



AUES JOB No.: TCS00715/14

**TUEN MUN - CHEK LAP KOK LINK
CONTRACT NO. HY/2013/12 –
NORTHERN CONNECTION TOLL PLAZA AND
ASSOCIATED WORKS**

**51ST MONTHLY ENVIRONMENTAL MONITORING AND
AUDIT (EM&A) REPORT – JANUARY 2019**

PREPARED FOR
CRBC AND KADEN JOINT VENTURE

| Date | Reference No. | Prepared By | Certified By |
|------------------|-------------------------|---|--|
| 18 February 2019 | TCS00715/14/600/R0513v2 |  Ben Tam (Environmental Consultant) |  T.W. Tam (Environmental Team Leader) |

Ref.: HYDHZMBEEM00_0_7187L.19

18 February 2019

AECOM
Engineer's Representative's Office
No. 8 Mong Fat Street, Tuen Mun,
New Territories, Hong Kong

By Fax (2218 7299) and By Post

Attention: Mr. Roger Man

Dear Mr. Man,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing
Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation**

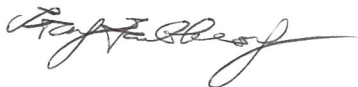
**Contract No. HY/2013/12 TM-CLKL Northern Connection Toll Plaza and
Associated Works
51st Monthly EM&A Report for January 2019 (EP-354/2009/D)**

Reference is made to the Monthly Environmental Monitoring and Audit (EM&A) Report (Jan. 2019) (AUES reference: TCS00715/14/600/R0513v2) certified by the ET Leader and provided to us via e-mail.

Please be informed that we have no adverse comments on the captioned Report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/D.

Thank you for your attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,



F. C. Tsang
Independent Environmental Checker
Tuen Mun – Chek Lap Kok Link

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AUES – Mr. T. W. Tam (By Fax: 2959 6079)
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Internal: DY, YH, DF, ENPO Site

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EXECUTIVE SUMMARY

ES01 This is the **51st** Monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 January 2019** (hereinafter ‘the Reporting Period’).

SUMMARY OF EM&A ACTIVITIES FOR THE REPORTING PERIOD

ES02 The EM&A activities conducted in the Reporting Period are summary in below:-

- 24-hours TSP of Air Quality Monitoring –**50 events**
- 1-hour TSP of Air Quality Monitoring – **150 events**
- Cultural Heritage Inspection – **5 events**
- Landfill Gas Monitoring –**26 days**
- Landscape & Visual Monitoring – **4 events**
- Environmental Site Inspection – **5 events**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES03 In the Reporting Period, 1 Action & 1 Limit Level exceedances of One-hour TSP were recorded at ASR1 on 11 & 17 January 2019 respectively and 4 Action Level exceedances of 1-hour TSP were recorded at ASR5 on 8, 11, 17 & 26 January 2019 according to the measurement results by the ET of Contract HY/2012/08. Investigation reports (IRs) for the exceedances were prepared by the ET and endorsed by IEC and the IRs revealed that the exceedances were not contract related. The endorsed investigation reports are included in this monthly EM&A Report. The summary of breach of air quality performance is shown below.

| Environmental Aspect | Monitoring Parameters | Action Level | Limit Level | Event & Action | | |
|----------------------|-----------------------|--------------|-------------|----------------|---------------|--------------------|
| | | | | NOE Issued | Investigation | Corrective Actions |
| Air Quality | 1-hour TSP | 5 | 1 | 4 | 4 | NA |
| | 24-hour TSP | 0 | 0 | 0 | 0 | NA |

ES04 In the Reporting Period, no noise complaint was received by RE, the Contractor, ENPO or HyD. No Action Level exceedances were therefore triggered and no NOE or the associated corrective actions were required.

ES05 Landfill gas monitoring was conducted at the Lung Mun Road works area in this reporting month by the Safety Officer. The monitoring results shown no exceedances were triggered. Moreover part of landfill gas monitoring zone at TD1 was handover to the Contract No. HY/2017/10 since 7 May 2018.

ES06 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure the compliance with the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.

SITE INSPECTION

ES07 In the Reporting Period, joint site inspection by the RE, ET and the Contractor was carried out on **3rd, 8th, 15th, 22nd and 29th January 2019** and the IEC has attended the joint site inspection on **29th January 2019**. No non-compliance was recorded during the site inspection but **5** observations and **2** reminders were recorded.

ES08 Inspection for Pitcher Plants of ecology and grave of culture heritage were also carried out during the weekly site inspection. It was observed that the transplanted pitcher plants were properly protected. Establishment period for the pitcher plants was completed at the end of September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Since then only the integrity of the protection fence was checked to fulfil the EIA requirement.

ENVIRONMENTAL COMPLAINT

ES09 In the Reporting Period, no environmental complaint was received.

ES10 The statistical summary of environmental complaints is summarized in the following table.

| Reporting Period | Environmental Complaint Statistics | |
|---------------------------------|------------------------------------|------------|
| | Frequency | Cumulative |
| Since the Contract commencement | 10 | 10 |
| January 2019 | 0 | 10 |

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES11 No environmental summons or successful prosecutions were recorded in the Reporting Period.

REPORTING CHANGE

ES12 No reporting changes were made in the Reporting Period.

FUTURE KEY ISSUES

ES13 During dry season, air quality mitigation measures such as watering of site area for at least 12 times per day and covering of exposed slopes should be fully implemented to reduce construction dust impact as recommended in the EMIS.

ES14 Moreover, muddy water or other water pollutants from site surface runoff into the public areas will be key environment issue. Special attention should be paid on the water quality mitigation measures to prevent surface runoff flow to public area.

ES15 It was reminded that good housekeeping practice should be maintained. Mosquito control measures should be properly implemented to prevent mosquito breeding on site especially after rain.

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1 INTRODUCTION

1.1 CONTRACT BACKGROUND

1.1.1 CRBC-Kaden Joint Venture (hereafter “CRBC-Kaden JV”) is commissioned by the Highways Department (HyD) as the Main Contractor of the Contract No. HY/2013/12 – Northern Connection Toll Plaza and Tunnel Section ((hereafter “the Contract”) and this Contract is part of the Tuen Mun – Chek Lap Kok Link (TM-CLK Link Project). TM-CLK Link Project is a Designated Project under Environmental Permit number EP-354/2009/D issued on 13 March 2015. The layout Plan of the Project and the Contract are showed in [Appendix A](#) and [B](#) respectively.

1.1.2 The construction works of the Contract mainly include:-

- a. construction of an approximately 5.4 hectares toll plaza and an associated footbridge;
- b. construction of associated carriageways including approximately 0.74 kilometre land viaducts, and an approximately 230 metres vehicular underpass to connect the toll plaza and the roundabout at Lung Mun Road/Lung Fu Road;
- c. site formation for the construction of the toll plaza, including associated slope works and natural terrain hazard mitigation measures;
- d. modification and realignment of the existing Lung Mun Road and Lung Fu Road; and
- e. associated waterworks, drainage, sewerage and landscaping works, etc..

1.1.3 This is 51st monthly EM&A report presenting the monitoring results and inspection findings for period from **1 to 31 January 2019**.

1.2 REPORT STRUCTURE

1.2.1 The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-

Section 1 *Introduction*

Section 2 *Contract Organization and Construction Progress and Environmental Submissions*

Section 3 *Summary of Impact Monitoring Requirements under the Contract*

Section 4 *Air Quality Monitoring*

Section 5 *Ecology Monitoring*

Section 6 *Cultural Heritage*

Section 7 *Landscape and Visual*

Section 8 *Landfill gas hazard Monitoring*

Section 9 *Waste Management*

Section 10 *Inspections and Audit*

Section 11 *Environmental Complaints and Non-Compliance*

Section 12 *Implementation Status of Mitigation Measures*

Section 13 *Conclusions and Recommendations*

2 CONTRACT ORGANIZATION AND CONSTRUCTION PROGRESS AND ENVIRONMENTAL SUBMISSIONS

2.1 CONTRACT ORGANIZATION

2.1.1 The Contract organization and contact details of key personnel are shown in [Appendix C](#).

2.2 CONSTRUCTION PROGRESS

2.2.1 In the Reporting Period, the major construction activity conducted under the Contract is summarized in below. The three-months rolling programme of the Contract is enclosed in [Appendix D](#).

- Instrumentation and Monitoring;
- Surface Drainage on Slope C, D & E and Portion H;
- Retaining Structure TP_G at Portion H;
- E & M Works at Retaining Wall B;
- Laying Water Main at Portion G;
- Construction of Manhole and Sewer Culvert at Portion G and H;
- Road and Drainage Works at LMR Central Median;
- Road pavement works at +19mPD platform, Lung Mun Road.

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 The environmental submissions under the EP requirement had been submitted to the EPD and they are listed in below:

- Monitoring Plan on Construction Dust (submission refer to Contract HY/2012/08)
- Landscape and Visual Plan (not yet endorsed by EPD)
- Waste Management Plan (endorsed by EPD on 16 March 2015)
- Baseline Monitoring Report (not yet endorsed by EPD)

2.3.2 Summary of environmental permits, licenses and notifications for the Contract is presented in [Table 2-1](#).

Table 2-1 Status of Environmental Licenses and Permits of the Contract

| No. | Type of Permit/ License | Reference/ License No. | Date of Issue | Date of Expiry |
|-----|--|---------------------------|---------------|----------------|
| 1 | Air pollution Control (Construction Dust) Regulation | 377719 | 06-08-2014 | N/A |
| 2 | Chemical Waste Producer Registration - Waste Producers Number | 5117422C389301 | 03-09-2014 | N/A |
| 3 | Water Pollution Control Ordinance -Variation of Effluent Discharge License | WT00023973-2016 | 25-10-2017 | 30-09-2019 |
| 4 | Waste Disposal Regulation - Billing Account for Disposal of Construction Waste | 7020460 | 01-08-2014 | N/A |
| 5 | Extended CNP for Multiple Task | GW-RW0480-18 | 25-11-2018 | 24-05-2019 |
| 6 | Extended CNP for Tunnel Works | GW-RW0478-18 | 23-11-2018 | 22-05-2019 |
| 7 | Extended CNP for Portion H | GW-RW0479-18 | 18-11-2018 | 17-05-2019 |
| 8 | Extended CNP for Lung Mun Road | GW-RW0530-18 | 25-12-2018 | 02-03-2019 |
| 9 | Extended CNP for Lung Fu Road | GW-RW0531-18 | 27-12-2018 | 02-03-2019 |

3 SUMMARY OF IMPACT MONITORING REQUIREMENTS UNDER THE CONTRACT

3.1 GENERAL

3.1.1 The major construction activities under the Contract are land-based and no marine work will be involved. In accordance with the Project EM&A Manual requirements, the environmental aspects under the Contract shall be included air quality, ecological, cultural heritage, landscape and visual, landfill gas and site inspection during construction period. In addition, audit of the contractor's implementation of the construction noise and land-based water quality pollution control measures are also required for the Contract.

3.1.2 A summary of construction phase EM&A requirements are presented in the sub-sections below.

3.2 AIR QUALITY MONITORING

3.2.1 The construction phase air quality monitoring shall cover the following parameters:

- 1-hour TSP; and
- 24-hour TSP

3.3 MONITORING LOCATION

3.3.1 The air quality monitoring stations for impact monitoring are listed in [Table 3-1](#) and illustrated in [Appendix E](#).

Table 3-1 Air Quality Monitoring Stations under the Contract

| ID | Location | Air monitoring station Description |
|-------|---------------------------|---|
| ASR1 | Tuen Mun Fireboat Station | EM&A Manual |
| ASR5 | Pillar Point Fire Station | EM&A Manual |
| AQMS1 | Previous River Trade Golf | Enhanced TSP Level under EP condition 2.4 |
| ASR6 | Butterfly Beach Laundry | Enhanced TSP Level under EP condition 2.4 |
| ASR10 | Butterfly Beach Park | Enhanced TSP Level under EP condition 2.4 |

3.4 MONITORING FREQUENCY

3.4.1 As per Condition 2.4 of the EP of TM-CLKL, an enhanced monitoring plan on TSP level at Tuen Mun ("the Enhanced TSP Monitoring Plan") is required to be submitted to the DEP for approval at least 1 month before the commencement of construction of the Project. Details of the Enhanced TSP Monitoring Plan under Contract No. HY/2012/08 could be found from the project website. The air quality monitoring work under this Contract will follow the monitoring requirement of enhanced TSP monitoring under the project.

3.4.2 The air quality monitoring requirements for the Contract is summarized in [Table 3-2](#).

Table 3-2 Enhanced TSP Monitoring Plan – Construction Phase

| Condition | Monitoring Parameter | Monitoring Location | Frequency | Monitoring Requirement |
|-----------|----------------------|--------------------------------|----------------------------------|--|
| General | 1-hour TSP | ASR1, ASR5, AQMS1, ASR6, ASR10 | 3 times per day every six days | Throughout the Northern Connection, toll plaza and tunnel buildings construction works |
| | 24-hour TSP | ASR1, ASR5, AQMS1, ASR6, ASR10 | Daily every six days | |
| Special | 1-hour TSP | ASR1, ASR5, AQMS1, ASR6, ASR10 | 3 times per day every three days | <u>Northern Connection</u> During excavation works for launching shaft, excavation work for Cut and Cover Tunnel and Cut and Cover Tunnel Construction <u>Toll Plaza</u> |
| | 24-hour TSP | ASR1, ASR5, AQMS1, ASR6, ASR10 | Daily every three days | |

| Condition | Monitoring Parameter | Monitoring Location | Frequency | Monitoring Requirement |
|-----------|----------------------|---------------------|-----------|--|
| | | | | During excavation, slope works, construction of road and superstructures and wind erosion from open sites and stockpiling areas <u>Tunnel Buildings</u> During excavation, foundation works, construction of superstructures and wind erosion from open sites and stockpiling areas |

3.5 MONITORING EQUIPMENT

- 3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*.
- 3.5.2 A high volume sampler in compliance with the following specifications shall be used for carrying out the 1-hr and 24-hr TSP monitoring:
- (i) 0.6-1.7 m³/min (20-60 SCFM) adjustable flow range;
 - (ii) equipped with a timing/control device with +/- 5 minutes accuracy for 24 hours operation;
 - (iii) installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
 - (iv) capable of providing a minimum exposed area of 406 cm² (63 in²);
 - (v) flow control accuracy: +/- 2.5% deviation over 24-hr sampling period;
 - (vi) equipped with a shelter to protect the filter and sampler;
 - (vii) incorporated with an electronic mass flow rate controller or other equivalent devices;
 - (viii) equipped with a flow recorder for continuous monitoring;
 - (ix) provided with a peaked roof inlet;
 - (x) equipped with a manometer;
 - (xi) able to hold and seal the filter paper to the sampler housing in a horizontal position;
 - (xii) easy to change the filter; and
 - (xiii) capable of operating continuously for 24-hr period.
- 3.5.3 Calibration of dust monitoring equipment shall be conducted by the ET upon installation and in bi-monthly intervals during construction phase. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The calibration data shall be properly documented for future reference by concerned parties, such as the IEC. All the data shall be converted into standard temperature and pressure condition.
- 3.5.4 The filter paper of 1-hour and 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.
- 3.5.5 If the ET Leader proposes to use a direct reading dust meter to measure 1-hr TSP levels on an ad hoc basis, he shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable result as that the High Volume Sampler (HVS) and may be used for the 1-hr sampling. The instrument should also be calibrated regularly and the 1-hr sampling shall be checked periodically by the HVS to check the validity and accuracy of the results measured by the direct reading method.
- 3.5.6 According to the Project EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET Leader and

agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:

- (i) the wind sensors should be installed on masts at an elevated level 10 m above ground so that they are clear of obstructions or turbulence caused by the buildings;
- (ii) the wind data should be captured by a data logger to be down-loaded for processing at least once a month;
- (iii) the wind data monitoring equipment should be re-calibrated at least once every six months; and
- (iv) wind direction should be divided into 16 sectors of 22.5 degrees each.

3.6 DERIVATION OF ACTION/LIMIT (A/L) LEVELS

3.6.1 The baseline monitoring results formed the basis for determining the air quality criteria for the impact monitoring. The ET shall compare the impact monitoring results with air quality criteria set up for 24-hour TSP and 1-hour TSP. Based on results of the approved Baseline Monitoring Report of HyD Contract HY/2012/08, the Action and Limit Levels for impact dust monitoring are shown in [Table 3-3](#).

Table 3-3 Action and Limit Levels for Impact Air Quality Monitoring

| Air Quality Monitoring Stations | 24-hour TSP ($\mu\text{g}/\text{m}^3$) | | 1-hour TSP ($\mu\text{g}/\text{m}^3$) | |
|---------------------------------|--|-------------|---|-------------|
| | Action Level | Limit Level | Action Level | Limit Level |
| ASR1 | 213 | 260 | 331 | 500 |
| ASR5 | 238 | 260 | 340 | 500 |
| AQMS1 | 213 | 260 | 335 | 500 |
| ASR6 | 238 | 260 | 338 | 500 |
| ASR10 | 214 | 260 | 337 | 500 |

3.6.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in [Appendix F](#).

3.7 OTHER ENVIRONMENTAL ASPECTS

Noise

3.7.1 The TM-CLKL EIA study stated that no existing noise sensitive receiver (NSR) was identified within the Study Area at Tuen Mun. Therefore, no noise monitoring is required for the construction phase of the Contract.

3.7.2 Regular site inspections and audits will be carried out during the construction phase in order to confirm the construction works under the Contract comply with the regulatory noise requirements.

Water Quality

3.7.3 No marine works will be undertaken under the Contract. Therefore, no water quality monitoring is required for the construction phase of the Contract.

Ecology

3.7.4 No marine works will be undertaken under the Contract and generated marine ecological impact, no dolphin monitoring is required for the construction phase of the Contract.

3.7.5 During construction phase, the ET will perform Pitcher Plants inspection at least once every week to report the growth condition (only undertaken at Establishment period) and protection measures.

Landscape and Visual

3.7.6 Measures to mitigate landscape and visual impact during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims

of the mitigation measures in accordance with the EM&A Manual.

Cultural Heritage

- 3.7.7 Grave G1 as a heritage resource is situated near the proposed toll plaza in Tuen Mun. Site inspections should be undertaken at least once per week throughout the construction period to ensure compliance with the intended aims of recommended mitigation measures.

Landfill Gas

- 3.7.8 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Landfill gas monitoring is recommended during construction of the Contract to ensure the works area is free of landfill gas before the worker entered the concerned area.

3.8 MONITORING SCHEDULE

- 3.8.1 The monitoring schedule for landscape & visual and landfill gas for the present and next reporting period are presented in [Appendix G](#).

4 AIR QUALITY MONITORING

4.1 GENERAL

4.1.1 The air quality impact monitoring and enhanced Total Suspended Particulates (TSP) level monitoring at five proposed locations are currently carried out by the ET of Contract HY/2012/08. Sharing of impact air quality monitoring data between HY/2012/08 and HY/2013/12 is agreed by all relevant parties. The Contract is not required to conduct its own dust monitoring exercise until the Contract HY/2012/08 ends.

4.2 AIR QUALITY MONITORING RESULTS IN REPORTING PERIOD

4.2.1 In the Reporting Period, 1-hour and 24-hour TSP monitoring at the five proposed locations are continued to perform by the ET of Contract HY/2012/08. Therefore, no air quality monitoring was conducted by the ET of Contract HY/2013/12. Details information of air quality monitoring results could be referred to the Monthly EM&A Reports of the Contract HY /2012 /08 ([January 2019](#)).

4.3 ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE

4.3.1 According to the air quality monitoring result provided by Contract HY/2012/08, 1 Action & 1 Limit Level exceedances of 1-hour TSP were recorded at ASR1 on 11 & 17 January 2019 respectively and 4 Action Level exceedances of 1-hour TSP were recorded at ASR5 on 8, 11, 17 & 26 January 2019. The summary of air quality exceedance in the Reporting Period is shown in [Table 4-1](#).

Table 4-1 Summary of Air Quality Monitoring Exceedance

| Date of Exceedance | Monitoring Station | Air Quality Parameter | Result | Exceed |
|--------------------|--------------------|-----------------------|------------------------------|--------------|
| 8 January 2019 | ASR5 | 1Hr TSP | 354 $\mu\text{g}/\text{m}^3$ | Action Level |
| 11 January 2019 | ASR1 | 1Hr TSP | 335 $\mu\text{g}/\text{m}^3$ | Action Level |
| 11 January 2019 | ASR5 | 1Hr TSP | 398 $\mu\text{g}/\text{m}^3$ | Action Level |
| 17 January 2019 | ASR1 | 1Hr TSP | 519 $\mu\text{g}/\text{m}^3$ | Limit Level |
| 17 January 2019 | ASR5 | 1Hr TSP | 354 $\mu\text{g}/\text{m}^3$ | Action Level |
| 26 January 2019 | ASR5 | 1Hr TSP | 399 $\mu\text{g}/\text{m}^3$ | Action Level |

4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

4.4.1 Investigation reports (IRs) for the exceedances in January 2019 prepared by the ET were endorsed by IEC and the IR revealed that the exceedances were not contract related. The completed investigation reports are included in [Appendix J](#).

5 ECOLOGY MONITORING

5.1 GENERAL

5.1.1 According to the EM&A Manual requirements, regularly inspection for Pitcher Plants shall be conducted at least once every week to report the protection measure of the Pitcher Plants during construction period.

5.1.2 A total of 181 pitcher plants were transplanted to final receptor site and the rest of the Pitcher Plant individuals (certified dead by the specialist) were not transplanted and were treated as general refuse. All the transplantation of pitcher plant from the nursery site to final receptor site was completed on 10th September 2015.

5.2 PITCHER PLANTS INSPECTION

5.2.1 Inspection for the mitigation measures implementation status of the Pitcher Plant at the final receptor area were performed on **3rd, 8th, 15th, 22nd and 29th January 2019** by the ET in the Reporting Period.

5.2.2 Establishment period for the pitcher plants was completed at the end of September 2016, the joint site completion of Establishment period visit with AFCD was undertaken on 23 September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Therefore after 23 September 2016, only the integrity of the protection fence was checked to fulfil the EIA requirement. During each inspection, the protection mitigation measures were checking at the final receptor area to make sure no site activities was undertaken inside the protection zone. Besides, no construction activities were observed to be carried out at the surrounding of the final receptor area. The condition of chain link fence is good and no repair or maintenance is required.

5.2.3 No matters the completion of Establishment period, the Contractor should properly maintain the fencing along the receptor area to avoid disturbance to the pitcher plants under the EIA requirement.

6 CULTURAL HERITAGE

6.1 GENERAL

6.1.1 According to the EM&A Manual requirements, regular inspection for heritage resource, Grave G1, shall be audited by the ET at least once every week to ensure recommended mitigation measures implemented during construction period. The aim of the survey is to prevent any possible damage to the grave and to ensure the proposed mitigation measures are implemented. The broad scope of the audit will involve supervision of the following:

- Non-contact effects of the engineering works, such as vibration from pneumatic drills which could cause damage, such as foundation or wall cracks and loosening of tiles or fixtures; and
- Contact between the historic structures and equipment and materials associated with the engineering works.

6.1.2 Specifically, the monitoring programme will entail the following tasks:

- The extent of the agreed works areas should be regularly checked during the construction phase to ensure the buffer is being maintained; and
- Ensure no stockpiling or equipment storage is affecting the structure.

6.1.3 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event/ Action Plan in *Appendix F*.

6.2 GRAVE INSPECTION

6.2.1 In the Reporting Period, Grave G1 of inspection was undertaken on **3rd, 8th, 15th, 22nd and 29th January 2019**. During these inspections, buffer zone was maintained between the working area and the Grave. The nearby areas were clean, and no construction materials or mechanical equipment were stored within or close to the buffer zone.

6.2.2 Since construction works very close to buffer zone of the Grave G1, cultural heritage mitigation measures and protection measures as provided by the Contractor, therefore has fully implemented in accordance with EM&A Manual requirements.

7 LANDSCAPE AND VISUAL

7.1 GENERAL

7.1.1 According to EM&A Manual requirements, monitoring of Contractor's operations during construction period to report on Contractor's compliance should be carried out on weekly basis. Measure to mitigate landscape and visual impact during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims of the mitigation measures. Moreover, the progress of the engineering works shall be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.

7.2 LANDSCAPE AND VISUAL INSPECTION

7.2.1 In the Reporting Period, site inspection for landscape and visual mitigation measures was undertaken on **4th, 11th, 18th and 25th January 2019** by the Registered Landscape Architect.

7.2.2 Most of the landscape works such as planting was not yet commenced, but some transplanting works was commenced on 22 May 2017. The detailed inspection checklists were provided in ***Appendix K***.

8 LANDFILL GAS HAZARD MONITORING

8.1 GENERAL

- 8.1.1 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Hence, regular landfill gas monitoring is recommended during construction of the proposed toll plaza.
- 8.1.2 During construction, a Safety Officer should be appointed to carry out the monitoring works. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriated qualified person. The routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters in the area.
- 8.1.3 For excavations deeper than 1m, measurements should be carried out:
- at the ground surface before excavation commences;
 - immediately before any worker enters the excavation;
 - at the beginning of each working day for the entire period the excavation remains open; and
 - periodically through the working day whilst workers are in the excavation.
- 8.1.4 For excavations between 300mm and 1m deep, measurements should be carried out:
- directly after the excavation has been completed; and
 - periodically whilst the excavation remains open
- 8.1.5 For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer (SO) or other appropriately qualified person.
- 8.1.6 To ensure the accuracy of the monitoring data, zeroing of the gas analyser shall be undertaken at the start of each day's monitoring. As advised by the SO, the gas analyser would be optimally calibrated by the self-test function to provide the most accurate result. The gas analyser is calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.
- 8.1.7 The landfill consultation zone was divided into 6 monitoring zones. The landfill gas monitoring zones are summarized in [Table 8-1](#). Moreover part of landfill gas monitoring zone at TD1 was handover to the Contract No. HY/2017/10 since 7 May 2018. The layout plan for the monitoring zone is illustrated in [Appendix E](#).

Table 8-1 Landfill Gas Monitoring Zone

| ID | Location | Excavation >300mm deep undertaken in this reporting period |
|------|--|--|
| TD1 | TD1, Retaining Wall A, Grave G1 and Subway | No |
| RW-B | Retaining Wall B | No |
| RW-F | Retaining Wall F | No |
| S&U | Slope and Underpass | No |
| BW | Bridge Works (G2, H1) | No |
| LMR | Lung Mun Road | Yes |

8.2 LANDFILL GAS MONITORING RESULT

8.2.1 In the Reporting Period, landfill gas monitoring was conducted at the zone Lung Mun Road which have excavation works was undertaking. A BIOGAS 5000 gas analyser was used for the landfill gas monitoring and the valid calibration certificate is presented in [Appendix H](#).

8.2.2 There were a total of **26** days monitoring were carried by the Safety Officer or an approved and qualified persons. The results of landfill gas measurement are summarized in [Table 8-2](#). Moreover, database of monitoring result and graphical plot are attached in [Appendix I](#).

Table 8-2 Summary of Landfill Gas Measurement Results

| Landfill Gas Parameter | Action Level | Limit Level | Detectable at LMR | |
|------------------------|-------------------------|-----------------------|-------------------|-------|
| | | | Min | Max |
| Methane | >10% LEL (>0.5% v/v) | >20% LEL (>1% v/v) | 0.1% | 0.1% |
| Oxygen | <19% | <18% | 20.8% | 21.0% |
| Carbon Dioxide | >0.5% | >1.5% | 0.1% | 0.2% |

8.2.3 The measurement results shown that slightly methane concentration was detected and oxygen concentration measured was over 19.0 % and Carbon Dioxide was between 0.1% and 0.2 %. No exceedance was triggered and therefore no corrective action was required accordingly.

9 WASTE MANAGEMENT

9.1 GENERAL WASTE MANAGEMENT

9.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time. The effective management of waste arising during the construction phase will be monitored through the site audit programme. The aims of the waste audit are:

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

9.1.2 In addition to the site inspections, the ET shall review the documentation procedures prepared by the Waste Coordinator once a week to ensure proper records are being maintained and procedures undertaken in accordance with the Waste Management Plan.

9.2 RECORDS OF WASTE QUANTITIES

9.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

9.2.2 The quantities of wastes generated under the Contract in this Reporting Period are summarized in [Tables 9-1](#) and [9-2](#) and the Monthly Summary Waste Flow Table is shown in [Appendix L](#). Whenever possible, materials were reused on-site as far as practicable.

