ANEWR

Civil Engineering and Development Department
New Territories East Development Office
Suite 1213 Chinachem Golden Plaza
77 Mody Road
Tsim Sha Tsui East
Kowloon

Your reference:

Our reference: HKCEDD10/50/105467

Date: 28 December 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 (November 2018)

We refer to the emails of 12, 18 and 28 December 2018 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (November 2018) for the captioned project.

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report (November 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

Ali Lee
Independent Environmental Checker

LYMA/LHHN/WWKJ/csym

cc CEDD – Mr Eric Li (email: chikli@cedd.gov.hk)
CEDD – Mr Matthew Lai (email: matthewsylai@cedd.gov.hk)
AECOM – Mr Alex Wong (email: yc.wong@aecom.com)
AECOM – Mr Dennis Leung (email: sre1tpf@yahoo.com.hk)
AUES – Mr T W Tam (email: twtam@fordbusiness.com)

ANewR Consulting Limited
Unit 517, 5/F, Tower A, Regent Centre
63 Wo Yi Hop Road, Kwai Chung, Hong Kong
Tel: (852) 2618 2831 Fax: (852) 3007 8648
Email: info@anewr.com
Web: www.anewr.com

ISO 9001 : 2015
Certificate No.: CC 3988

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 (NOVEMBER 2018)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
27 December 2018	TCS00864/16/600/R0226v3	Nicola Hon (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	12 December 2018	First Submission
2	18 December 2018	Amended according to the IEC's comments on 18 December 2018
3	27 December 2018	Amended according to the IEC's comments on 19 December 2018

ANEWR

Civil Engineering and Development Department
New Territories East Development Office
Suite 1213 Chinachem Golden Plaza
77 Mody Road
Tsim Sha Tsui East
Kowloon

Your reference:

Our reference: HKCEDD10/50/105467

Date: 28 December 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 (November 2018)

We refer to the emails of 12, 18 and 28 December 2018 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (November 2018) for the captioned project.

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report (November 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/WWKJ/csym

cc CEDD – Mr Eric Li (email: chikli@cedd.gov.hk)
CEDD – Mr Matthew Lai (email: matthewsylai@cedd.gov.hk)
AECOM – Mr Alex Wong (email: yc.wong@aecom.com)
AECOM – Mr Dennis Leung (email: sre1tpf@yahoo.com.hk)
AUES – Mr T W Tam (email: twtam@fordbusiness.com)

ANewR Consulting Limited
Unit 517, 5/F, Tower A, Regent Centre
63 Wo Yi Hop Road, Kwai Chung, Hong Kong
Tel: (852) 2618 2831 Fax: (852) 3007 8648
Email: info@anewr.com
Web: www.anewr.com

ISO 9001 : 2015
Certificate No.: CC 3988

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 (NE/2017/03). 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. Furthermore, Contract 3 was commenced on 31 May 2018 but the major construction activities works have not yet commenced in this reporting period. The EM&A programme under the Project was commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

ES04 This is the **20th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 30 November 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	**5**	**63**
	24-hour TSP	**4**	**23**
Construction Noise	$L_{eq(30min)}$ Daytime	**5**	**25**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES06 No exceedance of air quality was recorded in the Reporting Period. All noise measurement results were below the limit level (75dB(a)) and three noise complaints (which triggered Action Level) was received for Contract 1 in the reporting period. 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	NA	NA
	24-hour TSP	0	0	0	NA	NA
Construction Noise	$L_{eq(30min)}$ Daytime	**3**	0	0	In progress	NA

ENVIRONMENTAL COMPLAINT

ES07 In the Reporting Period, three (3) environmental complaints were received for Contract NE/2016/01 with respect to the noise, dust and light nuisance issues. The RE has resolved the concerns with the complainant in due course and the investigation report is underway 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 In the Reporting Period, air quality monitoring station AMS-2 was activated on 26 November 2018 since Fung Tai House became an air sensitive receiver. 1-hour TSP monitoring was commenced on 26 November 2018 while installation of HVS for 24-hour TSP was pending approval from Housing Authority.

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 **8, 13, 20 and 27 November 2018** in which IEC joined the site inspection with SSEMC on **8 November 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 **7, 14, 21 and 28 November 2018** in which IEC joined the site inspection with SSEMC on **21 November 2018**. No non-compliance was noted during the site inspection.

ES12 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 3*** was carried out by the RE, ET and Contractor on **1, 9, 15, 22 and 29 November 2018** in which IEC joined the site inspection with SSEMC on **9 November 2018**. No non-compliance was noted during the site inspection.

FUTURE KEY ISSUES

ES13 In coming dry season, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission as far as practicable. Furthermore, since construction site is highly visible to the resident at nearby estates, noise mitigation measures such as using of quiet plants should be implemented in accordance with the EM&A requirement.

ES14 Preventive measures for muddy water or other water pollutants from site surface overflow to public area should be properly maintained. The Contractors should paid special attention on water quality mitigation measures and fully implement according ISEMM of the EM&A Manual.

ES15 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.

ES16 Mosquito control measures should be continued to prevent mosquito breeding on site.

Table of Contents

1. INTRODUCTION 1
1.1 PROJECT BACKGROUND 1
1.2 REPORT STRUCTURE 1

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS 2
2.1 CONSTRUCTION CONTRACT PACKAGING 2
2.2 PROJECT ORGANIZATION 3
2.3 CONSTRUCTION PROGRESS 3

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS 6
3.1 GENERAL 6
3.2 MONITORING PARAMETERS 6
3.3 MONITORING LOCATIONS 6
3.4 MONITORING FREQUENCY AND PERIOD 8
3.5 MONITORING EQUIPMENT 9
3.6 MONITORING METHODOLOGY 9
3.7 DERIVATION OF ACTION/LIMIT (A/L) LEVELS 11
3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL 12

4. AIR QUALITY MONITORING 13
4.1 GENERAL 13
4.2 RESULTS OF AIR QUALITY MONITORING 13

5. CONSTRUCTION NOISE MONITORING 15
5.1 GENERAL 15
5.2 NOISE MONITORING RESULTS IN REPORTING MONTH 15

6. WASTE MANAGEMENT 16
6.1 GENERAL WASTE MANAGEMENT 16
6.2 RECORDS OF WASTE QUANTITIES 16

7. SITE INSPECTION 17
7.1 REQUIREMENTS 17
7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH 17

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE 20
8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION 20

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES 22
9.1 GENERAL REQUIREMENTS 22
9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH 22
9.3 KEY ISSUES FOR THE COMING MONTH 23

10. CONCLUSIONS AND RECOMMENDATIONS 24
10.1 CONCLUSIONS 24
10.2 RECOMMENDATIONS 24

LIST OF TABLES

TABLE 2-1 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 1
TABLE 2-2 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 2
TABLE 2-3 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 3
TABLE 3-1 SUMMARY OF EM&A REQUIREMENTS
TABLE 3-2 IMPACT MONITORING STATIONS - AIR QUALITY
TABLE 3-3 IMPACT MONITORING STATIONS - CONSTRUCTION NOISE
TABLE 3-4 AIR QUALITY MONITORING EQUIPMENT
TABLE 3-5 CONSTRUCTION NOISE MONITORING EQUIPMENT
TABLE 3-6 ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING
TABLE 3-7 ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
TABLE 4-1 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-1)
TABLE 4-2 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-2)
TABLE 4-3 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-5)
TABLE 4-4 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-6)
TABLE 4-4 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-7)
TABLE 5-1 SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS
TABLE 6-1 SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
TABLE 6-2 SUMMARY OF QUANTITIES OF C&D WASTES
TABLE 7-1 SITE OBSERVATIONS OF CONTRACT 1
TABLE 7-2 SITE OBSERVATIONS OF CONTRACT 2
TABLE 7-3 SITE OBSERVATIONS OF CONTRACT 3
TABLE 8-1 STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 8-2 STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 8-3 STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 9-1 ENVIRONMENTAL MITIGATION MEASURES

LIST OF APPENDICES

APPENDIX A LAYOUT PLAN OF THE PROJECT
APPENDIX B ORGANIZATION CHART
APPENDIX C THREE-MONTHS ROLLING CONSTRUCTION PROGRAMME
APPENDIX D MONITORING LOCATIONS FOR IMPACT MONITORING
APPENDIX E CALIBRATION CERTIFICATE OF MONITORING EQUIPMENT AND HOKLAS-ACCREDITATION CERTIFICATE OF THE TESTING LABORATORY
APPENDIX F EVENT AND ACTION PLAN
APPENDIX G IMPACT MONITORING SCHEDULE
APPENDIX H DATABASE OF MONITORING RESULT
APPENDIX I GRAPHICAL PLOTS FOR MONITORING RESULT
APPENDIX J METEOROLOGICAL DATA
APPENDIX K WASTE FLOW TABLE
APPENDIX L IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES
APPENDIX M COMPLAINT LOG AND INVESTIGATION REPORT FOR COMPLAINT

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 was December 2016 and the Contract Period is 70 months. 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.

1.1.2 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).

1.1.3 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 (NE/2017/03). The date for commencement of Contract 1 was on 21 December 2016 and the major construction works commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities commenced on 2 May 2017. Contract 3 was commenced on 31 May 2018 but the major construction activities works have not yet commenced in this reporting period. The EM&A programme under the Project was commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

1.1.4 According to the Approved EM&A Manual, air quality and construction noise are required to be monitored during the construction phase of the Project. As part of the EM&A program, baseline monitoring to determine the ambient environmental conditions is required to be carried out before construction work of the Project commencement. Hence, baseline air quality and background noise monitoring 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***. Furthermore, Baseline Monitoring Report, which certified by Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC) has been submitted to Environmental Protection Department (EPD) on ***9 May 2017*** for endorsement.

1.1.5 This is the **20th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 30 November 2018**.

1.2 REPORT STRUCTURE

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

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

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 CONSTRUCTION CONTRACT PACKAGING

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

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

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

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

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

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

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

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

(iii) Associated landscape works;

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

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

Contract 3 (Contract No. NE/2017/03)

2.1.4 The commencement date of Contract 3 is on 31 May 2018 and the major Scope of Work of the Contract 3 is listed below:

(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*** while the construction program for Contract 3 has not yet provided by the Contractor in this Reporting Period. As provided by the Contractors, the major construction activities conducted in the Reporting Period are summarized in below.

