JOB NO.: TCS00864/16

CEDD SERVICE CONTRACT NO. NTE/07/2016 ENVIRONMENTAL TEAM FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE – SITE FORMATION AND ASSOCIATED INFRASTRUCTURE WORKS

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (DECEMBER 2017)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
15 January 2018	TCS00864/16/600/R0120v2	Nicola Hon (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	9 January 2018	First Submission
2	15 January 2018	Amended according to the IEC's comments on 12 January 2018

ANEWR

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New Territories East Development Office
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Your reference:

Our reference: HKCEDD10/50/104784

Date: 17 January 2018

Attention: Mr Stephen T S Li

BY POST

Dear Sirs

Agreement No.: NTE 08/2016
Independent Environmental Checker for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works
Monthly Environmental Monitoring and Audit Report (December 2017)

We refer to the emails of 10, 15 and 16 January 2018 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (December 2017) for the captioned project.

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report (December 2017).

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Nic Lam on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/LHHN/WCKJ/lhmh

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EXECUTIVE SUMMARY

ES01 Action-United Environmental Services & Consulting (AUES) has been awarded the Civil Engineering and Development Department (CEDD) Service Contract No. NTE/07/2016 Environmental Team for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works (hereinafter called "the Service Contract") on 15 December 2016. The commencement date of the Service Contract is from December 2016 and the Contract Period is 70 months.

ES02 The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the EM&A manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Development of Anderson Road Quarry and other relevant statutory requirements.

ES03 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3. As advised by the RE, the date for commencement of Contract 1 was on 21 December 2016 and the major construction works has been commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities have been commenced on 2 May 2017. The EM&A programme under the Project was therefore commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

ES04 This is the **9th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 December 2017** (hereinafter 'the Reporting Period').

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES05 Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Reporting Period	
		Number of Active Monitoring Locations	Total Occasions
Air Quality	1-hour TSP	**4**	**72**
	24-hour TSP	**4**	**20**
Construction Noise	$L_{eq(30min)}$ Daytime	**2**	**10**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES06 No exceedance of air quality was recorded in the Reporting Period. However, for construction noise, two (2) noise complaint (which triggered Action Level) was recorded for Contract 1. The environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	0	0	0
	24-hour TSP	0	0	0	0	0
Construction Noise	$L_{eq(30min)}$ Daytime	**2**	0	0	Completed and details refer to Section 8.	Implement noise mitigation measures to eliminate nuisance

ENVIRONMENTAL COMPLAINT

ES07 In the Reporting Period, three (3) environmental complaints were received for Contract 1 in respect with the construction noise and dust concerned by the nearby resident. Investigations for the complaints have been conducted by ET. Investigation report for the complaint on 15 December 2017 was conducted by ET and it was concluded that the complaint was not valid to the project while the investigation for complaint on 20 and 28 December 2017 is underway.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES08 No environmental summons or successful prosecutions for the Project were recorded in the Reporting Period.

REPORTING CHANGE

ES09 No reporting changes were made in the Reporting Period.

SITE INSPECTION

ES10 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 1*** was carried out by the RE, ET and Contractor on **7, 12, 19 and 27 December 2017** in which IEC joined the site inspection with SSEMC on **12 December 2017**. No non-compliance was noted during the site inspection.

ES11 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 2*** was carried out by the RE, ET and Contractor on **7, 13, 20 and 28 December 2017** in which IEC joined the site inspection with SSEMC on **28 December 2017**. No non-compliance was noted during the site inspection.

FUTURE KEY ISSUES

ES12 Special attention should be paid on the potential construction dust impact since most of the construction sites are adjacent to resident. The Contractor should fully implement the construction dust mitigation measures properly, particularly in coming dry season.

ES13 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.

ES14 In addition, all effluent discharge shall be ensure to fulfill Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or discharge permits stipulation.

Table of Contents

LIST OF TABLES

LIST OF APPENDICES

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been awarded the CEDD Service Contract No. NTE/07/2016 Environmental Team for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works (hereinafter called "the Service Contract") on 15 December 2016. The commencement date of the Service Contract is in December 2016 and the Contract Period is 70 months.

1.1.2 The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the EM&A manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Development of Anderson Road Quarry and other relevant statutory requirements.

1.1.3 Development of Anderson Road Quarry is to provide land and the associated infrastructures for the proposed land used at the existing Anderson Road Quarry Site at the North-eastern of East Kowloon according to the final Recommended Outline Development Plan (hereinafter named as the Project Works).

1.1.4 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3. As advised by the RE, the date for commencement of Contract 1 was on 21 December 2016 and the major construction works has been commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities have been commenced on 2 May 2017. The EM&A programme under the Project was therefore commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

1.1.5 According to the Approved EM&A Manual, air quality and noise monitoring are required to be monitored during the construction phase of the Project. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions. Baseline monitoring including air quality and noise were conducted on ***17th January 2017*** to ***30th January 2017***, ***16th February 2017*** to ***2nd March 2017 and 26th March 2017 to 8th April 2017*** at all designated monitoring locations before construction work commencement.

1.1.6 The Baseline Monitoring Report which verified by the Independent Environmental Checker (hereinafter referred as "the IEC") has been submitted to Environmental Protection Department **(**EPD) on ***9 May 2017*** for endorsement.

1.1.7 This is the **9th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 December 2017**.

1.2 REPORT STRUCTURE

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

Section 1 *Introduction*
Section 2 *Project Organization and Construction Progress*
Section 3 *Summary of Impact Monitoring Requirements*
Section 4 *Air Quality Monitoring*
Section 5 *Construction Noise Monitoring*
Section 6 *Water Quality Monitoring*
Section 7 *Waste Management*
Section 8 *Site Inspections*
Section 9 *Environmental Complaints and Non-Compliance*
Section 10 *Implementation Status of Mitigation Measures*
Section 11 *Conclusions and Recommendations*

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 CONSTRUCTION CONTRACT PACKAGING

2.1.1 To facilitate the project management and implementation, the Project would be divided by the 3 contracts as described in following. The details of each contracts is summarized below and the delineation of each contracts is shown in ***Appendix A***.

Contract 1 (Contract No. NE/2016/01)

2.1.2 Commencement date of Contract 1 was in late December 2016 and the major scope of work of Contract 1 is listed below:

- Formation of about 40 hectares (ha) of land platforms at the ARQ site and the associated geotechnical works;
- Road works including construction of approximately 3-kilometer long vehicular roads, footpaths, cycle tracks, an approximately 130-meter long underpass at the southern end an a public transport terminus at the northern end at the ARQ site;
- Provision of and improvement to water supply, drainage and sewerage systems as well as landscaping works; and
- Construction of proposed subway structures and lift tower structures of pedestrian connectivity facilities.

Contract 2 (Contract No. NE/2016/05)

2.1.3 Commencement date of Contract 2 was 31 March 2017 and the major Scope of Work of the Contract 2 is listed below:

(i) Construction of the following pedestrian connectivity facilities with covered elevated walkways, covered at grad walkways, escalators, life towers with associate staircase and lifts:-
  (a) Linking Hiu Kwong street with Hiu Ming Street (E1)
  (b) Linking the proposed "Footbridge Link at Sau Ming Road" with Hiu Ming Street (E2, C1 and E3)
  (c) Linking the proposed bus-to-bus interchange at Tseung Kwan O Tunnel Toll Plaza with Lin Tak Road (E12)

(ii) Construction of bus-to-bus interchange (BBI) at Tseung Kwan O Tunnel Toll Plaza; and

(iii) Associated landscape works.

(iv) Construction of green routes connecting to Jordan Valley Park and Choi Wing Road

(v) Slope improvement works in the vicinity of Po Lam Road South and other associated works.

Contract 3 (Contract number to be assigned)

2.1.4 The commencement date of Contract 3 is to be confirmed.

(i) Site formation and road works in the following sections:-
  (a) at junction of Clear Water Bay Road (CWBR) and On Sau Road constructed under the Development at Anderson Road (DAR) project including the provision of U-turn facility and noise mitigation measures (RIW1);
  (b) at New Clear Water Bay Road (NCWBR) near Shun Lee Tsuen Road including the road widening works at NCWBR, modification of existing subway structure and provision of noise mitigation measures (RIW2); and
  (c) at the junction of Lin Tak Road and Sau Mau Ping Road, construction of flyover above Tseung Kwan O Road, provision of loading and unloading bays along Lin Tak Road and noise mitigation measures (RIW3).

(ii) construction of the following pedestrian connectivity facilities with covered elevated walkways, escalators and lift towers with associated staircases and lifts:-
  (a) linking Anderson Road Quarry site with the DAR Site (except the works covered under

Contract 1) (System A and System B);
(b) linking Hiu Ming Street with Hiu Yuk Path (E8); and
(c) linking the proposed bus-bus interchange at Tseung Kwan O Tunnel Toll Plaza with Sau Mau Ping Road (E11).

(iii) Associated landscape works.

2.2 PROJECT ORGANIZATION

2.2.1 The project organization for Contracts 1 and 2 is shown in ***Appendix B***.

2.3 CONSTRUCTION PROGRESS

2.3.1 The three-months rolling construction program for Contracts 1 and 2 are enclosed in ***Appendix C***. As provided by the Contractors of Contracts 1 and 2, the major construction activities conducted in the Reporting Period are summarized in below.

Contract 1 (NE/2016/01)

1. Completed trees felling works in Po Lam Road
2. Completed GI work of BH12 to BH29;
3. Completed soil & rock excavation achieved at Portion A4;
4. Completed backfilling and compacting achieved at Portion A4;
5. Completed construction of DN750 drainage pipe and U-channel 750U;
6. Completed excavation and the blinding layer of a manhole TM21 and TM21a ;
7. Commenced soil and rock excavation in Portion A3;
8. Portion B6 was substantially completed;
9. Backfilling and compacting works in Portion B8 and KW Asphalt Plant are in progress;
10. Trimming slope at West Portal at top-down direction is in progress;
11. Erection of scaffolds and platforms to proceed remaining soil nailing works at Slope A3 are in progress;
12. Tunnel face excavation at West Portal is in progress;
13. Erection of scaffolds and platforms at Slope A1 East Portal for soil nailing is in progress;
14. Completed rock excavation for noise barrier bay #6 to 33 and rock mapping of bay #9 to 32;
15. Completed mass concrete pouring at noise barrier bay #13 to 32;
16. Commenced excavation for temporary diversion of drainage for existing cascade and steel down pipes laying;
17. Excavation of retaining wall bay #20 to 17 is in progress;
18. Commenced stripping soil to expose rock head level in USRT;
19. Commenced excavation of slope A13 and the area of water pumping stations;
20. Completed the blinding layer of retaining wall RWA113 bay#1 and 2;
21. Completed excavation and the blinding layer of retaining wall RWA 13 bay #6 to11 and 13 to 15;
22. Completed rock mapping for retaining wall bay #12;
23. Commenced excavation for temporary haul road nearby retaining wall;
24. Commenced trail pits for PCCW cables;
25. Excavation at the north lift tower in System B and internal road L1 adjacent to the System B is in progress;
26. H-piles in PTT is in progress; and
27. Mitigation works of excavation to formation level and demolished the existing pavement for Natural Terrain Catchment B5.

Contract 2 (NE/2016/05)

1. Portion 1 : Continue piling works, Completed hoarding gates erection, Modify and relocate the site entrance;
2. Portion 2 : Continue site preparation for piling works/covered walkway, trial pit inspections on the existing UU, site preparation for rock slope excavation; Completed minor relocation of RCP;
3. Portion 4 : Continue the Slip Road construction, Completed CCTV inspections;

4. Portion 5 : Continue tree felling and tree transplant works, Completed the trial pit inspection;
5. Portion 6 : Commence rock dowel installation works, Continue the trial pit inspections, Completed CCTV inspection;
6. Portion 7 : Continue hiking trail extension work, Commence slope improvement works;
7. Portion 8 & 9 : General site clearance and soil nail head construction

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project of contract 1 are presented in ***Tables 2-1 and 2-2***.

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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Form NA - Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 411762	NA	NA	valid
	Form NB - Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 412730	NA	NA	valid
2	Chemical Waste Producer Registration	Registration no. WPN 5213-292-C4115-01	15 Feb 2017	End of project	valid
3	Water Pollution Control Ordinance - Discharge License	WT00027252-2017	20 Mar 2017	31 Mar 2022	valid
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no. 7026925	20 Jan 2017	End of project	valid
6	Construction Noise Permit	GW-RE0896-17 (superseded by GW-RE1017-17)	13 Nov 17	12 May 18	valid
		GW-RE1017-17	23 Dec 17	19 Jun 18	valid

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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 312173	NA	NA	valid
2	Chemical Waste Producer Registration	Registration no. WPN 5213-294-K2890-08	3 July 2017	End of Project	Valid
3	Water Pollution Control Ordinance - Discharge License	WT00028685-2017	02 Aug 2017	31 Aug 2022	Valid
		WT00028686-2017	02 Aug 2017	31 Aug 2022	Valid
		WT00028687-2017	02 Aug 2017	31 Aug 2022	Valid
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no.7027548	12 Apr 2017	End of project	Valid

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit requirements are set out in the Approved EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project.

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

3.2 MONITORING PARAMETERS

3.2.1 The EM&A program of construction phase monitoring shall cover the following environmental issues:

- Air quality; and
- Construction noise

3.2.2 A summary of the monitoring parameters is presented in ***Table 3-1.***

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP by Real-Time Portable Dust Meter; and • 24-hour TSP by High Volume Air Sampler
Noise	• Leq(30min) in normal working days (Monday to Saturday) 07:00-19:00 except public holiday • Supplementary information for data auditing, statistical results such as L_{10} and L_{90} shall also be obtained for reference.

3.3 MONITORING LOCATIONS

3.3.1 According to the EM&A Manual Section 4.6, seven (7) most representative and affected air sensitive receivers (ASR) were selected as air monitoring stations (AQM). The air quality monitoring locations are listed in ***Table 3-2*** and illustrated in ***Appendix D.***

Table 3-2 Impact Monitoring Stations - Air Quality

ID	ASR ID in EIA	Location in the EM&A Manual	Identified Location during Site Visit
AMS-1	ACYC-01	Chi Yum Ching She	Ground of Chi Yum Ching facing the project site
AMS-2	DARB-13	Block 8, Site B Note 1	Ground of Block 8, Site B facing On Sau Road
AMS-3	DARC-16	Planned Clinic and Community Centre, Site C2 Note 1	Ground of Planned Clinic and Community Centre facing Anderson Road
AMS-4	DARC-26	Planned School, Site C2 Note 2	Ground of Planned School facing Anderson Road
AMS-5	DARE-06	Block 5, DAR Site E	Main roof of Oi Tat House of On Tat Estate facing the project site
AMS-6	DARE-17	Block 9, Site E	Main roof of Hau Tat House of On Tat Estate facing the project site
AMS-7	AMYT-04	Ma Yau Tong Village	Balcony at 2nd floor of Village House Anderson Road No. 1 facing the project site

Note 1: The ASR is under construction and not yet in operation.
Note 2: The ASR is not yet constructed.

3.3.2 In our recent site visit at the subject site, it was noted that some planned ASRs identified in the

EM&A Manual are still under construction/ has not yet constructed and there were no suitable location to set up the high volume sampler to carry out the baseline 24-hour TSP monitoring. Therefore, a proposed changes for the baseline monitoring programme was submitted and agreed by EPD before the baseline monitoring.

3.3.3 In our baseline monitoring proposal, baseline 1-hour TSP monitoring will be conducted at all AQM location AMS-1 to AMS-7. However, baseline 24-hour TSP monitoring will be conducted at existing ASR AMS-1, AMS-5, AMS-6 and AMS-7 only with our justifications present below:

(a) AQM Locations AMS-2, AMS-3 & AMS-4 are planned ASRs which are still under construction/ has not yet constructed. During recent site visit, there were no suitable locations for setting up the HVS and electricity supply at these AQM locations.

(b) Alternative locations were considered in accordance with EM&A Manual Section 4.7.3. However, there were no suitable location found and our justifications are provided in below:

(i) Alternative locations Sau Mau Ping Estate and Shun Tin Estate were located at downhill of the subject site which separated by the active construction site (i.e., AMS-2, AMS-3 & AMS-4) and Sau Mau Ping Road. In view of the level deviation, the baseline data obtained in these alternative locations could not represent the baseline condition of the designated location AMS-2, AMS-3 & AMS-4. Moreover, when the planned ASR AMS-2, AMS-3 & AMS-4 activate sooner or later, impact monitoring should be carried out at these designated locations instead of the alternative locations.

(ii) Alternative location such as site boundary of the site subject was considered, however, there were no provisions of power supply to sustain the HVS continuously after consultation with the Contractor.

(c) According to EM&A Manual Section 4.7.4, as an exceptional cases, it is proposed to adopt the Action Level established at AMS-5 to AMS-2, AMS-3 & AMS-4 for impact monitoring as AMS-5 with our justification below.

(i) AMS-5 is the closest ASR to AMS-2, AMS-3 & AMS-4 under same direction of prevailing wind.

(ii) In view of the baseline 1-hour TSP data, the measured results at AMS-5 were lower than those collected at AMS-2, AMS-3 & AMS-4. As a conservation approach, adopting Action Level at AMS-5 for Location AMS-2, AMS-3 & AMS-4 is more stringent for the project.

(iii) The Action level for AMS-2, AMS-3 & AMS-4 will be subject to review in accordance with EM&A Manual Section 4.7.5

Construction Noise

3.3.4 According to the EM&A Manual Section 5.5, three (3) most representative and affected noise sensitive receivers (NSR) were selected as monitoring stations. As recommended by the RE and agreed by IEC, one (1) additional noise monitoring location is proposed to add in Oi Tat House of On Tat Estate (hereafter "NMS-4") to oversee the possible noise impact pose to the resident in On Tat Estate, which is an existing NSR close to the major works activities. Moreover, a review of impact monitoring location was proposed to IEC in view of the current site condition and it was agreed by all parties. The details of noise monitoring location are listed in ***Table 2-3*** and illustrated in ***Appendix D***.

Table 3-3 Impact Monitoring Stations - Construction Noise

ID	NSR ID in EIA	Location
NMS-1	Site C2 – School 05 Note 1	Ground of planned school at DAR facing the project site
NMS-2	Site E – School Note 1	Ground area between the planned school and Him Tat House facing the project site

NMS-3	Site C2 – R102 [Note 1]	Ground of Ancillary Facilities Building facing the project site
NMS-4*	Oi Tat House	1m from the exterior of ground floor façade of Oi Tat House of On Tat Estate facing the project site
NMS-4a#	Oi Tat House	Rooftop of Oi Tat House where 1m from the exterior of Oi Tat House facing the project site
NMS-5#	Hau Tat House	22/F, refuge floor of Hau Tat House where 1m from the exterior of Hau Tat House facing the project site.

Note 1: The NSR is under construction and not yet in operation.
Remark: (*) Additional noise monitoring location is recommended by RE and agreed by IEC
(#) Review of noise monitoring locations which effective on 8 November 2017.

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 The requirements of impact monitoring in the approved *EM&A Manual* and presented as follows.

Air Quality Monitoring

3.4.2 Frequency of impact air quality monitoring is as follows:

- 1-hour TSP — 3 times every six days during course of works throughout the construction period
- 24-hour TSP — Once every 6 days during course of works throughout the construction period

Noise Monitoring

3.4.3 Noise monitoring will be to conduct at the all available designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:

- one set of $Leq_{(30min)}$ measurements between 07:00 and 19:00 hours on normal weekdays

3.5 MONITORING EQUIPMENT

Air Quality Monitoring

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.* If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable results to the HVS. The instrument should be calibrated regularly, and the 1-hour sampling shall be determined on yearly basis by the HVS to check the validity and accuracy of the results measured by direct reading method. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

3.5.2 All equipment to be used for air quality monitoring is listed in ***Table 3-4***.

Table 3-4 Air Quality Monitoring Equipment

Equipment		Model
24-hour TSP	High Volume Air Sampler	TISCH High Volume Air Sampler, HVS Model TE-5170
	Calibration Kit	TISCH Model TE-5025A
1- hour TSP	Portable Dust Meter	Sibata LD-3B Laser Dust Monitor

Noise Monitoring

3.5.3 Sound level meter in compliance with the International Electrotechnical Commission Publications

651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms^{-1}.

3.5.4 Noise equipment as perform for baseline monitoring is listed in ***Table 3-5***.

Table 3-5 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	B&K Type 2238
Calibrator	Cesva CB - 5
Portable Wind Speed Indicator	Anemometer AZ Instrument 8908

3.6 MONITORING METHODOLOGY

1-hour TSP

3.6.1 The 1-hour TSP monitor was a brand named "Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter" which is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90^o light scattering. The 1-hour TSP monitor consists of the following:

(a.) A pump to draw sample aerosol through the optic chamber where TSP is measured;

(b.) A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and

(c.) A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

3.6.2 The 1-hour TSP meter to be used will be within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument will be checked before and after each monitoring event.

24-hour TSP

3.6.3 The equipment used for 24-hour TSP measurement is Thermo Andersen Model GS2310 TSP high volume air sampling system, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50*. The High Volume Air Sampler (HVS) consists of the following:

(a.) An anodized aluminum shelter;

(b.) A 8"x10" stainless steel filter holder;

(c.) A blower motor assembly;

(d.) A continuous flow/pressure recorder;

(e.) A motor speed-voltage control/elapsed time indicator;

(f.) A 7-day mechanical timer, and

(g.) A power supply of 220v/50 Hz

3.6.4 For HVS for 24-hour TSP monitoring, the HVS is mounted in a metallic cage with a top for protection and also it is sat on the existing ground or the roof of building. The flow rate of the HVS between $0.6m^3$/min and $1.7m^3$/min will be properly set in accordance with the manufacturer's instruction to within the range recommended in *EPA Code of Federal Regulation, Appendix B to Part 50*. Glass Fiber Filter 8" x 10" of TE-653 will be used for 24-Hour TSP monitoring and would be supplied by laboratory. The general procedures of sampling are described as below:-

- A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;
- No two samplers should be placed less than 2 meters apart;
- The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
- A minimum of 2 meters of separation from any supporting structure, measured horizontally is

required;

- Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;
- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge.
- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper ID with the initial weight;
- After sampling, the filter paper will be collected and transfer from the filter holder of the HVS to a sealed envelope and sent to a local HOKLAS accredited laboratory for quantifying.

3.6.5 All the sampled 24-hour TSP filters will be kept in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25^{o}C, for six months prior to disposal.

3.6.6 The HVS used for 24-hour TSP monitoring will be calibrated before the commencement for sampling, and after in two months interval for 1 point checking of maintenance and six months interval for five points calibrate in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A) to establish a relationship between the follow recorder meter reading in cfm (cubic feet per minute) and the standard flow rate, Qstd, in m^3/min. Motor brushes of HVS will be regularly replaced of about five hundred hours per time. The calibration certificates of all monitoring equipment used for the impact monitoring program in the Reporting Period and the HOKLAS accredited certificate of laboratory are attached in ***Appendix E***.

Noise Monitoring

3.6.7 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804:1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

3.6.8 All noise measurements will be performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). $Leq_{(30\ min)}$ in six consecutive $Leq_{(5\ min)}$ measurements will be used as the monitoring parameter for the time period between 07:00-19:00 hours on weekdays throughout the construction period.

3.6.9 The sound level meter will be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield will be fitted for all measurements. Where a measurement is to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.

3.6.10 Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

3.6.11 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or

wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.6.12 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The calibration certificates of all monitoring equipment used for the impact monitoring program in the Reporting Period is attached in ***Appendix E***.

Meteorological Information

3.6.13 The meteorological information including wind direction, wind speed, humidity, rainfall, air pressure and temperature etc. during baseline monitoring is extracted from the closest Hong Kong Observatory Station. To obtain the most appropriate meteorological information where available, the data of temperature is extracted from the Kwun Tong Observatory Station; the data of wind speed and wind direction are extracted from Kai Tak Observatory Station and the data of humidity is extracted from King's Park Station.

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

3.7.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. According to the approved Environmental Monitoring and Audit Manual, the air quality, construction noise were set up, namely Action and Limit levels are listed in ***Tables 3-6 and 3-7***.

Table 3-6 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AMS-1	313	154	500	260
AMS-2	319	165	500	260
AMS-3	319	165	500	260
AMS-4	315	165	500	260
AMS-5	299	166	500	260
AMS-6	303	168	500	260
AMS-7	307	156	500	260

Table 3-7 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)
	Time Period: 0700-1900 hours on normal weekdays	
NMS-1	When one or more documented complaints are received	***75*** dB(A) [Note 1] / ***70*** dB(A) [Note 2] / ***65*** dB(A) [Note 2]
NMS-2		
NMS-3		***75*** dB(A)
NMS-4a*		***75*** dB(A)
NMS-4*		***75*** dB(A)
NMS-5*		***75*** dB(A)

Note 1: Locations NMS-1 and NMS-2 are planned school as NSRs which are still under construction/ not yet constructed; hence the Limit Levels of 75dB(A) is adopted for NMS-1 and NMS-2 until the school is occupied and in operation.

Note 2: Noise Limit Levels for school is 70dB(A) and should be reduced to 65dB(A) during examination period.

Note: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Remark: (*) Additional noise monitoring location is recommended by RE and agreed by IEC

3.7.2 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.***

3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.8.1 All monitoring data will be handled by the ET's in-house data recording and management system. The monitoring data recorded in the equipment will be downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data will input into a computerized database properly maintained by the ET. The laboratory results will be input directly into the computerized database and checked by personnel other than those who input the data.

3.8.2 For monitoring parameters that require laboratory analysis, the local laboratory shall follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory tests.

4. AIR QUALITY MONITORING

4.1 GENERAL

4.1.1 In the Reporting Period, air quality monitoring was performed at the active designated monitoring locations AMS-1, AMS-5, AMS-6 and AMS-7. No monitoring was conducted at AMS-2, AMS-3 and AMS-4 since they are planned ASR which are still under construction/ not yet constructed.

4.1.2 The air quality monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

4.2 RESULTS OF AIR QUALITY MONITORING

4.2.1 In the Reporting Period, a total of ***72*** events of 1-hour TSP and ***20*** events 24-hours TSP monitoring were carried out and the monitoring results are summarized in ***Tables 4-1 to 4-4***. The detailed 24-hour TSP monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-1)

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
4-Dec-17	22	1-Dec-17	13:44	80	77	76
9-Dec-17	19	7-Dec-17	9:21	67	71	72
15-Dec-17	61	13-Dec-17	9:19	75	77	77
21-Dec-17	72	19-Dec-17	14:13	71	69	73
27-Dec-17	95	23-Dec-17	13:49	73	78	73
--	--	29-Dec-17	13:18	54	50	48
Average (Range)	**54 (19 – 95)**	Average (Range)		**70 (48 – 80)**		

Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-5)

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
4-Dec-17	46	1-Dec-17	9:08	67	69	67
9-Dec-17	74	7-Dec-17	10:14	74	75	78
15-Dec-17	36	13-Dec-17	9:16	87	81	85
21-Dec-17	57	19-Dec-17	9:58	61	66	63
27-Dec-17	54	23-Dec-17	9:06	66	69	65
--	--	29-Dec-17	9:50	68	64	65
Average (Range)	**53 (36 – 74)**	Average (Range)		**71 (61 – 87)**		

Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-6)

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
4-Dec-17	76	1-Dec-17	9:43	73	72	70
9-Dec-17	77	7-Dec-17	9:23	73	77	79
15-Dec-17	56	13-Dec-17	13:31	86	80	81
21-Dec-17	93	19-Dec-17	9:14	64	58	60
27-Dec-17	41	23-Dec-17	9:21	65	66	62
--	--	29-Dec-17	9:30	66	67	63
Average (Range)	**69 (41 – 93)**	Average (Range)		**70 (58 – 86)**		

Table 4-4 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-7)

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
4-Dec-17	46	1-Dec-17	12:58	76	76	75
9-Dec-17	72	7-Dec-17	13:28	68	70	71
15-Dec-17	37	13-Dec-17	13:17	78	82	83
21-Dec-17	61	19-Dec-17	13:37	65	65	66
27-Dec-17	57	23-Dec-17	13:12	68	69	69
--	--	29-Dec-17	9:27	63	62	57
Average (Range)	**55 (37 – 72)**	Average (Range)		**70 (57 – 83)**		

4.2.2 As shown in ***Tables 4-1 to 4-4***, all the 1-hour TSP and 24-hour TSP monitoring results were below the Action/Limit Levels. No Notification of Exceedance (NOE) was issued in this Reporting Period.

4.2.3 The meteorological data during the impact monitoring days are summarized in ***Appendix J***.

5. CONSTRUCTION NOISE MONITORING

5.1 GENERAL

5.1.1 In the Reporting Period, noise monitoring was performed at the additional monitoring locations NMS4a and NMS5. No monitoring was conducted at NMS1, NMS2 and NMS3 since they are planned NSR which are still under construction/ not yet constructed.

5.1.2 The noise monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

5.2 NOISE MONITORING RESULTS IN REPORTING MONTH

5.2.1 In the Reporting Period, a total of **10** events noise measurements were carried out at the designated locations. The noise monitoring results at the designated locations are summarized in ***Tables 5-1.*** The detailed noise monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

Table 5-1 Summary of Construction Noise Monitoring Results

Construction Noise Level ($L_{eq30min}$), dB(A)		
Date	**NMS4a**	**NMS5**
1-Dec-17	71	74
7-Dec-17	74	69
13-Dec-17	75	70
19-Dec-17	74	65
29-Dec-17	74	69
Limit Level	**75 dB(A)**	

5.2.2 As shown in ***Tables 5-1,*** no construction noise measurement results that exceeded the Limit Level were recorded.

5.2.3 In the Reporting Period, two (2) environmental complaints (which triggered Action Level exceedance) were received in respect with the construction noise concerned by the nearby resident. Investigation for the complaint was conducted by the ET and the detailed investigation result is presented in ***Section 8***.

6. WASTE MANAGEMENT

6.1 GENERAL WASTE MANAGEMENT

6.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

6.2 RECORDS OF WASTE QUANTITIES

6.2.1 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.

6.2.2 The quantities of waste for disposal in this Reporting Period are summarized in ***Tables 6-1*** and ***6-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix K***. Whenever possible, materials were reused on-site as far as practicable.

Table 6-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Contract 1		Contract 2	
	Quantity	Disposal Location	Quantity	Disposal Location
Total generated Inert C&D Materials (‘000m^3)	19.794	-	0.066	-
Hard Road and Large Broken Concrete	12.907	-	0	-
Reused in this Contract (Inert) (‘000m^3)	5.826	-	0	-
Reused in other Projects (Inert) (‘000m^3)	0	-	0	-
Disposal as Public Fill (Inert) (‘000m^3)	1.061	TKO 137	0.066	TKO 137

Remark: The summary of waste flow table for Contract 1 throughout the construction period was updated in this reporting period.

Table 6-2 Summary of Quantities of C&D Wastes

Type of Waste	Contract 1		Contract 2	
	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal (‘000kg)	324.710	License collector	0	-
Recycled Paper / Cardboard Packing (‘000kg)	0	-	0	-
Recycled Plastic (‘000kg)	0.009	-	0	-
Chemical Wastes (‘000kg)	0	-	0	-
General Refuses (‘000m^3)	0.008	SENT	0.021	SENT

Remark: The summary of waste flow table for Contract 1 throughout the construction period was updated in this reporting period.

7. SITE INSPECTION

7.1 REQUIREMENTS

7.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should be carried out to confirm the environmental performance.

7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

Contract 1

7.2.1 In the Reporting Period, joint site inspection for Contract 1 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **7, 12, 19 and 27 December 2017** in which IEC joined the site inspection with SSEMC on **12 December 2017**. No non-compliance was noted.

7.2.2 The findings / deficiencies of ***Contract 1*** that observed during the weekly site inspection are listed in ***Table 7-1***.

Table 7-1 Site Observations of Contract 1

Date	Findings / Deficiencies	Follow-Up Status
7 December 2017	• No environmental issue was observed during the site inspection.	• NA
12 December 2017	• Soil and debris was observed cumulated inside the existing channel. The Contractor should clear the soil and debris cumulated inside the channel to prevent clogging. (East Portal). • The Contractor should keep closely monitoring on the dust mitigation facilities to reduce dust impact during dry season. (General)	• Soil and debris cumulated inside the existing channel was cleared. • Not required for reminder.
19 December 2017	• Dusty haul road was observed. The Contractor should increase the water spraying frequency on the haul road in order to reduce dust impact during dry season. Moreover, proper maintenance should be provided for dust mitigation facilities to make sure the facilities are function properly. (General)	• Stockpile stored on site was compacted and covered by tarpaulin sheet. Moreover, water spraying was provided for the exposed haul road to minimize dust impact.
27 December 2017	• Although water spraying was observed, the Contractor was advised that the coverage of water spraying should be included all exposed area such as stockpile and dusty haul road. Also, water frequency should be increased during dry and windy season to minimize dust impact. (General)	• Stockpile stored on site was compacted and covered by tarpaulin sheet. Moreover, water spraying was provided for the exposed haul road to minimize dust impact.

Contract 2

7.2.3 In the Reporting Period, joint site inspection for Contract 2 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **7, 13, 20 and 28 December 2017** in which IEC joined the site inspection with SSEMC on **28 December 2017**. No

non-compliance was noted.

7.2.4 The findings / deficiencies of ***Contract 2*** that observed during the weekly site inspection are listed in ***Table 7-2***.

Table 7-2 Site Observations of Contract 2

Date	Findings / Deficiencies	Follow-Up Status
29 November 2017	• No NRMM label was provided for an idle excavator at Portion 2, the Contractor should provide a valid NRMM label on the excavator before use. • The Contractor was reminded to provide drip tray for all air compressors to avoid oil leakage.	• NRMM label was provided for the excavator. • Not required for reminder.
7 December 2017	• Construction materials stored near the tree protection zone were observed, the Contractor was advised to remove the construction materials from the retained tree. (Portion 2) • The Contractor was reminded to provide temporary construction waste storage area and dispose the construction waste regularly. (Portion 7) • The Contractor was reminded to provide tree protection zone to retained tree. (Portion 7) • The Contractor was reminded to remove stagnant water regularly to prevent mosquito breeding. (Portion 1)	• Construction materials were removed from the tree protection zone. • Not required for reminder. • Not required for reminder. • Not required for reminder.
13 December 2017	• Air compressor without drip tray was observed at Portion 6. The Contractor was advised to provide drip tray for air compressor to avoid oil leakage.	• To be followed.
20 December 2017	• Oil stain was observed at Portion 1. The Contractor should remove the oil stain and treated as chemical waste. • Stockpile was observed not properly covered at Portion 4. The Contractor should cover the stockpile with tarpaulin sheet properly to reduce dust generation.	• The oil stain was cleaned. • The stockpile was entirely covered.
28 December 2017	• Oil stains underneath a construction plant was observed at Portion 1. The Contractor should remove the oil stains and treat it as chemical waste. • The Contractor was reminded to provide tool box talk in plant maintenance and fueling operation for workers.	• To be followed. • Not required for reminder.

Other Contracts

7.2.5 Since Contract 3 has not yet commenced, no site inspection was performed in the Reporting Period.

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, three (3) environmental complaints were received for Contract 1 in respect with the construction noise and dust concerned by the nearby resident and the complaint details are summarized below.

(a) On 15 December 2017, a public complaint was received by the EPD regarding suspected construction noise from Anderson Construction Site during restricted hour (7pm to 7am) heard at Sau Yee House of Sau Mau Ping Estate. Investigation Report for the complaint was conducted by ET accordingly. In our investigation, it is confirmed by the Contractor and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. For day time construction activities, the Contractor has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since there were no works carried out during restricted hours, it is considered that the complaint was not valid to the project.

(b) On 20 December 2017, a complaint was received by EPD regarding the traffic of construction vehicles generated dust problem and arouse air pollution to On Tat Estate. The complainant stated that the water spraying tanker was out of order and no water spraying was provided on site to suppress the dust arising from the construction site. In our investigation, CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. It is considered that the complaint was an isolated case due to malfunction of water tanker and CWSTVJV has promptly rectified the deficiency. As advised by CWSTVJV, anther water tanker will be deployed in mid-January 2018 to enhance the dust suppression measures throughout the construction site. The draft Investigation Report prepared by ET is under reviewed by IEC.

(c) On 28 December 2017, a public complaint was received from the CE's office regarding construction noise from Anderson Construction Site during restricted hour (8pm to 12am) heard at Sau Yee House of Sau Mau Ping Estate. The investigation for the complaint is underway by ET.

8.1.2 Investigation Report for the complaints have been conducted by the ET without comment from IEC. The complaint log and Investigation Report for the above complaint is shown in ***Appendix M.***

8.1.3 In the Reporting Period, no summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in ***Tables 8-1, 8-2*** and ***8-3***.

Table 8-1 Statistical Summary of Environmental Complaints

Reporting Period	Contract no.	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 April – 30 Nov 2017	1	0	**18**	**Dust, Noise and light nuisance**
1 April – 30 Nov 2017	2	0	0	NA
1 – 31 Dec 2017	1	**3**	**21**	**Noise and dust**
1 – 31 Dec 2017	2	0	0	NA

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Contract no.	Environmental Summons Statistics		
		Frequency	Cumulative	Summons Nature
1 April – 30 Nov 2017	1	0	0	NA
1 April – 30 Nov 2017	2	0	0	NA
1 – 31 Dec 2017	1	0	0	NA
1 – 31 Dec 2017	2	0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract no.	Environmental Prosecution Statistics		
			Cumulative	Prosecution Nature
1 April – 30 Nov 2017	1	0	0	NA
1 April – 30 Nov 2017	2	0	0	NA
1 – 31 Dec 2017	1	0	0	NA
1 – 31 Dec 2017	2	0	0	NA

The Other Contracts

8.1.4 Since Contract 3 has not yet commenced, no environmental complaint, summons and prosecution are received in the Reporting Period.

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in ***Appendix L.***

9.1.2 All contracts under the Project shall be implementing the required environmental mitigation measures according to the approved EM&A Manual as subject to the site condition. Environmental mitigation measures generally implemented in this Reporting Period are summarized in ***Table 9-1***.