Table 9-1 Summary of Quantities of Inert C&D Materials

| Type of Waste | Quantity | Disposal Location |
|--|----------|--|
| Reused in this Contract (Inert) (^000m ³) | 0.000 | - |
| Reused in other Projects (Inert) (^000m ³) | 0.000 | 1. Lam Tei Quarry 2. Eco Park K.Wah Recycle Facilities 3. Lung Kwu Tan Tailor Recycled Aggregates 4. Liantang BCP Project 5. TM-CLKL Contract 2 - Northern Connection Sub-sea Tunnel Section Project |
| Disposal as Public Fill (Inert) (^000m ³) | 1.203 | Tuen Mun Area 38 |

Table 9-2 Summary of Quantities of C&D Wastes

| Type of Waste | Quantity | Disposal Location |
|---|----------|-------------------|
| Recycled Metal (^000kg) | 0 | - |
| Recycled Paper / Cardboard Packaging (^000kg) | 0 | - |
| Recycled Plastic (^000kg) | 0 | - |
| Chemical Wastes (^000kg) | 0 | - |
| General Refuses (^000m ³) | 0.264 | WENT |

10 INSPECTION AND AUDIT

10.1 SITE INSPECTION

10.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulated by ET Leader on weekly basis to confirm the environmental performance of the construction site.

Findings / Deficiencies During Reporting Period

10.1.2 In the Reporting Period, joint site inspections to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **3rd, 8th, 15th, 22nd and 29th January 2019**. No non-compliance was noted but **5** observations and **2** reminders were recorded during site inspection. Moreover, ENPO/IEC has attended joint site inspection on **29th January 2019**.

10.1.3 The findings / deficiencies observed during the weekly site inspection in the Reporting Period are listed in **Table 10-1**.

Table 10-1 Site Observations for the Contract

| Date | Findings / Deficiencies | Follow-Up Status |
|-----------------|--|--|
| 3 January 2019 | • Stagnant water cumulated on-site should be cleared to prevent mosquito breeding. (West Portion) | • Stagnant water cumulated inside the pit was removed and cover with tarpaulin sheets. |
| | • Proper dust mitigation measures should be provided for cement storage on-site. (West Portion) | • Not required for reminder. |
| 8 January 2019 | • Engine cover should be closed properly during the plant is operating to reduce noise impact. (Lung Mun Road) | • Engine cover was closed properly during operating. |
| 15 January 2019 | • Drip tray should be provided for chemical storage on-site. (Underpass and East Portal) | • Chemical storage on-site without drip tray were removed. |
| | • Opened bag cement should be covered to prevent dust emission. (East Portal) | • Opened bag cement was removed. |
| | • Engine cover should be closed properly during the plant is operating. (Idle backhoe at Underpass) | • Not required for reminder. |
| 22 January 2019 | • Nil | • NA |
| 29 January 2019 | • Oil stain was observed at the underpass. The Contractor should clean up the oil stain and avoid spillage of oil on site. (Underpass) | • Oil stain at the underpass was cleaned. |

- 10.1.4 No outstanding deficiency remained to be rectified in previous Reporting Period which presented in [Table 10-2](#).

Table 10-2 Outstanding Items in Site Inspection of previous Reporting Period

| Date | Findings / Deficiencies | Follow-Up Status |
|------|-------------------------|------------------|
| -- | • NA | • NA |

- 10.1.5 Air quality mitigation measures such as watering of site area for at least 12 times per day and covering of exposed slopes should be implemented during the construction period to reduce construction dust impact as recommended in the EMIS.
- 10.1.6 Good site practice for daily housekeeping is reminded. In addition, clean-up of the waste skips and wastewater treatment system should be increased to ensure these facilities functional and effective.
- 10.1.7 In addition, muddy water or other water pollutants from site surface runoff shall not be discharged into public areas. Water quality mitigation measures to prevent surface runoff into the public areas should be paid on special attention.
- 10.1.8 Stagnant water should be removed as soon as possible after rain to prevent mosquito breeding on site.

Inspection Checklist for Vulnerable to Contaminated Water Discharge

- 10.1.9 Following the complaint about discharge of milky water to Bufferfuly Beach on 2 September 2015. The Contractor proposed to carry out daily inspection of wastewater treatment facilities, concerned discharge points, drainage inlets and outlets during typhoon or wet season.
- 10.1.10 In addition, specific inspections would also be conducted before and after adverse weather to ensure necessary remedial works would be carried out timely. Should incidental contaminated water discharge be found at the inlet of the associated drainage system, a specific inspection of the relevant drainage pipes would be conducted for traces of deposit, and follow up actions would be taken when necessary.
- 10.1.11 During the dry season, the frequency of inspection for vulnerable to contaminated water discharge was undertaken by the Contractor in **January 2019** had been reduced to once per week. As requested by the EPD, the associated inspection checklist should be presented in the Monthly EM&A Report and it is shown in [Appendix P](#).

11 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

11.1.1 In the Reporting Period, no environmental complaint, summons and prosecution under the EM&A Programme was lodged. However, six exceedances of the environmental performance limit (5 Action Level & 1 Limit Level) were recorded for monitoring programme.

11.1.2 The statistical summary table of environmental exceedance, complaint, summons and prosecution are presented in *Tables 11-1, 11-2, 11-3 and 11-4*.

Table 11-1 Statistical Summary of Environmental Exceedance

| Reporting Period | Environmental Aspect / Parameter | Environmental Performance | Event Exceedance | | |
|------------------|----------------------------------|---------------------------|------------------|-----------------|------------|
| | | | Reporting Month | Previous Months | Cumulative |
| January 2019 | Air Quality - 1-hr TSP | Action Level | 5 | 56 | 61 |
| | | Limit Level | 1 | 3 | 4 |
| | Air Quality - 24-hr TSP | Action Level | 0 | 3 | 3 |
| | | Limit Level | 0 | 3 | 3 |

Table 11-2 Statistical Summary of Environmental Complaints

| Reporting Period | Environmental Complaint Statistics | | | | | |
|------------------|------------------------------------|------------|------------------|-------|-------|--------|
| | Frequency | Cumulative | Complaint Nature | | | |
| | | | Air | Noise | Water | Others |
| January 2019 | 0 | 10 | 3 | 1 | 6 | 2 |

Table 11-3 Statistical Summary of Environmental Summons

| Reporting Period | Environmental Summons Statistics | | | | |
|------------------|----------------------------------|------------|------------------|-------|-------|
| | Frequency | Cumulative | Complaint Nature | | |
| | | | Air | Noise | Water |
| January 2019 | 0 | 0 | NA | NA | NA |

Table 11-4 Statistical Summary of Environmental Prosecution

| Reporting Period | Environmental Prosecution Statistics | | | | |
|------------------|--------------------------------------|------------|------------------|-------|-------|
| | Frequency | Cumulative | Complaint Nature | | |
| | | | Air | Noise | Water |
| January 2019 | 0 | 0 | NA | NA | NA |

11.1.3 In the Reporting Period, no warning letter related to environmental issue was received from the EPD or HyD.

12 IMPLEMENTATION STATUS OF MITIGATION MEASURES

12.1 GENERAL REQUIREMENTS

12.1.1 The environmental mitigation measures that recommended in the Environmental Mitigation and Enhancement Measures Implementation Schedule (EMIS) for in the Project EM&A Manual covered the issues of air quality, cultural heritage, ecology, landfill gas hazard, landscape & visual, noise, water and waste. The updated EMIS for the Contract is shown in [Appendix M](#).

12.1.2 The Contractor shall implement the required environmental mitigation measures according to the EM&A Manual as subject to the site condition. The environmental mitigation measures implemented by the Contractor in this Reporting Period are summarized in [Table 12-1](#) and [Appendix M](#).

Table 12-1 Environmental Mitigation Measures

| Issues | Environmental Mitigation Measures |
|-------------------------------|--|
| Air Quality | <ul style="list-style-type: none"> • Maintain damp / wet surface on access road • Keep slow speed in the sites • All vehicles must use wheel washing facility before off site • Sprayed water during rock breaking works • During transportation by truck, materials loaded lower than the side and tail boards, and covered before transport • Compacted all soil stockpiles • Part of the exposed slopes covered geotextile net |
| Cultural Heritage | <ul style="list-style-type: none"> • Set a buffer zone between the working area and the Grave • All construction materials and equipment store far from the Grave • Inspection the Grave to ensure provision mitigation measures effective |
| Ecology | <ul style="list-style-type: none"> • Wire fencing provided for temporary protect Pitcher Plants • Undertake weekly inspection of Pitcher Plants |
| Landfill Gas Hazard | <ul style="list-style-type: none"> • Landfill Gas measurement undertake during trench excavation |
| Water Quality | <ul style="list-style-type: none"> • Temporary drainage system provide for surface runoff prevent discharge to public area • Wastewater to be treated by sedimentation tank before discharge. |
| Noise | <ul style="list-style-type: none"> • No operation of powered mechanical equipment is allowed during restricted hours from 19:00 to 07:00 on the following day and whole day during Sunday and public holiday without construction noise permit (CNP) • Keep good maintenance of plants • The noisy plants or works provide mobile noise barriers • Shut down the plants when not in use |
| Waste and Chemical Management | <ul style="list-style-type: none"> • On-site sorting prior to disposal • Follow requirements and procedures of the “Trip-ticket System” • Predict required quantity of concrete accurately • Collect the unused fresh concrete at designated locations in the sites for subsequent disposal |
| General | <ul style="list-style-type: none"> • The site was generally kept tidy and clean. |

12.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

12.2.1 Construction activities as undertaken in the coming month for the Contract lists below:

- Surface Drainage on Slope C and Portion H;
- Road pavement works at +19mPD platform, Lung Mun Road, Butterfly Beach; Vehicular Underpass, TD1&2, Bridge G&H, RW-E and HAS;
- Retaining Structure TP_G at Portion H;
- E & M Works at Retaining Wall B;
- Laying Water Main at Portion G;
- Construction of Manhole and Sewer Culvert at Portion G and H;
- Road and Drainage Works at LMR Central Median;

- Installation of Sign Gantries;
- Installation of Direction Sign.

12.3 KEY ENVIRONMENTAL ISSUES FOR THE COMING MONTH

12.3.1 Key environmental issues to be considered in the coming month include:

- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;
- Potential fugitive dust impact due to the dry/loose/exposure soil surface/dusty material;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Site effluent discharge to the nearby nullah is prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

13 CONCLUSIONS AND RECOMMENDATIONS

13.1 CONCLUSIONS

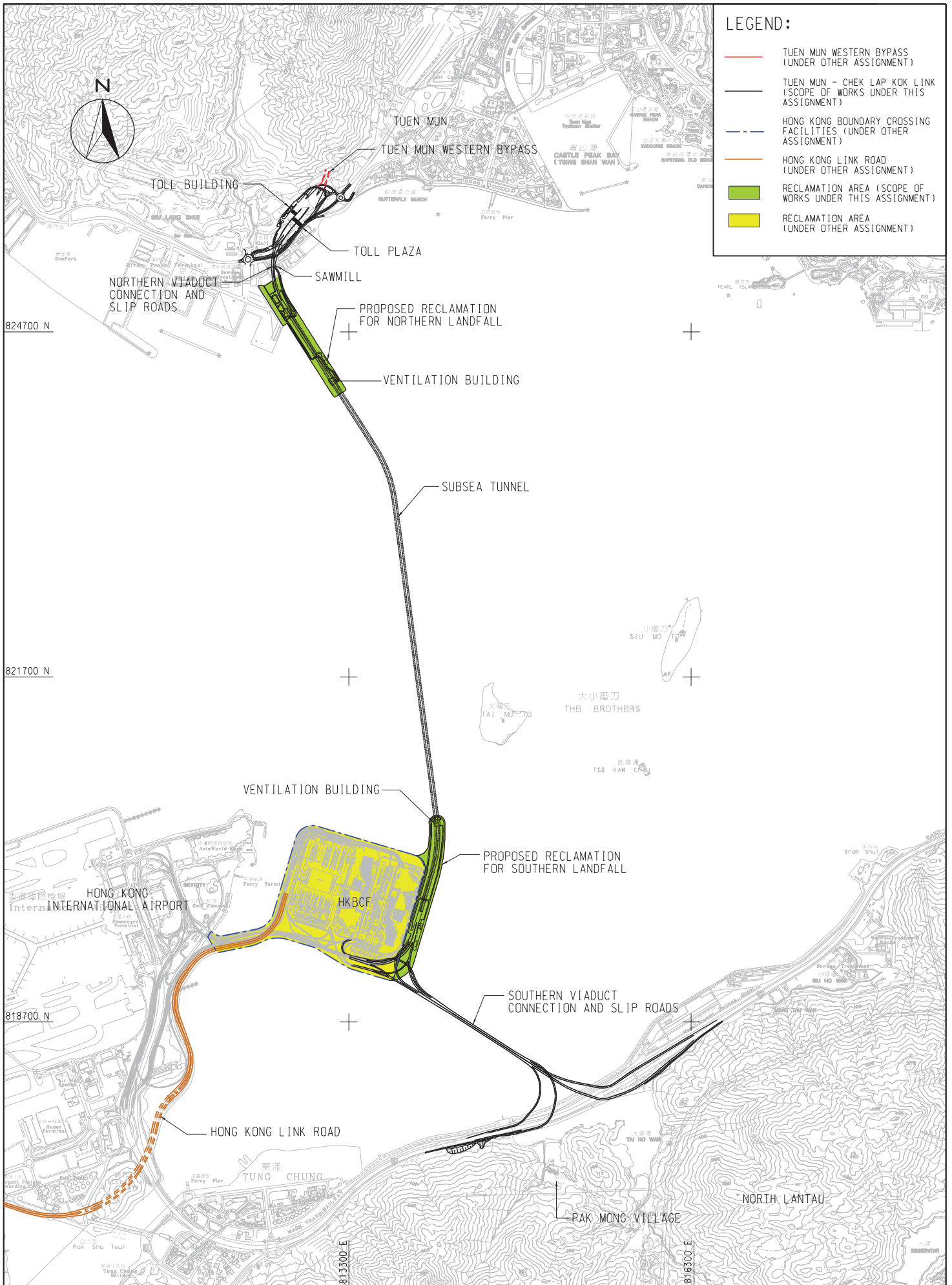
- 13.1.1 This is **51st** monthly EM&A report presenting the monitoring results and inspection findings for the period of **1** to **31 January 2019**.
- 13.1.2 There were six exceedances of 1-hour TSP measurements trigger in Action & Limit Level at ASR1 and ASR5 on 8, 11, 17 and 26 January 2019. NOEs were issued to notify all relevant parties. Investigation reports (IRs) for the exceedances prepared by the ET were endorsed by IEC and the IR revealed that the exceedances were not contract related.
- 13.1.3 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure the compliance of the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.
- 13.1.4 In the Reporting Period, no noise complaint was received by RE, the Contractor, ENPO or HyD. No Action Level exceedances were therefore triggered and no NOE or the associated corrective actions were required.
- 13.1.5 Establishment period for the pitcher plants was completed at the end of September 2016, the joint site completion of Establishment period visit with AFCD was undertaken on 23 September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Therefore after 23 September 2016, only the integrity of the protection fence was checked to fulfil the EIA requirement. During each inspection, the protection mitigation measures were checking at the final receptor area to make sure no site activities was undertaken inside the protection zone. Besides, no construction activities were observed to be carried out at the surrounding of the final receptor area. The condition of chain link fence is good and no repair or maintenance is required.
- 13.1.6 Landfill gas monitoring was conducted at the LMR works area. The monitoring results shown no exceedances were triggered.
- 13.1.7 In the Reporting Period, no environmental complaint was received.
- 13.1.8 No notifications of summons, or successful prosecution were received by the Contractor during the Reporting Period.
- 13.1.9 In the Reporting Period, joint site inspection by the RE, ET and the Contractor was carried out on **3rd, 8th, 15th, 22nd and 29th January 2019** and the IEC has attended the joint site inspection on **29th January 2019**. No non-compliance was recorded during the site inspection but **5** observations and **2** reminders were recorded.
- 13.1.10 In the Reporting Period, Grave G1 of inspection was undertaken on **3rd, 8th, 15th, 22nd and 29th January 2019**. Based on the inspection findings, the cultural heritage mitigation measures as implemented by the Contractor are fully complied with the EM&A Manual requirements.

13.2 RECOMMENDATIONS

- 13.2.1 During dry season, air quality mitigation measures such as watering of site area for at least 12 times per day and covering of exposed slopes should be fully implemented to reduce construction dust impact as recommended in the EMIS.
- 13.2.2 Moreover, muddy water or other water pollutants from site surface runoff into the public areas will be key environment issue. Special attention should be paid on the water quality mitigation measures to prevent surface runoff flow to public area.
- 13.2.3 Stagnant water should be removed as soon as possible after rain to prevent mosquito breeding on site.

Appendix A

Project Layout Plan



LEGEND:

- TUEN MUN WESTERN BYPASS (UNDER OTHER ASSIGNMENT)
- TUEN MUN - CHEK LAP KOK LINK (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
- HONG KONG BOUNDARY CROSSING FACILITIES (UNDER OTHER ASSIGNMENT)
- HONG KONG LINK ROAD (UNDER OTHER ASSIGNMENT)
- RECLAMATION AREA (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
- RECLAMATION AREA (UNDER OTHER ASSIGNMENT)

PROJECT NO. 60044963

AECOM

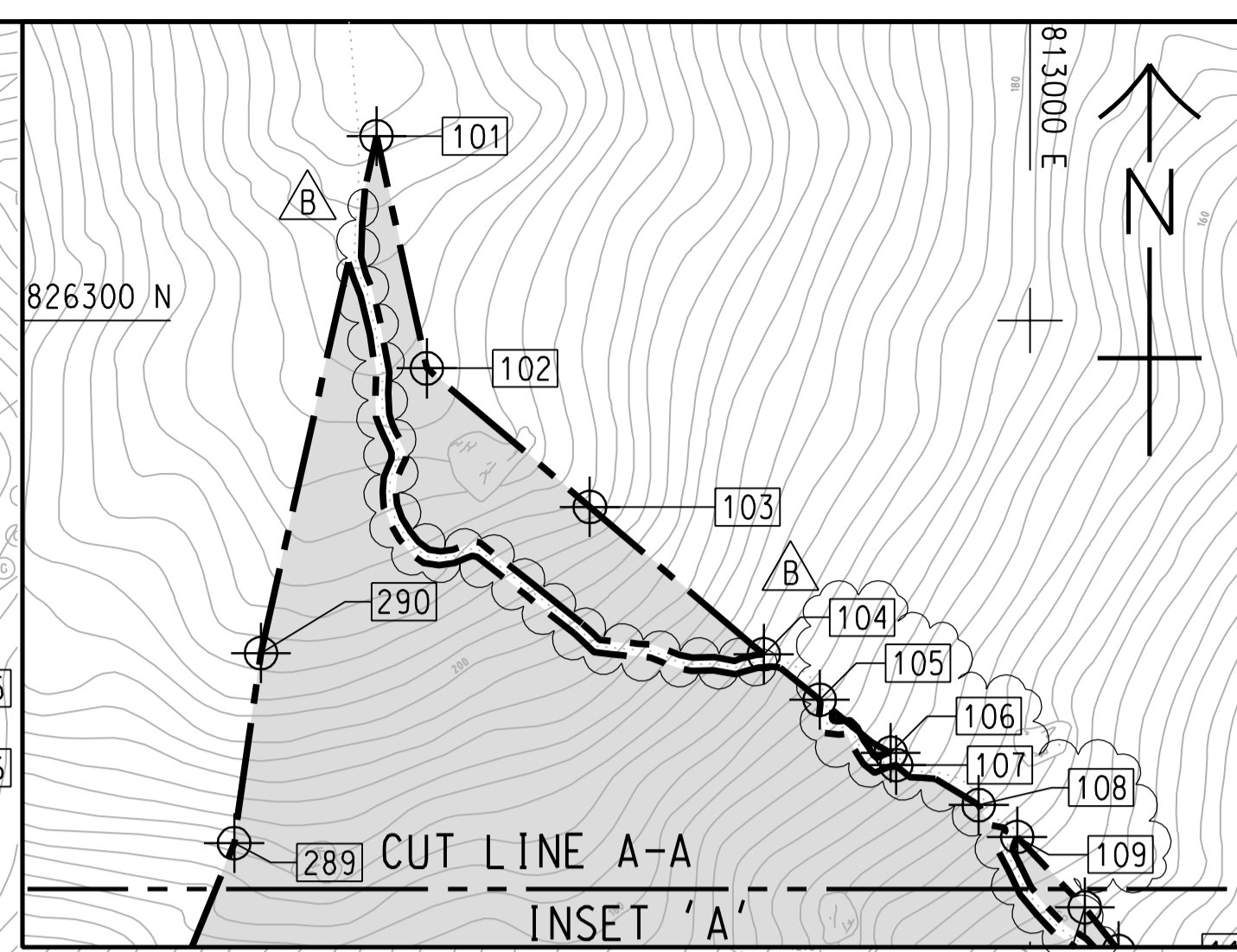
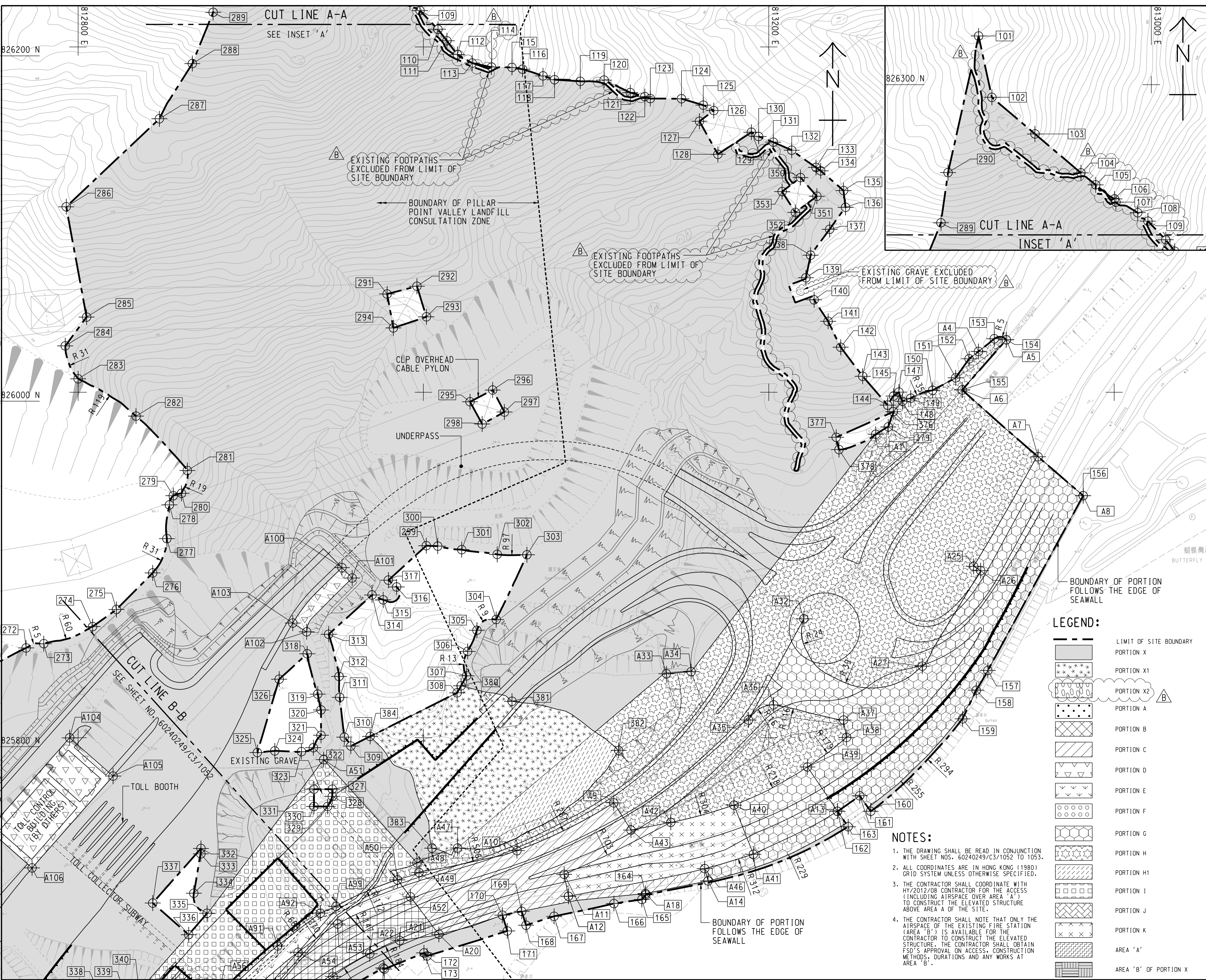
AGREEMENT NO. CE 52/2007(HY)
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION
 GENERAL LAYOUT OF TM-CLKL

| | | | |
|---------|------------|-------------|-----------|
| SCALE | A3 1:30000 | DATE | JUL. 2009 |
| CHECK | -- | DRAWN | WYP |
| JOB NO. | 60044963 | DRAWING NO. | Fig 2.1 |
| | | REV | A |

Appendix B

Layout Plan of the Contract

Project Management Initials: Designer: PI Checked: ALCF Approved: CWN ISO A1 594mm x 841mm
 Plot File by: LINDO 2014/05/19 PATH: P:\Projects\60240249\DRAWING\CONTRACT\C3\1005C3_05E1.dgn



LEGEND:

| | |
|--|------------------------|
| | LIMIT OF SITE BOUNDARY |
| | PORTION X |
| | PORTION X1 |
| | PORTION X2 |
| | PORTION A |
| | PORTION B |
| | PORTION C |
| | PORTION D |
| | PORTION E |
| | PORTION F |
| | PORTION G |
| | PORTION H |
| | PORTION H1 |
| | PORTION I |
| | PORTION J |
| | PORTION K |
| | AREA 'A' |
| | AREA 'B' OF PORTION X |

- NOTES:**
1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET NOS. 60240249/C3/1052 TO 1053.
 2. ALL COORDINATES ARE IN HONG KONG (1980) GRID SYSTEM UNLESS OTHERWISE SPECIFIED.
 3. THE CONTRACTOR SHALL COORDINATE WITH HY/2012/08 CONTRACTOR FOR THE ACCESS (INCLUDING AIRSPACE OVER AREA 'A') TO CONSTRUCT THE ELEVATED STRUCTURE ABOVE AREA A OF THE SITE.
 4. THE CONTRACTOR SHALL NOTE THAT ONLY THE AIRSPACE OF THE EXISTING FIRE STATION (AREA 'B') IS AVAILABLE FOR THE CONTRACTOR TO CONSTRUCT THE ELEVATED STRUCTURE. THE CONTRACTOR SHALL OBTAIN FSD'S APPROVAL ON ACCESS, CONSTRUCTION METHODS, DURATIONS AND ANY WORKS AT AREA 'B'.

