



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 (JANUARY 2018)**

**PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
(CEDD)**

Date	Reference No.	Prepared By	Certified By
14 February 2018	TCS00864/16/600/R0136v3	 Nicola Hon (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	8 February 2018	First Submission
2	13 February 2018	Amended according to the IEC's comments on 13 February 2018
3	14 February 2018	Amended according to the IEC's comments on 14 February 2018



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New Territories East Development Office
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Kowloon

Your reference:

Our reference: HKCEDD10/50/104837

Date: 15 February 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 (January 2018)

We refer to the emails of 8, 13 and 14 February 2018 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (January 2018) for the captioned project.

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report (January 2018).

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/lhnh

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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 **10th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 January 2018** (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	60
	24-hour TSP	4	24
Construction Noise	L _{eq(30min)} Daytime	2	8

BREACH OF ACTION AND LIMIT (A/L) LEVELS

- ES06 No exceedance of air quality was recorded in the Reporting Period. However, for construction noise, one (1) 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	1	0	0	Completed and details refer to Section 8.	Implement noise mitigation measures to eliminate nuisance

ENVIRONMENTAL COMPLAINT

- ES07 In the Reporting Period, one (1) environmental complaint was received for Contract 1 in respect with the construction noise concerned by the nearby resident. AECOM has explained to the complainant that the tentative completion date of the concerned work would be in mid-March and the complainant was satisfied with the respond. Investigation report for the complaint was completed by ET.

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 **2, 11, 17, 23 and 30 January 2018** in which IEC joined the site inspection with SSEMC on **11 January 2018**. 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 **4, 10, 19, 24 and 31 January 2018** in which IEC joined the site inspection with SSEMC on **24 January 2018**. 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.

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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 **10th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 January 2018**.

1.2 REPORT STRUCTURE

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

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

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 and 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 grade walkways, escalators, lift towers with associated 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)

- i. Site Cleaning:
 - Continued site cleaning in all portions including areas in the vicinity
- ii. Land Contamination Ground Investigation (totally completed 18 out of 29 holes)
 - Completed GI work of BH12 to BH29 (18 holes) and the Land Contamination Reports (CAR) have been accordingly submitted.
 - Mobilized a drilling rig and equipment to a position of BH06 and commenced on 18 Jan 2018
- iii. Site Formation in Portion A4:
 - Portion A4 was substantially completed on 20 Dec 2017.
- iv. Site Formation in Portion A3:
 - 20% completed of soil excavation and 49% completed of rock excavation, the overall completion is 22.2%.
- v. Site Formation in Portion B8 and KW Asphalt Plant:
 - Continued backfilling and compacting works in Portion B8 (14 out of 48 layers; 29% completed)
 - Continued backfilling and compacting works at the KW Asphalt Plant (11 out of 20 layers; 55% completed)
- vi. Alliance Concrete Plant at Portion B7:
 - Demolition of structure achieved at 100% completed on 27 Dec 2017.
 - Debris removal and breaking of concrete slab are in progress.
- vii. West Portal Area;
 - Continued trimming slope at West Portal at top-down direction
 - Continued erection of scaffolds and platforms to proceed remaining soil nailing works at Slope A3
 - Excavation from West Portal in progress which completed approx. 3.5% in length (4.4m out of 126m completed) from CH2392 heading to CH2518.
- viii. East Portal Area;
 - Excavated and commenced CLP 11kV cable diversion
 - Continued erection of scaffolds and platforms at Slope A1 East Portal for soil nailing
- ix. Internal Road L4, RWA18, RWA12 and Pedestrian Connectivity System A:
 - Completed mass concrete pouring at noise barrier bay #1 to 32 on 17 Jan 2018
 - Commenced excavation and demolishment of the temporary drainage for diversion of the existing cascade on 8 Nov 2017 and completed on 12 Jan 2018
 - Commenced excavation of retaining wall RWA18 bay #5 to 3 on 11 Jan 2018
 - Commenced excavation at retaining wall RWA12 bay #22 on 8 Jan 2018
- x. Underground Stormwater Retention Tank:
 - Continues stripping soil to expose rock head level
- xi. Water Pumping Station and Retaining Wall RWA13 and RWA14:
 - Excavation of slope A13 and the area of water pumping stations in progress
 - Completed all blinding layer of retaining wall RWA13 bay #1 to 15 on 20 Dec 2017

- Commenced construction of a base slab of retaining wall RWA13 on 27 Dec 2017 that erection of formwork at bay #1 and 9 commenced on 9 Jan 2018.
- Completed excavation for temporary haul road (road diversion) nearby retaining wall RWA14 and opened for use on 28 Dec 2017
- Commenced breaking existing road pavement of Anderson Road at retaining wall RWA14 in early January 2018
- Carried out exposing the existing power cable on 3 Jan 2018
- xii. Pedestrian Connectivity System B:
 - Excavation at North lift tower and at South lift tower including road L1 in progress that the overall progress is 79% completed
- xiii. Internal Road L1:
 - Continued excavation for the internal road L1 adjacent to the Pedestrian Connectivity System B
 - Commenced Laying geotextile filters and grade 200 rock filling at the transition section CH144 to CH178.392 of box culvert BC1 and BC2 on 16 Jan 2018
- xiv. Internal Road L5:
 - Commenced excavation of trench from manhole S214a to S214c and in progress
- xv. PTT:
 - The progressive construction of 89 socketed H-piles toward 11 Dec 2017 is overall 100% completed. 24 out of total 24 raking piles completed (100% completed) have been grouted and 65 out of total 65 vertical piles have been grouted (100% completed) that the last pile was grouted on 16 Jan 2018.
- xvi. Po Lam Road – Road Improvement Works:
 - Obtained an AECOM's instruction regarding to the underground utilities and preparing to commence excavation at Phase 1A and 1B
- xvii. Mitigation Works for Natural Terrain Catchment B5:
 - Completed excavation to formation level and demolished the existing pavement
 - Completed the Plate Bearing Test
 - Commenced testing the trial pit on 28 Dec 2017

Contract 2 (NE/2016/05)

1. Portion 1 : Continue piling works, Completed modification and relocation of the site entrance;
2. Portion 2: Completed piling works mobilization. Commence temporary rock fall fence works. Completed removal of temporary work access at Hiu Ming Street.
3. Portion 4 : Continue the Slip Road construction, Continue Tree transplant works
4. Portion 5 : Completed tree felling. Continue tree transplant works
5. Portion 6: Continue rock dowel installation works. Completed inspection pit to identify existing UU at TKOT Road
6. Portion 7 : Continue to construct Hiking trail extension work in Site A and Site B, Continue slope improvement works in Site B;
7. Portion 8 & 9: Completed rebar cutting for soil nail head. Placed purchase ordering materials of flexible barrier and stone pitching.

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)	EPD ref. no. 411762	NA	NA	valid

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
	Regulation				
	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-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-K28 90-08	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	<ul style="list-style-type: none"> • 1-hour TSP by Real-Time Portable Dust Meter; and • 24-hour TSP by High Volume Air Sampler
Noise	<ul style="list-style-type: none"> • 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 L₁₀ and L₉₀ 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 2 nd 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° light scattering. The 1-hour TSP monitor consists of the following:

- A pump to draw sample aerosol through the optic chamber where TSP is measured;
- A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
- 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:

- An anodized aluminum shelter;
- A 8”x10” stainless steel filter holder;
- A blower motor assembly;
- A continuous flow/pressure recorder;
- A motor speed-voltage control/elapsed time indicator;
- A 7-day mechanical timer, and
- 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 $0.6\text{m}^3/\text{min}$ and $1.7\text{m}^3/\text{min}$ 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°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 m³/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 ($\mu\text{g}/\text{m}^3$)		Limit Level ($\mu\text{g}/\text{m}^3$)	
	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} /
NMS-2		70 dB(A) ^{Note 2} / 65 dB(A) ^{Note 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 **60** events of 1-hour TSP and **24** 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 ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
2-Jan-18	65	4-Jan-18	14:11	73	74	73
8-Jan-18	21	10-Jan-18	13:28	71	72	66
13-Jan-18	53	16-Jan-18	13:28	37	41	42
19-Jan-18	50	22-Jan-18	13:46	118	120	137
25-Jan-18	42	27-Jan-18	9:28	46	31	34
31-Jan-18	21					
Average (Range)	42 (21 – 65)	Average (Range)		69 (31 – 137)		

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
2-Jan-18	95	4-Jan-18	9:16	69	70	69
8-Jan-18	60	10-Jan-18	9:03	64	63	69
13-Jan-18	66	16-Jan-18	9:15	52	46	49
19-Jan-18	63	22-Jan-18	9:06	138	139	130
25-Jan-18	43	27-Jan-18	9:43	49	50	51
31-Jan-18	26					
Average (Range)	59 (26 – 95)	Average (Range)		74 (46 – 139)		

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
2-Jan-18	88	4-Jan-18	9:57	74	72	70

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
8-Jan-18	30	10-Jan-18	13:19	61	69	75
13-Jan-18	88	16-Jan-18	12:59	58	53	54
19-Jan-18	62	22-Jan-18	9:19	137	130	124
25-Jan-18	41	27-Jan-18	9:25	45	48	49
31-Jan-18	30					
Average (Range)	57 (30 – 88)	Average (Range)		75 (45 – 137)		

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
2-Jan-18	84	4-Jan-18	13:31	71	69	68
8-Jan-18	31	10-Jan-18	9:28	70	67	64
13-Jan-18	29	16-Jan-18	9:31	48	52	53
19-Jan-18	43	22-Jan-18	13:13	118	138	153
25-Jan-18	30	27-Jan-18	13:12	41	26	30
31-Jan-18	18					
Average (Range)	39 (18 – 84)	Average (Range)		71 (26 – 153)		

- 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 8 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
4-Jan-18	73	67
10-Jan-18	74	66
16-Jan-18	72	64
22-Jan-18	68	70
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, one (1) environmental complaint (which triggered Action Level exceedance) was 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)	30.864	-	0.046	-
Hard Road and Large Broken Concrete	19.998	-	0	-
Reused in this Contract (Inert) ('000m ³)	10.550	-	0.001	-
Reused in other Projects (Inert) ('000m ³)	0	-	0	-
Disposal as Public Fill (Inert) ('000m ³)	0.316	TKO 137	0.045	TKO 137

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)	132.060	License collector	0	-
Recycled Paper / Cardboard Packing ('000kg)	0	-	0	-
Recycled Plastic ('000kg)	0	-	0	-
Chemical Wastes ('000kg)	0	-	0	-
General Refuses ('000m ³)	0.0013	SENT	0.0006	SENT

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 **2, 11, 17, 23 and 30 January 2018** in which IEC joined the site inspection with SSEMC on **11 January 2018**. 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
2 January 2018	<ul style="list-style-type: none"> Drip tray should be provided for all chemical storage on site. (West Portal) Dust emitted from drilling, breaking and exposed haul road was observed. Dust mitigation measures should be provided properly to reduce dust impact. (USRT) 	<ul style="list-style-type: none"> Drip tray was provided for the chemical storage. Water spraying for drilling, breaking and haul road was provided.
11 January 2018	<ul style="list-style-type: none"> Stagnant water was observed in drip tray. The Contractor should remove the stagnant water to prevent mosquito breeding. (West Portal) Drip tray should be provided for the generator to prevent land contamination. (Pumping Station) 	<ul style="list-style-type: none"> The stagnant water accumulated in the drip tray was cleaned up. Drip tray was provided for the generator.
17 January 2018	<ul style="list-style-type: none"> It was reminded that three sided and top shelter should be provided for cement mixing works area to prevent dust emission during operation. It was reminded that wastewater should be treated before any discharge at Q2 and to comply with the discharge licence. 	<ul style="list-style-type: none"> Not required for reminder. Not required for reminder.
23 January 2018	<ul style="list-style-type: none"> Stockpile storage on site should be covered with tarpaulin sheet to reduce dust impact. (West Portal) 	<ul style="list-style-type: none"> Stockpile was covered.
30 January 2018	<ul style="list-style-type: none"> Housekeeping should be improved. General refuse cumulated on site should be cleaned more frequently. (Reinforcement Area) Diesel cumulated inside the drip tray should be cleared to prevent contamination. (Reinforcement Area) Drip tray should be provided for chemical storage on-site. (West Portal) As a reminder, the Contractor should review the temporary drainage condition before the wet season. 	<ul style="list-style-type: none"> To be followed. To be followed. To be followed. Not required for reminder.

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 **4, 10, 19, 24 and 31 January 2018** in which IEC joined the site inspection with SSEMC on **24 January 2018**. 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
28 December 2018 (last reporting period)	<ul style="list-style-type: none"> Oil stains underneath a construction plant was observed at Portion 1. The Contractor should remove the oil stains and treat it as chemical waste. 	<ul style="list-style-type: none"> The oil strain was removed.
4 January 2018	<ul style="list-style-type: none"> Muddy water was observed on the site. The Contractor was advised to clear it properly. 	<ul style="list-style-type: none"> Muddy water was cleared.
10 January 2018	<ul style="list-style-type: none"> Stagnant water was observed inside the trip tray. The Contractor was advised to clean up it after rainstorm.(portion 2) NRMM label was observed missing on the excavator. The Contractor was advised to provide it. (portion 2) C&D wastes were observed on the site. The Contractor was advised to remove it and provide an on-site sorting area for proper C&D wastes. (portion 4) 	<ul style="list-style-type: none"> Stagnant water had been removed after rain. NRMM label was provided for the excavator. C&D wastes were removed.
19 January 2018	<ul style="list-style-type: none"> Chemical label and drip tray were missing for free-standing chemical containers. The Contractor should provide the chemical label and drip tray for the containers to avoid land contamination. (Portion 4) The Contractor was reminded to provide drip tray for generator at Portion 2 when it is in use. 	<ul style="list-style-type: none"> Chemical label and drip tray had been provided. Not required for reminder.
24 January 2018	<ul style="list-style-type: none"> Stagnant water was observed inside the drip tray. The Contractor was advised to remove it to prevent mosquito breeding. (portion 1) Chemical container was observed on the site. The Contractor was advised to provide drip tray.(portion1) 	<ul style="list-style-type: none"> Stagnant water had been removed. The chemical container was removed.
31 January 2018	<ul style="list-style-type: none"> Chemical container was observed on the site. The Contractor was advised to provide or remove it. The Contractor was reminded to remove stagnant water and muddy water after rainstorm. The Contractor was reminded to provide on-site sorting to sort the construction material. 	<ul style="list-style-type: none"> To be followed. Not required for reminder. 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, one (1) environmental complaint was received for Contract 1 in respect with the construction noise concerned by the nearby resident and the complaint details are summarized below.

- (a) On 15 January 2018, a public complaint was received by SPRO on 15 January 2018 regarding construction noise of breaking rock heard at 40/F Chun Tat House. AECOM has liaised with the complainant immediately and it was advised that there was breaking works at Underground Stormwater Retention Tank (USRT) which opposite to Chun Tat House. AECOM has explained to the complainant that the tentative completion date of the concerned work would be in mid-March and the complainant was satisfied with the respond. To eliminate the noise impact to the resident in the vicinity, noise mitigation measures including temporary noise barrier, acoustic mat and wrapped by acoustic materials have been implemented on site. Moreover, quiet plants (e.g. QPME) were used to reduce the cumulative noise impact from the construction activities of the whole site.

8.1.2 Investigation Report for the complaints have been conducted by the ET and under reviewed by 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 – 31 Dec 2017	1	0	21	Dust, Noise and light nuisance
1 April – 31 Dec 2017	2	0	0	NA
1 – 31 Jan 2018	1	1	22	Noise
1 – 31 Jan 2018	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 – 31 Dec 2017	1	0	0	NA
1 April – 31 Dec 2017	2	0	0	NA
1 – 31 Jan 2018	1	0	0	NA
1 – 31 Jan 2018	2	0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract no.	Environmental Prosecution Statistics		
			Cumulative	Prosecution Nature
1 April – 31 Dec 2017	1	0	0	NA
1 April – 31 Dec 2017	2	0	0	NA
1 – 31 Jan 2018	1	0	0	NA
1 – 31 Jan 2018	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	<ul style="list-style-type: none"> Wastewater to be treated by filtration system; such as, silt curtain or sedimentation tank before discharge. Replace silt curtain materials if necessary
Air Quality	<ul style="list-style-type: none"> Maintain damp / wet surface on access road Keep slow speed in the sites All vehicles must use wheel washing facility before off site All vehicles must use wheel washing facility before off site Sprayed water during breaking works
Noise	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> On-site sorting prior to disposal Follow requirements and procedures of the “Trip-ticket System” Predict required quantity of concrete accurately Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	<ul style="list-style-type: none"> The site was generally kept tidy and clean.

9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 9.2.1 Construction activities for Contract 1 in the coming month are listed below:
- Pedestrian Connectivity System B:
 - Continue excavation
 - Mobilize a piling machine and commence piling works at the South Lift Tower
 - Internal Road L1:
 - Continue excavation of the internal road L1 adjacent to Pedestrian Connectivity System B
 - Continue construction of the box culvert of transition section CH144 to CH178.392 between the box culvert BC1 and BC2
 - Internal Road L5:
 - Excavation and drainage works for the internal road L5
 - West Portal, East Portal and Underpass Tunnel:
 - Continue slope cut at slope A3 and A4
 - Continue excavation of tunnel face from West Portal from CH.2392 heading to CH.2518
 - Continue diversion of CLP’s 11kV cables at East Portal

- v. Water Pumping Station including Retaining Wall RWA13 and RWA14:
 - Continue excavation at Water Pumping Station area
 - Continue construction of retaining wall RWA13
 - Continue excavation to expose CLP's underground cables and conduct joint inspection meeting
 - Commence diversion of CLP's underground cables
- vi. Portion A3:
 - Continue excavation for site formation
- vii. Portion A4:
 - Clean up drainage pipes and install CCTV targeted on 22 Jan 2018
- viii. Portion B8 and KW Asphalt Plant:
 - Continue backfilling and compacting
- ix. Portion B7:
 - Continue demolition of the Alliance concrete plant
- x. Underground Stormwater Retention Tank (USRT):
 - Continue open-cut excavation for the underground stormwater retention tank
 - Continue temporary soil nailing works
 - Continue construction of base slabs
- xi. PTT:
 - Commence excavation and construction of pile caps
 - Commence the pile loading test
- xii. Rock Slope Survey and Slope Stabilization at Portion B1:
 - Commence drilling works for raking drainage and continue installation of protective mats at slope feature 11NE-D/C998
 - Continue grouting works at CH320 to CH370 of slope feature 11NE-D/C998
 - Continue drilling works for rock dowels at CH150 to CH225 slope feature 11NE-D/C998 and slope A16
 - ♦ Continue erection of inspection scaffold for slope feature 11NE-D/C999 for CH310 to CH320, CH335 to CH345 and CH347 to CH357 at 230mPD to 250mPD
 - ♦ Continue installation of protective mats at slope feature 11NE-D/C1004
- xiii. Establishment Works of the Planting Medium on the Existing Slope Berms in Portion B1 and B5:
 - Continue establishment works at existing berms on slopes in Portion B1 for 9-month establishment works for landscape softworks under establishment schedule no.1
 - Continue establishment works at existing berms on slopes in Portion B1 for 17-month establishment works for landscape softworks under establishment schedule no.2
 - Continue establishment works on slopes in Portion B1 for 30-month establishment works for landscape softworks under establishment schedule no.3
- xiv. Mitigation Works for Natural Terrain Catchment B5:
 - Continue excavation of two trial pits and testing
 - Commence construction of drainage and slope works
- xv. Road Improvement Works at Po Lam Road:
 - Commence excavation to expose underground utilities at Phase 1A and excavation of the trial pit at Phase 1B
- xvi. Land Contamination – Ground Investigation:
 - Continue drilling works for ground investigation from BH09 to BH04

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

1. Portion 1: Continue piling work. Complete tree pruning in order to facilitate the piling works at E1-RS1. Commence preparation for sheet piling installation at E1-PC2 and E1 –PC6.
2. Portion 2: Commence piling works; Complete to erect hoarding and rock fall temporary. Commence rock slope excavation.
3. Portion 4: Continue the slip road construction and commence temporary road diversion.

4. Portion 5: Complete sheet piling installation. Complete UU ground settlement markers. Complete tree transplant work, Commence covered walkway construction;
5. Portion 6: Continue Rock dowel installation work. Carry out removal of existing EPD fence. Carry out inspection pit to locate existing water mains;
6. Portion 7: Complete hiking trail extension in Site A. Commence slope improvement work in Site B;
7. Portion 8 & 9: Carry out soil nail head construction works. Carry out trial pits for baffle works

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

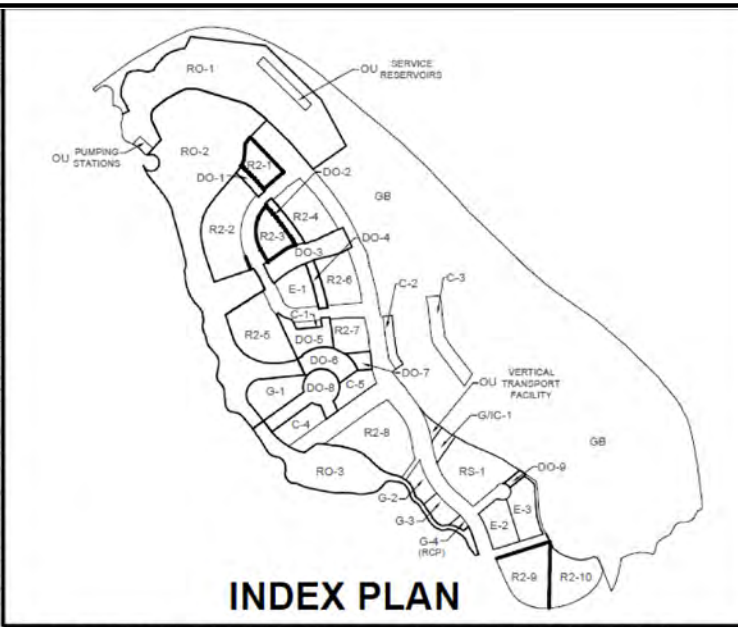
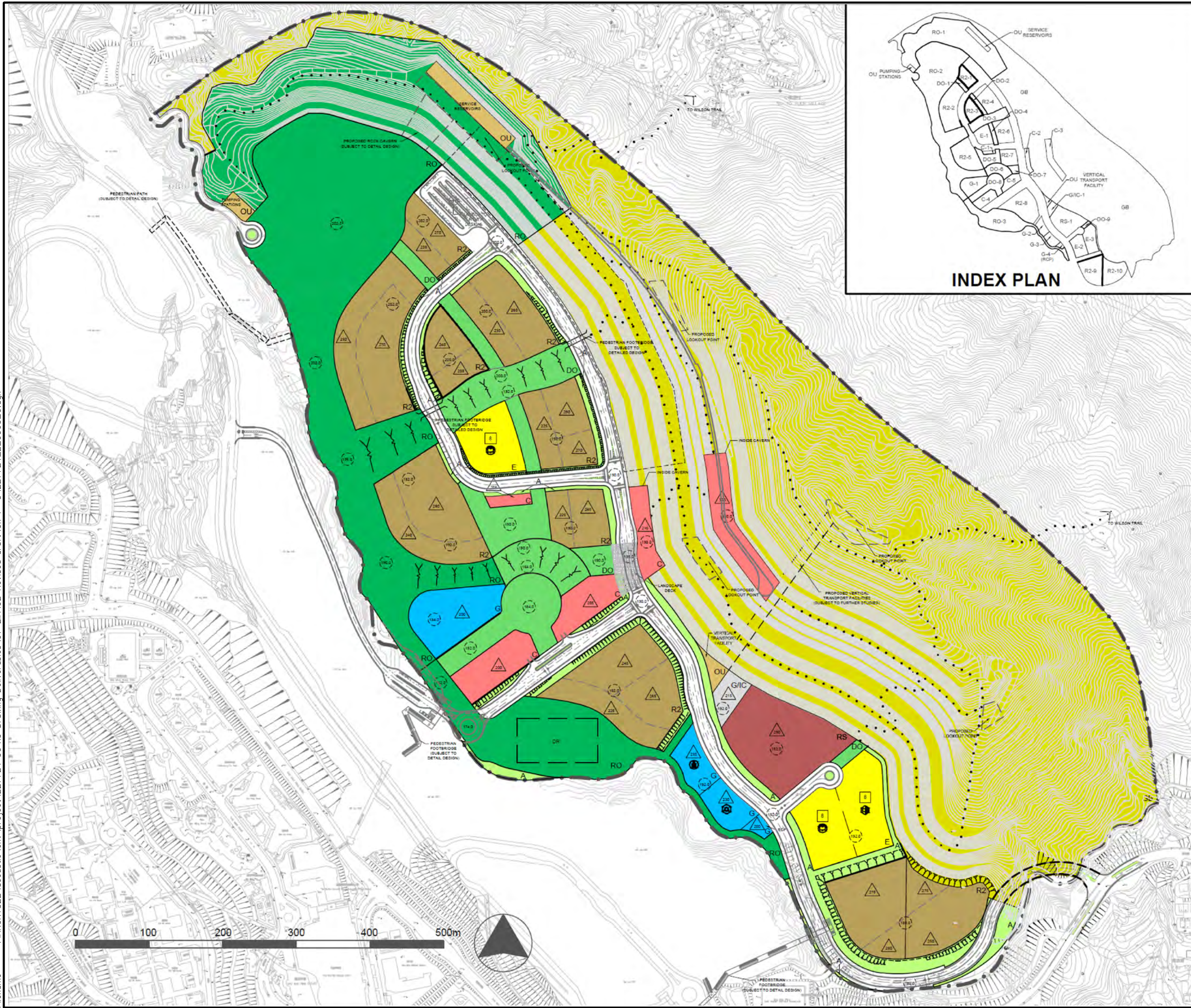
- 10.1.1 This is 10th monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from 1 to 31 January 2018.
- 10.1.2 No 24-hour or 1-hour TSP monitoring results that triggered the Action or Limit Levels were recorded. No NOEs or the associated corrective actions were therefore issued.
- 10.1.3 In the Reporting Period, no construction noise measurement results that exceeded the Limit Level were recorded. However, one (1) noise complaint (which triggered Action Level) was recorded for Contract 1. AECOM has explained to the complainant that the tentative completion date of the concerned work would be in mid-March and the complainant was satisfied with the respond. Investigation report for the complaint was completed by ET.
- 10.1.4 No notification of summons or successful prosecution was received under the Project.
- 10.1.5 In the Reporting Period, one (1) environmental complaint was received for Contract 1 in respect with the construction noise concerned by the nearby resident. AECOM has explained to the complainant that the tentative completion date of the concerned work would be in mid-March and the complainant was satisfied with the respond. Investigation report for the complaint was completed 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



LEGEND

- POLICE STATION
- DIVISIONAL FIRE STATION
- SECONDARY SCHOOL
- PRIMARY SCHOOL
- PUBLIC TRANSPORT TERMINUS
- PLANNING BOUNDARY
- UNDERPASS
- PROPOSED PEDESTRIAN TRAIL
- PEDESTRIAN PRECINCT
- DRAINAGE RESERVE
- MAXIMUM BUILDING HEIGHT (in m above PD)
- MAXIMUM BUILDING HEIGHT (in storeys)
- PROPOSED LEVEL (in m above PD)
- PROPOSED SLOPE
- REFUSE COLLECTION POINT
- FOOTBRIDGE
- COMMERCIAL
- SPECIAL RESIDENTIAL
- RESIDENTIAL ZONE-2
- GOVERNMENT
- GOVERNMENT/ INSTITUTION OR COMMUNITY
- EDUCATION
- REGIONAL OPEN SPACE
- DISTRICT OPEN SPACE
- AMENITY
- OTHER SPECIFIED USES
- 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**