Table 9-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	• Wastewater to be treated by filtration system; such as, silt curtain or sedimentation tank before discharge. • Replace silt curtain materials if necessary
Air Quality	• Maintain damp / wet surface on access road • Keep slow speed in the sites • All vehicles must use wheel washing facility before off site • All vehicles must use wheel washing facility before off site • Sprayed water during breaking works
Noise	• Restrain operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday. • Keep good maintenance of plants • Place noisy plants away from residence or school • Provide noise barriers or hoarding to enclose the noisy plants or works • Shut down the plants when not in used.
Waste and Chemical Management	• 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	• The site was generally kept tidy and clean.

9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

9.2.1 Construction activities for Contract 1 in the coming month are listed below:

1. Continue excavation at System B;
2. Continue excavation of the internal and box culverts at road L1;
3. Site Formation for the internal road L5;
4. Continue slope cut at slope A3 and A4;
5. Continue construction of soil nails at Slope A1;
6. Continue excavation of tunnel face from West Portal;
7. Continue excavation at Slope A13 and concreting blinding layer of bay #12 and 15, and construction of retaining wall RWA13;
8. Continue construction of temporary haul road for retaining wall RWA14;
9. Commence excavation to expose and diversion of CLP's underground cables;
10. Continue excavation for site formation at Portion A3;
11. Continue construction of chain link fences at Portion A4;
12. Continue backfilling and compacting at Portion B8 and KW Asphalt Plant;
13. Continue open-cut excavation and temporary soil nailing woks for the underground stormwater retention tank;

14. Continue mass concrete pouring for noise barrier bay #1 to 8 and bay 33;
15. Continue excavation of retaining wall bay #1 to 5, 17 to 20 and 22;
16. Commence excavation for RWA12 bay #22;
17. Continue construction of remaining socketed H-piles at PTT;
18. Commence excavation and construction of two trial pits at PTT;
19. Commence excavation of two trial pits and testing at catchment B5; and
20. Commence construction of drainage and slope works at catchment B5.

9.2.2 Construction activities for Contract 2 in the coming month are listed below:

1. Portion 1 : Continue piling works, Completed hoarding gates erection, Modify and relocate the site entrance;
2. Portion 2 : Continue site preparation for piling works/covered walkway, trial pit inspections on the existing UU, site preparation for rock slope excavation; Completed minor relocation of RCP;
3. Portion 4 : Continue the Slip Road construction, Completed CCTV inspections;
4. Portion 5 : Continue tree felling and tree transplant works, Completed the trial pit inspection;
5. Portion 6 : Commence rock dowel installation works, Continue the trial pit inspections, Completed CCTV inspection;
6. Portion 7 : Continue hiking trail extension work, Commence slope improvement works;
7. Portion 8 & 9 : General site clearance and soil nail head construction

9.3 KEY ISSUES FOR THE COMING MONTH

9.3.1 Key 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 quality impact due from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby wetland, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is **9th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 December 2017**.

10.1.2 No 24-hour or 1-hour TSP monitoring results that triggered the Action or Limit Levels were recorded. No NOEs or the associated corrective actions were therefore issued.

10.1.3 In the Reporting Period, no construction noise measurement results that exceeded the Limit Level were recorded. However, two (2) noise complaints (which triggered Action Level) were recorded for Contract 1 and both complaints were about the construction noise from the construction site during restricted hours. Investigation report for the complaint on 15 December 2017 was conducted by ET and it was concluded that the complaint was not valid to the project since there were no works carried out during restricted hours. The investigation for complaint on 20 and 28 December 2017 is underway.

10.1.4 No notification of summons or successful prosecution was received under the Project.

10.1.5 In the Reporting Period, three (3) environmental complaints were received for Contract 1 in respect with the construction noise and dust concerned by the nearby resident. Investigations for the complaints have been conducted by ET. Investigation reports for the complaint on 15 and 20 December 2017 was conducted by ET and it was concluded that the complaint was not valid to the project while the investigation for complaint on 28 December 2017 is underway by ET.

10.1.6 During the Reporting Period, weekly joint site inspection by the RE, ET with the relevant Main-contractor was carried out for Contracts 1 and 2 in accordance with the EM&A Manual stipulation whereas IEC performed monthly site inspection for both contracts. No non-compliance observed during the site inspection.

10.2 RECOMMENDATIONS

10.2.1 Special attention should be paid on the potential construction dust impact since most of the construction sites are adjacent to resident. The Contractor should fully implement the construction dust mitigation measures properly, particularly in coming dry season.

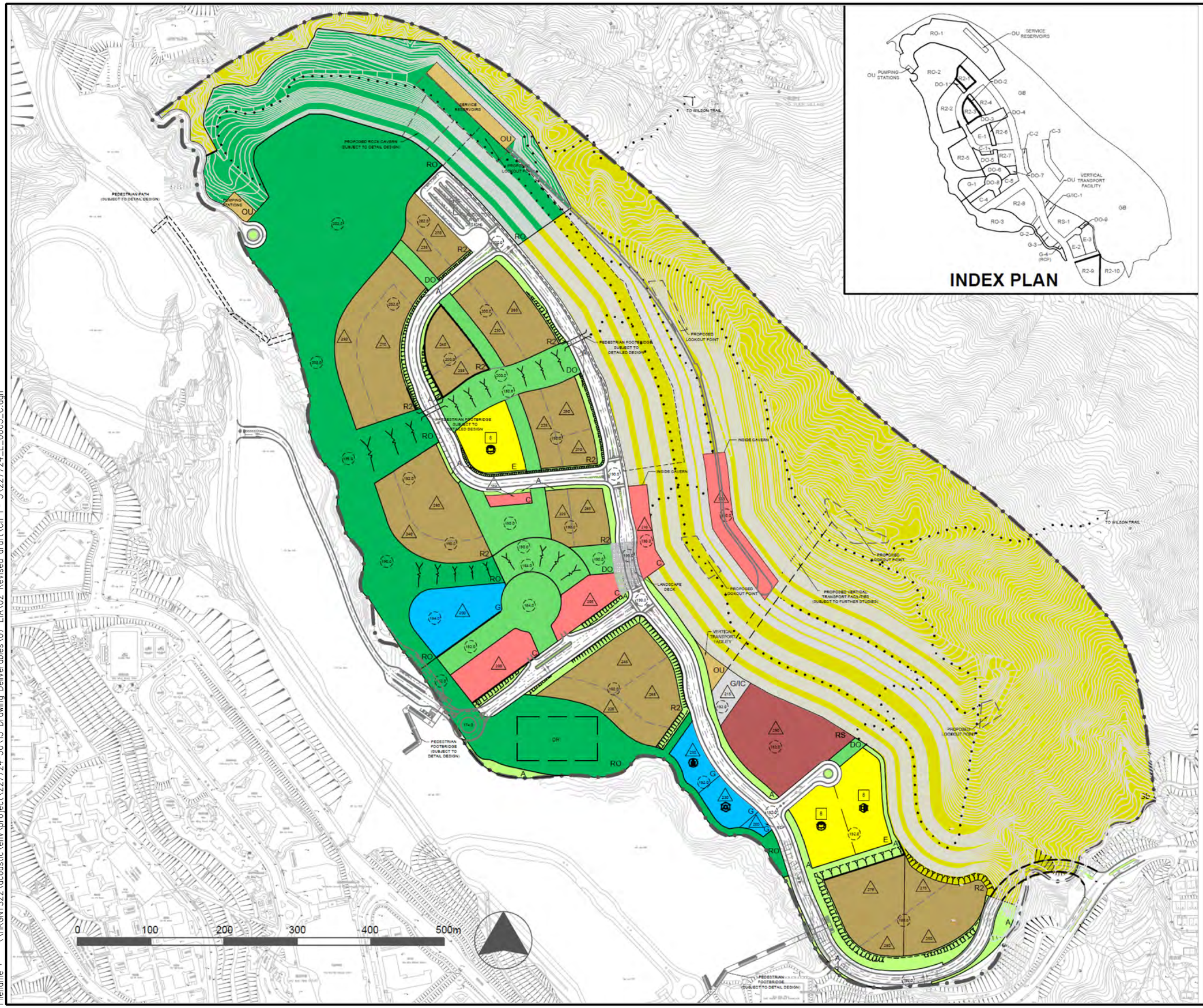
10.2.2 Moreover, muddy water and other water quality pollutants via site surface water runoff get into public areas should be avoided. Mitigation measures for water quality should be properly implemented.

10.2.3 Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants or temporary noise barrier installation at the construction noise predominate area should be implemented as accordance with the EM&A requirement.

10.2.4 Mosquito control measures should be continued to prevent mosquito breeding on site.

Appendix A

Layout plan of the Project



INDEX PLAN

LEGEND

- POLICE STATION
- DIVISIONAL FIRE STATION
- SECONDARY SCHOOL
- PRIMARY SCHOOL
- PTT — PUBLIC TRANSPORT TERMINUS
- PLANNING BOUNDARY
- UNDERPASS
- PROPOSED PEDESTRIAN TRAIL
- PEDESTRIAN PRECINCT
- DR — DRAINAGE RESERVE
- 255 — MAXIMUM BUILDING HEIGHT (in m above PD)
- 8 — MAXIMUM BUILDING HEIGHT (in storeys)
- 200.0 — PROPOSED LEVEL (in m above PD)
- PROPOSED SLOPE
- RCP — REFUSE COLLECTION POINT
- FOOTBRIDGE
- C — COMMERCIAL
- RS — SPECIAL RESIDENTIAL
- R2 — RESIDENTIAL ZONE-2
- G — GOVERNMENT
- G/IC — GOVERNMENT/ INSTITUTION OR COMMUNITY
- E — EDUCATION
- RO — REGIONAL OPEN SPACE
- DO — DISTRICT OPEN SPACE
- A — AMENITY
- OU — OTHER SPECIFIED USES
- GB — GREEN BELT
- ROADS, JUNCTIONS, ETC.
- AREA WITH POTENTIAL FOR ROCK CAVERN DEVELOPMENT

Rev	Description	By	Date
C	THIRD ISSUE	GL	03/14
B	SECOND ISSUE	GL	01/14
A	FIRST ISSUE	GL	10/13

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Recommended Outline Development Plan

Drawing no.			Rev.
227724/E/0003			C
Drawn: GL	Date: 03/14	Checked: TC	Approved: ST
Scale: AS SHOWN		Status: PRELIMINARY	

CEDD 土木工程拓展署 Civil Engineering and Development Department

Printed by : 3/31/2014
Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\07 EIA\02 Revised draft\Ch 1 - 3\227724_E_0003_C.dgn

圖例
LEGEND :

地盤平整及基礎建設工程
SITE FORMATION AND INFRASTRUCTURE WORKS

道路改善工程
ROAD IMPROVEMENT WORKS

行人連繫設施
PEDESTRIAN CONNECTIVITY FACILITIES

N

圖則名稱 drawing title

安達臣道石礦場發展工程位置圖
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE PROJECT LOCATION PLAN

繪圖 drawn	簽署 initial	日期 date	項目編號 item no.
H K TSANG		23.3.16	
核對 checked	簽署 initial	日期 date	比例 scale
L M CHAN		23.3.16	1:10 000 @ A3
核准 approved	簽署 initial	日期 date	圖則編號 drawing no.
T S LI		23.3.16	CDEARQZ0003

辦事處 office
新界東拓展處
NEW TERRITORIES EAST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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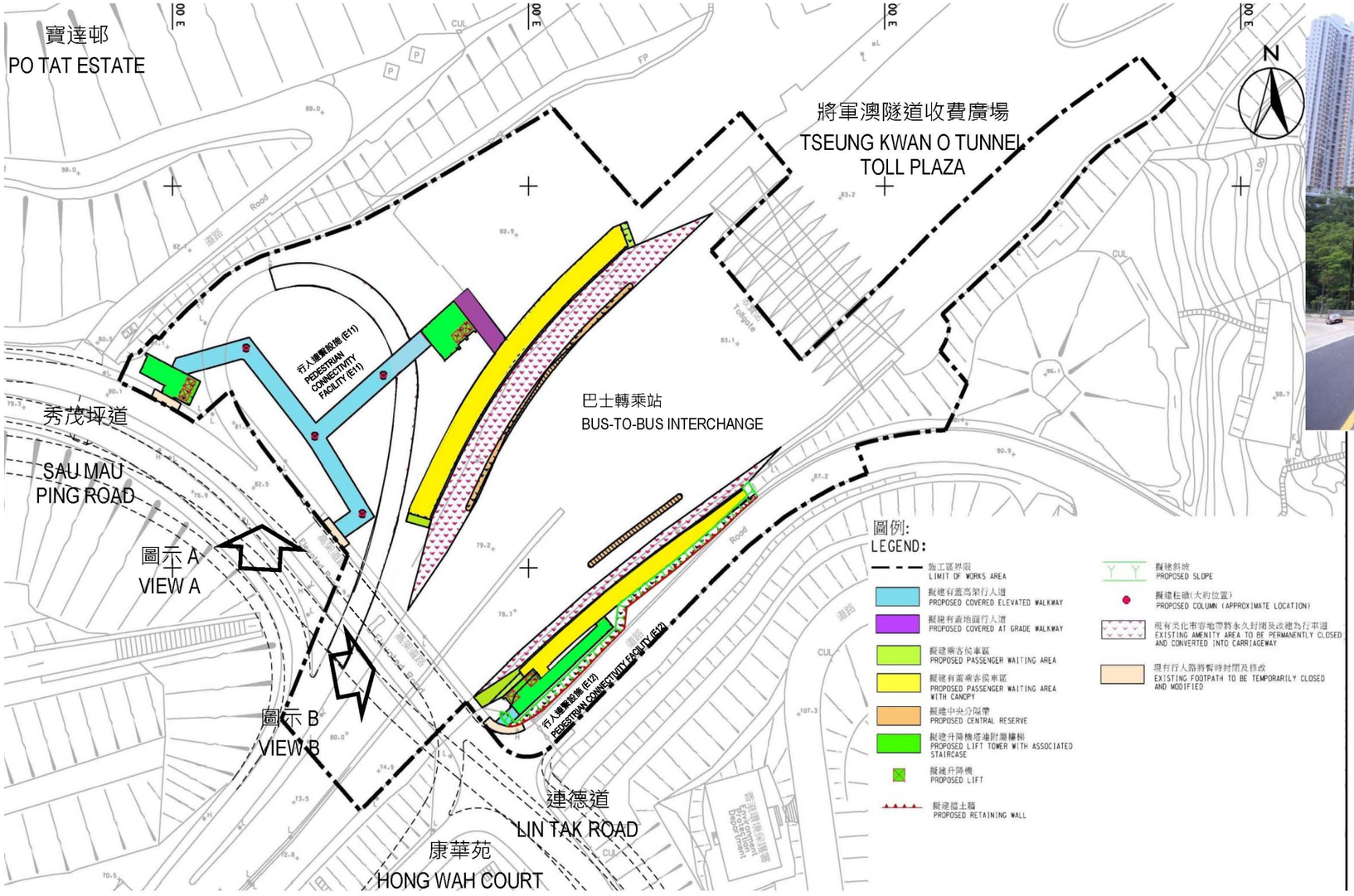
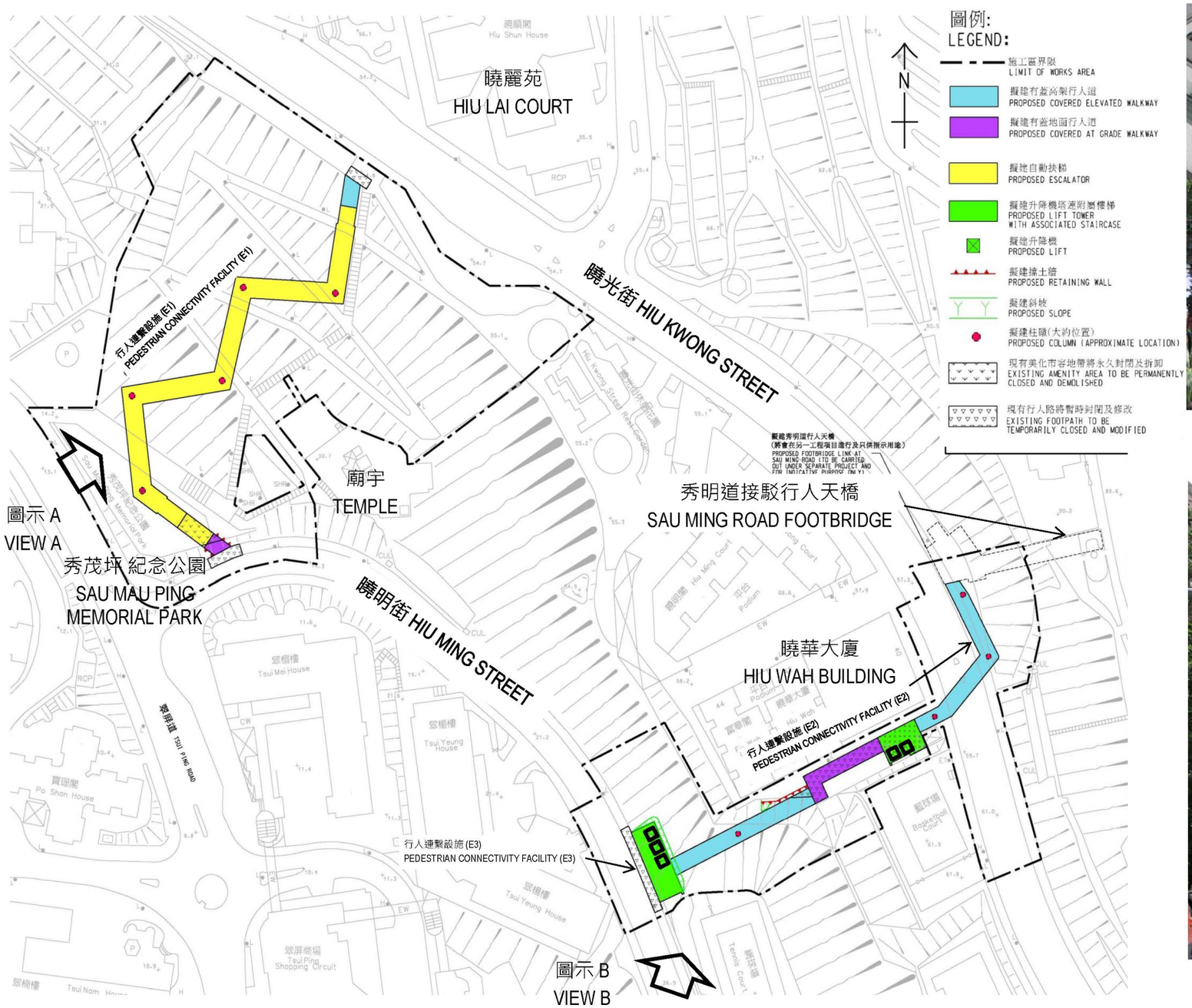
A3 297MM X 420MM



圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title 行人連繫設施(巴士轉乘站、E11及E12) - 平面圖及構思圖 Pedestrian Connectivity Facilities (Bus-to-Bus Interchange, E11 and E12) - Layout Plan and Artist's Impression	項目編號 Item No. 765CL 比例 Scale 圖則編號 Drawing No. 附件五 Appendix 5	辦事處 Office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(E1、E2及E3) - 平面圖及構思圖

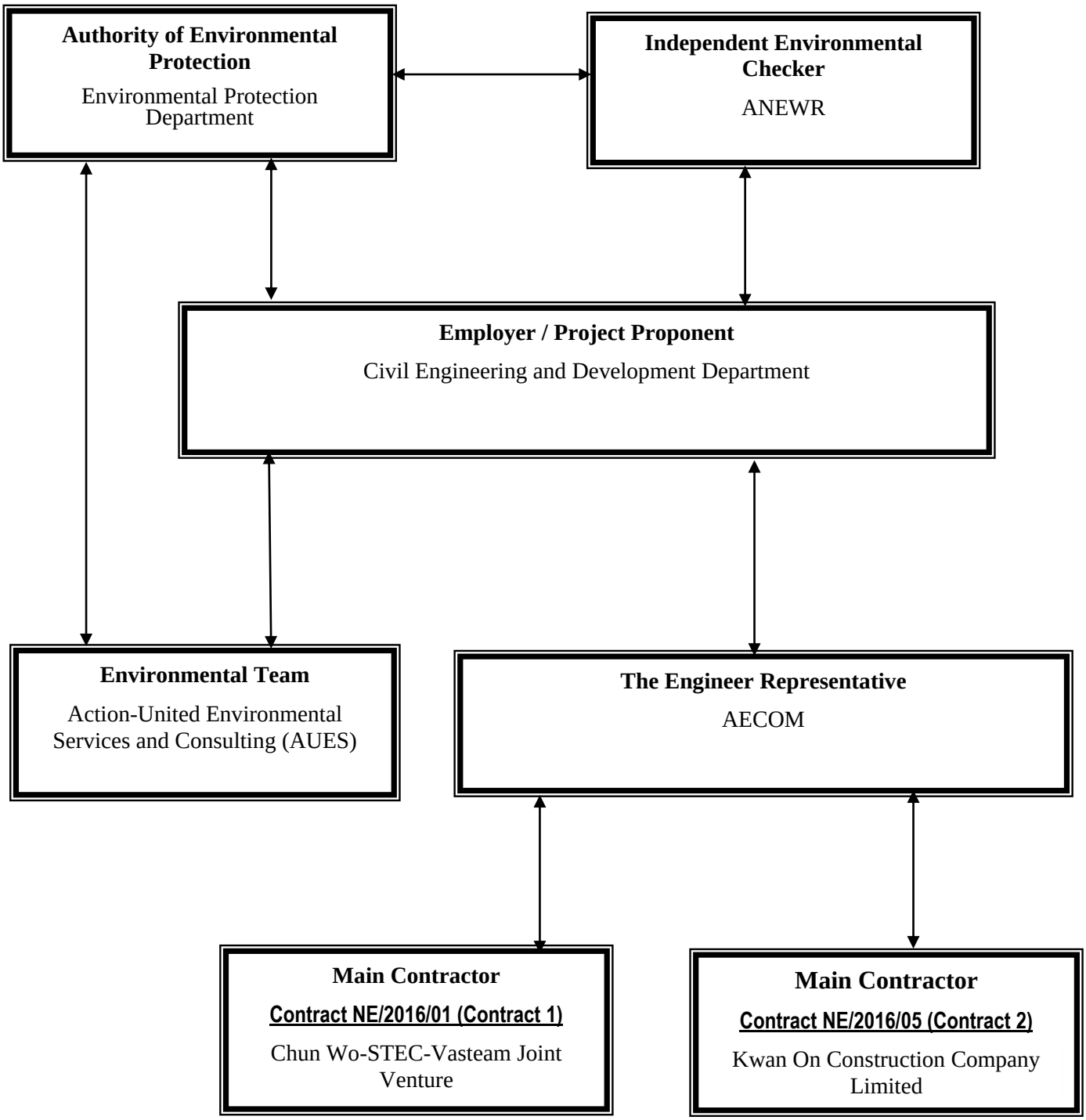
Pedestrian Connectivity Facilities (E1, E2 and E3) - Layout Plan and Artist's Impression

項目編號 Item No. 765CL	辦事處 Office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE
比例 Scale	土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
圖則編號 Drawing No. 附件二 Appendix 2	

Appendix B

Organization Chart

Project Organization Structure for



Contact Details of Key Personnel for Contract 1 – NE/2016/01

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer	Stephen Li	2301 1383	2739 0076
AECOM	Chief Resident Engineer	Dennis Leung	2967 6608	2473 3221
AECOM	Senior Resident Engineer	Simon Leung	2967 6608	2473 3221
ANEWR	Independent Environmental Checker	Adi Lee	2618 2836	3007 8648
CSVJV	Project Manager	William Leung	2638 7181	2744 6937
CSVJV	Site Agent	TY Leung	2638 7181	2744 6937
CSVJV	Project Environmental Manager	Shelton Chan	2638 7181	2744 6937
CSVJV	Environmental Officer	Kiwi Chan	2638 7181	2744 6937
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

CSVJV (Main Contractor) – Chun Wo-STEC-Vasteam Joint Venture

ANEWR (IEC) –ANewR Consulting Limited

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

Contact Details of Key Personnel for Contract 2 – NE/2016/05

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer	Stephen Li	2301 1383	2739 0076
AECOM	Chief Resident Engineer	Dennis Leung	2967 6608	2473 3221
AECOM	Senior Resident Engineer	Simon Leung	2967 6608	2473 3221
ANEWR	Independent Environmental Checker	Adi Lee	2618 2836	3007 8648
KOCCL	Project Director	Ambrose Kwong	2889 2675	2558 6900
KOCCL	Site Agent	Antony Kwok	2898 8510	2558 6900
KOCCL	Safety and Environmental Manager	Joly C K Kwong	6111 5711	2558 6900
KOCCL	Environmental Officer	Fung Hiu Lam, Purvi	6395 3685	2558 6900
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

KOCCL (Main Contractor) –Kwan On Construction Company Limited

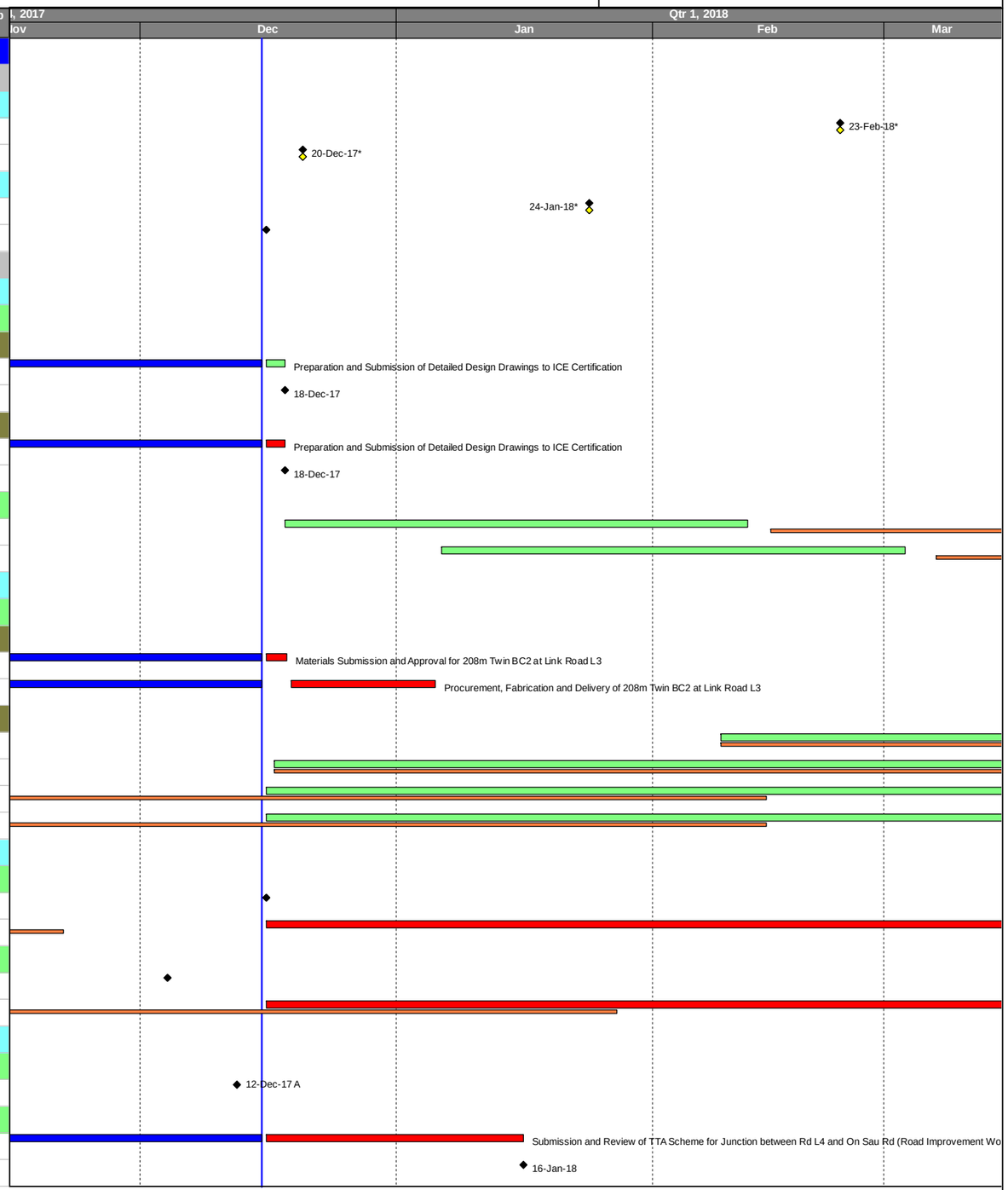
ANEWR (IEC) –ANewR Consulting Limited

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

Appendix C

Construction Programme
(a) Contract 1 (NE/2016/01)
(b) Contract 2 (NE/2016/05)

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ARQ - Works Programme Rev.1 - 3MRP (20 Dec 2017)								
Project Key Dates								
Key Dates for Completion of Sections of the Works								
AKC1010	KD1 - Completion of Section I of the Works - Portion A4	0	0		23-Feb-18		23-Feb-18*	0%
AKC1200	KD19 - Completion of Section XIIIA of the Works - Landscape Works at Shui Chuen O and Kau To (Portion E2)	0	0		20-Dec-17		20-Dec-17*	0%
Possession Periods								
AKP1220	Date for Possession of the Portion C1c	0	0	24-Jan-18		24-Jan-18*		0%
AKP1270	Date for Possession of the Portion E1	0	0	25-Dec-16		16-Dec-17*		0%
Preliminary								
Design								
Alternative Design (AD)								
PTT (Changing from Bored Piles to Socket H Piles and Pile Cap/Tie Beam Thickness)								
APD1040	Preparation and Submission of Detailed Design Drawings to ICE Certification	30	181	07-Jul-17	10-Aug-17	16-May-17 A	18-Dec-17	95%
APD1050	ICE Certification to Detailed Design Drawings of PTT	0	0		10-Aug-17		18-Dec-17	0%
Noise Barriers (Re-design of Footings) at Road L4								
APD2040	Preparation and Submission of Detailed Design Drawings to ICE Certification	30	260	29-May-17	04-Jul-17	06-Feb-17 A	18-Dec-17	95%
APD2050	ICE Certification to Detailed Design Drawings of Nosie Barriers	0	0		04-Jul-17		18-Dec-17	0%
Shop Drawings								
APD7010	Preparation and Submission of Shop Drawings of Structural Steel Works of PTT	45	45	15-Feb-18	16-Apr-18	18-Dec-17	12-Feb-18	0%
APD7020	Review and Approval of Shop Drawings of Structural Steel Works of PTT	45	45	07-Mar-18	03-May-18	06-Jan-18	03-Mar-18	0%
Major Material / Plants Deliveries								
Major Material								
Civil / Structural Material								
APM1100	Materials Submission and Approval for 208m Twin BC2 at Link Road L3	60	183	24-Apr-17	22-Jun-17	19-Jun-17 A	18-Dec-17	95%
APM1110	Procurement, Fabrication and Delivery of 208m Twin BC2 at Link Road L3	120	124	23-Jun-17	20-Oct-17	04-Sep-17 A	05-Jan-18	85%
MEP Material								
APM1029	Materials Submission and Approval for Electric Passenger Lifts for Lift Towers	120	120	09-Feb-18	08-Jun-18	09-Feb-18*	08-Jun-18	0%
APM1061	Materials Submission and Approval for Lighting System	120	120	17-Dec-17	15-Apr-18	17-Dec-17*	15-Apr-18	0%
APM1063	Materials Submission and Approval for Local Motor Control Panel (LMCP)	120	120	18-Oct-17	14-Feb-18	16-Dec-17*	14-Apr-18	0%
APM1089	Materials Submission and Approval for Battery and Charger	120	120	18-Oct-17	14-Feb-18	16-Dec-17*	14-Apr-18	0%
Excavation Permit (XP)								
On Sau Road (Junction between Road L4 and On Sau Road)								
APF1010	Submit Application of XP for Road Improvement at Junction between Road L4 and On Sau Road in Portion C1a	0	0	26-May-17		16-Dec-17*		0%
APF1020	HyD Review Application of XP for Road Improvement at Junction between Road L4 and On Sau Road in Portion C1a	180	180	26-May-17	21-Nov-17	16-Dec-17	13-Jun-18	0%
Portion C1c								
APF1160	Submit Application of XP for Waterworks in Portion C1c (Submtted to AECOM for Lodging to XPMS)	0	0	01-Aug-17		04-Dec-17 A		100%
APF1170	HyD Review Application of XP for Waterworks in Portion C1c	180	180	01-Aug-17	27-Jan-18	16-Dec-17	13-Jun-18	0%
Temporary Traffic Arrangement and Control								
Po Lam Road								
APT1050A001	Approval of Temporary Traffic Arrangement (TTA) Scheme (Stage 2) for Site Access at Po Lam Road	0	0				12-Dec-17 A	100%
On Sau Road (Junction between Road L4 and On Sau Road)								
APT2010	Submission and Review of TTA Scheme for Junction between Rd L4 and On Sau Rd (Road Improvement Works)	89	288	03-Apr-17	30-Jun-17	03-Apr-17 A	16-Jan-18	65%
APT2020	Approval of TTA Scheme for Junction between Rd L4 and On Sau Rd (Road Improvement Works)	0	0		30-Jun-17		16-Jan-18	0%



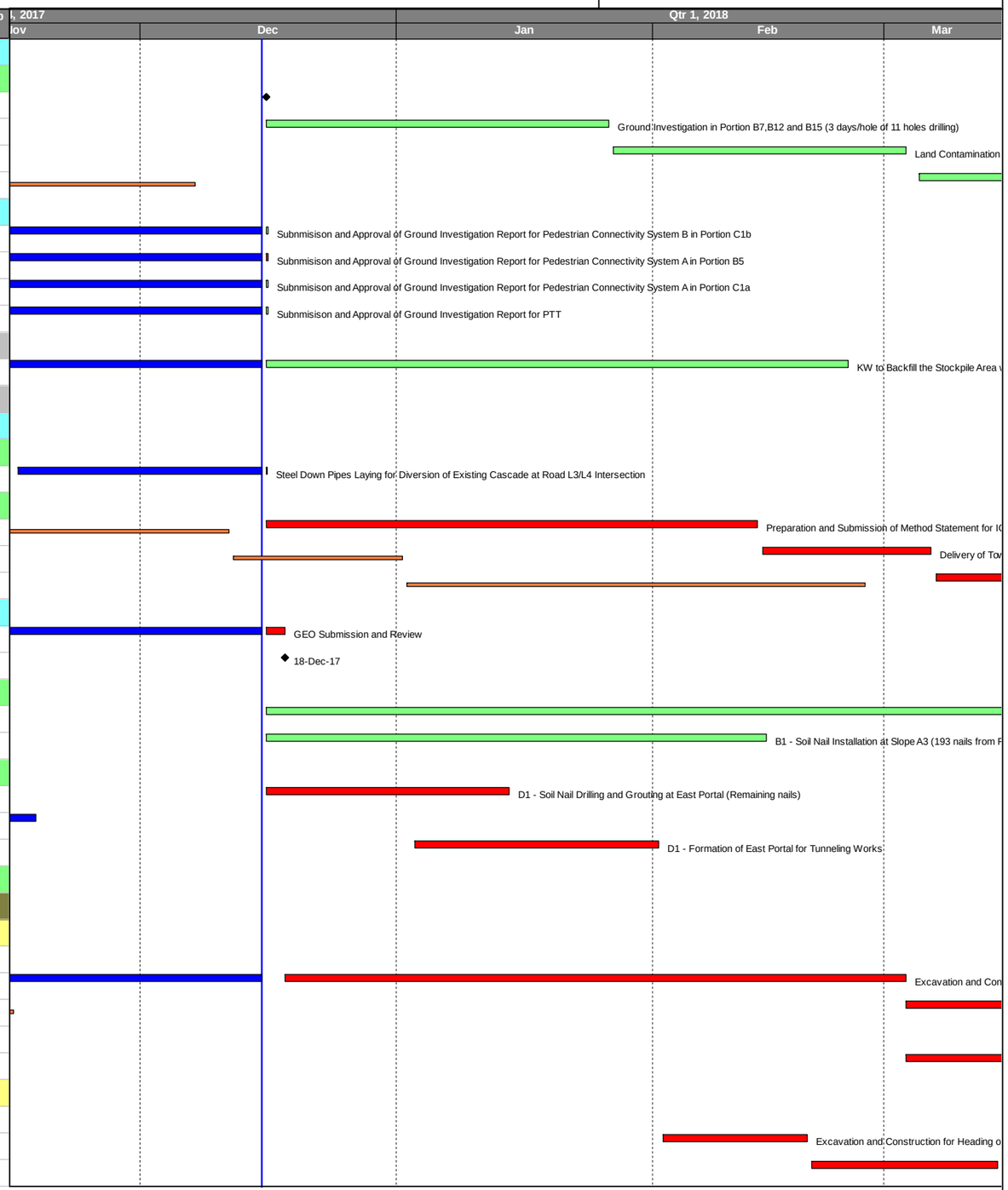
Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar
Critical Work

3-MONTH ROLLING PROGRAMME
(In comparison with WP Rev.1 dated 25 Aug 2017)