AECOM

PROJECT
項目
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CLIENT
業主
路政署
HIGHWAYS DEPARTMENT
港務大樓香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

CONSULTANT
工程顧問公司
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分判工程顧問公司

ISSUE/REVISION
修訂

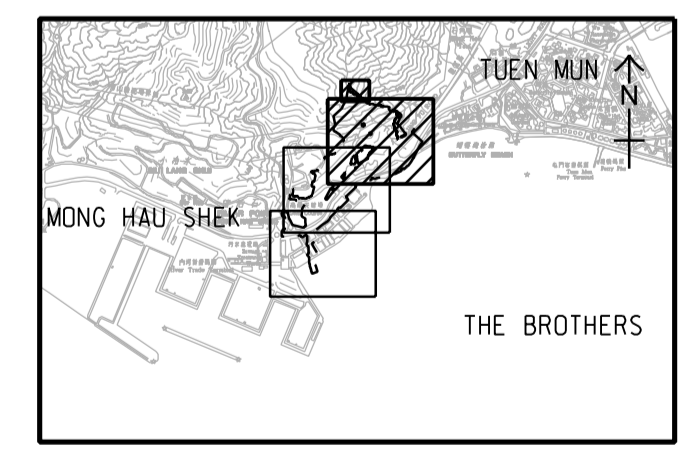
| I/R | DATE | DESCRIPTION | CHK. |
|-----|---------|-----------------------|------|
| B | MAR. 14 | TENDER ADDENDUM NO. 2 | CWN |
| A | FEB. 14 | TENDER ADDENDUM NO. 1 | CWN |
| - | JAN. 14 | TENDER DRAWING | CWN |

STATUS
階段

SCALE
比例
A1 1:1000

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN
索引圖
1:50000



PROJECT NO.
項目編號
60240249

CONTRACT NO.
合約編號
HY/2013/12

SHEET TITLE
圖紙名稱
PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

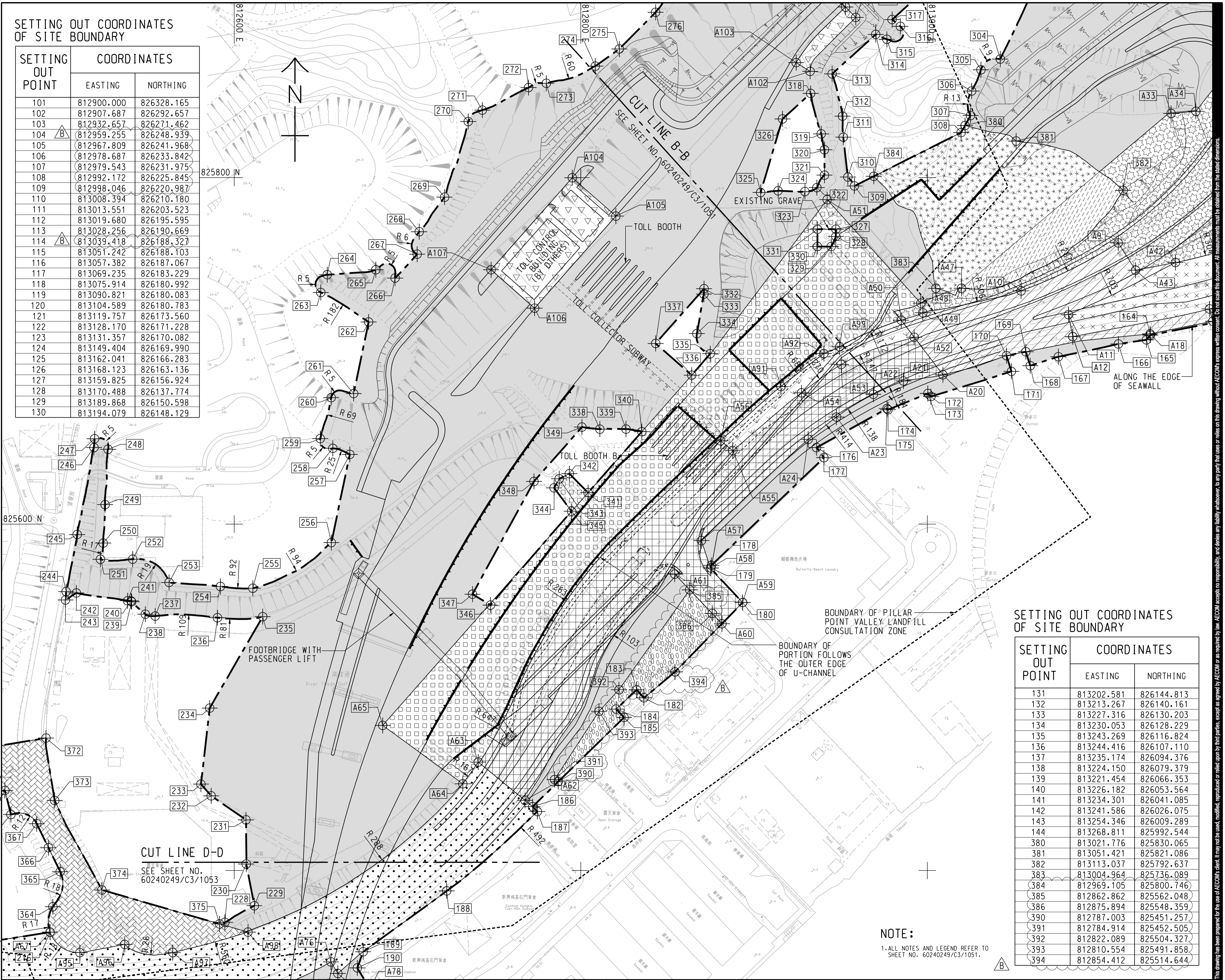
SHEET NUMBER
圖紙編號
60240249/C3/1051B

SHEET 1 OF 3

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SETTING OUT COORDINATES OF SITE BOUNDARY

| SETTING OUT POINT | COORDINATES | |
|-------------------|-------------|------------|
| | EASTING | NORTHING |
| 101 | 812900.000 | 826328.165 |
| 102 | 812907.687 | 826292.657 |
| 103 | 812932.657 | 826271.462 |
| 104 | 812959.255 | 826248.939 |
| 105 | 812967.809 | 826241.968 |
| 106 | 812978.687 | 826233.842 |
| 107 | 812979.543 | 826231.975 |
| 108 | 812992.172 | 826225.845 |
| 109 | 812998.046 | 826220.987 |
| 110 | 813008.394 | 826210.180 |
| 111 | 813013.551 | 826203.523 |
| 112 | 813019.680 | 826195.595 |
| 113 | 813028.256 | 826190.669 |
| 114 | 813039.418 | 826188.327 |
| 115 | 813051.242 | 826188.103 |
| 116 | 813057.382 | 826187.067 |
| 117 | 813069.235 | 826183.229 |
| 118 | 813075.914 | 826180.992 |
| 119 | 813090.821 | 826180.083 |
| 120 | 813104.589 | 826180.783 |
| 121 | 813119.757 | 826173.560 |
| 122 | 813128.170 | 826171.228 |
| 123 | 813131.357 | 826170.082 |
| 124 | 813149.404 | 826169.990 |
| 125 | 813162.041 | 826166.283 |
| 126 | 813168.123 | 826163.136 |
| 127 | 813159.825 | 826156.924 |
| 128 | 813170.488 | 826137.774 |
| 129 | 813189.868 | 826150.598 |
| 130 | 813194.079 | 826148.129 |



SETTING OUT COORDINATES OF SITE BOUNDARY

| SETTING OUT POINT | COORDINATES | |
|-------------------|-------------|------------|
| | EASTING | NORTHING |
| 131 | 813202.581 | 826144.813 |
| 132 | 813213.267 | 826140.161 |
| 133 | 813227.316 | 826130.203 |
| 134 | 813230.053 | 826128.229 |
| 135 | 813243.269 | 826116.824 |
| 136 | 813244.416 | 826107.110 |
| 137 | 813235.174 | 826094.376 |
| 138 | 813224.150 | 826079.379 |
| 139 | 813221.454 | 826066.353 |
| 140 | 813226.182 | 826053.564 |
| 141 | 813234.301 | 826041.085 |
| 142 | 813241.586 | 826026.075 |
| 143 | 813254.346 | 826009.289 |
| 144 | 813268.811 | 825992.544 |
| 380 | 813021.776 | 825830.065 |
| 381 | 813051.421 | 825821.086 |
| 382 | 813113.037 | 825792.637 |
| 383 | 813004.964 | 825736.089 |
| 384 | 812969.105 | 825800.746 |
| 385 | 812862.862 | 825562.048 |
| 386 | 812875.894 | 825548.359 |
| 390 | 812787.003 | 825451.257 |
| 391 | 812784.914 | 825452.505 |
| 392 | 812822.089 | 825504.327 |
| 393 | 812810.554 | 825491.858 |
| 394 | 812854.412 | 825514.644 |

NOTE:
1. ALL NOTES AND LEGEND REFER TO SHEET NO. 60240249/C3/1051.



PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CLIENT
路政署
HIGHWAYS DEPARTMENT
港務大樓香港工程管理局
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

CONSULTANT
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SUB-CONSULTANTS
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ISSUE/REVISION

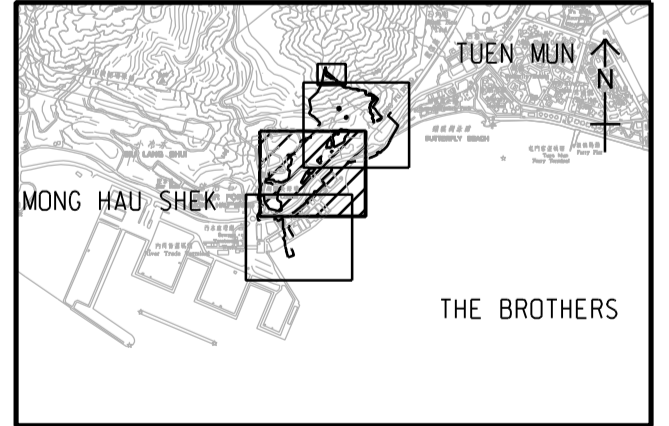
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|-----|---------|-----------------------|------|
| B | MAR. 14 | TENDER ADDENDUM NO. 2 | CWN |
| A | FEB. 14 | TENDER ADDENDUM NO. 1 | CWN |
| - | JAN. 14 | TENDER DRAWING | CWN |

STATUS

擬定

SCALE
比例 1:50000
DIMENSION UNIT
尺寸單位 METRES

KEY PLAN
索引圖 1:50000

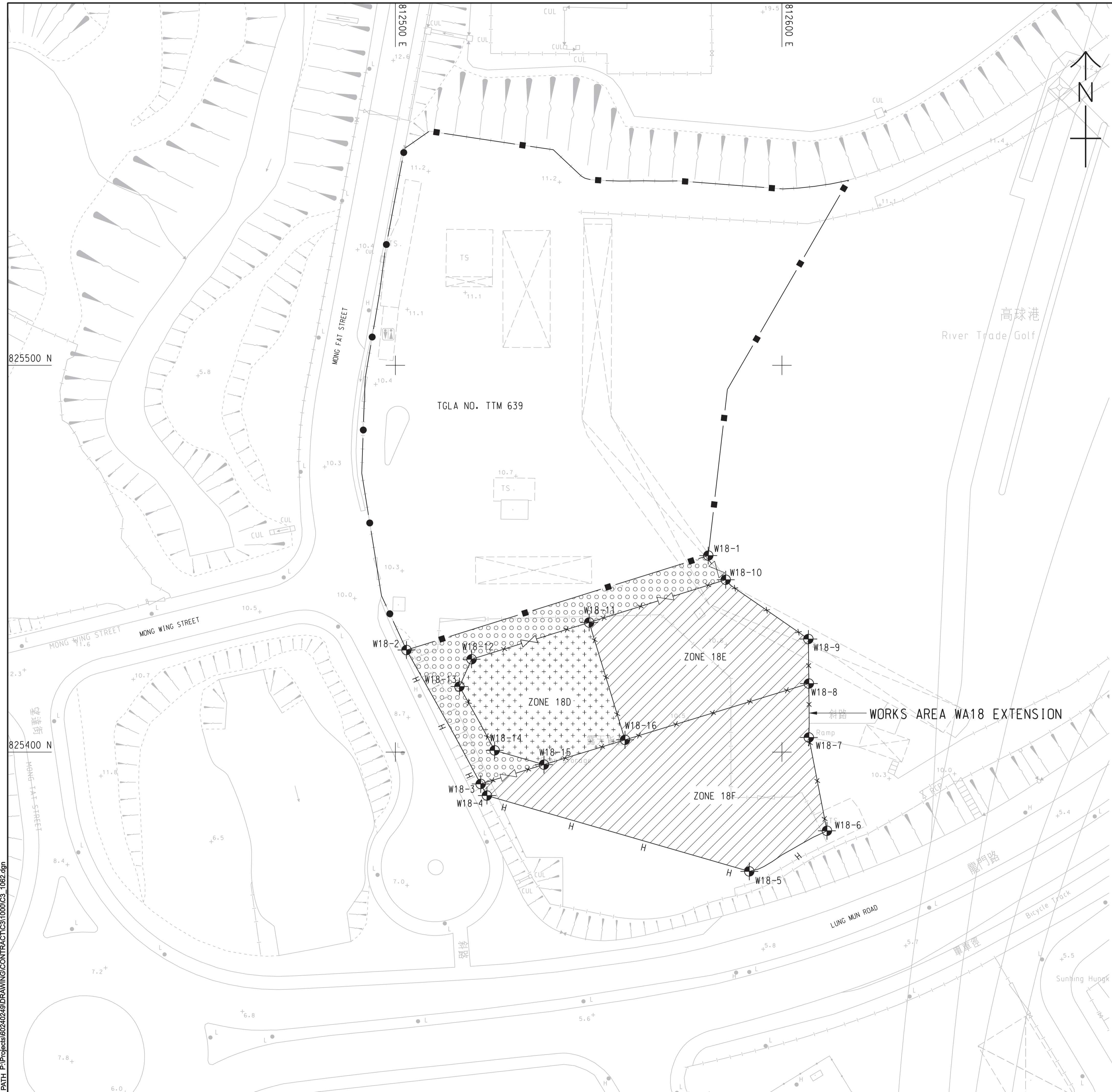


PROJECT NO.
項目編號 60240249
CONTRACT NO.
合約編號 HY/2013/12

SHEET TITLE
圖紙名稱
PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

SHEET NUMBER
圖紙編號 60240249/C3/1052B

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NOTES:

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C3/1000.
- DEMARCATON OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
- CHAIN LINK FENCE SHALL BE ERRECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF HOARDING AND CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
- THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
- THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. GLA-TM 639. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
- THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARED-USED AMONG THE TM-CLKL RELATED CONTRACTS. THE AREAS HATCHED WITH ARE TENTATIVELY ALLOCATED FOR THE USE BY THE CONTRACT.
- THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.
- ZONE 18F SHALL BE USED FOR THE SITE ACCOMMODATION OF THE ENGINEER. ZONE 18E SHALL BE USED FOR SITE ACCOMMODATION OF THE CONTRACTOR.
- ZONE 18D IS TO BE USED BY THE CONTRACTOR OF CONTRACT NO. HY/2012/08-TUEN MUN-CHEK LAP KOK LINK-NORTHERN CONNECTION SUB-SEA TUNNEL SECTION TO STORE PLANT AND EQUIPMENT ASSOCIATED WITH THE TBM TUNNELS FROM THE DATE FOR COMMENCEMENT OF THE WORKS TO 126 DAYS FROM THE DATE FOR COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL LIAISE AND PROVIDE FREE AND UNOBSTRUCTED 24-HOUR ACCESS FOR THE CONTRACTOR OF CONTRACT NO. HY/2012/08 TO ZONE 18D. THE CONTRACTOR SHALL BE GIVEN THE POSSESSION OF ZONE 18D IN ACCORDANCE WITH APPENDIX TO FORM OF TENDER-P.3.

LEGEND:

- WORKS AREA FOR THE CONTRACT
- COMMON AREA (MAINTAINED UNDER THE CONTRACT) TO BE SHARED-USED WITH OTHER CONTRACTS
- AREA TO BE USED BY THE CONTRACTOR OF CONTRACT NO. HY/2012/08 AND WORKS AREA FOR THIS CONTRACT TO BE EARLY HANDED OVER BY THE CONTRACTOR (SEE NOTES NO. 12 ABOVE)
- HOARDING AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING CHAIN LINK FENCE MAINTAINED BY OTHERS
- CHAIN LINK FENCE AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING HOARDING AND GATE MAINTAINED BY OTHERS

SETTING OUT CO-ORDINATES OF WORKS AREA WA18 EXTENSION

| POINT | CO-ORDINATES | |
|--------|--------------|------------|
| | EASTING | NORTHING |
| W18-1 | 812580.934 | 825450.791 |
| W18-2 | 812502.880 | 825426.380 |
| W18-3 | 812522.068 | 825391.750 |
| W18-4 | 812523.679 | 825388.756 |
| W18-5 | 812591.556 | 825369.151 |
| W18-6 | 812611.638 | 825379.647 |
| W18-7 | 812606.954 | 825403.769 |
| W18-8 | 812606.951 | 825417.705 |
| W18-9 | 812606.832 | 825429.231 |
| W18-10 | 812585.456 | 825444.557 |
| W18-11 | 812550.126 | 825433.508 |
| W18-12 | 812519.715 | 825423.997 |
| W18-13 | 812516.580 | 825416.947 |
| W18-14 | 812525.682 | 825400.438 |
| W18-15 | 812538.435 | 825396.754 |
| W18-16 | 812559.404 | 825403.166 |



PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CLIENT
 業主
 路政署
HIGHWAYS DEPARTMENT
 港務處大樓香港工程發展處
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

CONSULTANT
 工程師有限公司
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 www.aecom.com

SUB-CONSULTANTS
 分判工程師有限公司

ISSUE/REVISION
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| I/R | DATE | DESCRIPTION | CHK. |
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| B | MAR. 14 | TENDER ADDENDUM NO. 2 | CWN |
| A | FEB. 14 | TENDER ADDENDUM NO. 1 | CWN |
| - | JAN. 14 | TENDER DRAWING | CWN |

STATUS
 階段

SCALE
 比例
 A1 1:500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60240249

CONTRACT NO.
 合約編號
 HY/2013/12

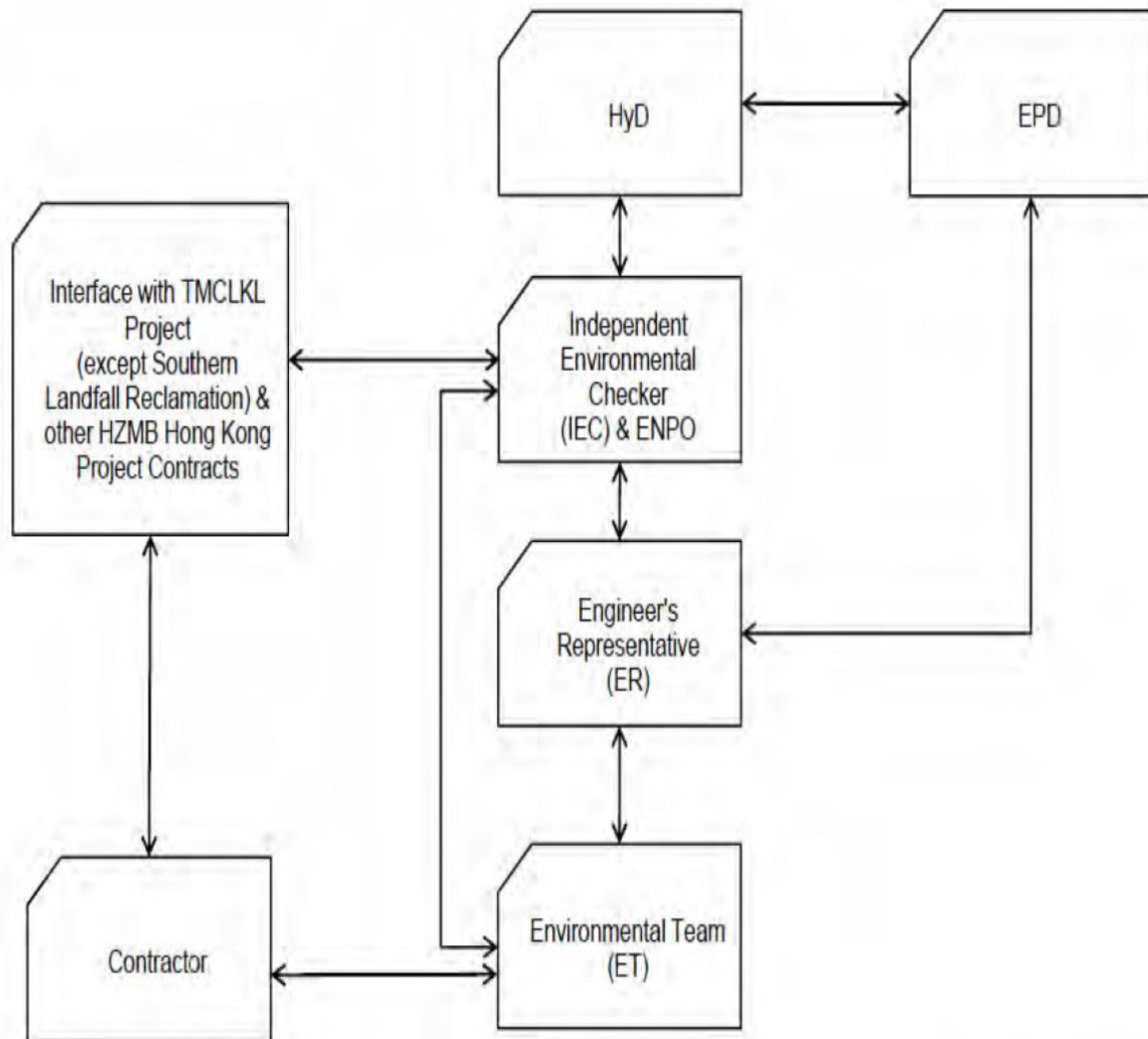
SHEET TITLE
 圖紙名稱
WORKS AREA AND HOARDING PLAN

SHEET NUMBER
 圖紙編號
 60240249/C3/1062B

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Appendix C

Organization of the Contract



↔ Line of Communication

Project Organization chart

Contact Details of Key Personnel for the Contract HY/2013/12

| Organization | Project Role | Name of Key Staff | Tel No | Fax No. |
|---------------------|---|--------------------------|---------------|----------------|
| HyD | Employer | Mr. C. W. Chow | 2762 4182 | 3188 6614 |
| AECOM | Principal Resident Engineer | Mr. S.W. Fok | 2218 7209 | 2218 7399 |
| AECOM | Chief Resident Engineer | Mr. Roger Man | 2293 6388 | 2218 7399 |
| AECOM | Resident Engineer (S&E) | Mr. Kelvin Yeung | 22187289 | 2218 7399 |
| Ramboll | Environmental Project Office Leader (ENPO Leader) | Mr. YH Hui | 3465 2850 | 3465 2899 |
| Ramboll | Independent Environmental Checker (IEC) | Dr. FC Tsang | 3465 2851 | 3465 2899 |
| CKJV | Deputy Project Manager | Mr. Raymond Suen | 2253 8309 | 2253 8399 |
| CKJV | Site Agent | Mr. Wilson Lau | 2253 8300 | 2253 8399 |
| CKJV | Safety and Environmental Manager | Mr. Winson Chung | 2273 3185 | 2375 3655 |
| CKJV | Environmental Officer | Mr. Thomas Tang | 2253 8300 | 2253 8399 |
| CKJV | Environmental Supervisor | Mr. Tommy Law | 2253 8300 | 2253 8399 |
| CKJV | Environmental Supervisor | Mr. Alex Li | 2253 8300 | 2253 8399 |
| AUES | Environmental Team Leader | Mr. T. W. Tam | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Miss Nicola Hon | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Mr. Ben Tam | 2959 6059 | 2959 6079 |
| HKL | Registered Landscape Architect | Kenneth Ng | 2866 3903 | -- |

Legend:

HyD (Employer) – Highways Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

CKJV (Main Contractor) – CRBC-Kaden Joint Venture

Ramboll (ENPO and IEC) – Ramboll Hong Kong Limited

AUES (ET) – Action-United Environmental Services & Consulting

HKL(RLA) – Hong Kong Landscape

Appendix D

Three-Months Rolling Programme

| Activity ID | Activity Name | 2018 | | 2019 | | |
|-------------|---------------|------|-----|------|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |

HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update

Achievement of Stages/ Completion of Sections

| | |
|---------|--|
| KD10210 | KD11 - Sec 8 Completion All Preservation & Protection to Existing Trees |
| KD10140 | KD4 - Sec 1 Completion TD1, TD2, RW_B, H1f, TC Subway & Bridge, Footbridge |
| KD10150 | KD5 - Sec 2 Completion Bridges G1, G2 & H2, Civil provisions for E&M/TCSS in Area A, Portion A/F/X |
| KD10180 | KD8 - Sec 5 Completion All Remainders of the Works except Works under Sec 1 thru 4 |

| |
|--|
| ▼ Achievement of Stages/ Completion |
| ◆ KD11 - Sec 8 Completion All Preserva |
| ◆ KD4 - Sec 1 Completion TD1, TD2, |
| ◆ KD5 - Sec 2 Completion Bridges G1 |
| ◆ KD8 - Sec 5 Completion All Remain |

Dismantling of HY/2012/04 Project Office at WA6

| | |
|---------|--------------------------|
| DM10060 | Completion of Demolition |
|---------|--------------------------|

Toll Plaza Decking TD1-Section 1

▼ Toll Plaza Decking TD1-Section 1

Completion of TD1 in Section 1

▼ Completion of TD1 in Section 1

Road pavement and road furniture

▼ Road pavement and road furniture

| | |
|----------|------------------------------------|
| TD121020 | Road pavement and remain furniture |
|----------|------------------------------------|

■ Road pavement and remain furniture

Completion of TD1 in Section 1

▼ Completion of TD1 in Section 1

| | |
|----------|---|
| TD121030 | Achievement of KD-4(section 1) for TD1 |
| TD121040 | KD-4 |

◆ Achievement of KD-4(section 1) for
◆ KD-4

Toll Plaza Decking TD2-Section 1

▼ Toll Plaza Decking TD2-Section 1

Field Works

▼ Field Works

Completion of TD2

▼ Completion of TD2

| | |
|----------|--|
| TD220710 | Achievement of KD-4(Section 1) for TD2 |
| TD220250 | Remaining works(Including Earthing System,Lightning Protection System) |

◆ Achievement of KD-4(Section 1) for
■ Remaining works(Including Earthing

Toll Plaza Footbridge-Section 1

▼ Toll Plaza Footbridge-Section 1

Miscellaneous Works

▼ Miscellaneous Works

| | |
|---------|--|
| TFB1450 | Remaining works(Fences, Handrailing, Guard-railing, Gates,etc) |
|---------|--|

■ Remaining works(Fences, Handrailin

| | |
|---------------------------|-------------------------|
| Remaining Level of Effort | Critical Remaining Work |
| Actual Work | ◆ Milestone |
| Remaining Work | ▼ Summary |

**CRBC - Kaden JV
Three-Month Rolling Programme**

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | 2019 | | | |
|--|--|------|------|-----|-----|--|
| | | Dec | Jan | Feb | Mar | Apr |
| Completion of footbridge in section 1 | | | | | | |
| TFB1460 | Achievement of KD-4 (Section 1) for footbridge | | | | | ▼ Completion of footbridge in section 1 ◆ Achievement of KD-4 (Section 1) for |
| TFB1470 | KD-4 | | | | | ◆ KD-4 |
| Retaining Structure RW_B-Section 1 | | | | | | ▼ Retaining Structure RW_B-Section 1 |
| Site Formation - Retaining Structure RW_B | | | | | | ▼ Site Formation - Retaining Structure F |
| Achievement of KD-4 (Section 1) for RW_B | | | | | | ▼ Achievement of KD-4 (Section 1) for |
| RWB10630 | Finishing works including feature wall | | | | | ◆ Finishing works including feature wall |
| RWB10660 | Achievement of KD-4(Section 1) for RW_B | | | | | ◆ Achievement of KD-4(Section 1) for |
| RWB10670 | KD-4(Section 1) | | | | | ◆ KD-4(Section 1) |
| RWB10650 | Road works | | | | | ◆ Road works |
| Toll Collector Subway & Associated Works-Section 1 | | | | | | ▼ Toll Collector Subway & Associated |
| Toll Collector Bridge (Portion I)-Section 1 | | | | | | ▼ Toll Collector Bridge (Portion I)-Sectio |
| Completion of Toll Collector Bridge in Section 1 | | | | | | ▼ Completion of Toll Collector Bridge in |
| TCS1640 | KD-4-Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge,Footbridge | | | | | ◆ KD-4-Section 1 Completion TD1,TD2 |
| Toll Collector Subway & Associate Works (Portion I)-Section 1 | | | | | | ▼ Toll Collector Subway & Associate W |
| Completion of Section 1 for Toll collector subway(Portion I) | | | | | | ▼ Completion of Section 1 for Toll colle |
| TCS1660 | KD-4-Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge,Footbridge | | | | | ◆ KD-4-Section 1 Completion TD1,TD |
| TCS1570 | Achievement of KD4 (Section 1) for toll collector subway(portion I) | | | | | ◆ Achievement of KD4 (Section 1) for |
| TCS1560 | Remaining works(Doors, Windows,etc.) | | | | | ◆ Remaining works(Doors, Windows,e |
| Toll Collector Subway (Portion X)-Section 5 | | | | | | ▼ Toll Collector Subway (Portion X)-Se |
| Section 5 | | | | | | ▼ Section 5 |
| TCS1230 | Achievement of KD-8(Section 5)for toll collector subway(Portion X) | | | | | ◆ Achievement of KD-8(Section 5)for |
| TCS1670 | KD-8-(Section 5) | | | | | ◆ KD-8-(Section 5) |

