或拒絕將牌照續期。
- (h) Under Section 24 of the Ordinance, the Authority may by notice in writing, impose new or amended terms and conditions on this licence or cancel this licence. Under Section 25, 26 and 27 of the Ordinance, a Licensee whose licence has been so varied or cancelled may be entitled to compensation.  
根據本條例第 24 條的規定，監督可以書面通知，向本牌照施加新訂或經修訂的條款及條件，或取消本牌照。根據本條例第 25、26 及 27 條的規定，被更改或取消牌照的持牌人可能會獲得補償。
- (i) Under Section 28 of the Ordinance, the Licensee may apply to the Authority for a variation of this licence.  
根據本條例第 28 條的規定，持牌人可向監督申請更改本牌照。
- (j) Under Section 49 of the Ordinance, this licence shall not be construed as a dispensation from the requirements of any other Ordinance except where that other Ordinance so provides.  
根據本條例第 49 條的規定，本牌照並不得解釋為豁免符合任何其他條例的規定，除非該其他條例如此訂定。
- (k) The licensee should ensure good practice is carried out in dealing with discharges from the construction site. The licensee should make reference to the EPD's Practice Note for Professional Persons, No. PN 1/94, "Construction Site Drainage."  
持牌人須確保妥善處理地盤之去水排放。持牌人可參考環保署印發之 Practice Note for Professional Persons, 編號 PN 1/94, "Construction Site Drainage"。

**Annex I**  
**附件 I**



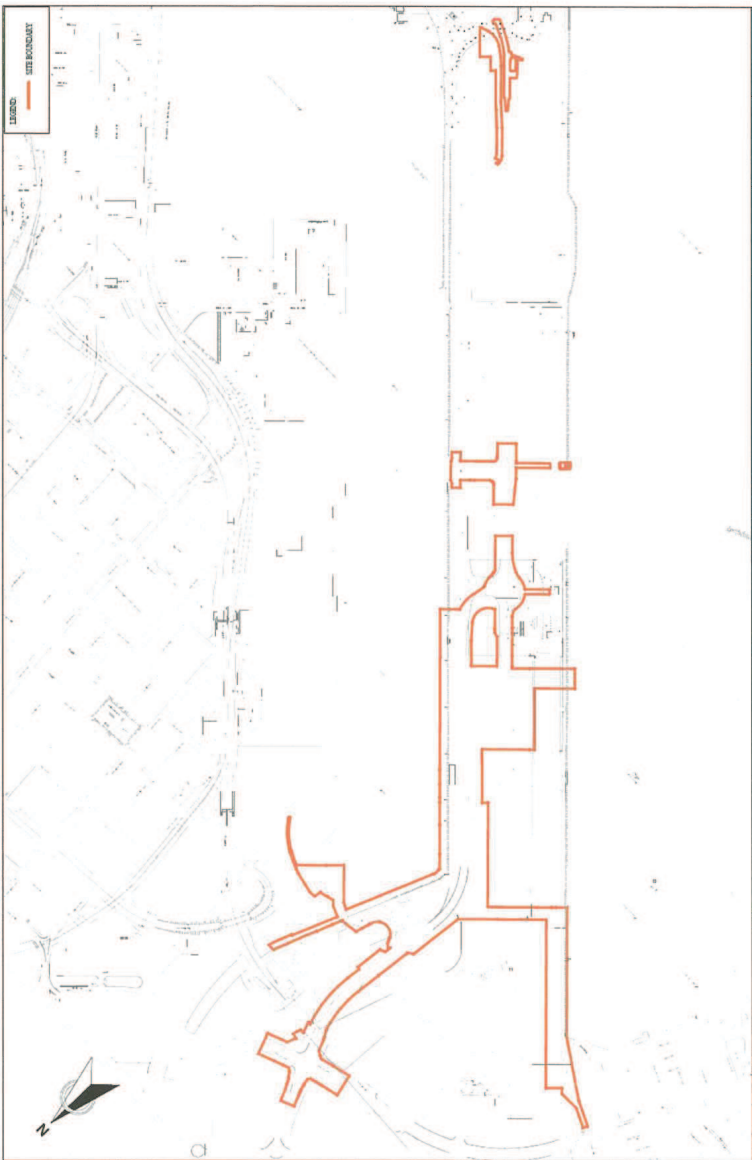
ENVIRONMENTAL PROTECTION DEPARTMENT,  
HONG KONG  
REGIONAL OFFICE (EAST)  
香港環境保護署  
區域辦事處(東)

Annex to licence No.: **WT00034610-2019**  
牌照編號 **WT00034610-2019** 的附件

Date: **September 2019** 日期:  
Scale: **NTS** 比例: 不按比例

**Title: Construction Site Boundary**  
標題: 建築地盤範圍

**Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01)**  
九龍九龍城啟德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤 (土木工程拓展署合約編號ED/2018/01)





**Wastewater Treatment Facility**  
廢水處理設施

Sampling Point (S.P.) at sampling valve of the discharge outlet of Wastewater Treatment Facility  
取樣點 (S.P.) 位於廢水處理設施出水口的取樣閥



**Annex II**  
**附件 II**

**Title: Wastewater Treatment Facility and Sampling Point (S.P.)**

標題: 廢水處理設施 及取樣點 (S.P.)

**Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01)**

九龍九龍城啟德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤 (土木工程拓展署合約編號ED/2018/01)

Annex to licence No.: **WT00034610-2019**

牌照編號 **WT00034610-2019** 的附件

Date: **September 2019**

日期:

Scale: **NTS**

比例: 不按比例

ENVIRONMENTAL PROTECTION DEPARTMENT,  
HONG KONG  
REGIONAL OFFICE (EAST)



香港環境保護署  
區域辦事處(東)



本署檔號  
Our Ref: EP682/286/0141/I  
來函檔號  
Your Ref:  
電話  
Tel. No.: 2117 7539  
圖文傳真  
Fax No.: 2756 8588  
電子郵件  
E-Mail:  
網址  
Homepage: <http://www.epd.gov.hk/>

Environmental Protection Department  
Environmental Compliance Division  
Regional Office (East)  
5<sup>th</sup> Floor, Nan Fung Commercial Centre,  
19 Lam Lok Street, Kowloon Bay,  
Kowloon, Hong Kong.



1316  
環境保護署  
環保法規管理科  
區域辦事處(東)  
香港九龍九龍灣臨樂街  
十九號南豐商業中心五樓

**BY REGISTERED POST**

25 FEB 2020

Penta-Ocean Construction Co., Ltd.  
Room 601, K. Wah Centre,  
191 Java Road,  
North Point, Hong Kong



Dear Sir/Madam,

**Water Pollution Control Ordinance (WPCO) (Cap 358)**  
**(Licence No: WT00034610-2019)**  
**Variation of Licence Pursuant to Section 28 of WPCO**

I refer to your application dated 19/11/2019 made under Section 28 of the WPCO for the variation of your captioned licence granted on 26/09/2019. The Authority, pursuant to Section 28(4) & (7), hereby grants the application with the following variations.

- Sampling Points and Wastewater Treatment Facilities
- The limitations on discharge in Part B shall be varied from the existing limits to the new limits
- Self-monitoring and Reporting

Part A, B, Annex II, III & IV of your captioned licence shall be replaced by the corresponding Part shown in the Appendix of this letter with immediate effect.

This letter plus the remaining valid parts of your captioned licence shall form the varied licence. Please therefore attach this letter to your captioned licence. Please also note that the expiry date remains unchanged and the varied licence is valid up to 30/09/2024.

The granting of the application does not imply that the discharge/deposit from your premises is in compliance with the required standards and limits as stipulated in the varied licence. It is your responsibility to ensure that the terms and conditions of the varied licence are fully complied with.

Should you have any enquiry, please feel free to contact TONG Tsz-shan, Viviana at 2117 7527.

Yours faithfully,

(CHAN Wai-lun)  
Environmental Protection Officer  
for Director of Environmental Protection

Encl.: Appendix



掛號郵件

先生/女士:

**《水污染管制條例》(第358章)**  
**牌照編號: WT00034610-2019**  
**根據《水污染管制條例》第28條更改牌照**

你在二零一九年十一月十九日根據《水污染管制條例》第28條遞交了更改在二零一九年九月廿六日發出的上述牌照的申請。監督根據《水污染管制條例》第28(4)及(7)條批准有關申請，並作出以下更改：

- 取樣點及廢水處理設施
- 乙部的排放限制將由現時的上限更改至新上限
- 自行監測及報告

上述牌照的 甲、乙、附件 II、III 及 IV 部分將由本函附錄所示的相應部分取代，即時生效。

本函連同上述牌照的餘下有效部分將構成修訂牌照，因此請將本函附於上述牌照。請注意，牌照屆滿日期維持不變，而修訂牌照的有效期至二零二四年九月三十日。

申請獲得批准並不代表你處所的排放／沉積物符合修訂牌照的訂明標準及上限。你必須確保完全遵守修訂牌照的條款及條件。

如有查詢，請致電 2117 7527 與本署 唐紫珊 聯絡。

環境保護署署長  
(環境保護主任)  
(陳偉麟代行)

連附錄



## Appendix 附錄

Licence No.: WT00034610-2019  
牌照編號: WT00034610-2019

This Licence is Valid to: 30/09/2024  
本牌照有效期至: 二零二四年九月三十日

ENVIRONMENTAL PROTECTION DEPARTMENT  
環境保護署

WATER POLLUTION CONTROL ORDINANCE (CAP. 358)  
水污染管制條例(第358章)

LICENCE PURSUANT TO SECTION 15/20/23A\*  
按第15 / 20/ 23A\*條簽發的牌照

The Director of Environmental Protection ("the Authority") grants this licence under the Water Pollution Control Ordinance ("the Ordinance") on the terms and conditions stated below.

環境保護署署長(「監督」)按下列的條款及條件,根據水污染管制條例(「本條例」)批給此牌照。

21 February 2020

Date  
日期

  
( CHAN Wai-lun )  
For the Authority  
監督( 陳偉麟 ) (代行)

## PART A 甲部 : GENERAL TERMS 一般條款

|  |   |
|--|---|
| Name of Licensee ("the Licensee")<br>持牌人名稱(「持牌人」)                      | Penta-Ocean Construction Co., Ltd.  |
| Discharge Premises ("the premises")<br>排放處所(「處所」)                      | Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01) (See Annex I)<br>九龍九龍城啟德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤(土木工程拓展署合約編號 ED/2018/01) (參見附件 I) |
| Water Control Zone<br>水質管制區  | Victoria Harbour (Phase Two) Water Control Zone<br>維多利亞港(第二期)水質管制區  |
| Discharge Category<br>排放種類   | Discharge of industrial trade effluent<br>工業污水排放  |
| Nature of Discharge and Wastewater Treatment Facilities<br>排放性質及廢水處理設施 | Effluent, Surface Run-off, and all other wastewater discharges from the premises<br>上址排放的污水、地面徑流水及其他的廢水<br>Screen, Chemical Precipitation, pH adjustment and Sedimentation Tank<br>隔濾設施、化學沉降、酸鹼值調節及沉澱池  |
| Discharge Point(s)<br>排放點  | Discharge into communal storm water drain<br>排放入公用雨水渠   |
| Sampling Point(s)<br>取樣點   | Discharge outlet(s) of Wastewater Treatment Facility marked S.P. 1, S.P. 2 & S.P. 3 on Annex II, III & IV<br>參見附件 II、III 及 IV 中標指 S.P. 1、S.P. 2 及 S.P. 3 的廢水處理設施的出水口  |

\*Delete as appropriate  
將不適用者刪去

Reference No. 參考編號 EP682/286/0141/1

- 1 -

Printed on Recycled Paper

EPD156

## PART B 乙部 : SPECIFIC CONDITIONS 特別條件

## B1. Limitations on Discharge 排放限制

The quantity and composition of any discharge from the premises shall not exceed the limits stated in the table below<sup>(Note a)</sup>. All figures are upper limits unless otherwise indicated. All units are expressed as concentration in milligramme per litre unless otherwise stated.

任何源自處所之排放的量和成份不得超過下表所列的限度<sup>(附註 a)</sup>。除另予表明外,所有數字均為上限。除另予說明外,所有單位均以毫克/升的濃度表示。

| Determinand 測量物                               | Limit 限度         |
|---|------------------|
| Flow Rate (m <sup>3</sup> / day)<br>流量(立方米/日) | 195              |
| pH (pH units)<br>酸鹼值 (pH 單位)                  | 6-9 <sup>#</sup> |
| Suspended Solids<br>懸浮固體                      | 30               |
| Chemical Oxygen Demand<br>化學需氧量               | 80               |

# Range 上下限

## B2. Self-monitoring and Reporting 自行監測及報告

The Licensee shall perform self-monitoring as and when required by the Authority.

持牌人須在監督要求時進行自行監測。

The Licensee shall sample the discharge at the Sampling Point(s) and, at his own expense carry out analyses in accordance with the sample type and measurement frequency specified for each determinand named below:-

持牌人須在取樣點為排放抽取樣本,並依照下列指定的測量物、取樣形式及頻率,自資予以分析。

| Determinand 測量物          | Unit 單位      | Sample Type 取樣形式 | Frequency 頻率        |
|--------------------------|--------------|------------------|---------------------|
| Suspended Solids<br>懸浮固體 | mg/L<br>毫克/升 | Grab<br>隨意取集     | Bimonthly<br>每兩個月一次 |

Results of these monitoring shall be summarized in a report on a Monthly/Bi-monthly/Quarterly/Yearly\* basis and shall be submitted to the Authority.

所有監測結果須以摘要形式,每一個月/兩個月/三個月/年\*作出報告,並須呈交監督審閱。

\*Delete as appropriate  
將不適用者刪去

- 2 -

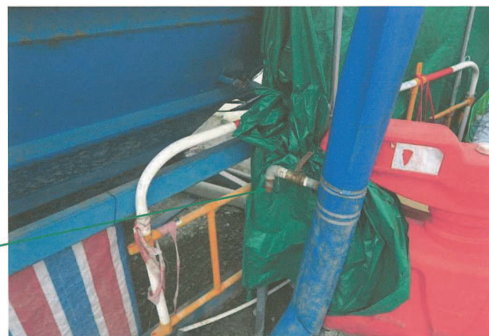
EPD156



Annex II  
附件 II



Wastewater Treatment Facility (1)  
廢水處理設施(1)



Sampling Point (S.P. 1) at sampling valve of the discharge outlet of Wastewater Treatment Facility (1)

取樣點(S.P. 1)位於廢水處理設施(1)出水口的取樣閥

Title: Wastewater Treatment Facility (1) and Sampling Point (S.P. 1)  
標題: 廢水處理設施(1)及取樣點(S.P. 1)

Annex to licence No.: WT00034610-2019

牌照編號 WT00034610-2019 的附件

Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01)  
九龍九龍城政德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤(土木工程拓展署合約編號ED/2018/01)

ENVIRONMENTAL PROTECTION DEPARTMENT,  
HONG KONG  
REGIONAL OFFICE (EAST)

Scale: NTS  
比例: 不按比例

香港環境保護署  
區域辦事處(東)



Annex III  
附件 III



Wastewater Treatment Facility (2)  
廢水處理設施(2)



Sampling Point (S.P. 2) at sampling valve of the discharge outlet of Wastewater Treatment Facility (2)

取樣點(S.P. 2)位於廢水處理設施(2)出水口的取樣閥

Title: Wastewater Treatment Facility (2) and Sampling Point (S.P. 2)  
標題: 廢水處理設施(2)及取樣點(S.P. 2)

Annex to licence No.: WT00034610-2019

牌照編號 WT00034610-2019 的附件

Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01)  
九龍九龍城政德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤(土木工程拓展署合約編號ED/2018/01)

ENVIRONMENTAL PROTECTION DEPARTMENT,  
HONG KONG  
REGIONAL OFFICE (EAST)

Scale: NTS  
比例: 不按比例

香港環境保護署  
區域辦事處(東)



Annex IV

附件 IV



Wastewater Treatment Facility (3)  
廢水處理設施(3)



Sampling Point (S.P. 3) at sampling valve of the discharge outlet of Wastewater Treatment Facility (3)

取樣點(S.P. 3)位於廢水處理設施(3)出水口的取樣閥

Title: Wastewater Treatment Facility (3) and Sampling Point (S.P. 3)  
標題: 廢水處理設施(3)及取樣點(S.P. 3)

Construction Site of Kai Tak Development – Stage 4 Infrastructure at the Former Runway and South Apron, Kowloon City, Kowloon (CEDD Contract No. ED/2018/01)  
九龍九龍城啟德發展-前跑道和南停機坪的第4階段基礎設施之建築地盤(土木工程拓展署合約編號ED/2018/01)

Annex to licence No.: WT00034610-2019

牌照編號 WT00034610-2019 的附件

Scale: NTS  
比例: 不按比例

ENVIRONMENTAL PROTECTION DEPARTMENT,  
HONG KONG  
REGIONAL OFFICE (EAST)

香港環境保護署  
區域辦事處(東)





本署檔號  
OUR REF.: RE04380  
來函檔號  
YOUR REF.:  
電話  
TEL. NO.: 2872 1769  
圖文傳真  
FAX NO.: 2591 0361  
網址  
HOMEPAGE: <http://www.epd.gov.hk>

Environmental Protection Department  
Environmental Infrastructure Division

88 Victoria Road,  
Kennedy Town,  
Hong Kong.



環境保護署  
環境基建科  
香港西環  
堅尼地城  
域多利道88號

PENTA-OCEAN CONSTRUCTION CO., LTD.  
FLAT/ROOM 601, K. WAH CENTRE,  
191 JAVA ROAD, NORTH POINT,  
HONG KONG  
Attn.: CHOI CHONG KEI

Friday, 28 June, 2019



Dear Sir/Madam,

**Waste Disposal (Charges for Disposal of Construction Waste) Regulation**  
**Approval of Application for Billing Account**  
**(Construction work contract with value of \$1 million or above)**  
Application No.: RE04380

I am pleased to inform you that your application for billing account for disposal of construction waste under the following construction work contract has been approved under Section 6 and 9 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation:

**Contract No.: ED/2018/01**

**Contract Name: KAI TAK DEVELOPMENT - STAGE 4 INFRASTRUCTURE AT THE FORMER RUNWAY AND SOUTH APRON**

**Construction Waste Generated Site: KAI TAK THE FORMER RUNWAY AND SOUTH APRON**

The account number is 7034450. Please quote this account number for enquiries in relation to the billing account.

You are bound by the "Basic Conditions" and "Conditions of Use" accompanied with this account for disposal of construction waste at the prescribed facilities. You shall ensure that (a) the billing account established solely for the contract as stated above is used for paying any prescribed charge payable in respect of construction waste generated from construction work undertaken under the above contract; and (b) that billing account is not used for paying any prescribed charge payable in respect of any other construction waste not generated from construction work undertaken under the contract as stated above.

Regarding your application for issuance of chits, a demand note for the deposit required will be sent to you accordingly. Request for additional chits can be made using "Form 4". Please note that one chit is required for each load of construction waste to be disposed of at prescribed facility.