ARQ - Programme Logics based on WP Rev.1 dated 25 Aug 2017

Date	Revision	Checked	Approved
20-Dec-17	3MRP Rev.1 (Cut Off on 15 Dec 17)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
Land Contamination - Ground Investigation								
Portion B7/B12/B15 (BH-01 to BH-11)								
APL1020	Start Date of Land Contamination Ground Investigation in Portion B7,B12 and B15	0	0	23-Aug-17		16-Dec-17		0%
APL1030	Ground Investigation in Portion B7,B12 and B15 (3 days/hole of 11 holes drilling)	33	33	23-Aug-17	29-Sep-17	16-Dec-17	26-Jan-18	0%
APL1040	Land Contamination Assessment and Submission of Contamination Action Report (CAR) to AECOM/EPD	28	28	30-Sep-17	04-Nov-17	27-Jan-18	03-Mar-18	0%
APL1060	Submission, Review and Approval of Remedial Action Plan (RAP)	28	28	06-Nov-17	07-Dec-17	05-Mar-18	10-Apr-18	0%
Ground Investigation								
APG1110	Subnmisison and Approval of Ground Investigation Report for Pedestrian Connectivity System B in Portion C1b	21	184	01-Jun-17	24-Jun-17	10-May-17 A	16-Dec-17	98%
APG1120	Subnmisison and Approval of Ground Investigation Report for Pedestrian Connectivity System A in Portion B5	21	220	22-Mar-17	19-Apr-17	22-Mar-17 A	16-Dec-17	98%
APG1130	Subnmisison and Approval of Ground Investigation Report for Pedestrian Connectivity System A in Portion C1a	21	71	24-Aug-17	16-Sep-17	21-Sep-17 A	16-Dec-17	98%
APG1140	Subnmisison and Approval of Ground Investigation Report for PTT	21	196	05-Aug-17	29-Aug-17	24-Apr-17 A	16-Dec-17	98%
Interface with Other Contractors								
AI1040	KW to Backfill the Stockpile Area within South Boundary of Zone A (Assume 50 layers with 2 days cycle per layer)	100	147	05-May-17	31-Aug-17	28-Aug-17 A	24-Feb-18	45%
Construction and Installation								
Temporary Works								
Temporary Drainage System at Road L3/L4 Intersection								
ACT1030	Steel Down Pipes Laying for Diversion of Existing Cascade at Road L3/L4 Intersection	5	26	03-Oct-17	09-Oct-17	16-Nov-17 A	16-Dec-17	95%
Tower Cranes at Underground Stormwater Tank								
ACT105	Preparation and Submission of Method Statement for ICE Approval	60	60	13-Oct-17	11-Dec-17	16-Dec-17	13-Feb-18	0%
ACT1110	Delivery of Tower Crane Components to Site	21	21	12-Dec-17	01-Jan-18	14-Feb-18	06-Mar-18	0%
ACT1120	Construct Foundation of Tower Cranes (2 locations)	45	45	02-Jan-18	26-Feb-18	07-Mar-18	03-May-18	0%
Underpass Tunnel								
ACU0010	GEO Submission and Review	30	145	02-Jun-17	07-Jul-17	28-Jun-17 A	18-Dec-17	95%
ACU0020	Approval of GEO Submission	0	0		07-Jul-17		18-Dec-17	0%
West Portal								
ACU1060A001	B1 - Rock Breaking at West Portal beyond Entrance	0	120			16-Dec-17	14-Apr-18	0%
ACU1080	B1 - Soil Nail Installation at Slope A3 (193 nails from Row K to A)	61	61	08-Jul-17	06-Sep-17	16-Dec-17	14-Feb-18	0%
East Portal								
ACU2040	D1 - Soil Nail Drilling and Grouting at East Portal (Remaining nails)	50	30	18-Jun-17	06-Aug-17	16-Dec-17	14-Jan-18	0%
ACU2040A012	D1 - Trial Soil Nail Installation incl. Pull Out Test at Slope A1 East Portal (TN2)	0	9			09-Nov-17 A	18-Nov-17 A	100%
ACU2050	D1 - Formation of East Portal for Tunneling Works	30	30	07-Aug-17	05-Sep-17	03-Jan-18	01-Feb-18	0%
Underpass Tunnel								
Tunnel Construction								
Tunnel Construction from West Portal								
CH2389.5 to CH2422 (Support Type A: 32.5m)								
ACU3010	Excavation and Construction for Heading of Tunnel from West Portal CH2389.5 to CH2422 (32.5m) (2.5days/m)	82	118	08-Jul-17	27-Sep-17	06-Nov-17 A	03-Mar-18	8%
ACU3020	Construction for Benching of Tunnel from West Portal CH2389.5 to CH2422 (32.5m) (1.5days/m)	49	49	28-Sep-17	15-Nov-17	03-Mar-18	21-Apr-18	0%
CH2422 to CH2433 (Support Type B: 11m)								
ACU3025	Excavation and Construction for Heading of Tunnel from West Portal CH2422 to CH2433 (11m) (Pilot - 2days/m)	22	22	28-Sep-17	19-Oct-17	03-Mar-18	25-Mar-18	0%
Tunnel Construction from East Portal								
CH2520 to CH2511 (Support Type B: 9m)								
ACU3065	Excavation and Construction for Heading of Tunnel from East Portal CH2520 to CH2511 (9m) (Pilot - 2days/m)	18	18	06-Sep-17	23-Sep-17	02-Feb-18	19-Feb-18	0%
ACU3070	Excavation and Construction for Heading of Tunnel from East Portal CH2520 to CH2511 (9m) (2.5days/m)	23	23	24-Sep-17	16-Oct-17	20-Feb-18	14-Mar-18	0%



Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar
Critical Work

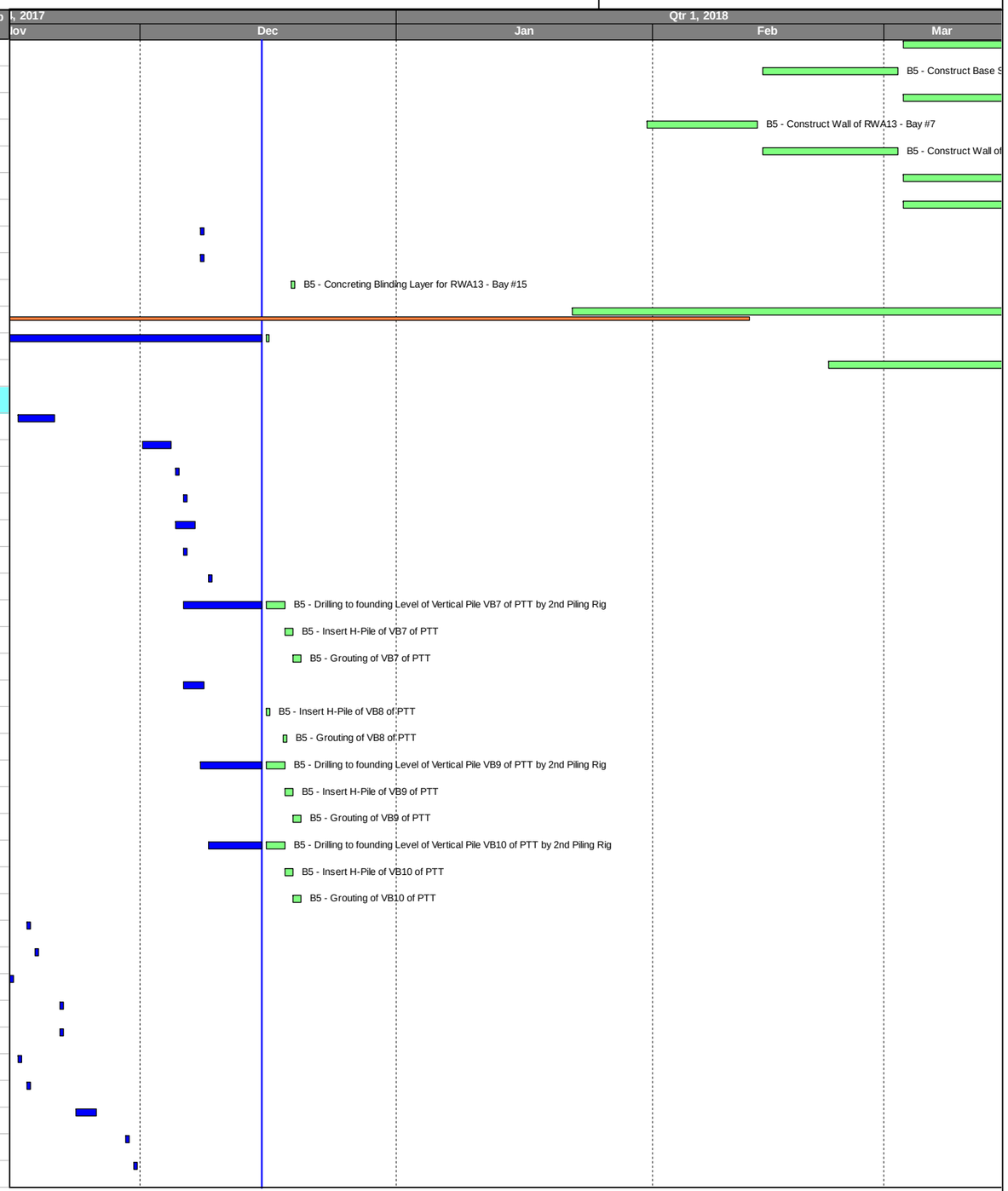
3-MONTH ROLLING PROGRAMME
(In comparison with WP Rev.1 dated 25 Aug 2017)

ARQ - Programme Logics based on WP Rev.1 dated 25 Aug 2017

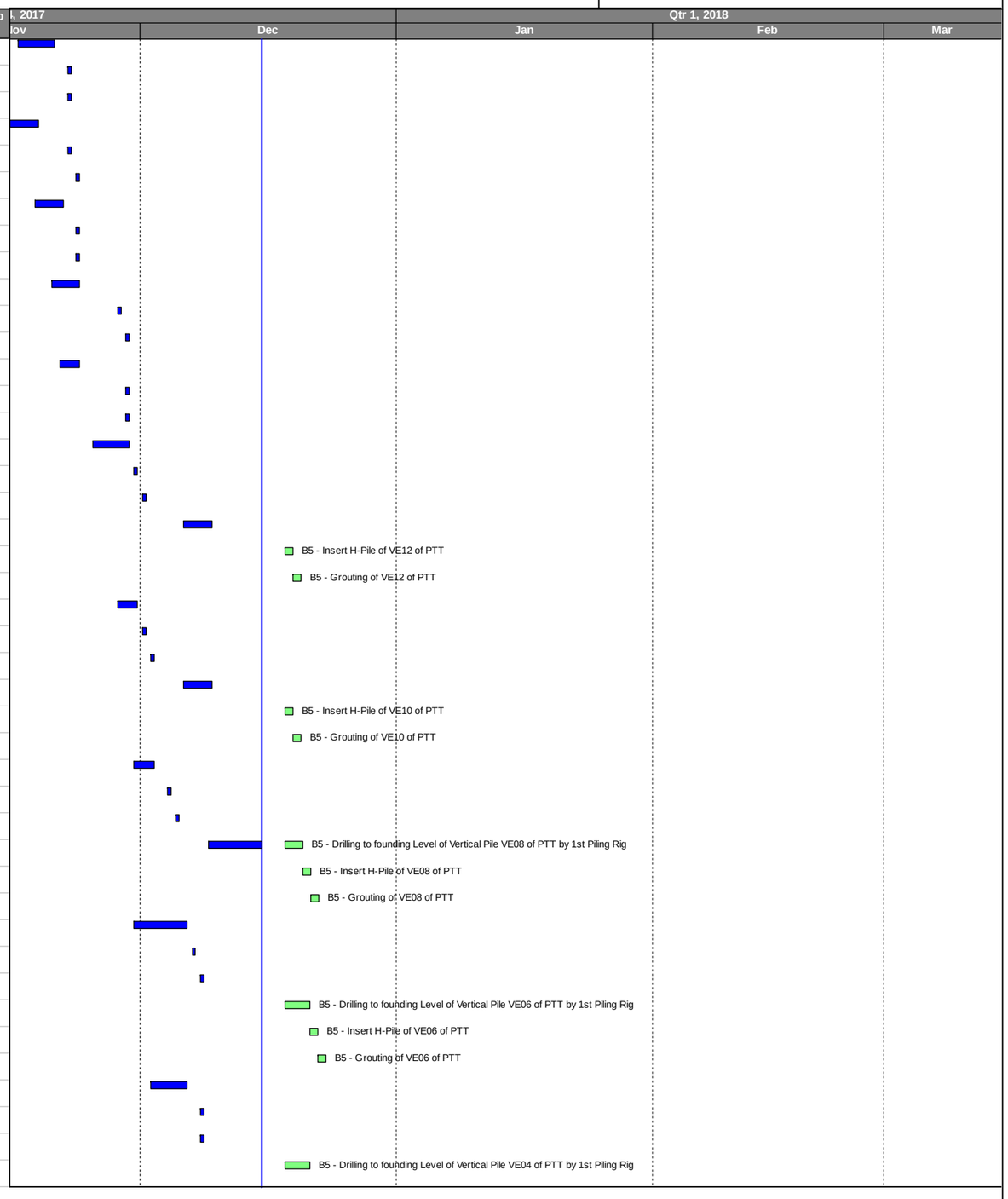
Date	Revision	Checked	Approved
20-Dec-17	3MRP Rev.1 (Cut Off on 15 Dec 17)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
Pedestrian Connectivity System A								
Lift Tower (North) and Subway within Portion B5								
ACS1010	B5 - Excavation for Pedestrian Connectivity System A (North) to Level (+164mPD)	14	34	04-Nov-17	20-Nov-17	15-Nov-17 A	23-Dec-17	55%
ACS1020	B5 - Construction of Pre-Bored H-Piles (66nos) of Lift Tower (4 days/pile/plant by 2 plants)	132	132	21-Nov-17	05-May-18	23-Dec-17	09-Jun-18	0%
Pedestrian Connectivity System B								
Lift Tower (North) and Subway within Portion A1								
ACS2010	A1 - Excavation for Pedestrian Connectivity System B (North)	90	169	01-Jun-17	14-Sep-17	08-Jun-17 A	28-Dec-17	90%
ACS2030	A1 - Construction of Footings and Wall Structure upwards Level (+176mPD)	30	120	27-Feb-18	06-Apr-18	29-Dec-17	29-May-18	0%
Lift Tower (South) and Subway within Portion C1b								
ACS2110	C1b - Excavation for Pedestrian Connectivity System B (South)	90	95	07-Jul-17	21-Oct-17	20-Nov-17 A	16-Mar-18	20%
Underground Stormwater Retention Tank (Portion A1)								
ACN1010	A1 - Excavation (Open Cut) of Underground Stormwater Tank	201	219	02-May-17	30-Dec-17	10-May-17 A	29-Jan-18	82.1%
ACN1010A5	A1 - Drilling and Grouting for Temporary soil Nails AE7 to AE23 (17 nails)	0	5			08-Dec-17 A	14-Dec-17 A	100%
ACN1020	A1 - Construction of Sub Structure of Underground Stormwater Tank	80	80	02-Jan-18	12-Apr-18	29-Jan-18	11-May-18	0%
Water Pumping Stations (Portion B5)								
ACW1030A001	B5 - Trial Pit for PCCW at Anderson Rd adjacent to RWA14	0	3			13-Nov-17 A	15-Nov-17 A	100%
ACW1030A002	B5 - PCCW Cable Diversion at Anderson Rd adjacent to RWA14	0	1			09-Dec-17 A	09-Dec-17 A	100%
ACW1030A003	B5 - Excavation to Expose CLP Cable at Anderson Rd adjacent to RWA14	0	14			27-Dec-17*	12-Jan-18	0%
ACW1030A004	B5 - Joint Inspection and Meeting for CLP Cable Diversion at Anderson Rd adjacent to RWA14	0	7			13-Jan-18	20-Jan-18	0%
ACW1030A4	B5 - CLP Cable Diversion at Anderson Rd adjacent to RWA14	0	24			22-Jan-18	21-Feb-18	0%
ACW1050	B5 - Further Cut Slope (Rock Breaking) and Erect Platform at Pumping Station (+194mPD)	180	151	29-Aug-17	10-Apr-18	14-Aug-17 A	12-Feb-18	74%
ACW1060A006	B5 - Concreting Blinding Layer for RWA13 - Bay #6	0	1			16-Nov-17 A	16-Nov-17 A	100%
ACW1060A007	B5 - Construct Base Slab of RWA13 - Bay #1	0	12			16-Dec-17	02-Jan-18	0%
ACW1060A008	B5 - Construct Base Slab of RWA13 - Bay #2	0	12			03-Jan-18	16-Jan-18	0%
ACW1060A009	B5 - Construct Base Slab of RWA13 - Bay #3	0	12			16-Dec-17	02-Jan-18	0%
ACW1060A010	B5 - Construct Base Slab of RWA13 - Bay #4	0	12			03-Jan-18	16-Jan-18	0%
ACW1060A011	B5 - Construct Base Slab of RWA13 - Bay #5	0	12			17-Jan-18	30-Jan-18	0%
ACW1060A012	B5 - Construct Base Slab of RWA13 - Bay #6	0	12			31-Jan-18	13-Feb-18	0%
ACW1060A013	B5 - Construct Wall of RWA13 - Bay #1	0	12			03-Jan-18	16-Jan-18	0%
ACW1060A014	B5 - Construct Wall of RWA13 - Bay #2	0	12			17-Jan-18	30-Jan-18	0%
ACW1060A23	B5 - Construct Wall of RWA13 - Bay #3	0	12			03-Jan-18	16-Jan-18	0%
ACW1060A33	B5 - Construct Wall of RWA13 - Bay #4	0	12			17-Jan-18	30-Jan-18	0%
ACW1060A43	B5 - Construct Wall of RWA13 - Bay #5	0	12			31-Jan-18	13-Feb-18	0%
ACW1060A53	B5 - Construct Wall of RWA13 - Bay #6	0	12			14-Feb-18	02-Mar-18	0%
ACW1070A001	B5 - Concreting Blinding Layer for RWA13 - Bay #7	0	1			16-Nov-17 A	16-Nov-17 A	100%
ACW1070A002	B5 - Concreting Blinding Layer for RWA13 - Bay #8	0	1			22-Nov-17 A	22-Nov-17 A	100%
ACW1070A003	B5 - Concreting Blinding Layer for RWA13 - Bay #9	0	1			22-Nov-17 A	22-Nov-17 A	100%
ACW1070A004	B5 - Concreting Blinding Layer for RWA13 - Bay #10	0	1			24-Nov-17 A	24-Nov-17 A	100%
ACW1070A005	B5 - Concreting Blinding Layer for RWA13 - Bay #11	0	1			24-Nov-17 A	24-Nov-17 A	100%
ACW1070A006	B5 - Concreting Blinding Layer for RWA13 - Bay #12	0	1			18-Dec-17*	18-Dec-17	0%
ACW1070A007	B5 - Construct Base Slab of RWA13 - Bay #7	0	12			17-Jan-18	30-Jan-18	0%
ACW1070A008	B5 - Construct Base Slab of RWA13 - Bay #8	0	12			31-Jan-18	13-Feb-18	0%
ACW1070A009	B5 - Construct Base Slab of RWA13 - Bay #9	0	12			14-Feb-18	02-Mar-18	0%

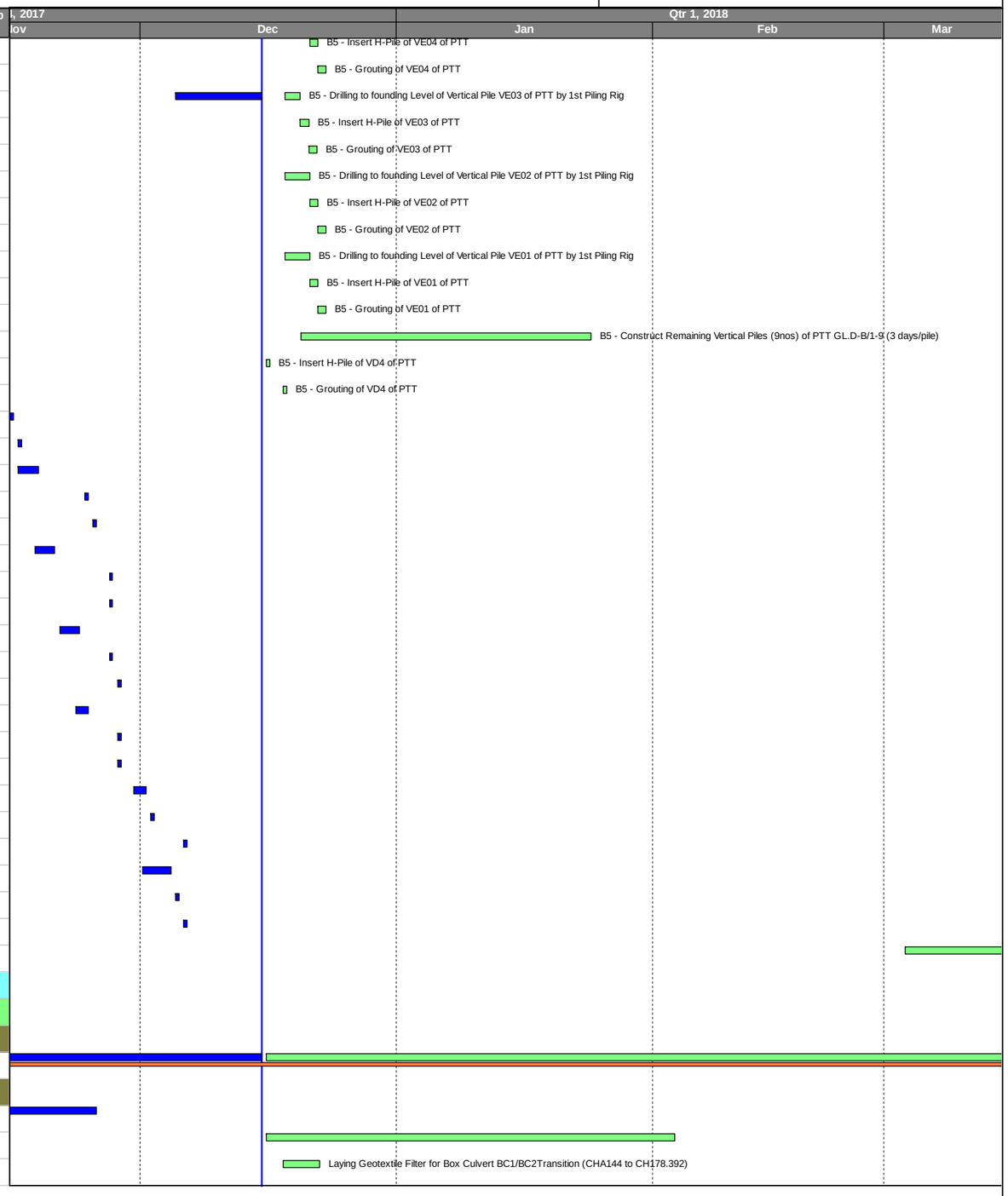
Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACW1070A010	B5 - Construct Base Slab of RWA13 - Bay #10	0	12			03-Mar-18	16-Mar-18	0%
ACW1070A011	B5 - Construct Base Slab of RWA13 - Bay #11	0	12			14-Feb-18	02-Mar-18	0%
ACW1070A012	B5 - Construct Base Slab of RWA13 - Bay #12	0	12			03-Mar-18	16-Mar-18	0%
ACW1070A12	B5 - Construct Wall of RWA13 - Bay #7	0	12			31-Jan-18	13-Feb-18	0%
ACW1070A22	B5 - Construct Wall of RWA13 - Bay #8	0	12			14-Feb-18	02-Mar-18	0%
ACW1070A32	B5 - Construct Wall of RWA13 - Bay #9	0	12			03-Mar-18	16-Mar-18	0%
ACW1070A52	B5 - Construct Wall of RWA13 - Bay #11	0	12			03-Mar-18	16-Mar-18	0%
ACW1080A001	B5 - Concreting Blinding Layer for RWA13 - Bay #13	0	1			08-Dec-17 A	08-Dec-17 A	100%
ACW1080A002	B5 - Concreting Blinding Layer for RWA13 - Bay #14	0	1			08-Dec-17 A	08-Dec-17 A	100%
ACW1080A003	B5 - Concreting Blinding Layer for RWA13 - Bay #15	0	1			19-Dec-17*	19-Dec-17	0%
ACW1090	B5 - Back Fill for RWA13	90	90	26-Oct-17	12-Feb-18	22-Jan-18	15-May-18	0%
ACW1100	B5 - Form new Temporary Access Road passing through Pumping Station Area	7	56	11-Apr-18	18-Apr-18	12-Oct-17 A	16-Dec-17	90%
ACW1110	B5 - Cut Down Existing Anderson Road to RWA14 Footing Level	30	30	19-Apr-18	25-May-18	22-Feb-18	28-Mar-18	0%
Public Transportation Terminus (Portion B5)								
ACP1030A024	B5 - Drilling to founding Level of Raking Pile RX08 of PTT GL.C-D/9 by 1st Piling Rig	0	4			16-Nov-17 A	20-Nov-17 A	100%
ACP1030A1010	B5 - Drilling to founding Level of Vertical Pile VB5 of PTT by 2nd Piling Rig	0	3			01-Dec-17 A	04-Dec-17 A	100%
ACP1030A1011	B5 - Insert H-Pile of VB5 of PTT	0	1			05-Dec-17 A	05-Dec-17 A	100%
ACP1030A1012	B5 - Grouting of VB5 of PTT	0	1			06-Dec-17 A	06-Dec-17 A	100%
ACP1030A1013	B5 - Drilling to founding Level of Vertical Pile VB6 of PTT by 2nd Piling Rig	0	3			05-Dec-17 A	07-Dec-17 A	100%
ACP1030A1014	B5 - Insert H-Pile of VB6 of PTT	0	1			06-Dec-17 A	06-Dec-17 A	100%
ACP1030A1015	B5 - Grouting of VB6 of PTT	0	1			09-Dec-17 A	09-Dec-17 A	100%
ACP1030A1016	B5 - Drilling to founding Level of Vertical Pile VB7 of PTT by 2nd Piling Rig	0	11			06-Dec-17 A	18-Dec-17	50%
ACP1030A1017	B5 - Insert H-Pile of VB7 of PTT	0	1			18-Dec-17	19-Dec-17	0%
ACP1030A1018	B5 - Grouting of VB7 of PTT	0	1			19-Dec-17	20-Dec-17	0%
ACP1030A1020	B5 - Drilling to founding Level of Vertical Pile VB8 of PTT by 2nd Piling Rig	0	3			06-Dec-17 A	08-Dec-17 A	100%
ACP1030A1021	B5 - Insert H-Pile of VB8 of PTT	0	1			16-Dec-17	16-Dec-17	0%
ACP1030A1022	B5 - Grouting of VB8 of PTT	0	1			18-Dec-17	18-Dec-17	0%
ACP1030A1023	B5 - Drilling to founding Level of Vertical Pile VB9 of PTT by 2nd Piling Rig	0	9			08-Dec-17 A	18-Dec-17	50%
ACP1030A1024	B5 - Insert H-Pile of VB9 of PTT	0	1			18-Dec-17	19-Dec-17	0%
ACP1030A1025	B5 - Grouting of VB9 of PTT	0	1			19-Dec-17	20-Dec-17	0%
ACP1030A1026	B5 - Drilling to founding Level of Vertical Pile VB10 of PTT by 2nd Piling Rig	0	8			09-Dec-17 A	18-Dec-17	50%
ACP1030A1027	B5 - Insert H-Pile of VB10 of PTT	0	1			18-Dec-17	19-Dec-17	0%
ACP1030A1028	B5 - Grouting of VB10 of PTT	0	1			19-Dec-17	20-Dec-17	0%
ACP1030A1031	B5 - Insert H-Pile of VB13 of PTT	0	1			17-Nov-17 A	17-Nov-17 A	100%
ACP1030A1032	B5 - Grouting of VB13 of PTT	0	1			18-Nov-17 A	18-Nov-17 A	100%
ACP1030A1036	B5 - Drilling to founding Level of Vertical Pile VC13 of PTT by 1st Piling Rig	0	3			13-Nov-17 A	15-Nov-17 A	100%
ACP1030A1037	B5 - Insert H-Pile of VC13 of PTT	0	1			21-Nov-17 A	21-Nov-17 A	100%
ACP1030A1038	B5 - Grouting of VC13 of PTT	0	1			21-Nov-17 A	21-Nov-17 A	100%
ACP1030A1041	B5 - Insert H-Pile of VC15 of PTT	0	1			16-Nov-17 A	16-Nov-17 A	100%
ACP1030A1042	B5 - Grouting of VC15 of PTT	0	1			17-Nov-17 A	17-Nov-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE19 of PTT by 1st Piling Rig	0	3			23-Nov-17 A	25-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE19 of PTT	0	1			29-Nov-17 A	29-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE19 of PTT	0	1			30-Nov-17 A	30-Nov-17 A	100%



Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE18 of PTT by 1st Piling Rig	0	4			16-Nov-17 A	20-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE18 of PTT	0	1			22-Nov-17 A	22-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE18 of PTT	0	1			22-Nov-17 A	22-Nov-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE17 of PTT by 1st Piling Rig	0	4			15-Nov-17 A	18-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE17 of PTT	0	1			22-Nov-17 A	22-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE17 of PTT	0	1			23-Nov-17 A	23-Nov-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE16 of PTT by 1st Piling Rig	0	3			18-Nov-17 A	21-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE16 of PTT	0	1			23-Nov-17 A	23-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE16 of PTT	0	1			23-Nov-17 A	23-Nov-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE15 of PTT by 1st Piling Rig	0	4			20-Nov-17 A	23-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE15 of PTT	0	1			28-Nov-17 A	28-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE15 of PTT	0	1			29-Nov-17 A	29-Nov-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE14 of PTT by 1st Piling Rig	0	3			21-Nov-17 A	23-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE14 of PTT	0	1			29-Nov-17 A	29-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE14 of PTT	0	1			29-Nov-17 A	29-Nov-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE13 of PTT by 1st Piling Rig	0	4			25-Nov-17 A	29-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE13 of PTT	0	1			30-Nov-17 A	30-Nov-17 A	100%
ACP1030A200A0	B5 - Grouting of VE13 of PTT	0	1			01-Dec-17 A	01-Dec-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE12 of PTT by 1st Piling Rig	0	4			06-Dec-17 A	09-Dec-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE12 of PTT	0	1			18-Dec-17	19-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE12 of PTT	0	1			19-Dec-17	20-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE11 of PTT by 1st Piling Rig	0	3			28-Nov-17 A	30-Nov-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE11 of PTT	0	1			01-Dec-17 A	01-Dec-17 A	100%
ACP1030A200A0	B5 - Grouting of VE11 of PTT	0	1			02-Dec-17 A	02-Dec-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE10 of PTT by 1st Piling Rig	0	4			06-Dec-17 A	09-Dec-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE10 of PTT	0	1			18-Dec-17	19-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE10 of PTT	0	1			19-Dec-17	20-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE09 of PTT by 1st Piling Rig	0	3			30-Nov-17 A	02-Dec-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE09 of PTT	0	1			04-Dec-17 A	04-Dec-17 A	100%
ACP1030A200A0	B5 - Grouting of VE09 of PTT	0	1			05-Dec-17 A	05-Dec-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE08 of PTT by 1st Piling Rig	0	10			09-Dec-17 A	20-Dec-17	20%
ACP1030A200A0	B5 - Insert H-Pile of VE08 of PTT	0	1			20-Dec-17	21-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE08 of PTT	0	1			21-Dec-17	22-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE07 of PTT by 1st Piling Rig	0	6			30-Nov-17 A	06-Dec-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE07 of PTT	0	1			07-Dec-17 A	07-Dec-17 A	100%
ACP1030A200A0	B5 - Grouting of VE07 of PTT	0	1			08-Dec-17 A	08-Dec-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE06 of PTT by 1st Piling Rig	0	3			18-Dec-17	21-Dec-17	0%
ACP1030A200A0	B5 - Insert H-Pile of VE06 of PTT	0	1			21-Dec-17	22-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE06 of PTT	0	1			22-Dec-17	23-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE05 of PTT by 1st Piling Rig	0	4			02-Dec-17 A	06-Dec-17 A	100%
ACP1030A200A0	B5 - Insert H-Pile of VE05 of PTT	0	1			08-Dec-17 A	08-Dec-17 A	100%
ACP1030A200A0	B5 - Grouting of VE05 of PTT	0	1			08-Dec-17 A	08-Dec-17 A	100%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE04 of PTT by 1st Piling Rig	0	3			18-Dec-17	21-Dec-17	0%



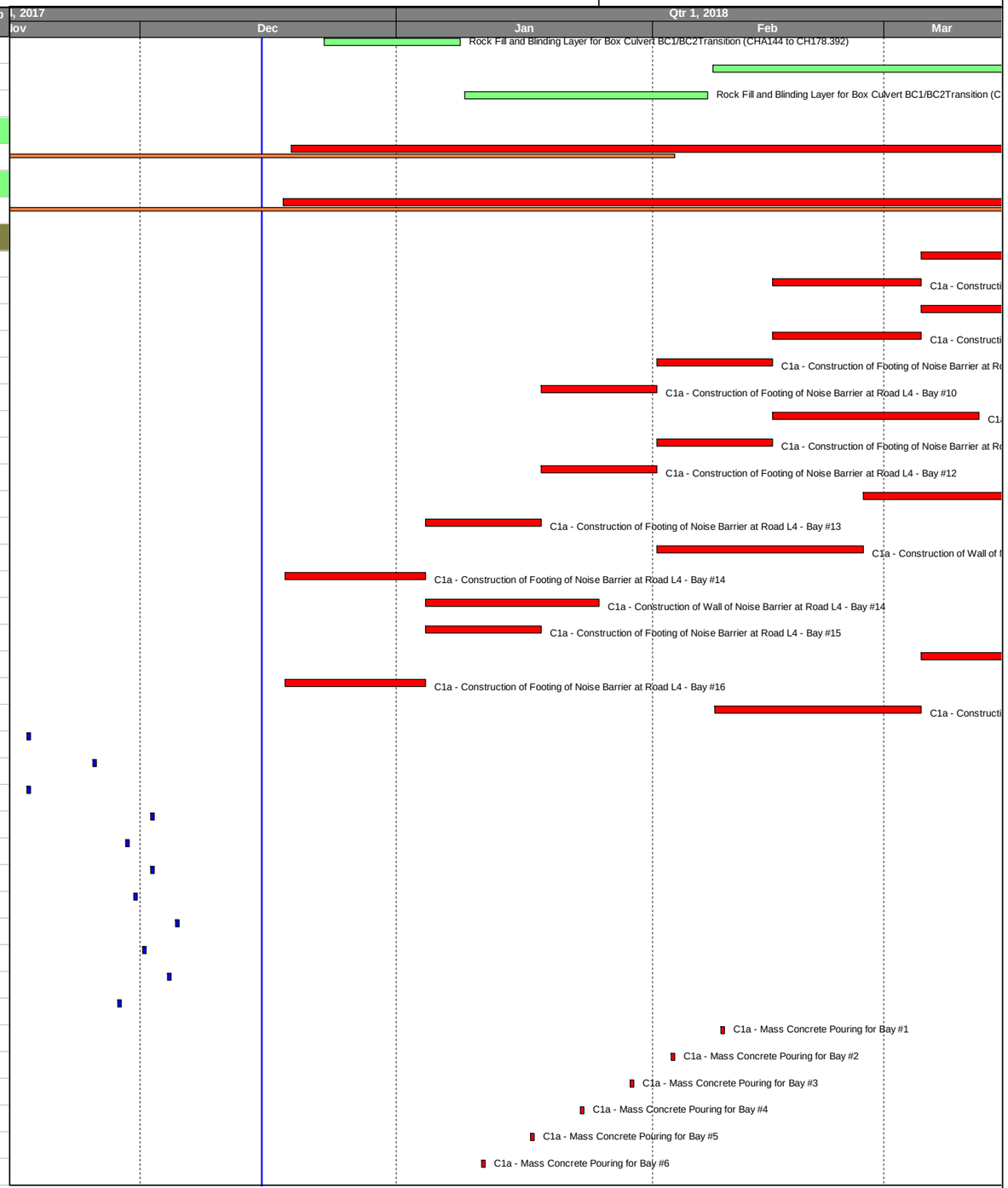
Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACP1030A200A0	B5 - Insert H-Pile of VE04 of PTT	0	1			21-Dec-17	22-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE04 of PTT	0	1			22-Dec-17	23-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE03 of PTT by 1st Piling Rig	0	13			05-Dec-17 A	20-Dec-17	40%
ACP1030A200A0	B5 - Insert H-Pile of VE03 of PTT	0	1			20-Dec-17	21-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE03 of PTT	0	1			21-Dec-17	22-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE02 of PTT by 1st Piling Rig	0	3			18-Dec-17	21-Dec-17	0%
ACP1030A200A0	B5 - Insert H-Pile of VE02 of PTT	0	1			21-Dec-17	22-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE02 of PTT	0	1			22-Dec-17	23-Dec-17	0%
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE01 of PTT by 1st Piling Rig	0	3			18-Dec-17	21-Dec-17	0%
ACP1030A200A0	B5 - Insert H-Pile of VE01 of PTT	0	1			21-Dec-17	22-Dec-17	0%
ACP1030A200A0	B5 - Grouting of VE01 of PTT	0	1			22-Dec-17	23-Dec-17	0%
ACP1030A201	B5 - Construct Remaining Vertical Piles (9nos) of PTT GL.D-B/1-9 (3 days/pile)	0	27			20-Dec-17	24-Jan-18	0%
ACP1030A404	B5 - Insert H-Pile of VD4 of PTT	0	1			16-Dec-17	16-Dec-17	0%
ACP1030A414	B5 - Grouting of VD4 of PTT	0	1			18-Dec-17	18-Dec-17	0%
ACP1030A774	B5 - Grouting of VC8 of PTT	0	1			15-Nov-17 A	15-Nov-17 A	100%
ACP1030A804	B5 - Grouting of VC7 of PTT	0	1			16-Nov-17 A	16-Nov-17 A	100%
ACP1030A814	B5 - Drilling to founding Level of Vertical Pile VC4 of PTT by 2nd Piling Rig	0	3			16-Nov-17 A	18-Nov-17 A	100%
ACP1030A824	B5 - Insert H-Pile of VC4 of PTT	0	1			24-Nov-17 A	24-Nov-17 A	100%
ACP1030A834	B5 - Grouting of VC4 of PTT	0	1			25-Nov-17 A	25-Nov-17 A	100%
ACP1030A844	B5 - Drilling to founding Level of Vertical Pile VC2 of PTT by 2nd Piling Rig	0	2			18-Nov-17 A	20-Nov-17 A	100%
ACP1030A854	B5 - Insert H-Pile of VC2 of PTT	0	1			27-Nov-17 A	27-Nov-17 A	100%
ACP1030A864	B5 - Grouting of VC2 of PTT	0	1			27-Nov-17 A	27-Nov-17 A	100%
ACP1030A874	B5 - Drilling to founding Level of Vertical Pile VC14 of PTT by 2nd Piling Rig	0	3			21-Nov-17 A	23-Nov-17 A	100%
ACP1030A884	B5 - Insert H-Pile of VC14 of PTT	0	1			27-Nov-17 A	27-Nov-17 A	100%
ACP1030A894	B5 - Grouting of VC14 of PTT	0	1			28-Nov-17 A	28-Nov-17 A	100%
ACP1030A904	B5 - Drilling to founding Level of Vertical Pile VD14 of PTT by 2nd Piling Rig	0	2			23-Nov-17 A	24-Nov-17 A	100%
ACP1030A914	B5 - Insert H-Pile of VD14 of PTT	0	1			28-Nov-17 A	28-Nov-17 A	100%
ACP1030A924	B5 - Grouting of VD14 of PTT	0	1			28-Nov-17 A	28-Nov-17 A	100%
ACP1030A934	B5 - Drilling to founding Level of Vertical Pile VB2 of PTT by 2nd Piling Rig	0	2			30-Nov-17 A	01-Dec-17 A	100%
ACP1030A944	B5 - Insert H-Pile of VB2 of PTT	0	1			02-Dec-17 A	02-Dec-17 A	100%
ACP1030A954	B5 - Grouting of VB2 of PTT	0	1			06-Dec-17 A	06-Dec-17 A	100%
ACP1030A964a	B5 - Drilling to founding Level of Vertical Pile VB4 of PTT by 2nd Piling Rig	0	3			01-Dec-17 A	04-Dec-17 A	100%
ACP1030A974a	B5 - Insert H-Pile of VB4 of PTT	0	1			05-Dec-17 A	05-Dec-17 A	100%
ACP1030A984a	B5 - Grouting of VB4 of PTT	0	1			06-Dec-17 A	06-Dec-17 A	100%
ACP1040	B5 - Construct Pile Caps with Erection of Steel Posts GL.E/1-9 (PC3)	36	46	04-May-18	15-Jun-18	03-Mar-18	02-May-18	0%
Internal Road Construction								
At-grade Internal Road L1								
Road L1 and L5 (Portion A1)								
ACL10100	A1 - Excavation and Rock Breaking along Road L1 from Junction Road L1/L3 to West Portal	160	190	15-Sep-17	03-Apr-18	04-Sep-17 A	27-Apr-18	35%
Road L1 (Portion B2)								
ACL10039A001	Excavation of Box Culvert BC1/BC2 Transition (CHA144 to CH178.392)	0	26			26-Oct-17 A	25-Nov-17 A	100%
ACL10040	B2 - Excavation for Box Culvert BC1 (CHA0.000 to CHA144)	40	40	03-Apr-18	21-May-18	16-Dec-17	03-Feb-18	0%
ACL10050A001	Laying Geotextile Filter for Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	5			18-Dec-17*	22-Dec-17	0%