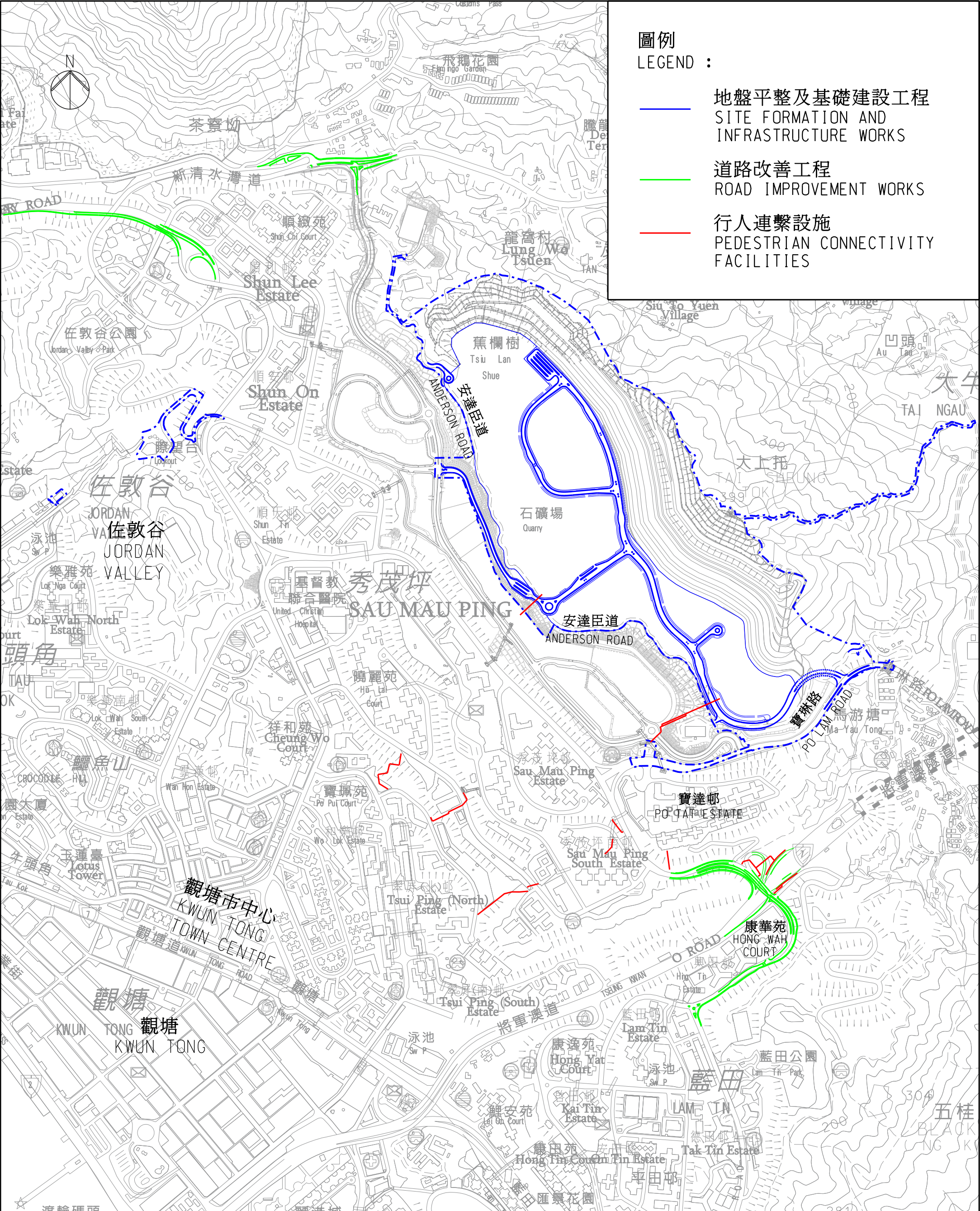
Drawing title
**Recommended Outline
Development Plan**

Drawing no.	Date	Checked	Approved
227724/E/0003	03/14	TC	ST

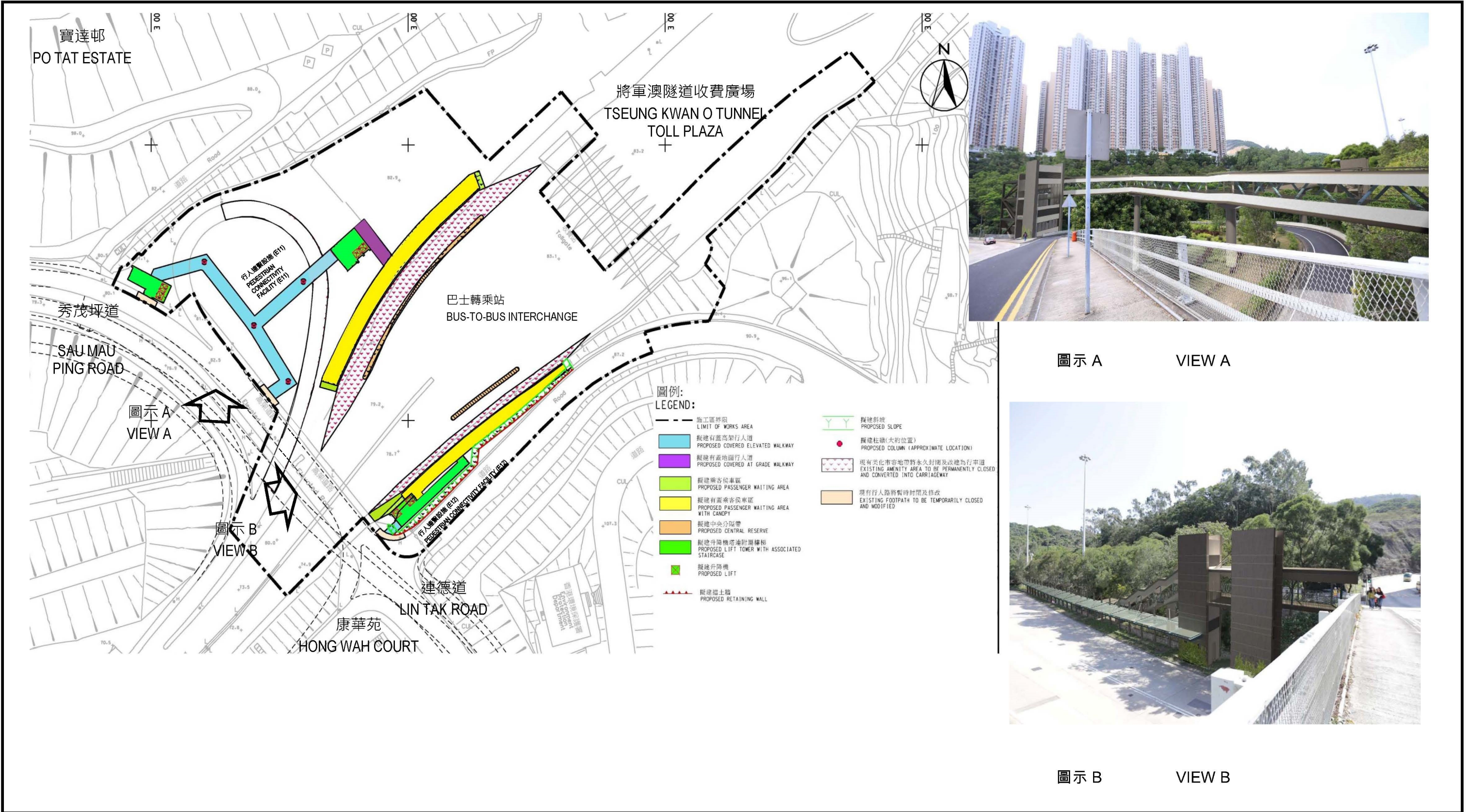
Scale AS SHOWN Status PRELIMINARY

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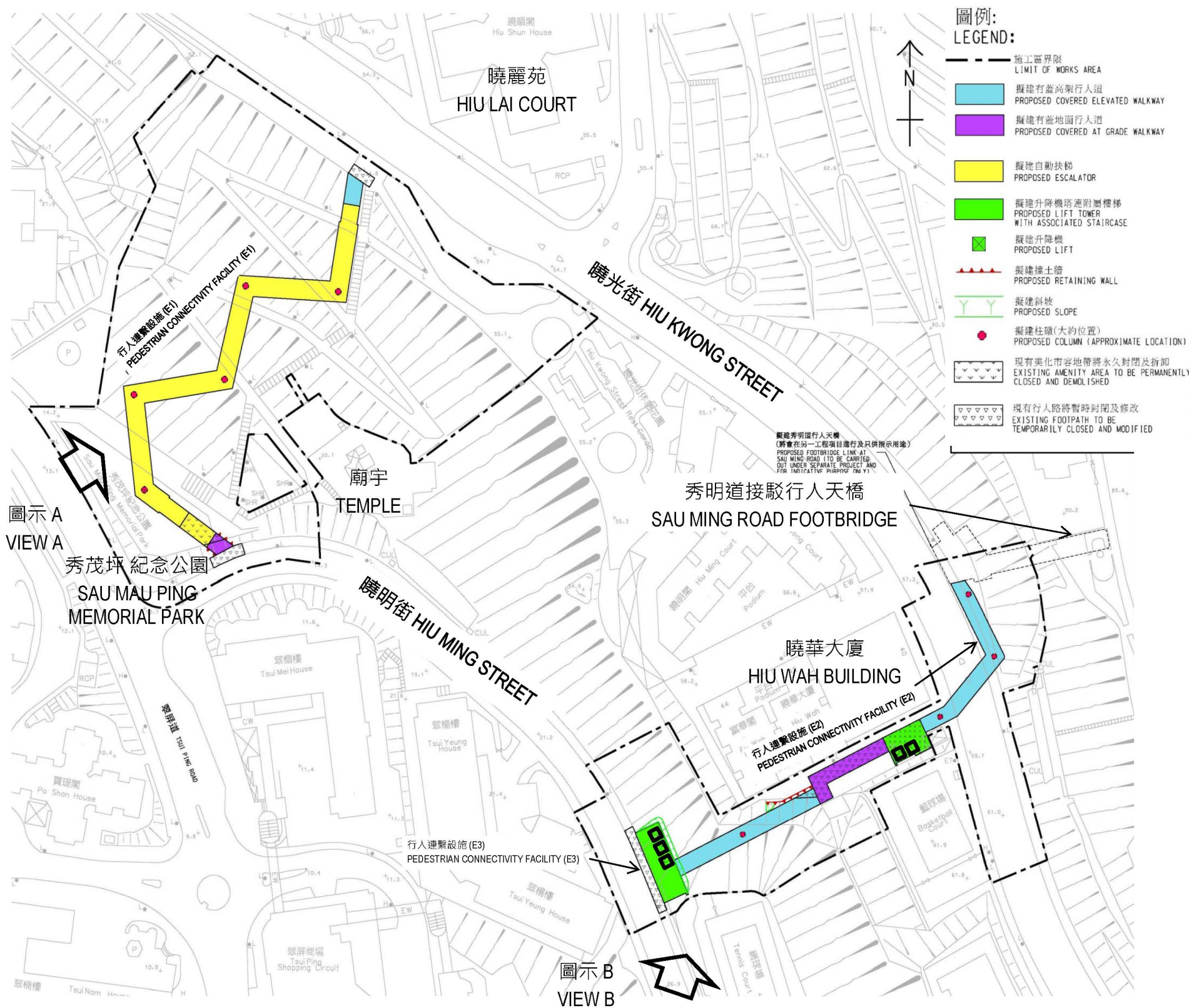
CEDD 土木工程拓展署
Civil Engineering and
Development Department



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 H K TSANG	簽署initial 日期date 23.3.16	項目編號 item no.	辦事處 office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE
	核對 checked L M CHAN	簽署initial 日期date 23.3.16	比例 scale 1:10 000 @ A3	
	核准 approved T S LI	簽署initial 日期date 23.3.16	圖則編號 drawing no. CDEARQZ0003	 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



圖則名稱 Drawing Title	項目編號 Item No.	辦事處 Office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE
	765CL	
	比例 Scale	
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	圖則編號 Drawing No.	 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
	附件五 Appendix 5	



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

比例 Scale

圖則編號 Drawing No.

附件二 Appendix 2

辦事處 Office

新界東拓展處

NEW TERRITORIES EAST
DEVELOPMENT OFFICE



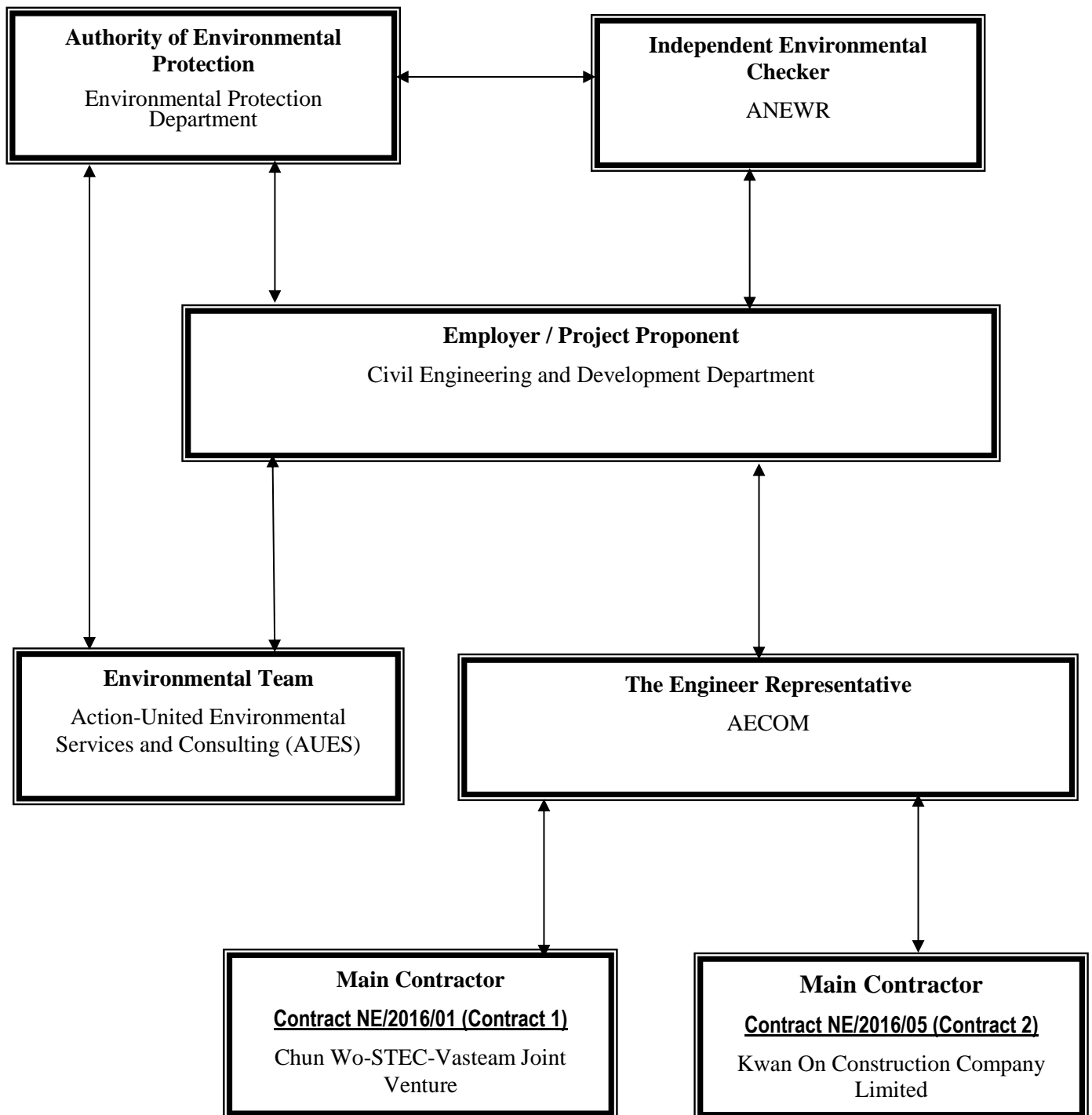
土木工程拓展署

CIVIL ENGINEERING
AND DEVELOPMENT
DEPARTMENT

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
ANWR	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-STECC-Vastream Joint Venture

ANWR (IEC) – ANWR 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
ANWR	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

ANWR (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)

<div><div><div><div></div><div>TEC</div><div>隆道股份</div></div><div>俊和 - 上隧 - 浩隆聯營</div><div>CHUN WO - STEC - VASTEAM JOINT VENTURE</div></div></div>				CONTRACT NO.NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE 3-MONTH ROLLING PROGRAMME					Page 1 of 9 23 Jan 2018				
Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Dec	Jan	Feb	Mar	Qtr 2, 2018 Apr
ARQ - Works Programme Rev.1 - 3MRP (15 Jan 2018)													
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 XIII A of the Works - Landscape Works at Shui Chuen O and Kau To (Portion E2)	0	0		20-Dec-17		20-Dec-17 A	100%					
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-Jan-18*		0%					
Preliminary													
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	160	05-May-17	31-Aug-17	28-Aug-17 A	12-Mar-18	55%					
Construction and Installation													
Temporary Works													
Underpass Tunnel													
ACU0010	GEO Submission and Review	30	167	02-Jun-17	07-Jul-17	28-Jun-17 A	16-Jan-18	98%					
ACU0020	Approval of GEO Submission	0	0		07-Jul-17		16-Jan-18	0%					
West Portal													
ACU1050A009	B1 - Soil Nail Drilling and Grouting at West Portal (K1 to K5)	0	3			04-Jan-18 A	06-Jan-18 A	100%					
ACU1050A010	B1 - Soil Nail Drilling and Grouting at West Portal (J1 to J6)	0	3			27-Dec-17 A	29-Dec-17 A	100%					
ACU1050A011	B1 - Soil Nail Drilling and Grouting at West Portal (G1 to G18)	0	10			20-Dec-17 A	29-Dec-17 A	100%					
ACU1050A012	B1 - Soil Nail Drilling and Grouting at West Portal (H1 to H19)	0	11			27-Dec-17 A	06-Jan-18 A	100%					
ACU1050A013	B1 - Soil Nail Drilling and Grouting at West Portal (J7 to J8)	0	6			16-Jan-18	21-Jan-18	0%					
ACU1060A001	B1 - Rock Breaking at West Portal beyond Entrance	0	258			17-May-17 A	30-Jan-18	88%					
ACU1080	B1 - Soil Nail Installation at Slope A3 (193 nails from Row K to A)	61	61	08-Jul-17	06-Sep-17	16-Jan-18	17-Mar-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-Jan-18	14-Feb-18	0%					
ACU2040A98	D1 - CLP 11kV Cable Diversion at East Portal	0	39			04-Jan-18 A	11-Feb-18	10%					
ACU2050	D1 - Formation of East Portal for Tunneling Works	30	30	07-Aug-17	05-Sep-17	12-Feb-18	13-Mar-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	143	08-Jul-17	27-Sep-17	06-Nov-17 A	28-Mar-18	13.5%					
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	28-Mar-18	16-May-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	28-Mar-18	19-Apr-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	14-Mar-18	31-Mar-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	01-Apr-18	23-Apr-18	0%					
Pedestrian Connectivity System A													
Lift Tower (North) and Subway within Portion B5													
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	26-Mar-18	05-Sep-18	0%					

<div><div><div><div></div><div>TEC</div><div>隆道股份</div></div><div>俊和 - 上隧 - 浩隆聯營</div><div>CHUN WO - STEC - VASTEAM JOINT VENTURE</div></div></div>				CONTRACT NO.NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE 3-MONTH ROLLING PROGRAMME							Page 2 of 9 23 Jan 2018				
Activity ID		Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Qtr 1, 2018					Qtr 2, 2018
										Dec	Jan	Feb	Mar	Apr	
Lift Tower (South) and Subway within Portion C1a															
ACS1090	C1a - Construction of Pre-Bored H-Piles (48nos) of Lift Tower (3 days/pile/plant, assume 2 rigs)	144	72	18-Sep-17	14-Mar-18	26-Mar-18	26-Jun-18	0%							
Pedestrian Connectivity System B															
Lift Tower (North) and Subway within Portion A1															
ACS2030	A1 - Construction of Footings and Wall Structure upwards Level (+176mPD)	30	120	27-Feb-18	06-Apr-18	23-Jan-18*	22-Jun-18	0%							
Lift Tower (South) and Subway within Portion C1b															
ACS2110	C1b - Excavation for Pedestrian Connectivity System B (South)	90	51	07-Jul-17	21-Oct-17	20-Nov-17 A	20-Jan-18	95%							
ACS2120	C1b - Construction of Pre-bored H-Piles (55nos) of Lift Tower (2.5days/pile/plant) by 1 workfront	110	140	23-Oct-17	07-Mar-18	23-Jan-18*	17-Jul-18	0%							
Underground Stormwater Retention Tank (Portion A1)															
ACN1010	A1 - Excavation (Open Cut) of Underground Stormwater Tank	201	227	02-May-17	30-Dec-17	10-May-17 A	07-Feb-18	90%							
ACN1010A006	A1 - Drilling and Grouting for Temporary soil Nails AF11 to AF22 (11 nails)	0	22			27-Dec-17 A	22-Jan-18	50%							
ACN1010A007	A1 - Drilling and Grouting for Temporary soil Nails AG1 to AG15 (15 nails)	0	7			23-Jan-18	30-Jan-18	0%							
ACN1010A008	A1 - Drilling and Grouting for Temporary soil Nails AH1 to AH15 (15 nails)	0	7			31-Jan-18	07-Feb-18	0%							
ACN1010A009	A1 - Rock Filling and Blinding Layer for Underground Stormwater Tank	0	38			20-Dec-17 A	05-Feb-18	40%							
ACN1020	A1 - Construction of Sub Structure of Underground Stormwater Tank	80	80	02-Jan-18	12-Apr-18	08-Feb-18	21-May-18	0%							
Water Pumping Stations (Portion B5)															
ACW1030A003	B5 - Excavation to Expose CLP Cable at Anderson Rd adjacent to RWA14	0	14			27-Dec-17 A	12-Jan-18 A	100%							
ACW1030A004	B5 - Joint Inspection and Meeting for CLP Cable Diversion at Anderson Rd adjacent to RWA14	0	4			12-Jan-18 A	16-Jan-18 A	100%							
ACW1050	B5 - Further Cut Slope (Rock Breaking) and Erect Platform at Pumping Station (+194mPD)	180	168	29-Aug-17	10-Apr-18	14-Aug-17 A	08-Mar-18	77%							
ACW1060A007	B5 - Construct Base Slab of RWA13 - Bay #1	0	20			27-Dec-17 A	19-Jan-18	65%							
ACW1060A008	B5 - Construct Base Slab of RWA13 - Bay #2	0	10			23-Jan-18*	02-Feb-18	0%							
ACW1060A009	B5 - Construct Base Slab of RWA13 - Bay #3	0	20			27-Dec-17 A	19-Jan-18	65%							
ACW1060A010	B5 - Construct Base Slab of RWA13 - Bay #4	0	10			23-Jan-18*	03-Feb-18	0%							
ACW1060A011	B5 - Construct Base Slab of RWA13 - Bay #5	0	10			03-Feb-18	14-Feb-18	0%							
ACW1060A012	B5 - Construct Base Slab of RWA13 - Bay #6	0	10			03-Feb-18	14-Feb-18	0%							
ACW1060A013	B5 - Construct Wall of RWA13 - Bay #1	0	12			19-Jan-18	02-Feb-18	0%							
ACW1060A014	B5 - Construct Wall of RWA13 - Bay #2	0	12			03-Feb-18	20-Feb-18	0%							
ACW1060A23	B5 - Construct Wall of RWA13 - Bay #3	0	12			19-Jan-18	02-Feb-18	0%							
ACW1060A33	B5 - Construct Wall of RWA13 - Bay #4	0	12			03-Feb-18	21-Feb-18	0%							
ACW1060A43	B5 - Construct Wall of RWA13 - Bay #5	0	12			15-Feb-18	03-Mar-18	0%							
ACW1060A53	B5 - Construct Wall of RWA13 - Bay #6	0	12			15-Feb-18	03-Mar-18	0%							
ACW1070A006	B5 - Concreting Blinding Layer for RWA13 - Bay #12	0	1			20-Dec-17 A	20-Dec-17 A	100%							
ACW1070A007	B5 - Construct Base Slab of RWA13 - Bay #7	0	10			03-Feb-18	15-Feb-18	0%							
ACW1070A008	B5 - Construct Base Slab of RWA13 - Bay #8	0	10			03-Feb-18	15-Feb-18	0%							
ACW1070A009	B5 - Construct Base Slab of RWA13 - Bay #9	0	20			27-Dec-17 A	19-Jan-18	65%							
ACW1070A010	B5 - Construct Base Slab of RWA13 - Bay #10	0	10			15-Feb-18	02-Mar-18	0%							
ACW1070A011	B5 - Construct Base Slab of RWA13 - Bay #11	0	10			15-Feb-18	02-Mar-18	0%							
ACW1070A012	B5 - Construct Base Slab of RWA13 - Bay #12	0	10			15-Feb-18	02-Mar-18	0%							
ACW1070A12	B5 - Construct Wall of RWA13 - Bay #7	0	12			15-Feb-18	05-Mar-18	0%							
ACW1070A22	B5 - Construct Wall of RWA13 - Bay #8	0	12			15-Feb-18	05-Mar-18	0%							
ACW1070A32	B5 - Construct Wall of RWA13 - Bay #9	0	12			05-Mar-18	19-Mar-18	0%							
ACW1070A42	B5 - Construct Wall of RWA13 - Bay #10	0	12			02-Mar-18	16-Mar-18	0%							
ACW1070A52	B5 - Construct Wall of RWA13 - Bay #11	0	12			02-Mar-18	16-Mar-18	0%							
										ARQ - Programme Logics based on WP Rev.1 dated 25 Aug 2017					
										Date	Revision		Checked	Approved	
										23-Jan-18	3MRP Rev.1 (Cut Off on 15 Jan 18)				