Should you have any queries, please contact us at 2872 1769.

Yours faithfully,

(K O Yeung)

Principal Environmental Protection Officer  
for Director of Environmental Protection



ISO 14001:2015  
Certificate No:E103

本署檔號 447046  
Our Ref:  
來函檔號  
Your Ref: 2117 7539  
電話  
Tel. No.: 2756 8588  
圖文傳真  
Fax No.:  
電子郵件  
E-Mail:  
網址  
Homepage: <http://www.epd.gov.hk/>

Environmental Protection Department  
Environmental Compliance Division  
Regional Office (East)  
5<sup>th</sup> Floor, Nan Fung Commercial Centre,  
19 Lam Lok Street, Kowloon Bay,  
Kowloon, Hong Kong.



環境保護署  
環保法規管理科  
區域辦事處(東)  
香港九龍九龍灣臨樂街  
十九號南豐商業中心五樓

31 JUL 2019

By Registered Post

PENTA-OCEAN CONSTRUCTION CO., LTD.  
FLAT 601, K. WAH CENTRE,  
191 JAVA ROAD,  
NORTH POINT, HONG KONG



Dear Sir/Madam,

**Waste Disposal Ordinance (Cap. 354)**  
**Waste Disposal (Chemical Waste) (General) Regulation**  
**Registration as a Chemical Waste Producer**  
**Completion of Registration**

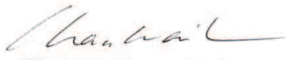
I am pleased to inform you that your registration with this department as a chemical waste producer has been completed.

The assigned Waste Producer Number (WPN) and the particulars of your establishment are printed in the enclosed form (EPD 130). If you consider there are any discrepancies about the particulars, please notify me immediately, quoting the assigned WPN.

The "EPD 130" is an important document, please archive appropriately. This registration is not transferable and will be valid only in respect of the applicant and the premises registered. In future when there is change in the registration particulars, you should inform this department as soon as possible so that our record can be amended accordingly. Under section 7 of the above regulation, failure to notify this department of relevant changes is an offence and liable to a maximum fine of HK\$10,000.

For enquiries, please contact us at Tel 2117 7546.

Yours faithfully,

  
( CHAN Wai-lun, William )  
Environmental Protection Officer  
for Director of Environmental Protection

Encl.



掛號函件

先生/女士:

香港法例第三五四章廢物處置條例  
廢物處置(化學廢物)(一般)規例  
化學廢物產生者  
完成登記程序

本署已完成辦理 貴機構申請登記為「化學廢物產生者」。現隨信附上EPD 130表格,載有 貴機構的各項資料及你的「化學廢物產生者」編號。請即核對表格內的各項資料,如有錯漏,請即聯絡本署職員以便更正。通訊時請註明你的化學廢物產生者編號。

EPD 130 表格是一份重要文件,請妥善存檔。同時,是項登記,不得轉讓,並只適用於已登記的申請人/機構及有關地址。日後如果已申報的資料有變更,你應馬上通知本署,以便修正紀錄。按照上述規例第七條規定,任何人倘未有將變更資料及時呈報,乃屬違例行為,一經定罪,可被判罰款最高港幣一萬元正。

若有任何疑問,請致電 2117 7546 與本署職員聯絡。

環境保護署署長  
(環境保護主任 陳偉麟 代行)

附件

**Environmental Protection Department**  
**環境保護署**  
**Waste Disposal Ordinance (Chapter 354)**  
 香港法例第354章廢物處置條例  
**Waste Disposal (Chemical Waste) (General) Regulation**  
 廢物處置(化學廢物)(一般)規例  
**Registration of Waste Producer**  
 廢物產生者登記證

|                         |  |  |
|-------------------------|--|--|
| To:<br>致<br><br>化學廢物產生者 | <b>Chemical Waste Producer</b>         | <b>Full Name (English)</b><br>全名(英文) <u>PENTA-OCEAN CONSTRUCTION CO., LTD.</u>                                   |
|                         |  | <b>(Chinese)</b><br>(中文) <u>---</u> <b>I.D. Card No. (if any)</b><br>身份證號碼:(如有者) <u>---</u>                      |
|                         |  | <b>Business Reg. Cert. No. (if any)</b><br>商業登記證號碼:(如有者) <u>07818486-000-05-18-7</u>                             |
|                         |  | <b>Address for Correspondence</b><br>通訊地址: <u>FLAT 601, K. WAH CENTRE, 191 JAVA ROAD, NORTH POINT, HONG KONG</u> |
|                         | <b>Tel. No.</b><br>電話: <u>94332628</u> | <b>Fax No.</b><br>圖文傳真: <u>25724080</u>  |

With reference to your application dated 09 / 07 / 2019 for registration as a Waste Producer under the Waste Disposal (Chemical Waste) (General) Regulation, the Waste Producer Number, WPN 5|2|1|8-2|8|6-P|3|1|8|2-0|3 is assigned to you in respect of the location or premises listed below:—

前於 2019 年 07 月 09 日根據廢物處置(化學廢物)(一般)規例而來信,申請登記為廢物產生者,茲特配予廢物產生者編號第 5|2|1|8-2|8|6-P|3|1|8|2-0|3 號,予下開地點或處所:—

|  |  |
|--|--|
| Location or Premises where the waste is produced<br><br>產生廢物的地點或處所 | <b>Name of Establishment</b><br>機構名稱: <u>PENTA-OCEAN CONSTRUCTION CO., LTD.</u>  |
|  | <b>Business Reg. Cert. No. (if any)</b><br>商業登記證號碼:(如有者) <u>07818486-000-05-18-7</u>   |
|  | <b>Nature of Business</b><br>業務性質: <u>CONSTRUCTION</u>   |
|  | <b>Major chemical waste types</b><br>主要化學廢物種類: <u>SPENT LUBRICATING OIL, SPENT MINERAL OIL, SURPLUS PAINT, SPENT BATTERY CELL CONTAINING HEAVY METALS, SPENT MIXING RESIDUE CONTAINING ACID AND ASBESTOS WASTE</u> |
|  | <b>Address</b><br>地址: <u>CONSTRUCTION SITE OF KAI TAK DEVELOPMENT - STAGE 4 INFRASTRUCTURE AT THE FORMER RUNWAY AND SOUTH APRON, KOWLOON CITY, KOWLOON (CEDD CONTRACT NO. ED/2018/01)</u>                          |



*Chan Wai-lun*  
**(CHAN Wai-lun, William)**  
 for Director of Environmental Protection  
 環境保護署署長(陳偉麟 代行)

Date 18 / 07 / 2019  
 日期

**WARNING:** Any registered waste producer who fails to inform the Director of Environmental Protection of any change in his registration particulars commits an offence and is liable on conviction to a fine of \$10,000.

**警告:** 任何已登記的廢物產生者,若其登記資料有任何改變而不知會環境保護署署長,即屬違法,被定罪者最高罰款港幣10,000元。



本署檔案  
OUR REF : (4) in EP631/K19/RE453737-20  
來函檔案  
YOUR REF :  
電話  
TEL NO : 2150 8081  
圖文傳真  
FAX NO : 2402 8275  
網址  
HOMEPAGE : <http://www.epd.gov.hk/>

Environmental Protection Department  
Environmental Compliance Division  
Regional Office (East)  
8/F., Cheung Sha Wan Government Offices,  
303 Cheung Sha Wan Road,  
Kowloon



環境保護署  
環保法規管理科  
區域辦事處(東)  
九龍長沙灣道303號  
長沙灣政府合署8樓



001487

Registered Post

16 March 2020

To: PENTA – OCEAN CONSTRUCTION CO., LTD.  
Flat 601, K. Wah Centre,  
191 Java Road,  
North Point, Hong Kong

Dear Sir,

**Notice of Issue of Construction Noise Permit pursuant  
to section 8(6) of the Noise Control Ordinance (Cap. 400)**

I write to inform you that, under section 8(6) of the Noise Control Ordinance, the Authority has decided to issue a construction noise permit in respect of your application, which was received by the Authority on 27 February 2020 **for the use of powered mechanical equipment for carrying out construction work at Kai Tak Development – Stage 4 infrastructure at the former runway and south apron (Works Area Part 1), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01).**

The construction noise permit No. GW-RE0173-20 is enclosed.

You are advised to read the conditions of the permit carefully and to ensure compliance with these conditions. Any breaching of the conditions may lead to cancellation of the permit, **subsequent prosecution action** and the Authority's refusal to issue further permit for the above construction site.

Yours faithfully,

(TANG Wai-man, Lisa)  
for Authority

Note:

Electronic submission of application for construction noise permit is available at Environmental Protection Department's website. File attachments with total size not exceeding 20 MB in acceptable format are allowed for electronic submission. Electronic application form can be downloaded from our website (<https://epic.epd.gov.hk/eForm/ChangeLanguage.do?language=eng&url=/pages/datadownload/downloadMain.jsp>) and an overview of application submission (<https://epic.epd.gov.hk/eForm/introduce.html>) is provided for more information.

(4) in EP631/K19/RE453737-20

2150 8081

2402 8275

掛號函件

致： 香港 北角  
渣華道191號  
嘉華國際中心601室  
PENTA – OCEAN CONSTRUCTION CO., LTD.

執事先生：

根據《噪音管制條例(第400章)》第8(6)條  
發出的通知書 — 簽發「建築噪音許可證」

本監督於二零二零年二月二十七日，收到你擬於下述地址：九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第一部份) (土木工程拓展署合約編號ED/2018/01)，使用機動設備進行建築工程而提出的「建築噪音許可證」申請，現根據《噪音管制條例》第8(6)條的規定通知你，上述的申請已被批准。

隨函附上「第GW-RE0173-20號建築噪音許可證」。

請細閱許可證各項條件，確保遵守，如有違反，本監督可撤銷許可證，提出檢控及拒絕再就上述地盤簽發任何「建築噪音許可證」。

監督

(鄧慧敏)



代行)

二零二零年三月十六日

注意:

環境保護署提供網上申請「建築噪音許可證」服務。網上申請容許上傳檔案總容量不大於20 MB的有關文件。可於本署網頁下載電子表格 (<https://epic.epd.gov.hk/eForm/ChangeLanguage.do?language=eng&url=/pages/datadownload/downloadMain.jsp>) 及參閱電子表格提交服務概覽 (<https://epic.epd.gov.hk/eForm/introduce.html>)，了解更多資料。

FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

**CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK**

CONSTRUCTION NOISE PERMIT NO. GW-RE0173-20

To : PENTA – OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

*CONDITIONS*

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed :  
Full address : Kai Tak Development -- Stage 4 infrastructure at the former runway and south apron (Works Area Part 1), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01) Lot No.: ---

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. \* PART/WHOLE of the site falls \* WITHIN/OUTSIDE a designated area.

3. Powered Mechanical Equipment

- a. Items of powered mechanical equipment which may be used inside the site boundary :

| <i>Identification code of item of powered mechanical equipment (if applicable)</i> | <i>Description of item of powered mechanical equipment</i> | <i>No. of units</i> |
|--|--|---------------------|
|  | Refer to attached sheet.                                   |                     |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:

Date and time of commencement : 28 April 2020 at 0000 hours

Days and hours : 0000-2400 hours on general holiday (including Sunday), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note Condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].

This part of the permit expires on : 27 October 2020 at 2400 hours

- c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.

- d. Other conditions imposed on the use of the powered mechanical equipment :

Refer to attached sheet.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary:

| <i>Identification code of type of prescribed construction work</i> | <i>Description of type of prescribed construction work</i> |
|--|--|
|  | Not applicable   |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement: Not applicable at Not applicable

Days and hours: Not applicable.

This part of the permit expires on : Not applicable at Not applicable


- c. Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.

- d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 16<sup>th</sup> day of March 2020

Signed : \_\_\_\_\_

  
(TANG Wai-man, Lisa)  
for Authority

\* Delete as necessary

表格 3  
 噪音管制條例  
 (第 400 章)  
 第 8(9) 條

[第 5(a) 條]

建築噪音許可證  
 為進行建築工程 (撞擊式打樁除外)  
 而使用機動設備及 / 或進行訂明建築工程

建築噪音許可證編號: GW-RE0173-20

致: PENTA - OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第 8 條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及 / 或進行訂明建築工程, 但須受以下條件規限。若不按照該等條件進行建築工程, 許可證可遭撤銷, 而且會受到檢控。

條件

1. 可使用機動設備及 / 或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第一部分)(土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上, 而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分 / 全部 \* 位於指定範圍之內 / 外 \*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識別代碼<br>(如適用的話) | 各項機動設備的說明 | 數目 |
|------------------------|-----------|----|
|                        | 參見附頁。     |    |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年四月二十八日 凌晨零時  
 日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時, 公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二零年十月二十七日 晚上十二時  
 日期 時間

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀, 供監督隨時查看; 該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

參見附頁。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識別代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用。

此部分許可證屆滿日期及時間: 不適用  
 日期 時間

c. 本許可證可夾附經監督認可的地盤圖則, 以顯示本許可證准予進行訂明建築工程的地點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處, 給予公眾人士參閱。

日期: 2020 年 03 月 16 日



簽署: \_\_\_\_\_  
 監督  
 (鄧慧敏 代行)

\* 刪去不適用者




## Sheet Attached to Construction Noise Permit

No. GW-RE0173-20

## 3.a. Items of powered mechanical equipment which may be used inside the site boundary :


| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group A</b>  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| ---   | Piling, vibrating hammer   | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| ---   | Welding machine (electric)   | Ten          |
| ---   | Air blower (electric)  | One          |
| CNP 283   | Water pump, submersible (electric)   | Eight        |
| ---   | Wastewater treatment plant   | Two          |
| <b>Group B</b>  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| CNP 081   | Excavator, tracked   | One          |
| CNP 283   | Water pump, submersible (electric)   | Eight        |
| ---   | Wastewater treatment plant   | Two          |
| ---   | Welding machine (electric)   | Ten          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| <b>Group C</b>  | CNP 283 Water pump, submersible (electric)   | Twelve       |
| ---   | Wastewater treatment plant   | Two          |
| ---   | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | Three        |
| <b>Group D</b>  | CNP 044 Concrete lorry mixer   | Two          |
| ---   | Poker, vibratory, hand-held (electric)   | One          |
| CNP 047   | Concrete pump, stationary  | One          |
| CNP 283   | Water pump, submersible (electric)   | Six          |
| ---   | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| ---   | Wastewater treatment plant   | Two          |

Signed:   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0173-20 的附頁

## 3.a. 在地盤範圍內可使用的各項機動設備：

| 各項機動設備的識別代碼 (如適用的話) | 各項機動設備的說明                            | 數目 |
|---------------------|--------------------------------------|----|
| <b>A 組</b>          | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 壹  |
| ---                 | 打樁機，震動鉗                              | 壹  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| ---                 | 焊接機 (電動)                             | 拾  |
| ---                 | 吹風機 (電動)                             | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 捌  |
| ---                 | 污水處理器                                | 貳  |
| <b>B 組</b>          | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 壹  |
| CNP 081             | 挖土機，履帶式                              | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 捌  |
| ---                 | 污水處理器                                | 貳  |
| ---                 | 焊接機 (電動)                             | 拾  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| <b>C 組</b>          | CNP 283 潛水泵 (電動)                     | 拾貳 |
| ---                 | 污水處理器                                | 貳  |
| ---                 | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 叁  |
| <b>D 組</b>          | CNP 044 混凝土攪拌車                       | 貳  |
| ---                 | 混凝土震動機，手提型 (電動)                      | 壹  |
| CNP 047             | 混凝土泵，固定                              | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 陸  |
| ---                 | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 壹  |
| ---                 | 污水處理器                                | 貳  |

簽署:   
監督  
(鄧慧敏 代行)

**Sheet Attached to Construction Noise Permit**  
**No. GW-RE0173-20**

**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

1. The powered mechanical equipment listed in condition 3.a shall only be operated during the hours shown below:

|                                 |                                     |   |
|---------------------------------|-------------------------------------|---|
| <b><u>Groups A, B and D</u></b> | General holiday including Sunday    | 0700 – 1900 hours                       |
|                                 | Any day not being a general holiday | 1900 – 2300 hours                       |
| <b><u>Group C</u></b>           | General holiday including Sunday    | 0000 – 2400 hours                       |
|                                 | Any day not being a general holiday | 0000 – 0700 hours AND 1900 – 2400 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a shall be allowed to operate at any time.