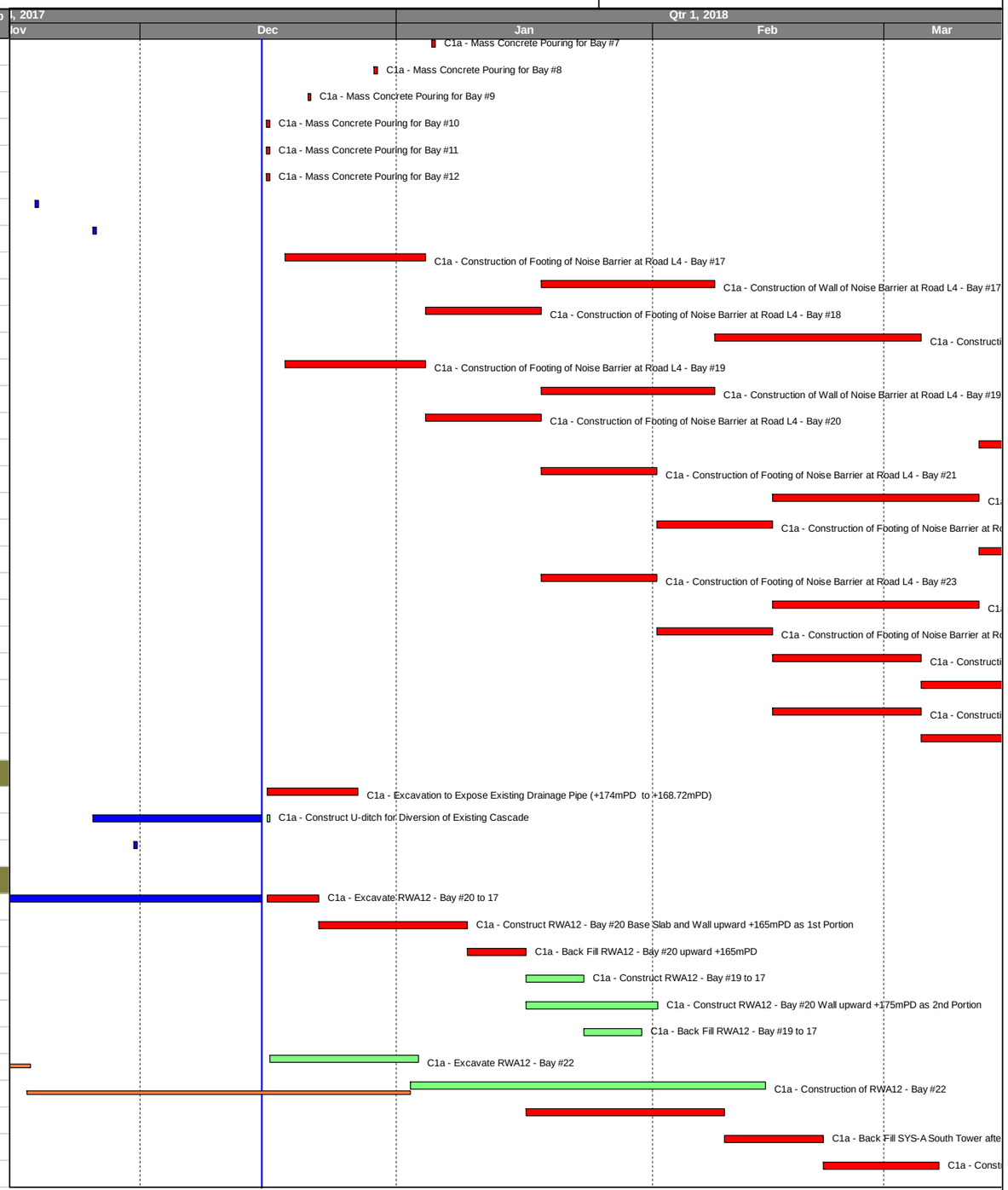
ARQ - Programme Logics based on WP Rev.1 dated 25 Aug 2017

Date	Revision	Checked	Approved
20-Dec-17	3MRP Rev.1 (Cut Off on 15 Dec 17)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL10050A002	Rock Fill and Blinding Layer for Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	11			23-Dec-17	08-Jan-18	0%
ACL10050A003	Construction of Box Culvert BC1 Single Cell (CHA0.000 to CHA144)	0	45			08-Feb-18	09-Apr-18	0%
ACL10050A2	Rock Fill and Blinding Layer for Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	26			09-Jan-18	07-Feb-18	0%
At-grade Internal Road L3 Portion A1)								
ACL30100	A1 - Excavation and Construction of Box Culvert BC2 Twin Cells (CHB0 to CHB84.000)	87	87	21-Oct-17	03-Feb-18	19-Dec-17	10-Apr-18	0%
At-grade Internal Road L4 (Portion C1a)								
ACL41250	C1a - Erect Scaffold for RockSlope Inspection along Road L4	180	180	13-Oct-17	25-May-18	18-Dec-17	31-Jul-18	0%
Noise Barrier								
ACL40370	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #5	12	12	06-Oct-17	19-Oct-17	05-Mar-18	19-Mar-18	0%
ACL40390	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #6	12	12	20-Sep-17	04-Oct-17	15-Feb-18	05-Mar-18	0%
ACL40410	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #7	12	12	06-Oct-17	19-Oct-17	05-Mar-18	19-Mar-18	0%
ACL40430	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #8	12	12	20-Sep-17	04-Oct-17	15-Feb-18	05-Mar-18	0%
ACL40450	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #9	12	12	06-Sep-17	19-Sep-17	01-Feb-18	15-Feb-18	0%
ACL40470	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #10	12	12	23-Aug-17	05-Sep-17	18-Jan-18	01-Feb-18	0%
ACL40480	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #10	18	18	20-Sep-17	12-Oct-17	15-Feb-18	12-Mar-18	0%
ACL40490	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #11	12	12	06-Sep-17	19-Sep-17	01-Feb-18	15-Feb-18	0%
ACL40510	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #12	12	12	23-Aug-17	05-Sep-17	18-Jan-18	01-Feb-18	0%
ACL40520	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #12	18	18	27-Sep-17	19-Oct-17	26-Feb-18	19-Mar-18	0%
ACL40530	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #13	12	12	09-Aug-17	22-Aug-17	04-Jan-18	18-Jan-18	0%
ACL40540	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #13	18	18	06-Sep-17	26-Sep-17	01-Feb-18	26-Feb-18	0%
ACL40550	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #14	12	12	26-Jul-17	08-Aug-17	18-Dec-17	04-Jan-18	0%
ACL40560	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #14	18	18	09-Aug-17	29-Aug-17	04-Jan-18	25-Jan-18	0%
ACL40570	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #15	12	12	09-Aug-17	22-Aug-17	04-Jan-18	18-Jan-18	0%
ACL40580	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #15	18	18	13-Sep-17	04-Oct-17	05-Mar-18	26-Mar-18	0%
ACL40590	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #16	12	12	26-Jul-17	08-Aug-17	18-Dec-17	04-Jan-18	0%
ACL40600	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #16	18	18	23-Aug-17	12-Sep-17	08-Feb-18	05-Mar-18	0%
ACL40605A36	C1a - Mass Concrete Pouring for Bay #21	0	1			17-Nov-17 A	17-Nov-17 A	100%
ACL40605A37	C1a - Mass Concrete Pouring for Bay #23	0	1			25-Nov-17 A	25-Nov-17 A	100%
ACL40605A38	C1a - Mass Concrete Pouring for Bay #24	0	1			17-Nov-17 A	17-Nov-17 A	100%
ACL40605A39	C1a - Mass Concrete Pouring for Bay #25	0	1			02-Dec-17 A	02-Dec-17 A	100%
ACL40605A40	C1a - Mass Concrete Pouring for Bay #26	0	1			29-Nov-17 A	29-Nov-17 A	100%
ACL40605A41	C1a - Mass Concrete Pouring for Bay #27	0	1			02-Dec-17 A	02-Dec-17 A	100%
ACL40605A42	C1a - Mass Concrete Pouring for Bay #28	0	1			30-Nov-17 A	30-Nov-17 A	100%
ACL40605A43	C1a - Mass Concrete Pouring for Bay #29	0	1			05-Dec-17 A	05-Dec-17 A	100%
ACL40605A44	C1a - Mass Concrete Pouring for Bay #30	0	1			01-Dec-17 A	01-Dec-17 A	100%
ACL40605A45	C1a - Mass Concrete Pouring for Bay #31	0	1			04-Dec-17 A	04-Dec-17 A	100%
ACL40605A46	C1a - Mass Concrete Pouring for Bay #32	0	1			28-Nov-17 A	28-Nov-17 A	100%
ACL40605A57	C1a - Mass Concrete Pouring for Bay #1	0	1			09-Feb-18*	09-Feb-18	0%
ACL40605A58	C1a - Mass Concrete Pouring for Bay #2	0	1			03-Feb-18*	03-Feb-18	0%
ACL40605A59	C1a - Mass Concrete Pouring for Bay #3	0	1			29-Jan-18*	29-Jan-18	0%
ACL40605A60	C1a - Mass Concrete Pouring for Bay #4	0	1			23-Jan-18*	23-Jan-18	0%
ACL40605A61	C1a - Mass Concrete Pouring for Bay #5	0	1			17-Jan-18*	17-Jan-18	0%
ACL40605A62	C1a - Mass Concrete Pouring for Bay #6	0	1			11-Jan-18*	11-Jan-18	0%

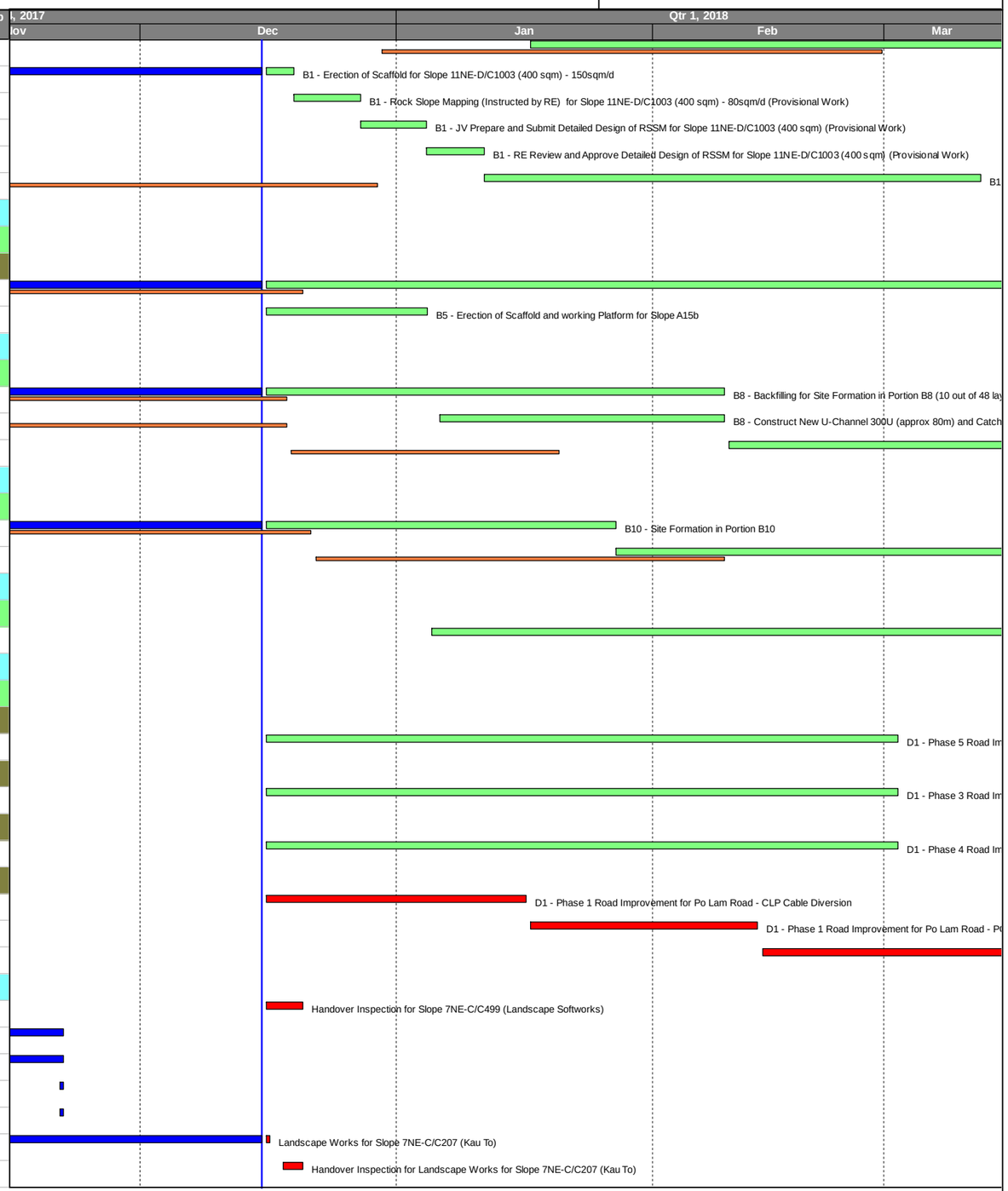


Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL40605A63	C1a - Mass Concrete Pouring for Bay #7	0	1			05-Jan-18*	05-Jan-18	0%
ACL40605A64	C1a - Mass Concrete Pouring for Bay #8	0	1			29-Dec-17*	29-Dec-17	0%
ACL40605A65	C1a - Mass Concrete Pouring for Bay #9	0	1			21-Dec-17*	21-Dec-17	0%
ACL40605A66	C1a - Mass Concrete Pouring for Bay #10	0	1			16-Dec-17*	16-Dec-17	0%
ACL40605A67	C1a - Mass Concrete Pouring for Bay #11	0	1			16-Dec-17*	16-Dec-17	0%
ACL40605A68	C1a - Mass Concrete Pouring for Bay #12	0	1			16-Dec-17*	16-Dec-17	0%
ACL40605A69	C1a - Mass Concrete Pouring for Bay #13	0	1			18-Nov-17 A	18-Nov-17 A	100%
ACL40605A70	C1a - Mass Concrete Pouring for Bay #14	0	1			25-Nov-17 A	25-Nov-17 A	100%
ACL40610	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #17	12	12	05-Jul-17	18-Jul-17	18-Dec-17	04-Jan-18	0%
ACL40620	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #17	18	18	02-Aug-17	22-Aug-17	18-Jan-18	08-Feb-18	0%
ACL40630	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #18	12	12	19-Jul-17	01-Aug-17	04-Jan-18	18-Jan-18	0%
ACL40640	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #18	18	18	23-Aug-17	12-Sep-17	08-Feb-18	05-Mar-18	0%
ACL40650	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #19	12	12	05-Jul-17	18-Jul-17	18-Dec-17	04-Jan-18	0%
ACL40660	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #19	18	18	02-Aug-17	22-Aug-17	18-Jan-18	08-Feb-18	0%
ACL40670	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #20	12	12	19-Jul-17	01-Aug-17	04-Jan-18	18-Jan-18	0%
ACL40680	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #20	18	18	20-Sep-17	12-Oct-17	12-Mar-18	06-Apr-18	0%
ACL40690	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #21	12	12	02-Aug-17	15-Aug-17	18-Jan-18	01-Feb-18	0%
ACL40700	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #21	18	18	30-Aug-17	19-Sep-17	15-Feb-18	12-Mar-18	0%
ACL40710	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #22	12	12	16-Aug-17	29-Aug-17	01-Feb-18	15-Feb-18	0%
ACL40720	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #22	18	18	20-Sep-17	12-Oct-17	12-Mar-18	06-Apr-18	0%
ACL40730	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #23	12	12	02-Aug-17	15-Aug-17	18-Jan-18	01-Feb-18	0%
ACL40740	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #23	18	18	30-Aug-17	19-Sep-17	15-Feb-18	12-Mar-18	0%
ACL40750	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #24	12	12	16-Aug-17	29-Aug-17	01-Feb-18	15-Feb-18	0%
ACL40770	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #25	12	12	30-Aug-17	12-Sep-17	15-Feb-18	05-Mar-18	0%
ACL40790	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #26	12	12	13-Sep-17	26-Sep-17	05-Mar-18	19-Mar-18	0%
ACL40810	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #27	12	12	30-Aug-17	12-Sep-17	15-Feb-18	05-Mar-18	0%
ACL40830	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #28	12	12	13-Sep-17	26-Sep-17	05-Mar-18	19-Mar-18	0%
Twin 1950 Dia. Downpipe and Cascade								
ACL40010	C1a - Excavation to Expose Existing Drainage Pipe (+174mPD to +168.72mPD)	6	7	10-Oct-17	16-Oct-17	16-Dec-17	27-Dec-17	0%
ACL40020A001	C1a - Construct U-ditch for Diversion of Existing Cascade	0	19			25-Nov-17 A	16-Dec-17	95%
ACL40020A001	C1a - Submit Temporary Drainage Diversion to DSD	0	1			30-Nov-17 A	30-Nov-17 A	100%
Retaining Wall RWA12								
ACL40020A002	C1a - Excavate RWA12 - Bay #20 to 17	0	116			07-Aug-17 A	22-Dec-17	60%
ACL40020A003	C1a - Construct RWA12 - Bay #20 Base Slab and Wall upward +165mPD as 1st Portion	0	12			22-Dec-17	09-Jan-18	0%
ACL40020A004	C1a - Back Fill RWA12 - Bay #20 upward +165mPD	0	6			09-Jan-18	16-Jan-18	0%
ACL40020A005	C1a - Construct RWA12 - Bay #19 to 17	0	6			16-Jan-18	23-Jan-18	0%
ACL40020A006	C1a - Construct RWA12 - Bay #20 Wall upward +175mPD as 2nd Portion	0	14			16-Jan-18	01-Feb-18	0%
ACL40020A007	C1a - Back Fill RWA12 - Bay #19 to 17	0	6			23-Jan-18	30-Jan-18	0%
ACL40030	C1a - Excavate RWA12 - Bay #22	12	12	04-Nov-17	17-Nov-17	16-Dec-17	03-Jan-18	0%
ACL40040	C1a - Construction of RWA12 - Bay #22	37	37	17-Nov-17	02-Jan-18	02-Jan-18	14-Feb-18	0%
ACL40110	C1a - Excavate RWA12 - Bay #21 (+156.6mPD) and Demolish Existing Soil Nails	5	21	28-Apr-18	04-May-18	16-Jan-18	09-Feb-18	0%
ACL40110A001	C1a - Back Fill SYS-A South Tower after Demolishing Existing Soil Nails to Form Platform	0	7			09-Feb-18	21-Feb-18	0%
ACL40120A001	C1a - Construct RWA12 - Bay #21 Base Slab and Wall upward +165mPD as 1st Portion	0	12			21-Feb-18	07-Mar-18	0%

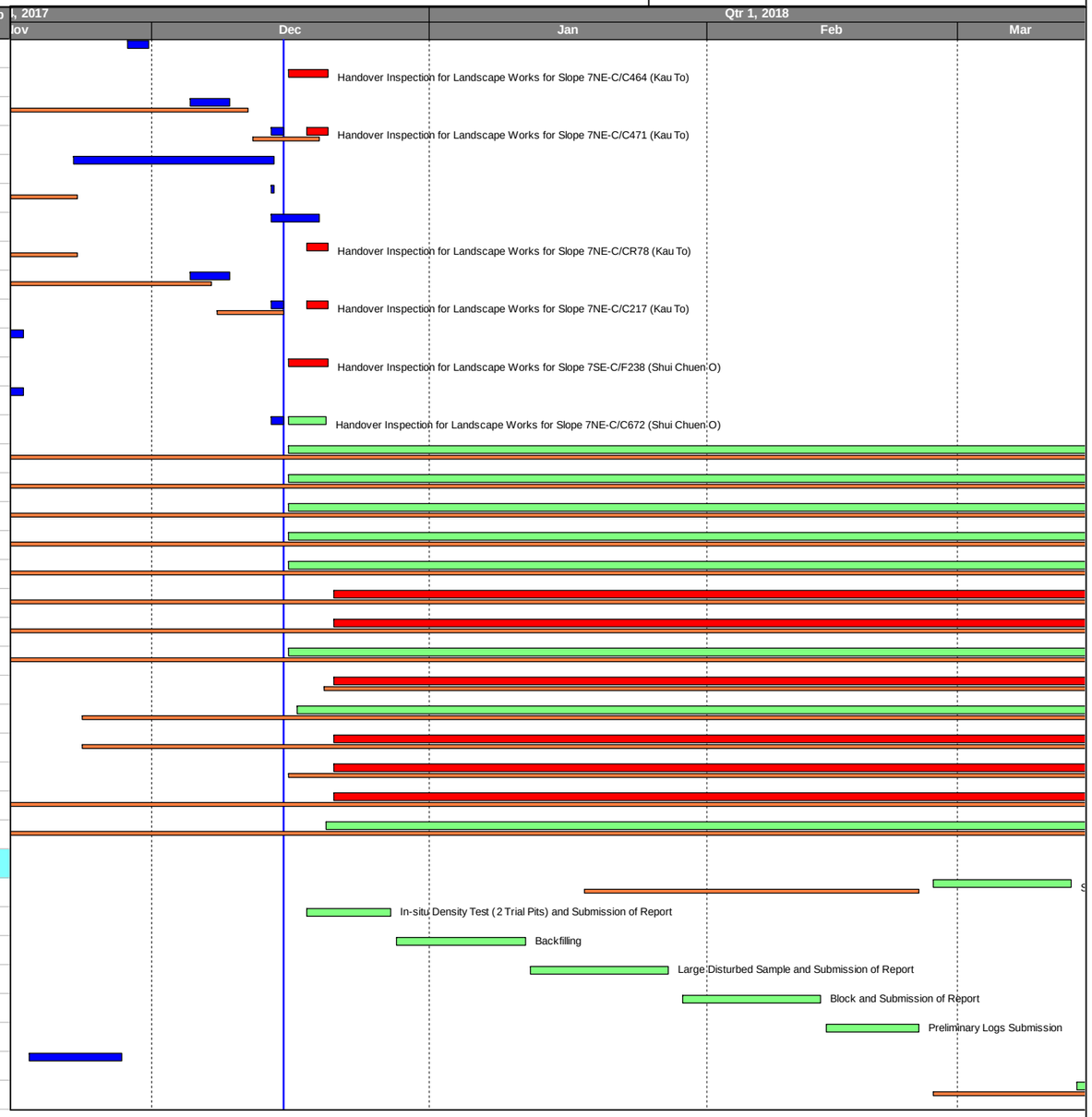


Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL40120A002	C1a - Back Fill RWA12 - Bay #21 and 22 upward +165mPD	0	30			07-Mar-18	16-Apr-18	0%
ACL40955	C1a - Excavate RWA12 - Bay #1 to 8	78	78	26-Jul-17	26-Oct-17	16-Dec-17	23-Mar-18	0%
Retaining Wall RWA18								
ACL40170A001	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #5	0	12			18-Dec-17*	03-Jan-18	0%
ACL40170A002	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #4	0	12			04-Jan-18	17-Jan-18	0%
ACL40170A003	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #3	0	12			18-Jan-18	31-Jan-18	0%
ACL40170A004	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #2	0	12			01-Feb-18	14-Feb-18	0%
ACL40170A005	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #1	0	12			15-Feb-18	03-Mar-18	0%
WSD Access Road (Portion B5)								
ACL60010	B5 - Site Clearance and Tree Felling	46	46	19-Dec-17	13-Feb-18	27-Jan-18	24-Mar-18	0%
Portion A3								
Site Formation								
ACA30020	A3 - Soil Excavation for Site Formation in Portion A3	306	117	07-Sep-17	18-Sep-18	13-Oct-17 A	06-Mar-18	10%
ACA30030	A3 - Rock Breaking for Site Formation in Portion A3	56	64	19-Sep-18	26-Nov-18	25-Oct-17 A	11-Jan-18	5%
ACA30035	A3 - Construct U-Channel with Cover (675UC) along Slope A16	14	14	27-Nov-18	12-Dec-18	22-Feb-18	09-Mar-18	0%
ACA30040	A3 - Construction of U-Channel, Catchpits and 525mm dia. drainage pipe connecting to Manhole A1	45	35	27-Nov-18	21-Jan-19	22-Feb-18	07-Apr-18	0%
Portion A4 (based on Sub Programme Ref.CWSTVJV/893/CSF/0208-2017)								
Site Formation								
ACA40110A002	A4 - Construct Manholes (TM21/TM21a)	0	39			16-Oct-17 A	30-Nov-17 A	100%
ACA40110A003	A4 - Installation of 750mm dia. Drainage Pipes	0	41			13-Oct-17 A	30-Nov-17 A	100%
ACA40130	A4 - Erect Boundary Chainlink Fence (approx. 212m) and Gates in Portion A4	60	34	04-Sep-17	02-Nov-17	15-Nov-17 A	18-Dec-17	86%
Portion B1								
Site Formation								
ACB10010	B1 - 9 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	270	340	24-Jan-17	20-Oct-17	15-Sep-17 A	21-Aug-18	8%
ACB10020	B1 - 17 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	510	561	24-Jan-17	17-Jun-18	15-Sep-17 A	30-Mar-19	8%
ACB10030	B1 - 30 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	900	912	24-Jan-17	12-Jul-19	19-Feb-17 A	19-Aug-19	32%
ACB10050	B1 - Erection of Scaffold for Slope A16	14	68	14-Jul-17	29-Jul-17	06-Oct-17 A	28-Dec-17	40%
ACB10060	B1 - Rock Slope Mapping (Instructed by RE) for Slope A16	30	30	19-Jul-17	22-Aug-17	16-Dec-17	23-Jan-18	0%
ACB10070	B1 - JV Prepare and Submit Detailed Design of RSSM for Slope A16 (Provisional Work)	18	18	23-Aug-17	12-Sep-17	24-Jan-18	13-Feb-18	0%
ACB10080	B1 - RE Review and Approve Detailed Design of RSSM for Slope A16 (Provisional Work)	12	12	13-Sep-17	26-Sep-17	14-Feb-18	02-Mar-18	0%
ACB10090	B1 - Rock Slope Stabilization Measures of RSSM for Slope A16 (Provisional Work)	48	48	27-Sep-17	24-Nov-17	03-Mar-18	03-May-18	0%
ACB10360	B1 - Material and Equipment Mobilization up Hill for Slope 11NE-D/C1004 (2700 sqm)	7	7	04-Nov-17	11-Nov-17	30-Dec-17	08-Jan-18	0%
ACB10380	B1 - Erection of Scaffold for Slope 11NE-D/C1004 (2700 sqm) - 150sqm/d	20	20	27-Nov-17	19-Dec-17	09-Jan-18	31-Jan-18	0%
ACB10390	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work)	38	38	20-Dec-17	05-Feb-18	01-Feb-18	20-Mar-18	0%
ACB10650	B1 - Erection of Scaffold for Slope 11NE-D/C998 (980 sqm) - 150sqm/d	7	86	28-Jul-17	04-Aug-17	10-Jul-17 A	21-Dec-17	40%
ACB10660	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C998 (980 sqm) - 80sqm/d (Provisional Work)	13	122	05-Aug-17	19-Aug-17	07-Aug-17 A	02-Jan-18	40%
ACB10670	B1 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-D/C998 (980 sqm) (Provisional Work)	6	116	21-Aug-17	26-Aug-17	18-Aug-17 A	06-Jan-18	40%
ACB10680	B1 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C998 (980 sqm) (Provisional Work)	6	118	28-Aug-17	02-Sep-17	19-Aug-17 A	11-Jan-18	40%
ACB10690	B1 - Rock Slope Stabilization Measures for Slope 11NE-D/C998 (980 sqm)	48	95	04-Sep-17	01-Nov-17	08-Nov-17 A	06-Mar-18	10%
ACB10710	B1 - Erection of Scaffold for Slope 11NE-D/C999 (600 sqm) - 150sqm/d	4	4	13-Oct-17	17-Oct-17	16-Dec-17*	20-Dec-17	0%
ACB10720	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C999 (600 sqm) - 80sqm/d (Provisional Work)	8	8	18-Oct-17	26-Oct-17	21-Dec-17	02-Jan-18	0%
ACB10730	B1 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-D/C999 (600 sqm) (Provisional Work)	6	6	27-Oct-17	03-Nov-17	03-Jan-18	09-Jan-18	0%
ACB10740	B1 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C999 (600 sqm) (Provisional Work)	6	6	04-Nov-17	10-Nov-17	10-Jan-18	16-Jan-18	0%

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACB10750	B1 - Rock Slope Stabilization Measures for Slope 11NE-D/C999 (600 sqm)	48	48	30-Dec-17	28-Feb-18	17-Jan-18	16-Mar-18	0%
ACB10770	B1 - Erection of Scaffold for Slope 11NE-D/C1003 (400 sqm) - 150sqm/d	3	57	11-Sep-17	13-Sep-17	13-Oct-17 A	19-Dec-17	5%
ACB10780	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1003 (400 sqm) - 80sqm/d (Provisional Work)	5	5	14-Sep-17	19-Sep-17	19-Dec-17*	27-Dec-17	0%
ACB10790	B1 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-D/C1003 (400 sqm) (Provisional Work)	6	6	20-Sep-17	26-Sep-17	27-Dec-17	04-Jan-18	0%
ACB10800	B1 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C1003 (400 sqm) (Provisional Work)	6	6	27-Sep-17	04-Oct-17	04-Jan-18	11-Jan-18	0%
ACB10810	B1 - Rock Slope Stabilization Measures for Slope 11NE-D/C1003 (400 sqm) (Provisional Work)	48	48	02-Nov-17	29-Dec-17	11-Jan-18	12-Mar-18	0%
Portion B5								
Portion B5 North & East Side adjacent to Portion B2 and Pumping Station and Reservoirs								
Site Formation								
ACB50060	B5 - 9 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	270	333	24-Jan-17	20-Dec-17	15-Sep-17 A	31-Oct-18	5%
ACB50070	B5 - Erection of Scaffold and working Platform for Slope A15b	180	14	24-Jan-17	02-Sep-17	16-Dec-17*	04-Jan-18	0%
Portion B8								
Site Formation								
ACB80020	B8 - Backfilling for Site Formation in Portion B8 (10 out of 48 layers completed)	60	133	09-Oct-17	18-Dec-17	01-Sep-17 A	09-Feb-18	25%
ACB80030	B8 - Construct New U-Channel 300U (approx 80m) and Catchpit TC6c	30	30	14-Nov-17	18-Dec-17	06-Jan-18	09-Feb-18	0%
ACB80040	B8 - Construct New U-Channel 375U (approx 66m) and Catchpit TC6d	26	26	19-Dec-17	20-Jan-18	10-Feb-18	15-Mar-18	0%
Portion B10								
Site Formation								
ACB100020	B10 - Site Formation in Portion B10	45	122	31-Oct-17	21-Dec-17	01-Sep-17 A	27-Jan-18	25%
ACB100030	B10 - Construct New U-Channel (450U,525U and 675U; approx 90m) and Catchpits (3nos)	40	40	22-Dec-17	09-Feb-18	27-Jan-18	19-Mar-18	0%
Portion C1b								
Site Formation								
ACC10009	C1b - Excavation In Portion C1b (Slope A5)	90	90	12-Jul-18	27-Oct-18	05-Jan-18	27-Apr-18	0%
Portion D1								
Road Improvement at Po Lam Road								
Phase 5 Road Improvement Works								
ACD10260	D1 - Phase 5 Road Improvement for Po Lam Road - Underground Utility Detection	60	60	20-Feb-17	06-May-17	16-Dec-17	02-Mar-18	0%
Phase 3 Road Improvement Works								
ACD10190	D1 - Phase 3 Road Improvement for Po Lam Road - Underground Utility Detection	60	60	20-Feb-17	06-May-17	16-Dec-17	02-Mar-18	0%
Phase 4 Road Improvement Works								
ACD10230	D1 - Phase 4 Road Improvement for Po Lam Road - Underground Utility Detection	60	60	20-Feb-17	06-May-17	16-Dec-17	02-Mar-18	0%
Phase 1 Road Improvement Works								
ACD10035	D1 - Phase 1 Road Improvement for Po Lam Road - CLP Cable Diversion	24	24	02-Aug-17	29-Aug-17	16-Dec-17	16-Jan-18	0%
ACD10045	D1 - Phase 1 Road Improvement for Po Lam Road - PCCW Cable Diversion	24	24	30-Aug-17	26-Sep-17	17-Jan-18	13-Feb-18	0%
ACD10055	D1 - Phase 1 Road Improvement for Po Lam Road - WT&T Cable Diversion	24	24	27-Sep-17	26-Oct-17	14-Feb-18	16-Mar-18	0%
Shui Chuen O & Kau To (Portion E2) - Subject to Excision								
ACO10066	Handover Inspection for Slope 7NE-C/C499 (Landscape Softworks)	7	4	13-Sep-17	20-Sep-17	16-Dec-17	20-Dec-17	0%
ACO10202	Handover Inspection for Landscape Works for Slope 7SE-C/CR309 (Shui Chuen O)	7	49	12-Aug-17	19-Aug-17	22-Sep-17 A	21-Nov-17 A	100%
ACO10204	Handover Inspection for Landscape Works for Slope 7SE-C/C673 (Shui Chuen O)	7	49	12-Aug-17	19-Aug-17	22-Sep-17 A	21-Nov-17 A	100%
ACO10221	Handover Inspection for Landscape Works for Slope 7SE-A/C604 (Kau To)	7	1	04-Oct-17	12-Oct-17	21-Nov-17 A	21-Nov-17 A	100%
ACO10223	Handover Inspection for Landscape Works for Slope 7SE-A/C605 (Kau To)	7	1	04-Oct-17	12-Oct-17	21-Nov-17 A	21-Nov-17 A	100%
ACO10240	Landscape Works for Slope 7NE-C/C207 (Kau To)	20	87	04-Oct-17	27-Oct-17	04-Sep-17 A	16-Dec-17	95%
ACO10241	Handover Inspection for Landscape Works for Slope 7NE-C/C207 (Kau To)	7	3	30-Oct-17	06-Nov-17	18-Dec-17	20-Dec-17	0%