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | | 2019 | | |
|---|--|------|-----|------|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| TCS1220 | Miscellaneous | | | | | |
| Bridge G2 | | | | | | |
| Completion of Bridge G2 | | | | | | |
| BG23120 | Road work | | | | | |
| BG23150 | KD-5 | | | | | |
| BG23130 | Remaining works(include Lightning Protection System,Earthing System,etc) | | | | | |
| BG23140 | Achievement of KD-5(Section 2)for Bridge G2 | | | | | |
| Bridge G1 | | | | | | |
| Completion of Bridge G1 | | | | | | |
| BG112730 | Road Work | | | | | |
| BG112740 | Miscellaneous Works | | | | | |
| BG112750 | Achievement of KD-5(Section 2)for Bridge G1 | | | | | |
| BG112760 | KD-5 | | | | | |
| Bridge H1-Section 2 | | | | | | |
| Completion of Bridge H1 | | | | | | |
| BH12410 | Road Work | | | | | |
| BH12740 | KD-5 | | | | | |
| BH12640 | Miscellaneous Works | | | | | |
| BH12660 | Achievement of KD-5(Section 2)for Bridge H1 | | | | | |
| Culvert 2 & Culvert 3 and Existing Box Culvert | | | | | | |
| Culvert 2 | | | | | | |
| CCE20180 | MH1 | | | | | |
| CCE20170 | Bay 17A | | | | | |

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | 2019 | | | |
|--|--|------|------|---|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| Existing Sewer Box Culvert | | | | Existing Sewer Box Culvert | | |
| MH2-MH3 | | | | MH2-MH3 | | |
| CCE20250 | Abandon the existing culvert with foam concrete | | | Abandon the existing culvert with | | |
| MH1-MH8 | | | | MH1-MH8 | | |
| CCE20260 | Achievement of KD-3(Stage 3) for Sewer Box Culvert | | | Achievement of KD-3(Stage 3) fo | | |
| CCE20270 | KD-3 | | | KD-3 | | |
| Site Formation - Retaining Structure RW_A | | | | Site Formation - Retaining Structure | | |
| Achievement of KD-8 (Section 5) for RW_A | | | | Achievement of KD-8 (Section 5) fo | | |
| RWA20202 | Road Works | | | Road Works | | |
| RWA20220 | KD-8 | | | KD-8 | | |
| RWA20204 | Remaining Works(Movement joint,etc.) | | | Remaining Works(Movement joint,et | | |
| RWA20210 | Achievement of KD-8(Section 5) for RW_A | | | Achievement of KD-8(Section 5) for | | |
| Retaining Structure RW_E | | | | Retaining Structure RW_E | | |
| Achievement of KD-5 (Section 2) for RW_E | | | | Achievement of KD-5 (Section 2) for | | |
| RWE20240 | Remaining works(Door, etc.) | | | Remaining works(Door, etc.) | | |
| RWE20250 | Achievement of KD-5(Section 2) for RW_E | | | Achievement of KD-5(Section 2) for | | |
| RWE20270 | KD-5 | | | KD-5 | | |
| Site Formation - Retaining Structure for Slope TP_F | | | | Site Formation - Retaining Structure fo | | |
| Achievement of KD-8 (Section 5) for TP_F | | | | Achievement of KD-8 (Section 5) for | | |
| RWF31490 | KD-8 | | | KD-8 | | |
| Site Formation - Retaining Structure for Slope TP_G | | | | | | |
| MJ17 -End | | | | MJ17 -End | | |
| RWG1050 | Wall | | | Wall | | |

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | | 2019 | | |
|------------------|------------------------------|------------------------------|-----|------|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| RWG1060 | Backfilling | Backfilling | | | | |
| MJ16-MJ17 | | MJ16-MJ17 | | | | |
| RWG1100 | Wall | Wall | | | | |
| RWG1110 | Backfilling | Backfilling | | | | |
| MJ15-MJ16 | | MJ15-MJ16 | | | | |
| RWG1150 | Wall | Wall | | | | |
| RWG1160 | Backfilling | Backfilling | | | | |
| RWG1115 | Civil Works for TCSS and E&M | Civil Works for TCSS and E&M | | | | |
| MJ14-MJ15 | | MJ14-MJ15 | | | | |
| RWG1290 | Base slab | Base slab | | | | |
| RWG1280 | Blinding Layer | Blinding Layer | | | | |
| RWG1300 | Wall | Wall | | | | |
| RWG1310 | Backfilling | Backfilling | | | | |
| MJ13-MJ14 | | MJ13-MJ14 | | | | |
| RWG1240 | Base slab | Base slab | | | | |
| RWG1250 | Wall | Wall | | | | |
| RWG1260 | Backfilling | Backfilling | | | | |
| MJ12-MJ13 | | MJ12-MJ13 | | | | |
| RWG1190 | Base slab | Base slab | | | | |
| RWG1200 | Wall | Wall | | | | |
| RWG1210 | Backfilling | Backfilling | | | | |
| MJ11-MJ12 | | MJ11-MJ12 | | | | |
| RWG1350 | Wall | Wall | | | | |

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | 2019 | | | |
|---|---|------|-----------|-----------------------------------|-----|---|
| | | Dec | Jan | Feb | Mar | Apr |
| RWG1340 | Base slab | | Base slab | | | |
| RWG1360 | Backfilling | | | Backfilling | | |
| CH285-MJ11 | | | | | | |
| RWG1390 | Base slab | | | | | |
| RWG1400 | Wall | | Wall | | | |
| RWG1410 | Backfilling | | | Backfilling | | |
| RWG1420 | Pavement and Remaining works | | | | | |
| Achievement of KD-3(Stage 3) for TP_G | | | | | | |
| RWG1425 | Achievement of KD-3(Stage 3) for TP-G | | | | | ▼ Achievement of KD-3(Stage 3) for TP |
| RWG1445 | KD-3 | | | | | ◆ Achievement of KD-3(Stage 3) for TP ◆ KD-3 |
| Site Formation - Slope TP_E & Associated Works | | | | | | |
| Achievement of KD-8(Section 5) for Slope E | | | | | | |
| TPE65360 | KD-8(Section 5) | | | | | ▼ Site Formation - Slope TP_E & Associ ▼ Achievement of KD-8(Section 5) for S ◆ KD-8(Section 5) |
| Natural Terrain Hazard Mitigation Measures | | | | | | |
| Achievement of KD-8(Section 5) | | | | | | |
| NTH10140 | KD-8 | | | | | ▼ Natural Terrain Hazard Mitigation Mea ▼ Achievement of KD-8(Section 5) ◆ KD-8 |
| Vehicular Underpass TN-01 | | | | | | |
| Achievement of KD-8 (Section 5) for TN-01 | | | | | | |
| UDP20670 | KD-8(Section 5) | | | | | ▼ Vehicular Underpass TN-01 ▼ Achievement of KD-8 (Section 5) for ◆ KD-8(Section 5) |
| UDP20640 | Road works and Remaining works(Sundry Metalwork,etc) | | | Road works and Remaining works(Su | | |
| UDP20650 | Achievement of KD-8(Section 5)for Vehicular Underpass | | | | | ◆ Achievement of KD-8(Section 5)for V |
| Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout | | | | | | |
| Section 3 | | | | | | |

Remaining Level of Effort Critical Remaining Work
 Actual Work ◆ Milestone
 Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | | 2019 | | |
|---|------------------------------|--|-----|------|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| Utilites installation ,road and drainage works (TTA Stage 2) | | Utilites installation ,road and drainage works (TTA Stage 2) | | | | |
| LFR10750 | HKC Cable | | | | | |
| LFR10760 | Pubic Lighting | | | | | |
| LFR10770 | CLP + CRD | | | | | |
| LFR10780 | TraxComm | | | | | |
| LFR10670 | DN700,800 | | | | | |
| LFR10800 | TTA Stage 2-1 | | | | | |
| LFR10790 | Irrigation System | | | | | |
| LFR10630 | Street Furniture | | | | | |
| LFR10640 | Sign Gantry | | | | | |
| LFR10650 | E&M, TCSS | | | | | |
| Utilites installation ,road and drainage works (TTA Stage 2-1) | | Utilites installation ,road and drainage works (TTA Stage 2-1) | | | | |
| LFR10220 | CLP+ CRD | | | | | |
| LFR10230 | DN450 | | | | | |
| LFR10240 | Road Pavement | | | | | |
| LFR10250 | Landscapping | | | | | |
| Road and Drainage Work ,Utilities Works at Lung Mun Road | | Road and Drainage Work ,Utilities Works at Lung Mun Road | | | | |
| Lung Mun Road (Westbound) | | Lung Mun Road (Westbound) | | | | |
| Ho Suen Street South | | Ho Suen Street South | | | | |
| LMRWA1250 | Wharf T&T Duct and Joint Box | | | | | |
| LMRWA1260 | New World Telecom | | | | | |
| LMRWA1270 | Town Gas | | | | | |
| LMRWA1280 | Smartone Cable | | | | | |

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | | 2019 | | |
|---|--|--|------------|-----------|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| LMRWA1290 | HKC Cable | [Blue bar] | | [Red bar] | | |
| LMRWA1300 | Pubic Lighting | [Blue bar] | | [Red bar] | | |
| LMRWA1310 | CLP | [Blue bar] | | [Red bar] | | |
| LMRWA1320 | TraxComm | [Blue bar] | | [Red bar] | | |
| LMRWA1330 | Irrigation System | [Blue bar] | | [Red bar] | | |
| LMRWA1340 | Road Pavement | [Blue bar] | | [Red bar] | | |
| LMRWA1241 | Street Furniture(Including eastbound) | [Blue bar] | | [Red bar] | | |
| LMRWA1242 | Sign Gantry(Including eastbound) | | [Blue bar] | [Red bar] | | |
| LMRWA1370 | Footpath Pavement | | | [Red bar] | | |
| Lung Mun Road (Eastbound) | | ▼ Lung Mun | | | | |
| LMREA1070 | Road Pavement | [Blue bar] | | [Red bar] | | |
| LMREA1090 | Footpath Pavement | [Blue bar] | | [Red bar] | | |
| Utilites installation ,road and drainage works for East Portal | | ▼ Utilites installation ,road and drainage v | | | | |
| EPA1160 | Irrigation System | [Blue bar] | | [Red bar] | | |
| Utilites installation ,road and drainage works near portion D | | ▼ Utilites installation ,road and drainage v | | | | |
| TOLLA1170 | Footpath Pavement | [Blue bar] | | [Red bar] | | |
| Sewage, Irrigation and Road& Drainage Works | | ▼ Seweage, Irrigation and Road& Draina | | | | |
| SAI10050 | Seweage, irrigation and road&drainage works - G1&H1-south side | [Blue bar] | | [Red bar] | | |
| Section 6 | | ▼ Secti | | | | |
| SEC61000 | Lanscape softworks in KD-1 area | [Blue bar] | | [Red bar] | | |
| SEC61020 | Lanscape softworks in KD-2 area | [Blue bar] | | [Red bar] | | |
| SEC61040 | Lanscape softworks in KD-3 area | [Blue bar] | | [Red bar] | | |
| Section 8 | | ▼ Section 8 | | | | |

| | | | |
|-------------------|---------------------------|-----------|-------------------------|
| [Green bar] | Remaining Level of Effort | [Red bar] | Critical Remaining Work |
| [Blue bar] | Actual Work | ◆ | Milestone |
| [Light Green bar] | Remaining Work | ▼ | Summary |

CRBC - Kaden JV
Three-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | 2019 | | | |
|---------------------------------|--|------|---|-----|-----|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| SEC81050 | KD-11 | | ◆ KD-11 | | | |
| Achievement of Key Dates | | | ▼ Achievement of Key Dates | | | |
| AK10430 | Achievement of KD-3(Stage 3) for RW_G | | ◆ Achievement of KD-3(Stage 3) for RW | | | |
| AK10100 | Achievement of KD-4 (Section 1) for Toll Collector Bridge | | ◆ Achievement of KD-4 (Section 1) for T | | | |
| AK10350 | Achievement of KD-8(Section 5) for slope D | | ◆ Achievement of KD-8(Section 5) for sl | | | |
| AK10310 | Achievement of KD-8(Section 5) for slope B | | ◆ Achievement of KD-8(Section 5) for sl | | | |
| AK10290 | Achievement of KD-8(Section 5) for slope A | | ◆ Achievement of KD-8(Section 5) for sl | | | |
| AK10330 | Achievement of KD-8(Section 5) for slope C | | ◆ Achievement of KD-8(Section 5) for sl | | | |
| AK10370 | Achievement of KD-8(Section 5) for slope E | | ◆ Achievement of KD-8(Section 5) for sl | | | |
| AK10260 | Achievement of KD-8(section 5) for TP_F | | ◆ Achievement of KD-8(section 5) for T | | | |
| AK10480 | Achievement of KD-8(Section 5)for Road and drainage works near east portal | | ◆ Achievement of KD-8(Section 5)for R | | | |
| AK10390 | Achievement of KD-8(Section 5)for Vehicular Underpass | | ◆ Achievement of KD-8(Section 5)for V | | | |
| AK10030 | Achievement of KD-4(Section 1) for TD2 | | ◆ Achievement of KD-4(Section 1) for | | | |
| AK10070 | Achievement of KD-4(Section 1) for RW_B | | ◆ Achievement of KD-4(Section 1) for | | | |
| AK10240 | Achievement of KD-5(Section 2) for RW_E | | ◆ Achievement of KD-5(Section 2) for | | | |
| AK10130 | Achievement of KD-8(Section 5)for Toll Collector Subway(Portion X) | | ◆ Achievement of KD-8(Section 5)for | | | |
| AK10110 | Achievement of KD4 (Section 1) for Toll Collector Subway(portion I) | | ◆ Achievement of KD4 (Section 1) for | | | |
| AK10010 | Achievement of KD-4(section 1) for TD1 | | ◆ Achievement of KD-4(section 1) for | | | |
| AK10050 | Achievement of KD-4 (Section 1) for Footbridge | | ◆ Achievement of KD-4 (Section 1) fo | | | |
| AK10160 | Achievement of KD-5(Section 2)for Bridge G1 | | ◆ Achievement of KD-5(Section 2)for l | | | |
| AK10180 | Achievement of KD-5(Section 2)for Bridge H1 | | ◆ Achievement of KD-5(Section 2)for l | | | |
| AK10145 | Achievement of KD-5(Section 2)for Bridge G2 | | ◆ Achievement of KD-5(Section 2)for l | | | |
| AK10220 | Achievement of KD-8(Section 5) for RW_A | | ◆ Achievement of KD-8(Section 5) for | | | |

■ Remaining Level of Effort ■ Critical Remaining Work
■ Actual Work ◆ Milestone
■ Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

| Activity ID | Activity Name | 2018 | | 2019 | | |
|-------------|--|------|-----|----------------------------------|-----------------|-----|
| | | Dec | Jan | Feb | Mar | Apr |
| AK10200 | Achievement of KD-3(Stage 3) for Sewer Box Culvert | | | ◆ Achievement of KD-3(Stage 3) f | | |
| AK10400 | Achievement of KD-3(Stage 3) for Roundabout works | | | ◆ Achievement of KD-3(St | | |
| AK10455 | Achievement of KD-3(Stage 3) for Road and draiange Works under TD1 | | | | ◆ Achievement e | |

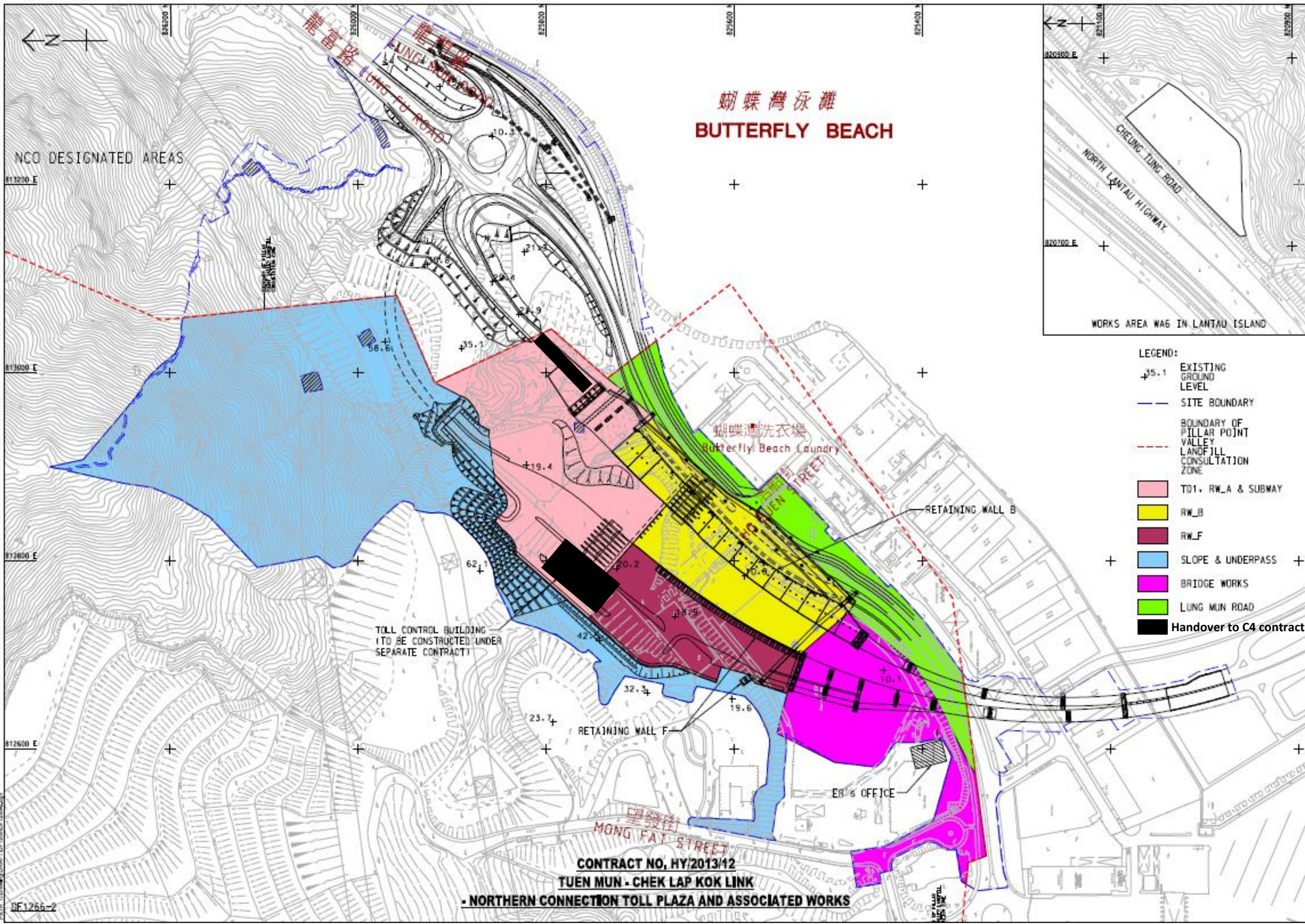
█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 23-01-19 | 4 | | |
| | | | |

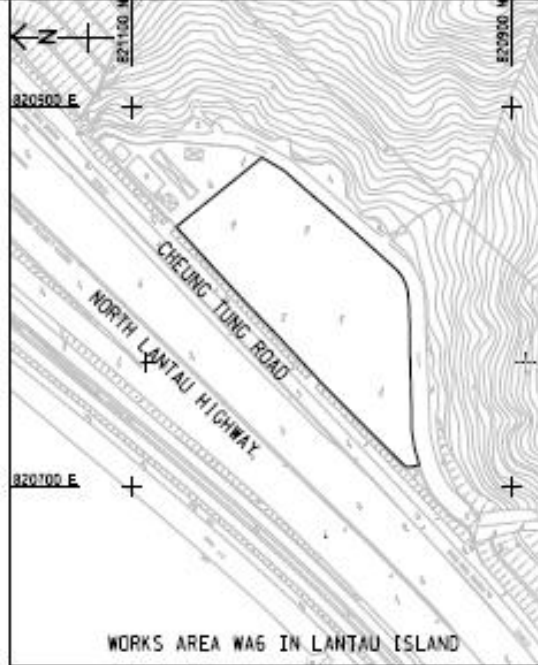
Appendix E

Monitoring Locations / Sensitive Receivers for the Contract



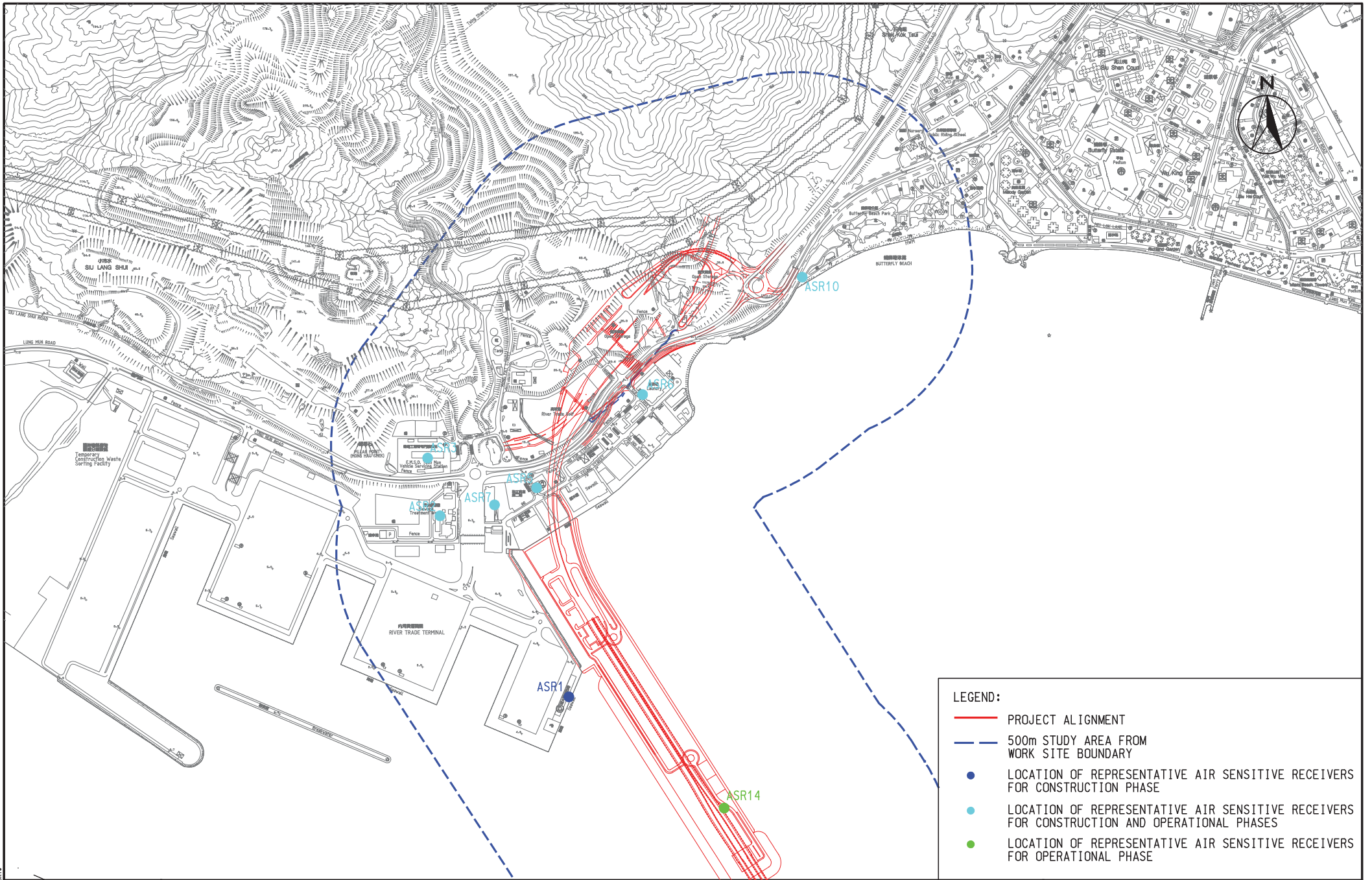
蝴蝶灣泳灘
BUTTERFLY BEACH

- LEGEND:**
- +35.1 EXISTING GROUND LEVEL
 - SITE BOUNDARY
 - BOUNDARY OF PILLAR POINT VALLEY LANDFILL CONSULTATION ZONE
 - TD1, RW_A & SUBWAY
 - RW_B
 - RW_F
 - SLOPE & UNDERPASS
 - BRIDGE WORKS
 - LUNG MUN ROAD
 - Handover to C4 contract



TOLL CONTROL BUILDING
 (TO BE CONSTRUCTED UNDER
 SEPARATE CONTRACT)

CONTRACT NO. HY/2013/12
TUEN MUN - CHEK LAP KOK LINK
- NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

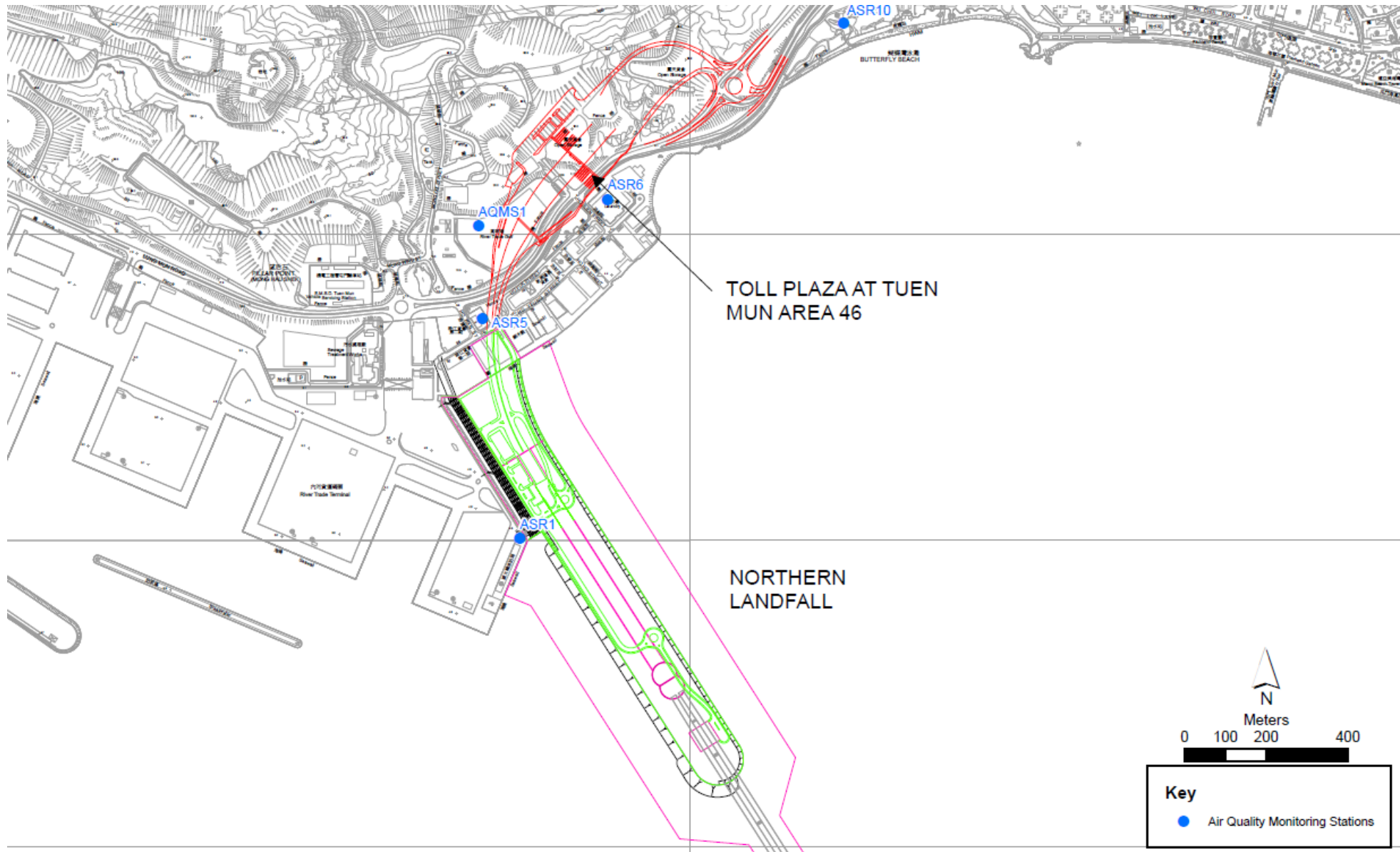


LEGEND:

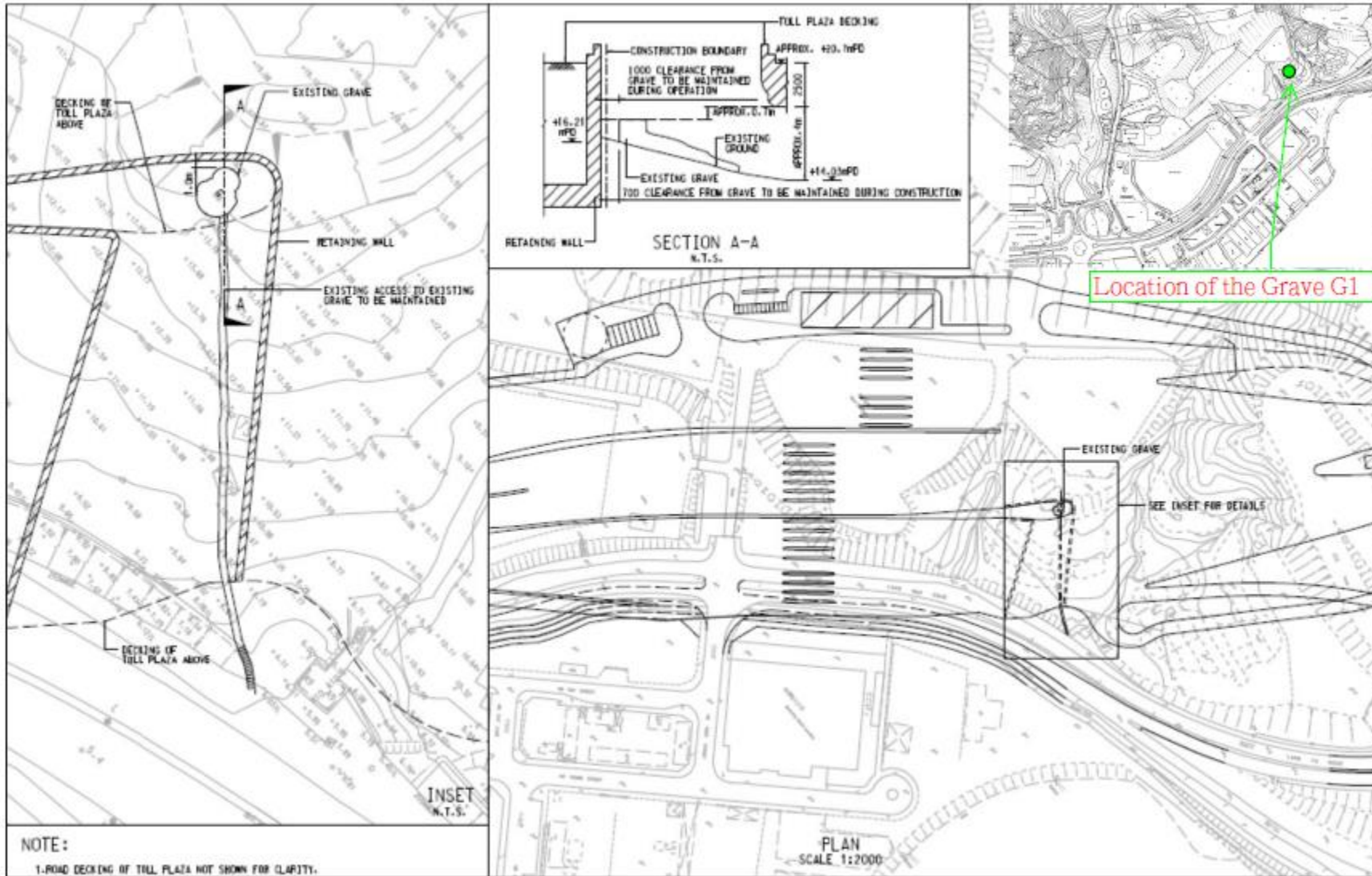
- PROJECT ALIGNMENT
- - - 500m STUDY AREA FROM WORK SITE BOUNDARY
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR CONSTRUCTION PHASE
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR CONSTRUCTION AND OPERATIONAL PHASES
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR OPERATIONAL PHASE

AGREEMENT NO. CE 52/2007(HY)
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION
REPRESENTATIVE AIR SENSITIVE RECEIVERS

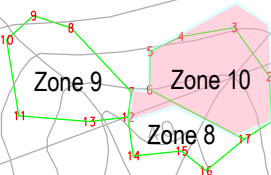
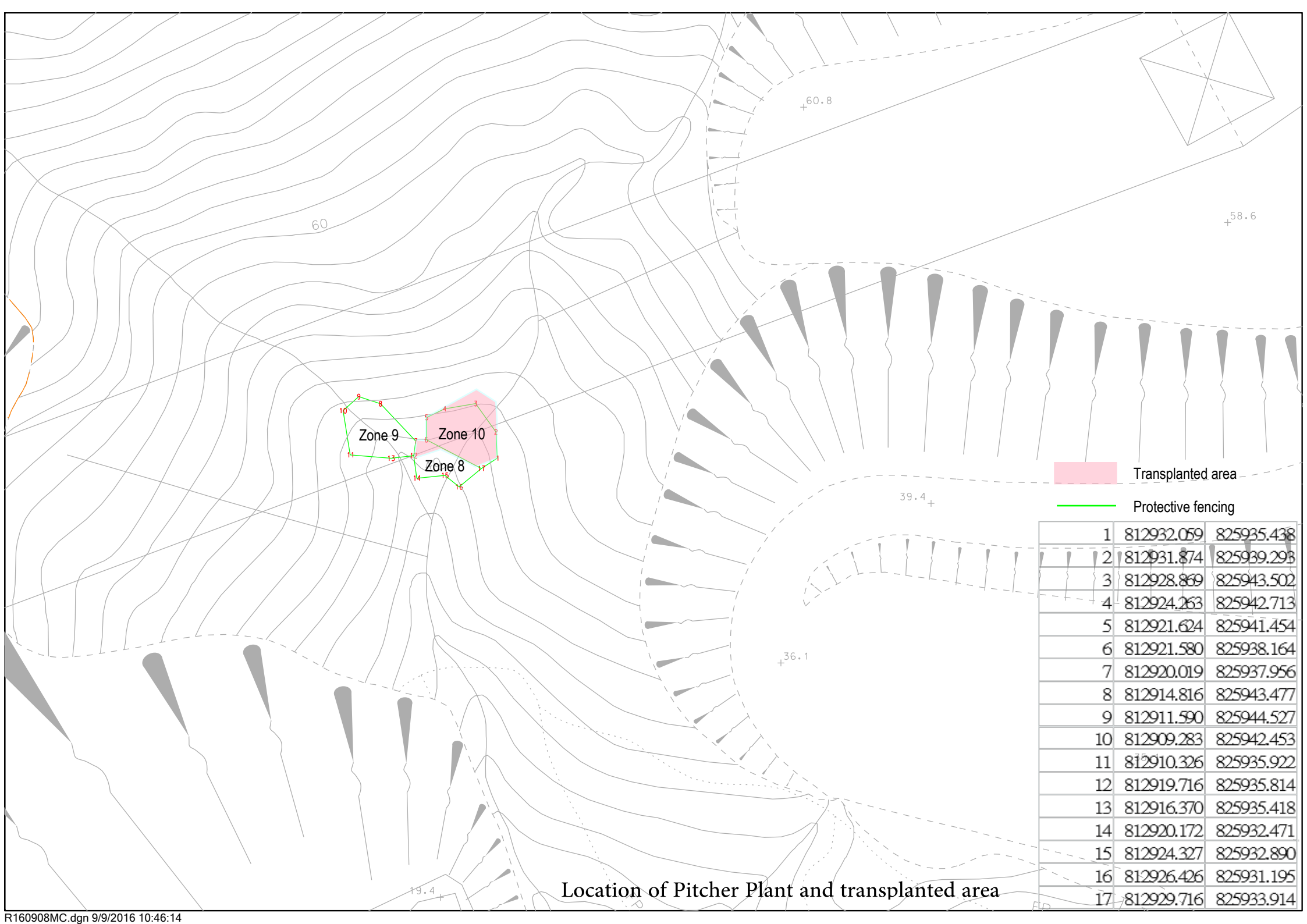
| | | |
|-------|------------|------|
| SCALE | 1 : 10 000 | DATE |
|-------|------------|------|



Air Quality Monitoring Location



Location of the Grave G1



Transplanted area
 Protective fencing

| | | |
|----|------------|------------|
| 1 | 812932.059 | 825935.438 |
| 2 | 812931.874 | 825939.293 |
| 3 | 812928.869 | 825943.502 |
| 4 | 812924.263 | 825942.713 |
| 5 | 812921.624 | 825941.454 |
| 6 | 812921.580 | 825938.164 |
| 7 | 812920.019 | 825937.956 |
| 8 | 812914.816 | 825943.477 |
| 9 | 812911.590 | 825944.527 |
| 10 | 812909.283 | 825942.453 |
| 11 | 812910.326 | 825935.922 |
| 12 | 812919.716 | 825935.814 |
| 13 | 812916.370 | 825935.418 |
| 14 | 812920.172 | 825932.471 |
| 15 | 812924.327 | 825932.890 |
| 16 | 812926.426 | 825931.195 |
| 17 | 812929.716 | 825933.914 |

Location of Pitcher Plant and transplanted area

Appendix F

Event and Action Plan

Event and Action Plan for Air Quality

| EVENT | ACTION | | | |
|---------------------|--|--|--|--|
| | ET ⁽¹⁾ | IEC ⁽¹⁾ | SOR ⁽¹⁾ | Contractor(s) |
| Action Level | | | | |
| Exceedance recorded | <ol style="list-style-type: none"> 1 Identify the source. 2 Repeat measurements to confirm findings. If two consecutive measurements exceed Action Level, the exceedance is then confirmed. 3 Inform the IEC and the SOR 4 Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. 5 If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. 6 Discuss with the IEC and the Contractor on remedial actions required. 7 If exceedance continues, arrange meeting with the IEC and the SOR. 8 If exceedance stops, cease additional monitoring. | <ol style="list-style-type: none"> 1 Check monitoring data submitted by the ET. 2 Check the Contractor's working method. 3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. 4 Advise the SOR on the effectiveness of the proposed remedial measures. 5 Supervisor implementation of remedial measures. | <ol style="list-style-type: none"> 1 Confirm receipt of notification of failure in writing. 2 Notify the Contractor. 3 Ensure remedial measures properly implemented. | <ol style="list-style-type: none"> 1 Rectify any unacceptable practice. 2 Amend working methods if appropriate 3 If the exceedance is confirmed to be Project related, submit proposals for remedial actions to IEC within 3 working days of notification 4 Implement the agreed proposals 5 Amend proposal if appropriate. |
| Limit Level | | | | |
| Exceedance recorded | <ol style="list-style-type: none"> 1. Identify the source. 2. Repeat measurement to confirm finding. If two consecutive measurements exceed Limit Level, the exceedance is then confirmed. 3. Inform the IEC, the SOR, the DEP and the Contractor. 4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. 5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. 6. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 7. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken. 8. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. 9. If exceedance stops, cease additional monitoring. | <ol style="list-style-type: none"> 1 Check monitoring data submitted by the ET. 2 Check Contractor's working method. 3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. 4 Advise the SOR on the effectiveness of the proposed remedial measures. 5 Supervisor implementation of remedial measures. | <ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. If the exceedance is confirmed to be Project related after investigation, in consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. | <ol style="list-style-type: none"> 1 Take immediate action to avoid further exceedance. 2 If the exceedance is confirmed to be Project related after investigation, submit proposals for remedial actions to IEC within 3 working days of notification. 3 Implement the agreed proposals. 4 Amend proposal if appropriate. 5 Stop the relevant activity of works as determined by the SOR until the exceedance is abated. |

Event and Action Plan for Landscape and Visual Impact

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

Event / Action Plan for Cultural Heritage

| Action Level | ET | IC (E) | ER | Contractor |
|---------------------------------|--|---|--|---|
| Non- conformity on one occasion | <ol style="list-style-type: none"> 1. Identify Source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed | <ol style="list-style-type: none"> 1. Check report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures. | <ol style="list-style-type: none"> 1. Notify Contractor 2. Ensure remedial measures are properly implemented | <ol style="list-style-type: none"> 1. Amend working methods 2. Rectify damage and undertake any necessary replacement |
| Repeated Non-conformity | <ol style="list-style-type: none"> 1. Identify Source 2. Inform the IC(E) and the ER 3. Increase monitoring frequency 4. Discuss remedial actions with the IC(E), the ER and the Contractor 5. Monitor remedial actions until 6. rectification has been completed 7. If exceedance stops, cease additional monitoring | <ol style="list-style-type: none"> 1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ES and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures. | <ol style="list-style-type: none"> 1. Notify the Contractor 2. Ensure remedial measures are properly implemented | <ol style="list-style-type: none"> 1. Amend working methods 2. Rectify damage and undertake any necessary replacement |

Note:

ET – Environmental Specialist, IEC – Independent Environmental Checker, ER – Engineer’s Representative

Event / Action Plan for General Ecology

| Action Level | ET | IEC | ER | Contractor |
|--------------------------------|--|---|--|---|
| Non-conformity on one occasion | <ul style="list-style-type: none"> Identify Source Inform the IEC and the ER Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial actions until rectification has been completed | <ul style="list-style-type: none"> Check report Check the Contractor's working method Discuss with the ET and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures. Check implementation of remedial measures. | <ul style="list-style-type: none"> Notify Contractor Ensure remedial measures are properly implemented Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified. | <ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement |
| Repeated Non conformity | <ul style="list-style-type: none"> Identify Source Inform the IC(E) and the ER Increase monitoring frequency Discuss remedial actions with the IC(E), the ER and the Contractor Monitor remedial actions until rectification has been completed If exceedance stops, cease additional monitoring | <ul style="list-style-type: none"> Check monitoring report Check the Contractor's working method Discuss with the ES and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures | <ul style="list-style-type: none"> Notify the Contractor Ensure remedial measures are properly implemented Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified. | <ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement |

Note:

ET – Environmental Specialist, IC(E) – Independent Checker (Environmental), ER – Engineer’s Representative

Actions in the Event of Landfill Gas being Detected in Excavation / Confined Area

| Parameter | Measurement | Action |
|----------------|------------------------|---|
| Oxygen | < 19% | - Ventilate to restore oxygen to > 19% |
| | < 18% | - Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to > 19% |
| Methane | > 10% LEL (> 0.5% v/v) | - Prohibit hot work - Ventilate to restore methane to < 10% LEL |
| | > 20% LEL (>1% v/v) | - Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 10% |
| Carbon Dioxide | > 0.5% | - Ventilate to restore oxygen to < 0.5% |
| | > 1.5% | - Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 0.5% |

Appendix G

Monitoring Schedule

Impact Monitoring Schedule for January 2019

| Date | | Landfill Gas Monitoring | Landscape and Visual Monitoring |
|------|---------------|-------------------------|---------------------------------|
| Tue | 1-January-19 | | |
| Wed | 2-January-19 | ✓ | |
| Thu | 3-January-19 | ✓ | |
| Fri | 4-January-19 | ✓ | ✓ |
| Sat | 5-January-19 | ✓ | |
| Sun | 6-January-19 | | |
| Mon | 7-January-19 | ✓ | |
| Tue | 8-January-19 | ✓ | |
| Wed | 9-January-19 | ✓ | |
| Thu | 10-January-19 | ✓ | |
| Fri | 11-January-19 | ✓ | ✓ |
| Sat | 12-January-19 | ✓ | |
| Sun | 13-January-19 | | |
| Mon | 14-January-19 | ✓ | |
| Tue | 15-January-19 | ✓ | |
| Wed | 16-January-19 | ✓ | |
| Thu | 17-January-19 | ✓ | |
| Fri | 18-January-19 | ✓ | ✓ |
| Sat | 19-January-19 | ✓ | |
| Sun | 20-January-19 | | |
| Mon | 21-January-19 | ✓ | |
| Tue | 22-January-19 | ✓ | |
| Wed | 23-January-19 | ✓ | |
| Thu | 24-January-19 | ✓ | |
| Fri | 25-January-19 | ✓ | ✓ |
| Sat | 26-January-19 | ✓ | |
| Sun | 27-January-19 | | |
| Mon | 28-January-19 | ✓ | |
| Tue | 29-January-19 | ✓ | |
| Wed | 30-January-19 | ✓ | |
| Thu | 31-January-19 | ✓ | |

| | |
|---|--------------------------|
| ✓ | Monitoring Day |
| | Sunday or Public Holiday |

Impact Monitoring Schedule for February 2019

| Date | | Landfill Gas Monitoring | Landscape and Visual Monitoring |
|------|----------------|-------------------------|---------------------------------|
| Fri | 1-February-19 | ✓ | ✓ |
| Sat | 2-February-19 | ✓ | |
| Sun | 3-February-19 | | |
| Mon | 4-February-19 | ✓ | |
| Tue | 5-February-19 | | |
| Wed | 6-February-19 | | |
| Thu | 7-February-19 | | |
| Fri | 8-February-19 | ✓ | ✓ |
| Sat | 9-February-19 | ✓ | |
| Sun | 10-February-19 | | |
| Mon | 11-February-19 | ✓ | |
| Tue | 12-February-19 | ✓ | |
| Wed | 13-February-19 | ✓ | |
| Thu | 14-February-19 | ✓ | |
| Fri | 15-February-19 | ✓ | ✓ |
| Sat | 16-February-19 | ✓ | |
| Sun | 17-February-19 | | |
| Mon | 18-February-19 | ✓ | |
| Tue | 19-February-19 | ✓ | |
| Wed | 20-February-19 | ✓ | |
| Thu | 21-February-19 | ✓ | |
| Fri | 22-February-19 | ✓ | ✓ |
| Sat | 23-February-19 | ✓ | |
| Sun | 24-February-19 | | |
| Mon | 25-February-19 | ✓ | |
| Tue | 26-February-19 | ✓ | |
| Wed | 27-February-19 | ✓ | |
| Thu | 28-February-19 | ✓ | |

| | |
|---|--------------------------|
| ✓ | Monitoring Day |
| | Sunday or Public Holiday |

Appendix H

Calibration Certificates of Monitoring Equipment

CERTIFICATION OF CALIBRATION



Geotech

Date Of Calibration: 05-Jul-2018

Certificate Number: G503226_2/20909

ISSUED BY: GEOTECHNICAL INSTRUMENTS (UK) LTD

Customer: Fugro Geotechnical Services Ltd
Units 6 8-11 10/F Worldwide Industrial Centre 43-47 Shan Mei Street
Fo Tan Sha Tin, N.T. HONG KONG

Description: Gas Analyser

Model: BIOGAS 5000

Serial Number: G503226

UKAS Accredited results:

Results after adjustment :

| Methane (CH ₄) | | |
|----------------------------|------------------------|-----------------|
| Certified Gas (%) | Instrument Reading (%) | Uncertainty (%) |
| 5.0 | 4.8 | 0.41 |
| 15.0 | 14.9 | 0.64 |
| 50.0 | 49.1 | 0.94 |

| Carbon Dioxide (CO ₂) | | |
|-----------------------------------|------------------------|-----------------|
| Certified Gas (%) | Instrument Reading (%) | Uncertainty (%) |
| 5.0 | 4.9 | 0.43 |
| 15.0 | 14.9 | 0.70 |
| 50.0 | 50.0 | 1.1 |

| Oxygen (O ₂) | | |
|--------------------------|------------------------|-----------------|
| Certified Gas (%) | Instrument Reading (%) | Uncertainty (%) |
| 21.0 | 21.1 | 0.31 |

The inwards assessment was carried out 26-Jun-2018.

The maximum adjustment was less than the inwards assessment uncertainty.

Inwards assessment data is available if requested.

All concentrations are molar.

CH₄, CO₂ readings recorded at : 36.4 °C ± 2.5 °C

O₂ readings recorded at : 25.9 °C ± 2.5 °C

Barometric Pressure : 1009 mbar ± 4 mbar

Method of Test : The analyser is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure LP004.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:98 IGC Instance:97

Page 1 of 2 | LP015GIUKAS-2.4

CERTIFICATION OF CALIBRATION



Date Of Calibration: 05-Jul-2018

Certificate Number: G503226_2/20909

ISSUED BY: GEOTECHNICAL INSTRUMENTS (UK) LTD

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Calibrations marked 'Non-UKAS Accredited results' on this certificate have been included for completeness.

Non-UKAS accredited results after adjustment:

| Barometer (mbar) | |
|------------------|--------------------|
| Reference | Instrument Reading |
| 1009 | 1009 |

Date of Issue : 06-Jul-2018

Approved by Signatory

Jeremy Dunn

Laboratory Inspection

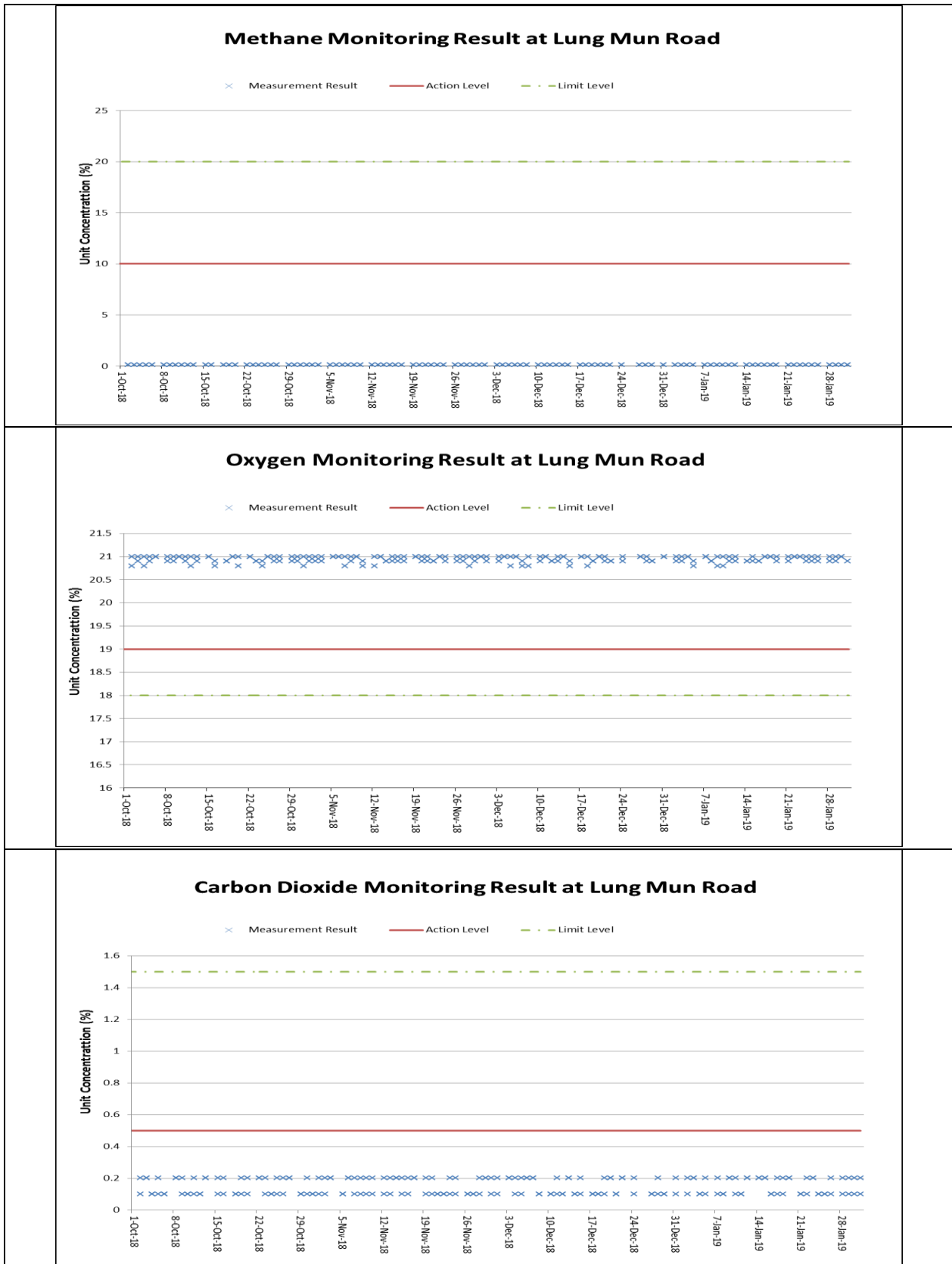
This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:98 IGC Instance:97

Page 2 of 2 | LP015GIUKAS-2.4

Appendix I

Landfill Gas Monitoring Results and Graphical Plots



Annotation:

During 1 to 31 January 2019, major construction activity at Lung Mun Road and the specified works included excavation, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.

Landfill Gas Monitoring Results (Lung Mun Road)

| Monitoring Location | Date | Time | Weather | Temperature (°C) | Methane (%) | | | Oxygen (%) | | | Carbon Dioxide (%) | | |
|---------------------|-----------|-------|---------|------------------|--------------------|--------------|-------------|--------------------|--------------|-------------|--------------------|--------------|-------------|
| | | | | | Measurement Result | Action Level | Limit Level | Measurement Result | Action Level | Limit Level | Measurement Result | Action Level | Limit Level |
| | | | | | | | | | | | | | |
| Lung Mun Road | 2/1/2019 | 8:00 | Cloudy | 13 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 2/1/2019 | 14:00 | | 16 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 3/1/2019 | 8:00 | Cloudy | 15 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 3/1/2019 | 14:00 | | 18 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 4/1/2019 | 8:00 | Cloudy | 17 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 4/1/2019 | 14:00 | | 21 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 5/1/2019 | 8:00 | Sunny | 19 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 5/1/2019 | 14:00 | | 23 | 0.1 | 10 | 20 | 20.8 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 7/1/2019 | 8:00 | Fine | 17 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 7/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 8/1/2019 | 8:00 | Cloudy | 17 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 8/1/2019 | 14:00 | | 21 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 9/1/2019 | 8:00 | Sunny | 17 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 9/1/2019 | 14:00 | | 19 | 0.1 | 10 | 20 | 20.8 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 10/1/2019 | 8:00 | Sunny | 17 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 10/1/2019 | 14:00 | | 21 | 0.1 | 10 | 20 | 20.8 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 11/1/2019 | 8:00 | Fine | 18 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 11/1/2019 | 14:00 | | 23 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 12/1/2019 | 8:00 | Cloudy | 19 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 12/1/2019 | 14:00 | | 23 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 14/1/2019 | 8:00 | Sunny | 17 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 14/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 15/1/2019 | 8:00 | Rain | 17 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 15/1/2019 | 14:00 | | 21 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 16/1/2019 | 8:00 | Fine | 16 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 16/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 17/1/2019 | 8:00 | Sunny | 14 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 17/1/2019 | 14:00 | | 19 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 18/1/2019 | 8:00 | Sunny | 16 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 |
| | 18/1/2019 | 14:00 | | 18 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| | 19/1/2019 | 8:00 | Fine | 17 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 |
| 19/1/2019 | 14:00 | 22 | | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 21/1/2019 | 8:00 | Sunny | 16 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 21/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 22/1/2019 | 8:00 | Sunny | 13 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 22/1/2019 | 14:00 | | 19 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 23/1/2019 | 8:00 | Sunny | 13 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 23/1/2019 | 14:00 | | 19 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 24/1/2019 | 8:00 | Sunny | 15 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 24/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 25/1/2019 | 8:00 | Sunny | 16 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 25/1/2019 | 14:00 | | 22 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 26/1/2019 | 8:00 | Sunny | 16 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 26/1/2019 | 14:00 | | 21 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 28/1/2019 | 8:00 | Sunny | 15 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 28/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 29/1/2019 | 8:00 | Sunny | 17 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 29/1/2019 | 14:00 | | 20 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 30/1/2019 | 8:00 | Fine | 17 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 30/1/2019 | 14:00 | | 22 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.1 | 0.5 | 1.5 | |
| 31/1/2019 | 8:00 | Sunny | 19 | 0.1 | 10 | 20 | 21 | 19 | 18 | 0.2 | 0.5 | 1.5 | |
| 31/1/2019 | 14:00 | | 25 | 0.1 | 10 | 20 | 20.9 | 19 | 18 | 0.1 | 0.5 | 1.5 | |

Remark:

| Parameter | Criteria | Measurement |
|----------------|--------------|------------------------|
| Oxygen | Action Level | < 19% |
| | Limit Level | < 18% |
| Methane | Action Level | > 10% LEL (> 0.5% v/v) |
| | Limit Level | > 20% LEL (>1% v/v) |
| Carbon Dioxide | Action Level | > 0.5% |
| | Limit Level | > 1.5% |

Appendix J

Investigation Report for Exceedance

Contract No. HY/2013/12
Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works

Investigation Report on Action or Limit Level Non-compliance

| | |
|---|--|
| Date | 8 January 2019 |
| Environmental Aspect | Air Quality |
| Parameter | 1-hour TSP |
| Monitoring Location | ASR5 (Pillar Point Fire Station) |
| Measurement Period | 13:20-14:20 |
| Action Level (ug/m³) | 340 |
| Limit Level (ug/m³) | 500 |
| Measured Level (ug/m³) | 354 |
| Exceedance | Action Level |
| Possible reason for Action or Limit Level Non-compliance | <ol style="list-style-type: none"> 1. According to site information provided by CRBC-Kaden JV, road and drainage works at Lung Mun Road central median, E&M works and installation of VE panels at Retaining Wall B, drainage works at Portion H and installation of sign gantries at Bridge G were conducted on 8 January 2019. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 8 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2 and water spraying record) • Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7) 3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-westerly wind at 0.9 m/s was blowing between 13:00 to 15:00. 4. Although the works area Bridge H was located at the upstream of monitoring station ASR5, all of the areas of Bridge H were hard paved and only hand tools was used for installation of sign gantries. It is unlikely to create heavy construction dust impact. 5. Furthermore, during the time of exceedance was recorded at ASR5. The weekly joint site inspection with ER, Contractor and ET was conducted and no dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring according to the water spraying record. The ET observed that the contractor had properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust |

| | |
|---------------------------|---|
| | <p>aspect was observed. (Ref. to Photo 8 to 10 and water spraying record)</p> <p>6. Therefore the exceedance of Air Quality Monitoring at ASR5 was due to other pollutant source rather than the construction site.</p> <p>7. Based on the investigation as above, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p> |
| Action to be taken | <p>The contractor had been reminded to implement dust mitigation measures under the EMIS requirement. Another, ET will conduct audit and inspection regularly for the implemented dust mitigation measures during the construction period.</p> |

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature :  _____

Date : 15 February 2019

Photo Record

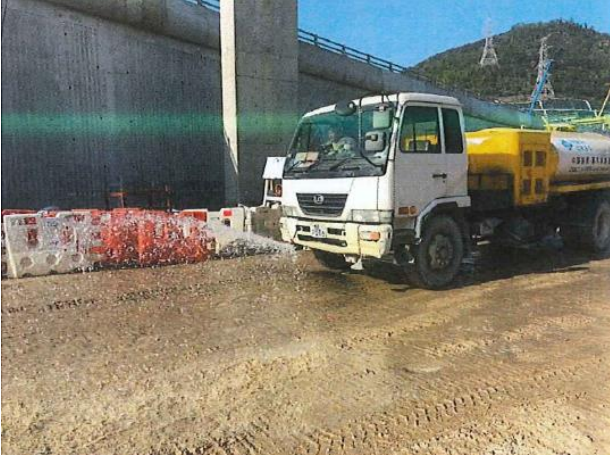


Photo 1 Watering of haul road by water truck to keep road surface wet



Photo 2 Water spraying by worker for un-accessible area.