Contract 1 (NE/2016/01)

i. Implementation of Temporary Traffic Arrangement at On Sau Road;
ii. Excavation of pad footing for North Tower of Pedestrian Connectivity System B (PSCB);
iii. Construction of drainage pipe 750mm dia. near North Tower of PCSB
iv. Temporary sheeting piling works and excavation works for drainage pipeline from the existing manhole no. X4 to new manhole no. X3A;
v. Construction Road L1 from North Tower of PCSB to West Portal area;
vi. Site formation works and load test for pre-bored H pile at South Tower of Pedestrian Connectivity System B;
vii. Site formation works for Subway near North Tower of PSCB;
viii. Backfilling works of trenches and blinding concrete for the construction of pile caps and strap beam at Public Transport Terminus;
ix. Road Improvement Works at Po Lam Road;
x. Sewage and greywater works at Road L5 and drainage works at Road L1 between Road L5 and Box Culvert BC02;
xi. Construction of Box Culvert BC1 and BC2;
xii. Slope trimming works at Slope 15b;
xiii. Tunneling works at West Portal;
xiv. Site formation at East Portal,
xv. Excavation works for Water Pumping Station area;
xvi. Backfilling works for Retaining Wall RWA14;
xvii. Excavation works for Water Reservoir;
xviii. Backfilling and compaction works for areas of Portion B8 and W Asphalt Plant;
xix. Construction of Underground Stormwater Retention Tank (USRT)
xx. Construction works of Road L4, Pedestrian Connectivity System A, Noise Barrier, Retaining Walls RWA12 and RWA18;
xxi. Rock Slope Survey and Slope Stabilization at Portion B1 and B5;
xxii. Mitigation Works for Natural Terrain Catchment B5

Contract 2 (NE/2016/05)

1. Portion 1: Driving of sheet pile for excavation for pile cap for E1-PC6.
2. Continue excavation and shoring for pile cap E1-RS1.
3. Portion 2: Rock breaking for E3-ST1.
4. Portion 4 : Installation of crashed barrier. Site clearance for handover to Contract 3 C ontractor.
5. Portion 5: Fixing of starter bar reinforcement for concrete footing BB1-NB-F5. Drivin g sheet pile for BB1-NB-F4. .
6. Portion 6: Rock breaking for RW12. Fixing formwork and reinforcement for RW12
7. Portion 7 : Handover on September 2018
8. Portion 8 : Handover on August 2018

9. Portion 9: Construction of maintenance access for flexible barrier

Contract 3 (NE/2017/03)

1. Tree falling work and trees protection works
2. Condition survey
3. UU detection
4. Install monitoring and instrumentation
5. Preparation works of boulder treatment works at RIW1
6. Excavate trial pit

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project of contracts 1 and 2 are presented in ***Tables 2-1, 2-2 and 2-3***.

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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Form NA – Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 411762	NA	NA	valid
	Form NB – Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 412730	NA	NA	valid
2	Chemical Waste Producer Registration	Registration no. WPN 5213-292-C4115-01	15 Feb 17	End of project	valid
3	Water Pollution Control Ordinance – Discharge License	WT00027252-2017	20 Mar 17	31 Mar 22	valid
4	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account no. 7026925	20 Jan 17	End of project	valid
5	Construction Noise Permit	GW-RE0662-18	6 Oct 18	5 Dec 18	valid

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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 312173	NA	NA	valid
2	Chemical Waste Producer Registration	Registration no. WPN 5213-294-K2890-08	3 Jul 17	End of Project	Valid
3	Water Pollution Control Ordinance – Discharge License	WT00028685-2017	02 Aug 17	31 Aug 22	Valid
		WT00028686-2017	02 Aug 17	31 Aug 22	Valid
		WT00028687-2017	02 Aug 17	31 Aug 22	Valid
4	Waste Disposal Regulation – Billing Account for Disposal of	Account no.7027548	12 Apr 17	End of project	Valid

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
	Construction Waste				
5	Construction Noise Permit	GW-RE0601-18	9 Sep 2018	25 Nov 2018	Valid

Table 2-3 Status of Environmental Licenses and Permits of the Contract 3

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Form NA – Notification pursuant to Air Pollution Control (Construction Dust) Regulation	Notification to EPD on 29 May 2018.			
2	Chemical Waste Producer Registration	**For Area R1W3 (E11)** Registration no. WPN : 5213-294-C4239-04	6-Aug-18	End of Project	Valid
		For Area System A Registration no. WPN: 5213-293-C4239-05	6-Aug-18	End of Project	Valid
		For Area System B Registration no. WPN 5213-294-C4239-03	6-Aug-18	End of Project	Valid
		For Area E8 Registration no. WPN 5213-292-C4239-06	6-Aug-18	End of Project	Valid
3	Water Pollution Control Ordinance – Discharge License	Application is under processing EPD ref. 436239			
4	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account no.7031075	20 July 2018	End of project	Valid

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

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

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

3.2 MONITORING PARAMETERS

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

- Air quality; and
- Construction noise

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

Table 3-1 Summary of EM&A Requirements

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

3.3 MONITORING LOCATIONS

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

Table 3-2 Impact Monitoring Stations – Air Quality

ID	ASR ID in EIA	Location in the EM&A Manual	Identified Location during Site Visit	Status
AMS-1	ACYC-01	Chi Yum Ching She	Ground of Chi Yum Ching facing the project site	Active
AMS-2 (#)	DARB-13	Block 8, Site B	Ground of Fung Tai House of On Tai Estate	Active
AMS-3	DARC-16	Planned Clinic and Community Centre, Site C2 Note 1	Ground of Planned Clinic and Community Centre facing Anderson Road	Not yet commenced
AMS-4	DARC-26	Planned School, Site C2 Note 2	Ground of Planned School facing Anderson Road	Not yet commenced
AMS-5	DARE-06	Block 5, DAR Site E	Main roof of Oi Tat House of On Tat Estate facing the project site	Active
AMS-6	DARE-17	Block 9, Site E	Main roof of Hau Tat House of On Tat Estate facing the project site	Active
AMS-7	AMYT-04	Ma Yau Tong Village	Balcony at 2nd floor of Village House Anderson Road No. 1 facing the project site	Active

Note 1: The ASR is under construction and not yet in operation.
Note 2: The ASR is not yet constructed.
(#) AMS-2 was activated on 26 November 2018 since Fung Tai House became an air sensitive receiver. 1-hour TSP monitoring was commenced on 26 November 2018 while installation of HVS for 24-hour TSP was pending approval from Housing Authority.

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 change 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, 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	Status
NMS-1	Site C2 – School 05 Note 1	Ground of planned school at DAR facing the project site	Not yet commenced
NMS-2	Site E – School Note 1	Ground area between the planned school and Him Tat House facing the project site	Not yet commenced
NMS-3	Site C2 – R102 Note 1	Ground of Ancillary Facilities Building facing the project site	Not yet commenced
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	Active
NMS-4a#	Oi Tat House	Rooftop of Oi Tat House where 1m from the exterior of Oi Tat House facing the project site	Active
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.	Active
NMS-6˜	Yung Tai House of On Tai Estate	Rooftop of Yung Tai House where 1m from the exterior of the building facing the project site)	Active
NMS-7˜	Chi Tai House of On Tai Estate	Rooftop of Chi Tai House where 1m from the exterior of the building facing the project site	Active
NMS-8^	No. 3-4 Ma Yau Tong Village	1m from the exterior of the building façade and facing the construction site	Active

Note 1: The NSR is under construction and not yet in operation.
Remark:
(*) Additional noise monitoring location was recommended by RE and agreed by IEC. It was temporary suspended and the monitoring location is relocated to NMS4a with effective on 15 Nov 2017.
(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 November 2017.
(˜) Review of noise monitoring locations was proposed by ET and NMS-6 and NMS-7 were effective on 28 Feb 2018.
(^) Review of noise monitoring locations was proposed by ET and NMS-8 was effective on 18 April 2018. Noise monitoring at NMS-8 was started on 3 May 2018 upon commencement of construction at relevant section.

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 construction phase 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	Rion NC-74
Portable Wind Speed Indicator	Anemometer AZ Instrument 8908

3.6 MONITORING METHODOLOGY

1-hour TSP

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

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

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

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

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

24-hour TSP

3.6.3 The equipment used for 24-hour TSP measurement is Thermo Andersen Model GS2310 TSP

high volume air sampling system, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50*. The High Volume Air Sampler (HVS) consists of the following:

(a.) An anodized aluminum shelter;
(b.) A 8"x10" stainless steel filter holder;
(c.) A blower motor assembly;
(d.) A continuous flow/pressure recorder;
(e.) A motor speed-voltage control/elapsed time indicator;
(f.) A 7-day mechanical timer, and
(g.) A power supply of 220v/50 Hz

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

- A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;
- No two samplers should be placed less than 2 meters apart;
- The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
- A minimum of 2 meters of separation from any supporting structure, measured horizontally is required;
- Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;
- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge.
- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper ID with the initial weight;
- After sampling, the filter paper will be collected and transfer from the filter holder of the HVS to a sealed envelope and sent to a local HOKLAS accredited laboratory for quantifying.

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

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

Noise Monitoring

3.6.7 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979

(Type 1) and 804:1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

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

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

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

3.6.11 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

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

Meteorological Information

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

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

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

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

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AMS-1	313	154	500	260
AMS-2	319	165	500	260
AMS-3	319	165	500	260
AMS-4	315	165	500	260

AMS-5	299	166	500	260
AMS-6	303	168	500	260
AMS-7	307	156	500	260

Table 3-7 Action and Limit Levels for Construction Noise

Monitoring Location	**Action Level**	**Limit Level in dB(A)**
	Time Period: 0700-1900 hours on normal weekdays	
NMS-1	When one or more documented complaints are received	***75*** dB(A)[Note 1] / ***70*** dB(A)[Note 2]/ ***65*** dB(A)[Note 2]
NMS-2		
NMS-3		***75*** dB(A)
NMS-4*		***75*** dB(A)
NMS-4a#		***75*** dB(A)
NMS-5#		***75*** dB(A)
NMS-6~		***75*** dB(A)
NMS-7~		***75*** dB(A)
NMS-8^		***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 was recommended by RE and agreed by IEC. It was temporary suspended and the monitoring location is relocated to NMS4a with effective on 15 Nov 2017.
(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 November 2017.
(~) Review of noise monitoring locations was proposed by ET and NMS-6 and NMS-7 were effective on 28 Feb 2018.
(^) Review of noise monitoring locations was proposed by ET and NMS-8 was effective on 18 April 2018. Noise monitoring at NMS-8 was started on 3 May 2018 upon commencement of construction at relevant section.