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Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Dec	Jan	Feb	Mar	Qtr 2, 2018 Apr
ACW1070A62	B5 - Construct Wall of RWA13 - Bay #12	0	12			02-Mar-18	16-Mar-18	0%				<div>B5 - Construct Wall of RWA13 - Bay #12</div>	
ACW1080A003	B5 - Concreting Blinding Layer for RWA13 - Bay #15	0	1			20-Dec-17 A	20-Dec-17 A	100%	<div></div>				
ACW1080A013	B5 - Concreting Base Slab for RWA13 - Bay #13	0	12			15-Feb-18*	05-Mar-18	0%			<div>B5 - Concreting Base Slab for RWA13 - Bay #13</div>		
ACW1080A014	B5 - Concreting Base Slab for RWA13 - Bay #14	0	12			15-Feb-18*	05-Mar-18	0%			<div>B5 - Concreting Base Slab for RWA13 - Bay #14</div>		
ACW1080A015	B5 - Concreting Base Slab for RWA13 - Bay #15	0	12			15-Feb-18*	05-Mar-18	0%			<div>B5 - Concreting Base Slab for RWA13 - Bay #15</div>		
ACW1080A016	B5 - Concreting Wall for RWA13 - Bay #13	0	12			05-Mar-18*	19-Mar-18	0%				<div>B5 - Concreting Wall for RWA13 - Bay #13</div>	
ACW1080A017	B5 - Concreting Wall for RWA13 - Bay #14	0	12			05-Mar-18*	19-Mar-18	0%				<div>B5 - Concreting Wall for RWA13 - Bay #14</div>	
ACW1080A018	B5 - Concreting Wall for RWA13 - Bay #15	0	12			05-Mar-18*	19-Mar-18	0%				<div>B5 - Concreting Wall for RWA13 - Bay #15</div>	
ACW1090	B5 - Back Fill for RWA13	90	60	26-Oct-17	12-Feb-18	21-Feb-18	08-May-18	0%					
ACW1100	B5 - Form new Temporary Access Road passing through Pumping Station Area	7	64	11-Apr-18	18-Apr-18	12-Oct-17 A	28-Dec-17 A	100%	<div></div>				
ACW1110	B5 - Cut Down Existing Anderson Road to RWA14 Footing Level	30	39	19-Apr-18	25-May-18	04-Jan-18 A	22-Feb-18	2%		<div></div>	<div></div>		
Public Transportation Terminus (Portion B5)													
ACP1030A1016	B5 - Drilling to founding Level of Vertical Pile VB7 of PTT by 2nd Piling Rig	0	9			06-Dec-17 A	15-Dec-17 A	100%	<div></div>				
ACP1030A1017	B5 - Insert H-Pile of VB7 of PTT	0	1			18-Dec-17 A	18-Dec-17 A	100%	<div></div>				
ACP1030A1018	B5 - Grouting of VB7 of PTT	0	1			19-Dec-17 A	19-Dec-17 A	100%	<div></div>				
ACP1030A1021	B5 - Insert H-Pile of VB8 of PTT	0	1			18-Dec-17 A	18-Dec-17 A	100%	<div></div>				
ACP1030A1022	B5 - Grouting of VB8 of PTT	0	1			19-Dec-17 A	19-Dec-17 A	100%	<div></div>				
ACP1030A1023	B5 - Drilling to founding Level of Vertical Pile VB9 of PTT by 2nd Piling Rig	0	7			08-Dec-17 A	15-Dec-17 A	100%	<div></div>				
ACP1030A1024	B5 - Insert H-Pile of VB9 of PTT	0	1			18-Dec-17 A	18-Dec-17 A	100%	<div></div>				
ACP1030A1025	B5 - Grouting of VB9 of PTT	0	1			20-Dec-17 A	20-Dec-17 A	100%	<div></div>				
ACP1030A1026	B5 - Drilling to founding Level of Vertical Pile VB10 of PTT by 2nd Piling Rig	0	7			09-Dec-17 A	16-Dec-17 A	100%	<div></div>				
ACP1030A1027	B5 - Insert H-Pile of VB10 of PTT	0	1			19-Dec-17 A	19-Dec-17 A	100%	<div></div>				
ACP1030A1028	B5 - Grouting of VB10 of PTT	0	1			20-Dec-17 A	20-Dec-17 A	100%	<div></div>				
ACP1030A158	B5 - Drilling to founding Level of Vertical Pile VC3 of PTT by 2nd Piling Rig	0	4			20-Dec-17 A	23-Dec-17 A	100%	<div></div>				
ACP1030A159	B5 - Insert H-Pile of VC03 of PTT	0	1			09-Jan-18 A	09-Jan-18 A	100%		<div></div>			
ACP1030A160	B5 - Grouting of VC03 of PTT	0	1			10-Jan-18 A	10-Jan-18 A	100%		<div></div>			
ACP1030A200A0	B5 - Insert H-Pile of VE12 of PTT	0	1			16-Dec-17 A	16-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Grouting of VE12 of PTT	0	1			16-Dec-17 A	16-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Grouting of VE10 of PTT	0	1			15-Dec-17 A	15-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE08 of PTT by 1st Piling Rig	0	6			09-Dec-17 A	15-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Insert H-Pile of VE08 of PTT	0	1			21-Dec-17 A	21-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Grouting of VE08 of PTT	0	1			21-Dec-17 A	21-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE06 of PTT by 1st Piling Rig	0	2			15-Dec-17 A	16-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Insert H-Pile of VE06 of PTT	0	1			28-Dec-17 A	28-Dec-17 A	100%		<div></div>			
ACP1030A200A0	B5 - Grouting of VE06 of PTT	0	1			29-Dec-17 A	29-Dec-17 A	100%		<div></div>			
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE04 of PTT by 1st Piling Rig	0	3			21-Dec-17 A	23-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Insert H-Pile of VE04 of PTT	0	1			03-Jan-18 A	03-Jan-18 A	100%		<div></div>			
ACP1030A200A0	B5 - Grouting of VE04 of PTT	0	1			04-Jan-18 A	04-Jan-18 A	100%		<div></div>			
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE03 of PTT by 1st Piling Rig	0	13			05-Dec-17 A	19-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Insert H-Pile of VE03 of PTT	0	1			04-Jan-18 A	04-Jan-18 A	100%		<div></div>			
ACP1030A200A0	B5 - Grouting of VE03 of PTT	0	1			05-Jan-18 A	05-Jan-18 A	100%		<div></div>			
ACP1030A200A0	B5 - Drilling to founding Level of Vertical Pile VE02 of PTT by 1st Piling Rig	0	3			16-Dec-17 A	19-Dec-17 A	100%	<div></div>				
ACP1030A200A0	B5 - Insert H-Pile of VE02 of PTT	0	1			27-Dec-17 A	27-Dec-17 A	100%	<div></div>				
<div><div><div><div><div></div><div>TEC</div><div>隆道股份</div></div><div>俊和 - 上隧 - 浩隆聯營</div><div>CHUN WO - STEC - VASTEAM JOINT VENTURE</div></div></div></div>			<div><div><div></div><div>Planned Bar (WP)</div></div><div><div></div><div>Actual Bar</div></div><div><div></div><div>Forecast Bar</div></div><div><div></div><div>Critical Work</div></div></div> <div><div><div></div><div>Planned Milestone (WP)</div></div><div><div></div><div>Milestone</div></div></div>		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				
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Activity ID		Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Qtr 1, 2018					Qtr 2, 2018						
										Dec	Jan	Feb	Mar	Apr							
ACP1030A200A0		B5 - Grouting of VE02 of PTT	0	1			28-Dec-17 A	28-Dec-17 A	100%												
ACP1030A200A0		B5 - Drilling to founding Level of Vertical Pile VE01 of PTT by 1st Piling Rig	0	3			19-Dec-17 A	21-Dec-17 A	100%												
ACP1030A200A0		B5 - Insert H-Pile of VE01 of PTT	0	1			05-Jan-18 A	05-Jan-18 A	100%												
ACP1030A200A0		B5 - Grouting of VE01 of PTT	0	1			06-Jan-18 A	06-Jan-18 A	100%												
ACP1030A200A0		B5 - Drilling to founding Level of Vertical Pile VB12 of PTT by 2nd Piling Rig	0	2			15-Dec-17 A	16-Dec-17 A	100%												
ACP1030A200A0		B5 - Insert H-Pile of VB12 of PTT	0	1			23-Dec-17 A	23-Dec-17 A	100%												
ACP1030A200A0		B5 - Grouting of VB12 of PTT	0	1			23-Dec-17 A	23-Dec-17 A	100%												
ACP1030A200A0		B5 - Drilling to founding Level of Vertical Pile VB03 of PTT by 2nd Piling Rig	0	4			22-Dec-17 A	28-Dec-17 A	100%												
ACP1030A200A0		B5 - Insert H-Pile of VB03 of PTT	0	1			29-Dec-17 A	29-Dec-17 A	100%												
ACP1030A200A0		B5 - Grouting of VB03 of PTT	0	1			30-Dec-17 A	30-Dec-17 A	100%												
ACP1030A200A0		B5 - Drilling to founding Level of Vertical Pile VB14 of PTT by 2nd Piling Rig	0	3			23-Dec-17 A	28-Dec-17 A	100%												
ACP1030A200A0		B5 - Insert H-Pile of VB14 of PTT	0	1			09-Jan-18 A	09-Jan-18 A	100%												
ACP1030A200A0		B5 - Grouting of VB14 of PTT	0	1			16-Jan-18	16-Jan-18	0%												
ACP1030A200A0		B5 - Drilling to founding Level of Vertical Pile VB11 of PTT by 2nd Piling Rig	0	3			29-Dec-17 A	02-Jan-18 A	100%												
ACP1030A200A0		B5 - Insert H-Pile of VB11 of PTT	0	1			08-Jan-18 A	08-Jan-18 A	100%												
ACP1030A200A0		B5 - Grouting of VB11 of PTT	0	1			16-Jan-18	16-Jan-18	0%												
ACP1030A200A0		B5 - Drilling to founding Level of Vertical Pile VD03 of PTT by 2nd Piling Rig	0	2			04-Jan-18 A	05-Jan-18 A	100%												
ACP1030A200A0		B5 - Insert H-Pile of VD03 of PTT	0	1			08-Jan-18 A	08-Jan-18 A	100%												
ACP1030A200A0		B5 - Grouting of VD03 of PTT	0	1			09-Jan-18 A	09-Jan-18 A	100%												
ACP1030A404		B5 - Insert H-Pile of VD4 of PTT	0	1			02-Jan-18 A	02-Jan-18 A	100%												
ACP1030A414		B5 - Grouting of VD4 of PTT	0	1			03-Jan-18 A	03-Jan-18 A	100%												
ACP1040		B5 - Excavation and Construct Pile Caps with Erection of Steel Posts GL.E/1-9 (PC3)	36	90	04-May-18	15-Jun-18	29-Jan-18*	23-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	143	15-Sep-17	03-Apr-18	04-Sep-17 A	27-Feb-18	79%												
ACL10110		A1 - Install Road Drainage, Water Mains, Ducts and Utilities along Road L1 from Junction Road L1/L5 to West Portal	80	80	04-Apr-18	11-Jul-18	19-Mar-18	27-Jun-18	0%												
Road L1 (Portion B2)																					
ACL10039A002		Form Platform for Slope Works at Slope A15	0	21			29-Jan-18*	24-Feb-18	0%												
ACL10039A003		Rock Slope Cut at Slope A15	0	30			26-Feb-18	04-Apr-18	0%												
ACL10050A001		Laying Geotextile Filter for Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	2			16-Jan-18 A	17-Jan-18 A	100%												
ACL10050A002		Rock Fill for Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	12			17-Jan-18 A	31-Jan-18	0%												
ACL10050A003		Blinding Layer for Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	7			31-Jan-18	08-Feb-18	0%												
ACL10050A004		Formwork for Base Slab of Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	14			08-Feb-18	28-Feb-18	0%												
ACL10050A005		Rebar Fixing and Water Stop Installation for Base Slab of Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	14			28-Feb-18	16-Mar-18	0%												
ACL10050A006		Concrete Pouring and Curing for Base Slab of Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	7			16-Mar-18	24-Mar-18	0%												
ACL10050A007		Formwork for Wall and Top Slab of Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	14			21-Mar-18	11-Apr-18	0%												
ACL10050A008		Rebar Fixing for Wall and Top Slab of Box Culvert BC1/BC2Transition (CHA144 to CH178.392)	0	14			11-Apr-18	27-Apr-18	0%												
At-grade Internal Road L4 (Portion C1a)																					
Noise Barrier																					
ACL40450		C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #9	12	12	06-Sep-17	19-Sep-17	10-Apr-18	24-Apr-18	0%												
ACL40470		C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #10	12	12	23-Aug-17	05-Sep-17	22-Mar-18	10-Apr-18	0%												
ACL40490		C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #11	12	12	06-Sep-17	19-Sep-17	10-Apr-18	24-Apr-18	0%												
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Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Dec	Jan	Feb	Mar	Qtr 2, 2018 Apr
ACL40510	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #12	12	12	23-Aug-17	05-Sep-17	22-Mar-18	10-Apr-18	0%					C1a - C
ACL40530	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #13	12	12	09-Aug-17	22-Aug-17	08-Mar-18	22-Mar-18	0%				C1a - Construction of Footing of Noise Bar	
ACL40540	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #13	18	18	06-Sep-17	26-Sep-17	10-Apr-18	02-May-18	0%					
ACL40550	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #14	12	12	26-Jul-17	08-Aug-17	22-Feb-18	08-Mar-18	0%				C1a - Construction of Footing of Noise Barri	
ACL40560	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #14	18	18	09-Aug-17	29-Aug-17	08-Mar-18	29-Mar-18	0%				C1a - Construction of Wall of	
ACL40570	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #15	12	12	09-Aug-17	22-Aug-17	08-Mar-18	22-Mar-18	0%				C1a - Construction of Footing of Noise Bar	
ACL40590	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #16	12	12	26-Jul-17	08-Aug-17	22-Feb-18	08-Mar-18	0%				C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #16	
ACL40600	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #16	18	18	23-Aug-17	12-Sep-17	29-Mar-18	24-Apr-18	0%					
ACL40605A57	C1a - Mass Concrete Pouring for Bay #1	0	1			17-Jan-18 A	17-Jan-18 A	100%					
ACL40605A58	C1a - Mass Concrete Pouring for Bay #2	0	1			12-Jan-18 A	12-Jan-18 A	100%					
ACL40605A59	C1a - Mass Concrete Pouring for Bay #3	0	1			08-Jan-18 A	08-Jan-18 A	100%					
ACL40605A60	C1a - Mass Concrete Pouring for Bay #4	0	1			12-Jan-18 A	12-Jan-18 A	100%					
ACL40605A61	C1a - Mass Concrete Pouring for Bay #5	0	1			08-Jan-18 A	08-Jan-18 A	100%					
ACL40605A62	C1a - Mass Concrete Pouring for Bay #6	0	1			19-Dec-17 A	19-Dec-17 A	100%					
ACL40605A63	C1a - Mass Concrete Pouring for Bay #7	0	1			22-Dec-17 A	22-Dec-17 A	100%					
ACL40605A64	C1a - Mass Concrete Pouring for Bay #8	0	1			19-Dec-17 A	19-Dec-17 A	100%					
ACL40605A71	C1a - Grade 200 Rockfilling alongside Noise Barrier Bay 24 to 30 (5 layers)	0	5			27-Dec-17 A	02-Jan-18 A	100%					
ACL40605A72	C1a - Grade 200 Rockfilling alongside Noise Barrier Bay 22 to 17 (5 layers)	0	9			11-Jan-18 A	20-Jan-18	20%				C1a - Grade 200 Rockfilling alongside Noise Barrier Bay 22 to 17 (5 layers)	
ACL40605A73	C1a - Grade 200 Rockfilling alongside Noise Barrier Bay 16 to 1 (5 layers)	0	6			20-Jan-18	27-Jan-18	0%				C1a - Grade 200 Rockfilling alongside Noise Barrier Bay 16 to 1 (5 layers)	
ACL40610	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #17	12	12	05-Jul-17	18-Jul-17	05-Feb-18	22-Feb-18	0%				C1a - Corstruction of Footing of Noise Barrier at Road L4 - Bay #17	
ACL40620	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #17	18	18	02-Aug-17	22-Aug-17	08-Mar-18	29-Mar-18	0%				C1a - Construction of Wall of	
ACL40630	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #18	12	12	19-Jul-17	01-Aug-17	22-Feb-18	08-Mar-18	0%				C1a - Construction of Footing of Noise Barri	
ACL40650	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #19	12	12	05-Jul-17	18-Jul-17	22-Feb-18	08-Mar-18	0%				C1a - Construction of Footing of Noise Barri	
ACL40660	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #19	18	18	02-Aug-17	22-Aug-17	22-Mar-18	17-Apr-18	0%					
ACL40670	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #20	12	12	19-Jul-17	01-Aug-17	08-Mar-18	22-Mar-18	0%				C1a - Construction of Footing of Noise Bar	
ACL40690	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #21	12	12	02-Aug-17	15-Aug-17	08-Mar-18	22-Mar-18	0%				C1a - Construction of Footing of Noise Bar	
ACL40700	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #21	18	18	30-Aug-17	19-Sep-17	10-Apr-18	02-May-18	0%					
ACL40710	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #22	12	12	16-Aug-17	29-Aug-17	22-Mar-18	10-Apr-18	0%					C1a - C
ACL40730	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #23	12	12	02-Aug-17	15-Aug-17	22-Mar-18	10-Apr-18	0%					C1a - C
ACL40750	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #24	12	12	16-Aug-17	29-Aug-17	10-Apr-18	24-Apr-18	0%					
ACL40770	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #25	12	12	30-Aug-17	12-Sep-17	10-Apr-18	24-Apr-18	0%					
ACL40790	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #26	12	12	13-Sep-17	26-Sep-17	20-Jan-18	03-Feb-18	0%				C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #26	
ACL40810	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #27	12	12	30-Aug-17	12-Sep-17	03-Feb-18	21-Feb-18	0%				C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #27	
ACL40820	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #27	18	18	27-Sep-17	19-Oct-17	07-Mar-18	28-Mar-18	0%				C1a - Construction of Wall of N	
ACL40830	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #28	12	12	13-Sep-17	26-Sep-17	21-Feb-18	07-Mar-18	0%				C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #28	
ACL40850	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #29	12	12	27-Sep-17	12-Oct-17	28-Mar-18	16-Apr-18	0%					
ACL40890	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #31	12	12	27-Sep-17	12-Oct-17	07-Mar-18	21-Mar-18	0%				C1a - Construction of Footing of Noise Barri	
ACL40900	C1a - Construction of Wall of Noise Barrier at Road L4 - Bay #31	18	18	27-Oct-17	17-Nov-17	09-Apr-18	30-Apr-18	0%					
ACL40910	C1a - Construction of Footing of Noise Barrier at Road L4 - Bay #32	12	12	13-Oct-17	26-Oct-17	21-Mar-18	09-Apr-18	0%					C1a - C
Twin 1950 Dia. Downpipe and Cascade													
ACL40010	C1a - Excavation to Expose Existing Drainage Pipe (+174mPD to +168.72mPD)	6	5	10-Oct-17	16-Oct-17	08-Jan-18 A	12-Jan-18 A	100%					
ACL40020A001	C1a - Construct U-ditch for Diversion of Existing Cascade	0	39			25-Nov-17 A	12-Jan-18 A	100%					
ACL40020A001	C1a - Submit Temporary Haul Road at Road L4 to retaining Wall RWA 12	0	1			16-Jan-18 A	16-Jan-18 A	100%					

<div><div><div><div></div><div>TEC</div><div>隆道股份</div></div><div>俊和 - 上隧 - 浩隆聯營</div><div>CHUN WO - STEC - VASTEAM JOINT VENTURE</div></div></div>			<div><div><div></div><div>Planned Bar (WP)</div></div><div><div></div><div>Actual Bar</div></div><div><div></div><div>Forecast Bar</div></div><div><div></div><div>Critical Work</div></div></div> <div><div><div></div><div>Planned Milestone (WP)</div></div><div><div></div><div>Milestone</div></div></div>	3-MONTH ROLLING PROGRAMME (In comparison with WP Rev.1 dated 25 Aug 2017)	<div>ARQ - Programme Logics based on WP Rev.1 dated 25 Aug 2017</div> <table><tr><th>Date</th><th>Revision</th><th>Checked</th><th>Approved</th></tr><tr><td>23-Jan-18</td><td>3MRP Rev.1 (Cut Off on 15 Jan 18)</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	Date	Revision	Checked	Approved	23-Jan-18	3MRP Rev.1 (Cut Off on 15 Jan 18)										
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Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Dec	Jan	Feb	Mar	Qtr 2, 2018 Apr
ACL40020A001	C1a - Construct Temporary Haul Road at Road L4 to retaining Wall RWA12	0	7			27-Jan-18	05-Feb-18	0%			C1a - Construct Temporary Haul Road at Road L4 to retaining Wall RWA12		
ACL40050	C1a - Construction of New CP17-1 (IL +165mPD)	17	12	02-Jan-18	20-Jan-18	24-Feb-18	10-Mar-18	0%			C1a - Construction of New CP17-1 (IL +165mPD)		
ACL40060	C1a - Construction of new 2x1950mm Dia Drainage Pipe (IL +165.6mPD)	17	12	20-Jan-18	08-Feb-18	27-Feb-18	13-Mar-18	0%			C1a - Construction of new 2x1950mm Dia Drainage Pipe (IL		
ACL40070	C1a - Construction of new Manhole Q2 (IL +165.8mPD)	15	15	08-Feb-18	28-Feb-18	27-Feb-18	16-Mar-18	0%			C1a - Construction of new Manhole Q2 (IL +165.8mPD)		
Retaining Wall RWA12													
ACL40020A002	C1a - Excavate RWA12 - Bay #20 to 17 (to +154mPD)	0	139			07-Aug-17 A	22-Jan-18	60%			C1a - Excavate RWA12 - Bay #20 to 17 (to +154mPD)		
ACL40020A003	C1a - Construct RWA12 - Bay #20 Base Slab and Wall upward +165mPD as 1st Portion	0	12			22-Jan-18	05-Feb-18	0%			C1a - Construct RWA12 - Bay #20 Base Slab and Wall upward +165mPD as 1st Portion		
ACL40020A004	C1a - Back Fill RWA12 - Bay #20 upward +163mPD	0	6			05-Feb-18	12-Feb-18	0%			C1a - Back Fill RWA12 - Bay #20 upward +163mPD		
ACL40020A005	C1a - Construct RWA12 - Bay #19 to 17	0	6			12-Feb-18	22-Feb-18	0%			C1a - Construct RWA12 - Bay #19 to 17		
ACL40020A006	C1a - Construct RWA12 - Bay #20 Wall upward +175mPD as 2nd Portion	0	14			12-Feb-18	03-Mar-18	0%			C1a - Construct RWA12 - Bay #20 Wall upward +175mPD as 2nd Portion		
ACL40020A007	C1a - Back Fill RWA12 - Bay #19 to 17	0	6			22-Feb-18	01-Mar-18	0%			C1a - Back Fill RWA12 - Bay #19 to 17		
ACL40030	C1a - Excavate RWA12 - Bay #22 (to +154mPD)	12	15	04-Nov-17	17-Nov-17	08-Jan-18 A	25-Jan-18	30%			C1a - Excavate RWA12 - Bay #22 (to +154mPD)		
ACL40040A001	C1a - Construction of RWA12 - Bay #22 Base Slab and Wall upward +165mPD as 1st Portion	0	14			05-Feb-18	24-Feb-18	0%			C1a - Construction of RWA12 - Bay #22 Base Slab and Wall upward +165mPD as 1st Portion		
ACL40040A002	C1a - Construction of RWA12 - Bay #22 Wall upward +175mPD as 2nd Portion	0	14			24-Feb-18	13-Mar-18	0%			C1a - Construction of RWA12 - Bay #22 Wall upward +175m		
ACL40110	C1a - Excavate RWA12 - Bay #21 (+156.6mPD) and Demolish Existing Soil Nails	5	18	28-Apr-18	04-May-18	25-Jan-18	15-Feb-18	0%					
ACL40110A001	C1a - Back Fill SYS-A South Tower after Demolishing Existing Soil Nails to Form Platform	0	10			15-Feb-18	02-Mar-18	0%			C1a - Back Fill SYS-A South Tower after Demolishing Existing Soil Nails to Form P		
ACL40120A001	C1a - Construct RWA12 - Bay #21 Base Slab and Wall upward +165mPD as 1st Portion	0	14			02-Mar-18	19-Mar-18	0%			C1a - Construct RWA12 - Bay #21 Base Slab and		
ACL40120A002	C1a - Back Fill RWA12 - Bay #21 and 22 upward +163mPD (15 layers @ 4 layers/day)	0	6			19-Mar-18	26-Mar-18	0%			C1a - Back Fill RWA12 - Bay #21 ar		
Retaining Wall RWA18													
ACL40170A001	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #5	0	15			11-Jan-18 A	29-Jan-18	5%			C1a - Excavation at Slope A18 for Construction of RWA18 Bay #5		
ACL40170A002	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #4	0	27			11-Jan-18 A	10-Feb-18	5%			C1a - Excavation at Slope A18 for Construction of RWA18 Bay #4		
ACL40170A003	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #3	0	12			10-Feb-18	28-Feb-18	0%			C1a - Excavation at Slope A18 for Construction of RWA18 Bay #3		
ACL40170A004	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #2	0	12			28-Feb-18	14-Mar-18	0%			C1a - Excavation at Slope A18 for Construction of RWA18		
ACL40170A005	C1a - Excavation at Slope A18 for Construction of RWA18 Bay #1	0	12			14-Mar-18	28-Mar-18	0%			C1a - Excavation at Slope A18 f		
ACL40180	C1a - Construction of Footing of RWA18 - Bay #1	12	12	16-Dec-17	02-Jan-18	28-Mar-18	16-Apr-18	0%					
ACL40200	C1a - Construction of Footing of RWA18 - Bay #2	12	12	02-Dec-17	15-Dec-17	14-Mar-18	28-Mar-18	0%				C1a - Construction of Footing o	
ACL40210	C1a - Construction of Wall of RWA18 - Bay #2	12	12	14-Feb-18	02-Mar-18	28-Mar-18	16-Apr-18	0%					
ACL40220	C1a - Construction of Footing of RWA18 - Bay #3	12	12	18-Nov-17	01-Dec-17	28-Feb-18	14-Mar-18	0%			C1a - Construction of Footing of RWA18 - Bay #3		
ACL40230	C1a - Construction of Wall of RWA18 - Bay #3	12	12	31-Jan-18	13-Feb-18	14-Mar-18	28-Mar-18	0%			C1a - Construction of Wall of R		
ACL40240	C1a - Construction of Footing of RWA18 - Bay #4	12	12	02-Dec-17	15-Dec-17	05-Mar-18	17-Mar-18	0%			C1a - Construction of Fobting of RWA18 - Bay #4		
ACL40250	C1a - Construction of Wall of RWA18 - Bay #4	12	12	24-Feb-18	09-Mar-18	19-Mar-18	04-Apr-18	0%				C1a - Construction	
ACL40260	C1a - Construction of Footing of RWA18 - Bay #5	12	12	18-Nov-17	01-Dec-17	15-Feb-18	03-Mar-18	0%			C1a - Construction of Footing of RWA18 - Bay #5		
ACL40270	C1a - Construction of Wall of RWA18 - Bay #5	12	12	07-Feb-18	23-Feb-18	05-Mar-18	17-Mar-18	0%			C1a - Construction of Wall of RWA18 - Bay #5		
WSD Access Road (Portion B5)													
ACL60010	B5 - Site Clearance and Tree Felling	46	46	19-Dec-17	13-Feb-18	21-Feb-18	20-Apr-18	0%					
ACL60020	B5 - Drainage,Sewerage,Water mains and Underground Utilities laying (approx 600m) along WSD Access Road	120	120	14-Feb-18	16-Jul-18	28-Mar-18	24-Aug-18	0%					
Portion A3													
Site Formation													
ACA30020	A3 - Soil Excavation for Site Formation in Portion A3	306	133	07-Sep-17	18-Sep-18	13-Oct-17 A	24-Mar-18	20%					
ACA30030	A3 - Rock Breaking for Site Formation in Portion A3	56	78	19-Sep-18	26-Nov-18	25-Oct-17 A	27-Jan-18	49%					
ACA30035	A3 - Construct U-Channel with Cover (675UC) along Slope A16	14	14	27-Nov-18	12-Dec-18	13-Mar-18	28-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	13-Mar-18	26-Apr-18	0%					
Portion A4 (based on Sub Programme Ref.CWSTVJV/893/CSF0208-2017)													
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Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Dec	Jan	Feb	Mar	Qtr 2, 2018 Apr		
ACB100020	B10 - Site Formation in Portion B10	45	143	31-Oct-17	21-Dec-17	01-Sep-17 A	24-Feb-18	29%					B10 - Site Formation in Portion B10		
ACB100030	B10 - Construct New U-Channel (450U,525U and 675U; approx 90m) and Catchpits (3nos)	40	40	22-Dec-17	09-Feb-18	24-Feb-18	17-Apr-18	0%							
Portion C1b															
Site Formation															
ACC10009	C1b - Excavation In Portion C1b (Slope A5)	90	90	12-Jul-18	27-Oct-18	16-Jan-18	09-May-18	0%							
Portion D1															
Road Improvement at Po Lam Road															
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	05-Feb-18*	07-Mar-18	0%					D1 - Phase 1 Road Improvement for Po Lam Road - CLP Cable Diversion		
ACD10045	D1 - Phase 1 Road Improvement for Po Lam Road - PCCW Cable Diversion	24	24	30-Aug-17	26-Sep-17	08-Mar-18	09-Apr-18	0%					D1 - Phase 1 Road Improvement for Po Lam Road - PCCW Cable Diversion		
ACD10055	D1 - Phase 1 Road Improvement for Po Lam Road - WT&T Cable Diversion	24	24	27-Sep-17	26-Oct-17	10-Apr-18	08-May-18	0%					D1 - Phase 1 Road Improvement for Po Lam Road - WT&T Cable Diversion		
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-Jan-18	29-Mar-18	0%					D1 - Phase 3 Road Improvement for Po Lam Road - Underground Utility Detection		
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-Jan-18	29-Mar-18	0%					D1 - Phase 4 Road Improvement for Po Lam Road - Underground Utility Detection		
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-Jan-18	29-Mar-18	0%					D1 - Phase 5 Road Improvement for Po Lam Road - Underground Utility Detection		
Shui Chuen O & Kau To (Portion E2) - Subject to Excision															
ACO10066	Handover Inspection for Slope 7NE-C/C499 (Landscape Softworks) - Awaiting Confirmation from HyD	7	4	13-Sep-17	20-Sep-17	16-Jan-18	19-Jan-18	0%					Handover Inspection for Slope 7NE-C/C499 (Landscape Softworks) - Awaiting Confirmation from HyD		
ACO10240	Landscape Works for Slope 7NE-C/C207 (Kau To)	20	90	04-Oct-17	27-Oct-17	04-Sep-17 A	20-Dec-17 A	100%							
ACO10241	Handover Inspection for Landscape Works for Slope 7NE-C/C207 (Kau To) - Awaiting Confirmation from HyD	7	3	30-Oct-17	06-Nov-17	16-Jan-18	18-Jan-18	0%					Handover Inspection for Landscape Works for Slope 7NE-C/C207 (Kau To) - Awaiting Confirmation from HyD		
ACO10243	Handover Inspection for Landscape Works for Slope 7NE-C/C464 (Kau To) - Defect Rectification	7	19	30-Oct-17	06-Nov-17	21-Dec-17 A	16-Jan-18	90%					Handover Inspection for Landscape Works for Slope 7NE-C/C464 (Kau To) - Defect Rectification		
ACO10251	Handover Inspection for Landscape Works for Slope 7NE-C/C471 (Kau To) - Defect Rectification	7	26	12-Dec-17	19-Dec-17	14-Dec-17 A	16-Jan-18	90%					Handover Inspection for Landscape Works for Slope 7NE-C/C471 (Kau To) - Defect Rectification		
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) - Awaiting Confirmation from HyD	7	3	15-Nov-17	22-Nov-17	16-Jan-18	18-Jan-18	0%					Handover Inspection for Landscape Works for Slope 7NE-C/CR78 (Kau To) - Awaiting Confirmation from HyD		
ACO10273	Handover Inspection for Landscape Works for Slope 7NE-C/C217 (Kau To)	7	16	08-Dec-17	15-Dec-17	14-Dec-17 A	04-Jan-18 A	100%							
ACO10281	Handover Inspection for Landscape Works for Slope 7SE-C/F238 (Shui Chuen O) - Awaiting Confirmation from HyD	7	4	19-Oct-17	26-Oct-17	16-Jan-18*	19-Jan-18	0%					Handover Inspection for Landscape Works for Slope 7SE-C/F238 (Shui Chuen O) - Awaiting Confirmation from HyD		
ACO10283	Handover Inspection for Landscape Works for Slope 7NE-C/C672 (Shui Chuen O)	7	16	19-Oct-17	26-Oct-17	14-Dec-17 A	04-Jan-18 A	100%							
ACO10290	Establishment Works for Slope 7SE-C/CR309 (Shui Chuen O)	365	300	20-Aug-17	19-Aug-18	16-Jan-18	11-Nov-18	0%							
ACO10291	Establishment Works for Slope 7SE-C/C673 (Shui Chuen O)	365	300	20-Aug-17	19-Aug-18	16-Jan-18	11-Nov-18	0%							
ACO10300	Establishment Works for Slope 7SE-C/C240 (Shui Chuen O)	365	300	20-Aug-17	19-Aug-18	16-Jan-18	11-Nov-18	0%							
ACO10310	Establishment Works for Slope 7SE-A/C604 (Kau To)	365	300	13-Oct-17	12-Oct-18	16-Jan-18	11-Nov-18	0%							
ACO10311	Establishment Works for Slope 7SE-A/C605 (Kau To)	365	300	13-Oct-17	12-Oct-18	16-Jan-18	11-Nov-18	0%							
ACO10315	Establishment Works for Slope 7NE-C/C464 (Kau To)	365	300	07-Nov-17	06-Nov-18	16-Jan-18	12-Nov-18	0%							
ACO10330	Establishment Works for Slope 7NE-C/C207 (Kau To)	365	300	07-Nov-17	06-Nov-18	19-Jan-18	14-Nov-18	0%							
ACO10340	Establishment Works for Slope 7NE-C/C482 (Kau To)	365	300	07-Nov-17	06-Nov-18	16-Jan-18	11-Nov-18	0%							
ACO10341	Establishment Works for Slope 7NE-C/C471 (Kau To)	365	300	20-Dec-17	19-Dec-18	16-Jan-18	12-Nov-18	0%							
ACO10350	Establishment Works for Slope 7NE-C/FR264 (Kau To)	365	300	23-Nov-17	22-Nov-18	16-Jan-18	11-Nov-18	0%							
ACO10360	Establishment Works for Slope 7NE-C/CR78 (Kau To)	365	300	23-Nov-17	22-Nov-18	19-Jan-18	14-Nov-18	0%							
ACO10361	Establishment Works for Slope 7NE-C/C217 (Kau To)	365	300	16-Dec-17	15-Dec-18	16-Jan-18	11-Nov-18	0%							
ACO10370	Establishment Works for Slope 7SE-C/F238 (Shui Chuen O)	365	300	27-Oct-17	26-Oct-18	20-Jan-18	15-Nov-18	0%							
ACO10371	Establishment Works for Slope 7NE-C/C672 (Shui Chuen O)	365	300	27-Oct-17	26-Oct-18	16-Jan-18	11-Nov-18	0%							
Mitigation Works for Natural Terrain Catchment B5 adjacent to Anderson Road - Subject to Excision															
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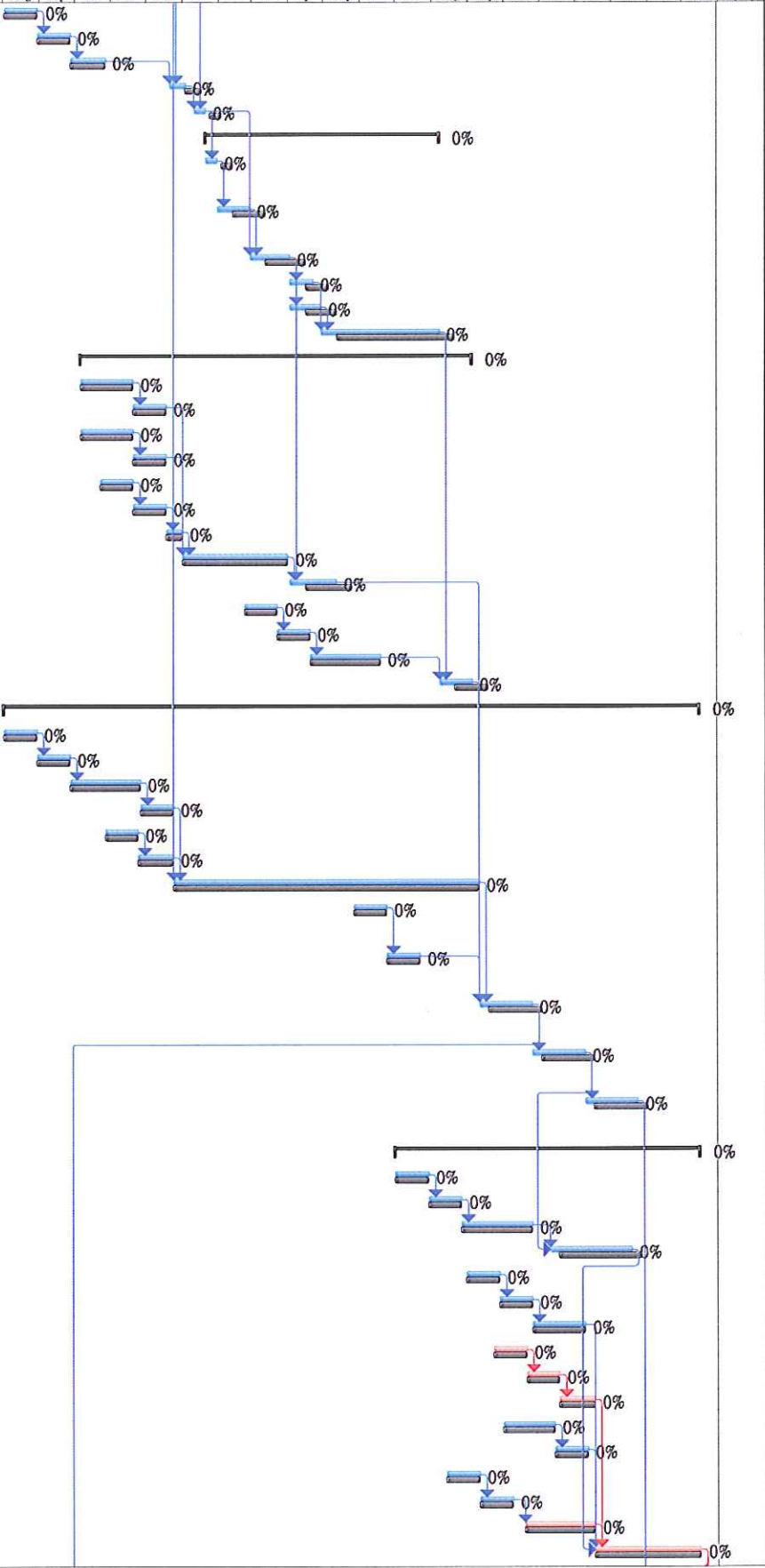
Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp	Dec	Jan	Feb	Mar	Apr
ACO10140	Slope Trimming and Excavation for Gabion Barrier Construction (As directed by Engineer)	30	14	18-Jan-18	24-Feb-18	01-Mar-18	16-Mar-18	0%					
ACO10142	In-situ Density Test (2 Trial Pits) and Submission of Report	0	7			18-Dec-17 A	27-Dec-17 A	100%					
ACO10142A001	Backfilling	0	12			28-Dec-17 A	11-Jan-18 A	100%					
ACO10143	Large Disturbed Sample and Submission of Report	0	14			16-Jan-18	31-Jan-18	0%					
ACO10144	Block and Submission of Report	0	14			01-Feb-18	20-Feb-18	0%					
ACO10145	Preliminary Logs Submission	0	7			21-Feb-18	28-Feb-18	0%					
ACO10150	Construct Gabion Barrier, 450UC and Catch Pits	50	50	26-Feb-18	28-Apr-18	17-Mar-18	19-May-18	0%					