Signed : \_\_\_\_\_

(TANG Wai-man, Lisa)  
for Authority

**建築噪音許可證**  
**編號 GW-RE0173-20 的附頁**

**3. d. 規限使用機動設備的其他條件：**

1. 祇可於以下時間內使用列在條件 3. a 內的機動設備：

|                             |             |                        |
|-----------------------------|-------------|------------------------|
| <b><u>A組、B組<br/>及D組</u></b> | 公眾假日包括星期日   | 上午七時 至 下午七時            |
|                             | 公眾假日以外的任何一日 | 下午七時 至 晚上十一時           |
| <b><u>C組</u></b>            | 公眾假日包括星期日   | 凌晨零時至晚上十二時             |
|                             | 公眾假日以外的任何一日 | 凌晨零時至上午七時 及 下午七時至晚上十二時 |

2. 在任何時間內，祇可使用列在條件 3. a. 內其中一組機動設備。

簽署： \_\_\_\_\_



監督  
(鄧慧敏 代行)



Photograph(s) attached to Construction Noise Permit No. GW-RE0173-20  
建築噪音許可證編號：GW-RE0173-20 的照片



Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 93$  dB(A)  
發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A)

Photograph(s) attached to Construction Noise Permit No. GW-RE0173-20  
建築噪音許可證編號：GW-RE0173-20 的照片



Wastewater treatment plant  
污水處理器



CNP 283 Water pump, submersible (electric)  
潛水泵 (電動)



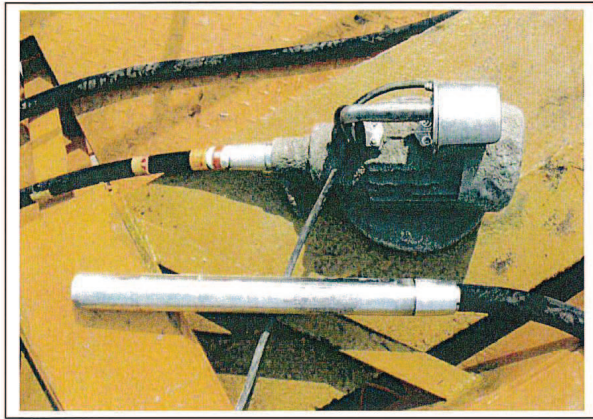
Air blower (electric)  
吹風機 (電動)





Photograph(s) attached to Construction Noise Permit No. GW-RE0173-20

建築噪音許可證編號：GW-RE0173-20 的照片



Poker, vibratory, hand-held (electric)  
混凝土震動機，手提型 (電動)



CNP 081 Excavator, tracked  
挖土機，履帶式



Photograph(s) attached to Construction Noise Permit No. GW-RE0173-20

建築噪音許可證編號：GW-RE0173-20 的照片



CNP 044 Concrete lorry mixer  
混凝土攪拌車



Piling, vibrating hammer  
打樁機，震動鎚



Photograph(s) attached to Construction Noise Permit No. GW-RE0173-20  
建築噪音許可證編號：GW-RE0173-20 的照片



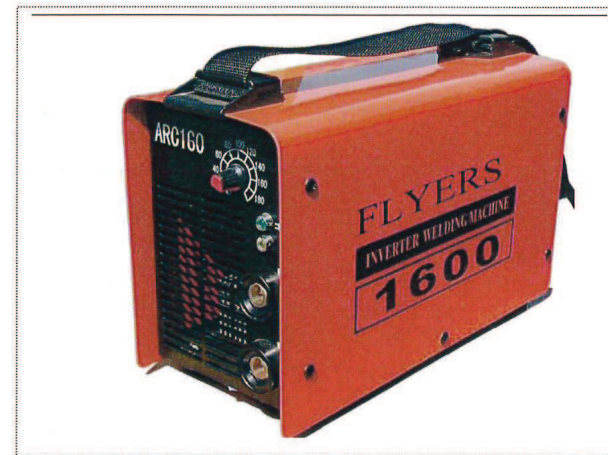
CNP 048 Crane, mobile (diesel) (1)  
起重機，流動(油渣)(1)



CNP 048 Crane, mobile (diesel) (2)  
起重機，流動(油渣)(2)



Photograph(s) attached to Construction Noise Permit No. GW-RE0173-20  
建築噪音許可證編號：GW-RE0173-20 的照片



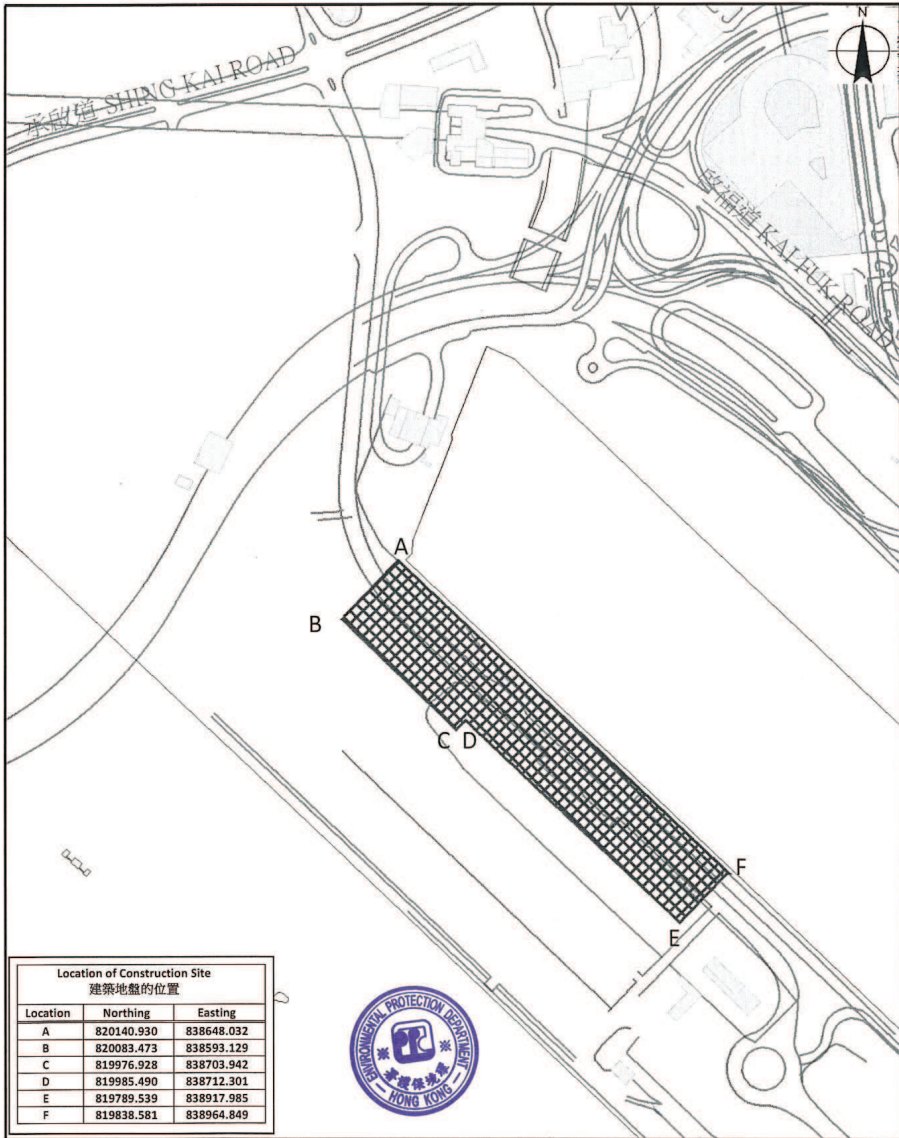
Welding machine (electric)  
焊接機(電動)



CNP 047 Concrete pump, stationary  
混凝土泵，固定







Location of Construction Site  
建築地盤的位置

| Location | Northing   | Easting    |
|----------|------------|------------|
| A        | 820140.930 | 838648.032 |
| B        | 820083.473 | 838593.129 |
| C        | 819976.928 | 838703.942 |
| D        | 819985.490 | 838712.301 |
| E        | 819789.539 | 838917.985 |
| F        | 819838.581 | 838964.849 |



環境保護署

噪音管制監督

Environmental Protection Department Noise Control Authority


圖例 Legend

 建築地盤 Construction Site

建築噪音許可證編號 GW-RE0173-20 的附圖

比例 Scale 1:5,000

Plan attached to Construction Noise Permit No. GW-RE0173-20

 米 Meters  
0 25 50 100 150

FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

**CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK**

CONSTRUCTION NOISE PERMIT NO. GW-RE0449-20

To : PENTA-OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

*CONDITIONS*

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed:

Full address: Kai Tak Development – Stage 4 infrastructure at the former runway and south apron (Work Area Part 3), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01). Lot No.: ---

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. **\*PART/WHOLE** of the site falls **\* WITHIN/OUTSIDE** a designated area.  
3. Powered Mechanical Equipment

- a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment | No. of units |
|---|---|--------------|
| Refer to attached sheet   |   |              |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:

Date and time of commencement : 1 June 2020 at 1900 hours

Days and hours : 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].

This part of the permit expires on : 26 November 2020 at 2300 hours

- c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.  
d. Other conditions imposed on the use of the powered mechanical equipment:

1. The powered mechanical equipment listed in condition 3.a. shall only be operated during the hours shown below:

|                                     |                   |
|-------------------------------------|-------------------|
| General holiday (including Sunday)  | 0700 – 1900 hours |
| Any day not being a general holiday | 1900 – 2300 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a. shall be allowed to operate at any time.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary:

| Identification code of type of prescribed construction work | Description of type of prescribed construction work |
|---|---|
|   | Not applicable                                      |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement : Not applicable at Not applicable

Date and hours : Not applicable

This part of the permit expires on : Not applicable at Not applicable

- c. ~~Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~

- d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 27<sup>th</sup> day of May, 2020

Signed : \_\_\_\_\_

( TANG Wai-man, Lisa )  
for Authority

- \* Delete as necessary



表格 3  
 噪音管制條例  
 (第400章)  
 第8(9)條

[第5(a)條]

建築噪音許可證  
 為進行建築工程(撞擊式打樁除外)  
 而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0449-20

致: PENTA-OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第3部分)  
 (土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識別代碼<br>(如適用的話) | 各項機動設備的說明 | 數目 |
|------------------------|-----------|----|
|                        | 參見附頁      |    |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年六月一日下午七時  
 日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時,公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二零年十一月二十六日晚上十一時  
 日期 時間

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀,供監督隨時查看;該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

1. 祇可於以下時間內使用列在條件3.a.內的機動設備:

|             |            |
|-------------|------------|
| 公眾假日(包括星期日) | 上午七時至下午七時  |
| 公眾假日以外的任何一日 | 下午七時至晚上十一時 |

2. 在任何時間內,祇可使用列在條件3.a.內的其中一組機動設備。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識別代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用

此部分許可證屆滿日期及時間: 不適用

c. 本許可證可夾附經監督認可的地盤圖則,以顯示本許可證准予進行訂明建築工程的點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處,給予公眾人士參閱。

日期: 2020年5月27日



簽署: \_\_\_\_\_


監督  
 (鄧慧敏 代行)

\* 刪去不適用者

Sheet Attached to Construction Noise Permit  
No. GW-RE0449-20

3.a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group A</b>  |  |              |
| CNP 021   | Bar bender and cutter (electric)   | Two          |
| ---   | Welding machine (electric)   | Three        |
| ---   | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level of $\leq$ 93dB(A) | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| ---   | Dump truck with grab, 5.5 tonne < gross vehicle weight $\leq$ 38 tonne                                   | One          |
| ---   | Air blower (electric)  | Six          |
| CNP 283   | Water pump, submersible (electric)   | Six          |
| ---   | Wastewater treatment plant   | Two          |
| <b>Group B</b>  |  |              |
| ---   | Poker, vibratory, hand-held (electric)   | One          |
| CNP 047   | Concrete pump, stationary  | One          |
| CNP 283   | Water pump, submersible (electric)   | Six          |
| ---   | Wastewater treatment plant   | Two          |
| ---   | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level of $\leq$ 93dB(A) | One          |
| CNP 044   | Concrete lorry mixer   | One          |

Signed :   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0449-20 的附頁

3.a. 在地盤範圍內可使用的各項機動設備：

| 各項機動設備的識辨代碼<br>(如適用的話) | 各項機動設備的說明                            | 數目 |
|------------------------|--------------------------------------|----|
| <b>A 組</b>             |                                      |    |
| CNP 021                | 鋼筋彎曲機及切割機 (電動)                       | 貳  |
| ---                    | 焊接機 (電動)                             | 參  |
| ---                    | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq$ 93 分貝(A) | 壹  |
| CNP 048                | 起重機，流動 (油渣)                          | 壹  |
| ---                    | 抓斗卸土車，5.5 噸 < 總重量 $\leq$ 38 噸        | 壹  |
| ---                    | 吹風機 (電動)                             | 陸  |
| CNP 283                | 潛水泵 (電動)                             | 陸  |
| ---                    | 污水處理器                                | 貳  |
| <b>B 組</b>             |                                      |    |
| ---                    | 混凝土震動機，手提 (電動)                       | 壹  |
| CNP 047                | 混凝土泵，固定                              | 壹  |
| CNP 283                | 潛水泵 (電動)                             | 陸  |
| ---                    | 污水處理器                                | 貳  |
| ---                    | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq$ 93 分貝(A) | 壹  |
| CNP 044                | 混凝土攪拌車                               | 壹  |

簽署：



監督  
(鄧慧敏 代行)



Photograph(s) attached to Construction Noise Permit No. GW-RE0449-20  
建築噪音許可證編號：GW-RE0449-20 的照片



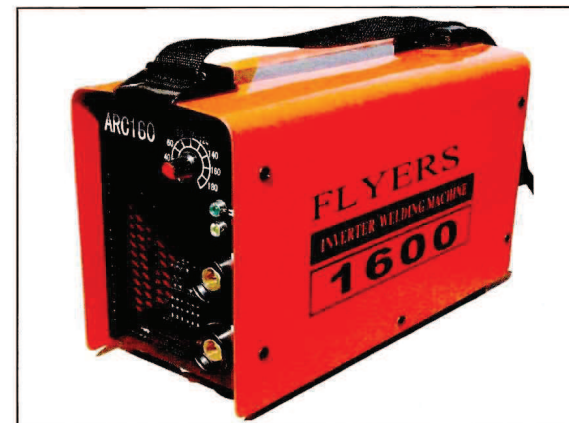
Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 93$  dB(A) (1)  
發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) (一)



Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 93$  dB(A) (2)  
發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) (二)



Photograph(s) attached to Construction Noise Permit No. GW-RE0449-20  
建築噪音許可證編號：GW-RE0449-20 的照片



Welding machine (electric)  
焊接機 (電動)



Air blower (electric)  
吹風機 (電動)





Photograph(s) attached to Construction Noise Permit No. GW-RE0449-20  
建築噪音許可證編號：GW-RE0449-20 的照片



CNP 283 Water pump, submersible (electric)  
潛水泵 (電動)



CNP 048 Crane, mobile (diesel)  
起重機，流動 (油渣)



Photograph(s) attached to Construction Noise Permit No. GW-RE0449-20  
建築噪音許可證編號：GW-RE0449-20 的照片

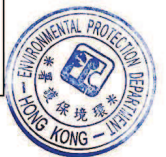


Wastewater treatment plant  
污水處理器



混凝土泵，固定  
Concrete pump, stationary  
mounted

CNP 047 Concrete pump, stationary  
混凝土泵，固定





Photograph(s) attached to Construction Noise Permit No. GW-RE0449-20  
建築噪音許可證編號：GW-RE0449-20 的照片



Poker, vibratory, hand-held (electric)  
混凝土震動機，手提(電動)

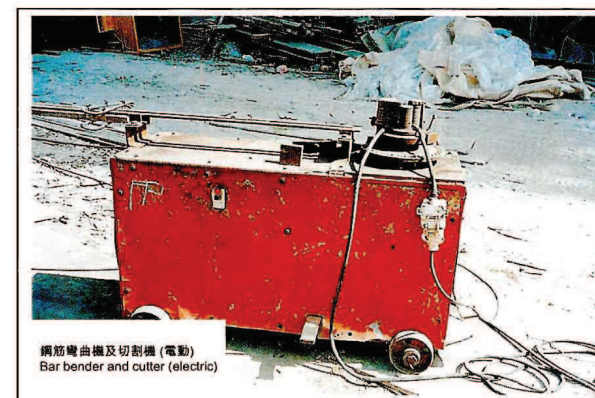


CNP 044 Concrete lorry mixer  
混凝土攪拌車

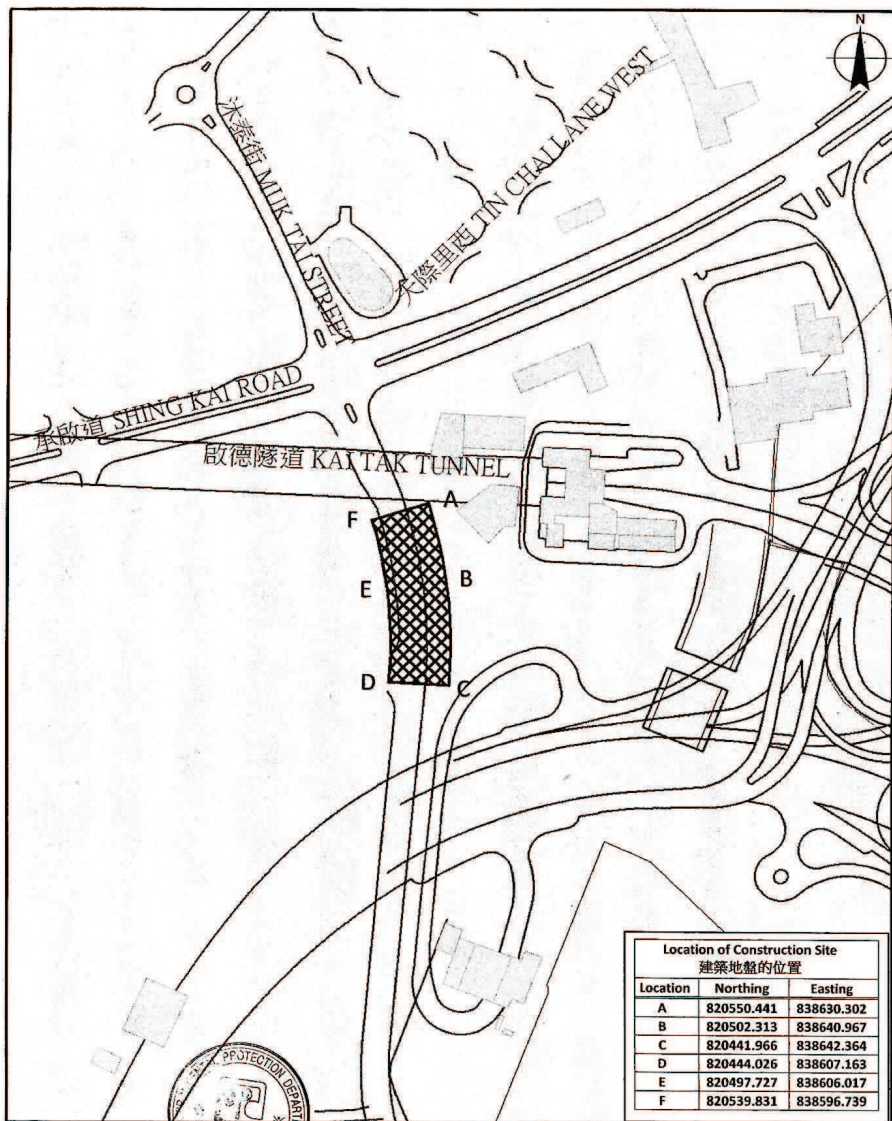
Photograph(s) attached to Construction Noise Permit No. GW-RE0449-20  
建築噪音許可證編號：GW-RE0449-20 的照片



Dump truck with grab, 5.5 tonne < gross vehicle weight  $\leq$  38 tonne  
抓斗卸土車，5.5 噸 < 總重量  $\leq$  38 噸



CNP 021 Bar bender and cutter (electric)  
鋼筋彎曲機及切割機(電動)



| Location of Construction Site<br>建築地盤的位置 |            |            |
|--|------------|------------|
| Location                                 | Northing   | Easting    |
| A  | 820550.441 | 838630.302 |
| B  | 820502.313 | 838640.967 |
| C  | 820441.966 | 838642.364 |
| D  | 820444.026 | 838607.163 |
| E  | 820497.727 | 838606.017 |
| F  | 820539.831 | 838596.739 |

環境保護署



噪音管制監督

Environmental Protection Department Noise Control Authority


圖例 Legend

 建築地盤 Construction Site

建築噪音許可證編號 GW-RE0449-20 的附圖

比例 Scale 1:3,000

Plan attached to Construction Noise Permit No. GW-RE0449-20

 米 Meters  
0 15 30 60 90



FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg. 5(a)]

CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK

CONSTRUCTION NOISE PERMIT NO. .... GW-RE0582-20 .....

To : PENTA-OCEAN CONSTRUCTION CO., LTD. ....

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

CONDITIONS

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed:

Full address: Kai Tak Development -- Stage 4 infrastructure at the former runway and south apron (Work Area Part 2A), Kai Tak, Kowloon  
(CEDD Contract No. ED/2018/01) ..... Lot No.: ..... --

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. \*PART/WHOLE of the site falls \* WITHIN/OUTSIDE a designated area.