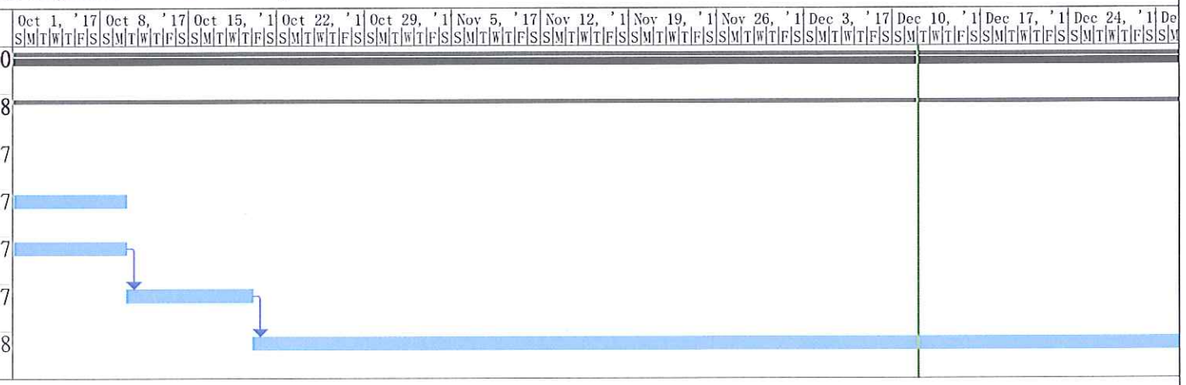


Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACO10242	Landscape Works for Slope 7NE-C/C464 (Kau To)	20	3	04-Oct-17	27-Oct-17	28-Nov-17 A	30-Nov-17 A	100%
ACO10243	Handover Inspection for Landscape Works for Slope 7NE-C/C464 (Kau To)	7	4	30-Oct-17	06-Nov-17	16-Dec-17	20-Dec-17	0%
ACO10250	Landscape Works for Slope 7NE-C/C471 (Kau To)	23	5	15-Nov-17	11-Dec-17	05-Dec-17 A	09-Dec-17 A	100%
ACO10251	Handover Inspection for Landscape Works for Slope 7NE-C/C471 (Kau To)	7	6	12-Dec-17	19-Dec-17	14-Dec-17 A	20-Dec-17	50%
ACO10253	Handover Inspection for Landscape Works for Slope 7NE-C/C482 (Kau To)	7	20	30-Oct-17	06-Nov-17	22-Nov-17 A	14-Dec-17 A	100%
ACO10261	Handover Inspection for Landscape Works for Slope 7NE-C/FR264 (Kau To)	7	1	15-Nov-17	22-Nov-17	14-Dec-17 A	14-Dec-17 A	100%
ACO10270	Landscape Works for Slope 7NE-C/CR78 (Kau To)	14	5	30-Oct-17	14-Nov-17	14-Dec-17 A	19-Dec-17 A	100%
ACO10271	Handover Inspection for Landscape Works for Slope 7NE-C/CR78 (Kau To)	7	3	15-Nov-17	22-Nov-17	18-Dec-17	20-Dec-17	0%
ACO10272	Landscape Works for Slope 7NE-C/C217 (Kau To)	20	5	15-Nov-17	07-Dec-17	05-Dec-17 A	09-Dec-17 A	100%
ACO10273	Handover Inspection for Landscape Works for Slope 7NE-C/C217 (Kau To)	7	6	08-Dec-17	15-Dec-17	14-Dec-17 A	20-Dec-17	50%
ACO10280	Landscape Works for Slope 7SE-C/F238 (Shui Chuen O)	56	37	12-Aug-17	18-Oct-17	02-Oct-17 A	16-Nov-17 A	100%
ACO10281	Handover Inspection for Landscape Works for Slope 7SE-C/F238 (Shui Chuen O)	7	4	19-Oct-17	26-Oct-17	16-Dec-17*	20-Dec-17	0%
ACO10282	Landscape Works for Slope 7NE-C/C672 (Shui Chuen O)	56	37	12-Aug-17	18-Oct-17	02-Oct-17 A	16-Nov-17 A	100%
ACO10283	Handover Inspection for Landscape Works for Slope 7NE-C/C672 (Shui Chuen O)	7	6	19-Oct-17	26-Oct-17	14-Dec-17 A	20-Dec-17	50%
ACO10290	Establishment Works for Slope 7SE-C/CR309 (Shui Chuen O)	365	365	20-Aug-17	19-Aug-18	16-Dec-17	15-Dec-18	0%
ACO10291	Establishment Works for Slope 7SE-C/C673 (Shui Chuen O)	365	365	20-Aug-17	19-Aug-18	16-Dec-17	15-Dec-18	0%
ACO10300	Establishment Works for Slope 7SE-C/C240 (Shui Chuen O)	365	365	20-Aug-17	19-Aug-18	16-Dec-17	15-Dec-18	0%
ACO10310	Establishment Works for Slope 7SE-A/C604 (Kau To)	365	365	13-Oct-17	12-Oct-18	16-Dec-17	15-Dec-18	0%
ACO10311	Establishment Works for Slope 7SE-A/C605 (Kau To)	365	365	13-Oct-17	12-Oct-18	16-Dec-17	15-Dec-18	0%
ACO10315	Establishment Works for Slope 7NE-C/C464 (Kau To)	365	365	07-Nov-17	06-Nov-18	21-Dec-17	20-Dec-18	0%
ACO10330	Establishment Works for Slope 7NE-C/C207 (Kau To)	365	365	07-Nov-17	06-Nov-18	21-Dec-17	20-Dec-18	0%
ACO10340	Establishment Works for Slope 7NE-C/C482 (Kau To)	365	365	07-Nov-17	06-Nov-18	16-Dec-17	15-Dec-18	0%
ACO10341	Establishment Works for Slope 7NE-C/C471 (Kau To)	365	365	20-Dec-17	19-Dec-18	21-Dec-17	20-Dec-18	0%
ACO10350	Establishment Works for Slope 7NE-C/FR264 (Kau To)	365	365	23-Nov-17	22-Nov-18	17-Dec-17	16-Dec-18	0%
ACO10360	Establishment Works for Slope 7NE-C/CR78 (Kau To)	365	365	23-Nov-17	22-Nov-18	21-Dec-17	20-Dec-18	0%
ACO10361	Establishment Works for Slope 7NE-C/C217 (Kau To)	365	365	16-Dec-17	15-Dec-18	21-Dec-17	20-Dec-18	0%
ACO10370	Establishment Works for Slope 7SE-C/F238 (Shui Chuen O)	365	365	27-Oct-17	26-Oct-18	21-Dec-17	20-Dec-18	0%
ACO10371	Establishment Works for Slope 7NE-C/C672 (Shui Chuen O)	365	365	27-Oct-17	26-Oct-18	20-Dec-17	20-Dec-18	0%
Mitigation Works for Natural Terrain Catchment B5 adjacent to Anderson Road - Subject to Excision								
ACO10140	Slope Trimming and Excavation for Gabion Barrier Construction (As directed by Engineer)	30	14	18-Jan-18	24-Feb-18	26-Feb-18	13-Mar-18	0%
ACO10142	In-situ Density Test (2 Trial Pits) and Submission of Report	0	7			18-Dec-17*	27-Dec-17	0%
ACO10142A001	Backfilling	0	12			28-Dec-17*	11-Jan-18	0%
ACO10143	Large Disturbed Sample and Submission of Report	0	14			12-Jan-18	27-Jan-18	0%
ACO10144	Block and Submission of Report	0	14			29-Jan-18	13-Feb-18	0%
ACO10145	Preliminary Logs Submission	0	7			14-Feb-18	24-Feb-18	0%
ACO10146	Plate Bearing Test	0	9			17-Nov-17 A	27-Nov-17 A	100%
ACO10150	Construct Gabion Barrier, 450UC and Catch Pits	50	50	26-Feb-18	28-Apr-18	14-Mar-18	16-May-18	0%



Contract No. NE/2016/05 Three months programme for Section A... Bridge E1

ID	Task Name	Duration	Start	Finish
1	**Section A, Portion 1 - Escalator (E1)**	**1096 days**	**Fri 3/31/17**	**Mon 3/30/20**
2	**Piling Works (Pr-bored Socket H-Pile)**	**161 days**	**Mon 9/25/17**	**Sun 3/4/18**
3	Excavation permit available	1 day	Mon 9/25/17	Mon 9/25/17
4	Tree felling	14 days	Tue 9/26/17	Mon 10/9/17
5	Forming Access for mobilization of Piling rig to E1-RS1	14 days	Tue 9/26/17	Mon 10/9/17
6	Mobilization of piling rig	10 days	Tue 10/10/17	Thu 10/19/17
7	Construction of prebored socket H piles for E1- PC1 and E1-RS1 (34nrs)	136 days	Fri 10/20/17	Sun 3/4/18

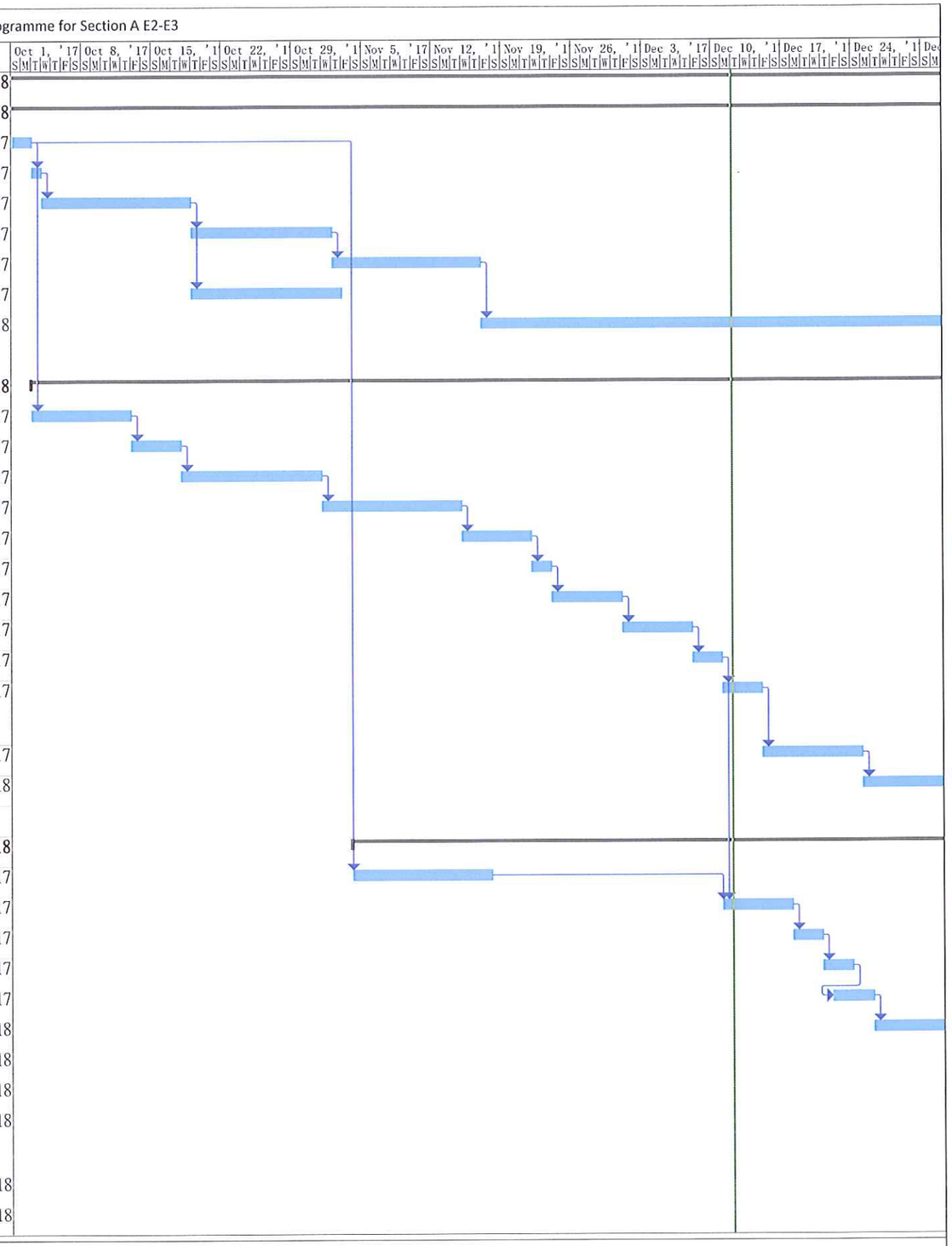


Project: Three months programme for
Date: Tue 12/12/17

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

Contract No. NE/2016/05 Three months programme for Section A E2-E3

ID	Task Name	Duration	Start	Finish
1	**Section A**	**239 days**	**Tue 9/19/17**	**Tue 5/15/18**
2	**E3 and E2 Footbridge and lift Tower**	**239 days**	**Tue 9/19/17**	**Tue 5/15/18**
3	Road Works Advice to block FP of Hiu Ming Street and Hiu Kwong Street	14 days	Tue 9/19/17	Mon 10/2/17
4	Implementation of TTA	1 day	Tue 10/3/17	Tue 10/3/17
5	Erection of Hoardings/water filled barriers at Hiu Ming Street	15 days	Wed 10/4/17	Wed 10/18/17
6	Erection of inspection platform	14 days	Thu 10/19/17	Wed 11/1/17
7	Mobilisation of excavator for breaking of rock for escalator tower E3-ST1	15 days	Thu 11/2/17	Thu 11/16/17
8	Rock Joint Survey (above the crest of the permanent cut slope)	15 days	Thu 10/19/17	Thu 11/2/17
9	Breaking of rock for escalator tower E3-ST1	180 days	Fri 11/17/17	Tue 5/15/18
10				
11	**Pile Cap E3-PC3**	**128 days**	**Tue 10/3/17**	**Wed 2/7/18**
12	Erection of Hoardings/water filled barriers at Hiu Kwong Street	10 days	Tue 10/3/17	Thu 10/12/17
13	General site clearance works	5 days	Fri 10/13/17	Tue 10/17/17
14	Tree felling works	14 days	Wed 10/18/17	Tue 10/31/17
15	Mobilization of plant for predrill for pile cap E3-PC3	14 days	Wed 11/1/17	Tue 11/14/17
16	Predrill for pile cap E3-PC3	7 days	Wed 11/15/17	Tue 11/21/17
17	demobilization of predrill rig	2 days	Wed 11/22/17	Thu 11/23/17
18	Set up tubular platform for removal of soil nails at Slope E3b	7 days	Fri 11/24/17	Thu 11/30/17
19	Removal of soil nails (19nrs) at slope E3b	7 days	Fri 12/1/17	Thu 12/7/17
20	Removal of tubular platform	3 days	Fri 12/8/17	Sun 12/10/17
21	Mobilization of plants for drilling for installation of pre-bored socket H piles for pile cap E3-PC3	4 days	Mon 12/11/17	Thu 12/14/17
22	Setting up plants for drilling for installation of pre-bored socket H pile	10 days	Fri 12/15/17	Sun 12/24/17
23	Construction of socket H piles (9nrs)	45 days	Mon 12/25/17	Wed 2/7/18
24				
25	**Pile Cap E3-PC2**	**130 days**	**Sat 11/4/17**	**Tue 3/13/18**
26	Tree felling works and general site clearance	14 days	Sat 11/4/17	Fri 11/17/17
27	Erection of tubular platform for removal of soil nails	7 days	Mon 12/11/17	Sun 12/17/17
28	Removal of soil nails	3 days	Mon 12/18/17	Wed 12/20/17
29	Removal of tubular platform	3 days	Thu 12/21/17	Sat 12/23/17
30	Mobilization of plants for predrilling for pile cap E3-PC 2	4 days	Fri 12/22/17	Mon 12/25/17
31	Setting up of plants for predrill for pile cap E3-PC2	7 days	Tue 12/26/17	Mon 1/1/18
32	Predrill for pile cap E3-PC2	7 days	Tue 1/2/18	Mon 1/8/18
33	Demobilization of predrill rig	2 days	Tue 1/9/18	Wed 1/10/18
34	Mobilization of plants for drilling and installation of pre-bored socket H pile for pile cap E3-PC2	7 days	Thu 1/11/18	Wed 1/17/18
35	Setting up plants for drilling for installation of pre-bored socket H pile	10 days	Thu 1/18/18	Sat 1/27/18
36	Construction of socket H piles (9nrs)	45 days	Sun 1/28/18	Tue 3/13/18



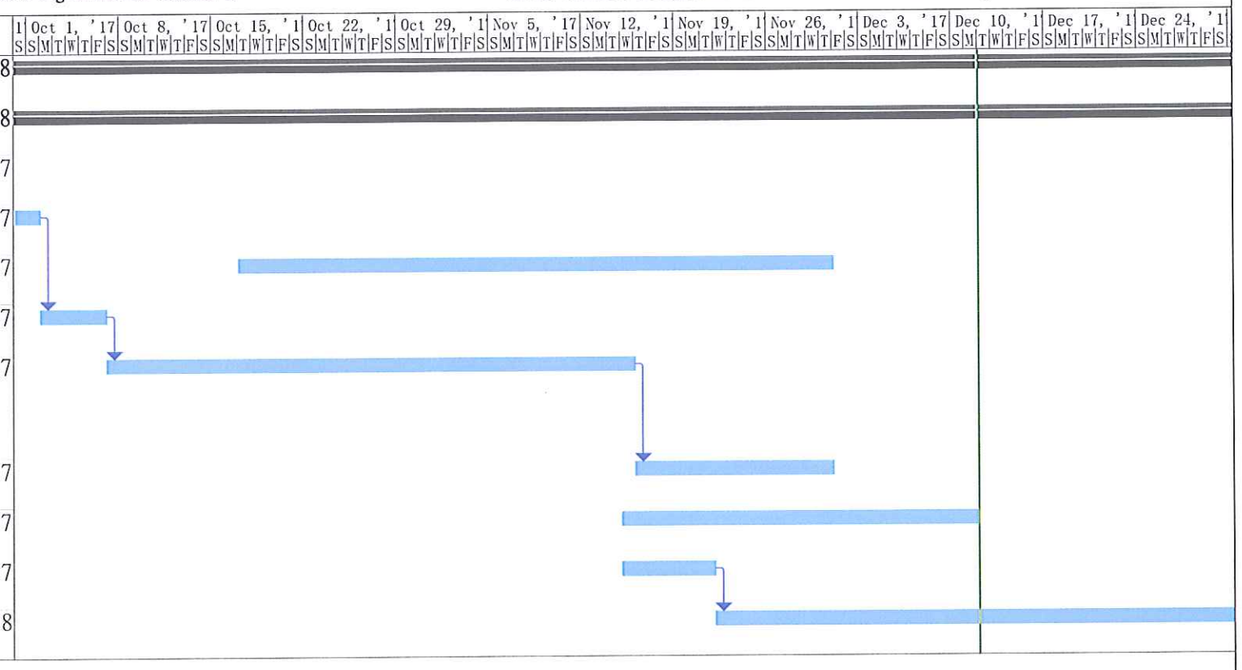
Project: Three months programme for
Date: Tue 12/12/17

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Three months Programme for Section B

Three months programme for Section B commencing in the end of Sept 17

ID	Task Name	Duration	Start	Finish
1	SECTION B - CONSTRUCTION OF SLIP ROAD	366 days	Fri 3/31/17	Sat 3/31/18
2	First Stage Works	105 days	Mon 9/25/17	Sun 1/7/18
3	Inspection of existing manhole	1 day	Mon 9/25/17	Mon 9/25/17
4	General site clearance	6 days	Tue 9/26/17	Sun 10/1/17
5	Trees transplant (2nd stage)	45 days	Tue 10/17/17	Thu 11/30/17
6	Inspection pits	5 days	Mon 10/2/17	Fri 10/6/17
7	Drainage and roadworks in first stage and construct associated lighting works	40 days	Sat 10/7/17	Wed 11/15/17
8	Backfill of trenches and laying of street lighting cables	15 days	Thu 11/16/17	Thu 11/30/17
9	Construct temporary road	27 days	Wed 11/15/17	Mon 12/11/17
10	Implement TTA for road diversion	7 days	Wed 11/15/17	Tue 11/21/17
11	Drainage and roadworks in second stage	45 days	Wed 11/22/17	Fri 1/5/18

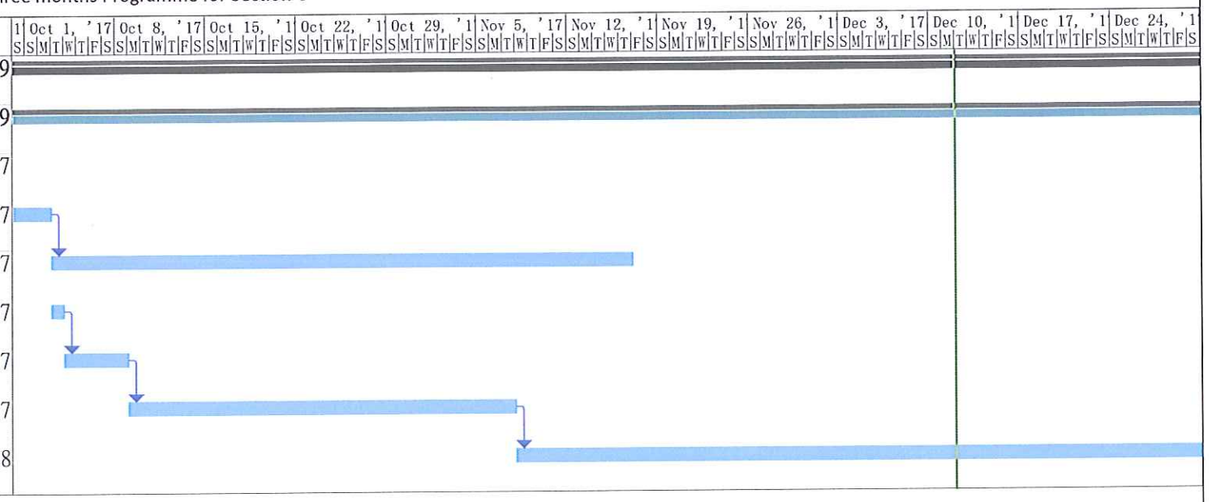


Project: Three months programme for
Date: Tue 12/12/17

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Contract No. NE/2016/05 Three months Programme for Section C

ID	Task Name	Duration	Start	Finish
1	SECTION C - CONSTRUCTION OF BUS BUS INTERCHANGE	731 days	Fri 3/31/17	Sun 3/31/19
2	Covered walkway	731 days	Fri 3/31/17	Sun 3/31/19
3	Tree felling works	3 days	Mon 9/25/17	Wed 9/27/17
4	site clearance	5 days	Thu 9/28/17	Mon 10/2/17
5	Tree Transplant (stage 3)	45 days	Tue 10/3/17	Thu 11/16/17
6	UU detection	1 day	Tue 10/3/17	Tue 10/3/17
7	Inspection pit excavation to expose utilities	5 days	Wed 10/4/17	Sun 10/8/17
8	Coordination meeting with utilities companies	30 days	Mon 10/9/17	Tue 11/7/17
9	Utilities diversion works	229 days	Wed 11/8/17	Sun 6/24/18



Project: Three months programme for
Date: Tue 12/12/17

Task
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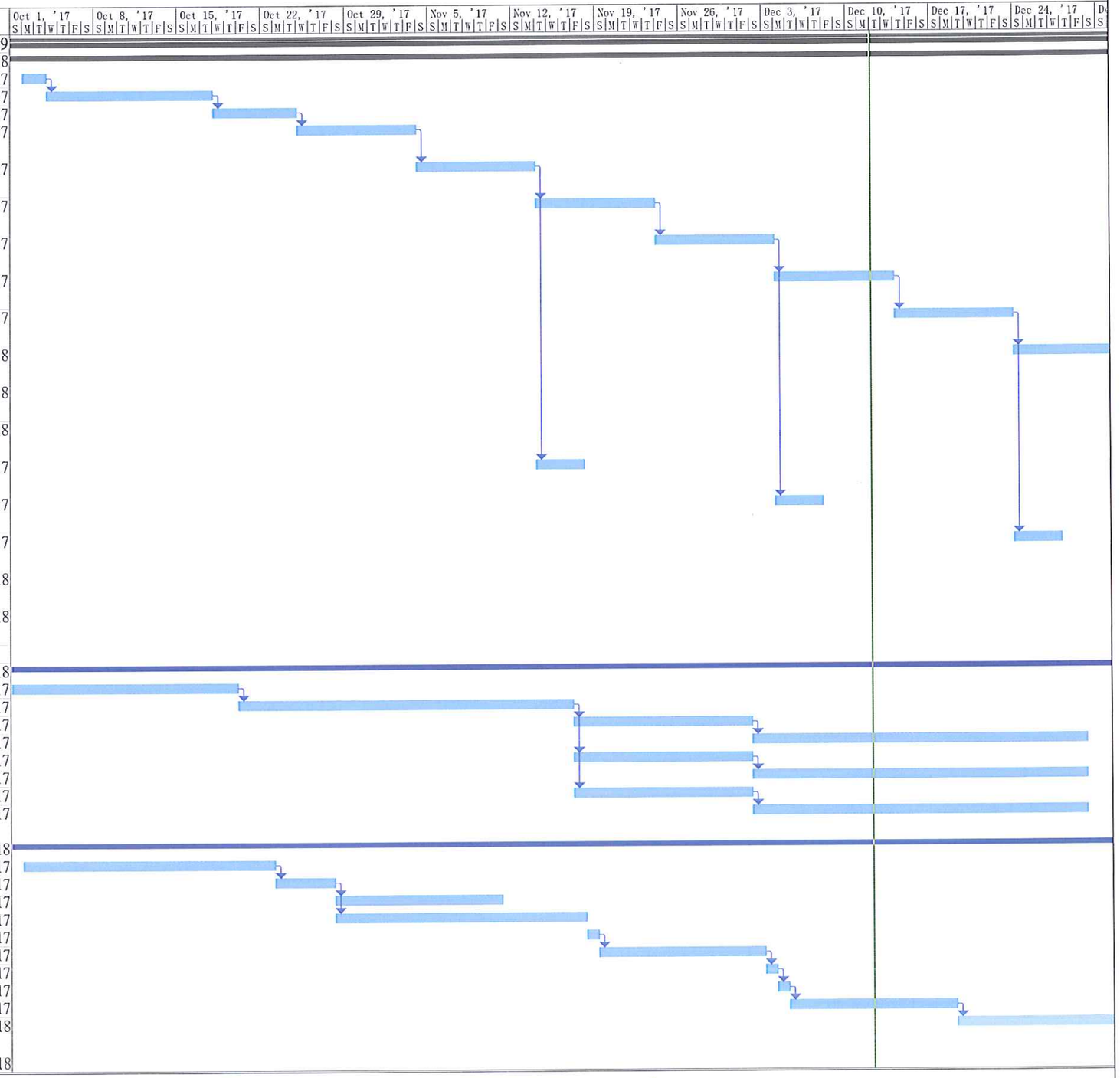
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Contract No. NE/2016/05-Three months programme for Section D

ID	Task Name	Duration	Start	Finish
1	**Section D**	**1006 days**	**Fri 3/31/17**	**Tue 12/31/19**
2	Retaining Wall Construction	106 days	Mon 9/25/17	Mon 1/8/18
3	Utilities detection	2 days	Mon 10/2/17	Tue 10/3/17
4	Existing Footpath Diversion (Stage 1)	14 days	Wed 10/4/17	Tue 10/17/17
5	Plant Mobilization for predrill rig	7 days	Wed 10/18/17	Tue 10/24/17
6	Predrill for installation of dowel bar for retaining wall CH97.5 to CH87	10 days	Wed 10/25/17	Fri 11/3/17
7	Predrill for installation of dowel bar for retaining wall CH87 to CH76.5	10 days	Sat 11/4/17	Mon 11/13/17
8	Predrill for installation of dowel bar for retaining wall CH 76.5 to CH 66	10 days	Tue 11/14/17	Thu 11/23/17
9	Predrill for installation of dowel bar for retaining wall CH 66 to CH 55.5	10 days	Fri 11/24/17	Sun 12/3/17
10	Predrill for installation of dowel bar for retaining wall CH 55.5 to CH45	10 days	Mon 12/4/17	Wed 12/13/17
11	Predrill for installation of dowel bar for retaining wall CH45 to CH34.5	10 days	Thu 12/14/17	Sat 12/23/17
12	Predrill for installation of dowel bar for retaining wall CH34.5 to CH24	10 days	Sun 12/24/17	Tue 1/2/18
13	Predrill for installation of dowel bar for retaining wall CH24 to CH 13.5	10 days	Wed 1/3/18	Fri 1/12/18
14	Predrill for installation of dowel bar for retaining wall CH 13.5 to CH0	10 days	Sat 1/13/18	Mon 1/22/18
15	Installation of dowel bar and grouting for retaining wall CH97.5 to CH76.5	4 days	Tue 11/14/17	Fri 11/17/17
16	Installation of dowel bar and grouting for retaining wall CH76.5 to CH55.5	4 days	Mon 12/4/17	Thu 12/7/17
17	Installation of dowel bar and grouting for retaining wall CH55.5 to CH34.5	4 days	Sun 12/24/17	Wed 12/27/17
18	Installation of dowel bar and grouting for retaining wall CH34.5 to CH14.5	4 days	Sat 1/13/18	Tue 1/16/18
19	Installation of dowel bar and grouting for retaining wall CH14.5 to CH0	4 days	Tue 1/23/18	Fri 1/26/18
20				
21	**Autotoll**	427 days	Fri 3/31/17	Thu 5/31/18
22	Proposal of Specialist for MTC and ETC system	25 days	Mon 9/25/17	Thu 10/19/17
23	Approval of Specialist for MTC and ETC system	28 days	Fri 10/20/17	Thu 11/16/17
24	Material submission of Autotoll System	15 days	Fri 11/17/17	Fri 12/1/17
25	Approval of material submission of autotoll system	28 days	Sat 12/2/17	Fri 12/29/17
26	Statuory submission of Auto Toll system	15 days	Fri 11/17/17	Fri 12/1/17
27	Approval of Auto Toll System	28 days	Sat 12/2/17	Fri 12/29/17
28	Method statement submission of Swapping of autotoll system	15 days	Fri 11/17/17	Fri 12/1/17
29	Approval of method statement of swapping of autotoll system	28 days	Sat 12/2/17	Fri 12/29/17
30				
31	**Drainage works in TKOT SB carriageway**	111 days	Fri 9/29/17	Wed 1/17/18
32	Tree Felling Works	21 days	Mon 10/2/17	Sun 10/22/17
33	Utitities Detection	5 days	Mon 10/23/17	Fri 10/27/17
34	Excavation of Inspection pit to expose utilities	14 days	Sat 10/28/17	Fri 11/10/17
35	Genral Site Clearance	21 days	Sat 10/28/17	Fri 11/17/17
36	Excavation permit available	1 day	Sat 11/18/17	Sat 11/18/17
37	Road work advice	14 days	Sun 11/19/17	Sat 12/2/17
38	Implemtation of TTA	1 day	Sun 12/3/17	Sun 12/3/17
39	UU detection	1 day	Mon 12/4/17	Mon 12/4/17
40	Excavation of Inspection pit to expose utilities	14 days	Tue 12/5/17	Mon 12/18/17
41	Coordination works with Utilities Companies for utilities diversion	30 days	Tue 12/19/17	Wed 1/17/18
42	UU diversion works	50 days	Thu 1/18/18	Thu 3/8/18

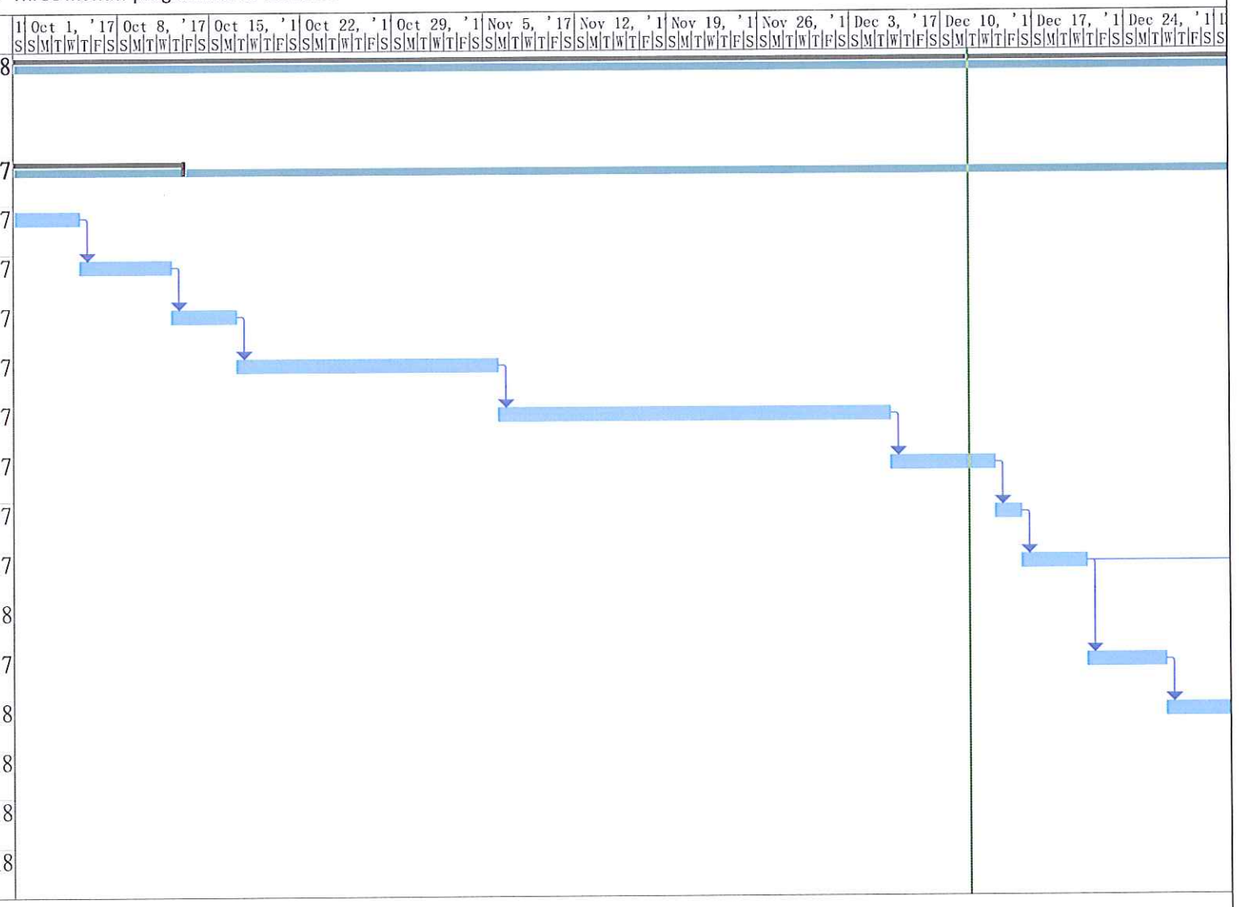


Project: Three months programme for
Date: Tue 12/12/17

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

Contract No. NE/2016/05- Three months programme for Section E

ID	Task Name	Duration	Start	Finish
1	SECTION E - HIKING TRAILS (JORDAN SECTION & CHOI WAN SECTION)	366 days	Fri 3/31/17	Sat 3/31/18
2	CONSTRUCTION OF HIKING TRAIL (Jordan section)	196 days	Fri 3/31/17	Thu 10/12/17
3	Access Arrangement	14 days	Thu 9/21/17	Wed 10/4/17
4	Erect Horading/Water barrier	7 days	Thu 10/5/17	Wed 10/11/17
5	Inspection pit excavation	5 days	Thu 10/12/17	Mon 10/16/17
6	Excavation of slope to form 45 degree cut slope	20 days	Tue 10/17/17	Sun 11/5/17
7	Construction of U channels and Step channels	30 days	Mon 11/6/17	Tue 12/5/17
8	Erection of tubular platform for soil nailing works	8 days	Wed 12/6/17	Wed 12/13/17
9	Setting out of soil nails	2 days	Thu 12/14/17	Fri 12/15/17
10	Construction of test soil nails TN1 and TN2	5 days	Sat 12/16/17	Wed 12/20/17
11	Testing of Test soil nails TN1 and TN2	1 day	Thu 1/18/18	Thu 1/18/18
12	Construction of soil nails in row D	6 days	Thu 12/21/17	Tue 12/26/17
13	Construction of soil nails in row C	6 days	Wed 12/27/17	Mon 1/1/18
14	Construction of soil nails in row B	5 days	Tue 1/2/18	Sat 1/6/18
15	Construction of soil nails in row A	5 days	Sun 1/7/18	Thu 1/11/18
16	Construction of soil nails heads	12 days	Fri 1/12/18	Tue 1/23/18



Project: three months programme for S
Date: Tue 12/12/17

Task
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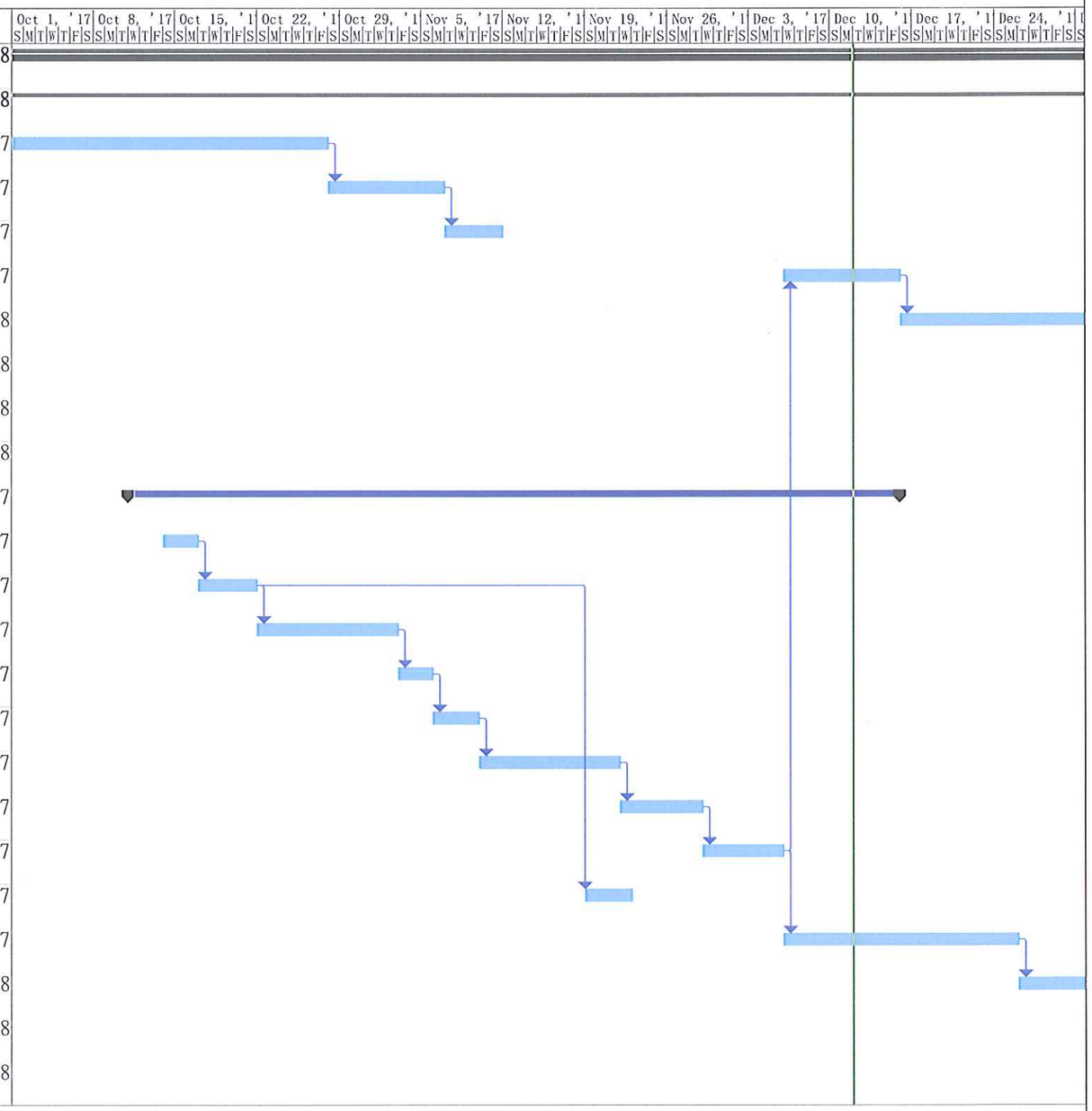
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Contract No. NE/2016/05- Section F Three Months Programme