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. Moreover, AMS-2 was activated on 26 November 2018 since it became an existing air sensitive receiver. Since installation of HVS for 24-hour TSP at AMS-2 was pending approval from Housing Authority, only 1-hour TSP monitoring was conducted at AMS-2. No monitoring was conducted at 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 ***63*** events of 1-hour TSP monitoring were carried out. Since power failure was reported at AMS1 on 7 November 2018, ***23*** events of 24-hours TSP was conducted in the Reporting Period and the monitoring results are summarized in ***Tables 4-1 to 4-5***. 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 ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
1-Nov-18	23	2-Nov-18	9:35	64	63	66
7-Nov-18	#	8-Nov-18	9:24	72	67	69
13-Nov-18	21	14-Nov-18	14:30	45	42	40
19-Nov-18	26	20-Nov-18	9:13	36	38	43
24-Nov-18	36	26-Nov-18	13:16	52	50	49
30-Nov-18	30					
Average (Range)	**27 (21 – 36)**	Average (Range)		**53 (36- 72)**		

Remark: (#) power failure was reported at AMS1 on 7 November 2018

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

1-hour TSP ($\mu g/m^3$)				
Date	**Start Time**	**1st reading**	**2nd reading**	**3rd reading**
26-Nov-18	13:05	34	35	34
Average (Range)		**34 (34 - 35)**		

Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-5)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
1-Nov-18	88	2-Nov-18	9:27	63	66	62
7-Nov-18	34	8-Nov-18	13:13	57	63	66
13-Nov-18	80	14-Nov-18	9:33	63	61	57
19-Nov-18	47	20-Nov-18	13:45	45	48	52
24-Nov-18	41	26-Nov-18	9:24	46	43	46
30-Nov-18	54					
Average (Range)	**57 (34 – 88)**	Average (Range)		**56 (43- 66)**		

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

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
1-Nov-18	95	2-Nov-18	13:05	59	61	60
7-Nov-18	25	8-Nov-18	14:10	62	64	70
13-Nov-18	76	14-Nov-18	10:04	58	56	53
19-Nov-18	55	20-Nov-18	13:28	43	46	50
24-Nov-18	59	26-Nov-18	9:45	43	46	44
30-Nov-18	62					
Average (Range)	**62 (25 – 95)**	Average (Range)		**54 (43 – 70)**		

Table 4-5 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-7)

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
1-Nov-18	65	2-Nov-18	13:36	65	69	71
7-Nov-18	35	8-Nov-18	13:24	67	64	69
13-Nov-18	57	14-Nov-18	13:11	71	68	67
19-Nov-18	40	20-Nov-18	9:55	38	40	44
24-Nov-18	76	26-Nov-18	9:21	51	49	51
30-Nov-18	81					
Average (Range)	**59 (35 – 81)**	Average (Range)		**59 (38 – 71)**		

4.2.2 As shown in ***Tables 4-1 to 4-5***, all the 1-hour TSP and 24-hour TSP monitoring results in the Reporting Period were below the Action and 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 only performed at the additional monitoring locations NMS4a, NMS5, NMS6, NMS7 and NMS8. No monitoring was conducted at the designated monitoring locations NMS1, NMS2 and NMS3 since they are the planned NSR and still under the construction or 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 **25** 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**	**NMS6**	**NMS7**	**NMS8**
2-Nov-18	63	59	59	60	58
8-Nov-18	65	61	56	60	56
14-Nov-18	70	62	59	63	68
20-Nov-18	65	62	56	57	62
26-Nov-18	70	63	60	63	61
Limit Level	**75 dB(A)**				

5.2.2 As shown in ***Tables 5-1,*** the noise level measured at the additional monitoring locations did not exceed the Limit Level.

5.2.3 In the Reporting Period, there were three (3) noise complaints (which triggered Action Level) received under the Project and complaint details could be referred to 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		Contract 3	
	Quantity	Disposal Location	Quantity	Disposal Location	Quantity	Disposal Location
Total generated Inert C&D Materials ('000m^3)	64.439	-	1.996	-	0.003	-
Hard Road and Large Broken Concrete	5.464	-	0	-	0	-
Reused in this Contract (Inert) ('000m^3)	52.255	-	0.065	-	0.003	-
Reused in other Projects (Inert) ('000m^3)	6.720	-	0	-	0	-
Disposal as Public Fill (Inert) ('000m^3)	0	TKO 137	1.931	TKO 137	0	-

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

Type of Waste	Contract 1		Contract 2		Contract 3	
	Quantity	Disposal Location	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal ('000kg)	0	-	0	-	0.004	License collector
Recycled Paper / Cardboard Packing ('000kg)	0.384	License collector	0	-	0.088	License collector
Recycled Plastic ('000kg)	1.202	License collector	0	-	0.0025	License collector
Chemical Wastes ('000kg)	0	-	0	-	0	-
General Refuses ('000m^3)	0.060	SENT	0.011	SENT	0	-

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 **8, 13, 20 and 27 November 2018** in which IEC joined the site inspection with SSEMC on **8 November 2018**. No non-compliance was noted. 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
30 October 2018 (last Reporting Period)	• Dust mitigation measures should be provided for breaking or excavating works to reduce dust impact. (West Portion)	• Mist cannon was provided for the dusty work as dust suppression measures.
8 November 2018	• Decolorized NRMM label was observed on the generator, the Contractor should replace the NRMM with a proper one in accordance with the Air Pollution Control Regulation. (USRT) • The Contractor was reminded to provide rubbish bin for the works area and maintain the site cleanliness.	• Proper NRMM label was displayed for the generator. • Not required for reminder.
13 November 2018	• General refuse cumulated on-site should be cleaned more frequently. (Behind Site Office) • NRMM label should be displayed properly for NRMM using on-site. (Mobile Crane at USRT) • It was reminded that water spraying for the haul road should be increased to reduce dust impact during dry season. (General) • It was reminded that NRMM label and NEL should be displayed properly for the air compressor during in operating. (USRT)	• General refuse cumulated on-site was cleaned. • NRMM label was displayed on NRMM using on-site. • Not required for reminder. • Not required for reminder.
20 November 2018	• Drip tray should be provided for all chemical storage on-site. (USRT) • NRMM label and NEL should be displayed properly for air compressor using on-site. (USRT) • Dust mitigation measures should be provided for breaking works to reduce dust impact. (East Portion)	• Oil drums without drip tray were removed. • Air compressor without NEL and NRMM label was removed from site. • Water spraying was provided for breaking works to reduce dust impact.

Date	Findings / Deficiencies	Follow-Up Status
	• Oil and water mixture cumulated inside the drip tray should be cleared and disposed as chemical waste. (Road L1)	• Oil and water mixture cumulated inside the drip tray was cleared.
27 November 2018	• Oil and water mixture cumulated inside the drip tray should be cleared and disposed as chemical waste. (Behind Site Office) • As a reminder, temporary drainage system should be provided to divert site runoff to proper de-silting facilities prior discharge. (East Portion)	• The oil and water mixture was removed from the drip tray and disposed as chemical waste. • Not required for reminder.

Contract 2

7.2.2 In the Reporting Period, joint site inspection for Contract 2 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **7, 14, 21 and 28 November 2018** in which IEC joined the site inspection with SSEMC on **21 November 2018**. No non-compliance was noted. 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
18 October 2018	• Accumulation of wastes was observed on the ground of portion 1. The Contractor was advised to dispose it regularly.	• Accumulation of wastes was disposed.
7 November 2018	• Mud trails were observed at site entrance of portion 1. The Contractor should clean the mud trails as soon as possible.3 • The Contractor was reminded to clean the dried leaf at the u-channel at slope of portion 1. • The Contractor was reminded to maintain the acoustic materials in the breaker of excavator properly at portion 2.	• Mud trails were cleaned at the site entrance of portion1. • Not required for reminder. • Not required for reminder.
14 November 2018	• Improper noise barrier was observed on the work area of portion 2. The Contractor should maintain the noise barriers throughout construction period. • The Contractor was reminded to dispose general waste on slope of portion 2 near site office.	• Noise barrier was maintained at portion 2. Last observation closed. • Not required for reminder.
21 November 2018	• Construction waste was observed on the ground of portion 1. The Contractor should dispose waste regularly. • Chemical containers were observed on the slope of portion 1. The Contractor was advised to place chemical containers inside drip tray. • The Contractor was reminded to spray water regularly on the exposed slope of portion 1.	• Construction waste was disposed regularly • Chemical containers were removed from site area. • Not required for reminder.

Date	Findings / Deficiencies	Follow-Up Status
28 November 2018	• Dusty material was observed on the slop exit/entrance of portion 1. The Contractor was advised to clean it as soon as possible. • The Contractor was reminded to maintain the noise barriers at portion 2 after disposal of waste.	• Dusty material on the slope exit/entrance area was cleaned. • Not required for reminder.

Contract 3

7.2.3 In the Reporting Period, joint site inspection for Contract 3 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **1, 9, 15, 22 and 29 November 2018** in which IEC joined the site inspection with SSEMC on **9 November 2018**. No non-compliance was noted. The findings / deficiencies of ***Contract 3*** that observed during the weekly site inspection are listed in ***Table 7-3***

Table 7-3 Site Observations of Contract 3

Date	Findings / Deficiencies	Follow-Up Status
1 November 2018	• The Contractor was reminded to display the mosquito breeding control measures implementation record at E8.	• Not required for reminder.
9 November 2018	• No environmental issue was observed.	• NA
15 November 2018	• The Contractor was reminded to provide water spraying regularly at E11 to reduce dust generation.	• Not required for reminder.
22 November 2018	• No environmental issue was observed.	• NA
29 November 2018	• The Contractor should clear the stagnant water at the pit of the concrete block to prevent mosquito breeding and fill the pit with sand to avoid accumulation of stagnant water.	• Stagnant water at the pits of the concrete blocks was removed and the pits were filled with sand.