Revised programme for Section A-E1_Dec 17

ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish	2018												2019												2020			
							Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	A.1.1	Section A, Portion 1 - Escalator (E1)	1096 days	986.55 days	Fri 31/3/17	Mon 30/3/20																												
2	A.1.1.1	Pre Construction Works	620 days	354.65 days	Fri 31/3/17	Mon 10/12/18																												
3	A.1.1.1.1	Access Date for Portion 1	1 day	0 days	Fri 31/3/17	Fri 31/3/17																												
4	A.1.1.1.2	Site Clearance	14 days	0 days	Fri 14/4/17	Thu 27/4/17																												
5	A.1.1.1.3	Site Condition Survey	14 days	0 days	Fri 28/4/17	Thu 11/5/17																												
6	A.1.1.1.4	Initial site survey and submission	58 days	17.4 days	Sun 17/9/17	Mon 13/11/17																												
7	1.1.5	Carry out Tree Survey and Report Submission	14 days	0 days	Sat 13/5/17	Fri 26/5/17																												
8	A.1.1.1.5	Application for Excavation Permit (XP)	180 days	0 days	Sat 1/4/17	Wed 27/9/17																												
9	A.1.1.1.7	Implement TTA at Hiu Ming Street/Hiu Kwong Street	14 days	0 days	Wed 9/8/17	Tue 22/8/17																												
10	A.1.1.1.8	Erection of Hoarding	33 days	0 days	Thu 13/7/17	Mon 14/8/17																												
11	A.1.1.1.9	Tree Fell	84 days	67.2 days	Tue 5/9/17	Mon 27/11/17																												
12	A.1.1.1.10	Design submission of Escalator	60 days	57 days	Sat 16/12/17	Tue 13/2/18																												
13	A.1.1.1.11	Comment of design submission of Escalator	90 days	90 days	Wed 14/2/18	Mon 14/5/18																												
14	1.1.12	Second design submission of Escalator	120 days	120 days	Tue 15/5/18	Tue 11/9/18																												
15	1.1.13	Approval of design submission of Escalator	90 days	90 days	Wed 12/9/18	Mon 10/12/18																												
16	A.1.1.2	Ground Investigation	132 days	0 days	Fri 31/3/17	Wed 9/8/17																												
17	A.1.1.2.1	Proposal of ground investigation specialist	1 day	0 days	Fri 31/3/17	Fri 31/3/17																												
18	A.1.1.2.2	Approval of ground investigation specialist	24 days	0 days	Sat 1/4/17	Mon 24/4/17																												
19	A.1.1.2.3	Submission of Construction Impact Assessment	12 days	12 days	Mon 17/4/17	Fri 28/4/17																												
20	A.1.1.2.4	Establishment of Drilling rigs	7 days	0 days	Fri 21/4/17	Fri 5/5/17																												
21	A.1.1.2.5	Inspection Pits (10 nr)	14 days	0 days	Fri 21/4/17	Thu 4/5/17																												
22	1.2.6	Additional Inspection Pit (PMI 1 & PMI 2)	2 days	0 days	Mon 5/6/17	Tue 6/6/17																												
23	A.1.1.2.6	Predrilling (10 nr)	54 days	0 days	Fri 28/4/17	Tue 20/6/17																												
24	1.2.8	Additional Pre-drilling (PMI 3)	2 days	0 days	Fri 7/7/17	Sat 8/7/17																												
25	A.1.1.2.7	Demobilization of Drilling rigs	1 day	0 days	Wed 12/7/17	Wed 12/7/17																												
26	A.1.1.2.8	In-situ testing and result submission	28 days	0 days	Thu 29/6/17	Wed 26/7/17																												
27	A.1.1.2.9	Laboratory tests	14 days	0 days	Thu 27/7/17	Wed 9/8/17																												
28	A.1.1.3	Piling Works (Pr-bored Socket H-Pile)	454.4 days	322.53 days	Sat 22/4/17	Fri 20/7/18																												
29	A.1.1.3.1	Proposal of Piling Specialist	7 days	0 days	Sat 22/4/17	Fri 28/4/17																												
30	A.1.1.3.2	Approval of Piling Specialist	24 days	0 days	Sat 29/4/17	Mon 22/5/17																												
31	A.1.1.3.3	Establishment of Piling rigs (1 nr)	3 days	0 days	Thu 19/10/17	Sat 21/10/17																												
32	A.1.1.3.4	Construction of Preliminary Pile (1 nr)	13 days	13 days	Sun 22/10/17	Fri 3/11/17																												
33	A.1.1.3.5	Establishment of pile testing equipment	14 days	14 days	Sat 4/11/17	Fri 17/11/17																												
34	A.1.1.3.6	Load Test Preliminary Pile (1 nr)	7 days	7 days	Sat 18/11/17	Fri 24/11/17																												
35	A.1.1.3.7	Submission of Load Test Report (Preliminary Pile)	3 days	3 days	Sat 25/11/17	Mon 27/11/17																												
36	A.1.1.3.8	Review of Load Test result	3 days	3 days	Tue 28/11/17	Thu 30/11/17																												
37	A.1.1.3.9	Establishment of Piling rigs (1 nr)	3 days	0 days	Wed 25/10/17	Sat 4/11/17																												
38	A.1.1.3.10	Submission of temporary working platform design	12 days	2.4 days	Fri 3/11/17	Tue 14/11/17																												
39	A.1.1.3.11	Approval of temporary working platform design	28 days	5.6 days	Wed 15/11/17	Tue 12/12/17																												
40	A.1.1.3.11a	CCTV on uncharted Manhole (PMI 12)	1 day	0 days	Tue 8/8/17	Tue 8/8/17																												
41	A.1.1.3.11b	Demolition of Uncharted Manhole (PMI 15)	2 days	0 days	Mon 21/8/17	Tue 22/8/17																												
42	A.1.1.2.11c	Revised Pile Loading Schedule (PMI 17)	1 day	0 days	Fri 8/9/17	Fri 8/9/17																												
43	A.1.1.2.11d	Pile Sleeve Not Required For E1-RS1 & E1-PC1 (PMI 19)	1 day	0 days	Wed 4/10/17	Wed 4/10/17																												
44	A.1.1.3.12	Construction of Main Pile for pile cap E1-RS1 and E1-PC1(34nrs)	60 days	30.4 days	Wed 15/11/17	Fri 26/1/18																												
45	A.1.1.3.13	Construction of main pile for pile cap E1 PC6 and E1-PC5 (30 nrs)	53 days	53 days	Fri 26/1/18	Tue 20/3/18																												
46	A.1.1.3.14	Construction of main pile for pile cap E1 PC2, E1 PC3 and E1 PC4 (44nrs)	77 days	77 days	Tue 20/3/18	Tue 5/6/18																												
47	A.1.1.3.15	Establishment of Drilling rigs for proof drill (1 nr)	3 days	3 days	Tue 5/6/18	Fri 8/6/18																												
48	A.1.1.3.16	Selection and Carry out Proof drill (2 nrs)	14 days	14 days	Fri 8/6/18	Fri 22/6/18																												
49	A.1.1.3.17	Establishment of pile testing equipment	14 days	14 days	Fri 22/6/18	Fri 6/7/18																												
50	A.1.1.3.18	Selection and Carry Out Load Test Main Pile (1 nr)	7 days	7 days	Fri 6/7/18	Fri 13/7/18																												
51	A.1.1.3.19	Submission of Load Test Report (Main Pile)	7 days	7 days	Fri 13/7/18	Fri 20/7/18																												
52	A.1.1.4	Pile Cap & Footing	184 days	184 days	Fri 20/7/18	Sun 20/1/19																												
53	A.1.1.4.1	Submission of temporary works for ELS	14 days	14 days	Fri 20/7/18	Fri 3/8/18																												
54	A.1.1.4.2	Approval of temporary works for ELS	28 days	28 days	Fri 3/8/18	Fri 31/8/18																												
55	A.1.1.4.3	Installing ELS Works	90 days	90 days	Fri 31/8/18	Thu 29/11/18																												
56	A.1.1.4.4	Pile cap (E1-PC1 and E1-PC2)	39 days	39 days	Fri 14/9/18	Tue 23/10/18																												
57	A.1.1.4.5	Pile Cap (E1-PC3 ~ PC6)	79 days	79 days	Tue 23/10/18	Thu 10/1/19																												
58	A.1.1.4.5a	Interface detail E1-RS1 (PMI 30)	3 days	3 days	Thu 29/11/18	Sun 2/12/18																												
59	A.1.1.4.5b	Water Pipe Diversion (PMI 16)	3 days	3 days	Thu 29/11/18	Sun 2/12/18																												
60	A.1.1.4.6	Retaining structure (E1-RS1)	21 days	21 days	Thu 29/11/18	Thu 20/12/18																												

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

ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish	2018												2019												2020			
							Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
61	A.1.1.4.7	Material submission of water proofing works	28 days	28 days	Thu 2/8/18	Wed 29/8/18																												
62	A.1.1.4.8	Approval of material of water proofing wroks	28 days	28 days	Thu 30/8/18	Wed 26/9/18																												
63	A.1.1.4.9	Procurement to delivery of water proofing material	30 days	30 days	Thu 27/9/18	Fri 26/10/18																												
64	A.1.1.4.10	Waterproofing Works	14 days	14 days	Thu 20/12/18	Thu 3/1/19																												
65	A.1.1.4.11	Backfilling	10 days	10 days	Thu 10/1/19	Sun 20/1/19																												
66	A.1.1.5	Superstructures	199 days	199 days	Sun 20/1/19	Wed 7/8/19																												
67	A.1.1.5.1	Submission of temporary work design and method for piers construction	10 days	10 days	Sun 20/1/19	Wed 30/1/19																												
68	A.1.1.5.2	Approval to temporary works design and method for piers construction	28 days	28 days	Wed 30/1/19	Wed 27/2/19																												
69	A.1.1.5.3	Construction of piers (E1-P1 ~ P5)	34 days	34 days	Wed 27/2/19	Tue 2/4/19																												
70	A.1.1.5.4	Conatruction of Ramp Structures	20 days	20 days	Tue 2/4/19	Mon 22/4/19																												
71	A.1.1.5.5	Construction of Abutment (E1-PC6)	27 days	27 days	Tue 2/4/19	Mon 29/4/19																												
72	A.1.1.5.6	Construction of deck slab with cast in items	100 days	100 days	Mon 29/4/19	Wed 7/8/19																												
73	A.1.1.6	Construction of Bearings and Movement Joints	333.4 days	333.4 days	Sat 6/10/18	Wed 4/9/19																												
74	A.1.1.6.1	Proposal of Bridge Bearing Specialist	45 days	45 days	Sat 6/10/18	Mon 19/11/18																												
75	A.1.1.6.2	Approval of Bridge Bearing Specialist	28 days	28 days	Tue 20/11/18	Mon 17/12/18																												
76	A.1.1.6.3	Design submission of Bridge Bearing	45 days	45 days	Sat 6/10/18	Mon 19/11/18																												
77	A.1.1.6.4	Approval of design submission of Bridge bearing	28 days	28 days	Tue 20/11/18	Mon 17/12/18																												
78	A.1.1.6.5	Material submission of Bridge Bearing	28 days	28 days	Tue 23/10/18	Mon 19/11/18																												
79	A.1.1.6.6	Approval of material submission to Bridge Bearing	28 days	28 days	Tue 20/11/18	Mon 17/12/18																												
80	A.1.1.6.7	Testing and submission of result of Bridge Bearing	14 days	14 days	Tue 18/12/18	Mon 31/12/18																												
81	A.1.1.6.8	Procurement and delivery of Bridge Bearing	90 days	90 days	Tue 1/1/19	Sun 31/3/19																												
82	A.1.1.6.9	Installation of Bearings (6 nr)	40 days	40 days	Tue 2/4/19	Sun 12/5/19																												
83	A.1.1.6.10	Material submission of movement joints	28 days	28 days	Sat 23/2/19	Fri 22/3/19																												
84	A.1.1.6.11	Approval of material submission of movement joints	28 days	28 days	Sat 23/3/19	Fri 19/4/19																												
85	A.1.1.6.12	Procurement to delivery of movement joints	60 days	60 days	Sat 20/4/19	Tue 18/6/19																												
86	A.1.1.6.13	Construction of MJ (3 nr)	28 days	28 days	Wed 7/8/19	Wed 4/9/19																												
87	A.1.1.7	Installation of Escalators (E1-ES01 to ES-12)	592 days	592 days	Thu 2/8/18	Sun 15/3/20																												
88	A.1.1.7.1	Proposal of Escalator Specialist	28 days	28 days	Thu 2/8/18	Wed 29/8/18																												
89	A.1.1.7.2	Approval of Escalator Specialist	28 days	28 days	Thu 30/8/18	Wed 26/9/18																												
90	A.1.1.7.3	Submission of Escalator E&M (SEM)	60 days	60 days	Thu 27/9/18	Sun 25/11/18																												
91	A.1.1.7.4	Approval of Escalator E&M (SEM)	28 days	28 days	Mon 26/11/18	Sun 23/12/18																												
92	A.1.1.7.5	Material submission of escalator	28 days	28 days	Sat 27/10/18	Fri 23/11/18																												
93	A.1.1.7.6	Approval of material submission of escalator	30 days	30 days	Sat 24/11/18	Sun 23/12/18																												
94	A.1.1.7.7	Procurement to delivery of escalator	260 days	260 days	Mon 24/12/18	Mon 9/9/19																												
95	A.1.1.7.8	Submission of method statement for installation of escalator	28 days	28 days	Mon 27/5/19	Sun 23/6/19																												
96	A.1.1.7.9	Approval of method statement for installation of escalator	28 days	28 days	Mon 24/6/19	Sun 21/7/19																												
97	A.1.1.7.10	Installation of escalators and associate works (E1-RS1 to E1-P2)	45 days	45 days	Tue 10/9/19	Thu 24/10/19																												
98	A.1.1.7.11	Installation of escalator and associate works (E1-P2 to E1 P4)	45 days	45 days	Fri 25/10/19	Sun 8/12/19																												
99	A.1.1.7.12	Escalator Installation and associate works (E1-P4 to E1-ABT)	45 days	45 days	Mon 9/12/19	Wed 22/1/20																												
100	A.1.1.7.13	Parapet and Roofing	259 days	259 days	Mon 1/7/19	Sun 15/3/20																												
101	A.1.1.7.14	Material submission of Plexiglass	28 days	28 days	Mon 1/7/19	Sun 28/7/19																												
102	A.1.1.7.15	Approval of material of Plexiglass	28 days	28 days	Mon 29/7/19	Sun 25/8/19																												
103	A.1.1.7.16	Procurement to delivery of Plexiglass	60 days	60 days	Mon 26/8/19	Thu 24/10/19																												
104	A.1.1.7.17	Construction of pedestrian Plexiglass parapet	70 days	70 days	Sat 9/11/19	Fri 17/1/20																												
105	A.1.1.7.18	Material submission of fall arrest system	28 days	28 days	Fri 30/8/19	Thu 26/9/19																												
106	A.1.1.7.19	Approval of material of fall arrest system	28 days	28 days	Fri 27/9/19	Thu 24/10/19																												
107	A.1.1.7.20	Procurement of fall arrest system	45 days	45 days	Fri 25/10/19	Sun 8/12/19																												
108	A.1.1.7.21	Material submission of corrugated steel roof	28 days	28 days	Sun 22/9/19	Sat 19/10/19																												
109	A.1.1.7.22	Approval of material for corrugated steel roof	28 days	28 days	Sun 20/10/19	Sat 16/11/19																												
110	A.1.1.7.23	Procurement of corrugated steel roof	30 days	30 days	Sun 17/11/19	Mon 16/12/19																												
111	A.1.1.7.24	Design submission of roof																																



Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Manual Task

Start-only

Finish-only

Duration-only

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

Summary

Manual Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Deadline

[illegible]

Revised programme for Section A E3 to E2_Dec 17

ID	Task Name	Duration	Remaining Duration	Start	Finish	2018												2019												2020												12%												
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec														
A.2.1	Section A	1175 days	1039.17 days	Fri 31/3/17	Wed 17/6/20																																																	15%
A.2.1.1	E3 and E2 Footbridge and lift Tower	1164 days	994.66 days	Fri 31/3/17	Sat 6/6/20																																																	
A.2.1.1.1	Access Date of Portion 2	1 day	0 days	Fri 31/3/17	Fri 31/3/17																																																	
A.2.1.1.2	Initial Site survey	60 days	3 days	Tue 17/10/17	Fri 15/12/17																																																	
A.2.1.1.3	Initial Tree survey	15 days	0.75 days	Sat 13/5/17	Wed 13/12/17																																																	
A.2.1.1.4	Design submission of lift	60 days	57 days	Sat 16/12/17	Tue 13/2/18																																																	
A.2.1.1.5	Comment of design submission of lift	90 days	90 days	Wed 14/2/18	Mon 14/5/18																																																	
A.2.1.1.5a	Second design submission of lift	120 days	120 days	Tue 15/5/18	Tue 11/9/18																																																	
A.2.1.1.5b	Approval of design submission of lift	90 days	90 days	Wed 12/9/18	Mon 10/12/18																																																	
A.2.1.1.6	Design submission of lighting at footbridge	41 days	41 days	Tue 2/7/19	Sun 11/8/19																																																	
A.2.1.1.7	Approval of design submission of lighting for footbridge	28 days	28 days	Mon 12/8/19	Sun 8/9/19																																																	
A.2.1.1.8	Proposal of Concrete Batching Plant and mixes	90 days	90 days	Tue 3/10/17	Sun 31/12/17																																																	
A.2.1.1.9	Submission of shop drawing for irrigation system and submersible pump for the footbridge	60 days	60 days	Wed 1/5/19	Sat 29/6/19																																																	
A.2.1.1.10	Acceptance of shop drawing for irrigation system and submersible pump system	28 days	28 days	Sun 30/6/19	Sat 27/7/19																																																	
A.2.1.1.11	Method Statement submission for excavation of rock for bridge tower E3-ST1 and approval	126 days	12.6 days	Wed 9/8/17	Tue 12/12/17																																																	
A.2.1.1.12	Approval of method statement of excavation of rock	28 days	8.4 days	Wed 13/12/17	Tue 9/1/18																																																	
A.2.1.1.13	Method Statement Submission for installation and Temporary works design for concreting of bridge tower E3-ST1	72 days	72 days	Thu 5/10/17	Fri 15/12/17																																																	
A.2.1.1.14	Approval of method statement of temporary works design for concreting of bridge tower of bridge tower E3-ST1	28 days	28 days	Sat 16/12/17	Fri 12/1/18																																																	
A.2.1.1.15	Method Statement submission for installation of socket H piles including predrill location and Proof Drill location	52 days	5.2 days	Tue 28/11/17	Thu 18/1/18																																																	
A.2.1.1.16	Approval of method statement for installation of socket H piles including predrill and proof drill location	28 days	2.8 days	Tue 28/11/17	Thu 1/2/18																																																	
A.2.1.1.17	Submission of Method statement for testing of socket H piles	52 days	52 days	Mon 5/3/18	Wed 25/4/18																																																	
A.2.1.1.18	Approval of method statement for testing of socket H piles	28 days	28 days	Thu 26/4/18	Wed 23/5/18																																																	
A.2.1.1.19	Submission of construction impact assessment	14 days	14 days	Fri 16/2/18	Thu 1/3/18																																																	
A.2.1.1.20	Submission of method statement for formwork design for casting the bridge piers footing and bridge piers	52 days	52 days	Mon 4/6/18	Wed 25/7/18																																																	
A.2.1.1.21	Approval of method statement for formwork design for casting bridge piers footing and piers	28 days	28 days	Thu 26/7/18	Wed 22/8/18																																																	
A.2.1.1.22	Design and Material Submission of proposed bridge bearings	52 days	52 days	Tue 24/7/18	Thu 13/9/18																																																	
A.2.1.1.23	Approval of design and material of bridge bearing	28 days	28 days	Fri 14/9/18	Thu 11/10/18																																																	
A.2.1.1.24	Testing and result submission of bridge bearing	15 days	15 days	Fri 12/10/18	Fri 26/10/18																																																	
A.2.1.1.25	Procurement, ordering and delivery of bridge bearings	45 days	45 days	Sat 27/10/18	Mon 10/12/18																																																	
A.2.1.1.26	Submission of method statement for erection of steel truss	52 days	52 days	Mon 10/9/18	Wed 31/10/18																																																	
A.2.1.1.27	Approval of method statement for erection of steel truss	28 days	28 days	Thu 1/11/18	Wed 28/11/18																																																	
A.2.1.1.28	Method statement submission for proposed lift installation	80 days	80 days	Fri 9/3/18	Sun 27/5/18																																																	
A.2.1.1.29	Material Submission of Proposed Lift	60 days	60 days	Mon 28/5/18	Thu 26/7/18																																																	
A.2.1.1.30	Procurement, ordering & delivery of proposed lift	124 days	124 days	Tue 11/12/18	Sat 13/4/19																																																	
A.2.1.1.31	Design and Material Submission of glazing and louvres	80 days	80 days	Fri 24/8/18	Sun 11/11/18																																																	
A.2.1.1.32	Method Statement of glazing and louvre installation	80 days	80 days	Mon 12/11/18	Wed 30/1/19																																																	
A.2.1.1.33	Procurement, ordering and delivery of louvres & glazing	60 days	60 days	Thu 31/1/19	Sun 31/3/19																																																	
A.2.1.1.35	Approval of TTA to block FP of Hiu Ming St and Hiu Kwong Street for erection of Hoarding	76 days	0 days	Thu 20/7/17	Tue 3/10/17																																																	
A.2.1.1.36	Road Works Advice	14 days	14 days	Wed 4/10/17	Tue 17/10/17																																																	
A.2.1.1.37	Implementation of TTA	1 day	1 day	Wed 18/10/17	Wed 18/10/17																																																	
A.2.1.1.38	Application of Excavation permit	180 days	0 days	Sat 1/4/17	Wed 27/9/17																																																	
A.2.1.1.39	Erection of Hoardings for footbridge E3, E2	26 days	10.4 days	Sat 16/12/17	Wed 10/1/18																																																	
A.2.1.1.40	Mobilisation of excavator for breaking of rock for escalator tower E3-ST1	14 days	12.6 days	Thu 11/1/18	Wed 24/1/18																																																	
A.2.1.1.41	Breaking of 50% of rock for escalator tower E3-ST1	60 days	60 days	Thu 25/1/18	Sun 25/3/18																																																	
A.2.1.1.42	Breaking of remaining 50% of rock for escalator tower E3-ST1	60 days	60 days	Mon 26/3/18	Thu 24/5/18																																																	
A.2.1.1.43	Construction of E3-ST1 substructure E3-PC1	67 days	67 days	Fri 25/5/18	Mon 30/7/18																																																	
A.2.1.1.44	Construction E3 superstructure E3 -ST1up to level 34mPD	45 days	45 days	Tue 31/7/18	Thu 13/9/18																																																	
A.2.1.1.45	Contruction of E3 superstructure E3-ST1 from 34mPD to 43.6mPD	45 days	45 days	Fri 14/9/18	Sun 28/10/18																																																	
A.2.1.1.46	Infill the space with no fine concrete between rock slope and edge of E3-ST1	30 days	30 days	Mon 29/10/18	Tue 27/11/18																																																	
A.2.1.1.47	Erect tubular platform for rock slope survey	10 days	10 days	Wed 28/11/18	Fri 7/12/18																																																	