ID	Task Name	Duration	Start	Finish
1	SECTION F - ENTRUSTED SLOPES (SITE A & SITE B)	331 days	Fri 3/31/17	Sat 2/24/18
2	CONSTRUCTION OF SOIL NAILS IN SITE B	132 days	Mon 9/25/17	Sat 2/3/18
3	Construction of soil nails head	33 days	Mon 9/25/17	Fri 10/27/17
4	Construction of sprayed concrete	10 days	Sat 10/28/17	Mon 11/6/17
5	Removal of tubular platform and tidy up	5 days	Tue 11/7/17	Sat 11/11/17
6	Construction of Soil nails in row G in slope feature 11NE-D/C711	10 days	Wed 12/6/17	Fri 12/15/17
7	Construction of soil nail heads	20 days	Sat 12/16/17	Thu 1/4/18
8	Removal of tubular platform and tidy up	7 days	Fri 1/5/18	Thu 1/11/18
9	Laying of non-biodegradable control mat	20 days	Fri 1/12/18	Wed 1/31/18
10	Hydroseeding of slope	3 days	Thu 2/1/18	Sat 2/3/18
11	CONSTRUCTION OF SOIL NAILS IN SITE A	66 days	Wed 10/11/17	Fri 12/15/17
12	Setting out of soil nails	3 days	Sat 10/14/17	Mon 10/16/17
13	Construction of pull out nails (TN1, TN2, TN3, TN4)	5 days	Tue 10/17/17	Sat 10/21/17
14	Construction of soil nails in row F (44nrs)	12 days	Sun 10/22/17	Thu 11/2/17
15	Construction of soil nails in row E (11nrs)	3 days	Fri 11/3/17	Sun 11/5/17
16	Construction of soil nails in row D (13nrs)	4 days	Mon 11/6/17	Thu 11/9/17
17	Construction of soil naisl in row C (42nrs)	12 days	Fri 11/10/17	Tue 11/21/17
18	Construction of soil nails in row B (26nrs)	7 days	Wed 11/22/17	Tue 11/28/17
19	Construction of soil nails in row A (26nrs)	7 days	Wed 11/29/17	Tue 12/5/17
20	Grout results for pull out test nails	4 days	Sun 11/19/17	Wed 11/22/17
21	Construction of soil nail heads	20 days	Wed 12/6/17	Mon 12/25/17
22	Removal of tubular platform and tidy up	7 days	Tue 12/26/17	Mon 1/1/18
23	Laying of non-biodegradable control mat	20 days	Tue 1/2/18	Sun 1/21/18
24	Hydroseeding of slope	3 days	Mon 1/22/18	Wed 1/24/18

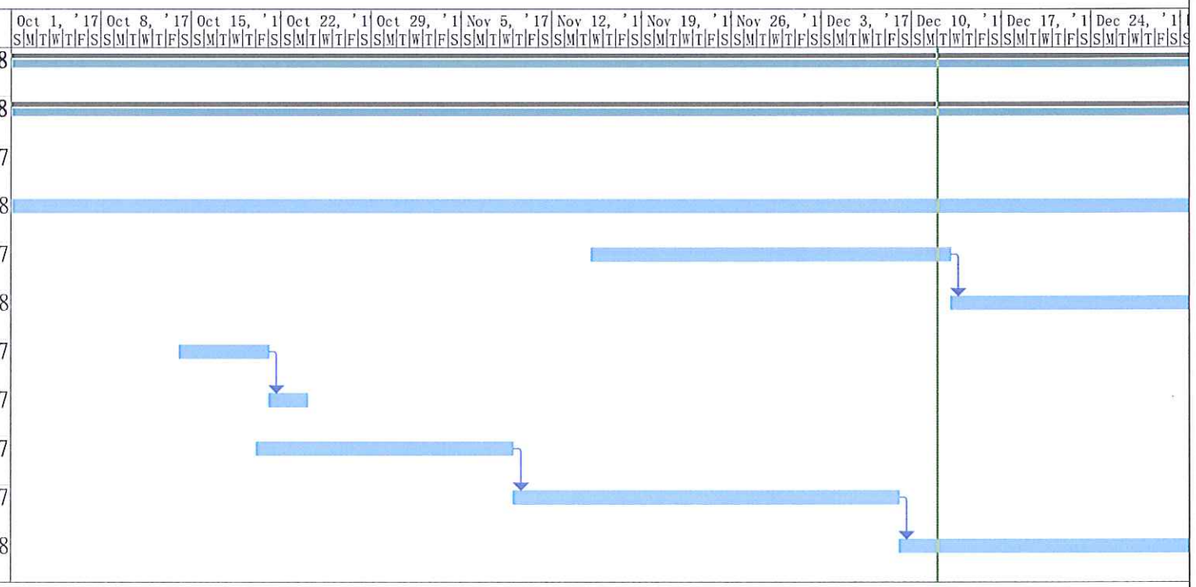


Project: Three months programme for
Date: Tue 12/12/17

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Contract No. NE/2016/05 Three months Programme For Section F1

ID	Task Name	Duration	Start	Finish
1	SECTION F1 - FLEXIBLE BARRIER	481 days	Fri 3/31/17	Tue 7/24/18
2	CONSTRUCTION OF Flexible barriers near Tiu King Leng	481 days	Fri 3/31/17	Tue 7/24/18
3	Approval of design submission of flexible barrier	1 day	Wed 9/27/17	Wed 9/27/17
4	Procurement of flexible barriers	121 days	Thu 9/28/17	Fri 1/26/18
5	Submission of method statement for Flexible barrier construction	28 days	Wed 11/15/17	Tue 12/12/17
6	Approval of method statement for flexible barrier construction	28 days	Wed 12/13/17	Tue 1/9/18
7	Site clearance	7 days	Sat 10/14/17	Fri 10/20/17
8	Setting out of baffle wall	3 days	Sat 10/21/17	Mon 10/23/17
9	Construction of tubular scaffold for ground investigation works	20 days	Fri 10/20/17	Wed 11/8/17
10	Ground investigation works for flexible barriers according to Contractor design	30 days	Thu 11/9/17	Fri 12/8/17
11	Construction of Baffle walls (upper row)	31 days	Sat 12/9/17	Mon 1/8/18



Project: Three months programme for
Date: Tue 12/12/17

Task	Project Summary	Manual Task	Start-only	Deadline	
Split	Inactive Task	Duration-only	Finish-only	Progress	
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress	
Summary	Inactive Summary	Manual Summary	External Milestone		

Appendix D

Monitoring Locations for Impact Monitoring

HVS in AMS-1 for 24-Hour TSP

AMS-1

AMS-2

AMS-3

N

Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations

0 25 50 75 100 125
METRES
1 : 5000

Rev	Description	By	Date
B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 1 of 3)

Drawing no.	Rev.
227724/E/1045	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

CEDD 土木工程拓展署 Civil Engineering and Development Department

Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1045_B - Locations of Construction Dust Monitoring (Sheet 1 of 3).dgn

AMS-3

AMS-4

AMS-5

AMS-6

HVS in AMS-5 for 24-Hour TSP

HVS in AMS-6 for 24-Hour TSP

Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations

Rev	Description	By	Date
B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 2 of 3)

Drawing no.	Rev.
227724/E/1046	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

CEDD 土木工程拓展署 Civil Engineering and Development Department

0 25 50 75 100 125
METRES
(1 : 5000

Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1046_B - Locations of Construction Dust Monitoring (Sheet 2 of 3).dgn

Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations

AMS-5

AMS-6

AMS-7

HVS in AMS-7 for 24-Hour TSP

0 20 40 60 80 100
METRES
1 : 5000

Rev	Description	By	Date
B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 3 of 3)

Drawing no.	Rev.
227724/E/1047	B

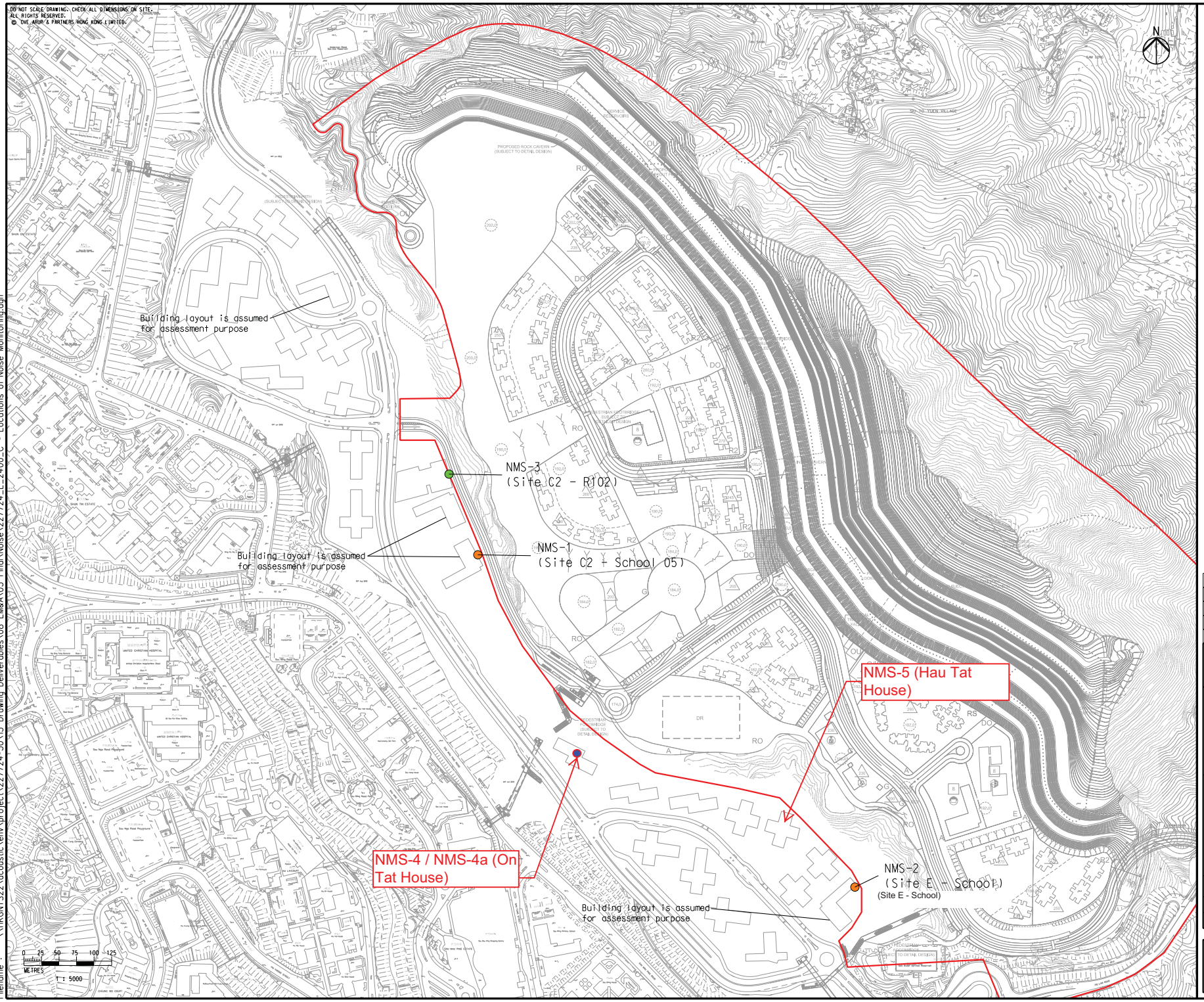
Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

CEDD 土木工程拓展署 Civil Engineering and Development Department

Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1047_B - Locations of Construction Dust Monitoring (Sheet 3 of 3).dgn



Legend

- Study Area
- Construction Noise Monitoring Location
- Construction and Operational Road Traffic Noise Monitoring Location

Rev	Description	By	Date
C	THIRD ISSUE	GL	05/14
B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Noise Monitoring

Drawing no.	Rev.
227724/E/2400	C

Drawn	Date	Checked	Approved
GL	05/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

CEDD 土木工程拓展署 Civil Engineering and Development Department

Printed by : 6/3/2014
Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\08 EM&A\03 Final Noise\227724_E_2400_C - Locations of Noise Monitoring.dgn

Appendix E

Calibration Certificate of Monitoring Equipment and HOKLAS-accreditation Certificate of the Testing Laboratory

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She
Location ID : AMS1
Model: TISCH High Volume Air Sampler TE-5170

Date of Calibration: 10-Oct-17
Next Calibration Date: 10-Dec-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.4	6.4	12.8	1.685	55	54.49	Slope = 37.3114
13	5	5	10	1.491	47	46.57	Intercept = -9.2421
10	4	4	8	1.335	40	39.63	Corr. coeff. = 0.9958
7	2.5	2.5	5	1.058	29	28.73	
5	1.4	1.4	2.8	0.795	22	21.80	

Calculations :

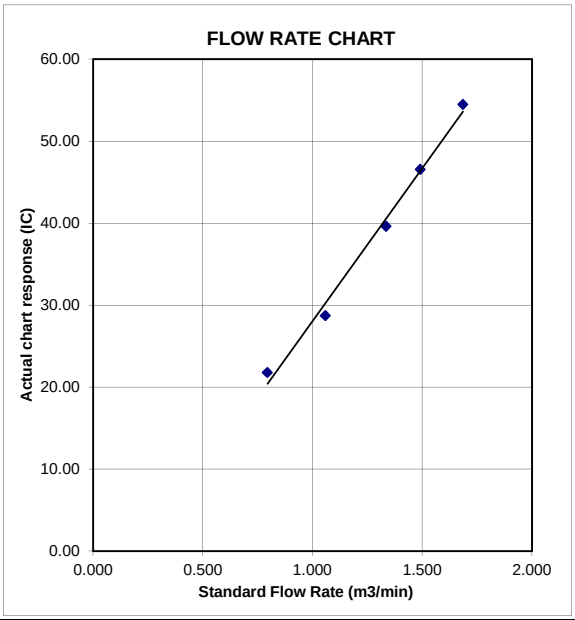
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Oi Tat House	Date of Calibration: 10-Oct-17
Location ID : AMS 5	Next Calibration Date: 10-Dec-17
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.645	52	51.52	Slope = 26.2627
13	4.7	4.7	9.4	1.446	46	45.58	Intercept = 7.6652
10	3.5	3.5	7	1.249	40	39.63	Corr. coeff. = 0.9974
7	2.1	2.1	4.2	0.971	33	32.70	
5	1.2	1.2	2.4	0.737	28	27.74	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

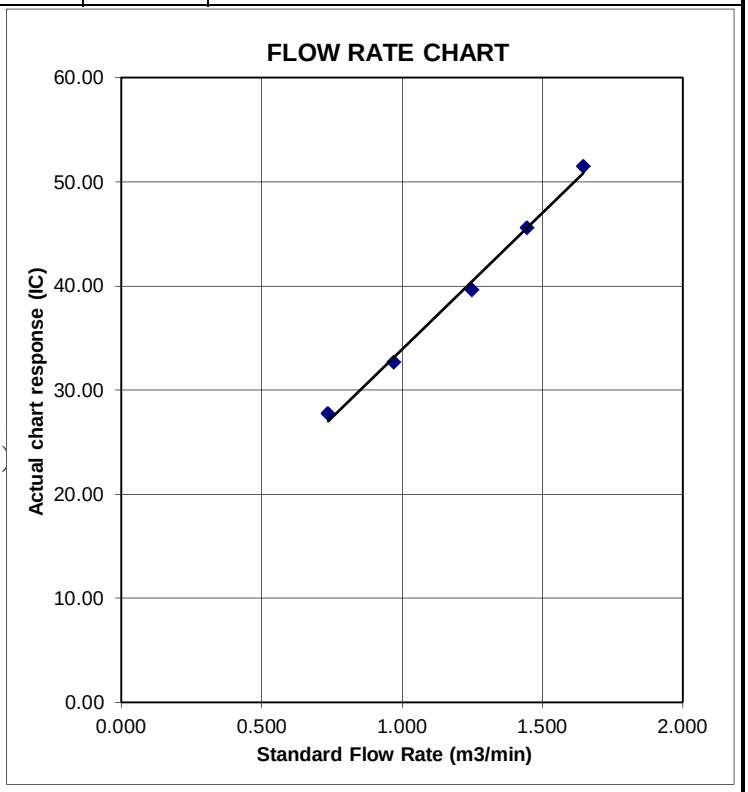
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hau Tat House	Date of Calibration: 10-Oct-17
Location ID : AMS 6	Next Calibration Date: 10-Dec-17
Model: TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.645	52	51.52	Slope = 27.5007
13	4.8	4.8	9.6	1.461	47	46.57	Intercept = 5.9723
10	3.9	3.9	7.8	1.318	42	41.61	Corr. coeff. = 0.9976
7	2.4	2.4	4.8	1.037	34	33.69	
5	1.3	1.3	2.6	0.766	28	27.74	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K

Pstd = actual pressure during calibration (mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

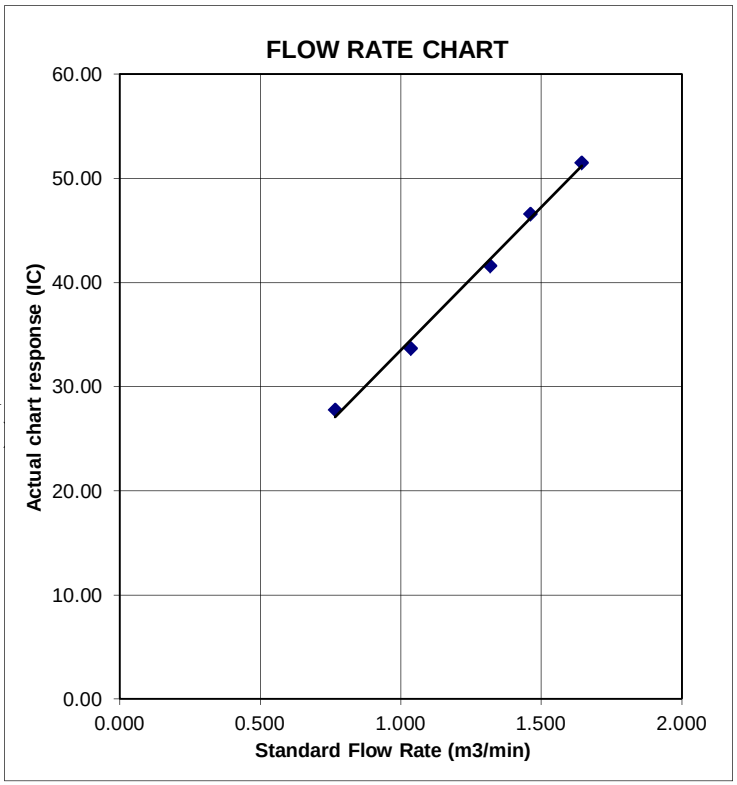
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ma Yau Tong Village
Location ID : AMS 7
Model: TISCH High Volume Air Sampler TE-5170

Date of Calibration: 10-Oct-17
Next Calibration Date: 10-Dec-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	29.8	Temperature (K)	303

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.659	45	44.59	Slope = 30.7009
13	5.0	5.0	10	1.491	39	38.64	Intercept = -7.0035
10	3.9	3.9	7.8	1.318	33	32.70	Corr. coeff. = 0.9982
7	2.6	2.6	5.2	1.079	26	25.76	
5	1.5	1.5	3	0.822	19	18.83	

Calculations :

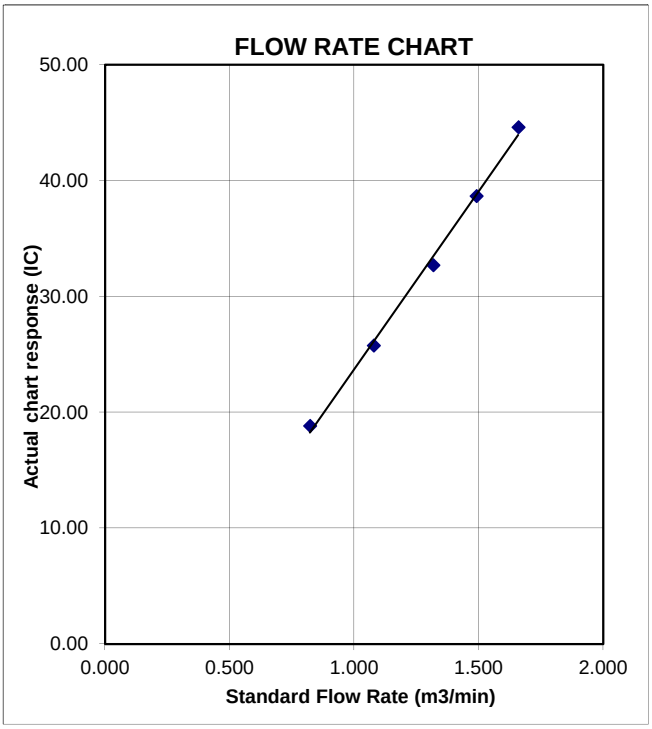
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She
Location ID : AMS1
Model:TISCH High Volume Air Sampler TE-5170

Date of Calibration: 7-Dec-17
Next Calibration Date: 7-Feb-18
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1018.2	Corrected Pressure (mm Hg)	763.65
Temperature (°C)	19.4	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.7	6.7	13.4	1.760	53	53.63	Slope = 37.5427
13	5.4	5.4	10.8	1.582	48	48.57	Intercept = -11.6998
10	4.2	4.2	8.4	1.396	40	40.48	Corr. coeff. = 0.9984
7	2.6	2.6	5.2	1.101	30	30.36	
5	1.6	1.6	3.2	0.867	20	20.24	

Calculations :

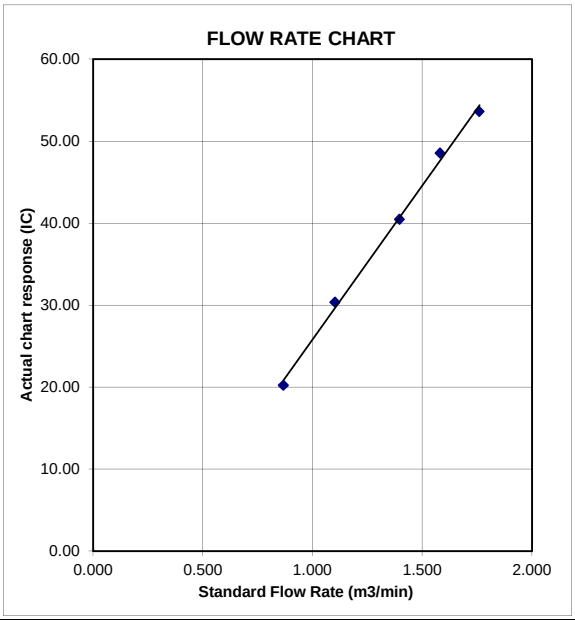
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Oi Tat House	Date of Calibration:	7-Dec-17
Location ID :	AMS 5	Next Calibration Date:	7-Feb-18
Model:TISCH High Volume Air Sampler TE-5170		Technician:	Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1018.2	Corrected Pressure (mm Hg)	763.65
Temperature (°C)	19.4	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.694	55	55.66	Slope = 37.4707
13	4.8	4.8	9.6	1.492	49	49.59	Intercept = -6.7643
10	3.8	3.8	7.6	1.329	43	43.51	Corr. coeff. = 0.9959
7	2.4	2.4	4.8	1.059	34	34.41	
5	1.4	1.4	2.8	0.812	22	22.26	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

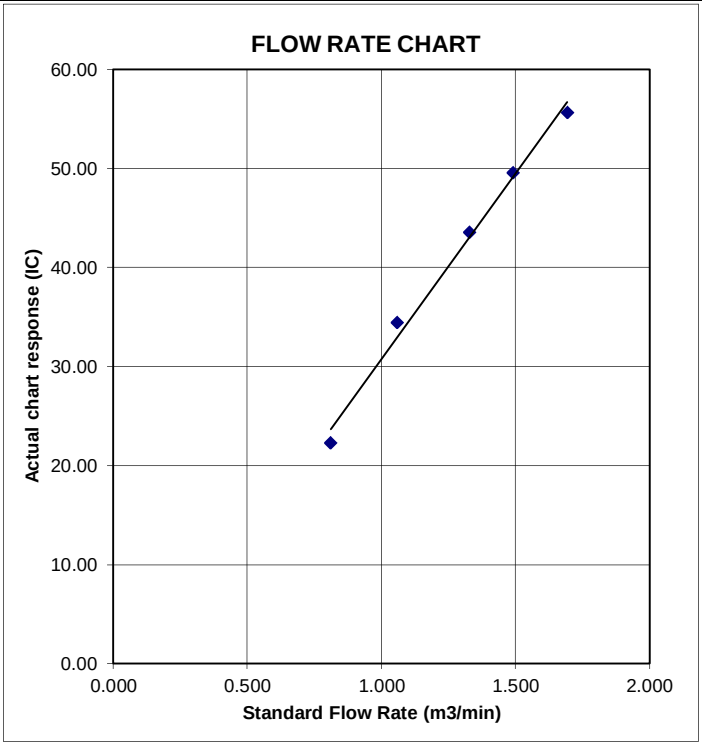
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hau Tat House	Date of Calibration: 7-Dec-17
Location ID : AMS 6	Next Calibration Date: 7-Feb-18
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1018.2	Corrected Pressure (mm Hg)	763.65
Temperature (°C)	19.4	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.694	53	53.63	Slope = 29.6673
13	4.8	4.8	9.6	1.492	46	46.55	Intercept = 3.0298
10	3.7	3.7	7.4	1.311	42	42.50	Corr. coeff. = 0.9986
7	2.3	2.3	4.6	1.037	33	33.39	
5	1.4	1.4	2.8	0.812	27	27.32	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

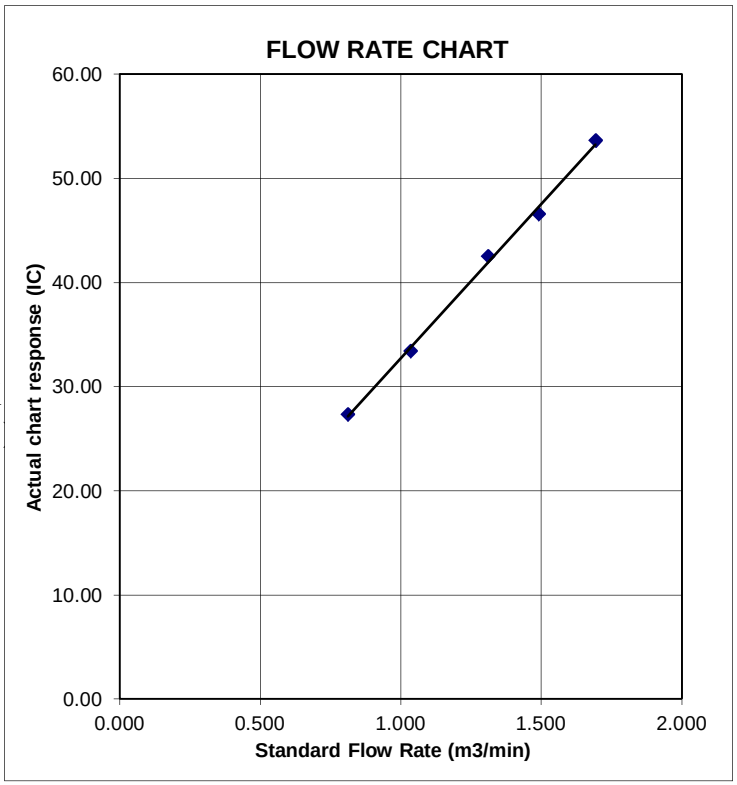
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K
Pstd = actual pressure during calibration (mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ma Yau Tong Village	Date of Calibration: 7-Dec-17
Location ID : AMS 7	Next Calibration Date: 7-Feb-18
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1018.2	Corrected Pressure (mm Hg)	763.65
Temperature (°C)	19.4	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.4	6.4	12.8	1.721	47	47.56	Slope = 29.4149
13	5.2	5.2	10.4	1.552	41	41.49	Intercept = -3.9358
10	3.9	3.9	7.8	1.346	34	34.41	Corr. coeff. = 0.9970
7	2.4	2.4	4.8	1.059	27	27.32	
5	1.5	1.5	3	0.840	21	21.25	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

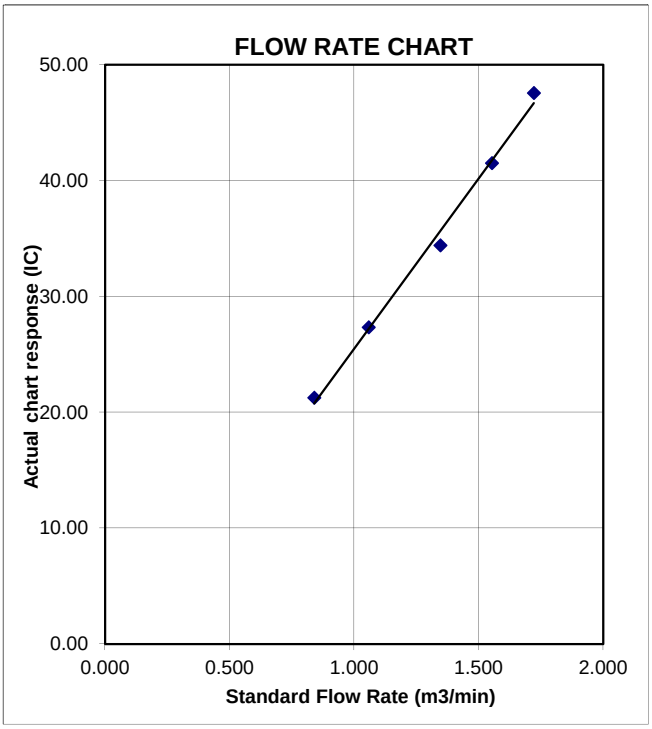
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 28, 2017 Rootsmeter S/N 0438320 Ta (K) - 294
Operator Tisch Orifice I.D. - 1941 Pa (mm) - 750.57

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4600	3.2	2.00
2	NA	NA	1.00	1.0410	6.4	4.00
3	NA	NA	1.00	0.9280	7.9	5.00
4	NA	NA	1.00	0.8840	8.7	5.50
5	NA	NA	1.00	0.7290	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9967	0.6827	1.4149		0.9957	0.6820	0.8851
0.9925	0.9534	2.0010		0.9915	0.9524	1.2517
0.9904	1.0672	2.2372		0.9894	1.0661	1.3995
0.9894	1.1192	2.3464		0.9884	1.1181	1.4678
0.9840	1.3499	2.8299		0.9830	1.3485	1.7702

Qstd slope (m) =	2.11965	Qa slope (m) =	1.32729
intercept (b) =	-0.02696	intercept (b) =	-0.01686
coefficient (r) =	0.99991	coefficient (r) =	0.99991
y axis = SQRT[H2O(Pa/760)(298/Ta)]		y axis = SQRT[H2O(Ta/Pa)]	

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1703460**
CLIENT	: **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING**		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 19-JAN-2017 : 23-JAN-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

General Comments

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*
Richard Fung	General Manager

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group
11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER	: HK1703460
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1703460-001	S/N: 366410	AIR	19-JAN-2017	S/N: 366410

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366410
Equipment Ref:	EQ110
Job Order	HK1703460

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	25 November 2016

Equipment Verification Results:

Testing Date: 9 January 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
3hr14min	09:10 ~ 12:24	20.6	1016.3	0.145	12401	64.0
1hr57min	12:30 ~ 14:27	20.6	1016.3	0.069	3266	27.9
1hr58min	14:35 ~ 16:33	20.6	1016.3	0.091	4878	41.1

Sensitivity Adjustment Scale Setting (Before Calibration) 677 (CPM)

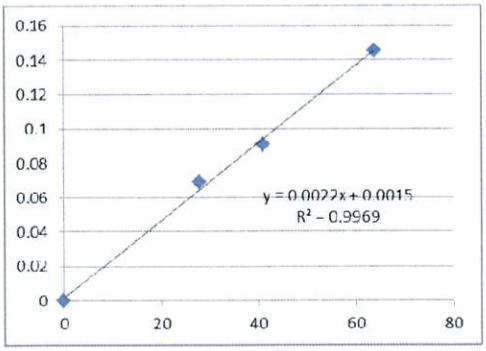
Sensitivity Adjustment Scale Setting (After Calibration) 675 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9984

Date of Issue 11 January 2017



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 11 January 2017

QC Reviewer : Ben Tam Signature : Date : 11 January 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	25-Nov-16
Location ID :	Calibration Room	Next Calibration Date:	25-Feb-17

CONDITIONS

Sea Level Pressure (hPa)	1016.4	Corrected Pressure (mm Hg)	762.3
Temperature (°C)	20.0	Temperature (K)	293

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.776	56	56.56	Slope = 35.6871
13	4.7	4.7	9.4	1.560	49	49.49	Intercept = -6.1123
10	3.6	3.6	7.2	1.368	43	43.43	Corr. coeff. = 0.9967
8	2.3	2.3	4.6	1.096	34	34.34	
5	1.4	1.4	2.8	0.859	23	23.23	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

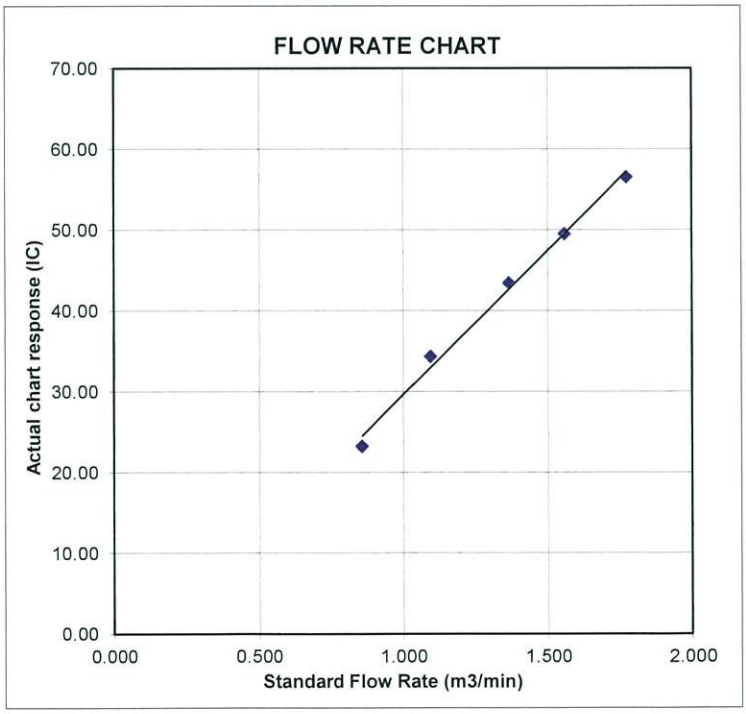
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1703455**
CLIENT	: **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING**		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 19-JAN-2017 : 23-JAN-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

General Comments

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

Signatories

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Signatories	*Position*
Richard Fung	General Manager

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WORK ORDER	: HK1703455
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1703455-001	S/N: 366409	AIR	19-JAN-2017	S/N: 366409

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366409
Equipment Ref:	EQ109
Job Order	HK1703455

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	25 November 2016

Equipment Verification Results:

Testing Date: 9 January 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
3hr14min	09:10 ~ 12:24	20.6	1016.3	0.145	12487	64.4
1hr57min	12:30 ~ 14:27	20.6	1016.3	0.069	3433	29.3
1hr58min	14:35 ~ 16:33	20.6	1016.3	0.091	4815	40.5

Sensitivity Adjustment Scale Setting (Before Calibration) 523 (CPM)

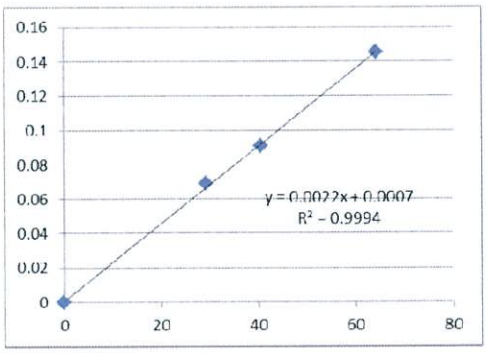
Sensitivity Adjustment Scale Setting (After Calibration) 525 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9997

Date of Issue 11 January 2017



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 11 January 2017

QC Reviewer : Ben Tam Signature : Date : 11 January 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	25-Nov-16
Location ID :	Calibration Room	Next Calibration Date:	25-Feb-17

CONDITIONS

Sea Level Pressure (hPa)	1016.4	Corrected Pressure (mm Hg)	762.3
Temperature (°C)	20.0	Temperature (K)	293

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.776	56	56.56	Slope = 35.6871
13	4.7	4.7	9.4	1.560	49	49.49	Intercept = -6.1123
10	3.6	3.6	7.2	1.368	43	43.43	Corr. coeff. = 0.9967
8	2.3	2.3	4.6	1.096	34	34.34	
5	1.4	1.4	2.8	0.859	23	23.23	