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, three (3) environmental complaints were received for Contract NE/2016/05 regarding the noise, dust and light nuisance issues. Besides, no summons and prosecution under the EM&A Programme was lodged for the project. Investigation for the complaint was undertaken by the ET and presented in following sections.

Complaint received for Contract 2 (last Reporting Period)

8.1.2 A complaint raised by KTDC Member Ms. Ann So was received by CEDD on 24 October 2018 regarding the noise generated by the breaking work at E3. She added that the breaker mounted on the excavator was not wrapped by acoustic materials. As advised by the Contractor, the acoustic material wrapped on the breaker was worn-out on 24 October 2018 and replacement of new acoustic materials has been installed on the breaker immediately on 25 October 2018. As advised by Kwan On, the rock breaking works shall tentatively be completed to the road level in the middle of November 2018 and the mitigation measures will implemented continuously during slope construction work and the slope construction will be carried out within the working hours at Portion 2. The IR has been reviewed by IEC without further comment.

Complaint received for Contract 1

8.1.3 A public complaint was received on 12 November 2018 regarding noise nuisance problem raised by a resident living in Ching Tat House (正達樓). The SPRO immediately contacted the complainant and explained to him about the purpose and benefits of the tunnel to the residents nearby and the expected date of completion of the tunnel will be earlier than 2020. Moreover, the noise mitigation measures had implemented to reduce the noise level effectively and the work progress will be closely updated to nearby stakeholders to enhance communication. The complainant satisfied with the reply from SPRO and he agreed that the proposed noise monitoring in Ching Tat House was not needed. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no breaches of legislative requirement. The IR has been reviewed by IEC without further comment.

Complaint received for Contract 1

EPD has referred a complaint case to CEDD on 14 November 2018, which the complainant complained about strong light and construction noise were found at project site at 1:00 am, 14 November 2018 and affected the resident nearby. In response to complainant's concern, the Contractor immediately adjusted the angle and brightness of the lighting to minimize the nuisance to the resident nearby. Moreover, it was advised that due to sudden event, the acoustic door was opened during the course of work and the sound generated by machine moving inside the tunnel was heard by the resident nearby. CWSTVJV conducted tool-box talk to the frontline staff for compliance of CNP requirement for works during Restricted Hours. The IR was under review by the IEC and will be reported in next Reporting Month.

Complaint received for Contract 1

1823 has referred a case to CEDD on 14 November 2018, which the complainant requested to postpone the starting time of construction work at project site and also to solve the problem of construction noise and dust. Investigation for the complaint is underway by ET and investigation result will be reported in next Reporting Month.

8.1.4 The complaint log and Investigation Report for the above complaints are shown in ***Appendix M.***

8.1.5 The statistical summary table of environmental complaint, summons and prosecution 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 2017 – 31 October 2018	1	0	**28**	**Dust, Noise and light nuisance**
	2	0	**3**	**Noise**
	3	0	**1**	**Waste Management**
1 – 30 November 2018	1	**3**	**31**	**Dust, Noise and light nuisance**
	2	0	**3**	**Noise**
	3	0	**1**	**Waste Management**

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Contract no.	Environmental Summons Statistics		
		Frequency	Cumulative	Summons Nature
1 April 2017 – 31 October 2018	1	0	0	NA
	2	0	0	NA
	3	0	0	NA
1 – 30 November 2018	1	0	0	NA
	2	0	0	NA
	3	0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract no.	Environmental Prosecution Statistics		
		Frequency	Cumulative	Prosecution Nature
1 April 2017 – 31 October 2018	1	0	0	NA
	2	0	0	NA
	3	0	0	NA
1 – 30 November 2018	1	0	0	NA
	2	0	0	NA
	3	0	0	NA

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

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

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

Table 9-1 Environmental Mitigation Measures

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

9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

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

1. Implementation of Temporary Traffic Arrangement at On Sau Road;
2. Excavation of pad footing for North Tower of Pedestrian Connectivity System B (PSCB);
3. Construction of drainage pipe 750mm dia. near PCSB
4. Temporary sheeting piling works and excavation works for drainage pipeline from the existing manhole no. X4 to new manhole no. X3A;
5. Construction Road L1 from North Tower of PCSB to West Portal area;
6. Site formation works and load test for pre-bored H pile at South Tower of Pedestrian Connectivity System B;
7. Site formation works for Subway near North Tower of PSCB;
8. Backfilling works of trenches, blinding concrete for the construction of pile caps and strap beam at Public Transport Terminus;
9. Road Improvement Works at Po Lam Road
10. Sewerage and greywater works at Road L5 and drainage works at Road L1 between Road L5 and Box Culvert BC2;
11. Construction of Box Culvert BC1 and BC2;
12. Slope trimming works of Slope 15b;
13. Tunneling works at West Portal;

14. Site formation at East Portal;
15. Excavation works for Water Pumping Station area;
16. Backfilling works for Retaining Wall RWA14;
17. Excavation works for Water Reservoir;
18. Backfilling and compact works for areas of Portion B8 and KW Asphalt Plant;
19. Construction of Underground Stormwater Retention Tank (USRT)
20. Construction works of road L4, Pedestrian Connectivity System A, Noise Barrier, Retaining Walls RWA12 and RWA18;
21. Rock Slope Survey and Slope Stabilization at Portion B1 and B5;
22. Mitigation Works for Natural Terrain Catchment B5

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

1. Portion 1: Excavation and shoring works for E1-RS1 and E1 – PC2. Excavation and shoring for pile cap E1-PC6. Haul road
2. construction
3. Portion 2: Continue rock slope excavation for E3-ST1. Excavation and shoring works for E2-PC1. Existing lighting removal.
4. Portion 4: Opening of slip road and rectification of defects.
5. Portion 5: Excavation for BB1-NB-F4. Footing construction of the covered walkway footing F4.
6. Portion 6: Formwork erection and concreting of RW12.
7. Portion 8: Handover on August 2018
8. Portion 9: Handover to client

9.2.3 Construction activities for Contract 3 in the coming month are listed below:

1. Temporary Traffic Arrangement (TTA)
2. Erect hoarding and construct haul road
3. Excavate trial pit
4. Install monitoring
5. Utilities mapping on RIW3

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 **20th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **30 November 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, all noise measurement results were below the limit level. However, three noise complaints (which triggered Action Level) was received for Contract 1 of the Project. Investigation for the complaint is underway by ET and investigation result will be reported in next Reporting Month.

10.1.4 In the Reporting Period, three (3) environmental complaints were received for Contract NE/2016/01 with respect to the noise, dust and light nuisance issues. The RE has resolved the concerns with the complainant in due course and the investigation report is underway by ET.

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

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, 2 and 3 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 In coming dry season, 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 as far as practicable.

10.2.2 Since construction site is highly visible to the resident at nearby estates, the Contractors should fully implement the noise mitigation measures to reduce construction noise nuisance. Furthermore, noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.

10.2.3 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.

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

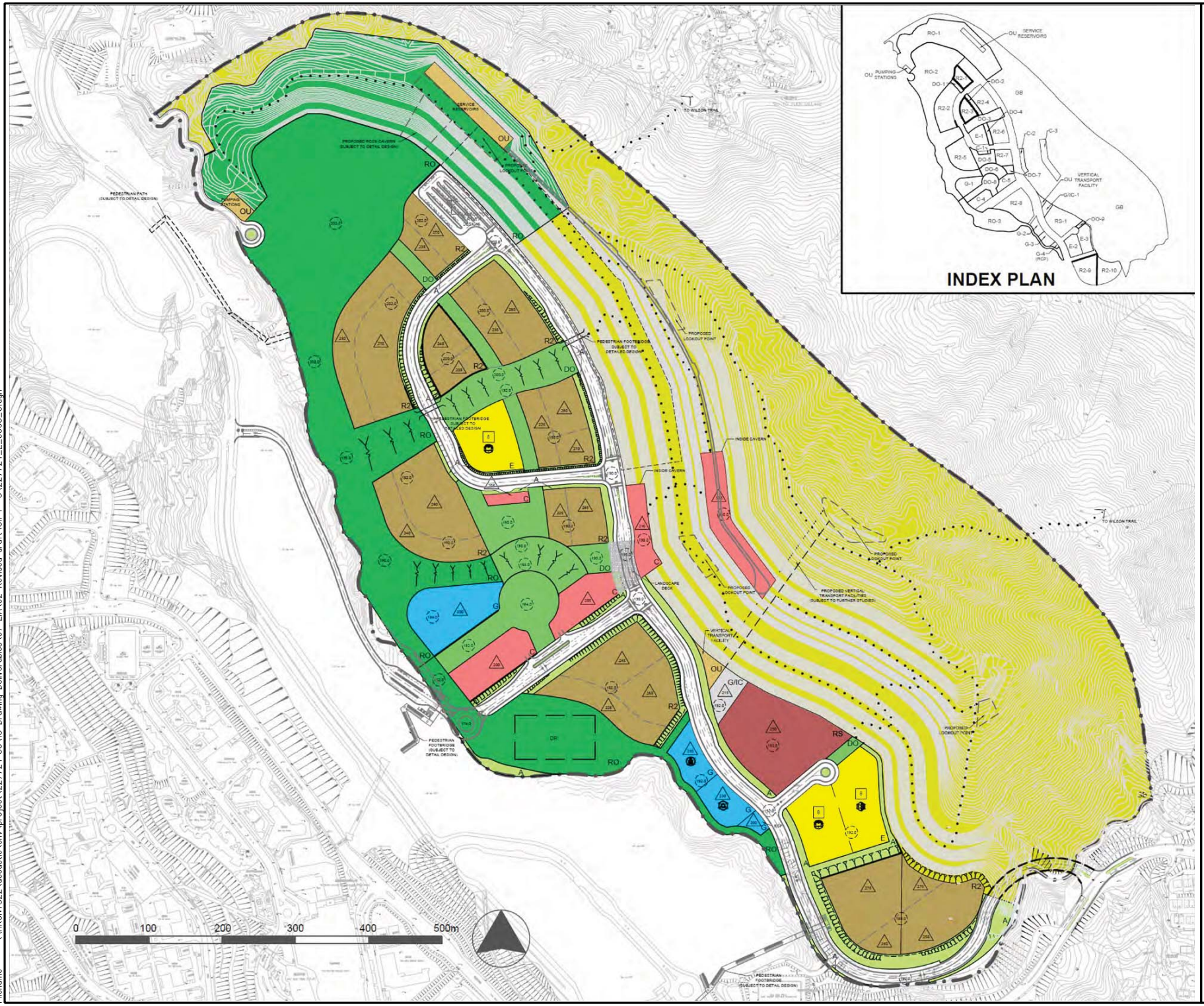
Appendix A

Layout plan of the Project

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	CEDD 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