Photo 3 Hydro seeding for the exposed slope.



Photo 4 Hydro seeding for the exposed slope.



Photo 5 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 6 All vehicles using the haul road had enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 7 All vehicles passing through the haul road at Lung Mun Road has enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 8 Water spraying was observed at site haul road during the joint site inspection on 8 January 2019.



Photo 9 Water spraying was observed at site haul road during the joint site inspection on 8 January 2019.



Photo 10 No dust emitted from the site area was observed during the joint site inspection on 8 January 2019.



Photo 11 Installation of sign gantries at Bridge G

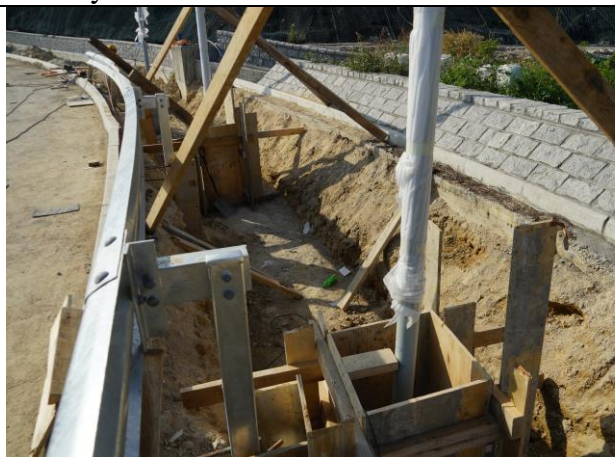


Photo 12 Drainage works at Lung Mun Road central median



Photo 13 Installation of VE panels at Retaining Wall B



Photo 14 All of the site area near ASR5 were hard paved

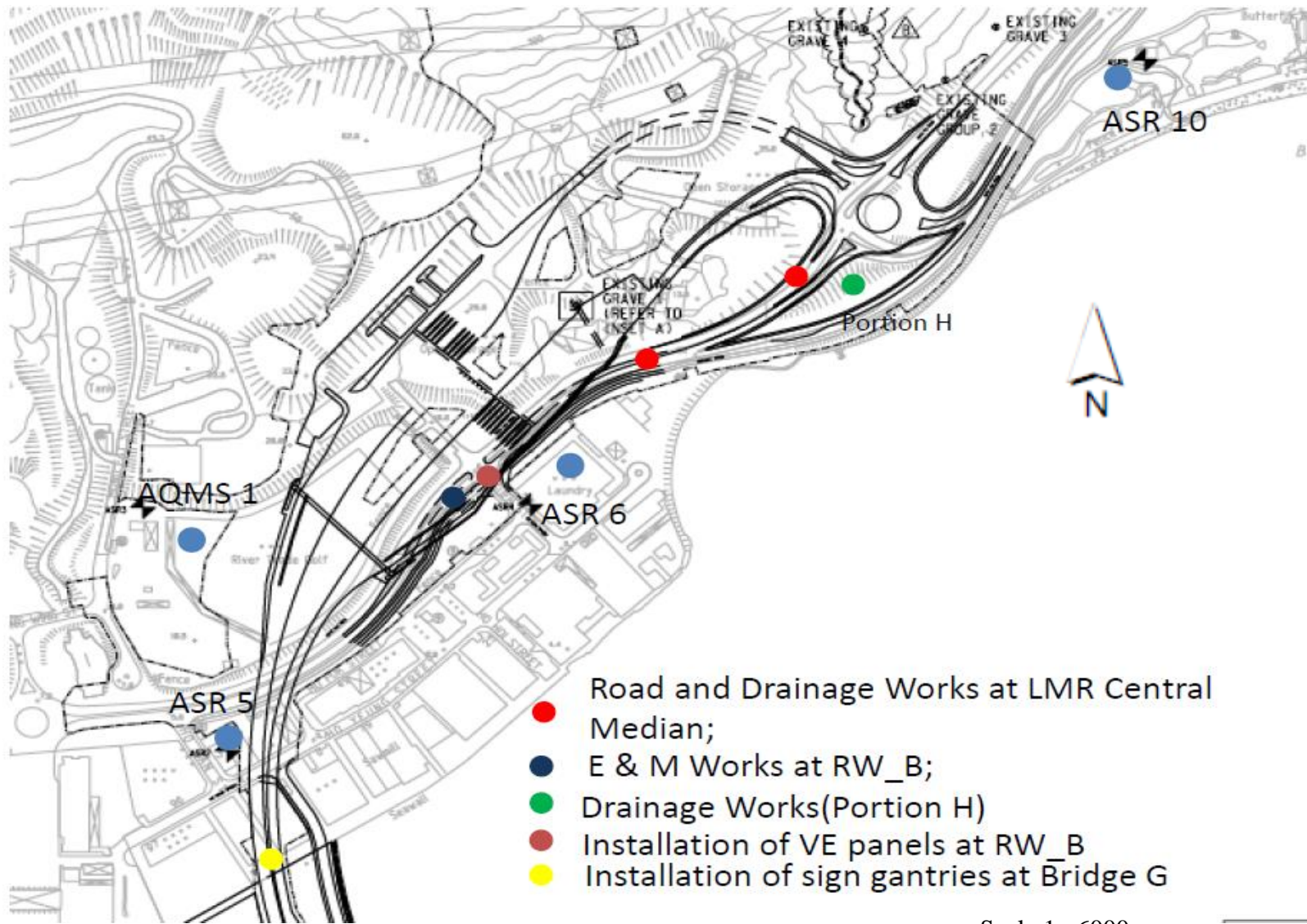


Figure 1. Location Plan

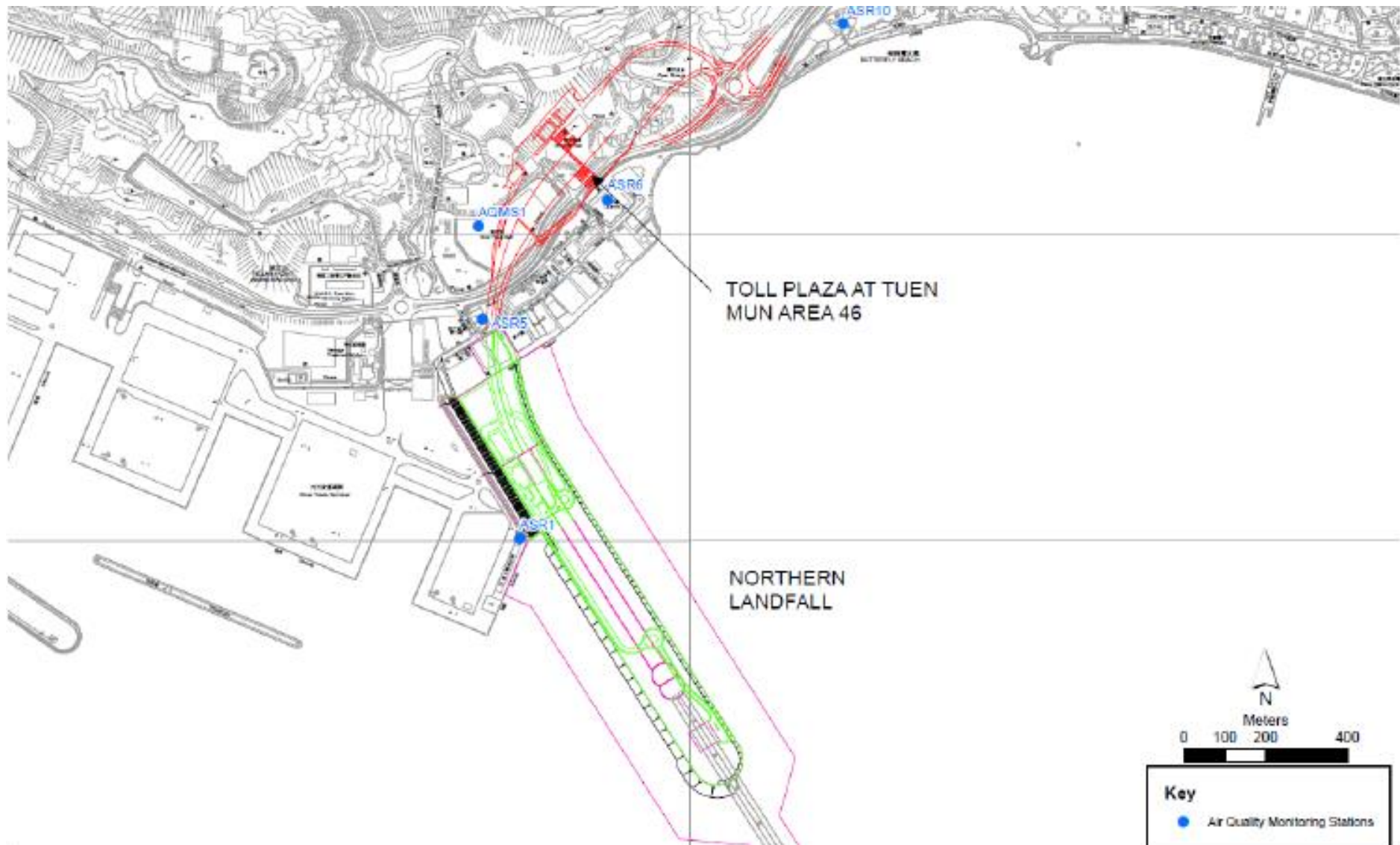


Figure 2. Air Monitoring Location

Table 1. 1-Hr TSP Monitoring Result of 8 January 2019

| Air quality monitoring results on 8/1/2019 | | | | | | | | |
|--|------------|------------|---------|---------|------------|-------------|---------|-------|
| Project | Works | Date | Station | Weather | Start time | Parameters | Results | Unit |
| TMCLKL | HY/2012/08 | 2019-01-08 | AQMS1 | Cloudy | 13:41 | 1-hour TSP | 179 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | AQMS1 | Cloudy | 14:43 | 1-hour TSP | 192 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | AQMS1 | Cloudy | 15:45 | 1-hour TSP | 193 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR1 | Cloudy | 13:30 | 1-hour TSP | 184 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR1 | Cloudy | 14:32 | 1-hour TSP | 281 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR1 | Cloudy | 15:34 | 1-hour TSP | 193 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR10 | Cloudy | 13:00 | 1-hour TSP | 162 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR10 | Cloudy | 14:02 | 1-hour TSP | 189 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR10 | Cloudy | 15:04 | 1-hour TSP | 192 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR5 | Cloudy | 13:20 | 1-hour TSP | 354 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR5 | Cloudy | 14:22 | 1-hour TSP | 292 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR5 | Cloudy | 15:24 | 1-hour TSP | 275 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR6 | Cloudy | 13:10 | 1-hour TSP | 239 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR6 | Cloudy | 14:12 | 1-hour TSP | 231 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR6 | Cloudy | 15:14 | 1-hour TSP | 197 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | AQMS1 | Cloudy | 16:47 | 24-hour TSP | 97 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR1 | Cloudy | 16:36 | 24-hour TSP | 135 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR10 | Cloudy | 16:06 | 24-hour TSP | 90 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR5 | Cloudy | 16:26 | 24-hour TSP | 175 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-08 | ASR6 | Cloudy | 16:16 | 24-hour TSP | 119 | ug/m3 |

Table 2. Wind Direction and Speed data during Air Quality Monitoring

| Date | Time | Average of Wind Speed (m/s) | Average of Wind Direction (degree) |
|----------|-------|-----------------------------|------------------------------------|
| 8/1/2019 | 13:00 | 0.9 | 210 |
| 8/1/2019 | 14:00 | 0.9 | 204 |
| 8/1/2019 | 15:00 | 0.9 | 221 |

Remarks:

Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08

FD 1126

地盆水車灑水記錄表(2019)

| 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|
| 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:30 - 12:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:00 - 12:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:30 - 13:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:00 - 13:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:00 - 14:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:30 - 15:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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Verified by Tommy Law (ES)
Date 16/1/19

UL7286

地盆水車灑水記錄表(2019)

| | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:30 - 12:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:00 - 12:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:30 - 13:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:00 - 13:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:00 - 14:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:30 - 15:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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Verified by Tommy Law (ES)
 Date 16/1/19

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Patuk | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:30 - 12:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:00 - 12:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:30 - 13:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:00 - 13:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:00 - 14:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:30 - 15:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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Verified by Tommy Law (ES)
 Date 16/11/19

地盆人手灑水記錄表(2019)

| 地點: Portwash | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Handwritten signature: *Tommy Law*

Verified by Tommy Law (ES)
 Date 16/1/19

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|
| Central Diner. | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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| 17:00 - 17:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Verified by Tommy Law (ES)

Date

[Signature]

16/1/19

Contract No. HY/2013/12
Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works

Investigation Report on Action or Limit Level Non-compliance

| | | |
|---|--|----------------------------------|
| Date | 11 January 2019 | |
| Environmental Aspect | Air Quality | |
| Parameter | 1-hour TSP | |
| Monitoring Location | ASR1 (Tuen Mun Fireboat Station) | ASR5 (Pillar Point Fire Station) |
| Measurement Period | 13:39-14:39 | 13:27-14:27 |
| Action Level (ug/m³) | 331 | 340 |
| Limit Level (ug/m³) | 500 | 500 |
| Measured Level (ug/m³) | 335 | 398 |
| Exceedance | Action Level | Action Level |
| Possible reason for Action or Limit Level Non-compliance | <ol style="list-style-type: none"> 1. According to site information provided by CRBC-Kaden JV, road and drainage works at Lung Mun Road central median, E&M works and installation of VE panels at Retaining Wall B, drainage works at Portion H and installation of sign gantries at Bridge G were conducted on 11 January 2019. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 8 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2 and water spraying record) • Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7) 3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-easterly to north-easterly wind at 0.9 to 2.2 m/s was blowing between 13:00 to 15:00. 4. For the exceedance at ASR1, all major works areas were located at the downstream during the monitoring. Another, the monitoring station ASR1 was located more than 500m from major works area. 5. For the exceedance at ASR5, although the works area Bridge H was located at the upstream of monitoring station ASR5, all of the areas of Bridge H were hard paved and only hand tools was used for installation of sign gantries. It is unlikely to create heavy construction dust impact. 6. During the weekly joint site inspection with ER, Contractor and ET on 8 & 15 January 2019, no dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring | |

| | |
|---------------------------|---|
| | <p>according to the water spraying record. The ET observed that the contractor had properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 8 to 10 and water spraying record)</p> <p>7. Therefore the exceedance of Air Quality Monitoring at ASR1 & ASR5 was due to other pollutant source rather than the construction site.</p> <p>8. Based on the investigation as above, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p> |
| Action to be taken | <p>The contractor had been reminded to implement dust mitigation measures under the EMIS requirement. Another, ET will conduct audit and inspection regularly for the implemented dust mitigation measures during the construction period.</p> |

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature : 

Date : 15 February 2019

Photo Record

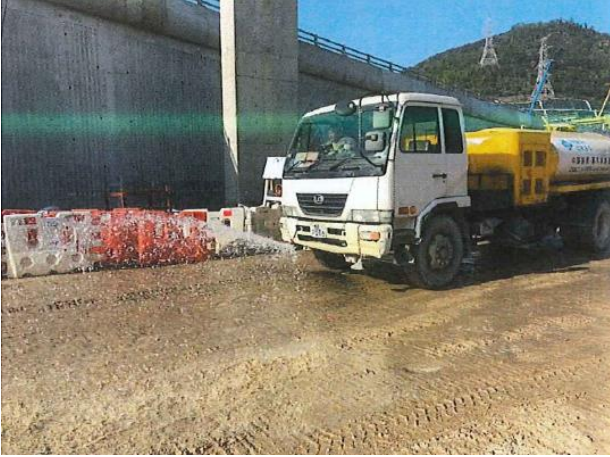


Photo 1 Watering of haul road by water truck to keep road surface wet



Photo 2 Water spraying by worker for un-accessible area.



Photo 3 Hydro seeding for the exposed slope at Retaining Wall B.



Photo 4 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 5 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 6 All vehicles using the haul road had enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 7 All vehicles passing through the haul road at Lung Mun Road has enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 8 Water spraying was observed at site haul road during the joint site inspection on 8 January 2019.



Photo 9 Water spraying was observed at site haul road during the joint site inspection on 8 January 2019.



Photo 10 Water spraying was observed at site haul road during the joint site inspection on 15 January 2019.



Photo 11 Installation of sign gantries at Bridge G



Photo 12 Installation of VE panels at Retaining Wall B



Photo 13 E&M works at the storage room at Retaining Wall B



Photo 14 All of the site area near ASR5 were hard paved

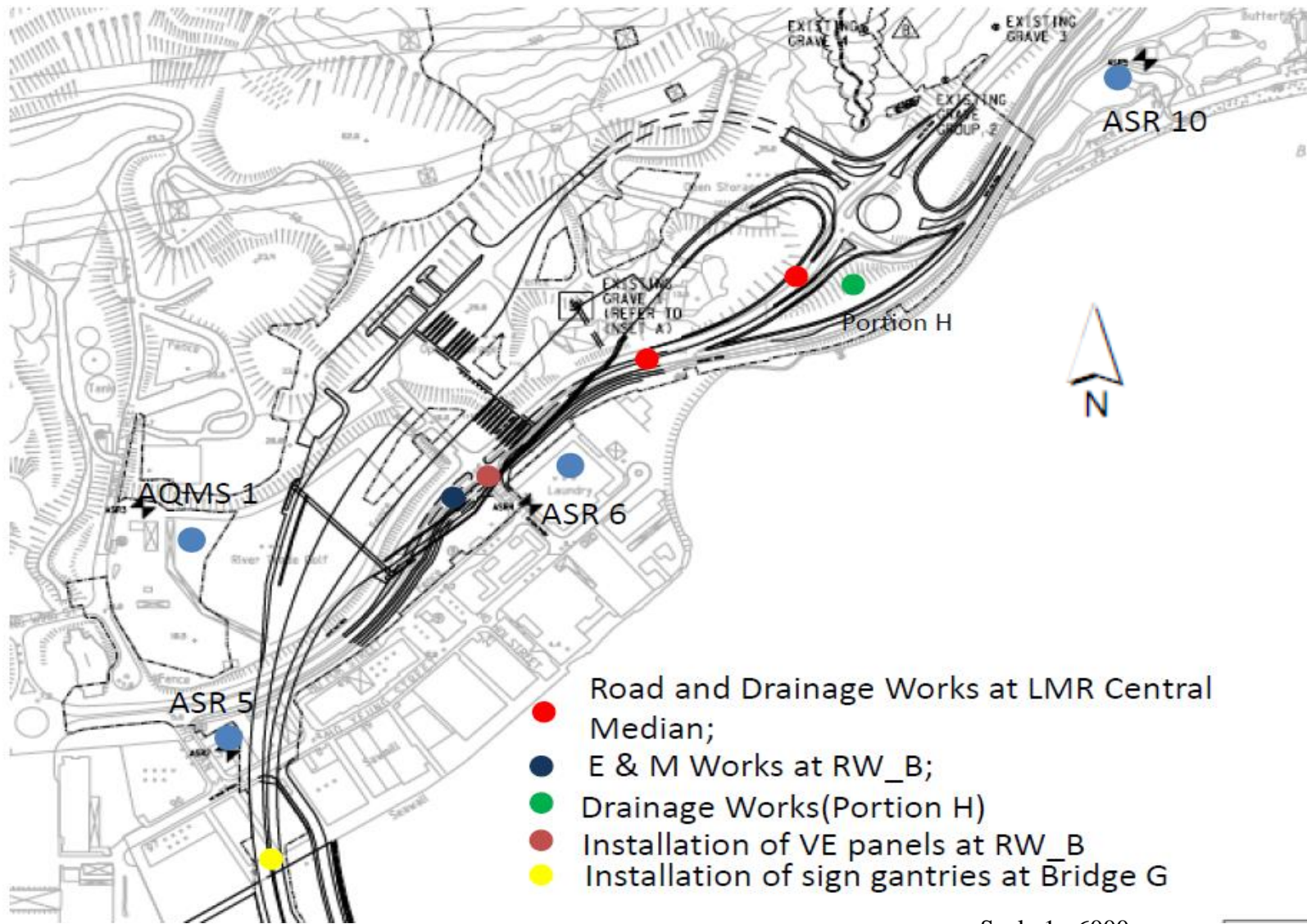


Figure 1. Location Plan

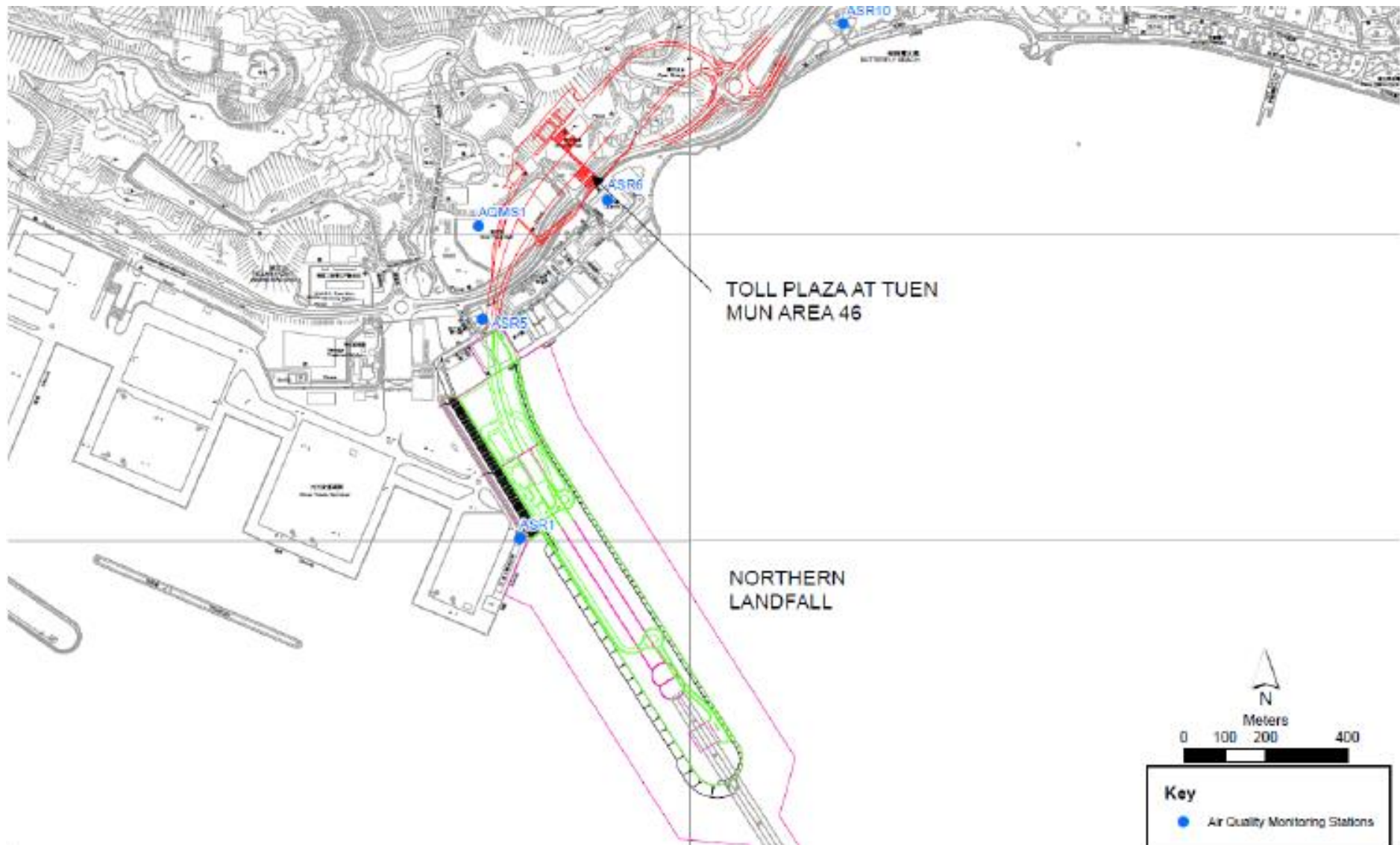


Figure 2. Air Monitoring Location

Table 1. 1-Hr TSP Monitoring Result of 11 January 2019

| Air quality monitoring results on 11/1/2019 | | | | | | | | |
|---|------------|-----------|---------|---------|------------|-------------|---------|-------|
| Project | Works | Date | Station | Weather | Start time | Parameters | Results | Unit |
| TMCLKL | HY/2012/08 | 11/1/2019 | AQMS1 | Cloudy | 13:50 | 1-hour TSP | 214 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | AQMS1 | Cloudy | 14:52 | 1-hour TSP | 90 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | AQMS1 | Cloudy | 15:54 | 1-hour TSP | 108 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR1 | Cloudy | 13:39 | 1-hour TSP | 335 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR1 | Cloudy | 14:41 | 1-hour TSP | 129 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR1 | Cloudy | 15:43 | 1-hour TSP | 120 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR10 | Cloudy | 13:05 | 1-hour TSP | 116 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR10 | Cloudy | 14:07 | 1-hour TSP | 155 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR10 | Cloudy | 15:09 | 1-hour TSP | 95 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR5 | Cloudy | 13:27 | 1-hour TSP | 398 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR5 | Cloudy | 14:29 | 1-hour TSP | 327 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR5 | Cloudy | 15:31 | 1-hour TSP | 243 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR6 | Cloudy | 13:16 | 1-hour TSP | 214 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR6 | Cloudy | 14:18 | 1-hour TSP | 125 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR6 | Cloudy | 15:20 | 1-hour TSP | 153 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | AQMS1 | Cloudy | 16:56 | 24-hour TSP | 127 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR1 | Cloudy | 16:45 | 24-hour TSP | 120 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR10 | Cloudy | 16:11 | 24-hour TSP | 137 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR5 | Cloudy | 16:33 | 24-hour TSP | 196 | ug/m3 |
| TMCLKL | HY/2012/08 | 11/1/2019 | ASR6 | Cloudy | 16:22 | 24-hour TSP | 191 | ug/m3 |

Table 2. Wind Direction and Speed data during Air Quality Monitoring

| Date | Time | Average of Wind Speed (m/s) | Average of Wind Direction (degree) |
|-----------|-------|-----------------------------|------------------------------------|
| 11/1/2019 | 13:00 | 0.9 | 112 |
| 11/1/2019 | 14:00 | 1.3 | 155 |
| 11/1/2019 | 15:00 | 2.2 | 69 |

Remarks:

Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08

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地盆水車灑水記錄表(2019)

| 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|
| 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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Date 16/1/19

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地盆水車灑水記錄表(2019)

| | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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Verified by Tommy Law (ES)
 Date 16/1/19

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Patuk | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
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Verified by Tommy Law (ES)
Date 16/1/19

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Portway | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
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| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |



Verified by Tommy Law (ES)

Date

B

16/1/19

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|
| Central Diner. | 01月06日 | 01月07日 | 01月08日 | 01月09日 | 01月10日 | 01月11日 | 01月12日 |
| 8:00 - 8:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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| 17:30 - 18:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Verified by Tommy Law (ES)

Date

 16/1/19

Contract No. HY/2013/12
Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works

Investigation Report on Action or Limit Level Non-compliance

| | | |
|---|--|----------------------------------|
| Date | 17 January 2019 | |
| Environmental Aspect | Air Quality | |
| Parameter | 1-hour TSP | |
| Monitoring Location | ASR1 (Tuen Mun Fireboat Station) | ASR5 (Pillar Point Fire Station) |
| Measurement Period | 16:04-17:04 | 15:52-16:52 |
| Action Level (ug/m³) | 331 | 340 |
| Limit Level (ug/m³) | 500 | 500 |
| Measured Level (ug/m³) | 519 | 354 |
| Exceedance | Limit Level | Action Level |
| Possible reason for Action or Limit Level Non-compliance | <ol style="list-style-type: none"> 1. According to site information provided by CRBC-Kaden JV, housekeeping works at Lung Mun Road central median, E&M works at Retaining Wall B, construction of Retaining wall G & parapet at Portion H and installation of sign gantries at TD2 were conducted on 17 January 2019. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 8 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2 and water spraying record) • Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7) 3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, north-westerly wind at 0.9 to 3.1 m/s was blowing between 15:00 to 17:00. 4. During the time of exceedances were recorded at ASR1 & ASR5, all major works areas were located at the downstream of the monitoring stations. Another, the monitoring station ASR1 was located more than 500m form major works area. Another, all construction site areas near ASR5 was hard paved. It is unlikely to create heavy construction dust impact. Furthermore, review the monitoring result at other monitoring stations which was located more closely to the major works area TD1, Portion H and Lung Mun Road no exceedance was recorded at similar time. 5. During the weekly joint site inspection with ER, Contractor and ET on 15 & 22 January 2019, no dust emitted from the works area was observed during the inspection. Also ER | |

| | |
|---------------------------|--|
| | <p>agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring according to the water spraying record. The ET observed that the contractor had properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 8 to 10 and water spraying record)</p> <p>6. Therefore the exceedance of Air Quality Monitoring at ASR1 & ASR5 was due to other pollutant source rather than the construction site.</p> <p>7. Based on the investigation as above, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p> |
| Action to be taken | <p>The contractor had been reminded to implement dust mitigation measures under the EMIS requirement. Another, ET will conduct audit and inspection regularly for the implemented dust mitigation measures during the construction period.</p> |

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature : 

Date : 15 February 2019

Photo Record



Photo 1 Watering of haul road by water truck to keep road surface wet



Photo 2 Water spraying by worker for un-accessible area.