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Manual Task

Start-only

Finish-only

Duration-only

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

Summary

Manual Summary

Project Summary

External Tasks

External Milestone

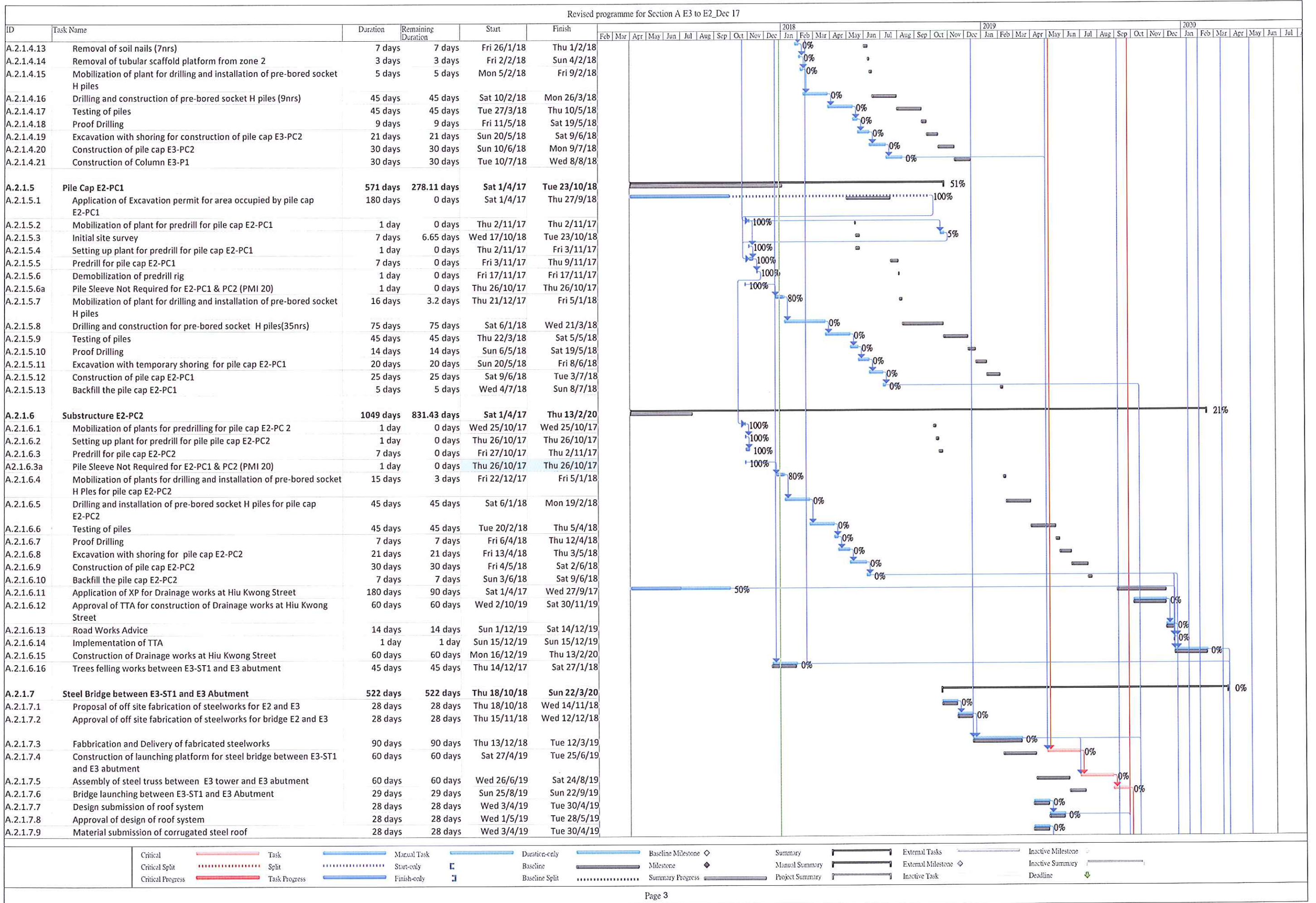
Inactive Task

Inactive Milestone

Inactive Summary

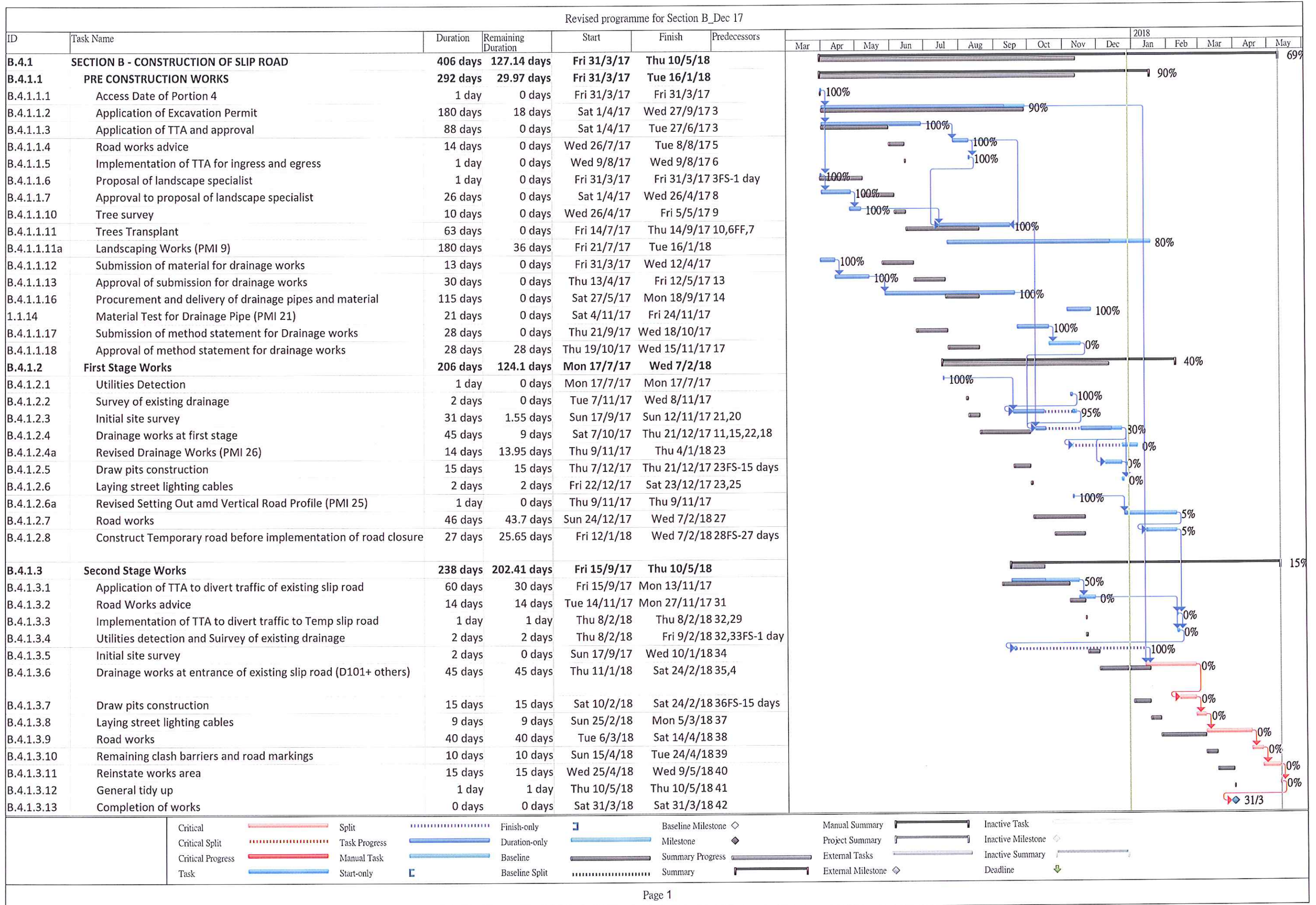
Deadline

Page 1

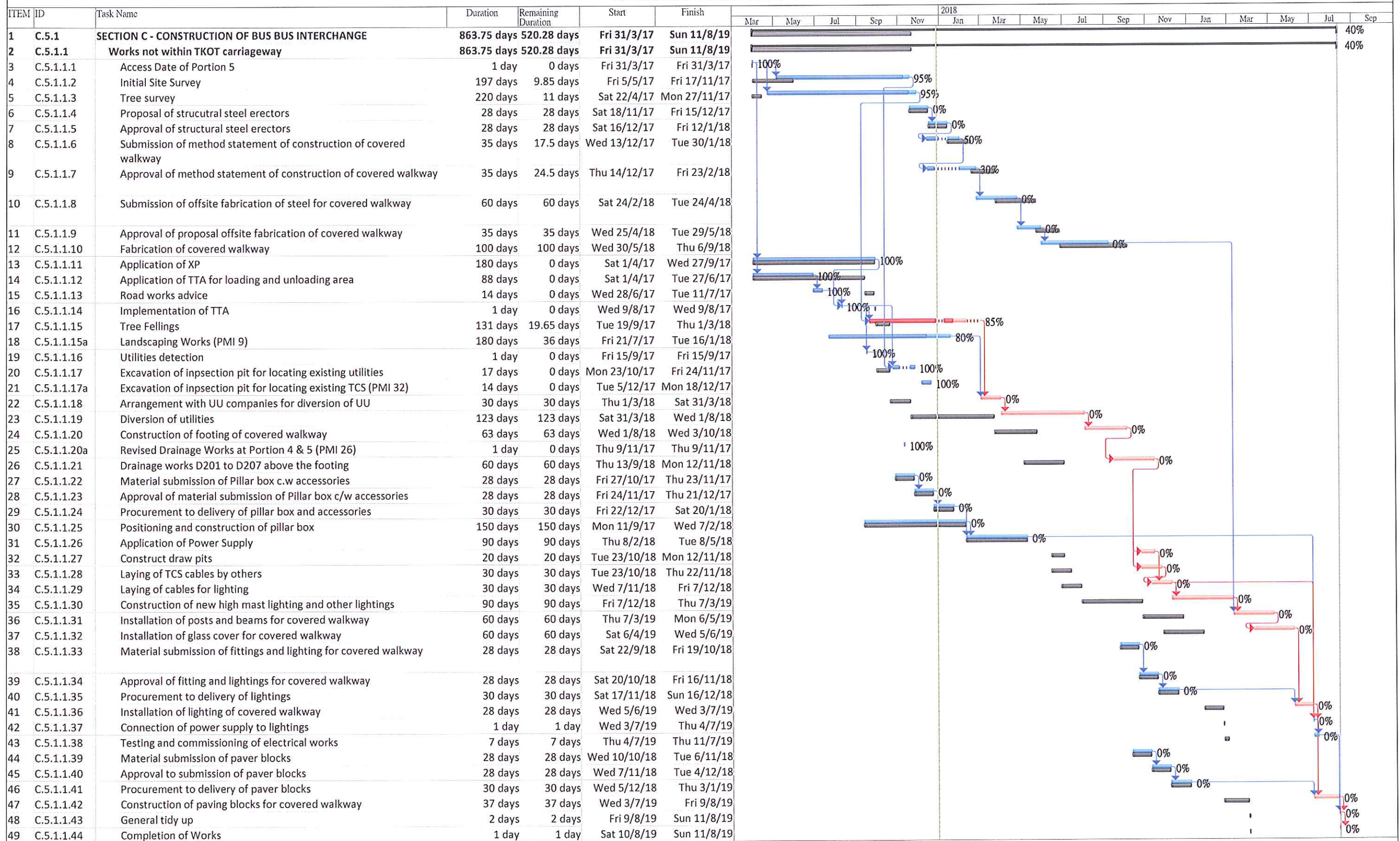


Revised programme for Section A E3 to E2_Dec 17

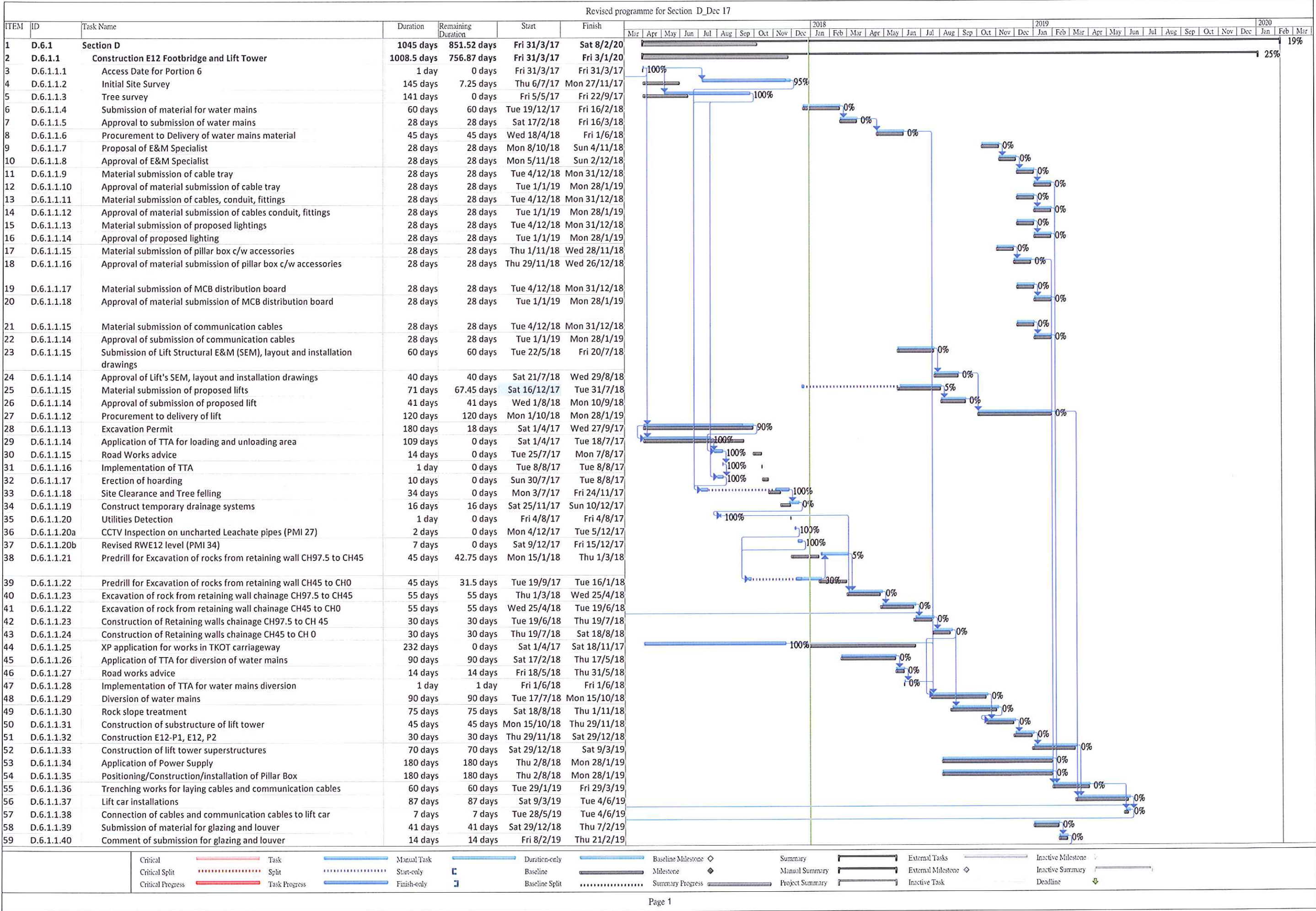
ID	Task Name	Duration	Remaining Duration	Start	Finish
A.2.1.7.10	Approval of corrugated steel roof	30 days	30 days	Wed 1/5/19	Thu 30/5/19
A.2.1.7.11	Procurement to delivery of corrugated steel roof	28 days	28 days	Fri 31/5/19	Thu 27/6/19
A.2.1.7.12	Material submission of fall arrest system	28 days	28 days	Wed 3/4/19	Tue 30/4/19
A.2.1.7.13	Approval of fall arrest system	28 days	28 days	Wed 1/5/19	Tue 28/5/19
A.2.1.7.14	Procurement to delivery of fall arrest system	30 days	30 days	Wed 29/5/19	Thu 27/6/19
A.2.1.7.15	Roof construction of the steel truss E3-ST1 to E3 abutment	50 days	50 days	Mon 23/9/19	Mon 11/11/19
A.2.1.7.16	Construction of screeding and paving blocks	40 days	40 days	Tue 12/11/19	Sat 21/12/19
A.2.1.7.17	Installation of parapets and planters	40 days	40 days	Sun 22/12/19	Thu 30/1/20
A.2.1.7.18	Installation of lightings to steel truss between E3 tower and E3 abutment	45 days	45 days	Fri 31/1/20	Sun 15/3/20
A.2.1.7.19	Installation of irrigation pipe and water point	7 days	7 days	Mon 16/3/20	Sun 22/3/20
A.2.1.8	Superstructure of Covered Walkway	162 days	162 days	Mon 23/9/19	Mon 2/3/20
A.2.1.8.1	Expose the substructure of the Covered Walkway	20 days	20 days	Mon 23/9/19	Sat 12/10/19
A.2.1.8.2	Construction of columns and beams for covered walkway	60 days	60 days	Sun 13/10/19	Wed 11/12/19
A.2.1.8.3	Installation of steel sheet roof for the covered walkway	30 days	30 days	Thu 12/12/19	Fri 10/1/20
A.2.1.8.4	Installation of Lighting to covered walkway	45 days	45 days	Sat 11/1/20	Mon 24/2/20
A.2.1.8.5	Installation of irrigation pipe	7 days	7 days	Tue 25/2/20	Mon 2/3/20
A.2.1.9	Superstructure of E2-LT1 and Lift	287 days	287 days	Wed 4/9/19	Tue 16/6/20
A.2.1.9.1	Excavation to expose footing E2-PC1	7 days	7 days	Sun 13/10/19	Sat 19/10/19
A.2.1.9.2	Construction of superstructure of lift tower E2-LT1	62 days	62 days	Sun 20/10/19	Fri 20/12/19
A.2.1.9.3	Installation of lift (2nrs)	60 days	60 days	Sat 21/12/19	Tue 18/2/20
A.2.1.9.4	Installation of E&M for the lift towers and Pillar Box	50 days	50 days	Wed 19/2/20	Wed 8/4/20
A.2.1.9.5	Testing and commissioning of lifts and submission of form LE5 to EMSD	60 days	60 days	Thu 9/4/20	Sun 7/6/20
A.2.1.9.6	Installation of louver and finishing works	20 days	20 days	Thu 28/5/20	Tue 16/6/20
A.2.1.9.7	Application for connection to existing water mains	90 days	90 days	Wed 4/9/19	Mon 2/12/19
A.2.1.9.8	Trenching works for connection of existing water connection point	28 days	28 days	Tue 3/12/19	Mon 30/12/19
A.2.1.9.9	Installation of water meter box	7 days	7 days	Thu 9/4/20	Wed 15/4/20
A.2.1.9.10	Planting works on bridge	7 days	7 days	Thu 16/4/20	Wed 22/4/20
A.2.1.10	Superstructure of E2-P1	48 days	48 days	Sat 21/12/19	Thu 6/2/20
A.2.1.10.1	Excavation to expose Pile cap E2-PC2 for column E2-P1	3 days	3 days	Sat 21/12/19	Mon 23/12/19
A.2.1.10.2	Construction of column for E2-P1	42 days	42 days	Tue 24/12/19	Mon 3/2/20
A.2.1.10.3	General tidy up	3 days	3 days	Tue 4/2/20	Thu 6/2/20
A.3.1.11	Bridge between E2-P1 to E2-P3	545 days	545 days	Fri 21/12/18	Wed 17/6/20
A.3.1.11.1	Access date of E2 between Pier E2-P2 to E2-P3 (Portion 3)	1 day	1 day	Fri 21/12/18	Fri 21/12/18
A.3.1.11.2	Initial site survey	15 days	15 days	Sat 22/12/18	Sat 5/1/19
A.3.1.11.3	Erection of Hoarding at South bound footpath of Hiu Kwong St	8 days	8 days	Sat 22/12/18	Sat 29/12/18
A.3.1.11.4	Excavation of inspection pits to locate utilities	20 days	20 days	Sun 6/1/19	Fri 25/1/19
A.3.1.11.5	Diversion of utilities by UU	90 days	90 days	Sat 26/1/19	Thu 25/4/19
A.3.1.11.6	Excavation with shoring for construction of E2-F3	30 days	30 days	Fri 26/4/19	Sat 25/5/19
A.3.1.11.7	Construction of pad footing of E2-F3	30 days	30 days	Sun 26/5/19	Mon 24/6/19
A.3.1.11.8	Construction of column for E2-P2	30 days	30 days	Tue 25/6/19	Wed 24/7/19
A.3.1.11.9	Excavation with shoring for construction of E2-F4	30 days	30 days	Thu 25/7/19	Fri 23/8/19
A.3.1.11.10	Construction of pad footing of E2-F4	30 days	30 days	Sat 24/8/19	Sun 22/9/19
A.3.1.11.11	Construction of column for E2-P3 and the bridge deck	35 days	35 days	Mon 23/9/19	Sun 27/10/19
A.3.1.11.12	Off site Fabrication of Steel deck truss between E2-LT1 to E2-P1, E2-P1 to E2-P2	90 days	90 days	Fri 26/4/19	Wed 24/7/19
A.3.1.11.13	Off site Fabrication of Steel deck truss between E2-P2 to E2-P3 and E2-P3 to bridge constructed by others	90 days	90 days	Thu 25/7/19	Tue 22/10/19
A.3.1.11.14	Lifting of steel truss between E2-LT1 to E2-P1	7 days	7 days	Tue 4/2/20	Mon 10/2/20
A.3.1.11.15	Lifting of steel truss between E2-P1 to E2-P2	7 days	7 days	Tue 11/2/20	Mon 17/2/20
A.3.1.11.16	Lifting of Truss between E2-P2 to E2-P3	7 days	7 days	Tue 18/2/20	Mon 24/2/20
A.3.1.11.17	Lifting of truss for E2-P3 to connect to bridge constructed by others	7 days	7 days	Tue 25/2/20	Mon 2/3/20
A.3.1.11.18	Roof installation of the bridge from E2-LT1 to E2-P3	60 days	60 days	Tue 3/3/20	Fri 1/5/20
A.3.1.11.19	Screeding and paving blocks for the bridge from E2-LT1 to E2-P3	42 days	42 days	Sun 12/4/20	Sat 23/5/20



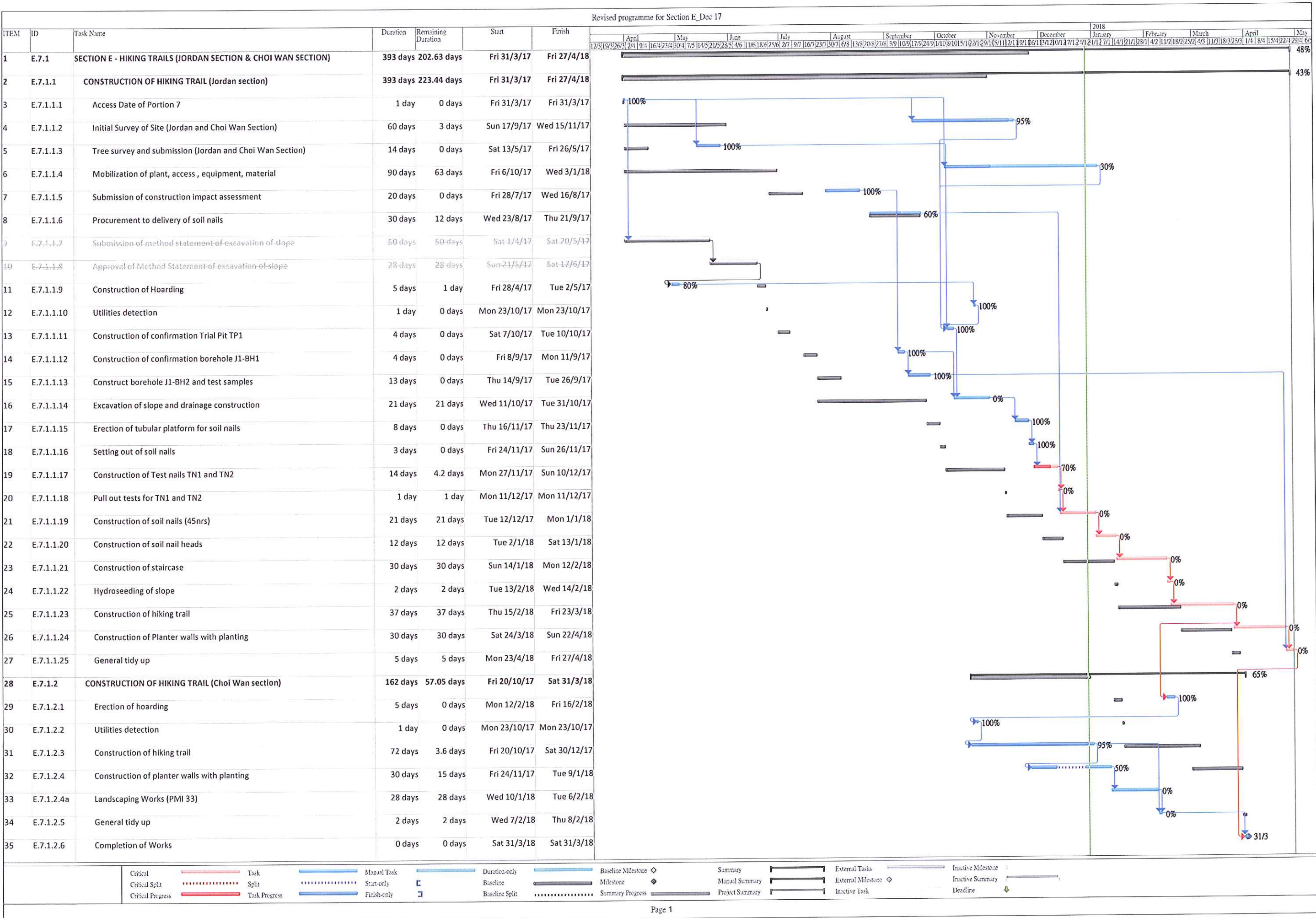
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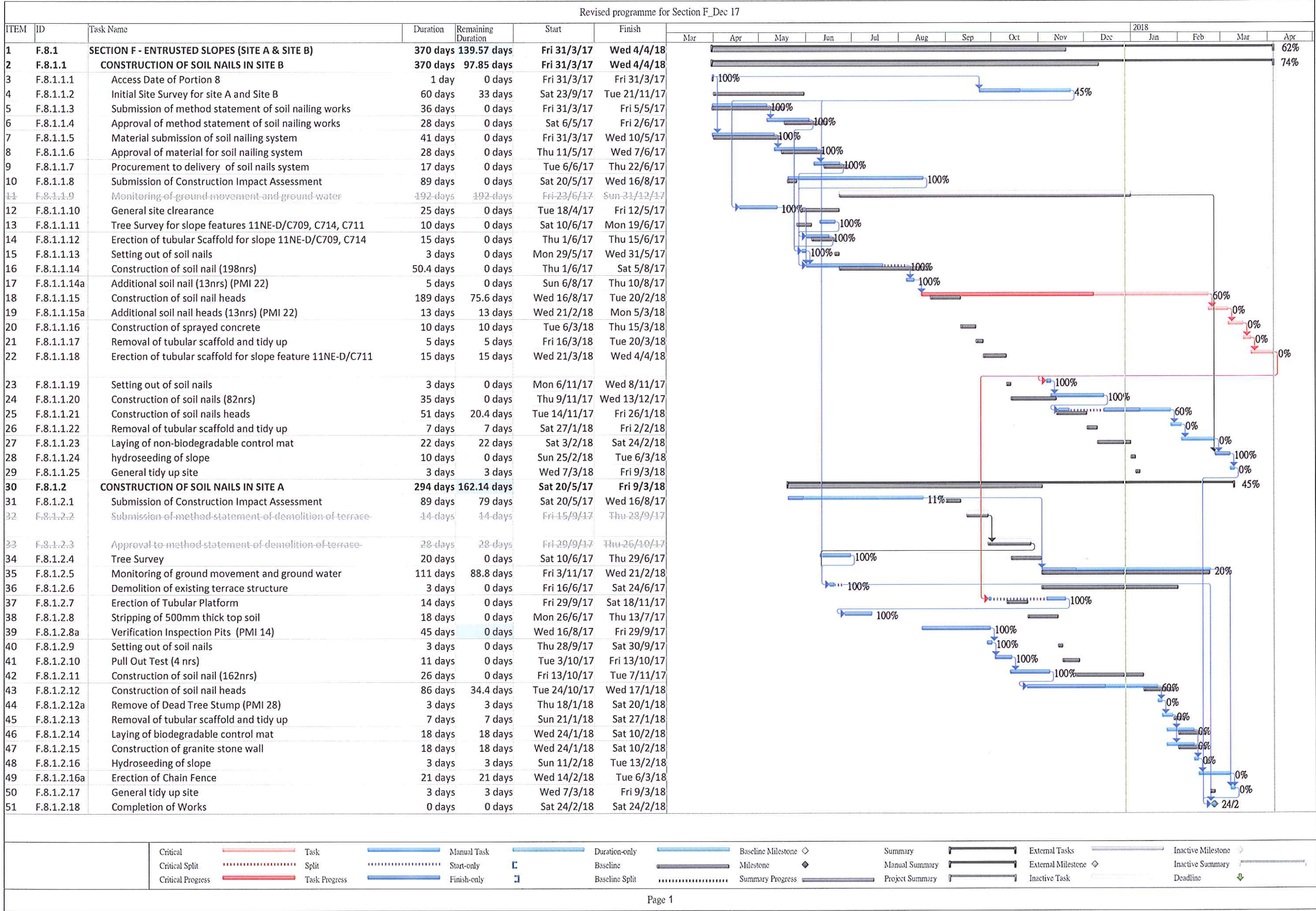