S:\Drawing\CDEARQ\UNctrol_copy\CDEARQZ0003\CDEARQZ0003.dgn

A3 297MM X 420MM



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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Recommended Outline Development Plan

Drawing no.	Rev.
227724/E/0003	C

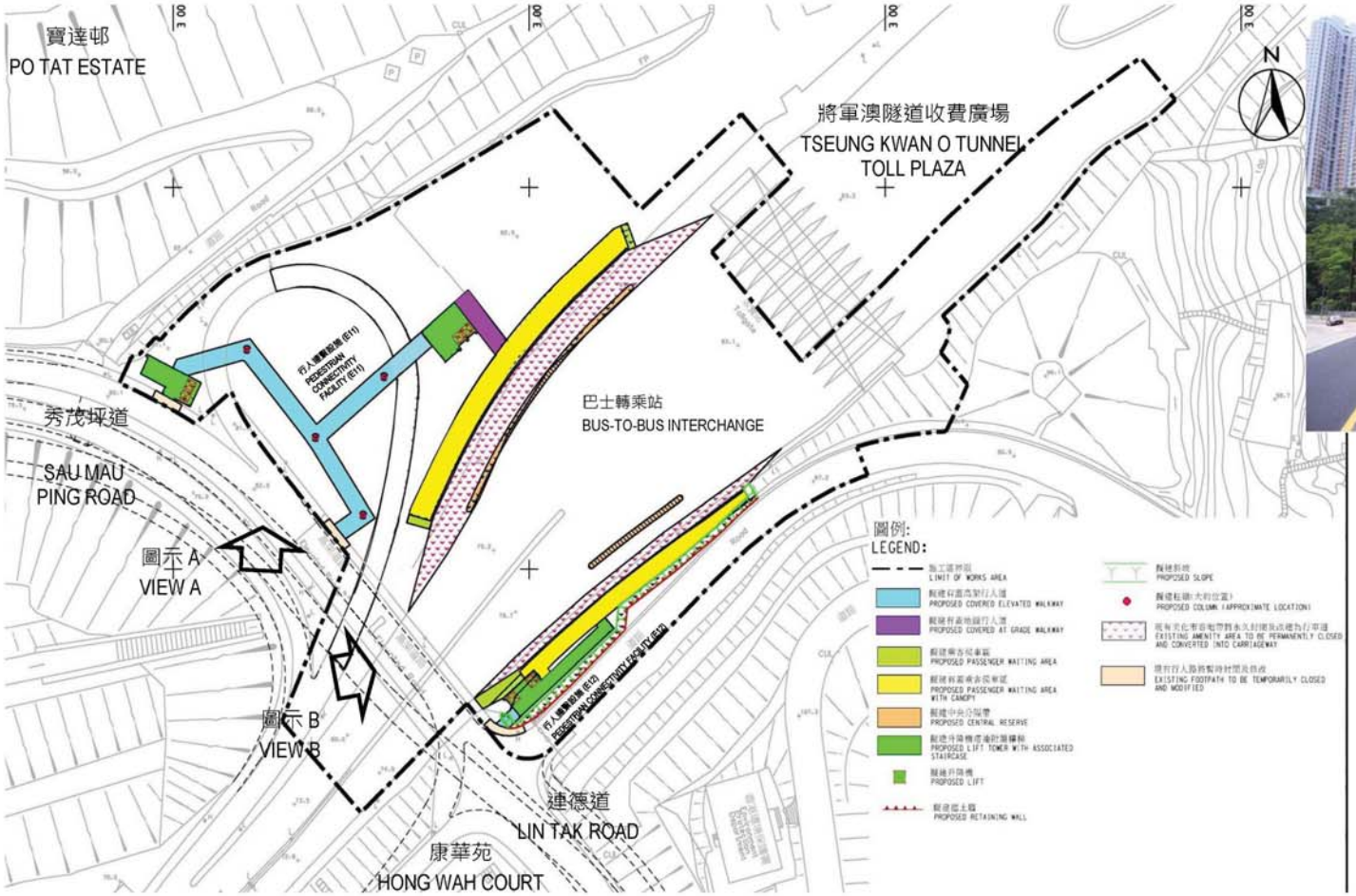
Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: AS SHOWN

Status: PRELIMINARY

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

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



圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(巴士轉乘站、E11及E12) - 平面圖及構思圖

Pedestrian Connectivity Facilities (Bus-to-Bus Interchange, E11 and E12) - Layout Plan and Artist's Impression

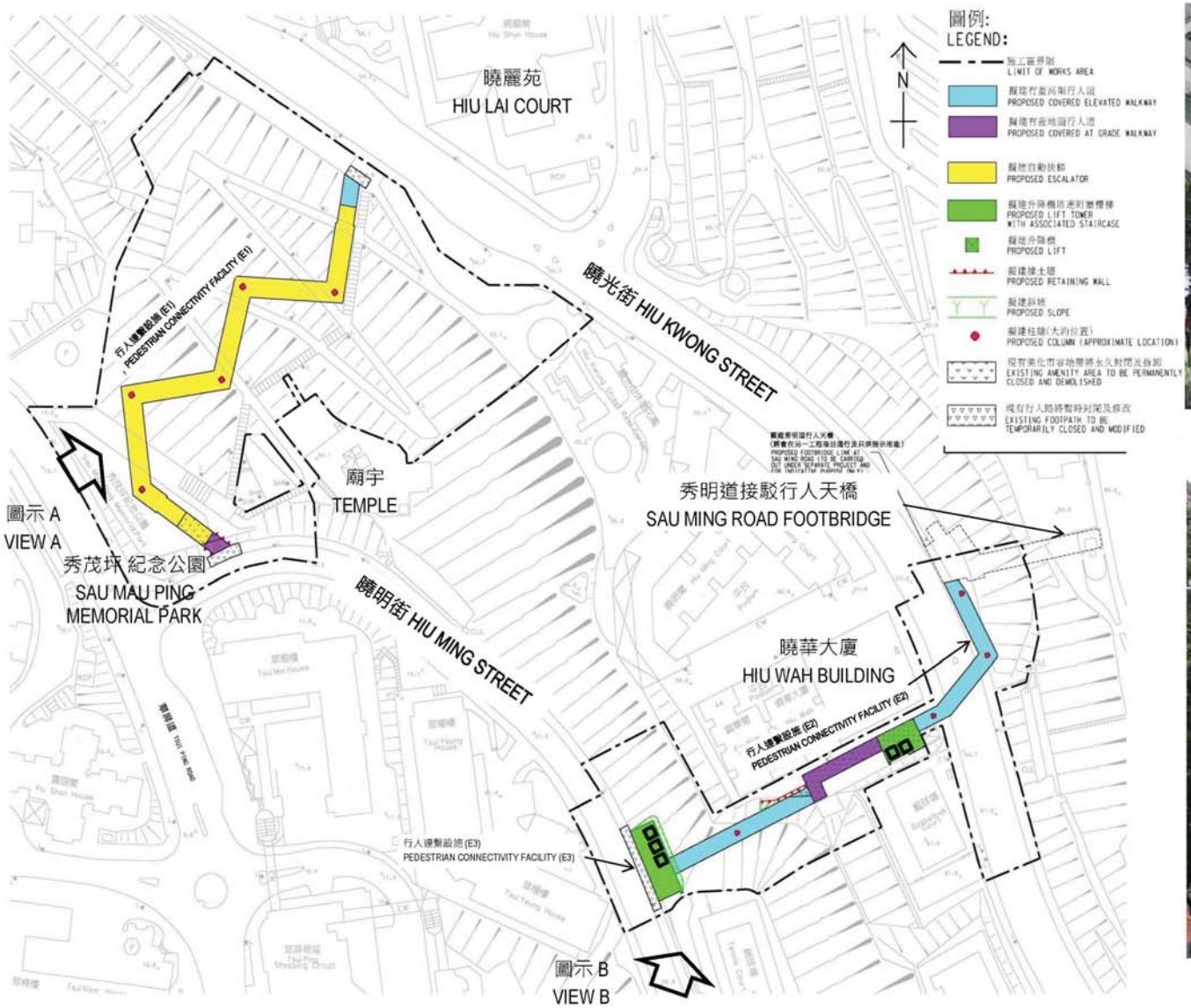
項目編號 Item No.
765CL

比例 Scale

圖則編號 Drawing No.
附件五 Appendix 5

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

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(E1、E2及E3) - 平面圖及構思圖

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

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

Project Management Initials: | Designer: | CCYT Checked: | AWYC Approved: HKT | ISO A1 594mm x 841mm

842000 N
819600 E
820400 N
820200 N
842600 E
842500 E
842100 E
842400 E

SLOPE NO. E8-1
SLOPE NO. E8-2
PEDESTRIAN CONNECTIVITY E8 SEE DRAWING NO. 60328348/R&P/3501
HIU YUK PATH
HIU MING STREET
HIU KWONG STREET
PARK STRIP
梁式芝書院 Leung Shek Chee College
曉育徑
足球場 Football Field
The Hong Kong Ching Chung Hau Po Woon Primary School
ROAD L4 (CONSTRUCTED UNDER SEPERATE CONTRACT)
EXISTING BOX CULVERT
PEDESTRIAN CONNECTIVITY SYSTEM A SEE DRAWING NO. 60328348/R&P/3101
PEDESTRIAN CONNECTIVITY SYSTEM A (CONSTRUCTED UNDER SEPERATE CONTRACT)
ROAD L1 (CONSTRUCTED UNDER SEPERATE CONTRACT)
PEDESTRIAN CONNECTIVITY SYSTEM B (CONSTRUCTED UNDER SEPERATE CONTRACT)
SLOPE NO. B1
SLOPE NO. B2
PEDESTRIAN CONNECTIVITY SYSTEM B SEE DRAWING NO. 60328348/R&P/3301
ON SAU ROAD
秀茂坪淨水配水庫 Sau Mau Ping Salt Water Service Reservoir

NOTES:

1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60328348/R&P/1001.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60328348/R&P/1001 TO 1008.