3. Powered Mechanical Equipment

- a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment                     | No. of units |
|---|---|--------------|
| ---   | Lorry with aerial platform, 5.5 tonne < gross vehicle weight ≤ 38 tonne | Two          |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:

Date and time of commencement : 15 July 2020 ..... at 2300 hours .....

Days and hours : 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].

This part of the permit expires on : 14 January 2021 ..... at 0700 hours .....

- c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.

- d. Other conditions imposed on the use of the powered mechanical equipment:

1. The powered mechanical equipment listed in condition 3.a. shall only be operated during the hours shown below:

|                                     |                               |
|-------------------------------------|-------------------------------|
| Any day not being a general holiday | 2300 - 0700 hours on next day |
|-------------------------------------|-------------------------------|

2. The construction work covered by this Construction Noise Permit shall not be carried out together with the construction work covered by the Construction Noise Permit GW-RE0442-20 at any time.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary:

| Identification code of type of prescribed construction work | Description of type of prescribed construction work |
|---|---|
|   | Not applicable                                      |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement : Not applicable ..... at Not applicable .....

Date and hours : Not applicable .....

This part of the permit expires on : Not applicable ..... at Not applicable .....

- c. Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.

- d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 10<sup>th</sup> day of July, 2020 .....

Signed :

  
(TANG Wai-man, Lisa)  
for Authority

\* Delete as necessary



表格 3  
噪音管制條例  
(第400章)  
第8(9)條

[第5(a)條]

建築噪音許可證  
為進行建築工程(撞擊式打樁除外)  
而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0582-20

致: PENTA-OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第2A部分)  
(土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識辨代碼<br>(如適用的話) | 各項機動設備的說明           | 數目 |
|------------------------|---------------------|----|
| ---                    | 升降台貨車, 5.5噸<總重量≤38噸 | 貳  |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年七月十五日晚上十一時  
日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時, 公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時。【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二一年一月十四日上午七時

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀, 供監督隨時查看; 該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

1. 祇可於以下時間內使用列在條件3.a.內的機動設備:

公眾假日以外的任何一日 晚上十一時至翌日上午七時

2. 在任何時間, 此建築噪音許可證所批准的建築工程不可與建築噪音許可證GW-RE0442-20所批准的建築工程一起進行。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識辨代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用。


此部分許可證屆滿日期及時間: 不適用

c. 本許可證可夾附經監督認可的地盤圖則, 以顯示本許可證准予進行訂明建築工程的點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處, 給予公眾人士參閱。

日期: 2020年7月10日

簽署:   
監督  
(鄧慧敏 代行)

\* 刪去不適用者

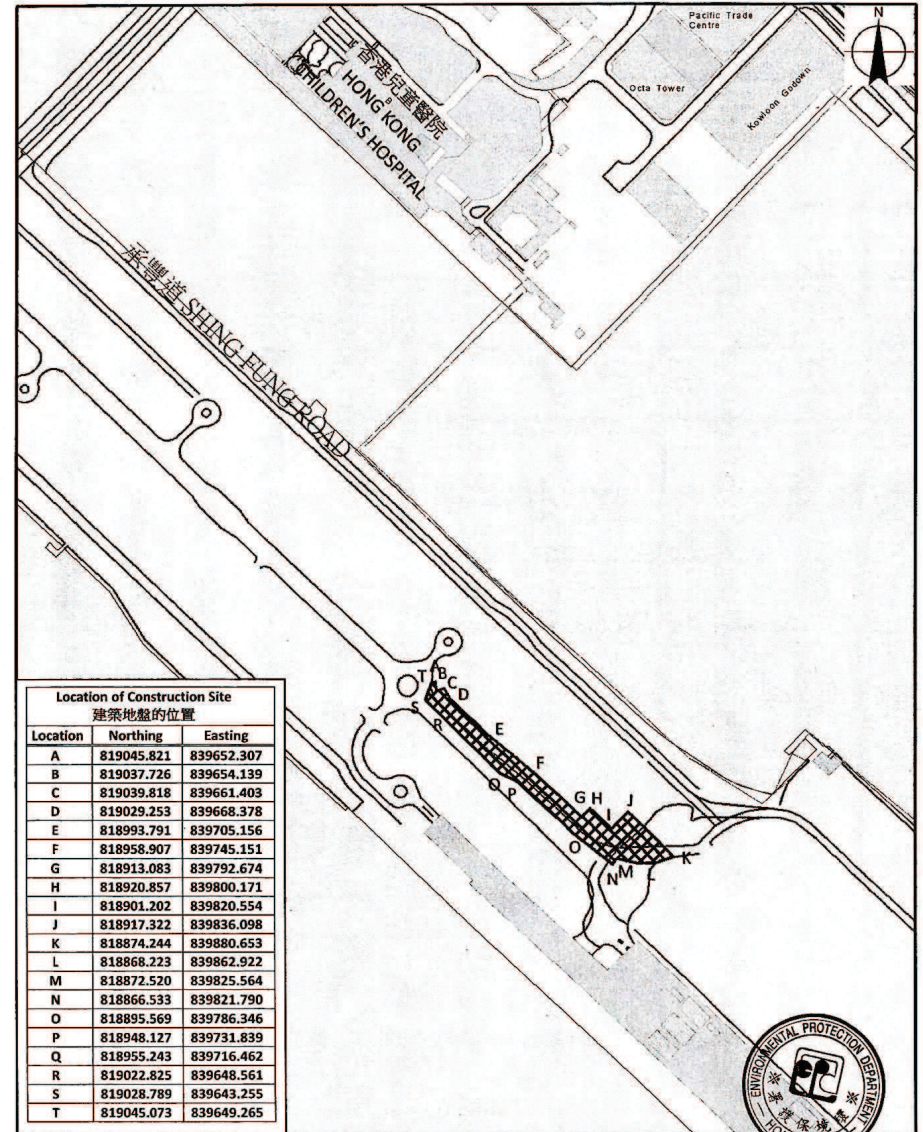


Photograph(s) attached to Construction Noise Permit No. GW-RE0582-20

建築噪音許可證編號 GW-RE0582-20 的照片



Lorry with aerial platform, 5.5 tonne < gross vehicle weight ≤ 38 tonne  
升降台貨車，5.5噸 < 總重量 ≤ 38噸



Location of Construction Site  
建築地盤的位置

| Location | Northing   | Easting    |
|----------|------------|------------|
| A        | 819045.821 | 839652.307 |
| B        | 819037.726 | 839654.139 |
| C        | 819039.818 | 839661.403 |
| D        | 819029.253 | 839668.378 |
| E        | 818993.791 | 839705.156 |
| F        | 818958.907 | 839745.151 |
| G        | 818913.083 | 839792.674 |
| H        | 818920.857 | 839800.171 |
| I        | 818901.202 | 839820.554 |
| J        | 818917.322 | 839836.098 |
| K        | 818874.244 | 839880.653 |
| L        | 818868.223 | 839862.922 |
| M        | 818872.520 | 839825.564 |
| N        | 818866.533 | 839821.790 |
| O        | 818895.569 | 839786.346 |
| P        | 818948.127 | 839731.839 |
| Q        | 818955.243 | 839716.462 |
| R        | 819022.825 | 839648.561 |
| S        | 819028.789 | 839643.255 |
| T        | 819045.073 | 839649.265 |



環境保護署

噪音管制監督

圖例 Legend

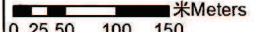
Environmental Protection Department Noise Control Authority

 建築地盤 Construction Site

建築噪音許可證編號 GW-RE0582-20 的附圖

比例 Scale 1:5,000

Plan attached to Construction Noise Permit No. GW-RE0582-20

 米 Meters



FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK

CONSTRUCTION NOISE PERMIT NO. GW-RE0705-20

To : PENTA-OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

CONDITIONS

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed:

Full address: Kai Tak Development -- Stage 4 infrastructure at the former runway and south apron (Works Area Part 3C), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01). Lot No.: ---

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. ~~\*PART~~/WHOLE of the site falls ~~\* WITHIN~~/OUTSIDE a designated area.

3. Powered Mechanical Equipment

a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment | No. of units |
|---|---|--------------|
|   | Refer to attached sheet                             |              |

b. Validity of the construction noise permit for the use of the powered mechanical equipment:

Date and time of commencement : 28 August 2020 at 1900 hours

Days and hours : 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].

This part of the permit expires on : 23 February 2021 at 2300 hours

c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.

d. Other conditions imposed on the use of the powered mechanical equipment:

1. The powered mechanical equipment listed in condition 3.a. shall only be operated during the hours shown below:

|                                     |                   |
|-------------------------------------|-------------------|
| General holiday (including Sunday)  | 0900 - 2300 hours |
| Any day not being a general holiday | 1900 - 2300 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a. shall be allowed to operate at any time...

4. Prescribed Construction Work

a. Type of prescribed construction work which may be carried out inside the site boundary:

| Identification code of type of prescribed construction work | Description of type of prescribed construction work |
|---|---|
|   | Not applicable                                      |

b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement : Not applicable at Not applicable

Date and hours : Not applicable

This part of the permit expires on : Not applicable at Not applicable

c. ~~Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~

d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 21<sup>st</sup> day of August 2020

Signed :

  
( TANG Wai-man, Lisa )  
for Authority

\* Delete as necessary

表格 3  
噪音管制條例  
(第400章)  
第8(9)條

[第5(a)條]

建築噪音許可證  
為進行建築工程(撞擊式打樁除外)  
而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0705-20

致: PENTA-OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍龍德啟德發展計劃-前跑道及廣面停機坪第四期基礎設施(工作地區第3.C部分)  
(土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識辨代碼<br>(如適用的話) | 各項機動設備的說明 | 數目 |
|------------------------|-----------|----|
|                        | 參見附頁      |    |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年八月二十八日下午七時

日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時,公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二一年二月二十三日晚上十一時

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀,供監督隨時查看;該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

1. 祇可於以下時間內使用列在條件3.a.內的機動設備:

|             |            |
|-------------|------------|
| 公眾假日包括星期日   | 上午九時至晚上十一時 |
| 公眾假日以外的任何一日 | 下午七時至晚上十一時 |

2. 在任何時間內,祇可使用列在條件3.a.內其中一組機動設備。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識辨代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用。

此部分許可證屆滿日期及時間: 不適用

c. 本許可證可夾附經監督認可的地盤圖則,以顯示本許可證准予進行訂明建築工程的點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處,給予公眾人士參閱。

日期: 2020年8月21日



簽署: \_\_\_\_\_

監督  
(鄧慧敏 代行)

\* 刪去不適用者



Sheet Attached to Construction Noise Permit  
No. GW-RE0705-20

## 3.a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group A</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 166   | Piling, large diameter bored, reverse circulation drill  | Two          |
| ---   | Air compressor, with Noise Emission Label showing a Sound Power Level of $\leq 104$ dB(A)              | Two          |
| ---   | Power pack (diesel)  | One          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Four         |
| CNP 165   | Piling, large diameter bored, oscillator   | One          |
| <b>Group B</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 164   | Piling, large diameter bored, grab and chisel  | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| <b>Group C</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| ---   | Welding machine (electric)   | Five         |
| CNP 048   | Crane, mobile (diesel)   | One          |
| <b>Group D</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| ---   | Air compressor, with Noise Emission Label showing a Sound Power Level of $\leq 104$ dB(A)              | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Four         |

Signed :   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0705-20 的附頁

## 3.a. 在地盤範圍內可使用的各項機動設備：

| 各項機動設備的識別代碼 (如適用的話) | 各項機動設備的說明                             | 數目 |
|---------------------|---------------------------------------|----|
| <b>A 組</b> ---      | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| CNP 166             | 大直徑鑽孔樁，循環式鑽機                          | 貳  |
| ---                 | 空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝(A)   | 貳  |
| ---                 | 油渣動力供應器                               | 壹  |
| ---                 | 污水處理器                                 | 壹  |
| CNP 283             | 潛水泵 (電動)                              | 肆  |
| CNP 165             | 大直徑鑽孔樁，擺動機                            | 壹  |
| <b>B 組</b> ---      | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| CNP 164             | 大直徑鑽孔樁，抓斗及鑿                           | 壹  |
| CNP 048             | 起重機，流動 (油渣)                           | 壹  |
| <b>C 組</b> ---      | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| ---                 | 焊接機 (電動)                              | 伍  |
| CNP 048             | 起重機，流動 (油渣)                           | 壹  |
| <b>D 組</b> ---      | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| ---                 | 空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝(A)   | 壹  |
| CNP 048             | 起重機，流動 (油渣)                           | 壹  |
| ---                 | 污水處理器                                 | 壹  |
| CNP 283             | 潛水泵 (電動)                              | 肆  |

簽署：




監督  
(鄧慧敏 代行)

**Sheet Attached to Construction Noise Permit**  
**No. GW-RE0705-20**

**3.a. Items of powered mechanical equipment which may be used inside the site boundary :**


| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group E</b>  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| CNP 044   | Concrete lorry mixer   | Two          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Two          |
| <b>Group F</b>  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| ---   | Welding machine (electric)   | One          |
| CNP 166   | Piling, large diameter bored, reverse circulation drill  | Two          |
| ---   | Air compressor, with Noise Emission Label showing a Sound Power Level of $\leq 104$ dB(A)              | One          |
| ---   | Wastewater treatment plant   | One          |
| ---   | Power pack (diesel)  | One          |
| <b>Group G</b>  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| CNP 164   | Piling, large diameter bored, grab and chisel  | One          |
| ---   | Air compressor, with Noise Emission Label showing a Sound Power Level of $\leq 104$ dB(A)              | One          |
| CNP 166   | Piling, large diameter bored, reverse circulation drill  | Two          |
| ---   | Power pack (diesel)  | One          |
| CNP 283   | Water pump, submersible (electric)   | Two          |
| ---   | Wastewater treatment plant   | One          |

Signed :   
(TANG Wai-man, Lisa)  
for Authority

**建築噪音許可證**  
**編號 GW-RE0705-20 的附頁**

**3.a. 在地盤範圍內可使用的各項機動設備：**

| 各項機動設備的識辨代碼 (如適用的話) | 各項機動設備的說明                             | 數目 |
|---------------------|---------------------------------------|----|
| <b>E 組</b>          | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| CNP 048             | 起重機，流動 (油渣)                           | 壹  |
| CNP 044             | 混凝土攪拌車                                | 貳  |
| ---                 | 污水處理器                                 | 壹  |
| CNP 283             | 潛水泵 (電動)                              | 貳  |
| <b>F 組</b>          | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| ---                 | 焊接機 (電動)                              | 壹  |
| CNP 166             | 大直徑鑽孔樁，循環式鑽機                          | 貳  |
| ---                 | 空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝 (A)  | 壹  |
| ---                 | 污水處理器                                 | 壹  |
| ---                 | 油渣動力供應器                               | 壹  |
| <b>G 組</b>          | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝 (A) | 壹  |
| CNP 048             | 起重機，流動 (油渣)                           | 壹  |
| CNP 164             | 大直徑鑽孔樁，抓斗及鑿                           | 壹  |
| ---                 | 空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝 (A)  | 壹  |
| CNP 166             | 大直徑鑽孔樁，循環式鑽機                          | 貳  |
| ---                 | 油渣動力供應器                               | 壹  |
| CNP 283             | 潛水泵 (電動)                              | 貳  |
| ---                 | 污水處理器                                 | 壹  |

簽署 :   
監督  
(鄧慧敏 代行)



Photograph(s) attached to Construction Noise Permit No. GW-RE0705-20  
建築噪音許可證編號：GW-RE0705-20 的照片



Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 95\text{dB(A)}$   
發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A)



CNP 283 Water pump, submersible (electric)  
潛水泵 (電動)



Photograph(s) attached to Construction Noise Permit No. GW-RE0705-20  
建築噪音許可證編號：GW-RE0705-20 的照片



Wastewater treatment plant  
污水處理器



Power pack (diesel)  
油渣動力供應器



Photograph(s) attached to Construction Noise Permit No. GW-RE0705-20  
建築噪音許可證編號：GW-RE0705-20 的照片



CNP 048 Crane, mobile (diesel)  
起重機，流動(油渣)



CNP 044 Concrete lorry mixer  
混凝土攪拌車



Photograph(s) attached to Construction Noise Permit No. GW-RE0705-20  
建築噪音許可證編號：GW-RE0705-20 的照片



Welding machine (electric)  
焊接機(電動)

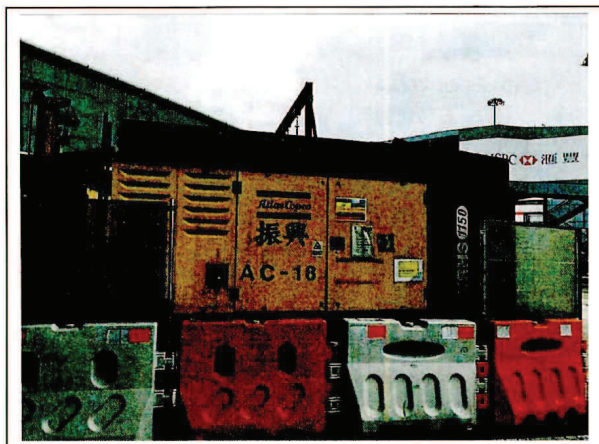


CNP 166 Piling, large diameter bored, reverse circulation drill  
大直徑鑽孔樁，循環式鑽機





Photograph(s) attached to Construction Noise Permit No. GW-RE0705-20  
建築噪音許可證編號：GW-RE0705-20 的照片



Air compressor, with Noise Emission Label showing a Sound Power Level of  $\leq 104\text{dB(A)}$  (1)  
空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$  分貝(A) (一)



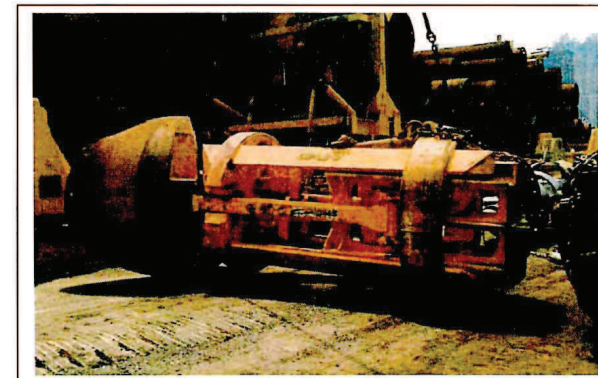
Air compressor, with Noise Emission Label showing a Sound Power Level of  $\leq 104\text{dB(A)}$  (2)  
空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$  分貝(A) (二)



Photograph(s) attached to Construction Noise Permit No. GW-RE0705-20  
建築噪音許可證編號：GW-RE0705-20 的照片