Calculations :

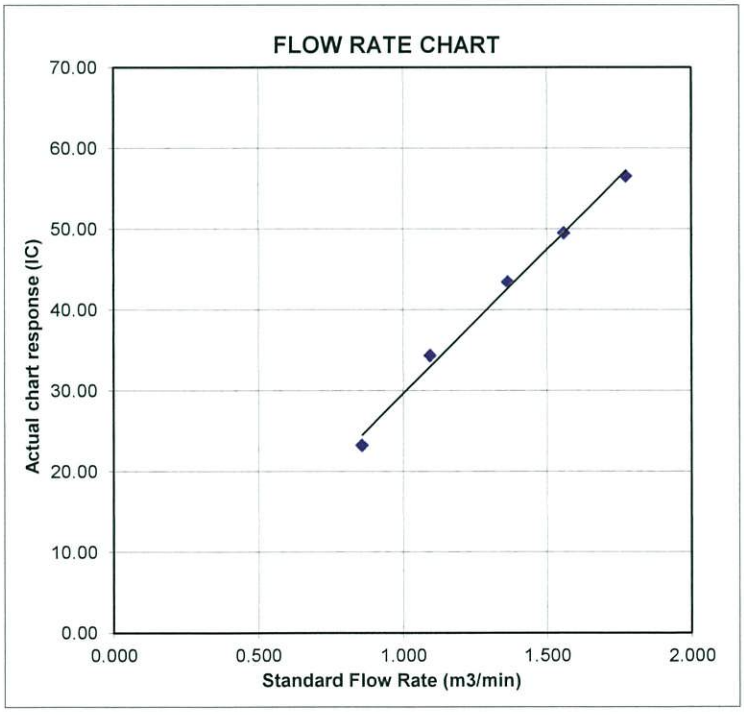
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1716580**
CLIENT	: **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING**		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 20-APR-2017 : 25-APR-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

General Comments

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

Signatories

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Signatories	*Position*
Richard Fung	General Manager

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Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER	: HK1716580
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1716580-001	S/N: 3Y6502	AIR	20-APR-2017	S/N: 3Y6502

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	3Y6502
Equipment Ref:	EQ113
Job Order	HK1716580

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	23 February 2017

Equipment Verification Results:

Calibration Date: 16 March 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr02min	09:58 ~ 12:00	17.8	1016.4	0.037	2031	16.7
2hr07min	12:05 ~ 14:12	17.8	1016.4	0.031	1874	14.7
2hr02min	14:20 ~ 16:22	17.8	1016.4	0.026	1255	10.3

Sensitivity Adjustment Scale Setting (Before Calibration) 569 (CPM)

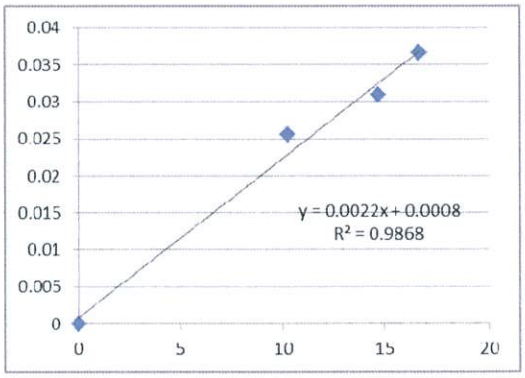
Sensitivity Adjustment Scale Setting (After Calibration) 569 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9934

Date of Issue 20 March 2017



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 20 March 2017

QC Reviewer : Ben Tam Signature : Date : 20 March 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	23-Feb-17
Location ID :	Calibration Room	Next Calibration Date:	23-May-17

CONDITIONS

Sea Level Pressure (hPa)	1017.4	Corrected Pressure (mm Hg)	763.05
Temperature (°C)	17.9	Temperature (K)	291

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.797	56	56.79	Slope = 36.1509
13	5	5	10.0	1.616	49	49.69	Intercept = -8.0555
10	3.8	3.8	7.6	1.410	43	43.61	Corr. coeff. = 0.9984
8	2.4	2.4	4.8	1.124	33	33.47	
5	1.4	1.4	2.8	0.862	22	22.31	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

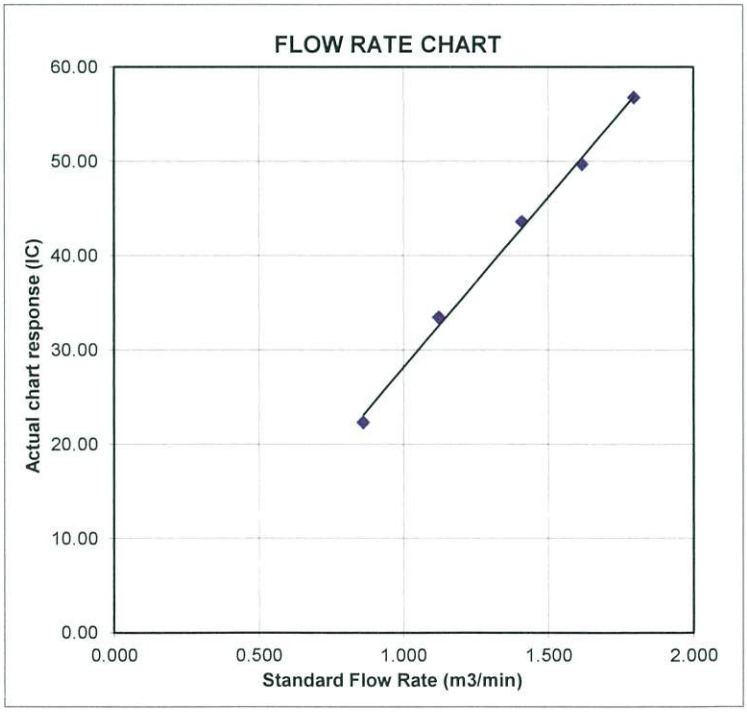
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1716579**
CLIENT	: **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING**		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH DATE RECEIVED DATE OF ISSUE	: 1 : 20-APR-2017 : 25-APR-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

General Comments

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

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Signatories	*Position*
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WORK ORDER	: HK1716579
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1716579-001	S/N: 3Y6501	AIR	20-APR-2017	S/N: 3Y6501

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	3Y6501
Equipment Ref:	EQ111
Job Order	HK1716579

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	23 February 2017

Equipment Verification Results:

Calibration Date: 16 March 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr02min	09:58 ~ 12:00	17.8	1016.4	0.037	2011	16.5
2hr07min	12:05 ~ 14:12	17.8	1016.4	0.031	1793	14.1
2hr02min	14:20 ~ 16:22	17.8	1016.4	0.026	1251	10.2

Sensitivity Adjustment Scale Setting (Before Calibration) 657 (CPM)

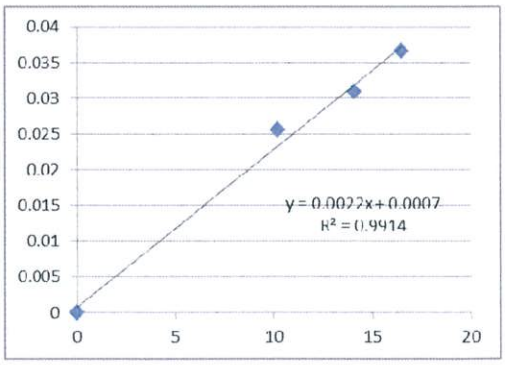
Sensitivity Adjustment Scale Setting (After Calibration) 657 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9957

Date of Issue 20 March 2017



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 20 March 2017

QC Reviewer : Ben Tam Signature : Date : 20 March 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	23-Feb-17
Location ID :	Calibration Room	Next Calibration Date:	23-May-17

CONDITIONS

Sea Level Pressure (hPa)	1017.4	Corrected Pressure (mm Hg)	763.05
Temperature (°C)	17.9	Temperature (K)	291

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.797	56	56.79	Slope = 36.1509
13	5	5	10.0	1.616	49	49.69	Intercept = -8.0555
10	3.8	3.8	7.6	1.410	43	43.61	Corr. coeff. = 0.9984
8	2.4	2.4	4.8	1.124	33	33.47	
5	1.4	1.4	2.8	0.862	22	22.31	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

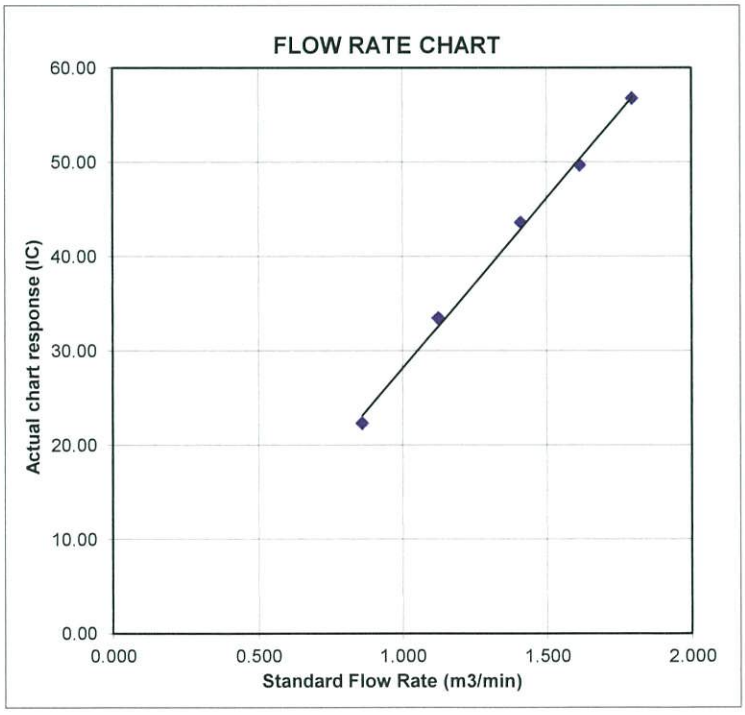
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



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

Certificate of Calibration
校正證書

Certificate No. : C174098
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-0924) Date of Receipt / 收件日期 : 14 July 2017

Description / 儀器名稱 : Integrating Sound Level Meter (EQ010)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285721
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 22 July 2017

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 25 July 2017

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

Certificate of Calibration
校正證書

Certificate No. : C174098
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C170048
CL281	Multifunction Acoustic Calibrator	PA160023

4. Test procedure : MA101N.

5. Results :

5.1 Sound Pressure Level

5.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 0.7

5.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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

5.2 Time Weighting

5.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

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5.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

5.3 Frequency Weighting

5.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

5.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.2	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

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5.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	90.1	± 0.5
			60 sec.			$1/10^3$		80	79.9	± 1.0
			5 min.			$1/10^4$		70	69.8	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2658547

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

- Uncertainties of Applied Value :

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

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

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C172791
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-0924) Date of Receipt / 收件日期 : 16 May 2017

Description / 儀器名稱 : Sound Level Calibrator (EQ084)
Manufacturer / 製造商 : Cesva
Model No. / 型號 : CB-5
Serial No. / 編號 : 030023
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 23 May 2017

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 24 May 2017

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

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

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C163709
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.8	± 0.3	± 0.2
104 dB, 1 kHz	103.9		± 0.3

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.994	1 kHz ± 1.5 %	± 1

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

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 – 校正及檢測實驗所
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Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港新界葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作（見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報）。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

L 000552

Appendix F

Event and Action Plan

Event / Action Plan for construction dust

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Notify Contractor.	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Rectify any unacceptable practice and implement remedial measures; and 3. Amend working methods agreed with ER if appropriate.
Action Level exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER and Contractor; 3. Advise the ER and Contractor on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC, ER and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET and ER on the effectiveness of the proposed remedial measures; and 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented.	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.

Limit Level exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor, IEC and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise the ER and ET on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented.	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; and 5. Amend proposal if appropriate.
Limit Level exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise and ensure remedial measures properly implemented; and 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; 5. Resubmit proposals if problem still not under control; 6. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Construction Noise

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level Exceedance	1. Notify IEC, ER and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementat-ion of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals.
Limit Level Exceedance	1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix G

Impact Monitoring Schedule

Impact Monitoring Schedule for the Reporting Period

Date		Noise Monitoring (0700 – 1900)	Air Quality Monitoring	
			1-hour TSP	24-hour TSP
Fri	1-Dec-17	✓	✓	
Sat	2-Dec-17			
Sun	3-Dec-17			
Mon	4-Dec-17			✓
Tue	5-Dec-17			
Wed	6-Dec-17			
Thu	7-Dec-17	✓	✓	
Fri	8-Dec-17			
Sat	9-Dec-17			✓
Sun	10-Dec-17			
Mon	11-Dec-17			
Tue	12-Dec-17			
Wed	13-Dec-17	✓	✓	
Thu	14-Dec-17			
Fri	15-Dec-17			✓
Sat	16-Dec-17			
Sun	17-Dec-17			
Mon	18-Dec-17			
Tue	19-Dec-17	✓	✓	
Wed	20-Dec-17			
Thu	21-Dec-17			✓
Fri	22-Dec-17			
Sat	23-Dec-17		✓	
Sun	24-Dec-17			
Mon	25-Dec-17			
Tue	26-Dec-17			
Wed	27-Dec-17			✓
Thu	28-Dec-17			
Fri	29-Dec-17	✓	✓	
Sat	30-Dec-17			
Sun	31-Dec-17			

✓	Monitoring Day
	Sunday or Public Holiday

Impact Monitoring Schedule for next Reporting Period

Date		Noise Monitoring (0700 – 1900)	Air Quality Monitoring	
			1-hour TSP	24-hour TSP
Mon	1-Jan-18			
Tue	2-Jan-18			✓
Wed	3-Jan-18			
Thu	4-Jan-18	✓	✓	
Fri	5-Jan-18			
Sat	6-Jan-18			
Sun	7-Jan-18			
Mon	8-Jan-18			✓
Tue	9-Jan-18			
Wed	10-Jan-18	✓	✓	
Thu	11-Jan-18			
Fri	12-Jan-18			
Sat	13-Jan-18			✓
Sun	14-Jan-18			
Mon	15-Jan-18			
Tue	16-Jan-18	✓	✓	
Wed	17-Jan-18			
Thu	18-Jan-18			
Fri	19-Jan-18			✓
Sat	20-Jan-18			
Sun	21-Jan-18			
Mon	22-Jan-18	✓	✓	
Tue	23-Jan-18			
Wed	24-Jan-18			
Thu	25-Jan-18			✓
Fri	26-Jan-18			
Sat	27-Jan-18		✓	
Sun	28-Jan-18			
Mon	29-Jan-18			
Tue	30-Jan-18			
Wed	31-Jan-18			✓

✓	Monitoring Day
	Sunday or Public Holiday

Appendix H

Database of Monitoring Result

24-hour TSP Database

24-hour TSP Monitoring Data for AMS-1

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
4-Dec-17	21934	18880.70	18904.85	1449.00	36	36	36.0	19.1	1020.3	1.23	1776	2.6068	2.6462	0.0394	22
9-Dec-17	21883	18904.85	18928.85	1440.00	36	41	38.5	18.8	1020.1	1.35	1946	2.5894	2.6263	0.0369	19
15-Dec-17	21962	18928.85	18952.85	1440.00	38	40	39.0	17.8	1020.8	1.37	1969	2.5598	2.6800	0.1202	61
21-Dec-17	21939	18952.85	18976.85	1440.00	38	40	39.0	17.2	1021.1	1.37	1970	2.5990	2.7407	0.1417	72
27-Dec-17	22014	18976.85	19000.85	1440.00	35	40	37.5	18.2	1024.6	1.33	1912	2.5569	2.7393	0.1824	95

24-hour TSP Monitoring Data for AMS-5

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
4-Dec-17	21913	5251.26	5275.29	1441.80	38	40	39.0	19.1	1020.3	1.21	1749	2.5573	2.6375	0.0802	46
9-Dec-17	21936	5275.29	5299.29	1440.00	37	40	38.5	18.8	1020.1	1.22	1760	2.5725	2.7032	0.1307	74
15-Dec-17	21967	5299.29	5323.29	1440.00	38	40	39.0	17.8	1020.8	1.24	1783	2.5666	2.6308	0.0642	36
21-Dec-17	21938	5323.29	5346.99	1422.00	37	40	38.5	17.2	1021.1	1.23	1743	2.6089	2.7078	0.0989	57
27-Dec-17	21941	5349.99	5373.99	1440.00	38	40	39.0	17	1020.5	1.24	1785	2.5598	2.6553	0.0955	54

24-hour TSP Monitoring Data for AMS-6

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
4-Dec-17	21914	10464.54	10488.54	1440.00	39	41	40.0	19.1	1020.3	1.26	1810	2.5656	2.7032	0.1376	76
9-Dec-17	21935	10488.54	10512.54	1440.00	40	42	41.0	18.8	1020.1	1.30	1871	2.5814	2.7254	0.1440	77
15-Dec-17	21968	10512.54	10536.52	1438.80	41	42	41.5	17.8	1020.8	1.32	1898	2.5797	2.6857	0.1060	56
21-Dec-17	21937	10536.52	10560.49	1438.20	39	41	40.0	17.2	1021.1	1.27	1826	2.5895	2.7587	0.1692	93
27-Dec-17	21942	10560.49	10584.29	1428.00	39	40	39.5	17	1020.5	1.25	1788	2.5660	2.6393	0.0733	41

24-hour TSP Monitoring Data for AMS-7

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
4-Dec-17	21933	5882.61	5906.77	1449.60	39	40	39.5	19.1	1020.3	1.53	2221	2.5475	2.6490	0.1015	46
9-Dec-17	21894	5907.77	5931.77	1440.00	40	42	41.0	18.8	1020.1	1.55	2228	2.5345	2.6941	0.1596	72
15-Dec-17	21963	5931.77	5955.77	1440.00	39	41	40.0	17.8	1020.8	1.52	2182	2.5732	2.6529	0.0797	37
21-Dec-17	21940	5955.77	5979.77	1440.00	38	41	39.5	17.2	1021.1	1.50	2160	2.5660	2.6971	0.1311	61
27-Dec-17	22013	5979.77	6003.77	1440.00	40	41	40.5	18.2	1024.6	1.53	2209	2.5620	2.6884	0.1264	57

Noise Database

Noise Measurement Results (dB) of NMS4a

Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	
1-Dec-17	9:04	72.3	74.5	65	69.6	72	64	71	73.5	65	70.7	73.5	65	72.8	74	63.5	71	74	64	71
7-Dec-17	10:18	74.2	77	70	75.3	78	70.5	75.3	77	69.5	73	75.5	68.5	74.4	77	69.5	73.4	75.5	69	74
13-Dec-17	14:02	75.2	81.3	68.9	74.1	79.2	69.1	75.1	77	70.5	74.6	77.1	68.2	75.6	76.2	67.5	73.6	75.5	68.1	75
19-Dec-17	10:18	73.6	76.5	68	74.7	77	70.5	73.6	76	69	73.4	76	69	74.4	76.5	70.5	74.2	77	69	74
29-Dec-17	10:05	73.8	76	69.5	74.5	77	70	74	77	68	74.2	76.5	70	74.2	76.5	69	73.7	76.5	68.5	74

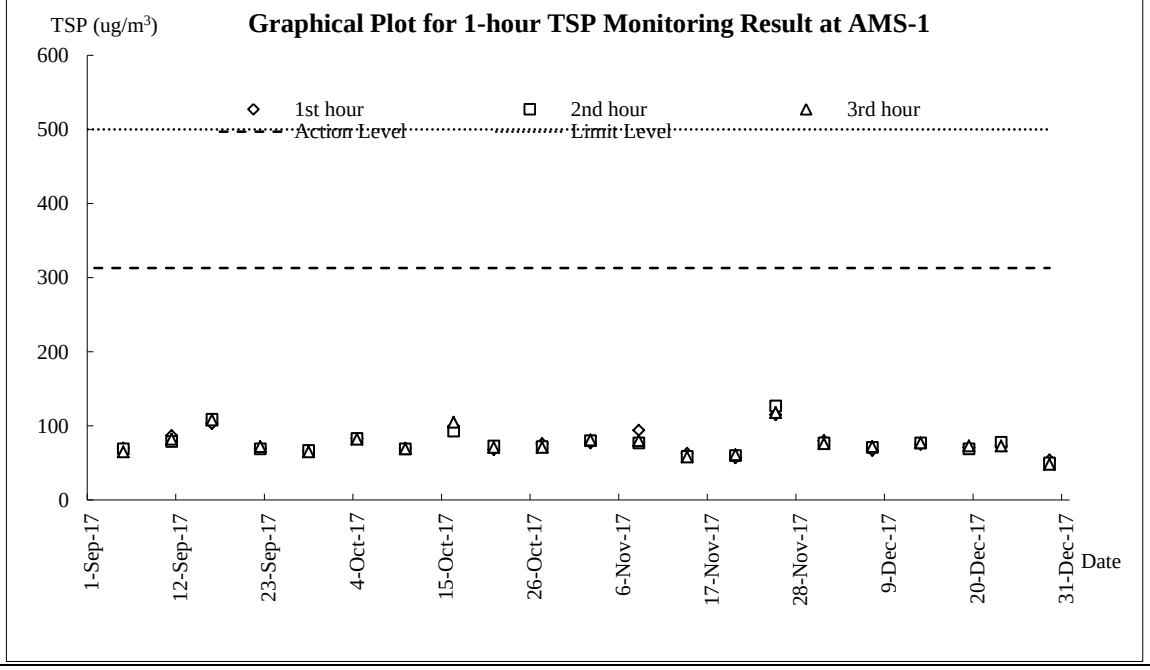
Noise Measurement Results (dB) of NMS5

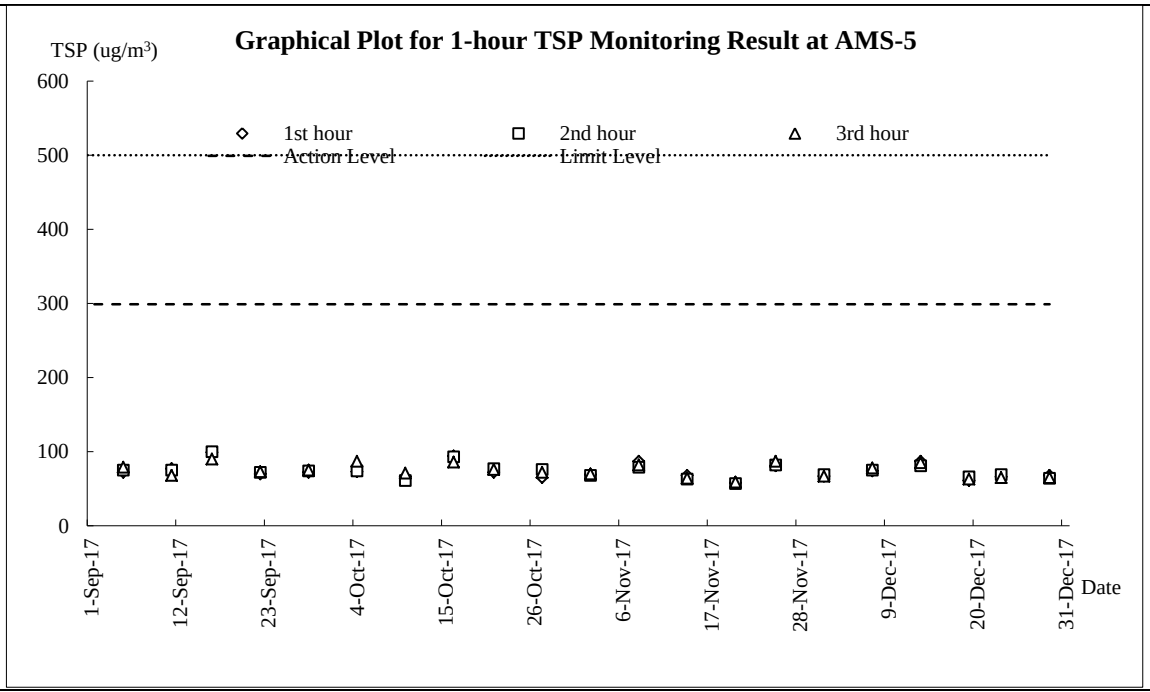
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	
1-Dec-17	9:51	70.1	72.5	66.5	71.3	73.5	67.5	73.9	76	71.5	74.3	75	71	75.6	77.5	71	74.8	77	71.5	74
7-Dec-17	9:27	66.8	69	63	65.4	67.5	62	71.1	71.5	62.5	70.2	73	62	70.9	71.5	61	67.3	68	59.5	69
13-Dec-17	15:08	67.2	68.1	61.2	68.1	69	60.5	69.5	71.2	63.6	70.1	72.1	64.5	71.2	73.4	65.6	69.9	72.1	61.2	70
19-Dec-17	9:32	64.1	65.5	60.5	64.7	66.5	61.5	65.6	67.5	62.5	64.1	66	61	64.8	66.5	62	65.6	67.5	62	65
29-Dec-17	10:46	68.8	71.5	63.5	68.9	71	65	70	72.5	65.5	64.4	67.5	60	67.6	70.5	62	69.7	72	65.5	69

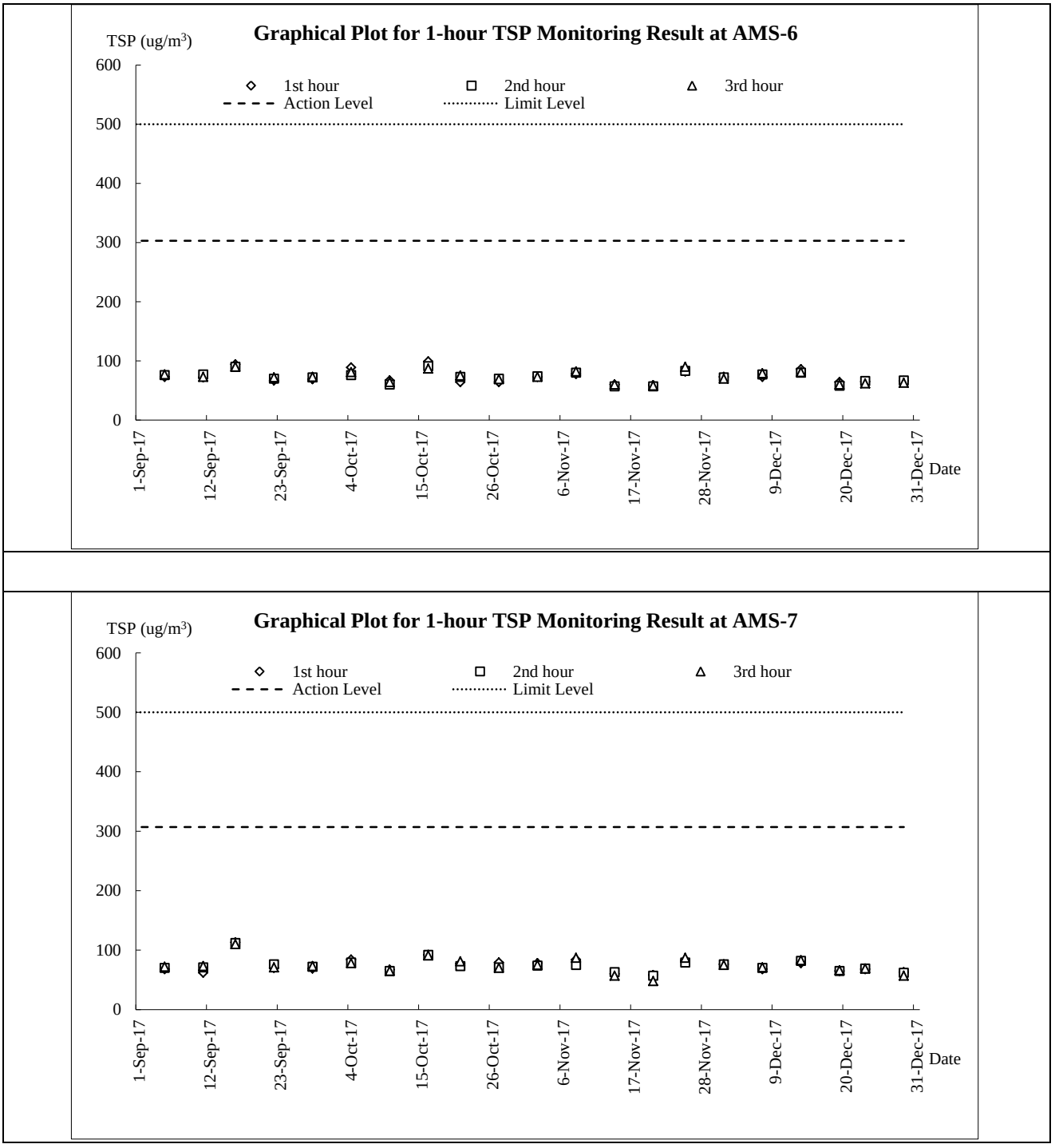
Appendix I

Graphical Plots for Monitoring Result

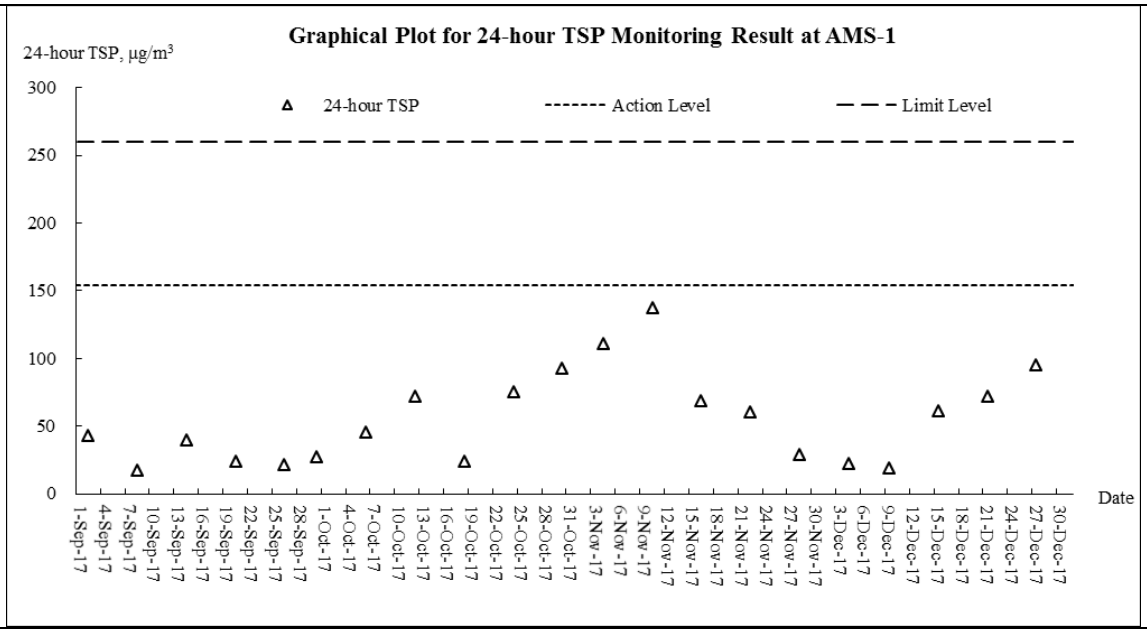
Air Quality – 1-hour TSP

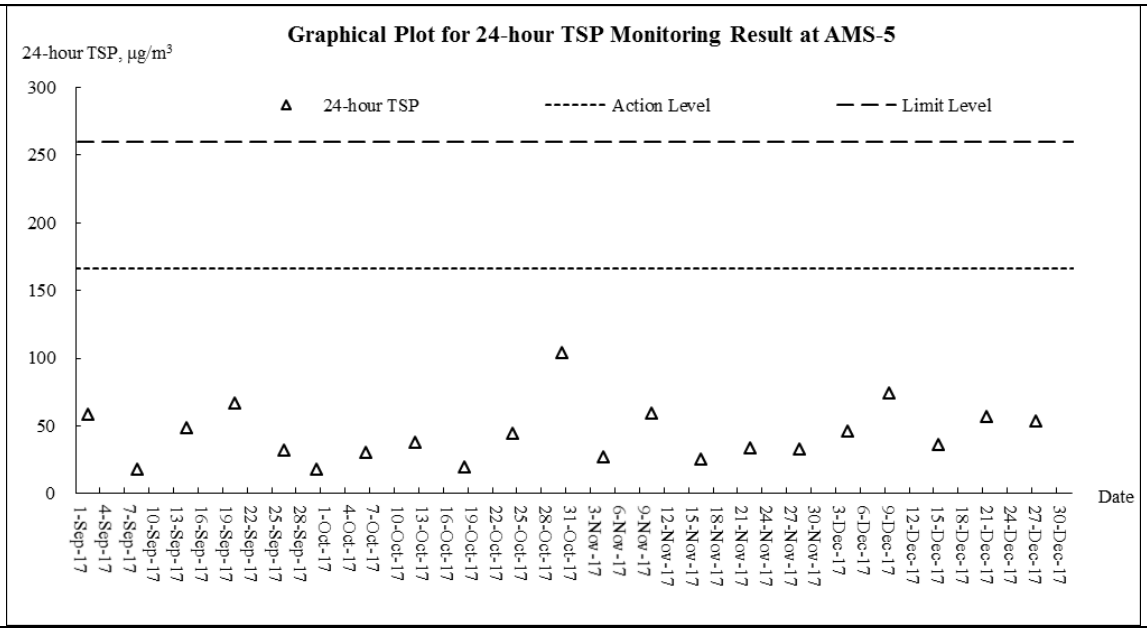




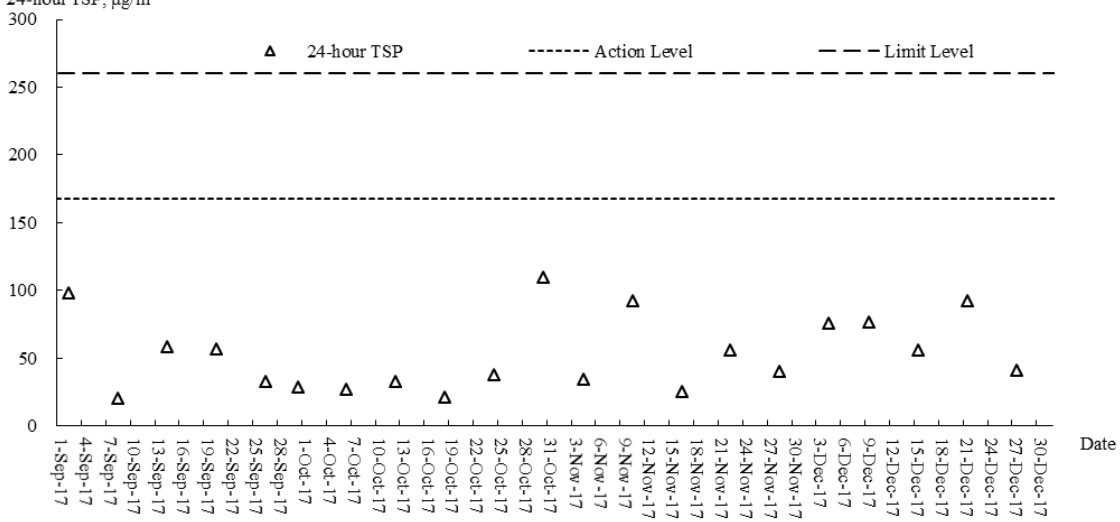

Graphical Plot for 1-hour TSP Monitoring Result at AMS-6
TSP (ug/m3)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
1-Sep-17
12-Sep-17
23-Sep-17
4-Oct-17
15-Oct-17
26-Oct-17
6-Nov-17
17-Nov-17
28-Nov-17
9-Dec-17
20-Dec-17
31-Dec-17
Date
Graphical Plot for 1-hour TSP Monitoring Result at AMS-7
TSP (ug/m3)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
1-Sep-17
12-Sep-17
23-Sep-17
4-Oct-17
15-Oct-17
26-Oct-17
6-Nov-17
17-Nov-17
28-Nov-17
9-Dec-17
20-Dec-17
31-Dec-17
Date