Plot File by: WUMT 2017/11/9
PATH P:\Projects\60328348\DRAWING\CONTRACT\R&P\1000\R&P_1008.dgn

AECOM

PROJECT 項目

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - ROAD IMPROVEMENT WORKS AND PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 2A

CLIENT 業主

土木工程拓展署
Civil Engineering and Development Department

CONSULTANT 工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS 分判工程顧問公司

ISSUE/REVISION 修訂

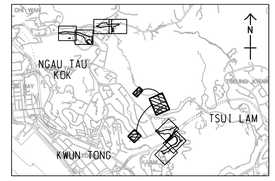
I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核核
			yc
A	NOV. 17	TENDER ADDENDUM NO. 1	AWYC
-	OCT. 17	TENDER DRAWING	AWYC

STATUS 階段

SCALE 比例
A1 1 : 500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖 A1 1 : 60000



PROJECT NO. 項目編號
60328348

CONTRACT NO. 合約編號
NE/2017/03

SHEET TITLE 圖紙名稱
GENERAL LAYOUT

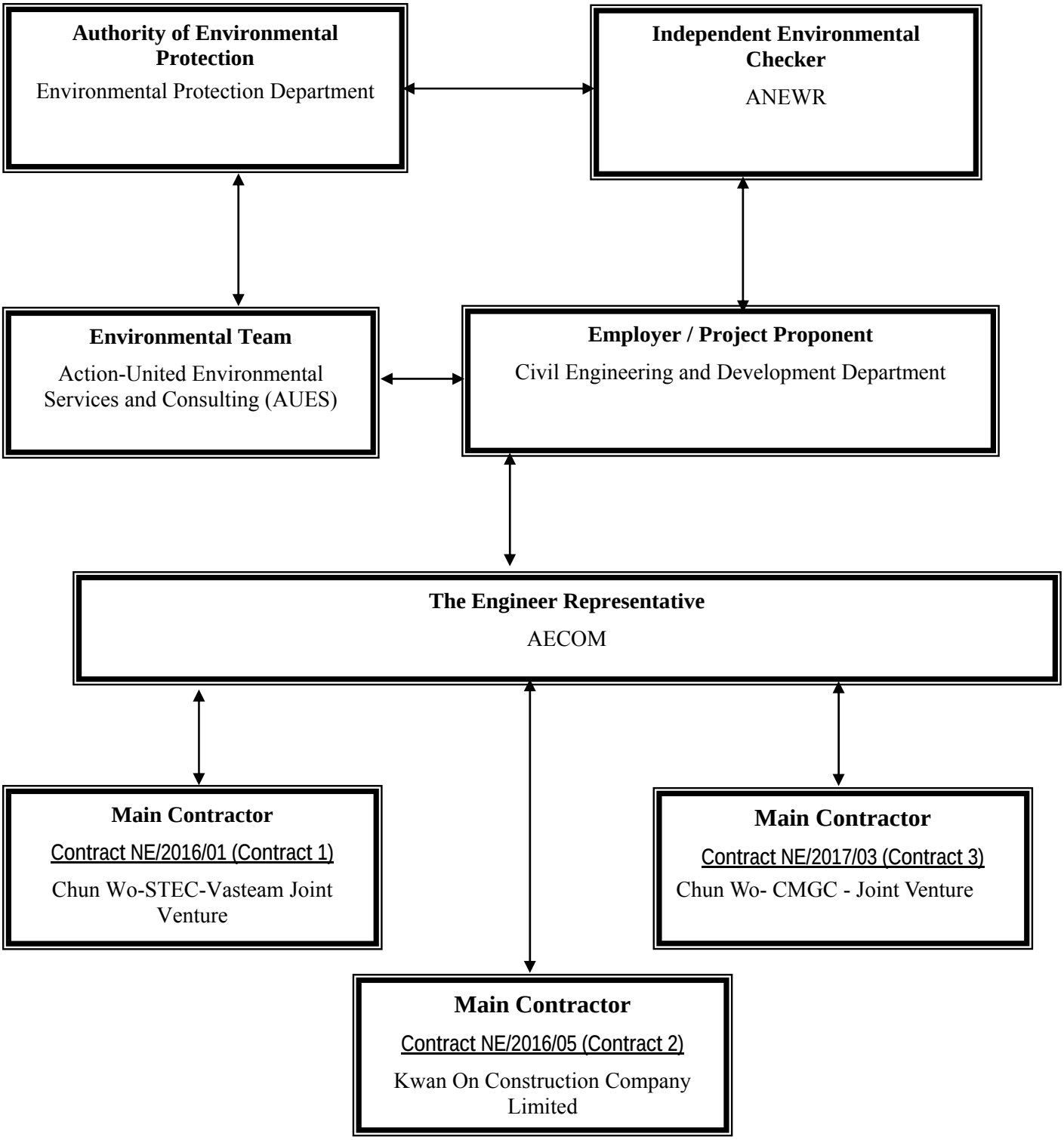
SHEET 8 OF 8

SHEET NUMBER 圖紙編號
60328348/R&P/1008A

Appendix B

Organization Chart

Project Organization Structure for



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

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

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

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

ANEWR (IEC) –ANewR Consulting Limited

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

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

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer	Stephen Li	2301 1383	2739 0076
AECOM	Chief Resident Engineer	Dennis Leung	2967 6608	2473 3221
AECOM	Senior Resident Engineer	Simon Leung	2967 6608	2473 3221
ANEWR	Independent Environmental Checker	Adi Lee	2618 2836	3007 8648
KOCCL	Project Director	Ambrose Kwong	2889 2675	2558 6900
KOCCL	Site Agent	Terry Yu	6146 6760	2558 6900
KOCCL	Safety and Environmental Manager	Joly C K Kwong	6111 5711	2558 6900
KOCCL	Environmental Officer	Lee Kwan Ho, Byron	6671 0383	2558 6900
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

KOCCL (Main Contractor) –Kwan On Construction Company Limited

ANEWR (IEC) –ANewR Consulting Limited

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

Contact Details of Key Personnel for Contract 3 –NE/2017/03

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer	Stephen Li	2301 1383	2739 0076
AECOM	Chief Resident Engineer	Dennis Leung	2967 6608	2473 3221
AECOM	Senior Resident Engineer	Simon Leung	2967 6608	2473 3221
ANEWR	Independent Environmental Checker	Adi Lee	2618 2836	3007 8648
CW – CMGC - JV	Operation Manager	Cheung Siu Yin	TBA	3965 9900
CW – CMGC - JV	Site Agent	Chris Lam	9801 9974	3965 9900
CW – CMGC - JV	Environmental Officer	Tiffany Tang	51170 9020	3965 9900
CW – CMGC - JV	Environmental Supervisor	Belle Mak	6094 1580	3965 9900
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.

CW – CMGC - JV (Main Contractor) – Chun Wo- CMGC - Joint Venture

ANEWR (IEC) –ANewR Consulting Limited

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

Appendix C

Construction Programme

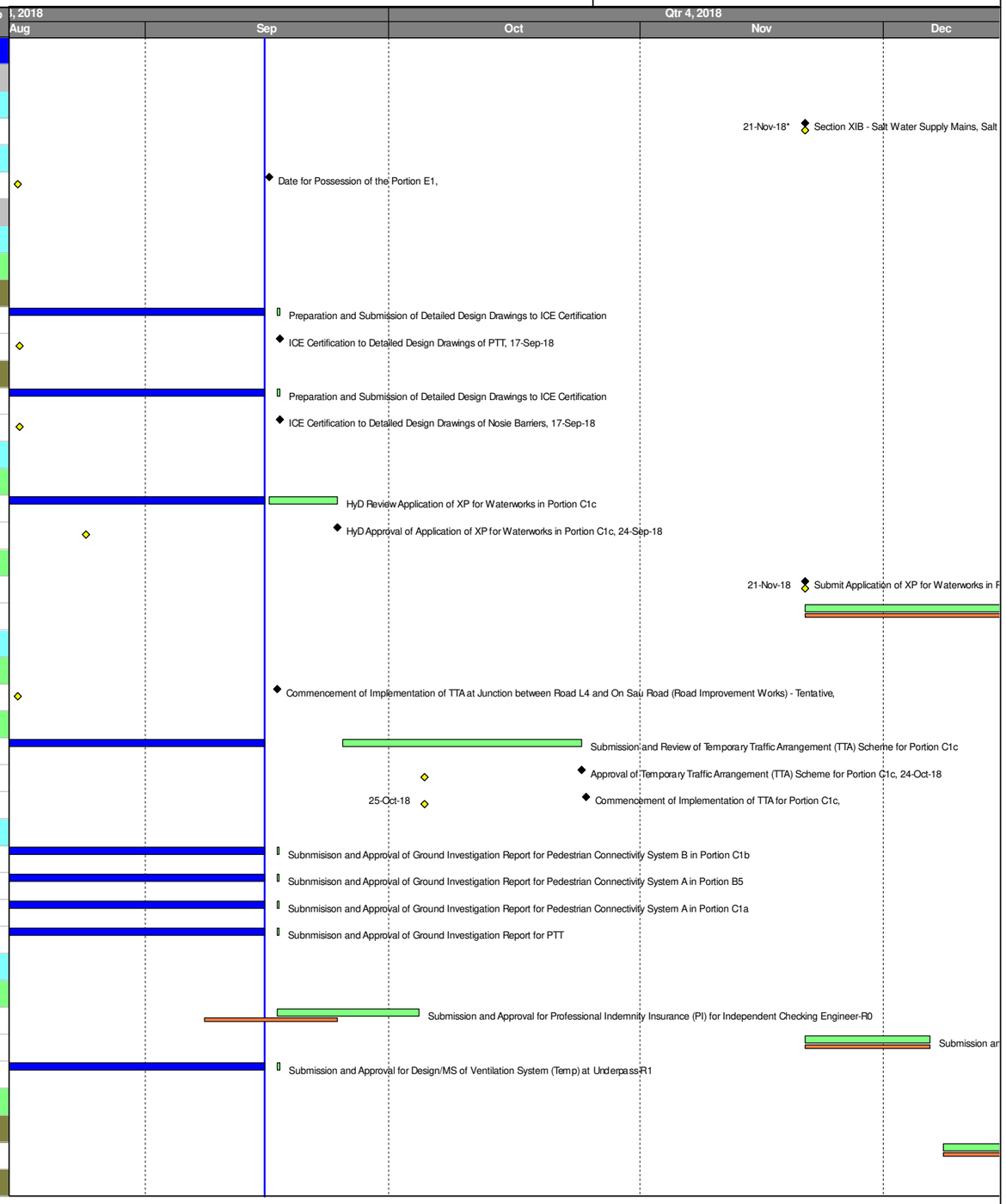
(a) Contract 1 (NE/2016/01)