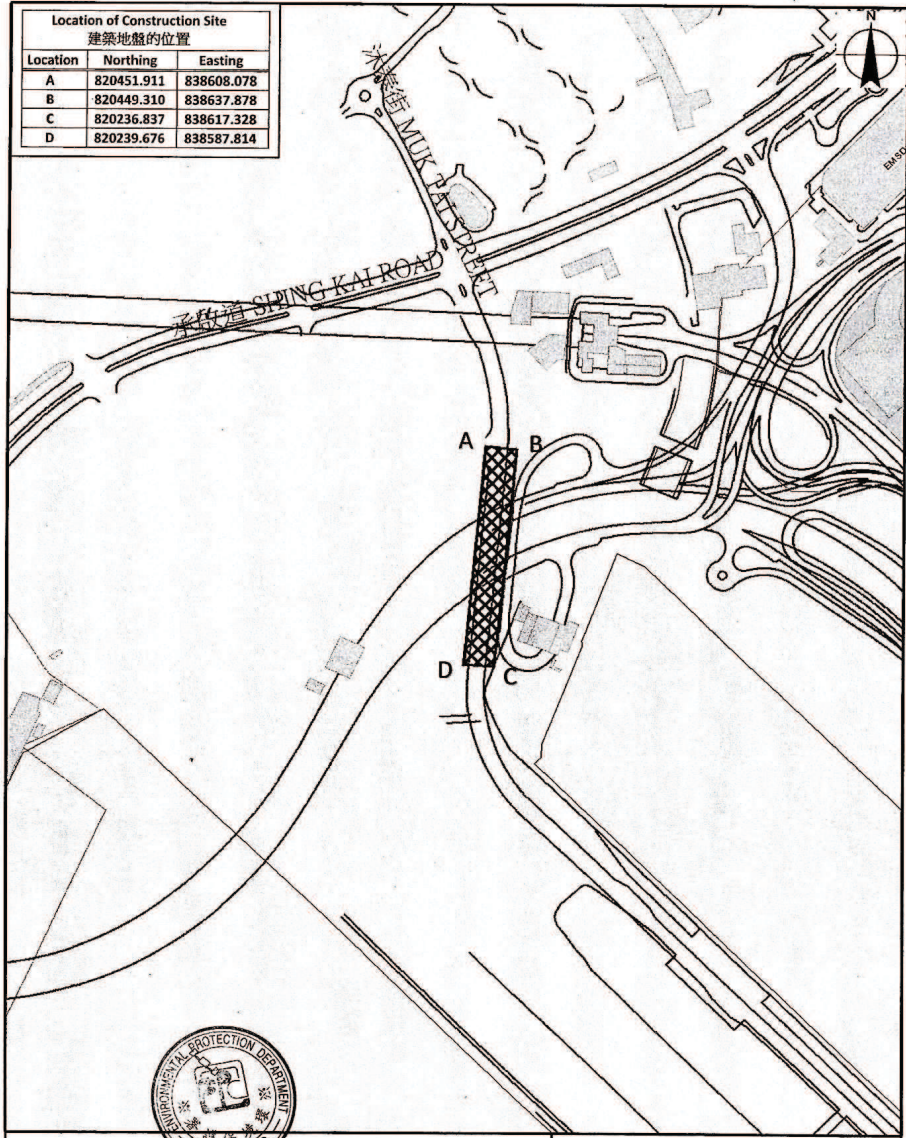
CNP 165 Piling, large diameter bored, oscillator  
大直徑鑽孔樁，擺動機



CNP 164 Piling, large diameter bored, grab and chisel  
大直徑鑽孔樁，抓斗及鑿



| Location of Construction Site<br>建築地盤的位置 |            |            |
|--|------------|------------|
| Location                                 | Northing   | Easting    |
| A  | 820451.911 | 838608.078 |
| B  | 820449.310 | 838637.878 |
| C  | 820236.837 | 838617.328 |
| D  | 820239.676 | 838587.814 |

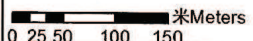


環境保護署  
Environmental Protection Department Noise Control Authority

噪音管制監督

圖例 Legend  
 建築地盤 Construction Site

建築噪音許可證編號 GW-RE0705-20 的附圖  
Plan attached to Construction Noise Permit No. GW-RE0705-20

比例 Scale 1:5,000  
 米 Meters  
0 25 50 100 150



FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

**CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK**

CONSTRUCTION NOISE PERMIT NO. GW-RE0735-20

To : PENTA – OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

*CONDITIONS*

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed:  
Full address : Kai Tak Development – Stage 4 infrastructure at the former runway and south apron (Works Area WA1), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01). Lot No.: ---

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. \* PART/WHOLE of the site falls \* WITHIN/OUTSIDE a designated area.  
3. Powered Mechanical Equipment

- a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <u>Group A</u> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| ---   | Lorry, with crane, 5.5 tonne < gross vehicle weight $\leq 38$ tonne                                    | One          |
| CNP 021   | Bar bender and cutter (electric)   | One          |
| <u>Group B</u> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| ---   | Welding machine (electric)   | Three        |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:  
Date and time of commencement : 09 September 2020 at 1900 hours  
Days and hours : 0000-2400 hours on general holiday (including Sunday), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].  
This part of the permit expires on : 06 March 2021 at 2300 hours
- c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.
- d. Other conditions imposed on the use of the powered mechanical equipment :  
Refer to attached sheet.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary :

| Identification code of type of prescribed construction work | Description of type of prescribed construction work |
|---|---|
| Not applicable  |   |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement: Not applicable at Not applicable


Days and hours: Not applicable.

This part of the permit expires on : Not applicable at Not applicable

- c. ~~Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~
- d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 03<sup>rd</sup> day of September 2020

Signed :   
(TANG Wai-man, Lisa)  
for Authority

\* Delete as necessary



表格 3  
噪音管制條例  
(第400章)  
第8(9)條

[第5(a)條]

建築噪音許可證  
為進行建築工程(撞擊式打樁除外)  
而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0735-20

致: PENTA - OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區WA1) (土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識辨代碼<br>(如適用的話) | 各項機動設備的說明                     | 數目 |
|------------------------|-------------------------------|----|
| A組 ---                 | 發電機, 備有優質機動設備標籤顯示聲功率級≤93分貝(A) | 壹  |
| ---                    | 吊臂貨車, 5.5噸<總重量≤38噸            | 壹  |
| CNP 021                | 鋼筋彎曲機及切割機 (電動)                | 壹  |
| B組 ---                 | 發電機, 備有優質機動設備標籤顯示聲功率級≤93分貝(A) | 壹  |
| ---                    | 焊接機(電動)                       | 叁  |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年九月九日 下午七時  
日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時, 公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二一年三月六日 晚上十一時  
日期 時間

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀, 供監督隨時查看; 該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

參見附頁。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識辨代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用。

此部分許可證屆滿日期及時間: 不適用

日期 時間

c. 本許可證可夾附經監督認可的地盤圖則, 以顯示本許可證准予進行訂明建築工程的地點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處, 給予公眾人士參閱。

日期: 20 年 09 月 03 日



簽署: \_\_\_\_\_

監督  
(鄧慧敏 代行)

\* 刪去不適用者



Sheet Attached to Construction Noise Permit

No. GW-RE0735-20**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

1. The powered mechanical equipment listed in condition 3.a. shall only be operated during the hours shown below:

|                                     |                   |
|-------------------------------------|-------------------|
| General holiday including Sunday    | 0700 – 1900 hours |
| Any day not being a general holiday | 1900 – 2300 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a. shall be allowed to operate at any time.

Signed : \_\_\_\_\_

(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0735-20 的附頁

## 3. d. 規限使用機動設備的其他條件：

1. 祇可於以下時間內使用列在條件 3.a. 內的機動設備：

|             |            |
|-------------|------------|
| 公眾假日包括星期日   | 上午七時至下午七時  |
| 公眾假日以外的任何一日 | 下午七時至晚上十一時 |

2. 在任何時間內，祇可使用列在條件 3.a. 內其中一組機動設備。

簽署：\_\_\_\_\_



監督  
(鄧慧敏 代行)

Photograph(s) attached to Construction Noise Permit No. GW-RE0735-20  
建築噪音許可證編號：GW-RE0735-20 的照片



Generator, with Quality Powered Mechanical Equipment Label showing  
a Sound Power Level  $\leq 93$  dB(A)

發電機，備有優質機動設備標籤顯示聲功率級  $\leq 93$  分貝(A)



Lorry, with crane, 5.5 tonne < gross vehicle weight  $\leq 38$  tonne  
吊臂貨車，5.5 噸 < 總重量  $\leq 38$  噸



Photograph(s) attached to Construction Noise Permit No. GW-RE0735-20  
建築噪音許可證編號：GW-RE0735-20 的照片



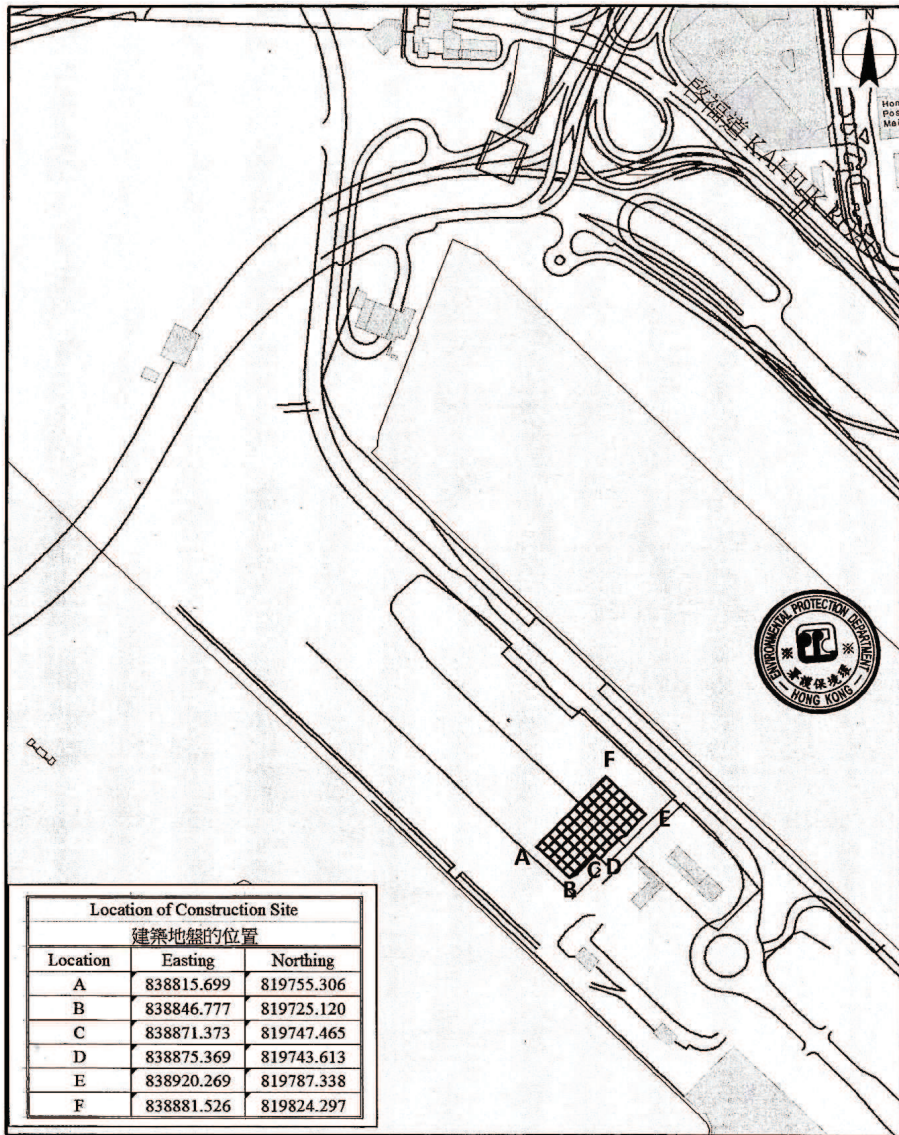
CNP 021 Bar bender and cutter (electric)  
鋼筋彎曲機及切割機 (電動)



Welding machine (electric)  
焊接機 (電動)







| Location of Construction Site |            |            |
|-------------------------------|------------|------------|
| 建築地盤的位置                       |            |            |
| Location                      | Easting    | Northing   |
| A                             | 838815.699 | 819755.306 |
| B                             | 838846.777 | 819725.120 |
| C                             | 838871.373 | 819747.465 |
| D                             | 838875.369 | 819743.613 |
| E                             | 838920.269 | 819787.338 |
| F                             | 838881.526 | 819824.297 |

環境保護署  
Environmental Protection Department


噪音管制監督  
Noise Control Authority

圖例 Legend

 建築地盤 Construction Site

建築噪音許可證編號 GW-RE0735-20 的附圖  
Plan attached to Construction Noise Permit No. GW-RE0735-20

比例 Scale 1:5,000

 米 Meters  
0 25 50 100 150

FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

**CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK**

CONSTRUCTION NOISE PERMIT NO. GW-RE0742-20

To : PENTA – OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

*CONDITIONS*

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed:  
Full address : Kai Tak Development – Stage 4 infrastructure at the former runway and south apron (Work Area Part 1), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01). Lot No.: ---  
The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.
2. \* ~~PART~~/WHOLE of the site falls \* WITHIN/OUTSIDE a designated area.
3. Powered Mechanical Equipment
  - a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment | No. of units |
|---|---|--------------|
| _____   | Refer to attached sheet                             | _____        |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:  
Date and time of commencement : 11 September 2020 at 1900 hours  
Days and hours : 0000-2400 hours on general holiday (including Sunday), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].  
This part of the permit expires on : 06 March 2021 at 2300 hours
  - c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.
  - d. Other conditions imposed on the use of the powered mechanical equipment :  
Refer to attached sheet.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary :

| Identification code of type of prescribed construction work | Description of type of prescribed construction work |
|---|---|
| _____   | Not applicable                                      |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:  
Date and time of commencement: Not applicable at Not applicable  
Days and hours: Not applicable  
This part of the permit expires on : Not applicable at Not applicable
  - c. ~~Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~
  - d. Other conditions imposed on the carrying out of the prescribed construction work:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.  
\_\_\_\_\_  
\_\_\_\_\_

Dated this 04<sup>th</sup> day of September 20 20

Signed : \_\_\_\_\_

(TANG Wai-man, Lisa)  
for Authority

\* Delete as necessary



表格 3  
 噪音管制條例  
 (第400章)  
 第8(9)條

[第5(a)條]

建築噪音許可證  
 為進行建築工程(撞擊式打樁除外)  
 而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0742-20

致: PENTA - OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第1部分)(土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識別代碼<br>(如適用的話) | 各項機動設備的說明 | 數目 |
|------------------------|-----------|----|
|                        | 參見附頁。     |    |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年九月十一日 下午七時  
 日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時,公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二一年三月六日 晚上十一時  
 日期 時間

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀,供監督隨時查看;該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

參見附頁。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識別代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用

此部分許可證屆滿日期及時間: 不適用  
 日期 時間

c. 本許可證可夾附經監督認可的地盤圖則,以顯示本許可證准予進行訂明建築工程的地點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處,給予公眾人士參閱。

日期: 20 20 年 09 月 04 日



簽署: \_\_\_\_\_


監督  
 (鄧慧敏 代行)

\* 刪去不適用者

Sheet Attached to Construction Noise Permit  
No. GW-RE0742-20

3.a. Items of powered mechanical equipment which may be used inside the site boundary :


| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group A</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 166   | Piling, large diameter bored, reverse circulation drill  | Two          |
| ---   | Air compressor, with Noise Emission Label showing a Sound Power Level of $\leq 104$ dB(A)              | Two          |
| ---   | Power pack (diesel)  | One          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Four         |
| ---   | Welding machine (electric)   | Two          |
| <b>Group B</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| ---   | Welding machine (electric)   | Five         |
| CNP 048   | Crane, mobile (diesel)   | One          |
| <b>Group C</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| CNP 044   | Concrete lorry mixer   | One          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Two          |
| <b>Group D</b> CNP 165  | Piling, large diameter bored, oscillator   | One          |
| ---   | Power pack (diesel)  | One          |

Signed :   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0742-20 的附頁

3.a. 在地盤範圍內可使用的各項機動設備：

| 各項機動設備的識辨代碼 (如適用的話) | 各項機動設備的說明                            | 數目 |
|---------------------|--------------------------------------|----|
| <b>A組</b> ---       | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A) | 壹  |
| CNP 166             | 大直徑鑽孔樁，循環式鑽機                         | 貳  |
| ---                 | 空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝(A)  | 貳  |
| ---                 | 油渣動力供應器                              | 壹  |
| ---                 | 污水處理器                                | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 肆  |
| ---                 | 焊接機 (電動)                             | 貳  |
| <b>B組</b> ---       | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A) | 壹  |
| ---                 | 焊接機 (電動)                             | 伍  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| <b>C組</b> ---       | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A) | 壹  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| CNP 044             | 混凝土攪拌車                               | 壹  |
| ---                 | 污水處理器                                | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 貳  |
| <b>D組</b> CNP 165   | 大直徑鑽孔樁，擺動機                           | 壹  |
| ---                 | 油渣動力供應器                              | 壹  |

簽署 :   
監督  
(鄧慧敏 代行)


Sheet Attached to Construction Noise Permit  
No. GW-RE0742-20

**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

1. The powered mechanical equipment listed in condition 3.a shall only be operated during the hours shown below:

|                                     |                   |
|-------------------------------------|-------------------|
| General holiday including Sunday    | 0900 – 2300 hours |
| Any day not being a general holiday | 1900 – 2300 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a shall be allowed to operate at any time.