Photo 3 Hydro seeding for the exposed slope at Retaining Wall B.



Photo 4 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 5 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 6 All vehicles using the haul road had enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 7 All vehicles passing through the haul road at Lung Mun Road has enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 8 Water spraying was observed at site haul road during the joint site inspection on 15 January 2019.



Photo 9 Water spraying was observed at site haul road during the joint site inspection on 22 January 2019.



Photo 10 During the joint site inspection on 22 January 2019 most of the site area was hard paved.



Photo 11 Construction of Retaining wall G & parapet at Portion H



Photo 12 Construction of Retaining wall G & parapet at Portion H

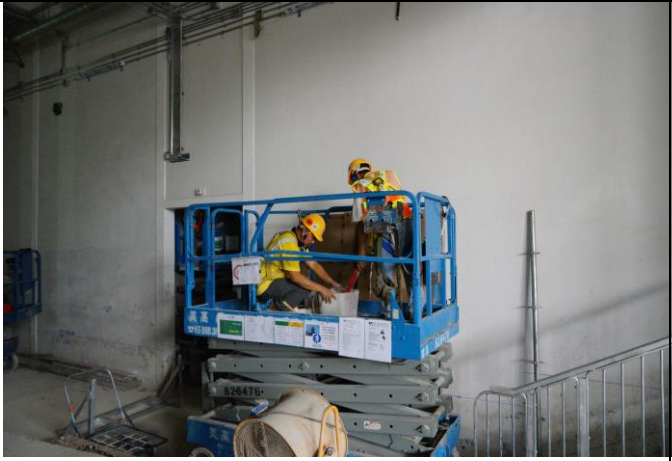


Photo 13 E&M works at the storage room at Retaining Wall B



Photo 14 All of the site area near ASR5 were hard paved

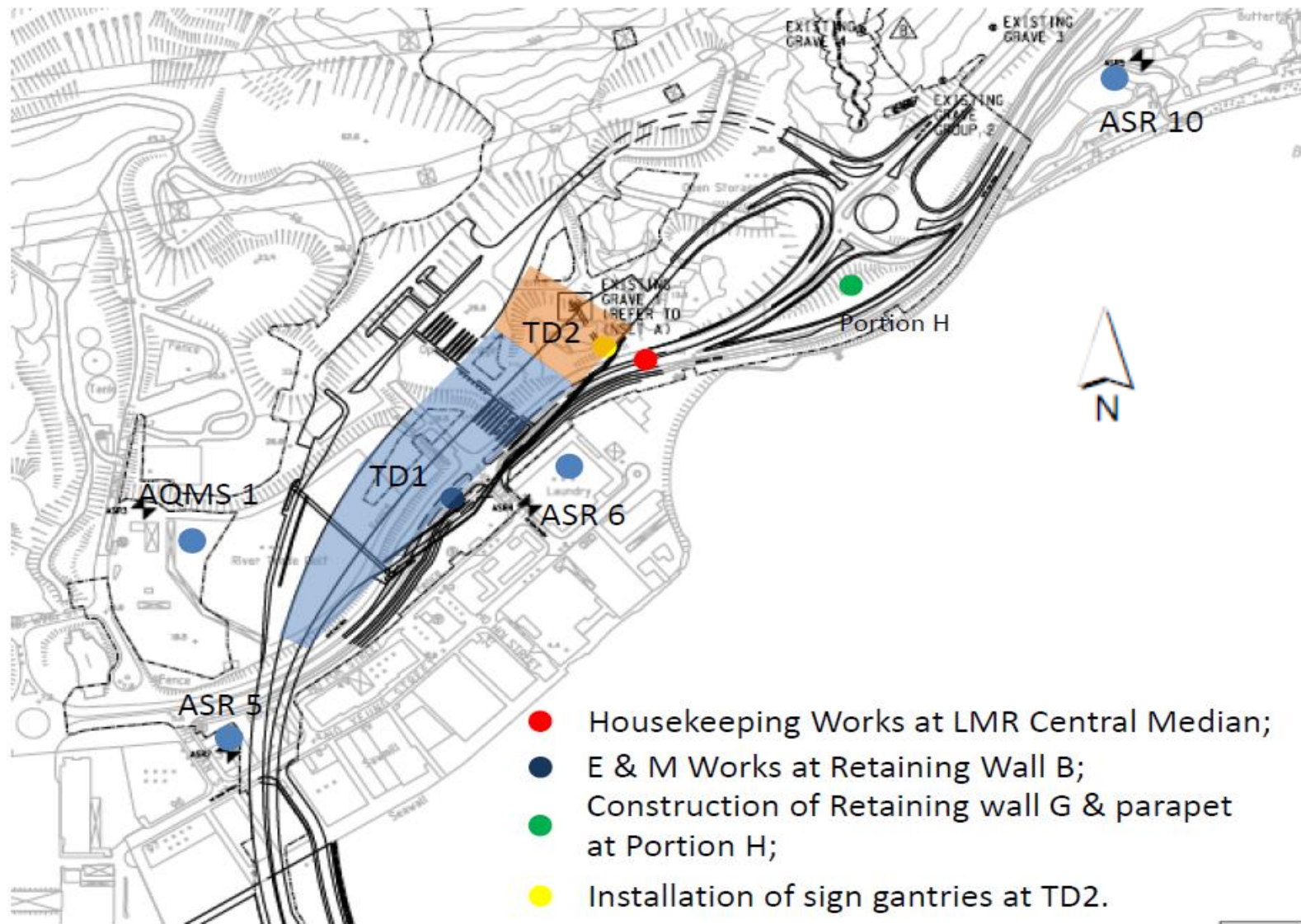


Figure 1. Location Plan

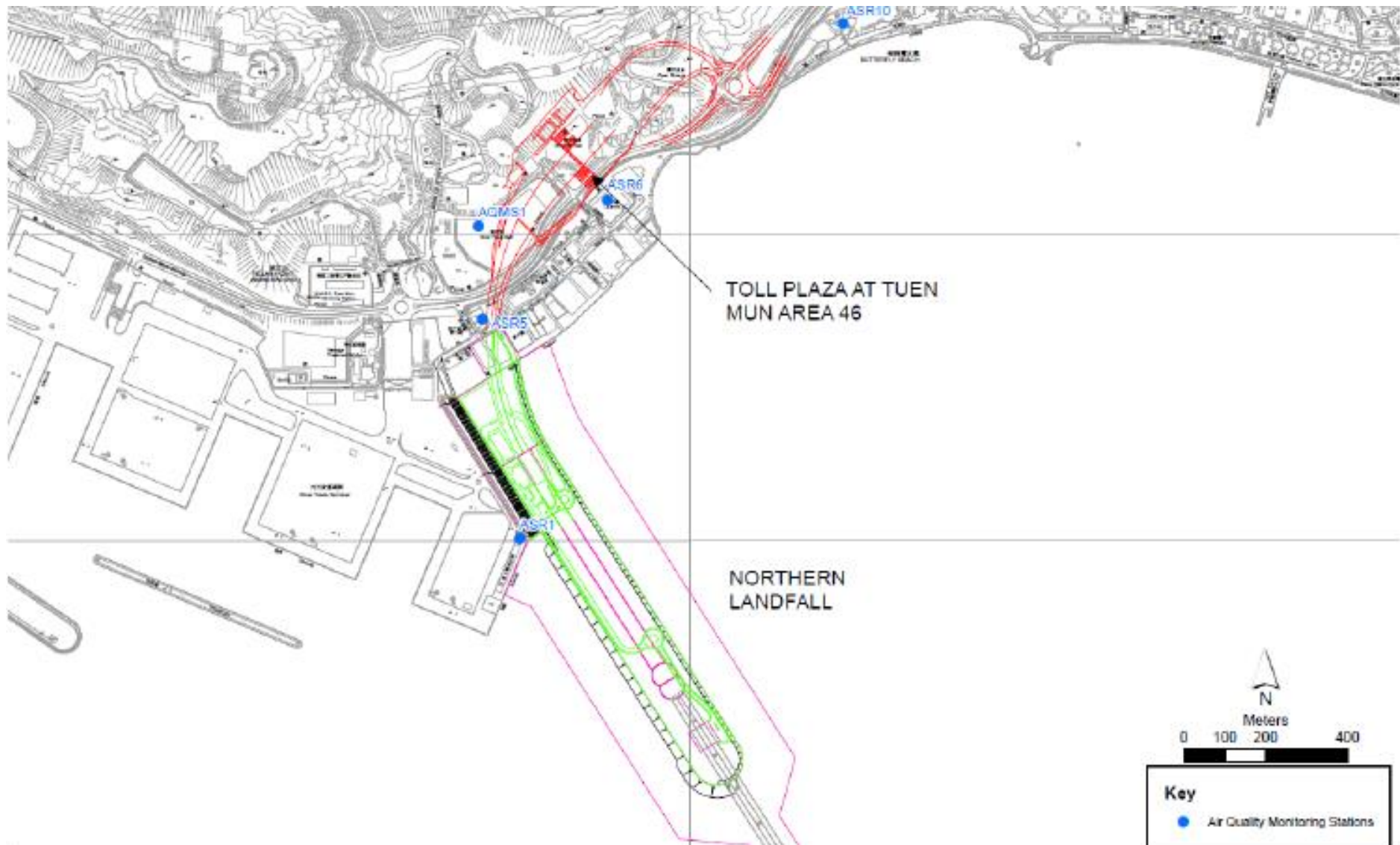


Figure 2. Air Monitoring Location

Table 1. 1-Hr TSP Monitoring Result of 17 January 2019

| Air quality monitoring results on 17/1/2019 | | | | | | | | |
|---|------------|-----------|---------|---------|------------|-------------|---------|-------|
| Project | Works | Date | Station | Weather | Start time | Parameters | Results | Unit |
| TMCLKL | HY/2012/08 | 17/1/2019 | AQMS1 | Cloudy | 14:13 | 1-hour TSP | 101 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | AQMS1 | Cloudy | 15:14 | 1-hour TSP | 194 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | AQMS1 | Cloudy | 16:16 | 1-hour TSP | 165 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR1 | Cloudy | 14:00 | 1-hour TSP | 154 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR1 | Cloudy | 15:02 | 1-hour TSP | 200 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR1 | Cloudy | 16:04 | 1-hour TSP | 519 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR10 | Cloudy | 13:26 | 1-hour TSP | 223 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR10 | Cloudy | 14:28 | 1-hour TSP | 156 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR10 | Cloudy | 15:30 | 1-hour TSP | 113 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR5 | Cloudy | 13:48 | 1-hour TSP | 140 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR5 | Cloudy | 14:50 | 1-hour TSP | 269 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR5 | Cloudy | 15:52 | 1-hour TSP | 354 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR6 | Cloudy | 13:37 | 1-hour TSP | 97 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR6 | Cloudy | 14:39 | 1-hour TSP | 304 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR6 | Cloudy | 15:41 | 1-hour TSP | 255 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | AQMS1 | Cloudy | 17:18 | 24-hour TSP | 82 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR1 | Cloudy | 17:06 | 24-hour TSP | 137 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR10 | Cloudy | 16:32 | 24-hour TSP | 73 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR5 | Cloudy | 16:54 | 24-hour TSP | 126 | ug/m3 |
| TMCLKL | HY/2012/08 | 17/1/2019 | ASR6 | Cloudy | 16:43 | 24-hour TSP | 98 | ug/m3 |

Table 2. Wind Direction and Speed data during Air Quality Monitoring

| Date | Time | Average of Wind Speed (m/s) | Average of Wind Direction (degree) |
|-----------|-------|-----------------------------|------------------------------------|
| 17/1/2019 | 15:00 | 3.1 | 276 |
| 17/1/2019 | 16:00 | 2.2 | 284 |
| 17/1/2019 | 17:00 | 0.9 | 351 |

Remarks:

Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08

6C83A

地盆水車灑水記錄表(2019)

| | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| | 01月13日 | 01月14日 | 01月15日 | 01月16日 | 01月17日 | 01月18日 | 01月19日 |
| 8:00 - 8:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:30 - 12:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:00 - 12:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:30 - 13:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:00 - 13:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:00 - 14:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:30 - 15:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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2/1/19

Verified by Tommy Law (ES)

Date

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Post only | 01月13日 | 01月14日 | 01月15日 | 01月16日 | 01月17日 | 01月18日 | 01月19日 |
| 8:00 - 8:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:30 - 12:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:00 - 12:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:30 - 13:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:00 - 13:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:00 - 14:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:30 - 15:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Verified by Tommy Lau (ES)

Date 2/1/19

Contract No. HY/2013/12
Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works

Investigation Report on Action or Limit Level Non-compliance

| | |
|---|---|
| Date | 26 January 2019 |
| Environmental Aspect | Air Quality |
| Parameter | 1-hour TSP |
| Monitoring Location | ASR5 (Pillar Point Fire Station) |
| Measurement Period | 8:30-9:30 |
| Action Level (ug/m³) | 340 |
| Limit Level (ug/m³) | 500 |
| Measured Level (ug/m³) | 399 |
| Exceedance | Action Level |
| Possible reason for Action or Limit Level Non-compliance | <ol style="list-style-type: none"> 1. According to site information provided by CRBC-Kaden JV, housekeeping works at Lung Mun Road central median, E&M works at Retaining Wall B and construction of Retaining wall G & parapet at Portion H were conducted on 26 January 2019. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 8 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2 and water spraying record) • Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7) 3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-easterly wind at 1.3 to 2.2 m/s was blowing between 08:00 to 10:00. 4. During the time of exceedances were recorded at ASR5, all major works areas were located at the downstream of the monitoring stations. Another, all construction site areas near ASR5 was hard paved. It is unlikely to create heavy construction dust impact. Furthermore, review the monitoring result at other monitoring stations which was located more closely to the major works area Portion H and Lung Mun Road no exceedance was recorded at similar time. 5. During the weekly joint site inspection with ER, Contractor and ET on 22 & 29 January 2019, no dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring according to the water spraying record. The ET observed that the contractor had properly implemented the dust mitigation |

| | |
|---------------------------|---|
| | <p>measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 8 to 10 and water spraying record)</p> <p>6. Therefore the exceedance of Air Quality Monitoring at ASR5 was due to other pollutant source rather than the construction site.</p> <p>7. Based on the investigation as above, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p> |
| Action to be taken | <p>The contractor had been reminded to implement dust mitigation measures under the EMIS requirement. Another, ET will conduct audit and inspection regularly for the implemented dust mitigation measures during the construction period.</p> |

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature :  _____

Date : 15 February 2019

Photo Record



Photo 1 Watering of haul road by water truck to keep road surface wet



Photo 2 Water spraying by worker for un-accessible area.



Photo 3 Hydro seeding for the exposed slope at Retaining Wall B.



Photo 4 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 5 Covered part of the exposed slopes and stockpile by tarpaulin sheet.



Photo 6 All vehicles using the haul road had enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 7 All vehicles passing through the haul road at Lung Mun Road has enhanced to control the speed below 8km/hr to reduce dust emission.



Photo 8 Water spraying was observed at site haul road during the joint site inspection on 22 January 2019.



Photo 9 During the joint site inspection on 22 January 2019 most of the site area was hard paved.



Photo 10 During the joint site inspection on 29 January 2019 most of the site area was hard paved.



Photo 11 Housekeeping works at Lung Mun Road central median



Photo 12 Construction of Retaining wall G & parapet at Portion H



Photo 13 E&M works at the storage room at Retaining Wall B



Photo 14 All of the site area near ASR5 were hard paved

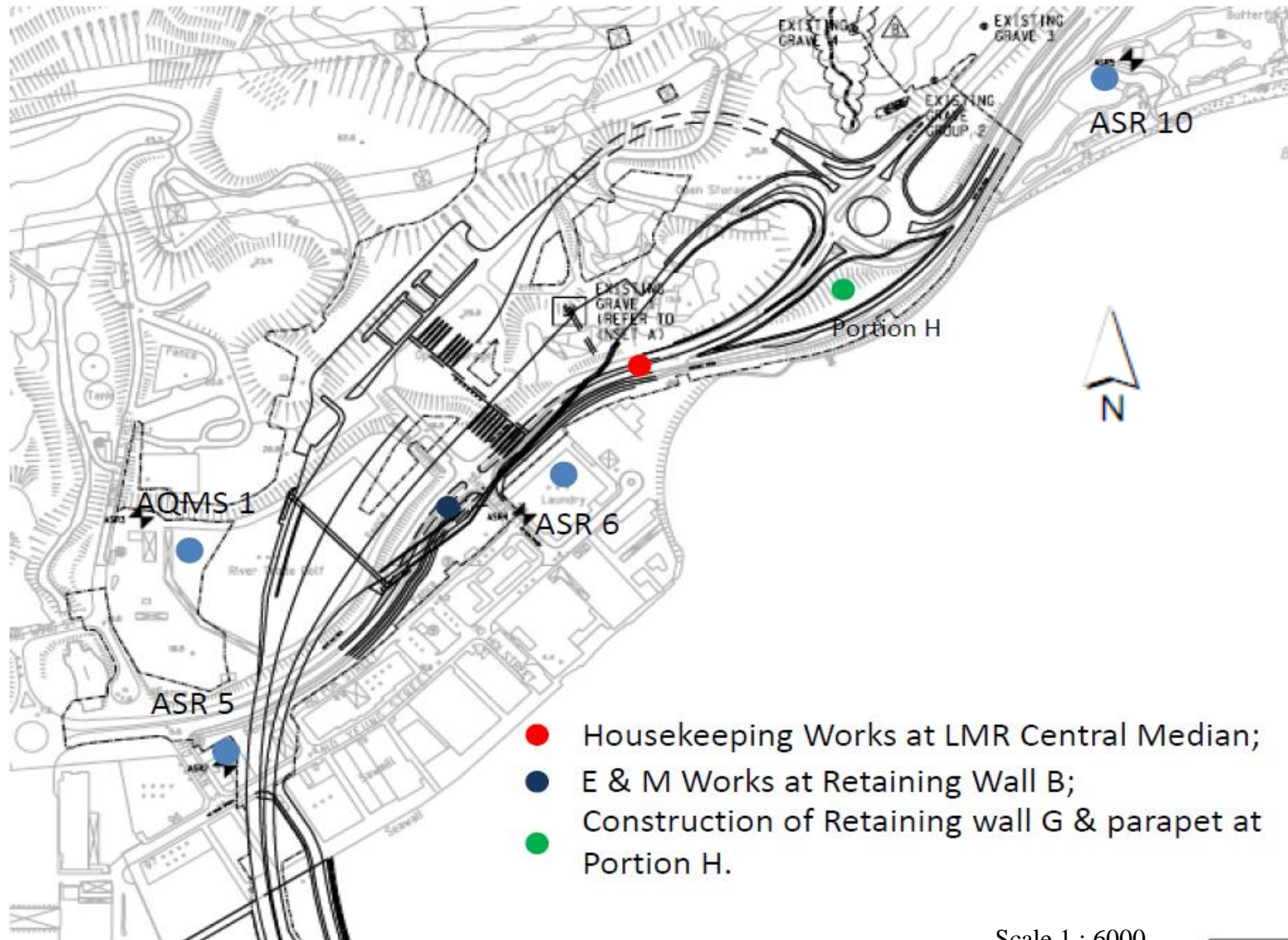


Figure 1. Location Plan

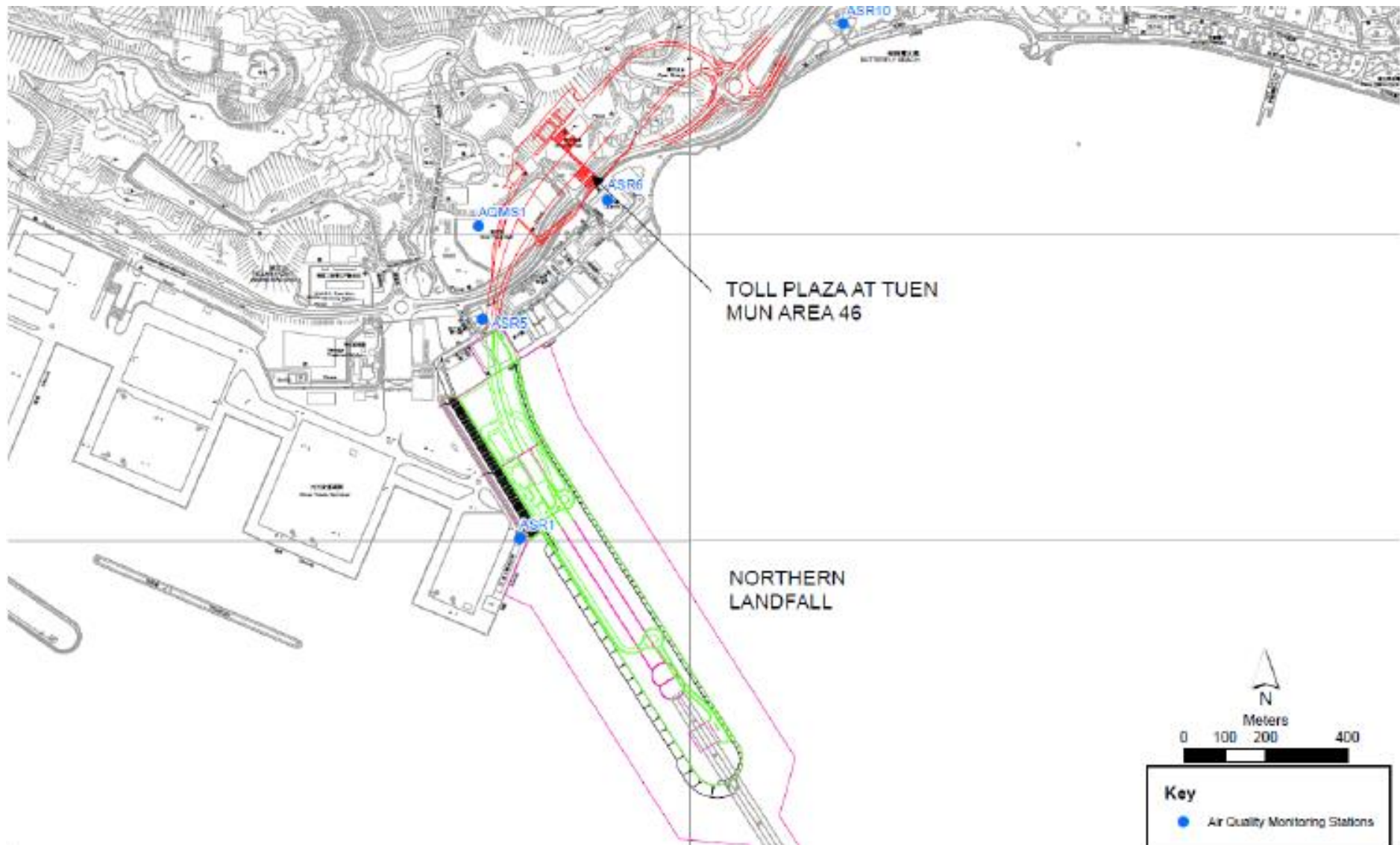


Figure 2. Air Monitoring Location

Table 1. 1-Hr TSP Monitoring Result of 26 January 2019

| Project | Works | Date | Station | Weather | Start time | Parameters | Results | units |
|---------|------------|------------|---------|---------|------------|------------|---------|-------|
| TMCLKL | HY/2012/08 | 2019-01-26 | AQMS1 | Sunny | 08:53 | 1-hour TSP | 126 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | AQMS1 | Sunny | 09:55 | 1-hour TSP | 69 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | AQMS1 | Sunny | 10:57 | 1-hour TSP | 75 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR1 | Sunny | 08:42 | 1-hour TSP | 245 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR1 | Sunny | 09:44 | 1-hour TSP | 207 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR1 | Sunny | 10:46 | 1-hour TSP | 112 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR10 | Sunny | 08:08 | 1-hour TSP | 106 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR10 | Sunny | 09:10 | 1-hour TSP | 74 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR10 | Sunny | 10:12 | 1-hour TSP | 71 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR5 | Sunny | 08:30 | 1-hour TSP | 399 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR5 | Sunny | 09:32 | 1-hour TSP | 208 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR5 | Sunny | 10:34 | 1-hour TSP | 208 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR6 | Sunny | 08:19 | 1-hour TSP | 304 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR6 | Sunny | 09:21 | 1-hour TSP | 111 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-26 | ASR6 | Sunny | 10:23 | 1-hour TSP | 141 | ug/m3 |
| TMCLKL | HY/2012/08 | 2019-01-29 | AQMS1 | Sunny | 14:22 | 1-hour TSP | 146 | ug/m3 |

Table 2. Wind Direction and Speed data during Air Quality Monitoring

| Date | Time | Average of Wind Speed (m/s) | Average of Wind Direction (degree) |
|-----------|-------|-----------------------------|------------------------------------|
| 26/1/2019 | 08:00 | 1.3 | 143 |
| 26/1/2019 | 09:00 | 2.2 | 158 |
| 26/1/2019 | 10:00 | 2.2 | 154 |


Remarks:



Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08

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地盆水車灑水記錄表(2019)

| 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|
| 01月20日 | 01月21日 | 01月22日 | 01月23日 | 01月24日 | 01月25日 | 01月26日 |
| 8:00 - 8:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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| 12:00 - 12:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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| 13:00 - 13:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
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| 14:30 - 15:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |



 28/1/19

Verified by Tommy Law (ES)
 Date

地盆人手灑水記錄表(2019)

| 地點: | 星期日 | 星期一 | 星期二 | 星期三 | 星期四 | 星期五 | 星期六 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Portlow H | 01月20日 | 01月21日 | 01月22日 | 01月23日 | 01月24日 | 01月25日 | 01月26日 |
| 8:00 - 8:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8:30 - 9:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:00 - 9:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9:30 - 10:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:00 - 10:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10:30 - 11:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:00 - 11:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11:30 - 12:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:00 - 12:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12:30 - 13:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:00 - 13:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13:30 - 14:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:00 - 14:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14:30 - 15:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:00 - 15:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15:30 - 16:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:00 - 16:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16:30 - 17:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:00 - 17:30 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17:30 - 18:00 | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |









Verified by Tommy Law (ES)

Date

28/1/19

Appendix K

Checklist for Landscape and Visual Monitoring

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋
CRBC




Monitoring Date: 04th Jan 2019


| Item | Environmental Protection Measures | Location/ Timing | Implementation Agent | Status | | | | Remarks |
|------|--|------------------------------------|----------------------------------|--------|----|----|----|---|
| | | | | A | UA | IR | NA | |
| 1 | Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 2 | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme | All areas / During construction | Design Consultant/ Contractor | √ | | | | Tree Transplanting works conducted on 22-May-17. |
| 3 | Hillside and roadside screen planting to proposed roads, associated structures and slope works | All areas / During construction | Design Consultant/ Contractor | | | | √ | Construction of roads planting not commenced yet |
| 4 | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) | All areas / During construction | Design Consultant/ Contractor | | | | √ | No stockpile in the reporting period |
| 5 | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works | All areas / During construction | Design Consultant/ Contractor | | | | √ | For some area, erection of hoarding was not feasible due to the limitation of |

| | | | | | | | | |
|----|---|------------------------------------|-------------------------------------|---|--|--|---|--|
| | | | | | | | | traffic sight line; water barrier with panel was used to screen works. |
| 6 | Control night-time lighting and glare by hooding all lights | All areas / During construction | Design Consultant/ Contractor | √ | | | | Only temporary traffic management lighting was applied. |
| 7 | Ensure no run-off into water body adjacent to the Project Area | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 8 | Avoidance of excessive height and bulk of buildings and structures | All areas / During construction | Design Consultant/ Contractor | | | | √ | No high-rise building would be constructed. |
| 9 | Recycle/Reuse all felled trees and vegetation, e.g. mulching | All areas / During construction | Design Consultant/ Contractor | | | | √ | |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 | All areas / During construction | Design Consultant/ Contractor | | | | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by:  **Chung Koon Wah Albert** (RLA) No. R-150 (Date) 4/2/2019

Checked by:  **T. W. Tam** (ET) 11/2/2019 (Date)

Checked by:  **F. C. Tsang** (IEC) 12/2/2019 (Date)

(F. C. Tsang)



Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works conducted on 22-May-17.



Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.(Outfall 1)

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋
CRBC



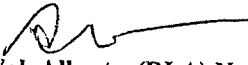
Monitoring Date: 11th Jan 2019


| Item | Environmental Protection Measures | Location/ Timing | Implementation Agent | Status | | | | Remarks |
|------|--|------------------------------------|----------------------------------|--------|----|----|----|---|
| | | | | A | UA | IR | NA | |
| 1 | Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 2 | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme | All areas / During construction | Design Consultant/ Contractor | √ | | | | Tree Transplanting works conducted on 22-May-17. |
| 3 | Hillside and roadside screen planting to proposed roads, associated structures and slope works | All areas / During construction | Design Consultant/ Contractor | | | | √ | Construction of roads planting not commenced yet |
| 4 | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) | All areas / During construction | Design Consultant/ Contractor | | | | √ | No stockpile in the reporting period |
| 5 | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works | All areas / During construction | Design Consultant/ Contractor | | | | √ | For some area, erection of hoarding was not feasible due to the limitation of |

| | | | | | | | | |
|----|---|------------------------------------|----------------------------------|---|--|--|---|--|
| | | | | | | | | traffic sight line; water barrier with panel was used to screen works. |
| 6 | Control night-time lighting and glare by hooding all lights | All areas / During construction | Design Consultant/ Contractor | √ | | | | Only temporary traffic management lighting was applied. |
| 7 | Ensure no run-off into water body adjacent to the Project Area | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 8 | Avoidance of excessive height and bulk of buildings and structures | All areas / During construction | Design Consultant/ Contractor | | | | √ | No high-rise building would be constructed. |
| 9 | Recycle/Reuse all felled trees and vegetation, e.g. mulching | All areas / During construction | Design Consultant/ Contractor | | | | √ | |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 | All areas / During construction | Design Consultant/ Contractor | | | | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by:  Chung Koon Wah Albert (RLA) No. R-150 (Date) 4/2/2019

Checked by:  T. W. Tam (ET) 11/2/2019 (Date)

Checked by:  F. C. Tsang (IEC) 12/2/2019 (Date)

(F. C. Tsang)



Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works conducted on 22-May-17.



Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.(Outfall 1)

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋
CRBC




Monitoring Date: 18th Jan 2019


| Item | Environmental Protection Measures | Location/ Timing | Implementation Agent | Status | | | | Remarks |
|------|--|------------------------------------|----------------------------------|--------|----|----|----|---|
| | | | | A | UA | IR | NA | |
| 1 | Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 2 | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme | All areas / During construction | Design Consultant/ Contractor | √ | | | | Tree Transplanting works conducted on 22-May-17. |
| 3 | Hillside and roadside screen planting to proposed roads, associated structures and slope works | All areas / During construction | Design Consultant/ Contractor | | | | √ | Construction of roads planting not commenced yet |
| 4 | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) | All areas / During construction | Design Consultant/ Contractor | | | | √ | No stockpile in the reporting period |
| 5 | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works | All areas / During construction | Design Consultant/ Contractor | | | | √ | For some area, erection of hoarding was not feasible due to the limitation of |


| | | | | | | | | |
|----|---|------------------------------------|-------------------------------------|---|--|--|---|--|
| | | | | | | | | traffic sight line; water barrier with panel was used to screen works. |
| 6 | Control night-time lighting and glare by hooding all lights | All areas / During construction | Design Consultant/ Contractor | √ | | | | Only temporary traffic management lighting was applied. |
| 7 | Ensure no run-off into water body adjacent to the Project Area | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 8 | Avoidance of excessive height and bulk of buildings and structures | All areas / During construction | Design Consultant/ Contractor | | | | √ | No high-rise building would be constructed. |
| 9 | Recycle/Reuse all felled trees and vegetation, e.g. mulching | All areas / During construction | Design Consultant/ Contractor | | | | √ | |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 | All areas / During construction | Design Consultant/ Contractor | | | | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by:  **Chung Koon Wah Albert (RLA) No. R-150 (Date) 4/2/2019**

Checked by:  **T. W. Tsang (ET) 11/2/2019 (Date)**

Checked by:  **F. C. Tsang (IEC) 12/2/2019 (Date)**
(F. C. Tsang)



Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works conducted on 22-May-17.



Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.(Outfall 1)

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋
CRBC



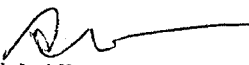
Monitoring Date: 25th Jan 2019


| Item | Environmental Protection Measures | Location/ Timing | Implementation Agent | Status | | | | Remarks |
|------|--|------------------------------------|----------------------------------|--------|----|----|----|---|
| | | | | A | UA | IR | NA | |
| 1 | Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas / During construction | Design Consultant/ Contractor | √ | | | | |
| 2 | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme | All areas / During construction | Design Consultant/ Contractor | √ | | | | Tree Transplanting works conducted on 22-May-17. |
| 3 | Hillside and roadside screen planting to proposed roads, associated structures and slope works | All areas / During construction | Design Consultant/ Contractor | | | | √ | Construction of roads planting not commenced yet |
| 4 | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) | All areas / During construction | Design Consultant/ Contractor | | | | √ | No stockpile in the reporting period |
| 5 | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works | All areas / During construction | Design Consultant/ Contractor | | | | √ | For some area, erection of hoarding was not feasible due to the limitation of |

| | | | | | | | | | |
|----|---|------------------------------------|----------------------------------|---|--|--|--|---|--|
| | | | | | | | | | traffic sight line; water barrier with panel was used to screen works. |
| 6 | Control night-time lighting and glare by hooding all lights | All areas / During construction | Design Consultant/ Contractor | √ | | | | | Only temporary traffic management lighting was applied. |
| 7 | Ensure no run-off into water body adjacent to the Project Area | All areas / During construction | Design Consultant/ Contractor | √ | | | | | |
| 8 | Avoidance of excessive height and bulk of buildings and structures | All areas / During construction | Design Consultant/ Contractor | | | | | √ | No high-rise building would be constructed. |
| 9 | Recycle/Reuse all felled trees and vegetation, e.g. mulching | All areas / During construction | Design Consultant/ Contractor | | | | | √ | |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 | All areas / During construction | Design Consultant/ Contractor | | | | | √ | Compensatory planting will be carry out in later stage of the project. |

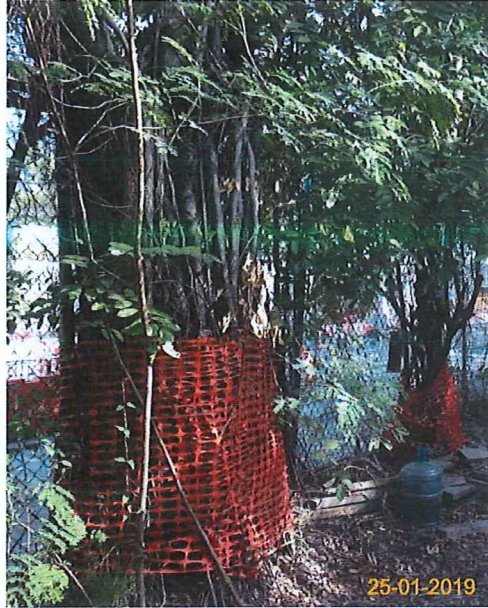
Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by:  Chung Koon Wah Albert (RLA) No. R-150 (Date) 4/2/2019

Checked by:  T. L. Tam (ET) 11/2/2019 (Date)

Checked by:  F. C. Tsang (IEC) 12/2/2018 (Date)
(F. C. Tsang)



Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works was conducted on 22-May-17.



Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.(Outfall 1)

Appendix L

Monthly Summary Waste Flow Table

Appendix A –Monthly Waste Flow Table

Monthly Summary Waste Flow Table for 2019 (year)

| Month | Annual Quantities of Inert C&D Materials Generated Monthly | | | | | | Annual Quantities of C&D Wastes Generated Monthly | | | | |
|-----------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|--|--------------------------------|----------------|--------------------------|
| | Total Quantity Generated | Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals (see note 4) | Paper / cardboard packaging (see note 4) | Plastics & Rubber (see note 2) | Chemical Waste | Others (general refuse) |
| | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000m ³) |
| Jan | 1.467 | 0.000 | 0.000 | 0.000 | 1.203 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.264 |
| Feb | | | | | | | | | | | |
| Mar | | | | | | | | | | | |
| Apr | | | | | | | | | | | |
| May | | | | | | | | | | | |
| June | | | | | | | | | | | |
| Sub-total | | | | | | | | | | | |
| July | | | | | | | | | | | |
| Aug | | | | | | | | | | | |
| Sept | | | | | | | | | | | |
| Oct | | | | | | | | | | | |
| Nov | | | | | | | | | | | |
| Dec | | | | | | | | | | | |
| Total | 1.467 | 0.000 | 0.000 | 0.000 | 1.203 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.264 |

Notes:

- 1 The waste flow table shall also include C&D materials that are specified in the contract to be imported for use at the Site.
- 2 Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
- 3 Broken concrete for recycling into aggregates.

Appendix M

Environmental Mitigation and Enhancement Measures Implementation Schedule (EMIS)

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| Air Quality | | | | | | | | | |
|----------------------|----------------------------------|---|--|-----------------------------|--|------------------------------|----------|----------|-----------------|
| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status * |
| | | | | | | D | C | O | |
| 4.8.1 | 3.8 | An effective watering programme of twice daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum; | All areas / throughout construction period | Contractor | TMEIA Avoid smoke impacts and disturbance | | Y | | ✓ |
| 4.8.1 | 3.8 | Watering of the construction sites in Lantau for 8 times/day and in Tuen Mun for 12 times/day to reduce dust emissions by 87.5% and 91.7% respectively and shall be undertaken. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | The Contractor shall not burn debris or other materials on the works areas. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet. | All unpaved haul roads / throughout construction period in hot, dry or windy weather | Contractor | TMEIA Avoid smoke impacts and disturbance | | Y | | ✓ |
| 4.8.1 | 3.8 | Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIORNMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|-------|-----------|---|---|------------|--------------------------------|--|---|--|---|
| 4.8.1 | 3.8 | During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site. | construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | Areas of exposed soil shall be minimized to areas in which works have been completed shall be restored as soon as is practicable. | All exposed surfaces / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ✓ |
| 4.8.1 | 3.8 | All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | ◇ |
| 4.11 | Section 3 | EM&A in the form of 1 hour and 24 hour dust monitoring and site audit | All representative existing ASRs / throughout construction period | Contractor | EM&A Manual | | Y | | ✓ Monitoring for 1 hour and 24 hour dust monitoring were undertaken by the ET of Contract HY/2012/08 |

Cultural Heritage

| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
|---------------|-----------------------|--|--|----------------------|----------------------------------|-----------------------|---|---|--------|
| | | | | | | D | C | O | |
| 11.8 | Section 9 | EM&A in the form of audit of the mitigation measures | All areas / throughout construction period | Highways Department | EIAO-TM | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| Ecology | | | | | | | | | |
|---------------------------------------|-----------------------|---|---|-------------------------------|---|-----------------------|---|---|--------|
| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
| | | | | | | D | C | O | |
| 7.13# | 6.3, 6.5# | Fencing or other physical barriers for protection of Pitcher Plant around Zones 8, 9 and 10 and the temporary nursery site | Tuen Mun Area 46 shrubland/ Detailed/ Prior to construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 7.13 | 6.5 | Audit Pitcher Plant protection measures | Tuen Mun Area 46 | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule. | All areas / As soon as accessible | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Spoil heaps shall be covered at all times. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Avoid damage and disturbance to the remaining and surrounding natural habitat | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Placement of equipment in designated areas within the existing disturbed land | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Disturbed areas to be reinstated immediately after completion of the works. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Construction activities should be restricted to the proposed works boundary | All areas / Throughout construction | Contractor | TMEIA | | Y | | ✓ |
| Landfill Gas Hazard Assessment | | | | | | | | | |
| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
| | | | | | | D | C | O | |
| 14.12.2 | 14.2 | <u>Appointment of Safety Officer</u> Appoint a properly trained safety officer and provide with appropriate equipment to measure and monitor LFG hazard. The monitoring frequency and areas to | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|---------|---|---|---|------------|---|--|---|--|---|
| | | be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person. | | | Guidance Note | | | | |
| 14.12.2 | - | <u>Safety Measures - Excavation</u> Staff should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. Excavation procedures and code of practice should be implemented. | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.2 | - | <u>Safety Measures – Welding, Flame- Cutting and Hot works</u> Hot works should be confined to open areas away from any trench or excavation. Should hot works must be carried out in trenches or confined space, “permit to work” procedures should be followed. | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.2 | - | <u>Safety Measures – Enclosed Spaces</u> Site offices or buildings located within PPV Landfill Consultation Zone which have the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas; or be raised clear of the ground by a minimum of 500mm. | Site office, building, tunnel, subway, confined area / Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.2 | - | <u>Safety Measures – Electrical Equipment</u> Any electrical equipment, such as motors and extension cords, should be intrinsically safe. | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.2 | - | <u>Safety Measures – Piping</u> During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping/conduiting should be capped at the end of | Services & utilities / Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|---------|---|--|-------------------------------------|------------|---|--|---|--|---|
| | | each working day. | | | | | | | |
| 14.12.2 | - | <u>Safety Measures – Fire Safety</u> Adequate fire safety equipments should be provided on site. Workers and visitors should be notified of the potential fire hazards. Safety notices should be posted around the site warning the anger and potential hazards. | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.1 | - | <u>Safety Measures – Confined Spaces</u> Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces, and that appropriate monitoring procedures are in place to prevent hazards in confined spaces. | Confined space / Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.1 | - | <u>Monitoring</u> Periodically during ground-works within the Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. Depending on the results of the measurements, actions required will vary. As a minimum these should encompass those actions specified in Table 14.8 of the EIA Report or Table 14.1 of the EM&A Manual. | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |

Landscape and Visual

| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
|---------------|-----------------------|---|--|-------------------------------|----------------------------------|-----------------------|---|---|--------|
| | | | | | | D | C | O | |
| 10.9 | 7.6 | Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|------|-----|---|---|-------------------------------------|-------|---|---|--|---|
| | | including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1) | | | | | | | |
| 10.9 | 7.6 | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2) | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5) | All areas/detailed design/ during Construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Control night-time lighting and glare by hooding all lights (CM6) | All areas/detailed design/ during Construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Ensure no run-off into water body adjacent to the Project Area (CM7) | All areas/detailed design/ during Construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Avoidance of excessive height and bulk of buildings and structures (CM8) | All areas/detailed design/ during Construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9) | All areas/detailed design/ during Construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. | All areas/detailed design/ during | Design Consultant/ | TMEIA | Y | Y | | ✓ |

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**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|--------------------------|----------------------------|---|---|-------------------------------------|---------------------------------|----------------------------------|---|---------------|----|
| | | Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 (CM10) | Construction | Contractor | | | | | |
| 10.9 | 7.6 | Re-vegetation of affected woodland/shrubland with native species (OM1) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √* |
| 10.9 | 7.6 | Tall buffer screen tree / shrub / climber planting where appropriate should be incorporated to soften hard engineering structures and facilities (OM2) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √* |
| 10.9 | 7.6 | Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill (OM3) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √* |
| 10.9 | 7.6 | Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement (OM4) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √* |
| 10.9 | 7.6 | Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √* |
| 10.9 | 7.6 | Avoidance of excessive height and bulk of buildings and structures (OM6) | All areas/detailed design/ during Construction/ post construction | Design Consultant/ Contractor | TMEIA | Y | Y | Y | √* |
| Waste | | | | | | | | | |
| EIA reference | EM&A Manual | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or | Implementation Stages | | Status | |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | reference | | | | Requirement | D | C | O | |
|------|-----------|---|-----------------------|------------|---|---|---|---|---|
| 12.6 | | The Contractor shall identify a coordinator for the management of waste. | Contract mobilisation | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | | The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established. | Contract mobilisation | Contractor | TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material | | Y | | ✓ |
| 12.6 | | The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges. | Contract mobilisation | Contractor | TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance. | | Y | | ✓ |
| 12.6 | 8.1 | Training shall be provided to workers about the concepts of site cleanliness and appropriate waste | Contract mobilisation | Contractor | TMEIA | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|------|-----|--|--|------------|-------|--|---|--|---|
| | | management procedures including waste reduction, reuse and recycling | | | | | | | |
| 12.6 | 8.1 | The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimize the extent of cutting. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Inert C&D materials from the toll plaza cut slopes shall be reused for construction of the raised platform for the toll plaza where possible. | Tol Plaza / toll plaza construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | The site and surroundings shall be kept tidy and litter free. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | No waste shall be burnt on site. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ◇ |
| 12.6 | 8.1 | Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/ plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIORNMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|------|-----|---|--|------------|-------|--|---|---|---|
| | | materials should avoid over-ordering and wastage. | | | | | | | |
| 12.6 | 8.1 | The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | All falsework will be steel instead of wood. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <ul style="list-style-type: none"> • suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; • Having a capacity of <450L unless the specifications have been approved by the EPD; and • Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. • Clearly labelled and used solely for the storage of chemical wastes; • Enclosed with at least 3 sides; • Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; • Adequate ventilation; | All areas / throughout construction period | Contractor | TMEIA | | Y | △ | |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|------|-----------|--|--|------------|-------------|--|---|--|---|
| | | <ul style="list-style-type: none"> Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and Incompatible materials are adequately separated. | | | | | | | |
| 12.6 | 8.1 | Waste oils, chemicals or solvents shall not be disposed of to drain, | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Night soil should be regularly collected by licensed collectors. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | All waste containers shall be in a secure area on hardstanding; | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | 8.1 | Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminum cans, plastic bottles, etc should be provided on-site. | Site Offices/ throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 12.6 | Section 8 | EM&A of waste handling, storage, transportation, disposal procedures and documentation through the | All areas / throughout construction period | Contractor | EM&A Manual | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | site audit programme shall be undertaken. | | | | | | | |
|----------------------|----------------------------------|--|---|-----------------------------|---|------------------------------|----------|----------|---------------|
| Water Quality | | | | | | | | | |
| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
| | | | | | | D | C | O | |
| Land Works | | | | | | | | | |
| 6.10 | - | Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Sewage effluent and discharges from onsite kitchen facilities shall be directed to Government sewer in accordance with the Requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Temporary access roads should be surfaced with crushed stone or gravel. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | △ |
| 6.10 | - | Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|------|-----|---|---|------------|-------------------------------------|--|---|--|---|
| 6.10 | - | Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | 5.8 | Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | ✓ |
| 6.10 | - | Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance. | All areas/ throughout construction period | Contractor | TM-EIAO Waste Disposal Ordinance | | Y | | ✓ |

CONTRACT NO. HY/2013/12
TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE

| | | | | | | | | | |
|------|-----------|--|---|------------|-------------|--|---|--|---|
| 6.10 | - | All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank. | All areas/ throughout construction period | Contractor | TM-EIAO | | Y | | △ |
| 6.10 | Section 5 | All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice. | All areas/ throughout construction period | Contractor | EM&A Manual | | Y | | ✓ |

Remarks:

- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation Measures but need improvement.
- × Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- △ Deficiency of Mitigation Measures but rectified by Contractor
- N/A Not Applicable in Reporting Period
- # Amended against condition 3.13 of EP-354/2009/C
- * In Progress and subject to approved L&V Plan

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Appendix N

Cumulative Statistics on Exceedance and Complaint

Table N-1 Statistical Summary of Environmental Exceedance

| Reporting Period | Environmental Aspect / Parameter | Environmental Performance | Event Exceedance | |
|------------------|----------------------------------|---------------------------|------------------|---------------------------------------|
| | | | Reporting Period | Cumulative since project commencement |
| January 2019 | Air Quality – 1-hour TSP | Action Level | 5 | 61 |
| | | Limit Level | 1 | 4 |
| | Air Quality – 24-hour TSP | Action Level | 0 | 3 |
| | | Limit Level | 0 | 3 |

Table N-2 Statistical Summary of Environmental Complaints

| Reporting Period | Environmental Complaint Statistics | | | | | |
|---------------------------------------|------------------------------------|------------|------------------|-------|-------|--------|
| | Frequency | Cumulative | Complaint Nature | | | |
| | | | Air | Noise | Water | Others |
| January 2019 | 0 | 10 | 3 | 1 | 6 | 2 |
| Cumulative since project commencement | 10 | 10 | 3 | 1 | 6 | 2 |

Table N-3 Statistical Summary of Environmental Summons

| Reporting Period | Environmental Summons Statistics | | | | |
|---------------------------------------|----------------------------------|------------|------------------|-------|-------|
| | Frequency | Cumulative | Complaint Nature | | |
| | | | Air | Noise | Water |
| January 2019 | 0 | 0 | NA | NA | NA |
| Cumulative since project commencement | 0 | 0 | NA | NA | NA |

Table N-4 Statistical Summary of Environmental Prosecution

| Reporting Period | Environmental Prosecution Statistics | | | | |
|---------------------------------------|--------------------------------------|------------|------------------|-------|-------|
| | Frequency | Cumulative | Complaint Nature | | |
| | | | Air | Noise | Water |
| January 2019 | 0 | 0 | NA | NA | NA |
| Cumulative since project commencement | 0 | 0 | NA | NA | NA |

Appendix O

Investigation Report for the Complaint

(Not Use)

Appendix P

Inspection Checklist for
Vulnerable to Contaminated Water Discharge



中國路橋
CRBC

Kaden 基利

Contract No. HY/2013/12
Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza
and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2019-01-03 Location: Stream B, Outfall 1
Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick \checkmark on the appropriate box.

| Item Description | | Y | P | N | Remarks |
|------------------|---|--------------|---|---|---------|
| 1 | Exposed slope protected? | \checkmark | | | |
| 2 | Adequacy of wastewater treatment facilities provided? | \checkmark | | | |
| 3 | Sandbags provided at each step and top of side walls? | \checkmark | | | |
| 4 | Is silt screen maintained in good condition? | \checkmark | | | |
| 5 | Remove debris, grit and silt inside the drainage system? | \checkmark | | | |
| 6 | Contaminated water discharge at discharge point / drainage inlet avoided? | \checkmark | | | |
| 7 | General housekeeping / site tidiness in good condition? | \checkmark | | | |

Legends: Y = Yes, P = Partial, N = No

Daily Drainage Inspection Record

Inspection Date: 2019-01-03



Stream B Outfall: No water is discharging.



Outfall 1: Clean water is discharging.



中國路橋
CRBC

Kaden



Contract No. HY/2013/12

Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza
and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2019-01-09

Location: Stream B, Outfall 1

Name of Inspector: Tommy Law

Position of Inspector: EO

Please put a tick on the appropriate box.

| Item Description | | Y | P | N | Remarks |
|------------------|---|-------------------------------------|--------------------------|--------------------------|---------|
| 1 | Exposed slope protected? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2 | Adequacy of wastewater treatment facilities provided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 | Sandbags provided at each step and top of side walls? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4 | Is silt screen maintained in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5 | Remove debris, grit and silt inside the drainage system? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6 | Contaminated water discharge at discharge point / drainage inlet avoided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | General housekeeping / site tidiness in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Legends: Y = Yes, P = Partial, N = No

Daily Drainage Inspection Record

Inspection Date: 2019-01-09



Stream B Outfall: No water is discharging.



Outfall 1: Clean water is discharging.



中國路橋
CRBC

Kaden



Contract No. HY/2013/12

Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza
and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2019-01-16

Location: Stream B, Outfall 1

Name of Inspector: Tommy Law

Position of Inspector: EO

Please put a tick on the appropriate box.

| Item Description | | Y | P | N | Remarks |
|------------------|---|-------------------------------------|--------------------------|--------------------------|---------|
| 1 | Exposed slope protected? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2 | Adequacy of wastewater treatment facilities provided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 | Sandbags provided at each step and top of side walls? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4 | Is silt screen maintained in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5 | Remove debris, grit and silt inside the drainage system? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6 | Contaminated water discharge at discharge point / drainage inlet avoided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | General housekeeping / site tidiness in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Legends: Y = Yes, P = Partial, N = No

Daily Drainage Inspection Record

Inspection Date: 2019-01-16



Stream B Outfall: No water is discharging.



Outfall 1: Clean water is discharging.



中國路橋
CRBC

Kaden



Contract No. HY/2013/12

Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza
and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2019-01-23

Location: Stream B, Outfall 1

Name of Inspector: Tommy Law

Position of Inspector: EO

Please put a tick on the appropriate box.

| Item Description | | Y | P | N | Remarks |
|------------------|---|-------------------------------------|--------------------------|--------------------------|---------|
| 1 | Exposed slope protected? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2 | Adequacy of wastewater treatment facilities provided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 | Sandbags provided at each step and top of side walls? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4 | Is silt screen maintained in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5 | Remove debris, grit and silt inside the drainage system? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6 | Contaminated water discharge at discharge point / drainage inlet avoided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | General housekeeping / site tidiness in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Legends: Y = Yes, P = Partial, N = No

Daily Drainage Inspection Record

Inspection Date: 2019-01-23



Stream B Outfall: No water is discharging.



Outfall 1: Clean water is discharging.



Contract No. HY/2013/12
 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza
 and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2019-01-29 Location: Stream B, Outfall 1
 Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick on the appropriate box.

| Item Description | | Y | P | N | Remarks |
|------------------|---|-------------------------------------|--------------------------|--------------------------|---------|
| 1 | Exposed slope protected? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2 | Adequacy of wastewater treatment facilities provided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 | Sandbags provided at each step and top of side walls? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4 | Is silt screen maintained in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5 | Remove debris, grit and silt inside the drainage system? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6 | Contaminated water discharge at discharge point / drainage inlet avoided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7 | General housekeeping / site tidiness in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Legends: Y = Yes, P = Partial, N = No

Daily Drainage Inspection Record

Inspection Date: 2019-01-29



Stream B Outfall: No water is discharging.



Outfall 1: Clean water is discharging.