(b) Contract 2 (NE/2016/05)

(c) Contract 3 (NTE/07/2016)

CONTRACT NO.NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE
3-MONTH ROLLING PROGRAMME

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ARQ - Works Programme Rev.1 - 3MRP (15 Sept 2018)								
Project Key Dates								
Subject to Excision								
AKE1010	Section XIB - Salt Water Supply Mains, Salt Water Pumping Station and Break Tank in B5 and D2	0	0	21-Nov-18		21-Nov-18*		0%
Possession Periods								
AKP1270	Date for Possession of the Portion E1	0	0	16-Aug-18		16-Sep-18*		0%
Preliminary								
Design								
Alternative Design (AD)								
PTT (Changing from Bored Piles to Socket H Piles and Pile Cap/Tie Beam Thickness)								
APD1040	Preparation and Submission of Detailed Design Drawings to ICE Certification	30	401	02-Nov-17	06-Dec-17	16-May-17 A	17-Sep-18	98%
APD1050	ICE Certification to Detailed Design Drawings of PTT	0	0		16-Aug-18		17-Sep-18	0%
Noise Barriers (Re-design of Footings) at Road L4								
APD2040	Preparation and Submission of Detailed Design Drawings to ICE Certification	30	480	02-Nov-17	06-Dec-17	06-Feb-17 A	17-Sep-18	98%
APD2050	ICE Certification to Detailed Design Drawings of Nosie Barriers	0	0		16-Aug-18		17-Sep-18	0%
Excavation Permit (XP)								
Portion C1c								
APF1170	HyD Review Application of XP for Waterworks in Portion C1c	180	295	16-Jan-18	14-Jul-18	04-Dec-17 A	24-Sep-18	95%
APF1180	HyD Approval of Application of XP for Waterworks in Portion C1c	0	0		24-Aug-18		24-Sep-18	0%
Portion E1 (Water Mains as referred to Dwg. No.60328348/SF&I/5722)								
APF1190	Submit Application of XP for Waterworks in Portion E1 (CHU455 to CHU494.446)	0	0	21-Nov-18		21-Nov-18		0%
APF1200	HyD Review Application of XP for Waterworks in Portion E1 (CHU455 to CHU494.446)	180	180	21-Nov-18	19-May-19	21-Nov-18	19-May-19	0%
Temporary Traffic Arrangement and Control								
On Sau Road (Junction between Road L4 and On Sau Road)								
APT2030	Commencement of Implementation of TTA at Junction between Road L4 and On Sau Road (Road Improvement Works) - Tentative	0	0	16-Aug-18		17-Sep-18		0%
Portion C1c								
APT4010	Submission and Review of Temporary Traffic Arrangement (TTA) Scheme for Portion C1c	75	325	03-Apr-18	16-Jun-18	04-Dec-17 A	24-Oct-18	60%
APT4020	Approval of Temporary Traffic Arrangement (TTA) Scheme for Portion C1c	0	0		05-Oct-18		24-Oct-18	0%
APT4030	Commencement of Implementation of TTA for Portion C1c	0	0	05-Oct-18		25-Oct-18		0%
Ground Investigation								
APG1110	Subnmisison and Approval of Ground Investigation Report for Pedestrian Connectivity System B in Portion C1b	21	405	21-Aug-17	13-Sep-17	10-May-17 A	17-Sep-18	98%
APG1120	Subnmisison and Approval of Ground Investigation Report for Pedestrian Connectivity System A in Portion B5	21	441	21-Aug-17	13-Sep-17	22-Mar-17 A	17-Sep-18	98%
APG1130	Subnmisison and Approval of Ground Investigation Report for Pedestrian Connectivity System A in Portion C1a	21	292	18-Sep-17	13-Oct-17	21-Sep-17 A	17-Sep-18	98%
APG1140	Subnmisison and Approval of Ground Investigation Report for PTT	21	417	21-Aug-17	13-Sep-17	24-Apr-17 A	17-Sep-18	98%
ARQ - MEP Submission								
General Submission								
A1030	Submission and Approval for Professional Indemnity Insurance (PI) for Independent Checking Engineer-R0	14	14	08-Sep-18	24-Sep-18	17-Sep-18*	04-Oct-18	0%
A1031	Submission and Approval for Professional Indemnity Insurance (PI) for Independent Checking Engineer-R1	14	14	21-Nov-18	06-Dec-18	21-Nov-18*	06-Dec-18	0%
A1100	Submission and Approval for Design/MS of Ventilation System (Temp) at Underpass-R1	34	274	16-Oct-17	24-Nov-17	16-Oct-17 A	17-Sep-18	98%
Fresh and Salt Water Pumping Station								
Mechanical								
A1330	Submission and Approval for Material of High Head Pump Set at Salt Water Pumping Station	14	14	08-Dec-18	24-Dec-18	08-Dec-18*	24-Dec-18	0%
Civil Requirement								



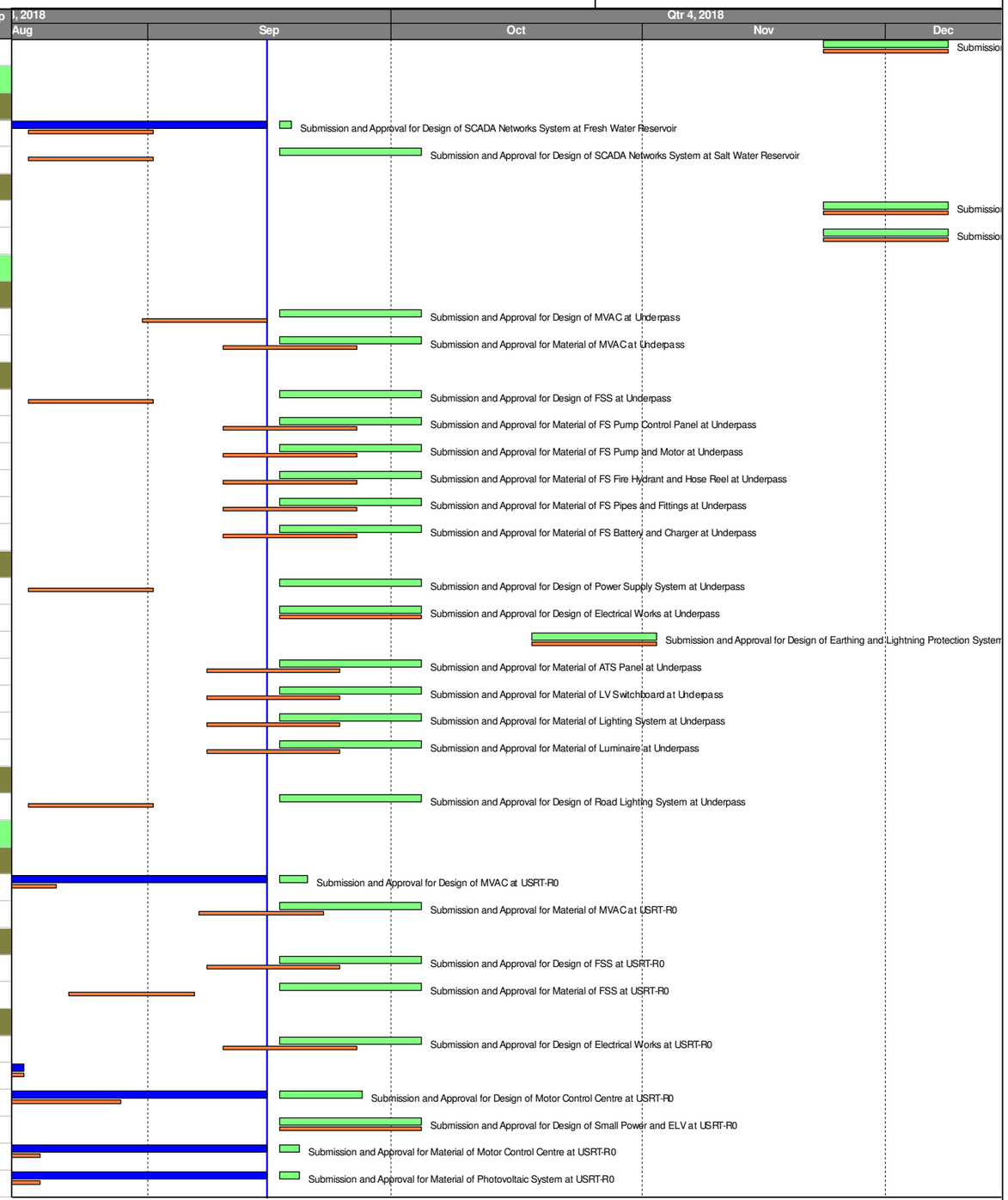
Planned Bar (WP) ◆ Milestone
Actual Bar
Forecast Bar
◇ Planned Milestone (WP)