Signed :   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0742-20 的附頁

3. d. 規限使用機動設備的其他條件：

1. 祇可於以下時間內使用列在條件 3. a.內的機動設備：

|             |            |
|-------------|------------|
| 公眾假日包括星期日   | 上午九時至晚上十一時 |
| 公眾假日以外的任何一日 | 下午七時至晚上十一時 |

2. 在任何時間內，祇可使用列在條件 3. a. 內其中一組機動設備。

簽署 :   
監督  
(鄧慧敏 代行)



Photograph(s) attached to Construction Noise Permit No. GW-RE0742-20  
建築噪音許可證編號：GW-RE0742-20 的照片



Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 95$  dB(A)  
發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A)



CNP 166 Piling, large diameter bored, reverse circulation drill  
大直徑鑽孔樁，循環式鑽機



Photograph(s) attached to Construction Noise Permit No. GW-RE0742-20  
建築噪音許可證編號：GW-RE0742-20 的照片



Air compressor, with Noise Emission Label showing a Sound Power Level of  $\leq 104$  dB(A)  
空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝(A)



Power pack (diesel)  
油渣動力供應器



Photograph(s) attached to Construction Noise Permit No. GW-RE0742-20  
建築噪音許可證編號：GW-RE0742-20 的照片



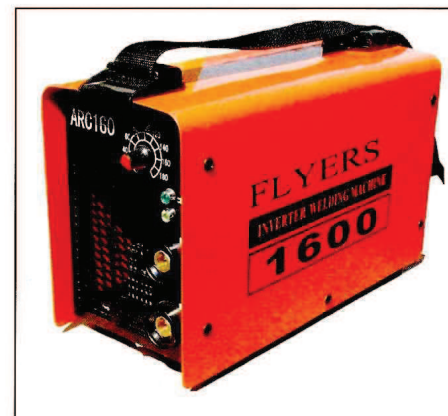
Wastewater treatment plant  
污水處理器



CNP 283 Water pump, submersible (electric)  
潛水泵 (電動)



Photograph(s) attached to Construction Noise Permit No. GW-RE0742-20  
建築噪音許可證編號：GW-RE0742-20 的照片



Welding machine (electric)  
焊接機 (電動)



CNP 048 Crane, mobile (diesel)  
起重機, 流動 (油渣)





Photograph(s) attached to Construction Noise Permit No. GW-RE0742-20  
 建築噪音許可證編號：GW-RE0742-20 的照片

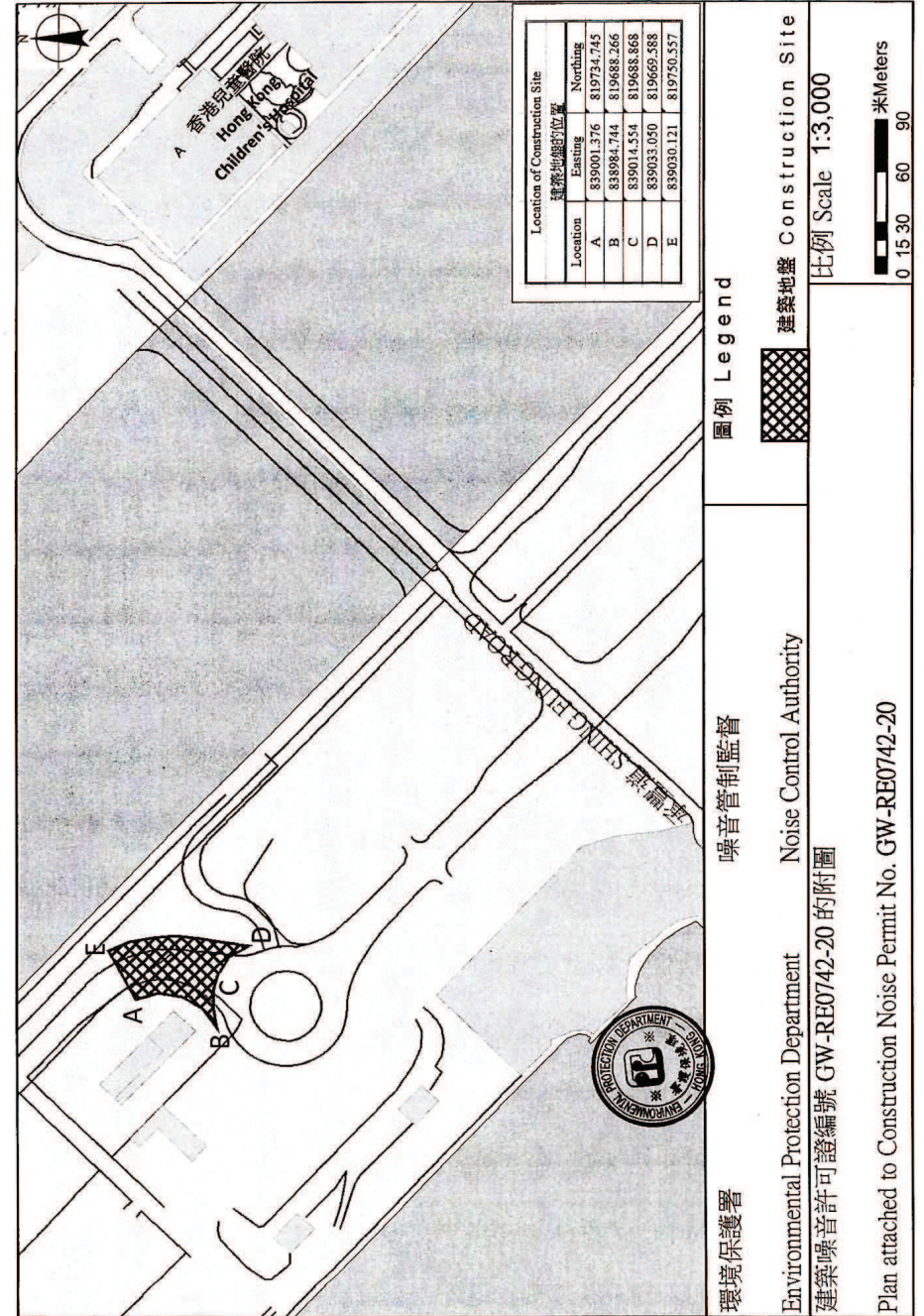


CNP 044 Concrete lorry mixer  
 混凝土攪拌車



大直徑鑽孔樁·擺動機  
 Piling, large diameter bored,  
 oscillator

CNP 165 Piling, large diameter bored, oscillator  
 大直徑鑽孔樁·擺動機



Plan attached to Construction Noise Permit No. GW-RE0742-20



FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

**CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED  
MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT  
CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR  
THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK**

CONSTRUCTION NOISE PERMIT NO. GW-RE0862-20

To : PENTA – OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

*CONDITIONS*

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed :  
Full address : Kai Tak Development – Stage 4 infrastructure at the former runway and south apron (Works Area Part 1), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01). Lot No. : ---

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. \* PART/WHOLE of the site falls \* WITHIN/OUTSIDE a designated area.  
3. Powered Mechanical Equipment

- a. Items of powered mechanical equipment which may be used inside the site boundary :

| <i>Identification code of item of powered mechanical equipment (if applicable)</i> | <i>Description of item of powered mechanical equipment</i> | <i>No. of units</i> |
|--|--|---------------------|
|  | Refer to attached sheet.                                   |                     |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:  
Date and time of commencement : 28 October 2020 at 0000 hours  
Days and hours : 0000-2400 hours on general holiday (including Sunday), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note Condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].  
This part of the permit expires on : 27 April 2021 at 2400 hours
- c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.
- d. Other conditions imposed on the use of the powered mechanical equipment :  
Refer to attached sheet.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary :

| <i>Identification code of type of prescribed construction work</i> | <i>Description of type of prescribed construction work</i> |
|--|--|
|  | Not applicable   |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement: Not applicable at Not applicable


Days and hours: Not applicable.

This part of the permit expires on : Not applicable at Not applicable

- c. ~~Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~
- d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 12<sup>th</sup> day of October 20 20

Signed :   
(TANG Wai-man, Lisa)  
for Authority

\* Delete as necessary

表格 3  
噪音管制條例  
(第400章)  
第8(9)條

[第5(a)條]

建築噪音許可證  
為進行建築工程(撞擊式打樁除外)  
而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0862-20

致: PENTA - OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第一部分)(土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識別代碼<br>(如適用的話) | 各項機動設備的說明 | 數目 |
|------------------------|-----------|----|
|                        | 參見附頁。     |    |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年十月二十八日 凌晨零時  
日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時,公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二一年四月二十七日 晚上十二時  
日期 時間

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀,供監督隨時查看;該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

參見附頁。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識別代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用。

此部分許可證屆滿日期及時間: 不適用  
日期 時間

c. 本許可證可夾附經監督認可的地盤圖則,以顯示本許可證准予進行訂明建築工程的地點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處,給予公眾人士參閱。

日期: 2020 年 10 月 12 日



簽署: \_\_\_\_\_

監督  
(鄧慧敏 代行)

\* 刪去不適用者



## Sheet Attached to Construction Noise Permit

No. GW-RE0862-20

## 3.a. Items of powered mechanical equipment which may be used inside the site boundary :


| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group A</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| ---   | Piling, vibrating hammer   | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| ---   | Welding machine (electric)   | Ten          |
| ---   | Air blower (electric)  | One          |
| CNP 283   | Water pump, submersible (electric)   | Eight        |
| ---   | Wastewater treatment plant   | Two          |
| CNP 021   | Bar bender and cutter (electric)   | One          |
| <b>Group B</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| CNP 081   | Excavator, tracked   | One          |
| CNP 283   | Water pump, submersible (electric)   | Eight        |
| ---   | Wastewater treatment plant   | Two          |
| ---   | Welding machine (electric)   | Ten          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| <b>Group C</b> CNP 283  | Water pump, submersible (electric)   | Twelve       |
| ---   | Wastewater treatment plant   | Two          |
| ---   | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | Three        |
| <b>Group D</b> CNP 044  | Concrete lorry mixer   | Two          |
| ---   | Poker, vibratory, hand-held (electric)   | One          |
| CNP 047   | Concrete pump, stationary  | One          |
| CNP 283   | Water pump, submersible (electric)   | Six          |
| ---   | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 93$ dB(A) | One          |
| ---   | Wastewater treatment plant   | Two          |

Signed :   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0862-20 的附頁

## 3.a. 在地盤範圍內可使用的各項機動設備：

| 各項機動設備的識別代碼 (如適用的話) | 各項機動設備的說明                            | 數目 |
|---------------------|--------------------------------------|----|
| <b>A 組</b> ---      | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 壹  |
| ---                 | 打樁機，震動鎚                              | 壹  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| ---                 | 焊接機 (電動)                             | 拾  |
| ---                 | 吹風機 (電動)                             | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 捌  |
| ---                 | 污水處理器                                | 貳  |
| CNP 021             | 鋼筋彎曲機及切割機 (電動)                       | 壹  |
| <b>B 組</b> ---      | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 壹  |
| CNP 081             | 挖土機，履帶式                              | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 捌  |
| ---                 | 污水處理器                                | 貳  |
| ---                 | 焊接機 (電動)                             | 拾  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| <b>C 組</b> CNP 283  | 潛水泵 (電動)                             | 拾貳 |
| ---                 | 污水處理器                                | 貳  |
| ---                 | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 叁  |
| <b>D 組</b> CNP 044  | 混凝土攪拌車                               | 貳  |
| ---                 | 混凝土震動機，手提型 (電動)                      | 壹  |
| CNP 047             | 混凝土泵，固定                              | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 陸  |
| ---                 | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A) | 壹  |
| ---                 | 污水處理器                                | 貳  |

簽署 :   
監督  
(鄧慧敏 代行)


**Sheet Attached to Construction Noise Permit**  
**No. GW-RE0862-20**

**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

1. The powered mechanical equipment listed in condition 3.a shall only be operated during the hours shown below:

|                          |                                     |   |
|--------------------------|-------------------------------------|---|
| <b>Groups A, B and D</b> | General holiday including Sunday    | 0700 – 1900 hours                       |
|                          | Any day not being a general holiday | 1900 – 2300 hours                       |
| <b>Group C</b>           | General holiday including Sunday    | 0000 – 2400 hours                       |
|                          | Any day not being a general holiday | 0000 – 0700 hours AND 1900 – 2400 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a shall be allowed to operate at any time.

Signed :   
(TANG Wai-man, Lisa)  
for Authority

**建築噪音許可證**  
**編號 GW-RE0862-20 的附頁**

3. d. 規限使用機動設備的其他條件：

1. 祇可於以下時間內使用列在條件 3. a 內的機動設備：

|                          |             |                        |
|--------------------------|-------------|------------------------|
| <b>A 組、B 組<br/>及 D 組</b> | 公眾假日包括星期日   | 上午七時 至下午七時             |
|                          | 公眾假日以外的任何一日 | 下午七時 至晚上十一時            |
| <b>C 組</b>               | 公眾假日包括星期日   | 凌晨零時至晚上十二時             |
|                          | 公眾假日以外的任何一日 | 凌晨零時至上午七時 及 下午七時至晚上十二時 |

2. 在任何時間內，祇可使用列在條件 3. a. 內其中一組機動設備。

簽署： \_\_\_\_\_



監督  
(鄧慧敏 代行)



Photograph(s) attached to Construction Noise Permit No. GW-RE0862-20

建築噪音許可證編號：GW-RE0862-20 的照片



Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 93$  dB(A)

發電機，備有優質機動設備標籤顯示聲功率級 $\leq 93$ 分貝(A)



CNP 283 Water pump, submersible (electric)

潛水泵 (電動)



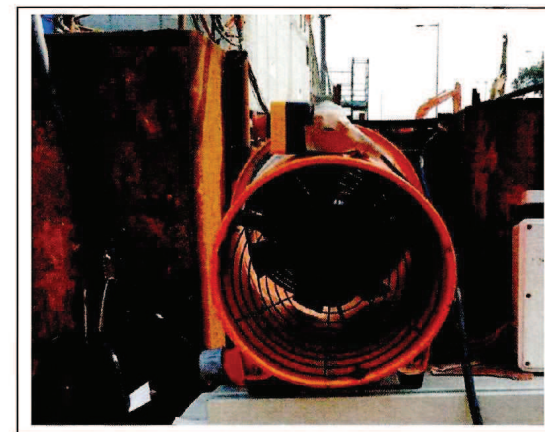
Photograph(s) attached to Construction Noise Permit No. GW-RE0862-20

建築噪音許可證編號：GW-RE0862-20 的照片



Wastewater treatment plant

污水處理器

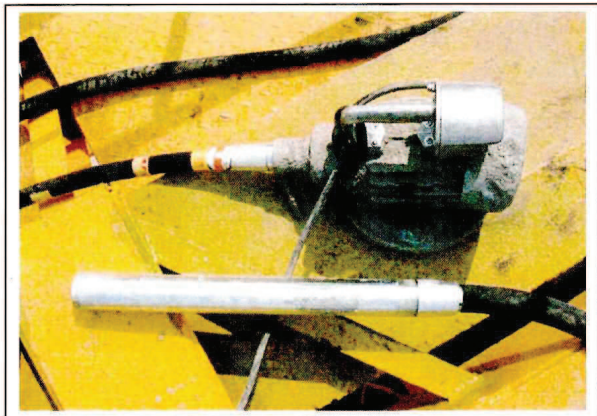


Air blower (electric)

吹風機 (電動)



Photograph(s) attached to Construction Noise Permit No. GW-RE0862-20  
建築噪音許可證編號：GW-RE0862-20 的照片



Poker, vibratory, hand-held (electric)  
混凝土震動機，手提型(電動)



CNP 081 Excavator, tracked  
挖土機，履帶式



Photograph(s) attached to Construction Noise Permit No. GW-RE0862-20  
建築噪音許可證編號：GW-RE0862-20 的照片



CNP 044 Concrete lorry mixer  
混凝土攪拌車



Piling, vibrating hammer  
打樁機，震動錘





Photograph(s) attached to Construction Noise Permit No. GW-RE0862-20

建築噪音許可證編號：GW-RE0862-20 的照片



CNP 048 Crane, mobile (diesel) (1)  
起重機，流動(油渣)(1)

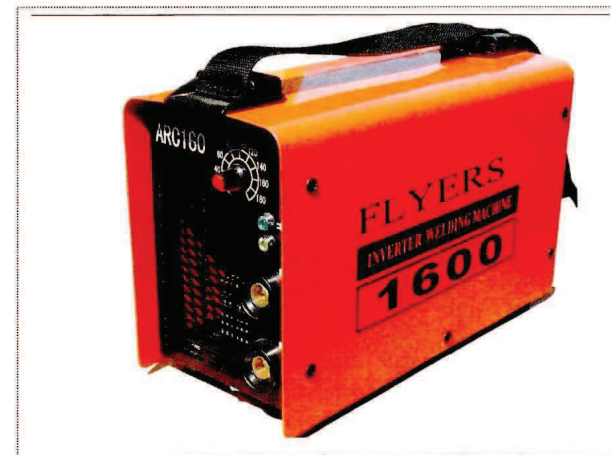


CNP 048 Crane, mobile (diesel) (2)  
起重機，流動(油渣)(2)



Photograph(s) attached to Construction Noise Permit No. GW-RE0862-20

建築噪音許可證編號：GW-RE0862-20 的照片



Welding machine (electric)  
焊接機(電動)

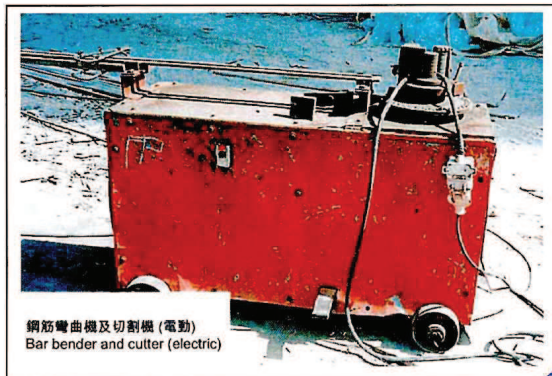


CNP 047 Concrete pump, stationary  
混凝土泵，固定



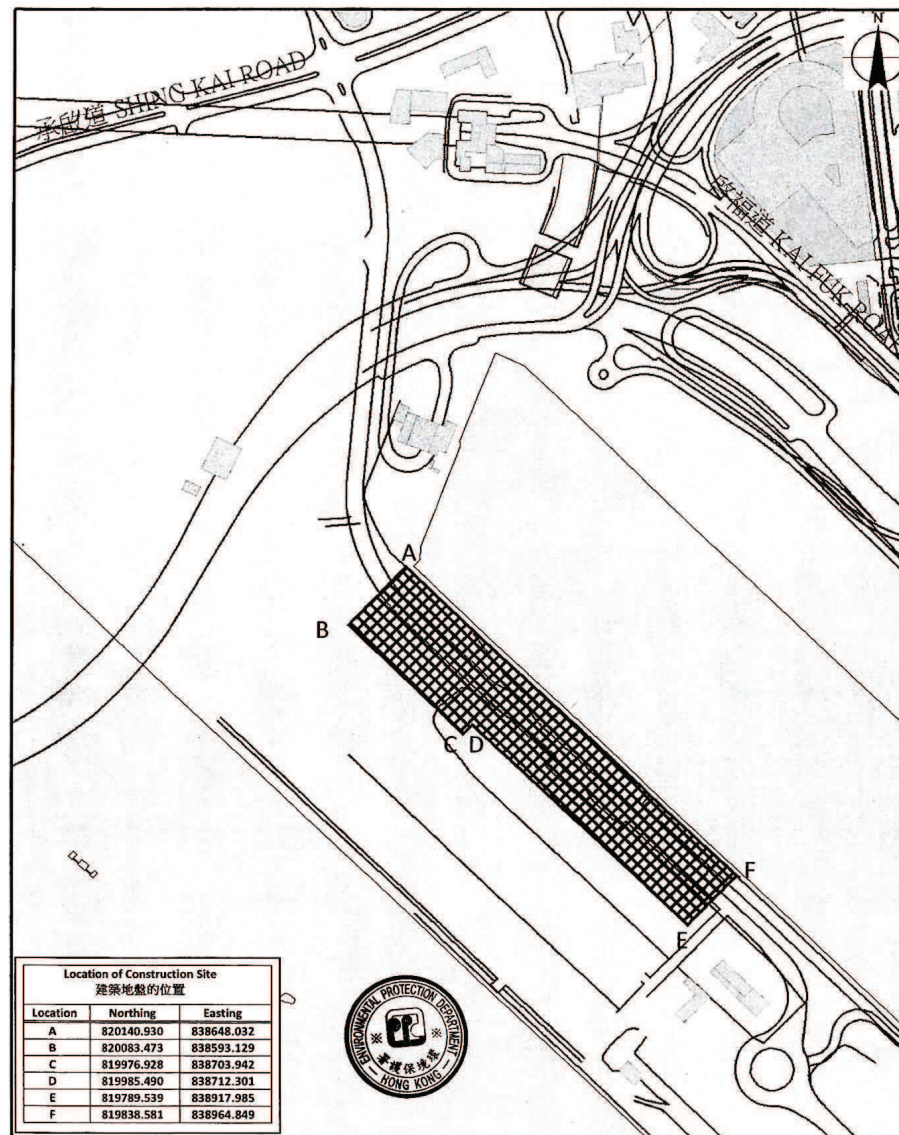
Photograph(s) attached to Construction Noise Permit No. **GW-RE0862-20**

建築噪音許可證編號：**GW-RE0862-20** 的照片



鋼筋彎曲機及切割機 (電動)  
Bar bender and cutter (electric)

CNP 021 Bar bender and cutter (electric)  
鋼筋彎曲機及切割機 (電動)




| Location of Construction Site<br>建築地盤的位置 |            |            |
|--|------------|------------|
| Location                                 | Northing   | Easting    |
| A  | 820140.930 | 838648.032 |
| B  | 820083.473 | 838593.129 |
| C  | 819976.928 | 838703.942 |
| D  | 819985.490 | 838712.301 |
| E  | 819789.539 | 838917.985 |
| F  | 819838.581 | 838964.849 |

環境保護署

噪音管制監督

圖例 Legend

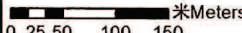
Environmental Protection Department Noise Control Authority

 建築地盤 Construction Site

建築噪音許可證編號GW-RE0862-20的附圖

比例 Scale 1:5,000

Plan attached to Construction Noise Permit No. GW-RE0862-20

 米 Meters  
0 25 50 100 150



FORM 3  
NOISE CONTROL ORDINANCE  
(Chapter 400)  
SECTION 8(9)

[reg.5(a)]

**CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK**

CONSTRUCTION NOISE PERMIT NO. GW-RE0869-20

To : PENTA – OCEAN CONSTRUCTION CO., LTD.