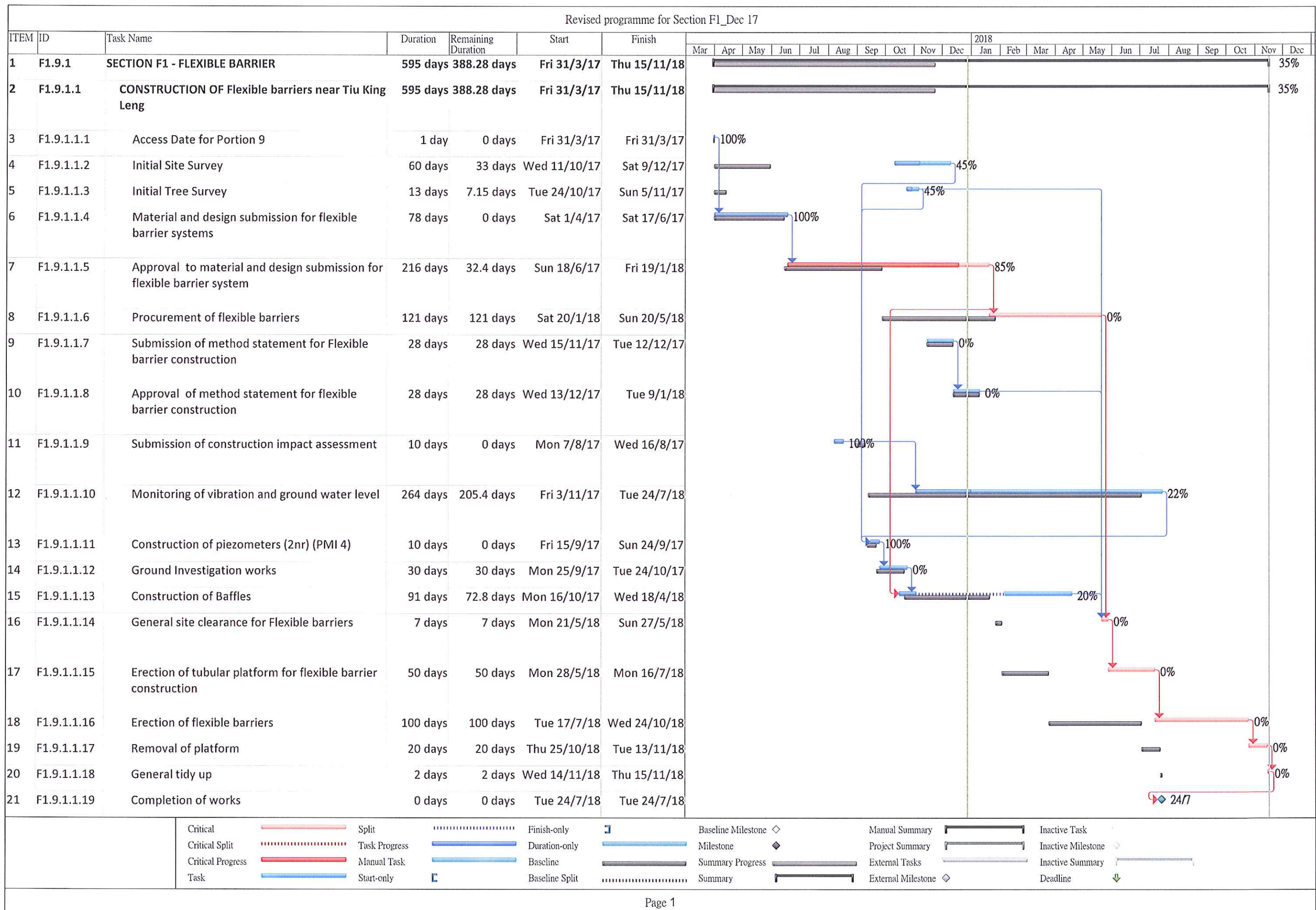
Critical	Task	Manual Task	Duration-only	Baseline Milestone	Summary	External Tasks	Inactive Milestone
Critical Split	Split	Start-only	Baseline	Milestone	Manual Summary	External Milestone	Inactive Summary
Critical Progress	Task Progress	Finish-only	Baseline Split	Summary Progress	Project Summary	Inactive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



[illegible]







Appendix D

Monitoring Locations for Impact Monitoring


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HVS in AMS-1 for 24-Hour TSP



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

B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13
Rev	Description	By	Date
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 GL	Date 03/14	Checked TC	Approved ST
Scale 1:5000 A3		Status PRELIMINARY	
COPYRIGHT RESERVED			
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- Legend
- Study Area
 - 500m Assessment Area
 - Dust Monitoring Locations



HVS in AMS-5 for 24-Hour TSP



HVS in AMS-6 for 24-Hour TSP



B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13
Rev	Description	By	Date
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 (M3)	Status	PRELIMINARY
COPYRIGHT RESERVED			


Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EIMA\02 Revised draft\227724-E-047-B - Locations of Construction Dust Monitoring (Sheet 3 of 3).dgn

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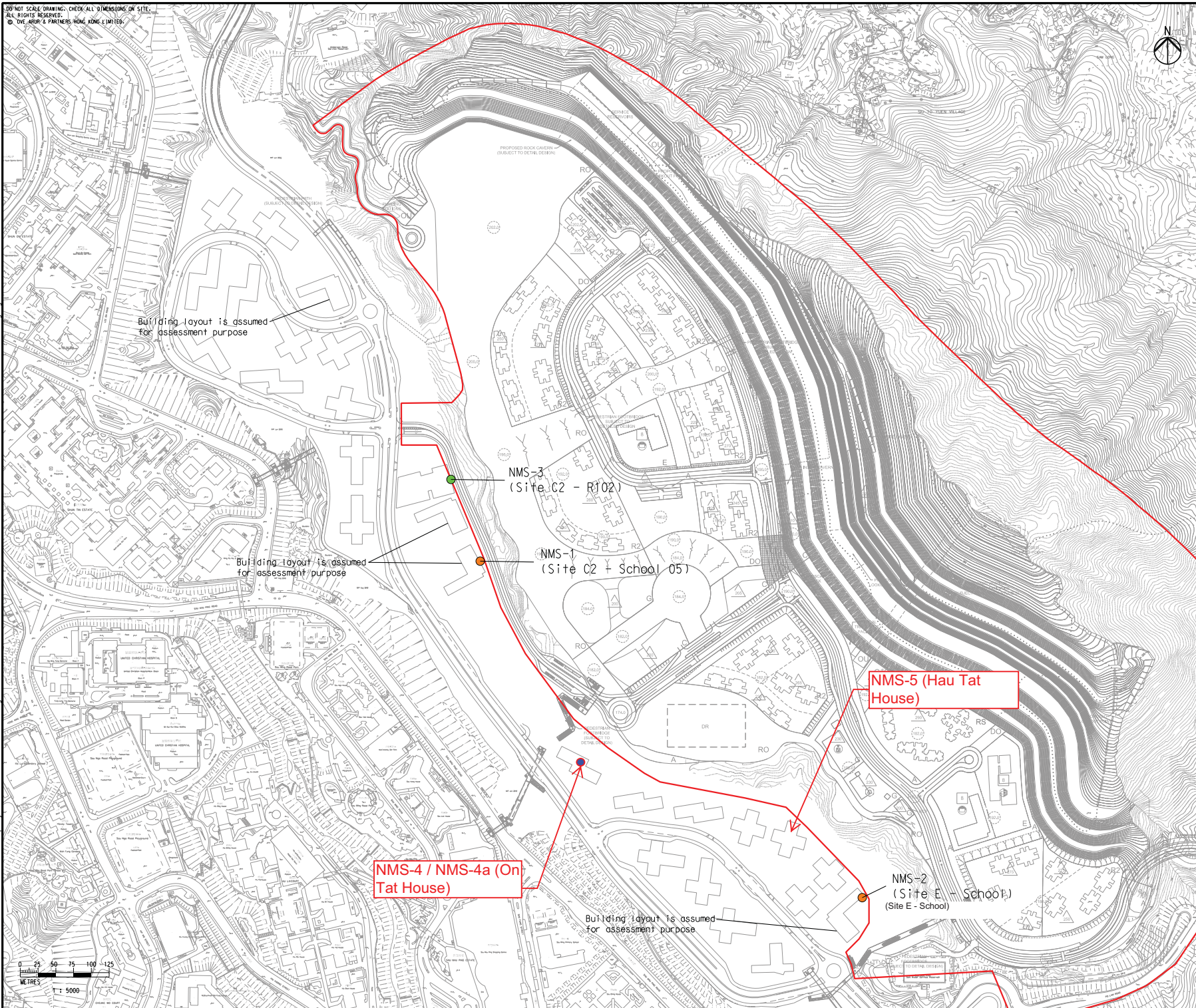


- Legend
- Study Area
 - 500m Assessment Area
 - Dust Monitoring Locations



B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13
Rev	Description	By	Date
Consultant			
<div>ARUP</div>			
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 GL	Date 03/14	Checked TC	Approved ST
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Legend

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

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

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.	227724/E/2400	Rev.	C
Drawn	Date	Checked	Approved
GL	05/14	TC	ST
Scale	1:50000 RA3	Status	PRELIMINARY

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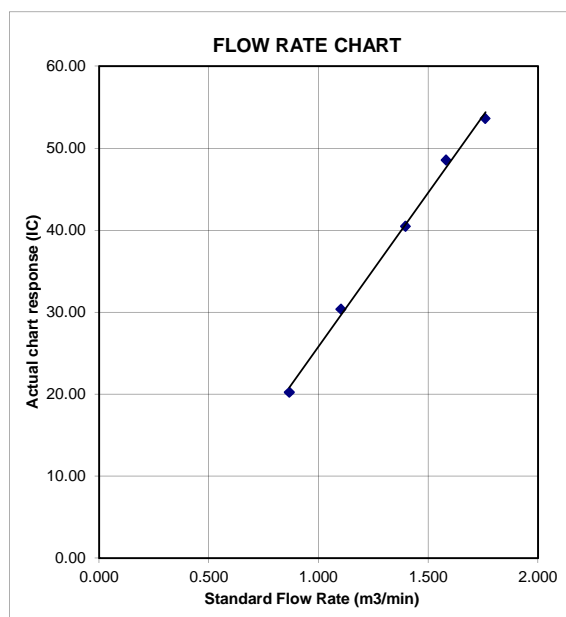
土木工程拓展署
Civil Engineering and
Development Department

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				Date of Calibration: 7-Dec-17			
Location ID : AMS1				Next Calibration Date: 7-Feb-18			
Model: TISCH High Volume Air Sampler TE-5170				Technician: Mr. Ip Ka Hing			
CONDITIONS							
Sea Level Pressure (hPa)		<div style="border: 1px solid black; padding: 2px;">1018.2</div>		Corrected Pressure (mm Hg)		<div style="border: 1px solid black; padding: 2px;">763.65</div>	
Temperature (°C)		<div style="border: 1px solid black; padding: 2px;">19.4</div>		Temperature (K)		<div style="border: 1px solid black; padding: 2px;">292</div>	
CALIBRATION ORIFICE							
Make->		<div style="border: 1px solid black; padding: 2px;">TISCH</div>		Qstd Slope ->		<div style="border: 1px solid black; padding: 2px;">2.11965</div>	
Model->		<div style="border: 1px solid black; padding: 2px;">5025A</div>		Qstd Intercept ->		<div style="border: 1px solid black; padding: 2px;">-0.02696</div>	
Serial # ->		<div style="border: 1px solid black; padding: 2px;">1941</div>					
CALIBRATION							
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = -11.6998 Corr. coeff. = 0.9984
13	5.4	5.4	10.8	1.582	48	48.57	
10	4.2	4.2	8.4	1.396	40	40.48	
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 : $Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$ $IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$ Qstd = standard flow rate IC = corrected chart responses 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: $1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$ 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.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = -6.7643 Corr. coeff. = 0.9959
13	4.8	4.8	9.6	1.492	49	49.59	
10	3.8	3.8	7.6	1.329	43	43.51	
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 :

$$Q_{std} = 1/m[\sqrt{H_2O(P_a/P_{std})(T_{std}/T_a)} - b]$$

$$IC = I[\sqrt{P_a/P_{std}}(T_{std}/T_a)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\sqrt{298/T_{av}}(P_{av}/760)] - b)$$

m = sampler slope

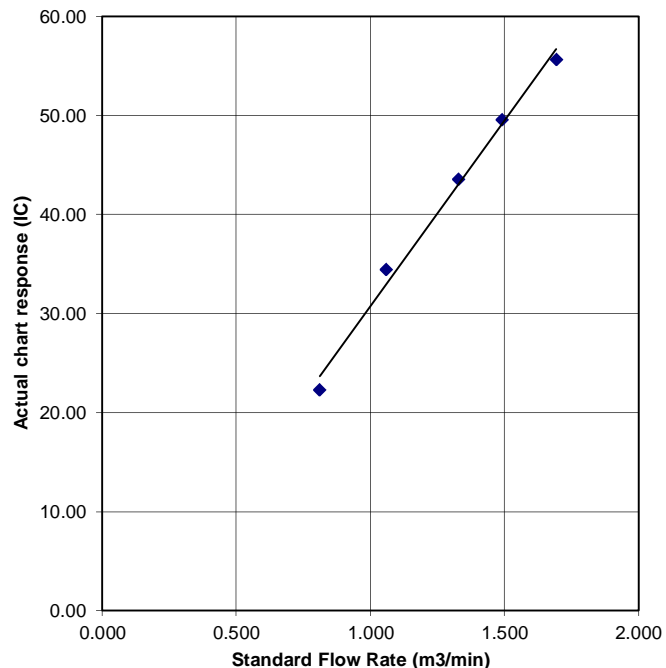
b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure

FLOW RATE CHART



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

Temperature (°C)

19.4

Corrected Pressure (mm Hg)

763.65

Temperature (K)

292

CALIBRATION ORIFICE

Make-> TISCH

Model-> 5025A

Serial # -> 1941

Qstd Slope ->

2.11965

Qstd Intercept ->

-0.02696

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = 3.0298 Corr. coeff. = 0.9986
13	4.8	4.8	9.6	1.492	46	46.55	
10	3.7	3.7	7.4	1.311	42	42.50	
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 :

$$Q_{std} = 1/m[\sqrt{H2O(Pa/P_{std})(T_{std}/Ta)}] - b]$$

$$IC = I[\sqrt{Pa/P_{std})(T_{std}/Ta)}]$$

Qstd = standard flow rate

IC = corrected chart responses

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

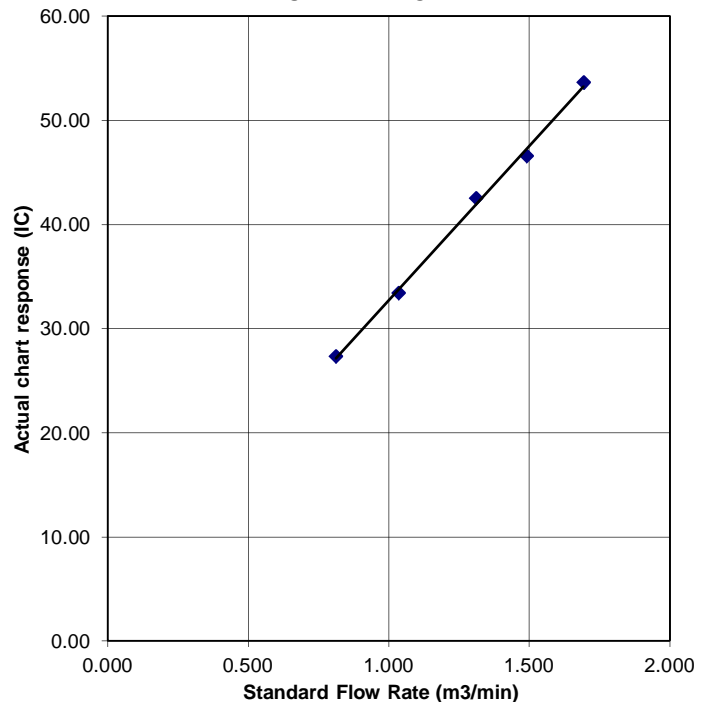
b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure

FLOW RATE CHART



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.	H2O (L) (in)	H2O (R) (in)	H2O (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 :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

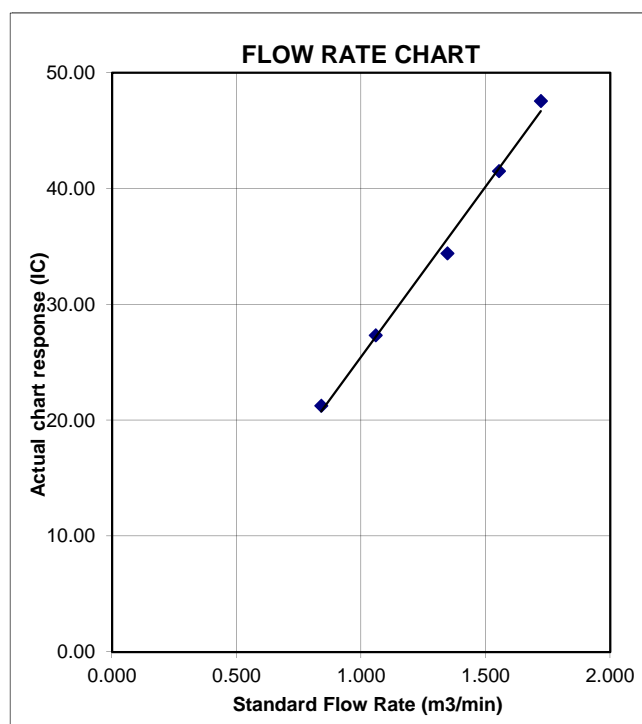
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 28, 2017 Rootmeter 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

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

$$Qstd = Vstd/Time$$

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

$$Qa = Va/Time$$

For subsequent flow rate calculations:

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

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



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	: 1
		DATE RECEIVED	: 19-JAN-2017
		DATE OF ISSUE	: 23-JAN-2017
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

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

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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)

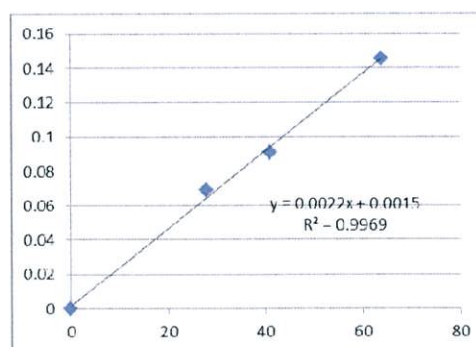
Sensitivity Adjustment Scale Setting (After Calibration) 675 (CPM)

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.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = -6.1123 Corr. coeff. = 0.9967
13	4.7	4.7	9.4	1.560	49	49.49	
10	3.6	3.6	7.2	1.368	43	43.43	
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 :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

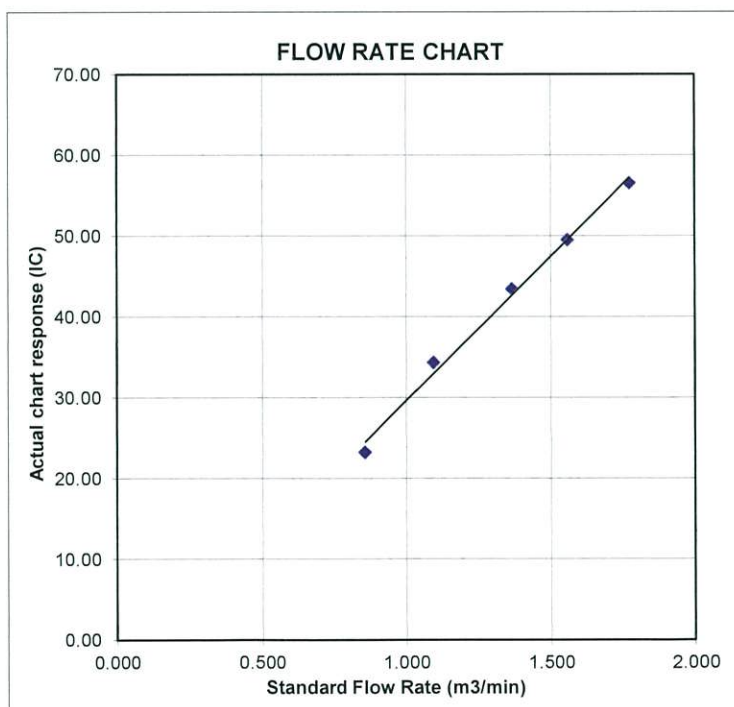
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





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	: 1
		DATE RECEIVED	: 19-JAN-2017
		DATE OF ISSUE	: 23-JAN-2017
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

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

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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)

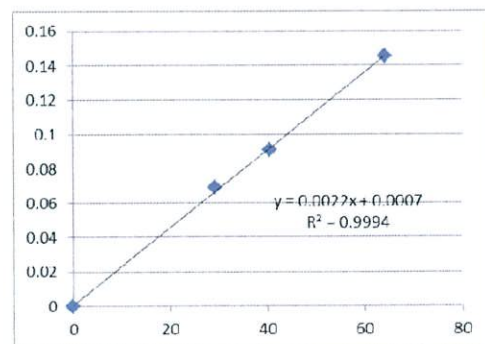
Sensitivity Adjustment Scale Setting (After Calibration) 525 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9997

Date of Issue 11 January 2017



Remarks:

- Strong** Correlation ($R > 0.8$)
 - 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 : [Signature] Date : 11 January 2017

QC Reviewer : Ben Tam Signature : [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.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = -6.1123 Corr. coeff. = 0.9967
13	4.7	4.7	9.4	1.560	49	49.49	
10	3.6	3.6	7.2	1.368	43	43.43	
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 :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope

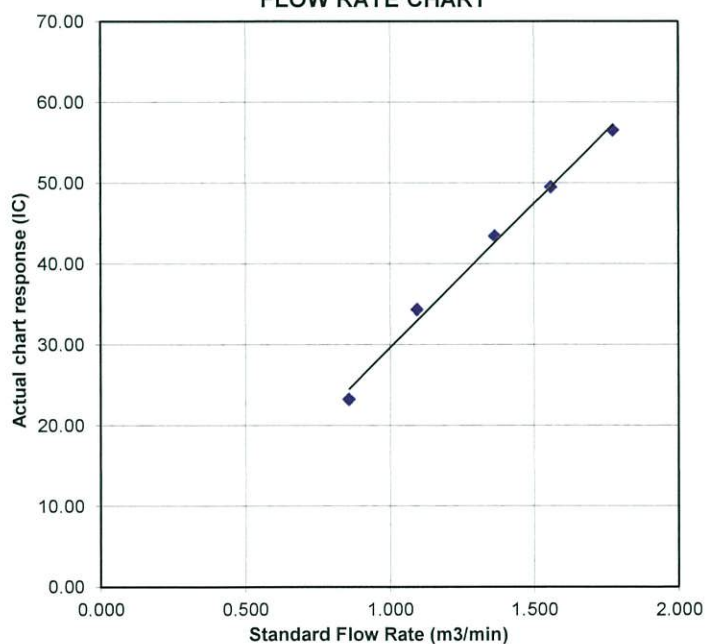
b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure

FLOW RATE CHART





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	: 1
		DATE RECEIVED	: 20-APR-2017
		DATE OF ISSUE	: 25-APR-2017
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

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

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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)

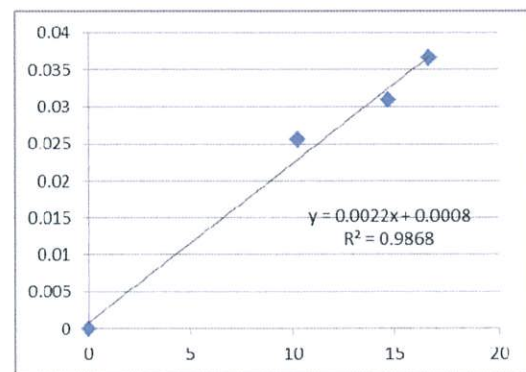
Sensitivity Adjustment Scale Setting (After Calibration) 569 (CPM)

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.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = -8.0555 Corr. coeff. = 0.9984
13	5	5	10.0	1.616	49	49.69	
10	3.8	3.8	7.6	1.410	43	43.61	
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 :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

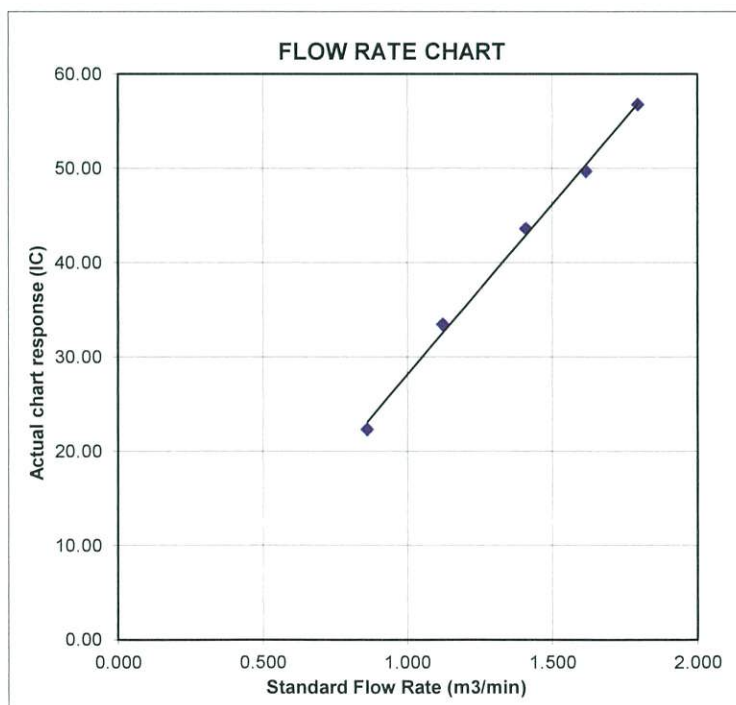
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





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	: 1
		DATE RECEIVED	: 20-APR-2017
		DATE OF ISSUE	: 25-APR-2017
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

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 : 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

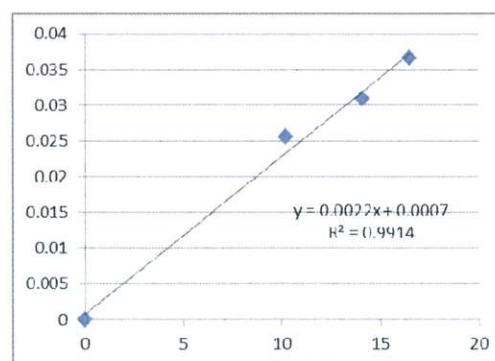
Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr02min	09:58 ~ 12:00	17.8	1016.4	0.037	2011	16.5
2hr07min	12:05 ~ 14:12	17.8	1016.4	0.031	1793	14.1
2hr02min	14:20 ~ 16:22	17.8	1016.4	0.026	1251	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
 Location ID : Calibration Room

Date of Calibration: 23-Feb-17
 Next Calibration Date: 23-May-17

CONDITIONS

Sea Level Pressure (hPa) 1017.4
 Temperature (°C) 17.9

Corrected Pressure (mm Hg) 763.05
 Temperature (K) 291

CALIBRATION ORIFICE

Make-> TISCH
 Model-> 5025A
 Calibration Date-> 14-Mar-16

Qstd Slope -> 2.00411
 Qstd Intercept -> -0.03059
 Expiry Date-> 14-Mar-17

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (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 Intercept = -8.0555 Corr. coeff. = 0.9984
13	5	5	10.0	1.616	49	49.69	
10	3.8	3.8	7.6	1.410	43	43.61	
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 :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

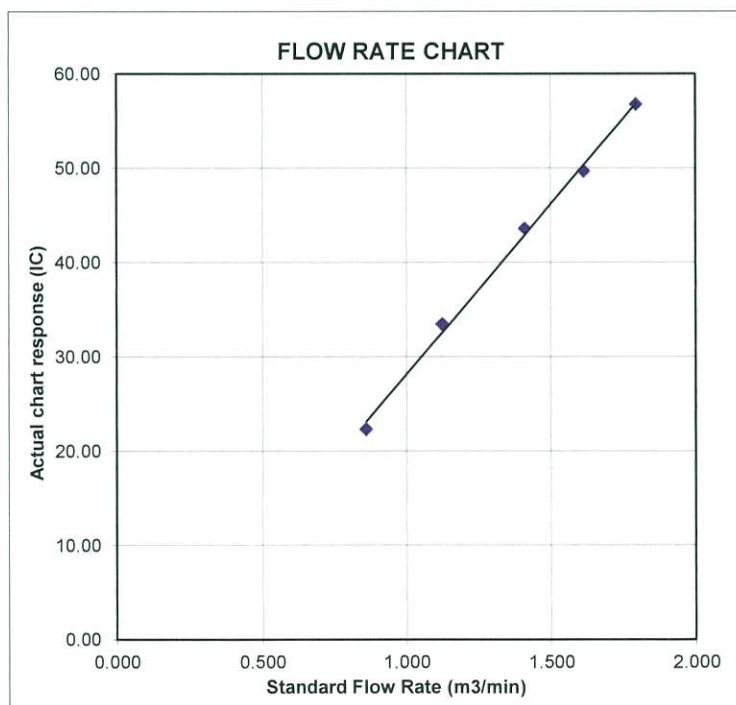
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK1815072
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	: 1
		DATE RECEIVED	: 5-JAN-2018
		DATE OF ISSUE	: 5-FEB-2018
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.