Air Quality – 24-hour TSP

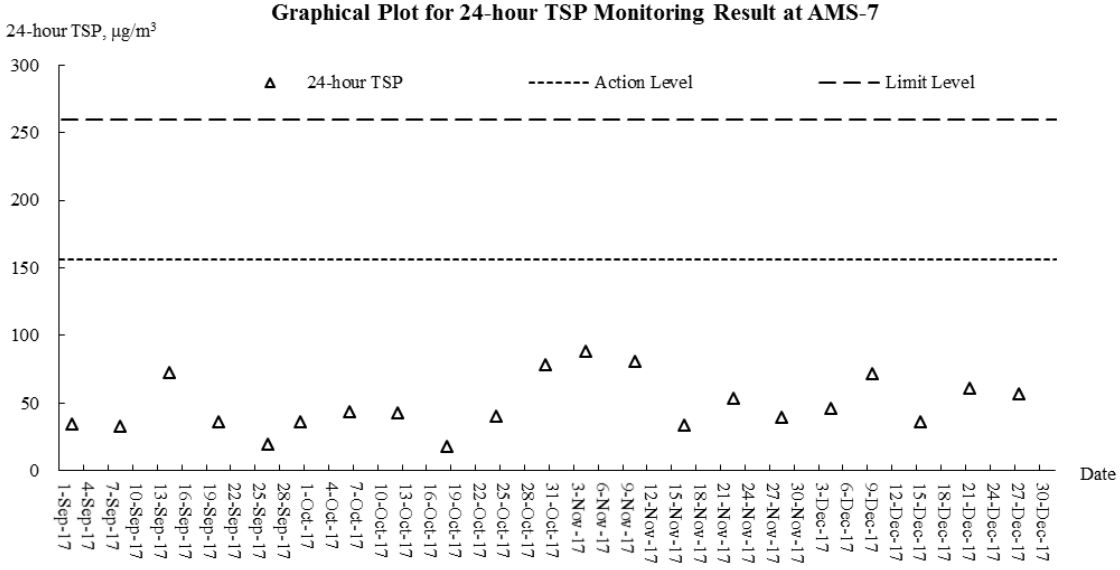




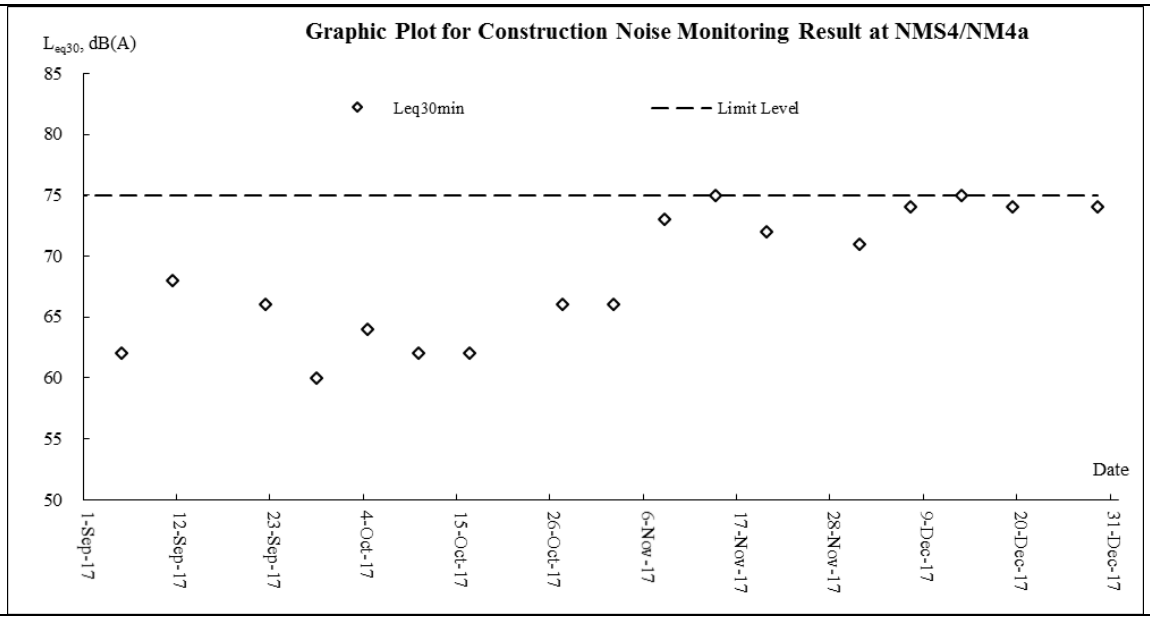
Graphical Plot for 24-hour TSP Monitoring Result at AMS-6

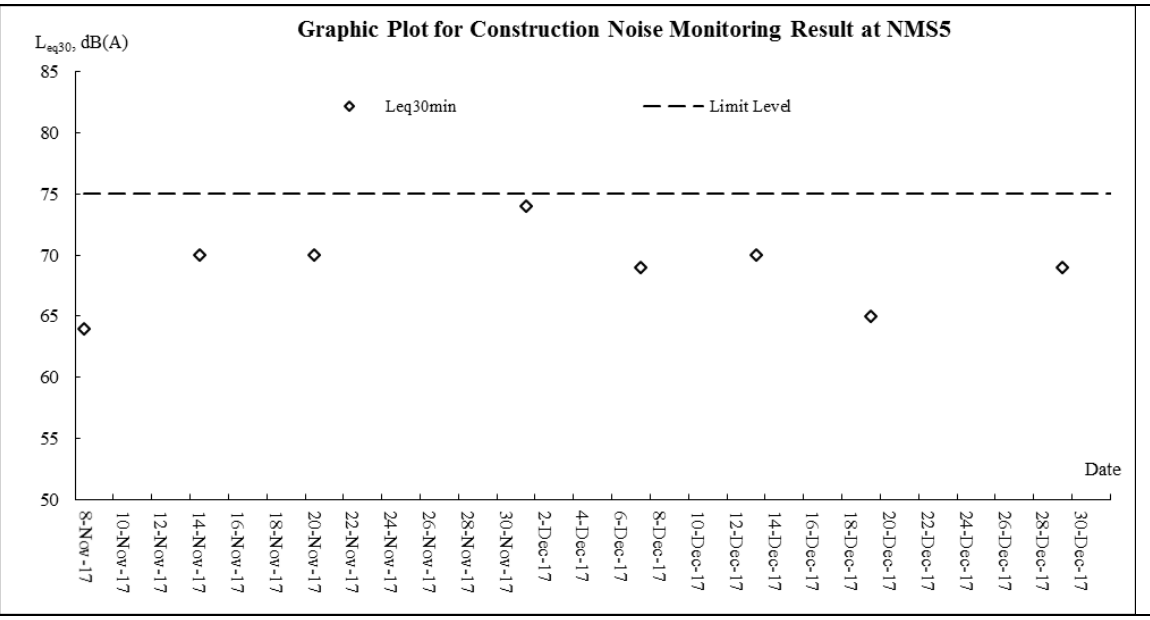


Graphical Plot for 24-hour TSP Monitoring Result at AMS-7



Noise


Graphic Plot for Construction Noise Monitoring Result at NMS4/NM4a
L_{eq30}, dB(A)
Leq30min
Limit Level
Date
85
80
75
70
65
60
55
50
1-Sep-17
12-Sep-17
23-Sep-17
4-Oct-17
15-Oct-17
26-Oct-17
6-Nov-17
17-Nov-17
28-Nov-17
9-Dec-17
20-Dec-17
31-Dec-17


Graphic Plot for Construction Noise Monitoring Result at NMS5
L_{eq30}, dB(A)
Leq30min
Limit Level
Date
85
80
75
70
65
60
55
50
8-Nov-17
10-Nov-17
12-Nov-17
14-Nov-17
16-Nov-17
18-Nov-17
20-Nov-17
22-Nov-17
24-Nov-17
26-Nov-17
28-Nov-17
30-Nov-17
2-Dec-17
4-Dec-17
6-Dec-17
8-Dec-17
10-Dec-17
12-Dec-17
14-Dec-17
16-Dec-17
18-Dec-17
20-Dec-17
22-Dec-17
24-Dec-17
26-Dec-17
28-Dec-17
30-Dec-17

Appendix J

Meteorological Data

Date		Weather	Total Rainfall (mm)	Kwun Tong Station	Kai Tak Station		King's Park Station
				Mean Air Temp. (°C)	Wind Speed (km/h)	Wind Direction	Mean Relative Humidity (%)
1-Dec-17	Fri	Fine and dry in the afternoon.	Trace	21.2	10.2	N/NE	70
2-Dec-17	Sat	Cloudy periods tonight.	0	20.5	11.0	Ne	71
3-Dec-17	Sun	Moderate east to northeasterly winds	0	20.8	8.5	SE	70.2
4-Dec-17	Mon	Cloudy periods tonight.	0	20.9	7.5	S/SW	69
5-Dec-17	Tue	Moderate east to northeasterly winds	0	18.2	9.5	N/NE	66
6-Dec-17	Wed	Cloudy periods tonight.	0	18.9	8.7	E/SE	64.7
7-Dec-17	Thu	Fine and very dry. Moderate to fresh northerly winds.	0	19.6	9	E/SE	64.7
8-Dec-17	Fri	Fine and very dry. Moderate to fresh northerly winds.	0	17.4	15.2	N/NW	39.7
9-Dec-17	Sat	Moderate to fresh easterly winds.	0	15.3	7	NW	41.7
10-Dec-17	Sun	Moderate to fresh easterly winds.	0	18.3	6	W/NW	48
11-Dec-17	Mon	Moderate east to northeasterly winds	0	19.1	9	E/SE	41.5
12-Dec-17	Tue	Fine and dry in the afternoon.	Trace	18.3	12.8	E/SE	57.5
13-Dec-17	Wed	Cloudy periods tonight.	Trace	17.9	16.8	E/SE	72.5
14-Dec-17	Thu	Moderate east to northeasterly winds	Trace	19.2	18.2	E/SE	71
15-Dec-17	Fri	Cloudy periods tonight.	0	19.9	15	E/SE	74.2
16-Dec-17	Sat	Fine and very dry. Moderate to fresh northerly winds.	0	14.9	18	SE	61.1
17-Dec-17	Sun	Fine and very dry. Moderate to fresh northerly winds.	0	12	8.8	N/NW	58.7
18-Dec-17	Mon	Fine and very dry. Moderate to fresh northerly winds.	0	12.8	9.5	N/NW	49.8
19-Dec-17	Tue	Fine and very dry. Moderate to fresh northerly winds.	0	14.2	14.5	NW	36.2
20-Dec-17	Wed	Fine and very dry. Moderate to fresh northerly winds.	0	15.7	12	N/NW	26.5
21-Dec-17	Thu	Fine and dry in the afternoon.	0	15	14.2	E/SE	40
22-Dec-17	Fri	Cloudy periods tonight.	0	17.1	9.9	E/SE	54.7
23-Dec-17	Sat	Moderate east to northeasterly winds	0	19.3	11.1	SE	51.4
24-Dec-17	Sun	Cloudy periods tonight.	0	20.9	10.1	E	60.1
25-Dec-17	Mon	Fine and very dry. Moderate to fresh northerly winds.	0	17.3	8.7	SE	51.1
26-Dec-17	Tue	Fine and very dry. Moderate to fresh northerly winds.	0	18	13.8	E/SE	66.7
27-Dec-17	Wed	Moderate to fresh easterly winds.	0	17.5	20.5	E/SE	64.7
28-Dec-17	Thu	Moderate to fresh easterly winds.	Trace	18.7	11.9	E/SE	68.5
29-Dec-17	Fri	Moderate to fresh easterly winds.	0	19.4	9.9	E/SE	66.5
30-Dec-17	Sat	Bright periods in the afternoon.	0	20.9	10.1	SE	66.1
31-Dec-17	Sun	Mainly cloudy with one or two light rain patches.	Trace	18.7	11.1	E	71.9

Appendix K

Waste Flow Table

Contract No.: NE/2016/01

Site Formation and Infrastructure Works for Development of Anderson Road Quarry Site

Monthly Summary Waste Flow Table for 2017 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract (see Note 6)	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste (see Note 5)	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	1.681	1.681	0	0	0	0	0	0	0	0	0.001
May	0.197	0.197	0	0	0	0	3.880	0	0	0	0.033
Jun	4.446	3.246	1.200	0	0	0	0	0	0	1.808	0.055
Sub-total	6.324	5.124	1.200	0	0	0	3.880	0	0	1.808	0.089
Jul	8.720	6.820	1.900	0	0	0	7.880	0	4.800	0	0.002
Aug	25.986	21.248	4.738	0	0	0	0	0	0	0	0.072
Sep	20.741	15.779	4.962	0	0	0	0	0	0	0	0.005
Oct	24.371	16.447	6.953	0	0.971	0.036	0	0	0	0	0.020
# Nov	24.485	13.665	10.137	0	0.683	0.221	0	0	0	0	0.104
Dec	19.794	12.907	5.826	0	1.061	0.486	324.710	0	0.009	0	0.008
Total	130.421	91.990	35.716	0	2.715	0.743	336.470	0	4.809	1.808	0.300

Notes:

(1) The performance targets are given in PS Clause 1.119 (14).

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and waste will be collected by recycler for recycling.

(4) Use the conversion factor, density of general refuse (1 t/m^3) and inert C&D materials (2 t/m^3).

(5) Use the conversion factor for chemical waste (0.88kg/L).

(6) Assume a dump truck delivers 7.5 m^3 material in 1 trip.

(7) The cut-off date of this summary is 20th of each month.

There is an update on the waste quantity on Nov 2017

Appendix (ii)

Name of Department: CEDD Contract No. : NE/2016/05

Monthly Summary Waste Flow Table for 2017 (year)

[PS Clause 1.129]

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m^3)
Jan											
Feb											
Mar											
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.615	0.00	0.002	0.00	0.613	0.00	0.00	0.00	0.00	0.00	0.00
Sub-total	0.615	0.00	0.002	0.00	0.613	0.00	0.00	0.00	0.00	0.00	0.00
July	1.088	0.00	0.00	0.00	1.088	0.00	0.00	0.00	0.00	0.00	0.019
Aug	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Sept	0.092	0.00	0.00	0.00	0.092	0.00	0.00	0.00	0.00	0.00	0.019
Oct	0.397	0.00	0.00	0.00	0.397	0.00	0.00	0.00	0.00	0.00	0.014
Nov	0.069	0.00	0.00	0.00	0.069	0.00	0.00	0.00	0.00	0.00	0.022
Dec	0.066	0.00	0.00	0.00	0.066	0.00	0.00	0.00	0.00	0.00	0.021
Total	2.338	0.00	0.002	0.00	2.335	0.00	0.00	0.00	0.00	0.00	0.095

Notes: (1) The performance targets are given in PS Clause 6.14

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works. Together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m^3.

Appendix L

Implementation Schedule for Environmental Mitigation Measures

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
Dust Impact (Contraction Phase)						
S4.7.2 to S4.7.5	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.75 L/m2 to achieve the respective dust removal efficiencies.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V
S4.7.6	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construct ion Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V
S4.7.6	Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wet ted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;. • The load of dusty materials on a vehicle leaving a construct ion site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point . The area where vehicle washing takes place and the road sect ion between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construct ion period. • The port ion of any road leading only to construct ion site that is	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet ; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fit ted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; and • Exposed earth should be properly treated by compact ion, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construct ion activity on the construction site or part of the construct ion site where the exposed earth lies.					
S4.7.7	Implement regular dust monitoring under EM&A programme during the Construct ion phase.	Control construction airborne noise	Selected Representative dust monitoring station	All construction sites where practicable	V	N/A
Noise Impact (Contraction Phase)						
S5.6.9	Implement the following good site management practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construct ion programme; • machines and plant (such as trucks, cranes) that may be in	Control construct ion airborne noise	Contractor	All construction sites where practicable	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direct ion, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construct ion equipment should be properly fit ted and maintained during the construct ion works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construct ion activities.					
S5.6.11 to S5.6.13	Use of " Quiet " Plant and Working Methods.	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	@	V
S5.6.14	Install temporary site hoarding (approx 2.5m high) located on the site boundaries between noisy construct ion activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construct ion noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	NA	V
S5.6.15 to S5.6.18	Install movable noise barriers, full enclosure and acoustic mat, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construct ion sites	Contractor	All construct ion sites where practicable	V	V
S5.6.19	Sequencing operation of construction plants equipment.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construct ion sites where practicable	V	V
S5.6.34	Implement temporary noise barrier along Road L4.	Further reduce the construct ion airborne noise	Contractor	Road L4 of ARQ	N/A	N/A
S5.6.35	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected Representative Noise monitoring stations	V	N/A
Water Quality Impact (Contraction Phase)						
S6.6.3	Construction Runoff In accordance with the Practice Note for Professional Persons on Construct ion Site Drainage, Environmental Protect ion Department , 1994	Control construction runoff	Contractor	All construction sites	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	(ProPECC PN 1/94), best management pract ices should be implemented as far as practicable as below: • At the start of site establishment , perimeter cut -off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimize polluted runoff. Sediment at ion tanks with sufficient capacity, constructed from preformed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for set t ling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protect ion should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt /sediment t rap. The silt /sediment t raps should be incorporated in the permanent drainage channels to enhance deposit ion rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construct ion. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms.					

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sect ions wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construct ion materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construct ion materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construct ion materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, act ions to be taken when a rainstorm is imminent or forecasted, and act ions to be taken during or after rainstorms are summarized in Appendix A2 of ***ProPECC PN 1/94***. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construct ion site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construct ion site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The sect ion of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient back all toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and rains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental					

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construct ion solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bun ds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Not ices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the rivers.					
S6.6.6 and 6.6.7	<u>Sewage from Workforce</u> • Portable chemical toilets should be provided for handling the construction sewage generated by the workforce. Assume that the capacity of the chemical toilets would be 0.4m3 and suck up twice a day under normal practices, around 45 chemical toilets would be required for the whole site at peak hour. And it should be noted that under normal construction periods, less chemical toilets would be needed. In addition, the total number of the chemical toilets would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices. Nevertheless, a licensed contractor should be employed to provide appropriate and adequate portable toilets to cater around 37.5 m3/day sewage and be responsible for appropriate disposal and maintenance. Since portable chemical toilets will be provided, no adverse water quality impact from the workforce sewage is anticipated. • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construct ion phase of the Project . Regular environmental audit on the construct ion site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking	Handling of site sewage	Contractor	All construction sites	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	all required measure					
S6.6.8 and 6.6.9	Accidental Spillage To prevent accidental spillage of chemicals, proper storage and handling facilities should be provided. All the tanks, containers and storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and storm drains. The Contractor is required to register as a chemical waste producer if chemical wastes would be generated from the construct ion activities. Storage of chemical waste arising from the construct ion activities should be well managed with suitable labels an d warnings while disposal of those chemical wastes should be comply with the requirement states in Waste Disposal Ordinance (Cap 354) as well as Waste Disposal (Chemical Waste) (General) Regulations.	Prevent ion of accidental spillage	Contractor	All construction sites	V	V
S6.6.11-S6.6.14	Groundwater from Contaminated Area The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater discharge. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed during the process of discharge license application. The compliancy to the TM-DSS and the existence of prohibited substance should be confirmed after further SI. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, the contaminated groundwater should be either properly treated in compliance with TMDSS or properly recharged into the ground. If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. Petroleum Carbon Ranges (PCRs)). All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be discharged into the foul sewers. If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back	Minimize contaminated groundwater impacts	Contractor	All construction sites	NA	NA

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Sect ion 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the select ion of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement . Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as PCRs should be removed as necessary by installing the petrol interceptor.					
Waste Management (Contraction Phase)						
S8.5.2	Good Site Practice The following good site practices are recommended throughout the construct ion activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collect ion and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collect ion for disposal; • appropriate measures to minimize windblown litter and dust during transportation of waste by either covering t rucks or by transporting wastes in enclosed containers; • regular cleaning an d maintenance programme for drainage systems, sumps and oil interceptors;	Minimize waste generation during construction	Contractor	All construction sites	V	V
S8.5.2 (6)	The contractor should submit a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ***ETWB TC(W) No. 19/2005*** for construct ion phase. The EMP should be submit ted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted.	Minimize waste generation during construction	Contractor	All construction sites	V	V
S8.5.3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following	Reduce waste generation	Contractor	All construction sites where	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling o materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construct ion materials; • plan and stock construct ion materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable port ions (i.e. soil, broken concrete, metal etc.); • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.			practicable		
S8.5.5	<u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts: • waste such as soil should be handled an d stored well to ensure secure containment ; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse;	Minimize waste impacts from storage	Contractor Contractor	All construct ion sites	V	V
S8.5.6	<u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts: • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste • transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities.	Minimize waste impacts from storage	Contractor	All construction sites	V	V
S8.5.8	<u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	• maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • implement a recording system for the amount of waste generated, recycled and disposed of for checking; The recommended C&D materials handling should include: • On-site sorting of C&D materials • Reuse of C&D materials • Use of Standard Formwork and Planning of Construction Materials purchasing • Provision of wheel wash facilities					
S8.5.15	Contaminated Soil As a precaution, it is recommended that standard good site practice should be implemented during the construct ion phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	Remediate contaminated soil	Contractor	All construction sites where applicable	V	v
S8.5.17	Chemical Waste • If chemical wastes are produced at the construct ion site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Cent re, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	V	V
S8.5.18	General Waste • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collect ion and routine cleaning for these areas should	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
S8.5.19	<u>Sewage</u> • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. • Regularly collect ion by licensed collectors should be arranged to minimize potential environmental impacts.	Minimize production of sewage impacts	Contractor	All construction sites	V	V
Ecology (Contraction Phase)						
S. 10.7.2 to 10.7.6	Re-provision of Wooded Area for ecological function at the future Quarry Park.	Compensate for the loss of three woodland patches of a total area of about 1.13ha.	Contractor/ Detailed Design Consultant (qualified botanist / horticulturist / Certified Arborist to supervise the planting).	Northern part of the proposed Quarry Park.	N/A	NA
.10.7.10	Construction phase in situ mitigation measures to minimize impacts on hydrological condition and water quality of hillside watercourses include: • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby watercourses; • Proper locations well away from nearby watercourses will be used for temporary storage of materials (i.e. equipment , fill materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby watercourses, work sites close to nearby watercourses will be isolated, using such items as sandbags or silt curtains with lead edge at bot tom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the works site; • Stockpiling of construct ion materials, if necessary, will be properly	Minimize impacts on Hydrological condition and water quality of hillside watercourses.	Contractor	All construction sites	V	NA

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	covered and located away from nearby watercourses; • Erection of temporary geotextile silt fences will be carried out around earth-moving works to t rap any sediments and prevent them from entering watercourses; • Construction debris and spoil will be covered and/or properly disposed as soon as possible to avoid being washed into nearby watercourses; • Exposed soil will be covered as quickly as possible following format ion works, followed, where appropriate, by covering with biodegradable geotextile blanket for erosion control purposes; • Where appropriate, earth-bunding will be carried out of areas where soils have been disturbed or where vegetation has been cleared, to ensure that surface runoff will not move soils off-site; • Construct ion effluent, site run-off and sewage will be probably collected and/or treated. Wastewater from any construct ion site will be minimised via the following in descending order: reuse, recycling and treatment ; • Proper locations for discharge out lets of wastewater treatment facilities well away from sensitive receivers will be identified and used; • Silt traps will be installed at points where drainage from the site enters local watercourses; • Appropriate sanitary facilities for on-site workers will be provided; • The site boundary will be clearly marked and any works beyond the boundary strictly prohibited, and • Regular water monitoring and site audit will be carried out at suitable points. If the monitoring and audit results show that pollution occurs, adequate measures including temporary cessation of works will be considered.					
S.10.7.11	Implement an emergency contingency plan during the construction phase and the plan will include, but not be limited to, the following: • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hot lines; • Locations and types of emergency response equipment , and	Minimize impacts on Hydrological condition and water quality of hillside watercourses.	Contractor	All construction sites	N/A	NA

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status	
					Contract 1	Contract 2
	• Training plan and testing for effectiveness.					
Landscape and visual (Contraction Phase)						
S11.14.23, Table 11.9, CM1 [4]	All existing trees to be retained shall be carefully protected during construction.	Avoid disturbance and protection of the existing trees	Detailed Design Consultant /	The whole project area where applicable	V	V
S11.14.23, Table 11.9, CM2 [3]	Tree Transplantation - Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled. Detailed transplanting proposal will be submit ted to relevant government departments for approval in accordance with **LAO GN No. 7/2007**, ***ETWB TCW No. 29/2004*** and ***10/2013***. Final locations of transplanted trees shall be agreed prior to commencement of the work.	Minimize landscape impact and retention of landscape resources	Detailed Design Consultant /	Onsite where possible. Otherwise consider offsite locations	*	N/A
S11.14.23, Table 11.9, CM3 [4]	Control of operation night -time glare with well-planned light ing operation system to minimize potential glare impact to adjacent VSRs	Minimize glare impact to adjacent VSRs	Contractor/ CEDD	The whole project area where applicable	N/A	V
S11.14.23, Table 11.9, CM [4]	Erection of decorative screen hoarding.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	N/A	N/A
S11.14.23, Table 11.9, CM5 [2]	Minimise disturbance and limitation of run-off – temporary structures and construction works should be planned with care to minimize disturbance to adjacent landscape, vegetation, natural stream habitats.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	V	V

Legend: V = implemented; x = not implemented; @ = partially implemented; * = pending to be implemented; N/A = not applicable

Appendix M

Complaint Log
And
Investigation Report for Complaint

Appendix M1 Cumulative Complaint and Summons/ prosecution

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/ Prosecution in Reporting Month
March 2017	**1**	0
April 2017	0	0
May 2017	0	0
June 2017	**2**	0
July 2017	**3**	0
August 2017	**3**	0
September 2017	**4**	0
October 2017	**2**	0
November 2017	**3**	0
December 2017	**3**	0
Overall Total	**21**	**0**

Appendix M2 Complaint Log

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action	Status	Investigation Report Ref.
1	23-Mar-17	NA	On Tat Estate	Resident of On Tat Estate	Construction noise	SPRO hotline	NA	A resident living in On Tat House reported that some night works with noise and flashing caused nuisance to nearby resident after 11:00 pm on 23 March 2017.	According the incident report conducted by the CWSTVJV, demobilization of crawler crane was undertaken on 23 March 2017 11pm and it is TD requirement to carry out demobilization of heavy machine at nighttime. It is considered this complaint was a single incident and would not be happened again in future.	no comment by IEC on 11 Oct 2017	TCS00864/16/300/F0087
2	28-Jul-17	28-Jul-17	38/F of Yin Tat House (賢達樓), On Tat Estate	Resident of On Tat Estate	Construction noise	SPRO hotline	NA	Mr. Hsu received a complaint from a resident living in the flat on 38/F of Yin Tat House (**賢達樓**), On Tat Estate. The resident complained about the noise level of our works during daytime.	Noise monitoring by Contractor was conducted in Yin Tat House, On Tat Estate, at around 2 pm on 28-Jul-2017. Another noise monitoring was carried out by ET and representatives of AECOM and JV in the presence of the complainant in her flat at 10 am on 1-Aug-2017 and was witnessed by Mr. Hsu. No exceedance of noise was recorded. The complainant was satisfied about the monitoring results.	no comment by IEC on 9 Aug 2017	TCS00864/16/300/F0060
3	29-Aug-17	29-Aug-17	Shing Tat House 24/F	Resident of On Tat Estate	Construction noise	SPRO hotline	NA	Mr. Hsu Yau Wai reported that he received complaint from a resident (Ms Cheng) living at Shing Tat House 24/F Room 22 about the noise generated from our site this week. The noise heard was mainly rock breaking noise from our site.	Noise monitoring was carried out by ET and representatives of AECOM and JV in the presence of the complainant in her flat at 3pm on 30-Aug-2017. No exceedance of noise was recorded. The complainant was satisfied about the monitoring results.	no comment by IEC on 8 Sep 2017	TCS00864/16/300/F0081
4	21-Jun-17	29-Aug-17	Tat Yan House, Po Tat Estate	Resident of Po Tat Estate	Construction noise	EPD	EPD (ref.N08/RE/00019373-17)	day time construciton noise of breakers (8am to 6pm)	These two complaints were forwarded by CEDD to ET on 31 August 2017 which after the complaint dates. Investigation was conducted based on the site information by the Contractor of Contract 1 as well as the observation during weekly site inspection carried out ET during June 2017. In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident and the working hour 08:00 to 18:00 did not breach any legal requirement. To eliminate the inconvenience caused to the nearby resident CWSTVJV was advised to further enhance the noise mitigation measures as appropriately.	no comment by IEC on 3 Nov 2017	TCS00864/16/300/F0093
5	22-Jun-17	29-Aug-17	Tat Yan House, Po Tat Estate	Resident of Po Tat Estate	Dust & Construction noise	EPD	EPD (ref. N08/RE/00019428-17)	Day time construction noise of breakers (8AM to 6PM). Requested to delay the operating hour of breakers to 10AM or 11AM			TCS00864/16/300/F0093
6	15-Jul-17	29-Aug-17	Tat Yi House, Po Tat Estate	Resident of Po Tat Estate	Construction noise	EPD	EPD (ref.N08/RE/00022479-17)	Construction noise	CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident and the working hour 08:00 to 18:00 did not breach any legal requirement. To eliminate the inconvenience caused to the nearby resident, CWSTVJV was advised to further enhance the noise mitigation measures as appropriately.	no comment by IEC on 3 Nov 2017	TCS00864/16/300/F0094
7	28-Jul-17	29-Aug-17	Anderson Road	unknown	Dust	EPD	EPD (ref.N08/RE/00023986-17)	Poor control on dust emission at Anderson Road Construction Site	CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident and status of the implementation of dust mitigation measures was considered effective based on the site observation.	no comment by IEC on 15 Nov 2017	TCS00864/16/300/F0097

8	2-Aug-17	29-Aug-17	Chun Tat House, On Tat Estate	Resident of On Tat Estate	Construction noise	EPD	EPD (ref.N08/ RE/00024 557-17)	Day time construction noise of breakers (8AM to 6PM)	CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in August 2017, there were no breaches of EM&A requirement. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should further enhance the noise mitigation measures as appropriately. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 15 Nov 2017	TCS00864/16/300/F0098
9	19-Sep-17	19-Sep-17	Sau Mau Ping Estate Sau Nga House	Resident of Sau Mau Ping Estate	Construction noise	SPRO hotline	NA	The complainant is living at Sau Mau Ping Estate Sau Nga House 38/F. He complained about the noise nuisance recently from August to September especially during night time after 12:00 am, even in Saturdays and Sundays. The noise nuisance caused a great disturbance to him. He made a request to conduct investigation about the source of the noise during night time.	ET has conducted an ad-hoc noise measurement for Leq (30min) on the rooftop of 秀雅樓 and 秀義樓 in the afternoon of 22 September 2017. During the course of noise measurement, construction activities such as excavation and breaking were conducted in the Quarry Site. The measurement results taken at both 秀雅樓 and 秀義樓 were 63dB(A) which below the Limit Level under the EM&A Programme.	no comment by IEC on 18 Oct 2017	TCS00864/16/300/F0088
10	21-Sep-17	13-Oct-17	Sau Mau Ping Estate Sau Nga House and Sau Yee House	Resident of Sau Mau Ping Estate	Construction noise	EPD	EPD (ref.N08/ RE/00031 074-17)	On 21 September 2017, the same complaint further reported that the noise can be heard at both Sau Yee House and Sau Nga House even in daytime and he strongly requested the Contractor to follow up the case immediately.			TCS00864/16/300/F0088
11	27-Sep-17	13-Oct-17	Chun Tat House, On Tat Estate	Resident of On Tat Estate	Construction noise	EPD	EPD (ref.N08/ RE/00029 489-17)	The complainant questioned why there were 6 to 7 breakers operating in the morning but only 1 operating in the afternoon. He requested to shift the operation of the breakers to afternoon.	CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in September and October 2017, there were no breaches of EM&A requirement. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should properly maintain the noise mitigation measures as appropriate. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 30 Nov 2017	TCS00864/16/300/F0106
12	3-Oct-17	13-Oct-17	Chun Tat House, On Tat Estate	Resident of On Tat Estate	Construction noise	EPD	EPD (ref. N08/RE/0 0032407-17)	Day time construction noise, the complainant requested using less breaker at one time, erecting taller noise barrier to cover the equipment. In addition, the complainant would like to know the construction schedule whether there will be more breaking activities in near future			TCS00864/16/300/F0106
13	25-Oct-17	26-Oct-17	Tat Kwai House, Po Tat Estate	Resident of Po Tat Estate	Dust	EPD	NA	投訴安達臣道地盤的泥車落泥，令他達貴樓的住所受到大塵影響，要求跟進及回覆	Investigation revealed that CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. Nevertheless, based on the observation during site inspection on 31 October 2017, CWSTVJV was advised to enhance the dust mitigation measures particularly during dry season.	no comment by IEC on 15 Nov 2017	TCS00864/16/300/F0100

14	6-Nov-17	7-Nov-17	Chun Tat House, On Tat Estate	Resident of On Tat Estate	Noise	EPD	NA	安達邨俊達樓居民投訴石礦場地盤又再於早上 07:45 開始傳出機器不停 掻 石 的 噪 音 (幾 乎 每 日 在 08:00-19:00 進行工程)，已持續一年，他全家人受到滋擾。	Ad-hoc noise measurement was conducted by ET at rooftop of Chun Tat House in the morning of 20 November 2017 and measurement result was below the Limit Level under the EM&A Programme. CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 30 Nov 2017	TCS00864/16/300/F0109
15	13-Nov-17	14-Nov-17	Chi Tai House, On Tai Estate	Mr. Lam Wai	light pollution and noise	SPRO hotline	NA	1. 智泰樓面向安達臣地盤方向，有照射燈深夜時分仍然常開，影響居民正常睡眠質素，照成一定的精神壓力。 2. 隔音布未固定，大風吹過發出極大的聲浪	To ease the concern by the complaint, CWSTVJV has adjusted the lights to the orientation pointing the ground and that to minimise the nuisance. For the maintenance of noise barrier, CWSTVJV has immediately fixed the noise barrier nearest to On Tai Estate and prolonged the cover area of the noise barrier to reduce the noise impact to the public.	no comment by IEC on 24 Nov 2017	TCS00864/16/300/F0104
16	1-Nov-17	14-Nov-17	Shing Tat House, On Tat Estate	Resident of Po Tat Estate	Noise	EPD	NA	居住於安達邨誠達樓高層的投訴人投訴由早上八時半至下午六時聽到掻鐵噪音。	CWSTVJV had already deployed the acoustic mat as noise barrier at the site boundary near Shing Tat House. To enhance the noise mitigation measures, CWSTVJV deployed an acoustic mat as noise barrier for the breaking work in order to reduce construction noise affecting the upper floor of On Tat Estate.	no comment by IEC on 13 Dec 2017	TCS00864/16/300/F0110
17	25-Aug-17	26-Oct-17	Sau Yee House, Sau Mau Ping Estate	Resident of Sau Mau Ping Estate	Construction Noise	EPD	EPD (ref.N08/RE/00027738-17)	Night time construction noise of hammering (around 12AM)	It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project.	no comment by IEC on 14 Dec 2017	TCS00864/16/300/F0114
18	12-Sep-17	26-Oct-17	Chun Tat House, On Tat Estate	Resident of On Tat Estate	Construction Noise	EPD	EPD (ref. N08/RE/00029489-17)	Day time construction noise of breakers (8AM to 5PM)	Noise mitigation measures were implemented to reduce the noise impact to the nearby resident. According to the impact noise monitoring result in September 2017, there were no breaches of EM&A requirement. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 10 Jan 2018	TCS00864/16/300/F0117
19	15-Dec-17	21-Dec-17	Sau Yee House	Resident of Sau Mau Ping Estate	Construction Noise	EPD	NA	Resident of Sau Yee House complained suspected construction noise from Anderson Construction Site at restricted hour (7pm to 7am).	It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project.	no comment by IEC on 10 Jan 2018	TCS00864/16/300/F0118
20	20-Dec-17	21-Dec-17	On Tat Estate	Resident of On Tat Estate	Dust	EPD	NA	投訴安達臣道信和地盤水車已經壞了十多天， 一直無灑水，四周非常大塵。 投訴人住於安達邨，投訴安達臣道石礦場有大地盤，地盤大車工作時間不停出入揚起沙塵，吹到安達邨，影響空氣環境，要求部門到場視察。	under reviewed by IEC			TCS00864/16/300/F0121
21	28-Dec-17	10-Jan-18	Sau Yee House	Resident of Sau Mau Ping Estate	Construction Noise	CE's office	NA	日間及凌晨均聽到轟隆聲的噪音及震動，懷疑是由附近工程引起	in progress		

AUES

Fax Cover Sheet

To	**Mr. Dennis Leung**	**Fax No**	**By e-mail**
Company	**AECOM**		
cc			
From	**Nicola Hon**	**Date**	**10 January 2018**
Our Ref	TCS00864/16/300/**F0118a**	**No of Pages**	4 **(Incl. cover sheet)**

RE **CEDD Service Contract No. NTE/07/2016**
Environmental Team for Development of Anderson Road Quarry Site –
Site Formation and Associated Infrastructure Works
Investigation Report for Noise Complaint from resident of Sau Mau Ping Estate

Dear Sir,

Enclosed please find the investigation report for the captioned for your follow up action.

Should you have any queries or need further information, please do not hesitate to contact us or the undersigned at **Tel: 2959-6059 or Fax: 2959-6079**.

Yours Faithfully,
For and on Behalf of
Action-United Environmental Services & Consulting

Nicola Hon
Environmental Consultant

Encl.

EPD	Mr. Leo Luk	Fax: 2591 0558
EPD	Mr. Paul Wong	Fax: 2756 8588
CEDD/BCP	Mr Stephen Li (Ch Eng/NTE2)	Fax: 2739 0076
ANewR (IEC)	Mr. Adi Lee	By e-mail
CWSTVJV	Mr. TY Leung	By e-mail

CEDD Service Contract No. NTE/07/2016
Environmental Team for Development of Anderson Road Quarry Site –
Site Formation and Associated Infrastructure Works

Investigation Report on Environmental Complaint / Enquires

Complaint Log No.	NTE/07/2016 – 20
Received Date by ET	21 December 2017
Related Contracts	Contract 1 (NE/2016/01)
Complaint Details	Resident of Sau Yee House complained suspected construction noise from Anderson Construction Site at restricted hour (7pm to 7am).
Complaint Location	Sau Yee House , Sau Mau Ping Estate
Date of Complaint	15 December 2017
Environmental Aspect	Noise
Complainant	Resident of Sau Mau Ping Estate
Complaint Route	EPD
Investigation Result	1. On 15 December 2017, EPD received a complaint regarding suspected construction noise from Anderson Construction Site at restricted hour (7pm to 7am) at Sau Yee House of Sau Mau Ping Estate. 2. Joint site inspections among the RE, CWSTVJV and ET were carried out on weekly basis on 5 and 12 December 2017 and the status of implemented mitigation measures provided by CWSTVJV was inspected. The observations during site inspection are summarized below. (a) As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the boundary of Portion A. Moreover, the head of the breakers were wrapped by acoustic material. ***(Photos 1 & 2)*** 3. As advised by CWSTVJV, there was a CNP (GW-RE0763-17) in force for the subject site for operation of generator and electric submersible water pump for the wastewater treatment plant and it is considered that abovementioned PMEs should not generate significant noise. Moreover, it is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project. Since the Quarry site is not the only construction site near the complaint location (Sau Mau Ping Estate) and there were several concurrent projects located along Anderson Road. It is suspected that the source of the noise at night might be contributed by other project. 4. In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby residents. To eliminate the inconvenience caused to the nearby residents, CWSTVJV should further enhance the noise mitigation measures as appropriately. Since the day time noise measurement result at the complaint location did not exceed the statutory requirement as well as the Limit Level under the EM&A programme, it is considered that the works under the project did not breach the

	Noise Control Ordinance. 5. Nevertheless, in view of the subject site of the project is close to the residential area, CWSTVJV was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme.

Prepared By : Nicola Hon

Designation : Environmental Consultant

Signature : 

Date : 10 January 2018

Photo Record

	
Photo 1 As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the boundary of Portion A.	**Photo 2** As noise mitigation measures, the head of the breakers were wrapped by acoustic material.