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

**CONDITIONS**

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed:  
Full address : Kai Tak Development – Stage 4 infrastructure at the former runway and south apron (Work Area Part 1), Kai Tak, Kowloon (CEDD Contract No. ED/2018/01). Lot No.: ---

The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. \* PART/WHOLE of the site falls \* WITHIN/OUTSIDE a designated area.

3. Powered Mechanical Equipment

- a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment | No. of units |
|---|---|--------------|
|   | Refer to attached sheet.                            |              |

- b. Validity of the construction noise permit for the use of the powered mechanical equipment:

Date and time of commencement : 20 October 2020 at 1900 hours  
Days and hours : 0000-2400 hours on general holiday (including Sunday), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note condition 3.d.1. below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].  
This part of the permit expires on : 08 April 2021 at 2300 hours

- c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.

- d. Other conditions imposed on the use of the powered mechanical equipment :  
Refer to attached sheet.

4. Prescribed Construction Work

- a. Type of prescribed construction work which may be carried out inside the site boundary :

| Identification code of type of prescribed construction work | Description of type of prescribed construction work |
|---|---|
|   | Not applicable                                      |

- b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement: Not applicable at Not applicable

Days and hours: Not applicable.


This part of the permit expires on : Not applicable at Not applicable

- c. ~~Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~

- d. Other conditions imposed on the carrying out of the prescribed construction work:

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular entrances for public information.

Dated this 16<sup>th</sup> day of October 20 20

Signed :   
(TANG Wai-man, Lisa)  
for Authority

- \* Delete as necessary

表格 3  
噪音管制條例  
(第400章)  
第8(9)條

[第5(a)條]

建築噪音許可證  
為進行建築工程(撞擊式打樁除外)  
而使用機動設備及/或進行訂明建築工程

建築噪音許可證編號: GW-RE0869-20

致: PENTA - OCEAN CONSTRUCTION CO., LTD.

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及/或進行訂明建築工程,但須受以下條件規限。若不按照該等條件進行建築工程,許可證可遭撤銷,而且會受到檢控。

條件

1. 可使用機動設備及/或進行訂明建築工程的建築地盤:

詳細地址: 九龍啟德啟德發展計劃-前跑道及南面停機坪第四期基礎設施(工作地區第1部分)(土木工程拓展署合約編號ED/2018/01)。地段編號: ---

地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上,而該圖則是本建築噪音許可證的一部分。

2. 該地盤部分/全部\*位於指定範圍之內/外\*。

3. 機動設備

a. 在地盤範圍內可使用的各項機動設備:

| 各項機動設備的識辨代碼<br>(如適用的話) | 各項機動設備的說明 | 數目 |
|------------------------|-----------|----|
|                        | 參見附頁。     |    |

b. 可使用機動設備的建築噪音許可證有效期:

生效日期及時間: 二零二零年十月二十日 下午七時

日期及時間: 公眾假日(包括星期日)的凌晨零時至晚上十二時,公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時【但須注意條件3.d.1.有關可以使用上列機動設備的時間】。

此部分許可證屆滿日期及時間: 二零二一年四月八日 晚上十一時

c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀,供監督隨時查看;該等照片須經監督認可。

d. 規限使用機動設備的其他條件:

參見附頁。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程:

| 訂明建築工程的識辨代碼 | 訂明建築工程的類別的說明 |
|-------------|--------------|
|             | 不適用          |

b. 可進行訂明建築工程的建築噪音許可證有效期:

生效日期及時間: 不適用

日期及時間: 不適用。

此部分許可證屆滿日期及時間: 不適用

日期 時間

c. 本許可證可夾附經監督認可的地盤圖則,以顯示本許可證准予進行訂明建築工程的地點。該地盤圖則須存放於建築地盤供監督隨時查看。

d. 規限進行訂明建築工程的其他條件:

5. 本建築噪音許可證或其副本必須展示於建築地盤的所有車輛入口處,給予公眾人士參閱。

日期: 20 年 10 月 16 日



簽署:

監督  
(鄧慧敏 代行)

\* 刪去不適用者




Sheet Attached to Construction Noise Permit

No. GW-RE0869-20

## 3.a. Items of powered mechanical equipment which may be used inside the site boundary :

| Identification code of item of powered mechanical equipment (if applicable) | Description of item of powered mechanical equipment  | No. of units |
|---|--|--------------|
| <b>Group A</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 166   | Piling, large diameter bored, reverse circulation drill  | Two          |
| ---   | Air compressor, with Noise Emission Label showing a Sound Power Level of $\leq 104$ dB(A)              | Two          |
| ---   | Power pack (diesel)  | One          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Four         |
| ---   | Welding machine (electric)   | Two          |
| <b>Group B</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| ---   | Welding machine (electric)   | Five         |
| CNP 048   | Crane, mobile (diesel)   | One          |
| <b>Group C</b> ---  | Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level $\leq 95$ dB(A) | One          |
| CNP 048   | Crane, mobile (diesel)   | One          |
| CNP 044   | Concrete lorry mixer   | One          |
| ---   | Wastewater treatment plant   | One          |
| CNP 283   | Water pump, submersible (electric)   | Two          |
| <b>Group D</b> CNP 165  | Piling, large diameter bored, oscillator   | One          |
| ---   | Power pack (diesel)  | One          |

Signed :   
(TANG Wai-man, Lisa)  
for Authority

建築噪音許可證  
編號 GW-RE0869-20 的附頁

## 3.a. 在地盤範圍內可使用的各項機動設備：

| 各項機動設備的識別代碼 (如適用的話) | 各項機動設備的說明                            | 數目 |
|---------------------|--------------------------------------|----|
| <b>A組</b> ---       | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A) | 壹  |
| CNP 166             | 大直徑鑽孔樁，循環式鑽機                         | 貳  |
| ---                 | 空氣壓縮機，備有噪音標籤顯示聲功率級 $\leq 104$ 分貝(A)  | 貳  |
| ---                 | 油渣動力供應器                              | 壹  |
| ---                 | 污水處理器                                | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 肆  |
| ---                 | 焊接機 (電動)                             | 貳  |
| <b>B組</b> ---       | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A) | 壹  |
| ---                 | 焊接機 (電動)                             | 伍  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| <b>C組</b> ---       | 發電機，備有優質機動設備標籤顯示聲功率級 $\leq 95$ 分貝(A) | 壹  |
| CNP 048             | 起重機，流動 (油渣)                          | 壹  |
| CNP 044             | 混凝土攪拌車                               | 壹  |
| ---                 | 污水處理器                                | 壹  |
| CNP 283             | 潛水泵 (電動)                             | 貳  |
| <b>D組</b> CNP 165   | 大直徑鑽孔樁，擺動機                           | 壹  |
| ---                 | 油渣動力供應器                              | 壹  |

簽署：



監督  
(鄧慧敏 代行)




Sheet Attached to Construction Noise Permit  
No. GW-RE0869-20

**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

1. The powered mechanical equipment listed in condition 3.a shall only be operated during the hours shown below:

|                                     |                   |
|-------------------------------------|-------------------|
| General holiday including Sunday    | 0900 – 2300 hours |
| Any day not being a general holiday | 1900 – 2300 hours |

2. Only one group of the powered mechanical equipment listed in condition 3.a shall be allowed to operate at any time.

Signed :   
(TANG Wai-man, Lisa)  
for Authority


建築噪音許可證  
編號 GW-RE0869-20 的附頁

3. d. 規限使用機動設備的其他條件：

1. 祇可於以下時間內使用列在條件 3. a 內的機動設備：

|             |            |
|-------------|------------|
| 公眾假日包括星期日   | 上午九時至晚上十一時 |
| 公眾假日以外的任何一日 | 下午七時至晚上十一時 |

2. 在任何時間內，祇可使用列在條件 3. a. 內其中一組機動設備。

簽署 :   
監督  
(鄧慧敏 代行)

Photograph(s) attached to Construction Noise Permit No. GW-RE0869-20  
 建築噪音許可證編號：GW-RE0869-20 的照片



Generator, with Quality Powered Mechanical Equipment Label showing a Sound Power Level  $\leq 95$  dB(A)  
 發電機，備有優質機動設備標籤顯示聲功率級  $\leq 95$  分貝(A)



CNP 166 Piling, large diameter bored, reverse circulation drill  
 大直徑鑽孔樁，循環式鑽機



Photograph(s) attached to Construction Noise Permit No. GW-RE0869-20  
 建築噪音許可證編號：GW-RE0869-20 的照片



Air compressor, with Noise Emission Label showing a Sound Power Level of  $\leq 104$  dB(A)  
 空氣壓縮機，備有噪音標籤顯示聲功率級  $\leq 104$  分貝(A)



Power pack (diesel)  
 油渣動力供應器





Photograph(s) attached to Construction Noise Permit No. GW-RE0869-20  
建築噪音許可證編號：GW-RE0869-20 的照片



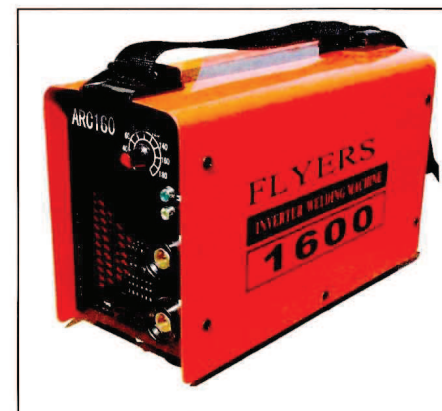
Wastewater treatment plant  
污水處理器



CNP 283 Water pump, submersible (electric)  
潛水泵 (電動)



Photograph(s) attached to Construction Noise Permit No. GW-RE0869-20  
建築噪音許可證編號：GW-RE0869-20 的照片



Welding machine (electric)  
焊接機 (電動)



CNP 048 Crane, mobile (diesel)  
起重機, 流動 (油渣)





Photograph(s) attached to Construction Noise Permit No. GW-RE0869-20

建築噪音許可證編號：GW-RE0869-20 的照片

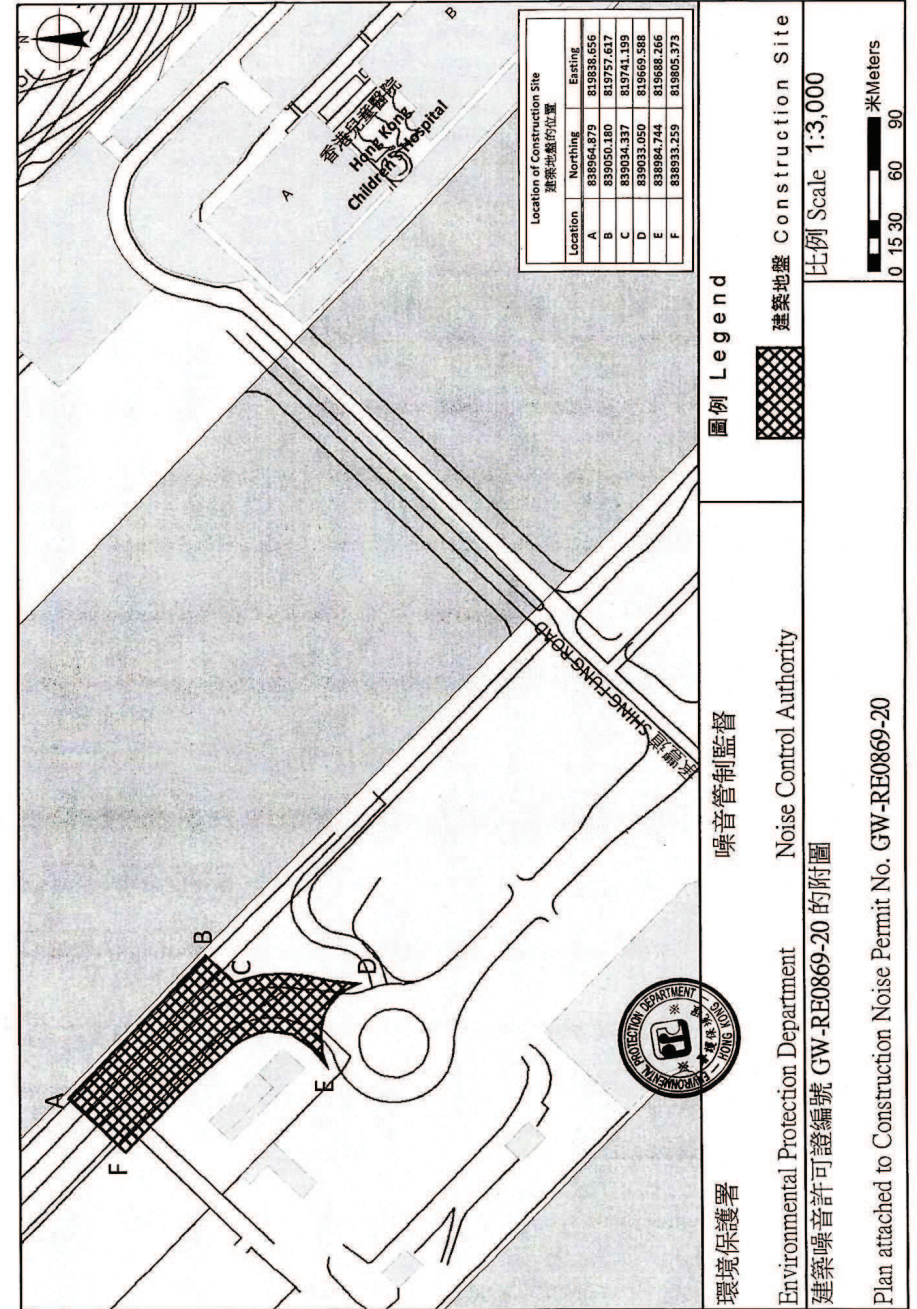


CNP 044 Concrete lorry mixer  
混凝土攪拌車



大直徑鑽孔樁·擺動機  
Piling, large diameter bored,  
oscillator

CNP 165 Piling, large diameter bored, oscillator  
大直徑鑽孔樁·擺動機



**Appendix P – Environmental Mitigation Implementation Schedule  
(EMIS)**

| <b>Implementation Schedule for Air Quality Measures</b> |   |   |               |
|---|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                     | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
| S3.2  |   | 8 times daily watering of the work site with active dust emitting activities.   | ^             |
| S3.2  | S4.8  | Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts. | ^             |
|   |   | - Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.   | ^*            |
|   |   | - Misting for the dusty material should be carried out before being loaded into the vehicle.  | ^             |
|   |   | - Any vehicle with an open load carrying area should have properly fitted side and tail boards.   | ^             |
|   |   | - Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.  | ^             |
|   |   | - The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary, before transportation.  | ^             |
|   |   | - The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials.  | ^             |
|   |   | - Vehicle washing facilities should be provided at every vehicle exit point.  | ^             |
|   |   | - The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.  | ^             |
|   |   | - Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.  | ^             |
|   |   | - Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.  | ^             |
|   |   | - Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.  | ^             |



| <b>Implementation Schedule for Noise Measures</b> |   |  |               |
|---|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>               | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
| S3.3  |   | Use of quiet PME, movable barriers for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump. | ^             |
| S3.3  |   | Good Site Practice:  |               |
| S3.3  |   | - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.  | ^             |
|   |   | - Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.  | ^             |
|   |   | - Mobile plant, if any, should be sited as far away from NSRs as possible.   | ^             |
|   |   | - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.                                  | ^             |
|   |   | - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.                                    | ^             |
|   |   | - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.                                  | ^             |
|   |   | - Scheduling of Construction Works during School Examination Period  | N/A           |

| <b>Implementation Schedule for Water Quality Measures</b> |   |  |               |
|---|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
| S3.4  |   | <u>Construction Runoff</u><br>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include: |               |
| S3.4  |   | - use of sediment traps.   | ^             |
| S3.4  |   | - adequate maintenance of drainage systems to prevent flooding and overflow.   | ^             |

| <b>Implementation Schedule for Water Quality Measures</b> |   |  |               |
|---|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
|   | S5.8  | - 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.   | ^             |
|   | S5.8  | - Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels 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. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.   | ^             |
|   | S5.8  | - Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distance of 100 m should be maintained between the discharge points of construction site run-off and the existing saltwater intakes. | ^             |
|   | S5.8  | - Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.  | ^             |
|   | S5.8  | - 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.  | ^             |
|   | S5.8  | - Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.   | ^             |
|   | S5.8  | - 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. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul  | ^             |

| <b>Implementation Schedule for Water Quality Measures</b> |   |   |               |
|---|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
|   |   | sewerage system.  |               |
|   | S5.8  | - 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. It is recommended to clean the construction sites on a regular basis.   | ^             |
| S3.4  |   | Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.   | ^             |
| S3.4  | S5.8  | Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable.<br><br>If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.<br><br>If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, 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. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. | ^             |
| S3.4  |   | Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources  | ^             |