Signatories

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Signatories

Position

Richard Fung  General Manager

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WORK ORDER : HK1815072
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.
HK1815072-001	S/N: 366410	AIR	05-Jan-2018	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 HK1815072

Standard Equipment:

Standard Equipment: Higher Volume Sampler
Location & Location ID: AUES office (calibration room)
Equipment Ref: HVS 018
Last Calibration Date: 1 December 2017

Equipment Verification Results:

Testing Date: 5 January 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	10:27 ~ 12:34	19.3	1015.3	0.011	498	3.9
2hr01min	12:38 ~ 14:39	19.3	1015.3	0.012	571	4.7
2hr08min	14:42 ~ 16:50	19.3	1015.3	0.036	2095	16.4

Sensitivity Adjustment Scale Setting (Before Calibration) 670 (CPM)

Sensitivity Adjustment Scale Setting (After Calibration) 669 (CPM)

Linear Regression of Y or X

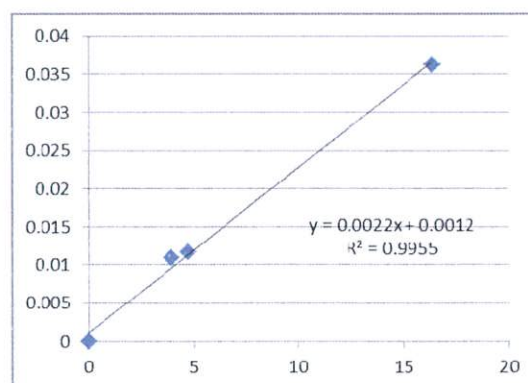
Slope (K-factor): 0.0022

Correlation Coefficient 0.9977

Date of Issue 9 January 2018

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: 9 January 2018

QC Reviewer: Ben Tam Signature:  Date: 9 January 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration: 1-Dec-17
Location ID :	Calibration Room	Next Calibration Date: 1-Mar-18

CONDITIONS

Sea Level Pressure (hPa)	1018.8	Corrected Pressure (mm Hg)	764.1
Temperature (°C)	21.2	Temperature (K)	294

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Calibration Date->	28-Feb-17	Expiry Date->	28-Feb-18

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.3	6.3	12.6	1.703	54	54.49	Slope = 31.2239
13	5	5	10.0	1.518	48	48.44	Intercept = 0.7901
10	3.9	3.9	7.8	1.342	42	42.38	Corr. coeff. = 0.9971
8	2.4	2.4	4.8	1.056	32	32.29	
5	1.0	1.0	2.0	0.686	23	23.21	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

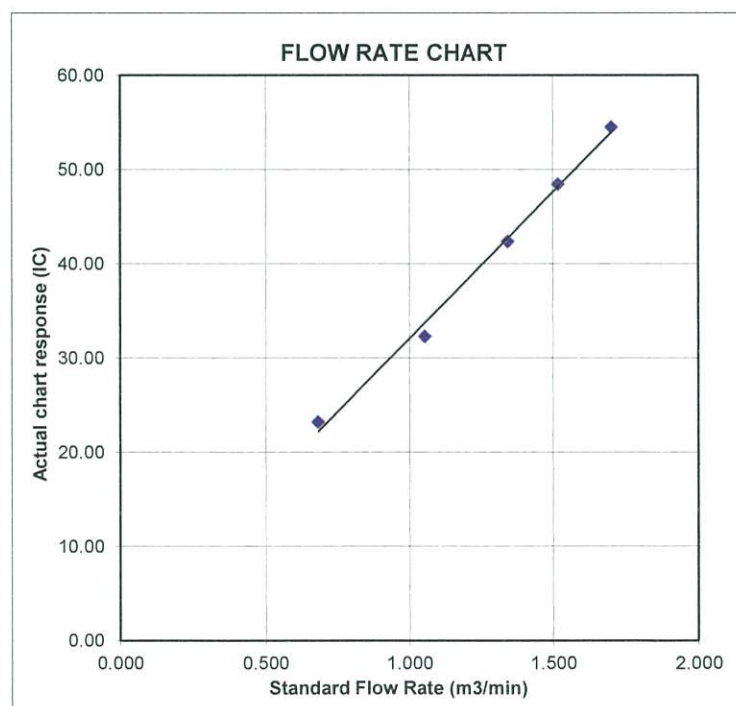
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: HK1815078
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	: 1
		DATE RECEIVED	: 5-JAN-2018
		DATE OF ISSUE	: 5-FEB-2018
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.

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 : HK1815078
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.
HK1815078-001	S/N: 366409	AIR	05-Jan-2018	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 HK1815078

Standard Equipment:

Standard Equipment: Higher Volume Sampler
Location & Location ID: AUES office (calibration room)
Equipment Ref: HVS 018
Last Calibration Date: 1 December 2017

Equipment Verification Results:

Testing Date: 5 January 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	10:27 ~ 12:34	19.3	1015.3	0.011	474	3.7
2hr01min	12:38 ~ 14:39	19.3	1015.3	0.012	577	4.8
2hr08min	14:42 ~ 16:50	19.3	1015.3	0.036	2097	16.4

Sensitivity Adjustment Scale Setting (Before Calibration) 520 (CPM)

Sensitivity Adjustment Scale Setting (After Calibration) 521 (CPM)

Linear Regression of Y or X

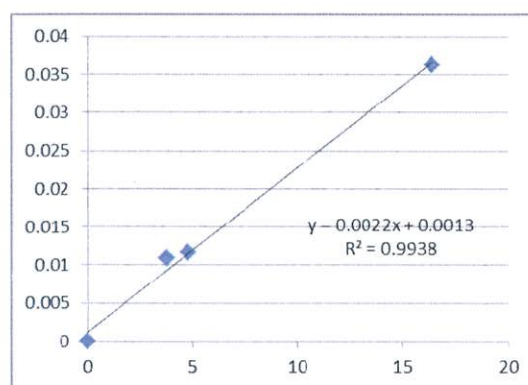
Slope (K-factor): 0.0022

Correlation Coefficient 0.9967

Date of Issue 9 January 2018

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: 9 January 2018

QC Reviewer: Ben Tam Signature:  Date: 9 January 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration: 1-Dec-17
Location ID :	Calibration Room	Next Calibration Date: 1-Mar-18

CONDITIONS

Sea Level Pressure (hPa)	1018.8	Corrected Pressure (mm Hg)	764.1
Temperature (°C)	21.2	Temperature (K)	294

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Calibration Date->	28-Feb-17	Expiry Date->	28-Feb-18

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.3	6.3	12.6	1.703	54	54.49	Slope = 31.2239
13	5	5	10.0	1.518	48	48.44	Intercept = 0.7901
10	3.9	3.9	7.8	1.342	42	42.38	Corr. coeff. = 0.9971
8	2.4	2.4	4.8	1.056	32	32.29	
5	1.0	1.0	2.0	0.686	23	23.21	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H20(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I) [\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

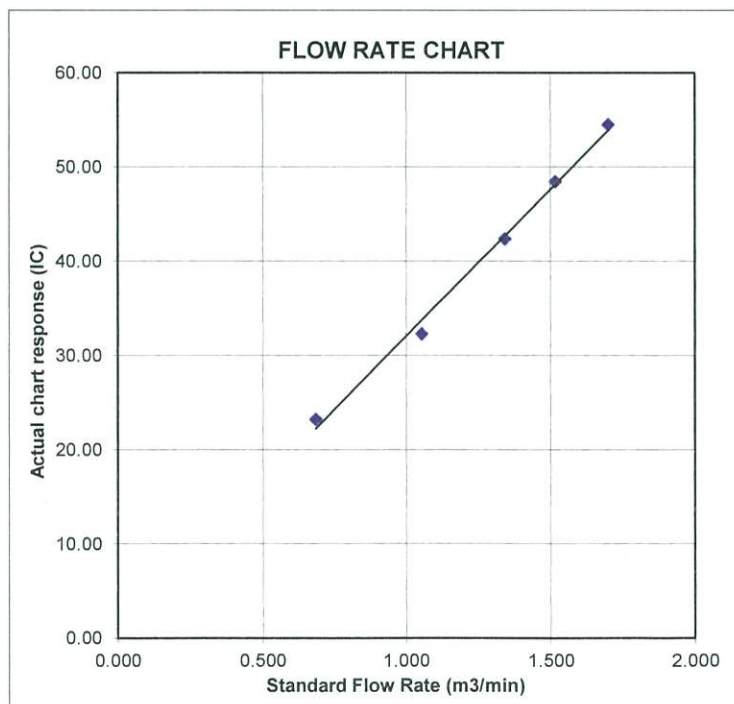
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



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

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

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 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.

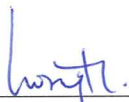
The results are detailed in the subsequent page(s).

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

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Tel/電話: 2927 2606

Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C174098
證書編號

- 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.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

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

- Test procedure : MA101N.
- Results :

5.1 Sound Pressure Level

5.1.1 Reference Sound Pressure Level

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

5.1.2 Linearity

UUT Setting				Applied Value		UUT
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
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	IEC 60651
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
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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Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C174098
證書編號

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)

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

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c/o 香港新界屯門興安里一號青山灣機樓四樓

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

Certificate of Calibration 校正證書

Certificate No. : C174098
證書編號

5.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (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.

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

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Website/網址: www.suncreation.com

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

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

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 23 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).

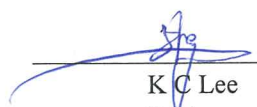
The test equipment used for calibration are traceable to National Standards via :

- 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

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

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Certificate of Calibration

校正證書

Certificate No. : C172791

證書編號

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

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

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

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

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Website/網址: www.suncreation.com



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
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，
of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as
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
listed in the HOKLAS Directory of Accredited Laboratories within the test category of
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
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
quality management system (see joint IAF-ILAC-ISO Communiqué).
(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



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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 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 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
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

Impact Monitoring Schedule for next Reporting Period

Date		Noise Monitoring (0700 – 1900)	Air Quality Monitoring	
			1-hour TSP	24-hour TSP
Thu	1-Feb-18			
Fri	2-Feb-18	✓	✓	
Sat	3-Feb-18			
Sun	4-Feb-18			
Mon	5-Feb-18			
Tue	6-Feb-18			✓
Wed	7-Feb-18			
Thu	8-Feb-18	✓	✓	
Fri	9-Feb-18			
Sat	10-Feb-18			
Sun	11-Feb-18			
Mon	12-Feb-18			✓
Tue	13-Feb-18			
Wed	14-Feb-18	✓	✓	
Thu	15-Feb-18			✓
Fri	16-Feb-18			
Sat	17-Feb-18			
Sun	18-Feb-18			
Mon	19-Feb-18			
Tue	20-Feb-18	✓	✓	
Wed	21-Feb-18			✓
Thu	22-Feb-18			
Fri	23-Feb-18			
Sat	24-Feb-18			
Sun	25-Feb-18			
Mon	26-Feb-18	✓	✓	
Tue	27-Feb-18			✓
Wed	28-Feb-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 (µg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
2-Jan-18	21495	19000.85	19024.85	1440.00	30	40	35.0	17.8	1019.3	1.26	1812	2.6396	2.7574	0.1178	65
8-Jan-18	22082	19014.38	19038.38	1440.00	38	40	39.0	16.8	1020.5	1.37	1971	2.6114	2.6523	0.0409	21
13-Jan-18	22105	19038.38	19062.38	1440.00	39	41	40.0	16.4	1020.1	1.40	2011	2.6482	2.7554	0.1072	53
19-Jan-18	22147	19062.38	19086.38	1440.00	38	40	39.0	16.3	1019.7	1.37	1972	2.6557	2.7546	0.0989	50
25-Jan-18	22134	19086.38	19110.38	1440.00	36	40	38.0	15.4	1020.6	1.34	1936	2.6099	2.6915	0.0816	42
31-Jan-18	22201	19110.38	19134.41	1441.80	34	34	34.0	16.2	1020.2	1.23	1779	2.6744	2.7120	0.0376	21
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 (µg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
2-Jan-18	22015	5373.99	5397.89	1434.00	38	40	39.0	17.8	1019.3	1.24	1774	2.5511	2.7197	0.1686	95
8-Jan-18	22085	5397.89	5421.89	1440.00	38	42	40.0	16.8	1020.5	1.27	1824	2.6057	2.7158	0.1101	60
13-Jan-18	22117	5421.89	5445.89	1440.00	38	40	39.0	16.4	1020.1	1.24	1786	2.6363	2.7540	0.1177	66
19-Jan-18	22110	5445.89	5469.89	1440.00	38	40	39.0	16.3	1019.7	1.24	1786	2.6363	2.7496	0.1133	63
25-Jan-18	22112	5469.89	5493.88	1439.40	37	40	38.5	15.4	1020.6	1.23	1769	2.6360	2.7127	0.0767	43
31-Jan-18	22137	5493.88	5517.98	1446.00	37	40	38.5	16	1020.2	1.23	1775	2.6489	2.6948	0.0459	26
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 (µg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)	
2-Jan-18	22016	10584.29	10608.07	1426.80	40	40	40.0	17.8	1019.3	1.27	1807	2.5338	2.6933	0.1595	88
8-Jan-18	22084	10608.07	10631.89	1429.20	39	41	40.0	16.8	1020.5	1.27	1815	2.6191	2.6741	0.0550	30
13-Jan-18	22132	10631.89	10655.69	1428.00	38	38	38.0	16.4	1020.1	1.20	1716	2.6177	2.7690	0.1513	88
19-Jan-18	22109	10655.69	10679.50	1428.60	39	40	39.5	16.3	1019.7	1.25	1791	2.6269	2.7388	0.1119	62
25-Jan-18	22113	10679.50	10703.25	1425.00	39	41	40.0	15.4	1020.6	1.27	1814	2.6509	2.7255	0.0746	41
31-Jan-18	22138	10703.25	10727.06	1428.60	39	41	40.0	16	1020.2	1.27	1817	2.6500	2.7038	0.0538	30

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 ($\mu\text{g}/\text{m}^3$)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	($^{\circ}\text{C}$)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	
2-Jan-18	21784	6003.79	6028.17	1462.80	48	48	48.0	17.8	1019.3	1.79	2619	2.6452	2.8661	0.2209	84
8-Jan-18	22083	6028.17	6052.53	1461.60	40	42	41.0	16.8	1020.5	1.55	2269	2.6394	2.7092	0.0698	31
13-Jan-18	22022	6052.53	6076.83	1458.00	37	40	38.5	16.4	1020.1	1.47	2138	2.5576	2.6195	0.0619	29
19-Jan-18	22146	6076.83	6101.23	1464.00	38	41	39.5	16.3	1019.7	1.50	2197	2.6507	2.7461	0.0954	43
25-Jan-18	22114	6101.23	6125.62	1463.40	37	41	39.0	15.4	1020.6	1.49	2175	2.6386	2.7040	0.0654	30
31-Jan-18	22202	6125.62	6149.91	1457.40	34	35	34.5	16.2	1020.2	1.33	1936	2.6710	2.7061	0.0351	18

Noise Database

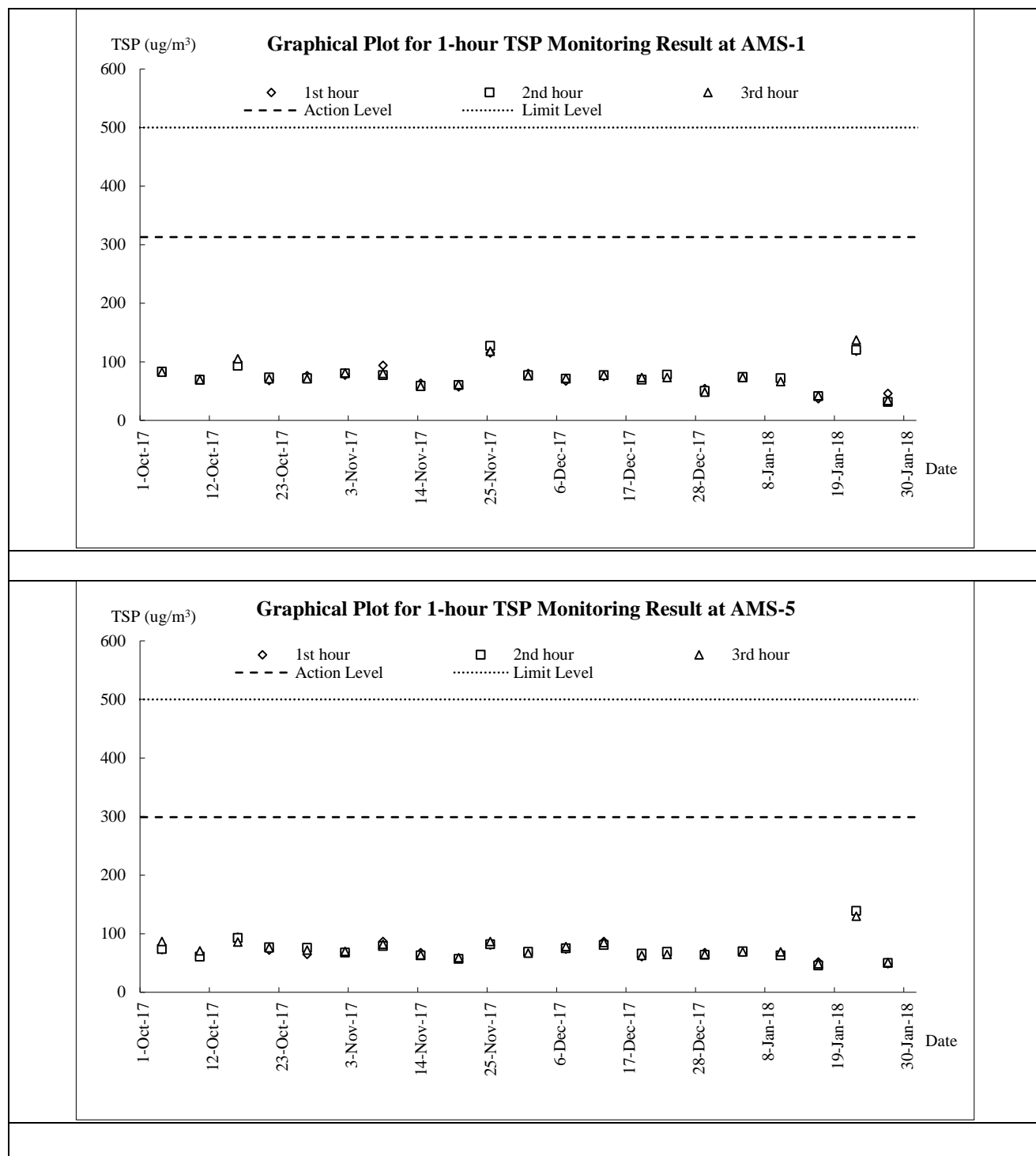
Noise Measurement Results (dB) of NMS4a																				
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	
4-Jan-17	10:25	73.5	76	68	74.3	77	69.5	74.3	77	69.5	73	75.5	68.5	73	75.5	68.5	71.2	73.5	67	73
10-Jan-18	10:06	74.4	76	70.5	74.4	76.1	70.8	73.8	76	69.3	74.4	75.8	72.4	74.1	75.9	71.4	75.2	76.9	73.2	74
16-Jan-18	10:26	72.7	74.5	69.5	72.3	74.5	69	73.1	75.5	69.5	71	73	67	71.3	73.5	67.5	72.7	74.5	69.5	72
22-Jan-18	9:00	67.5	70.5	61.5	67.8	70.5	63	67.4	70	61.5	68.1	71	62	67.9	71	62	69.9	71.5	63	68

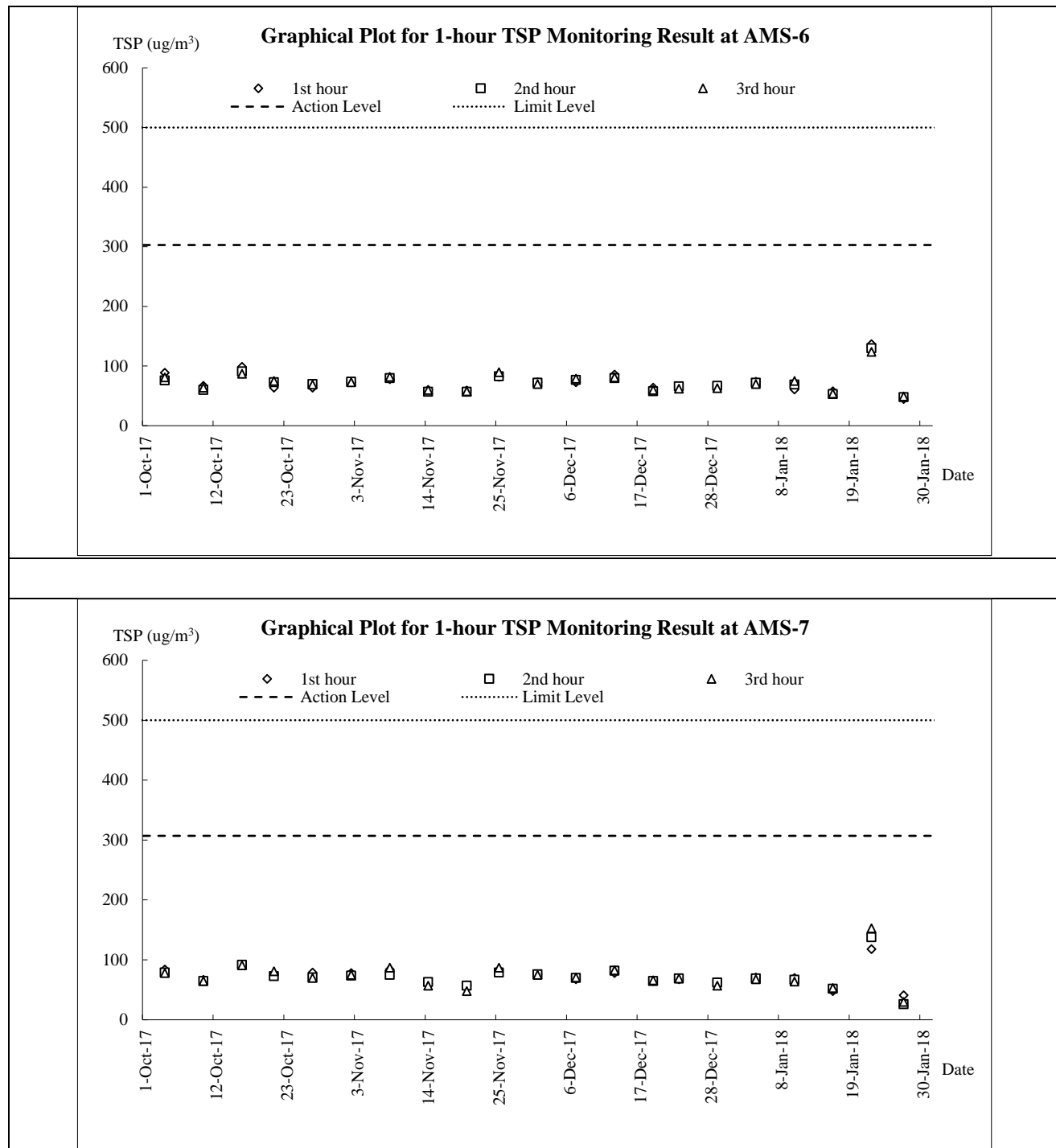
Noise Measurement Results (dB) of NMS5																				
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	
4-Jan-18	9:32	68.3	71	63.5	67.5	70	63	65.7	68	62	64.2	66	61	67.3	70	63	66	68	60	67
10-Jan-18	13:22	61.8	64.9	58.1	61.1	62.5	57.9	64.9	67.3	59.6	66.9	69.6	60.8	68.2	70.9	64.1	66.9	68.8	64.1	66
16-Jan-18	9:43	63.7	66	60	63.5	66	58.5	64.5	67	60.5	64.1	66.5	60.5	65.1	67.5	61	63.8	65.5	61	64
22-Jan-18	9:43	72.3	76	65.5	69.3	69.5	62.5	66.9	67.5	63	68.2	68	62.5	69	70	63.5	69.9	68.5	63.5	70