| <b>Implementation Schedule for Water Quality Measures</b> |   |  |               |
|---|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
|   |   | and particularly suited to applications where the influent is pumped.  |               |
| S3.4  |   | Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> 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.   | ^             |
| S3.4  |   | 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.   | ^             |
| S3.4  |   | Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.   | ^             |
| S3.4  |   | Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.   | NA            |
| S3.4  | S5.8  | <u>Wheel Washing Water</u><br>All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. | ^             |
| S3.4  |   | <u>Drainage</u><br>It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.  | ^             |
| S3.4  |   | All temporary and permanent drainage pipes and culverts provided   | ^             |

| <b>Implementation Schedule for Water Quality Measures</b> |   |   |               |
|---|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
|   |   | to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.   |               |
| S3.4  |   | All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.   | ^             |
| S3.4  | S5.8  | <p><u>Sewage Effluent</u></p> <p>Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.</p> | ^             |
| S3.4  |   | <p><u>Stormwater Discharges</u></p> <p>Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes</p>   | ^             |
| S3.4  |   | <p><u>Debris and Litter</u></p> <p>In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised</p>  | ^             |

| <b>Implementation Schedule for Water Quality Measures</b> |   |   |               |
|---|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
|   |   | and that disposal of any solid materials, litter or wastes to marine waters does not occur.   |               |
|   | S5.8  | <u>Boring and Drilling Water</u><br>Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.   | ^             |
|   | S5.8  | <u>Acid Cleaning, Etching and Pickling Wastewater</u><br>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.  | NA            |
|   | S5.8  | <u>Effluent Discharge</u><br>There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water 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 (RO) of EPD. | ^             |
|   | S5.8  | <u>Accidental Spillage</u><br>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.<br>Any service shop and maintenance facilities should be located on   | ^             |



| <b>Implementation Schedule for Water Quality Measures</b> |   |  |               |
|---|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>                       | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
|   |   | hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.  |               |
|   | S5.8  | Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:<br>- Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. | ^             |
|   | S5.8  | - Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.   | ^             |
|   | S5.8  | - Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.   | ^             |

| <b>Implementation Schedule for Waste Management Measures</b> |   |   |               |
|--|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                          | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
| S3.5   |   | <u>Good Site Practices</u><br>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:                                      |               |
| S3.5   |   | - Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.  | ^             |
|  | S6.7  | - Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites. | ^             |
| S3.5   | S6.7  | - Training of site personnel in proper waste management and chemical waste handling procedures.   | ^             |

| <b>Implementation Schedule for Waste Management Measures</b> |   |  |               |
|--|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>                          | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
| S3.5   | S6.7  | - Provision of sufficient waste disposal points and regular collection for disposal.   | ^*            |
| S3.5   | S6.7  | - Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.  | ^             |
| S3.5   |   | - A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).  | ^             |
|  | S6.7  | - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.   | ^             |
|  | S6.7  | - Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.   | ^             |
| S3.5   |   | <u>Waste Reduction Measures</u><br>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: | ^             |
| S3.5   | S6.7  | - Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.  | NA            |
| S3.5   | S6.7  | - 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.   | ^             |
| S3.5   | S6.7  | - Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.   | ^             |
| S3.5   |   | - Any unused chemicals or those with remaining functional capacity should be recycled.   | ^             |
| S3.5   | S6.7  | - Proper storage and site practices to minimise the potential for damage or contamination of construction materials.   | ^             |
| S3.5   |   | <u>Construction and Demolition Materials</u><br>Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:   |               |
| S3.5   |   | - Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for   | ^             |

| <b>Implementation Schedule for Waste Management Measures</b> |   |   |               |
|--|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                          | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
|  |   | disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.  |               |
| S3.5   |   | - Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.  | ^             |
| S3.5   |   | - Skip hoist for material transport should be totally enclosed by impervious sheeting.  | ^             |
| S3.5   |   | - Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.   | ^             |
| S3.5   |   | - The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.  | ^             |
| S3.5   |   | - The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.   | ^             |
| S3.5   |   | - All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.   | ^             |
| S3.5   |   | - The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.  | ^             |
| S3.5   |   | - When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction and Demolition Materials” should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system. | ^             |
|  | S6.7  | - Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation  | ^             |

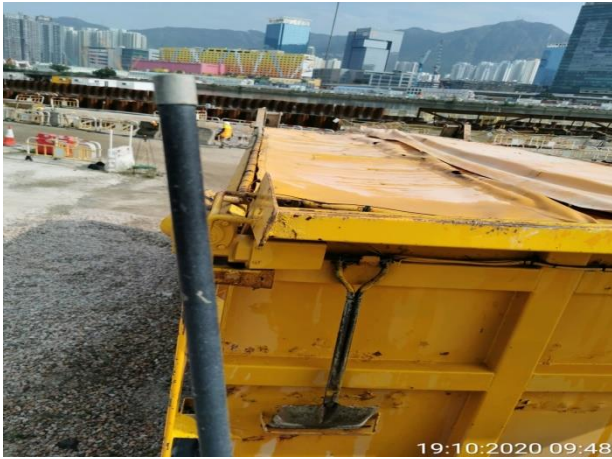
| <b>Implementation Schedule for Waste Management Measures</b> |   |  |               |
|--|---|--|---------------|
| <b>EIA for KTD Development Ref.</b>                          | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>   | <b>Status</b> |
|  |   | of waste.  |               |
| S3.5   |   | <u>Chemical Waste</u><br>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.   | ^             |
|  | S6.7  | Separation of chemical wastes for special handling and appropriate treatment.  | ^             |
| S3.5   |   | <u>General Refuse</u><br>General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem. | ^             |

| <b>Implementation Schedule for Landscape and Visual Measures</b> |   |   |               |
|--|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                              | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
| S3.8.12  |   | All existing trees should be carefully protected during construction.   | ^*            |
| S3.8.12  |   | Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work. | NA            |
| S3.8.12  |   | Control of night-time lighting.   | ^             |
| S3.8.12  |   | Erection of decorative screen hoarding.   | ^             |
|  | S7.9  | <u>Construction Site Control</u><br>- CM1 - Minimized construction area and contractor's temporary works areas.   | ^             |
|  |   | - CM2- Control of night-time lighting and glare by hooding all lights.  | ^             |
|  |   | - CM3 - Erection of decorative mesh screens or construction   | ^             |

| <b>Implementation Schedule for Landscape and Visual Measures</b> |   |   |               |
|--|---|---|---------------|
| <b>EIA for KTD Development Ref.</b>                              | <b>EIA for KTD – Roads D3A &amp; D4A Ref.</b> | <b>Environmental Protection Measures / Mitigation Measures</b>  | <b>Status</b> |
|  |   | hoardings around works areas in visually unobtrusive colours.   |               |
|  |   | - CM4 - Reduction of construction period to practical minimum.  | ^             |
|  |   | - CM5 - Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas.   | ^             |
|  |   | - CM6 - Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open. | NA            |

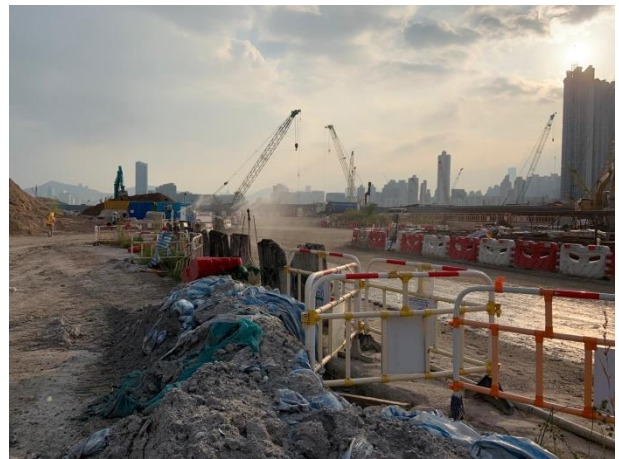
| <b>Remarks:</b> |   |   |   |
|-----------------|---|---|---|
| ^               | Compliance of mitigation measure.   | X | Non-compliance of mitigation measure.   |
| N/A             | Not Applicable at this stage.   | ● | Non-compliance but rectified by the contractor.                                       |
| N/A (1)         | Not observed.   |   |   |
| *               | Recommendation was made during site audit but improved/rectified by the contractor. | # | Recommendation was made during audit and to be improved/ rectified by the contractor. |

## Mitigation Measures undertaken by the Contractor for site inspections



|                      |  |
|----------------------|--|
| Date:                | 19 October 2020  |
| Mitigation Measures: | Covering the dusty materials on the truck with mechanical covers |

|                      |                         |
|----------------------|-------------------------|
| Date:                | 22 October 2020         |
| Mitigation Measures: | Stockpile were covered. |



|                      |  |
|----------------------|--|
| Date:                | 22 October 2020                                  |
| Mitigation Measures: | Tree protection zone were kept clean from waste. |

|                      |   |
|----------------------|---|
| Date:                | 22 October 2020   |
| Mitigation Measures: | Watering of the work site with active dust emitting activities by automatic water spray system. |



**Appendix Q – Summaries of Environmental Complaint, Warning,  
Summon and Notification of Successful Prosecution**

**Reporting Month: October 2020**

| <b>Contract No.</b> | <b>Record of Complaint<br/>(Yes/No)</b>    | <b>Record of Warning<br/>(Yes/No)</b> | <b>Notification of<br/>Summons and<br/>Successful<br/>Prosecutions (Yes/No)</b> |
|---------------------|--|---------------------------------------|---|
| ED/2018/01          | Yes (1 dust complaint via<br>hotline 1823) | No                                    | No  |

**Cumulative Statistics on Complaints, Notification of Summons and Successful Prosecutions upto reporting month**

| <b>Contract No.</b> | <b>Record of Complaint</b> | <b>Record of Warning</b> | <b>Notification of<br/>Summons and<br/>Successful<br/>Prosecutions</b> |
|---------------------|----------------------------|--------------------------|--|
| ED/2018/01          | 1                          | 0                        | 0  |

| Complaint Log for ED/2018/01 |  |   |  |  |
|------------------------------|--|---|--|--|
| Complaint Ref. No.           | Date of Complaint  | Description of Complaint  | Investigation / Recommendations / Actions  | Close-Out Date / Status  |
| C0001                        | A dust complaint was referred from the Contractor on 21 October 2020 regarding a public complaint via 1823 hotline (Case no. 3-6518939602) on 20 October 2020. | <ol style="list-style-type: none"> <li>1. The water spraying system was not operated in proper time.</li> <li>2. Stockpile was not covered properly.</li> <li>3. Haul road was not wetted.</li> <li>4. Materials transported on trucks were not provided with mechanical covers.</li> </ol> | <p><u>Investigation</u></p> <ol style="list-style-type: none"> <li>1. Based on the information provided by the Contractor on 22 October 2020, the water sprinklers system was sprayed every 15 minutes with 70 seconds interval automatically. For the area that water sprinklers system was not covered, manual water spraying was provided. Dump trucks were covered with mechanical cover after loading the materials. The stockpile area was covered by the tarpaulin during night time.</li> <li>2. Based on the monitoring results on 16 October 2020, the 1-hour and 24-hour TSP results were below the Action Levels and Limit Levels.</li> <li>3. Regular site inspection was conducted by ET on 22 October 2020, no adverse observation against the dust impact was recorded.</li> </ol> <p><u>Recommendations</u></p> <p>To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:</p> <ol style="list-style-type: none"> <li>1. Increase the frequency and duration for automatic water spraying system.</li> <li>2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis.</li> <li>3. Ensure stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process.</li> </ol> | <ul style="list-style-type: none"> <li>- Closed-out on 5 Nov 2020</li> <li>- No further complaint was received.</li> </ul> |

| <b>Complaint Log for ED/2018/01</b> |                   |                          |  |                         |
|-------------------------------------|-------------------|--------------------------|--|-------------------------|
| Complaint Ref. No.                  | Date of Complaint | Description of Complaint | Investigation / Recommendations / Actions  | Close-Out Date / Status |
|                                     |                   |                          | <u>Action taken</u><br>1. As per the Contractor, the water sprinkler are now adjusted to start at 8:00am and end at 6:00pm for Monday to Saturday while from 8:00am to 5:00pm on Sunday. Water spraying are set with 5-minute time interval with duration 30-60 seconds. |                         |
|                                     |                   |                          |  |                         |
|                                     |                   |                          |  |                         |
|                                     |                   |                          |  |                         |
|                                     |                   |                          |  |                         |
|                                     |                   |                          |  |                         |
|                                     |                   |                          |  |                         |
|                                     |                   |                          |  |                         |

### Incident Report on Complaint Investigation

| Receipt of Complaint                         |   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
|--|---|-------------|------------|-------------|------------|-------------|-----|--|------------|-------------|------------|-------------|------------|-------------|--|-------|----|-------|----|-------|----|---|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|
| Date:  | 21 October 2020   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| From:  | Ms. Nga Man Ting [Penta-Ocean Construction Co. Ltd. (The Contractor)]   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Contact No.:                                 | 3465 8858/ 9555 8820  |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Reference No.:                               | C0001   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Via:   | E-Mail  |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Details of Complaint                         |   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Date:  | 20 October 2020   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Parameter:                                   | Dust  |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Description:                                 | <p>Contractor received public complaint via 1823 hotline (Case no. 3-6518939602) on 20 October 2020.</p> <p>有關公務工程ED/2018/01地盤內沙塵事宜</p> <p>爭發地點資料：</p> <ol style="list-style-type: none"> <li>1. 地盤內的車用道路旁有行人通路及工作地點</li> <li>2. 車用道路持續有大型車輛行駛，道路旁是有灑水設施。</li> <li>3. 地盤內數個有大型儲泥區，泥車每日往返不同儲泥區裝載及卸載沙泥</li> </ol> <p>投訴要點：</p> <p>上述灑水設施長時間沒有適時運作，例如：每次灑水相距數小時甚至半日，每次灑水約半分鐘</p> <p>儲泥區沒有適當覆蓋，泥車於行駛期間沒有覆蓋</p> <p>由於沒有適時灑水，每當車輛經過上述道路，便會塵土飛揚</p> <p>有些沙塵甚至被吹得比較遠(如：行駛中車輛的20米範圍外)，地盤內人士即使沒有經過車用道路附近也會被影響。</p> <p>地盤內塵土飛揚的程度完全是漠視工人安全。</p>  |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Details of Investigation                     |   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Investigation Date:                          | 22 October 2020   |             |            |             |            |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Results / Findings:                          | <p>There was no specific time for the captioned complaint occurred.</p> <p>Based on the information provided by the Contractor on 22 October 2020, the water sprinklers system was sprayed every 15 minutes with 70 seconds interval automatically. For the area that water sprinklers system was not covered, manual water spraying was provided. Dump trucks were covered with mechanical cover after loading the materials. The stockpile area was covered by the tarpaulin during night time.</p> <p>Based on the monitoring results on 16 October 2020, the 1-hour and 24-hour TSP results were below the Action Levels and Limit Levels as shown as below.</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">AM3</th> <th colspan="2">AM4(A)</th> <th colspan="2">AM7</th> </tr> <tr> <th>1-hour TSP</th> <th>24-hour TSP</th> <th>1-hour TSP</th> <th>24-hour TSP</th> <th>1-hour TSP</th> <th>24-hour TSP</th> </tr> </thead> <tbody> <tr> <td>Measured result (<math>\mu\text{g}/\text{m}^3</math>)</td> <td>89-94</td> <td>72</td> <td>76-85</td> <td>72</td> <td>75-86</td> <td>60</td> </tr> <tr> <td>Action Level (<math>\mu\text{g}/\text{m}^3</math>)</td> <td>297</td> <td>182</td> <td>326</td> <td>187</td> <td>315</td> <td>181</td> </tr> <tr> <td>Limit Level (<math>\mu\text{g}/\text{m}^3</math>)</td> <td>500</td> <td>260</td> <td>500</td> <td>260</td> <td>500</td> <td>260</td> </tr> </tbody> </table> |             | AM3        |             | AM4(A)     |             | AM7 |  | 1-hour TSP | 24-hour TSP | 1-hour TSP | 24-hour TSP | 1-hour TSP | 24-hour TSP | Measured result ( $\mu\text{g}/\text{m}^3$ ) | 89-94 | 72 | 76-85 | 72 | 75-86 | 60 | Action Level ( $\mu\text{g}/\text{m}^3$ ) | 297 | 182 | 326 | 187 | 315 | 181 | Limit Level ( $\mu\text{g}/\text{m}^3$ ) | 500 | 260 | 500 | 260 | 500 | 260 |
|  | AM3   |             | AM4(A)     |             | AM7        |             |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
|  | 1-hour TSP  | 24-hour TSP | 1-hour TSP | 24-hour TSP | 1-hour TSP | 24-hour TSP |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Measured result ( $\mu\text{g}/\text{m}^3$ ) | 89-94   | 72          | 76-85      | 72          | 75-86      | 60          |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Action Level ( $\mu\text{g}/\text{m}^3$ )    | 297   | 182         | 326        | 187         | 315        | 181         |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |
| Limit Level ( $\mu\text{g}/\text{m}^3$ )     | 500   | 260         | 500        | 260         | 500        | 260         |     |  |            |             |            |             |            |             |  |       |    |       |    |       |    |   |     |     |     |     |     |     |  |     |     |     |     |     |     |

Regular site inspection was conducted by ET on 22 October 2020, no adverse observation against the dust impact was recorded.

Recommendations / Mitigation Measures / Actions

Recommendations

To minimize the impact for air quality, mitigation measures should be enhanced specially in dry seasons are recommended:

1. Increase the frequency and duration for automatic water spraying system.
2. Main haul road and the area that water sprinklers system was not covered in the construction site should be wetted by water trucks or manually in regular basis.
3. Ensure stockpiling sites should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting at all time except during working process.

Action taken

1. As per the Contractor, the water sprinkler are now adjusted to start at 8:00am and end at 6:00pm for Monday to Saturday while from 8:00am to 5:00pm on Sunday. Water spraying are set with 5-minute time interval with duration 30-60 seconds.

Prepared By:



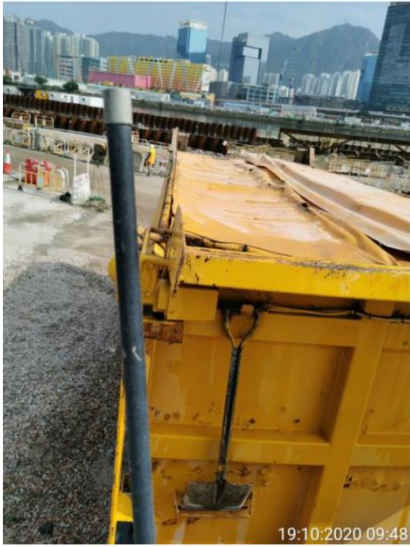
Date:

4 November 2020

Mr. Chan Pang (Environmental Team Leader)



**Attachment: Photo Records**



Date: 19 October 2020 (Photo provided by Penta-Ocean)

Description: The Truck have been covered.



Date: 20 October 2020 (Photo provided by Penta-Ocean)

Description: Stockpile was covered after worked.



Date: 22 October 2020

Action: Watering manually



Date: 22 October 2020

Action: Stockpile was covered.