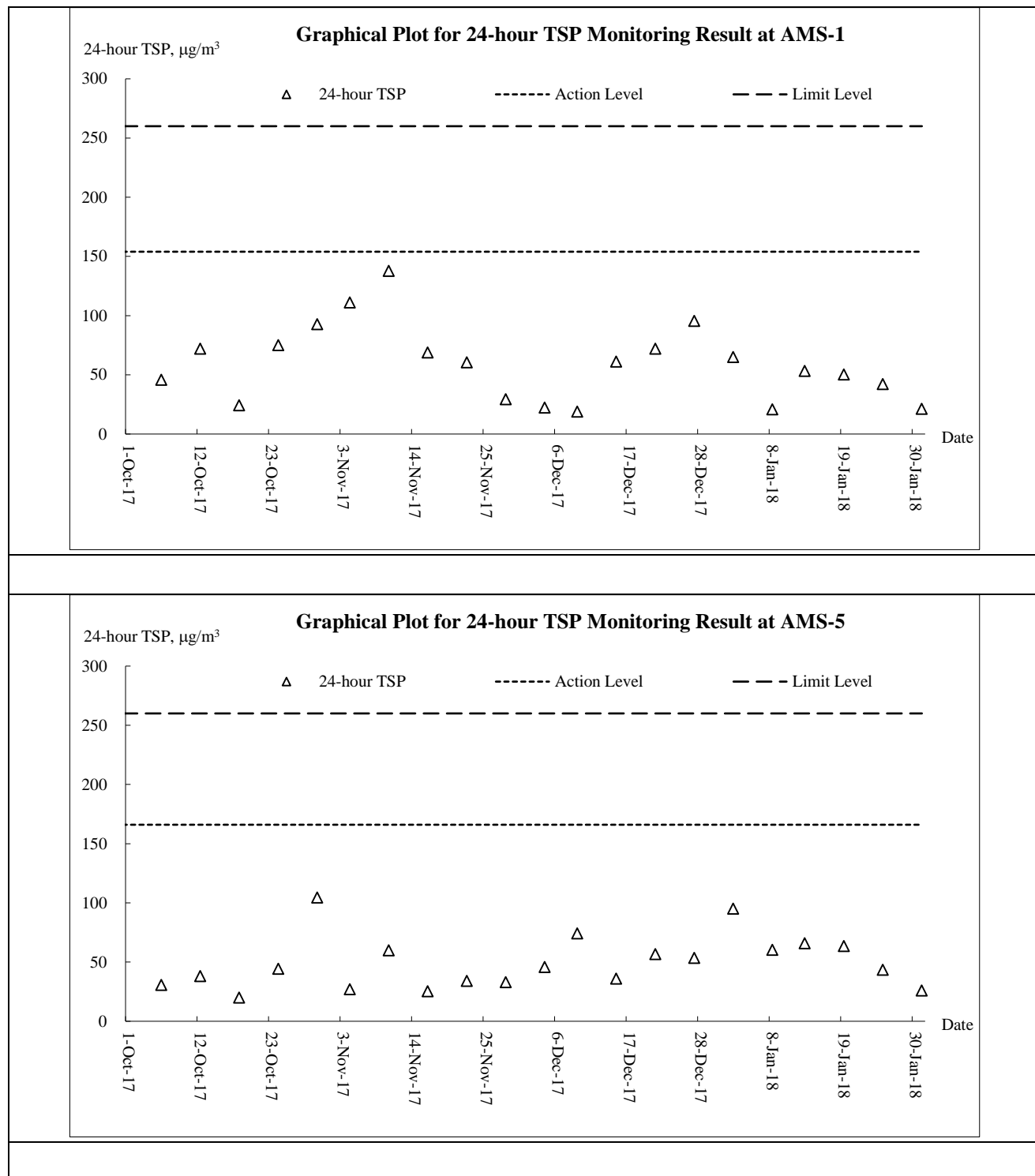
Appendix I

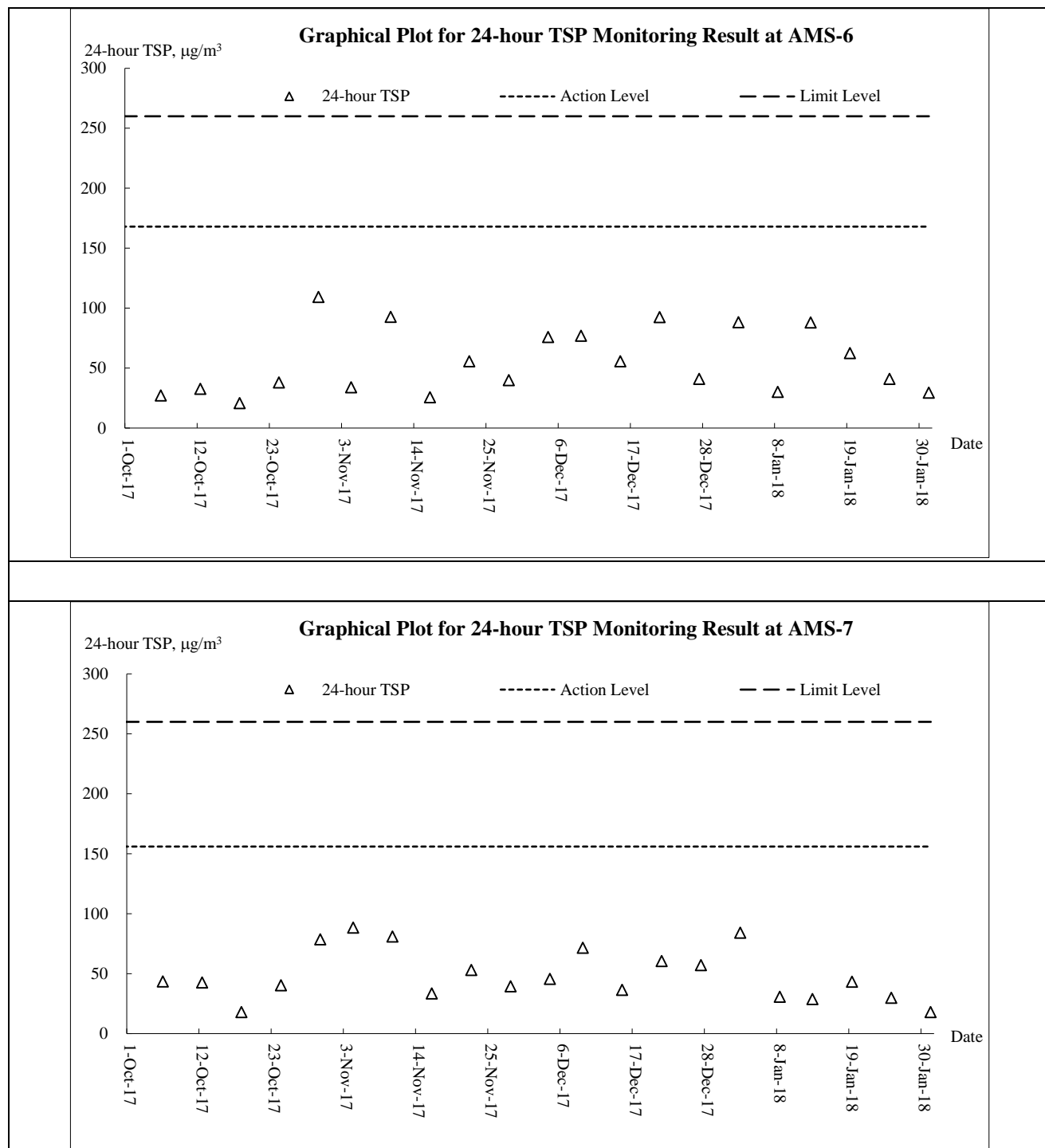
Graphical Plots for Monitoring Result

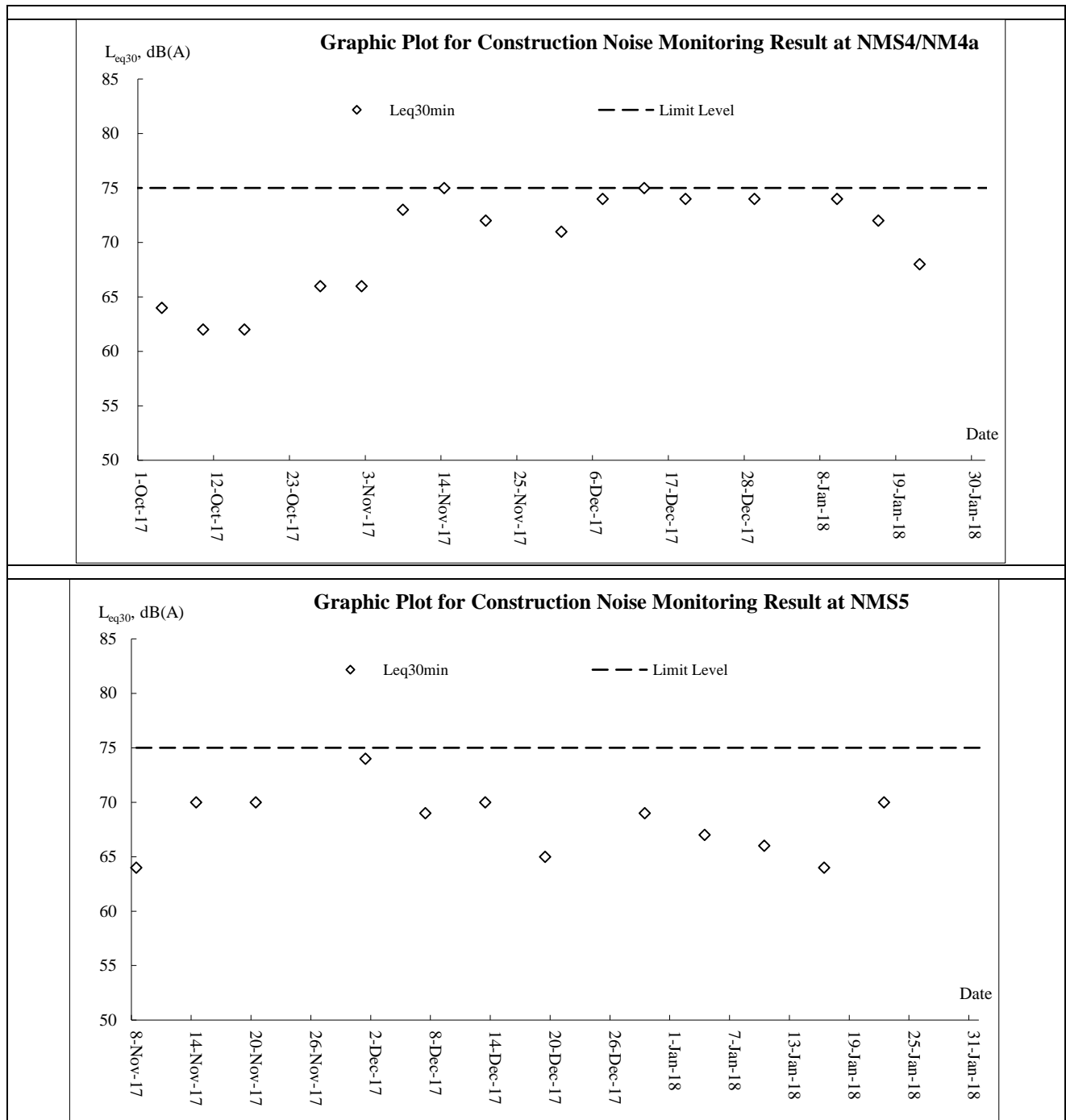
Air Quality – 1-hour TSP





Air Quality – 24-hour TSP



Noise

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-Jan-18	Mon	Mainly cloudy.	0	17.3	13.5	E/SE	70.5
2-Jan-18	Tue	Moderate east to northeasterly winds	0	17.3	12	E/SE	72
3-Jan-18	Wed	There will also be one or two light rain patches.	0	19.6	15.5	E	65.2
4-Jan-18	Thu	Moderate east to northeasterly winds	0.2	18.4	15.8	E/SE	77.5
5-Jan-18	Fri	Moderate east to northeasterly winds	0.2	19.4	10.1	SE	80.5
6-Jan-18	Sat	Fresh northerly winds	3.7	15.6	9.3	E/SE	90.3
7-Jan-18	Sun	Cloudy to overcast with a few rain patches.	16.2	16.4	18	E/SE	90.5
8-Jan-18	Mon	Cloudy to overcast with a few rain patches.	11.6	13.6	14.8	NW	89.2
9-Jan-18	Tue	Cloudy to overcast with a few rain patches.	9.9	8.8	10.9	NW	74.2
10-Jan-18	Wed	Fine and dry.	Trace	13.1	8.2	N/NW	31.2
11-Jan-18	Thu	Fine and dry.	Trace	14.1	10.2	N/NE	27.5
12-Jan-18	Fri	Moderate to fresh east to northeasterly winds	0	12.6	10	N/NE	28.7
13-Jan-18	Sat	Fine and dry.	0	12.2	8.3	N/NE	65.3
14-Jan-18	Sun	Hazy with sunny periods. Warm during the day. Light winds.	0	14.4	10	E/SE	65.5
15-Jan-18	Mon	Mainly fine but hazy. Light winds	0	16	10.5	E/SE	72.5
16-Jan-18	Tue	Hazy with sunny periods. Warm during the day. Light winds.	0	19.1	8.6	SE	71.2
17-Jan-18	Wed	Mainly fine but hazy. Light winds	0	20.7	7.7	SE	63.2
18-Jan-18	Thu	Fresh easterly winds, strong offshore.	0	18.4	13.2	E/SE	73.2
19-Jan-18	Fri	Moderate to fresh easterly winds	0.8	18.1	15.3	E/SE	71.2
20-Jan-18	Sat	Mainly cloudy	Trace	18.8	13.6	SE	78.3
21-Jan-18	Sun	Hazy with sunny periods. Warm during the day. Light winds.	0	18.2	15	SE	78.5
22-Jan-18	Mon	Mainly fine but hazy. Light winds	0	21	8.2	SE	78.5
23-Jan-18	Tue	Mainly fine. Moderate to fresh easterly winds.	0	19.2	14.7	E/SE	77.5
24-Jan-18	Wed	One or two light rain patches tonight.	0	17.1	19.2	E	75.2
25-Jan-18	Thu	Mainly cloudy	0	16.5	20.3	E	75
26-Jan-18	Fri	Mainly fine. Moderate to fresh easterly winds.	Trace	15.6	11.5	E/SE	84
27-Jan-18	Sat	One or two light rain patches tonight.	Trace	14.3	13.2	E/SE	80.6
28-Jan-18	Sun	Moderate to fresh north to northeasterly winds.	0	15.7	15.7	NW	76.2
29-Jan-18	Mon	Cloudy to overcast and cold with one or two rain patches.	0.1	10.1	15.7	NW	76.2
30-Jan-18	Tue	Mainly cloudy with one or two light rain patches at first.	0.2	8.7	13.7	NE	81
31-Jan-18	Wed	Mainly fine and dry.	19.3	8.4	13.2	N/NW	83.7

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 2018 (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	30.864	19.998	10.550	0	0.316	1.191	132.060	0	0	0	0.013
Feb											
Mar											
Apr											
May											
Jun											
Sub-total	30.864	19.998	10.550	0	0.316	1.191	132.060	0	0	0	0.013
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	30.864	19.998	10.550	0	0.316	1.191	132.060	0	0	0	0.013

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/m³) and inert C&D materials (2 t/m³).
- (5) Use the conversion factor for chemical waste (0.88kg/L).
- (6) Assume a dump truck delivers 7.5 m³ material in 1 trip.
- (7) The cut-off date of this summary is 20th of each month.

Name of Department: CEDDContract No. : NE/2016/05**Monthly Summary Waste Flow Table for 2018** (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	0.046	0.00	0.001	0.00	0.045	0.00	0.00	0.00	0.00	0.00	0.0006
Feb											
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total											

- 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 m³.

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/m ² 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: <ul style="list-style-type: none">Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;Any dusty materials remaining after a stockpile is removed should be 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

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
	<p>within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</p> <ul style="list-style-type: none"> 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	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the 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
	<p>intermittent use should be shut down between work periods or should be throttled down to a minimum;</p> <ul style="list-style-type: none"> plant 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 construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; and material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction 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	V
S5.6.14	Install temporary site hoarding (approx 2.5m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites 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 construction sites	Contractor	All construction 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 construction sites where practicable	V	V
S5.6.34	Implement temporary noise barrier along Road L4.	Further reduce the construction 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	<u>Construction Runoff</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994	Control construction runoff	Contractor	All construction sites	*	@

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
	<p>(ProPECC PN 1/94), best management practices should be implemented as far as practicable as below:</p> <ul style="list-style-type: none"> 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 m³ capacities, are recommended as a general mitigation measure which can be used for settling 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 protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt /sediment trap. The silt /sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. 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
	<p>Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.</p> <ul style="list-style-type: none"> 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 sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of <i>ProPECC PN 1/94</i>. 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 construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill 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
	<p>spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.</p> <ul style="list-style-type: none"> 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 bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices 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	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> 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 construction phase of the Project. Regular environmental audit on the construction 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	<p><u>Accidental Spillage</u> 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 construction activities. Storage of chemical waste arising from the construction activities should be well managed with suitable labels and 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.</p>	Prevent ion of accidental spillage	Contractor	All construction sites	*	*
S6.6.11- S6.6.14	<p><u>Groundwater from Contaminated Area</u> 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.</p> <p>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.</p> <p>If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back</p>	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 Section 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as PCBs should be removed as necessary by installing the petrol interceptor.					
Waste Management (Construction Phase)						
S8.5.2	<u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities: <ul style="list-style-type: none"> • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection 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 collection for disposal; • appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and 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 construction phase. The EMP should be submitted 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	<u>Waste Reduction Measures</u> 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
	<p>recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction 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 portions (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	<p><u>Storage of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and 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 construction sites	V	V
S8.5.6	<p><u>Collection and Transportation of Waste</u></p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> 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	*	@
S8.5.8	<p><u>Excavated and C&D Material</u></p> <p>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:</p>	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
	<ul style="list-style-type: none"> 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; <p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> 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	<u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction 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	@
S8.5.17	<u>Chemical Waste</u> <ul style="list-style-type: none"> If chemical wastes are produced at the construction 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 Centre, 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	<u>General Waste</u> <ul style="list-style-type: none"> 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 collection 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
	<p>also be implemented to keep areas clean.</p> <ul style="list-style-type: none"> A reputable waste collector should be employed to remove general refuse on a daily basis. 					
S8.5.19	<p><u>Sewage</u></p> <ul style="list-style-type: none"> 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 collection 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	<p>Construction phase in situ mitigation measures to minimize impacts on hydrological condition and water quality of hillside watercourses include:</p> <ul style="list-style-type: none"> 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 bottom 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 construction 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
	<p>covered and located away from nearby watercourses;</p> <ul style="list-style-type: none"> Erection of temporary geotextile silt fences will be carried out around earth-moving works to trap 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 formation 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; Construction effluent, site run-off and sewage will be probably collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment ; Proper locations for discharge outlets 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.10.7.1 1	<p>Implement an emergency contingency plan during the construction phase and the plan will include, but not be limited to, the following:</p> <ul style="list-style-type: none"> 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
	<ul style="list-style-type: none"> Training plan and testing for effectiveness. 					
Landscape and visual (Contraction Phase)						
S11.14.2 3, 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
S11.14.2 3, 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 submitted 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
S11.14.2 3, Table 11.9, CM3 [4]	Control of operation night -time glare with well-planned lighting 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
S11.14.2 3, 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
S11.14.2 3, 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
January 2018	1	0
Overall Total	22	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 construcion 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

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.
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/00031074-17)	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/00029489-17)	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/00032407-17)	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	no comment by IEC on 15 Nov 2017	TCS00864/16/300/F0100

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.
									during dry season.		
14	6-Nov-17	7-Nov-17	Chun Tat House, On Tat Estate	Resident of On Tat Estate	Noise	EPD	NA	安達邨後達樓居民投訴石礦場地盤又再於早上 07:45 開始傳出機器不停搗石的噪音 (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搗鐵噪音。	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/00027/738-17)	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

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.
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。	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, another water tanker will be deployed in mid-January 2018 to enhance the dust suppression measures throughout the construction site.	no comment by IEC on 25 Jan 2018	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	ET has conducted an ad-hoc noise measurement for Leq (30min) in the complainant's flat in the monitoring of 17 January 2018. It was noted that the complainant's flat is not in direct line of sight to the Anderson Road Quarry Site. The measurement noise result was below the Limit Level under the EM&A Programme. Moreover, it is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out during restricted hour at the subject site. Therefore, the complaint about noise nuisance during restricted hour should not be related to the Project.	no comment by IEC on 8 Feb 2018	TCS00864/16/300/F0129
22	15-Jan-18	15-Jan-18	Chun Tat House	Resident of Chun Tat House of On Tat Estate, 40/F	Construction Noise	SPRO mobile	NA	She is irritated by the construction noise of breaking rock for a long time and strongly requested to know exactly when will be the completion date of the breaking rock part of works opposite to Chun Tat House. She said we should do more on the mitigation measures because our site is very close to the residents nearby.	CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in January 2018, 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 8 Feb 2018	TCS00864/16/300/F0130

To **Mr. Dennis Leung**

Fax No

By e-mail

Company **AECOM**

cc

From **Nicola Hon**

Date

6 February 2018

Our Ref **TCS00864/16/300/F0129a**

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**

If you do not receive all pages, or transmission is illegible, please contact the originator on (852) 2959-6059 to re-send. Should this facsimile be sent to the wrong fax number, would receiver please destroy this copy and notify Action-United Environmental Services & Consulting immediately. Thank you.

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.

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EPD

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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 – 22
Received Date by ET	10 January 2018
Related Contracts	Contract 1 (NE/2016/01)
Complaint Details	投訴人表示居於秀茂坪邨秀義樓，指附近的安達臣道一個由土木工程拓展署管轄的石礦場不時於非允許時段(即晚上七時後至翌日早上)發出疑似打地基的轟轟聲巨響，最近一次就是28/12凌晨五時多再次聽到石礦場傳來聲響，將投訴人先生吵醒，懷疑有人刻意在無人監管下施工，更表示曾向環保署及土木工程署作出投訴，但環保署表示巡查後無發現在非允許時段有工程進行，而土木工程署則表示晚上七時後不會再進行工程。投訴人指石礦場經常在晚上八至十二時，或凌晨時份發出巨響，對附近居民已造成很大的滋擾，要求相關部門儘快作出跟進及回覆。
Complaint Location	Sau Mau Ping Estate Sau Yee House (37/F)
Date of Complaint	28 December 2017
Environmental Aspect	Noise
Complainant	Resident of Sau Mau Ping Estate Sau Yee House (37/F)
Complaint Route	CE's office
Investigation Result	<ol style="list-style-type: none"> On 28 December 2017, a complaint was received by CE's office regarding the noise nuisance and loud noise created by the construction works in the Anderson Road Quarry Site during restricted hours as described in "Complaint Details". He strongly requested the relevant department to follow up the case immediately. Upon receipt of the complaint, the Contractor of Contract 1 - NE/2016/01 (CWSTVJV) and ET has conducted an ad-hoc noise measurement for Leq (30min) in the complainant's flat in the monitoring of 17 January 2018. (<i>Photos 1 & 2</i>) It was noted that the complainant's flat is not in direct line of sight to the Anderson Road Quarry Site. The measurement noise result was 56dB(A) which below the Limit Level under the EM&A Programme. According to the information provided by CWSTVJV, the site activities conducted at the subject sites include backfilling, pre-drilling, excavation and rock breaking etc. and the operation hour is 07:00 to 19:00 in entire December 2017. Noise mitigation measures including temporary noise barrier, acoustic mat and wrapped by acoustic materials are implemented on site. Moreover, quiet plants (e.g. QPME) are used to reduce the cumulative noise impact from the construction activities of the whole site. Joint site inspection among the RE, CWSTVJV and ET was carried out on 19 and 27 December 2017 and the status of implemented mitigation measures provided by CWSTVJV was inspected. The observations during site inspection are summarized below. <ol style="list-style-type: none"> As noise mitigation measures, erection of acoustic mat as

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

	<p>temporary noise barrier was installed along the boundary of the site. <i>(Photos 3 & 4)</i></p> <p>(b) As noise mitigation measures, the head of the breakers were wrapped by acoustic material. <i>(Photos 5 & 6)</i></p> <p>(c) As noise mitigation measures, the generator was 3-sides enclosed by acoustic material to minimize noise impact.</p> <p>5. 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 during restricted hour at the subject site. Therefore, the complaint about noise nuisance during restricted hour 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.</p> <p>6. In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby residents. Moreover, the noise measurement carried out at the complainant's flat did not exceed the statutory requirement as well as the Limit Level under the EM&A programme. It is considered that works under the project did not breach the Noise Control Ordinance and the complaint was not valid to the Contract.</p> <p>7. 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.</p>
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Prepared By : Nicola Hon

Designation : Environmental Consultant

Signature :



Date : 6 February 2018

Photo Record

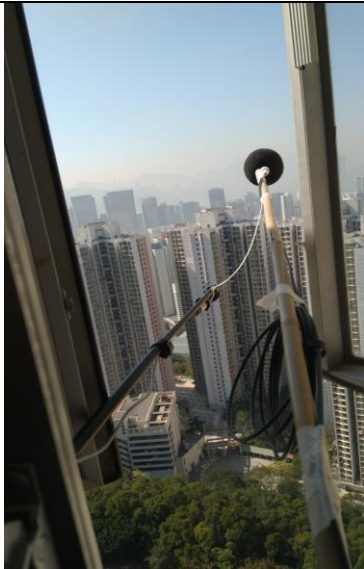


Photo 1

Ad-hoc noise measurement was conducted by ET at the complainant's flat on 17 January 2018.



Photo 2

Ad-hoc noise measurement was conducted by ET at the complainant's flat on 17 January 2018.

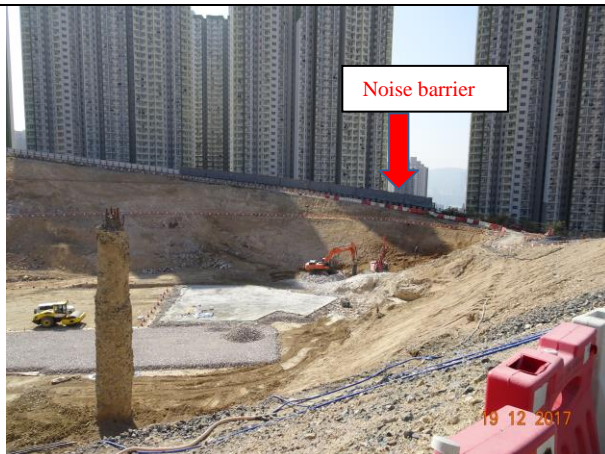


Photo 3

As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the site boundary..



Photo 4

As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the site boundary.



Photo 5

As noise mitigation measures, the head of the breakers were wrapped by acoustic material.



Photo 6

As noise mitigation measures, the head of the breakers were wrapped by acoustic material.



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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 – 23
Received Date by ET	15 January 2018
Related Contracts	Contract 1 (NE/2016/01)
Complaint Details	The complainant was irritated by the construction noise of breaking rock for a long time and strongly requested to know exactly when will be the completion date of the breaking rock part of works opposite to Chun Tat House. She said we should do more on the mitigation measures because our site is very close to the residents nearby.
Complaint Location	Chun Tat House of On Tat Estate, 40/F
Date of Complaint	15 January 2018
Environmental Aspect	Noise
Complainant	Resident of Chun Tat House of On Tat Estate
Complaint Route	Received by SPRO mobile
Investigation Result	<ol style="list-style-type: none"> 1. A public complaint was received by SPRO on 15 January 2018 regarding construction noise of breaking rock heard at 40/F Chun Tat House as described in “Complaint Details” 2. AECOM has liaised with the complainant immediately and it was advised that there was breaking works at Underground Stormwater Retention Tank (USRT) which opposite to Chun Tat House. AECOM has explained to the complainant that the tentative completion date of the concerned work would be in mid-March and the complainant was satisfied with the respond. The site layout and complaint location are shown in <i>Figure 1</i>. 3. As advised by Contractor of Contract 1 - NE/2016/01 (CWSTVJV), to eliminate the noise impact to the resident in the vicinity, noise mitigation measures including temporary noise barrier, acoustic mat and wrapped by acoustic materials have been implemented on site. Moreover, quiet plants (e.g. QPME) were used to reduce the cumulative noise impact from the construction activities of the whole site. According to the weekly site inspection records by ET in January 2018, the observations during site inspection are summarized below. <ol style="list-style-type: none"> (a) Excavation and breaking works were carried out at USRT and there was direct line of sight between the construction site and the higher floor of On Tat Estate. (<i>Photo 1</i>) (b) As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the site boundary toward On Tat Estate. (<i>Photos 1 & 2</i>) (c) As noise mitigation measures, the head of the breakers were wrapped by acoustic material. (<i>Photos 3 & 4</i>) 4. As advised by CWSTVJV, they will properly maintain the noise barrier and acoustic mats toward residential area of On Tat Estate. The following noise mitigation measures are recommended to

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

	<p>CWSTVJV as further noise mitigation measures.</p> <p>(a) Maintain good site practices such as intermittent use of machine and plant</p> <p>(b) Sequencing operation of construction plant equipment.</p> <p>5. In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in January 2018, 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.</p> <p>6. 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.</p>
--	---

Prepared By : Nicola Hon

Designation : Environmental Consultant

Signature :



Date : 6 February 2018

Photo Record



Photo 1

Excavation and breaking works were carried out at USRT and there was direct line of sight between the construction site and the upper floor of Chun Tat House. As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the boundary of Portion A toward On Tat Estate



Photo 2

As noise mitigation measures, erection of acoustic mat as temporary noise barrier was installed along the boundary toward On Tat Estate.



Photo 3

As noise mitigation measures, the head of the breakers were wrapped by acoustic material



Photo 4

As noise mitigation measures, the head of the breakers were wrapped by acoustic material

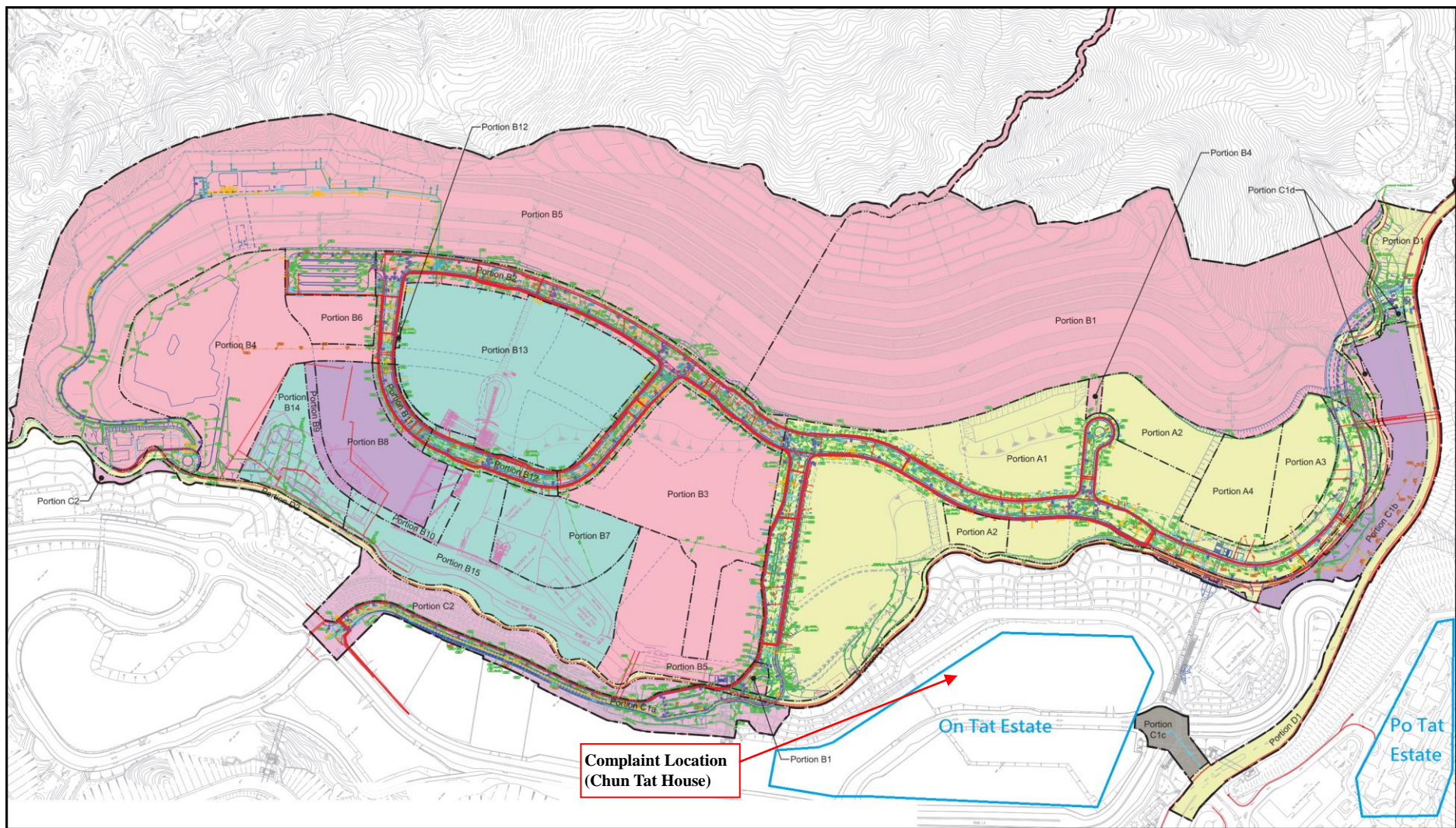


Figure 1 The Layout of NE/2016/01 and the Complaint Location