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
A3391	Submission and Approval for Drawing (Civil Requirement) of Fresh Water Pumping Station	14	14	23-Nov-18	08-Dec-18	23-Nov-18*	08-Dec-18	0%
Fresh and Salt Water Service Reservoir								
Instrumentation								
A2070	Submission and Approval for Design of SCADA Networks System at Fresh Water Reservoir	14	52	17-Aug-18	01-Sep-18	20-Jul-18 A	18-Sep-18	85.71%
A2080	Submission and Approval for Design of SCADA Networks System at Salt Water Reservoir	14	14	17-Aug-18	01-Sep-18	17-Sep-18*	04-Oct-18	0%
Civil Requirement								
A3393	Submission and Approval for Drawing (Civil Requirement) of Fresh Water Pumping Station	14	14	23-Nov-18	08-Dec-18	23-Nov-18*	08-Dec-18	0%
A3394	Submission and Approval for Drawing (Civil Requirement) of Salt Water Pumping Station	14	14	23-Nov-18	08-Dec-18	23-Nov-18*	08-Dec-18	0%
Underpass								
MVAC								
A2230	Submission and Approval for Design of MVAC at Underpass	14	14	31-Aug-18	15-Sep-18	17-Sep-18*	04-Oct-18	0%
A2240	Submission and Approval for Material of MVAC at Underpass	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
Fire Services								
A2380	Submission and Approval for Design of FSS at Underpass	14	14	17-Aug-18	01-Sep-18	17-Sep-18*	04-Oct-18	0%
A2390	Submission and Approval for Material of FS Pump Control Panel at Underpass	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
A2400	Submission and Approval for Material of FS Pump and Motor at Underpass	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
A2410	Submission and Approval for Material of FS Fire Hydrant and Hose Reel at Underpass	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
A2420	Submission and Approval for Material of FS Pipes and Fittings at Underpass	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
A2430	Submission and Approval for Material of FS Battery and Charger at Underpass	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
Electrical								
A2260	Submission and Approval for Design of Power Supply System at Underpass	14	14	17-Aug-18	01-Sep-18	17-Sep-18*	04-Oct-18	0%
A2270	Submission and Approval for Design of Electrical Works at Underpass	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
A2280	Submission and Approval for Design of Earthing and Lightning Protection System at Underpass	14	14	18-Oct-18	02-Nov-18	18-Oct-18*	02-Nov-18	0%
A2340	Submission and Approval for Material of ATS Panel at Underpass	14	14	08-Sep-18	24-Sep-18	17-Sep-18*	04-Oct-18	0%
A2350	Submission and Approval for Material of LV Switchboard at Underpass	14	14	08-Sep-18	24-Sep-18	17-Sep-18*	04-Oct-18	0%
A2360	Submission and Approval for Material of Lighting System at Underpass	14	14	08-Sep-18	24-Sep-18	17-Sep-18*	04-Oct-18	0%
A2370	Submission and Approval for Material of Luminaire at Underpass	14	14	08-Sep-18	24-Sep-18	17-Sep-18*	04-Oct-18	0%
Road Lighting								
A2250	Submission and Approval for Design of Road Lighting System at Underpass	14	14	17-Aug-18	01-Sep-18	17-Sep-18*	04-Oct-18	0%
Underground Stormwater Retention Tank								
MVAC								
A2460	Submission and Approval for Design of MVAC at USRT-R0	14	41	04-Aug-18	20-Aug-18	04-Aug-18 A	20-Sep-18	71.43%
A2470	Submission and Approval for Material of MVAC at USRT-R0	14	14	07-Sep-18	22-Sep-18	17-Sep-18*	04-Oct-18	0%
Fire Services								
A2600	Submission and Approval for Design of FSS at USRT-R0	14	14	08-Sep-18	24-Sep-18	17-Sep-18*	04-Oct-18	0%
A2610	Submission and Approval for Material of FSS at USRT-R0	14	14	22-Aug-18	06-Sep-18	17-Sep-18*	04-Oct-18	0%
Electrical								
A2490	Submission and Approval for Design of Electrical Works at USRT-R0	14	14	10-Sep-18	26-Sep-18	17-Sep-18*	04-Oct-18	0%
A2505	Submission and Approval for Design of Capacitor and Capacitor Panel at USRT-R0	14	14	01-Aug-18	16-Aug-18	01-Aug-18 A	16-Aug-18 A	100%
A2510	Submission and Approval for Design of Motor Control Centre at USRT-R0	14	38	13-Aug-18	28-Aug-18	13-Aug-18 A	27-Sep-18	40%
A2550	Submission and Approval for Design of Small Power and ELV at USRT-R0	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
A2560	Submission and Approval for Material of Motor Control Centre at USRT-R0	14	41	03-Aug-18	18-Aug-18	03-Aug-18 A	19-Sep-18	78.57%
A2590	Submission and Approval for Material of Photovoltaic System at USRT-R0	14	41	03-Aug-18	18-Aug-18	03-Aug-18 A	19-Sep-18	78.57%



Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
A2595	Submission and Approval for Material of Capacitor and Capacitor Panel at USRT-R0	14	41	08-Aug-18	23-Aug-18	08-Aug-18 A	24-Sep-18	50%
Pedestrian Connectivity System A								
MVAC								
A2640	Submission and Approval for Material of MVAC at SYS-A-R0	14	35	10-Aug-18	25-Aug-18	10-Aug-18 A	19-Sep-18	80%
Fire Services								
A2680	Submission and Approval for Design of FSS at SYS-A-R0	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
Building Services - Plumbing and Drainage								
A3401	Submission and Approval for Design of Lift Sump Pit (Submersible) at SYS-A-R0	14	17	18-Oct-18	02-Nov-18	06-Sep-18 A	27-Sep-18	40%
A3402	Submission and Approval for Material of Lift Sump Pit (Submersible) at SYS-A-R0	14	14	22-Oct-18	06-Nov-18	22-Oct-18*	06-Nov-18	0%
Electrical								
A2650	Submission and Approval for Design of Power Supply System at SYS-A-R0	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
A2660	Submission and Approval for Design of Electrical Works at SYS-A-R0	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
A2670	Submission and Approval for Design of Earthing and Lightning Protection System at SYS-A-R0	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
Civil Requirement								
A3403	Submission and Approval for Drawing (Civil Requirement) of SYS-A	14	14	21-Sep-18	09-Oct-18	21-Sep-18*	09-Oct-18	0%
Pedestrian Connectivity System B								
MVAC								
A2910	Submission and Approval for Design of MVAC at SYS-B	14	56	21-Jul-18	06-Aug-18	21-Jul-18 A	24-Sep-18	50%
A2920	Submission and Approval for Material of MVAC at SYS-B	14	58	16-Jul-18	31-Jul-18	16-Jul-18 A	20-Sep-18	75%
Fire Services								
A2960	Submission and Approval for Design of FSS at SYS-B	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
Building Services - Plumbing and Drainage								
A3404	Submission and Approval for Design of Lift Sump Pit (Submersible) at SYS-B	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
A3405	Submission and Approval for Material of Lift Sump Pit (Submersible) at SYS-B	14	14	21-Sep-18	09-Oct-18	21-Sep-18*	09-Oct-18	0%
Electrical								
A2930	Submission and Approval for Design of Power Supply System at SYS-B	14	14	20-Aug-18	04-Sep-18	17-Sep-18*	04-Oct-18	0%
A2940	Submission and Approval for Design of Electrical Works at SYS-B	14	14	17-Sep-18	04-Oct-18	17-Sep-18*	04-Oct-18	0%
Civil Requirement								
A3406	Submission and Approval for Drawing (Civil Requirement) of SYS-B	14	14	21-Sep-18	09-Oct-18	21-Sep-18*	09-Oct-18	0%
Common for All Areas								
MVAC								
A2970	Submission and Approval for Material of MVAC Thermal Insulation at Common Areas	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
A2980	Submission and Approval for Material of MVAC LMCP at Common Areas	14	41	10-Aug-18	25-Aug-18	10-Aug-18 A	27-Sep-18	35.71%
Fire Services								
A3070	Submission and Approval for Material of Manual Fire Alarm System at Common Areas	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
A3080	Submission and Approval for Material of Manual Fire Alarm Control at Common Areas	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
A3090	Submission and Approval for Material of Battery and Charger at Common Areas	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
Plumbing and Drainage Services								
A3120	Submission and Approval for Material of Tanks,Pipes,Valves and Fittings for Fresh Water and Cleaning Water Supply System	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
A3130	Submission and Approval for Material of Tanks,Pipes,Valves and Fittings for Flushing Water Supply System	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
A3140	Submission and Approval for Material of Pipes,Valves and Fittings for Drainage System	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
A3150	Submission and Approval for Material of LMCP for Drainage Pump System	14	14	06-Sep-18	21-Sep-18	17-Sep-18*	04-Oct-18	0%
Electrical								

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
A3060R1	Submission and Approval for Material of Switches,Power Socket Outlets and Ass. Lighting and Power at Common Areas (R1)	14	49	23-Jul-18	07-Aug-18	23-Jul-18 A	18-Sep-18	90%
A3210	Submission and Approval for Material of CCTV at Common Areas	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
A3220	Submission and Approval for Material of Intercom System at Common Areas	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
A3230	Submission and Approval for Material of Telephone System at Common Areas	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
A3240	Submission and Approval for Material of Security System at Common Areas	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
A3250	Submission and Approval for Material of Radio System at Common Areas	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
A3260	Submission and Approval for Material of ELV Cable at Common Areas	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
A3270	Submission and Approval for Material of UPS at Fresh and Salt Water Pumping Station	14	41	07-Aug-18	22-Aug-18	07-Aug-18 A	22-Sep-18	60%
Instrumentation								
A3160	Submission and Approval for Material of Station Control and Instrumentation Panel at Common Areas	14	40	08-Aug-18	23-Aug-18	08-Aug-18 A	22-Sep-18	60%
A3180R1	Submission and Approval for Process Instruments at Common Areas (R1)	14	58	16-Jul-18	31-Jul-18	16-Jul-18 A	20-Sep-18	75%
A3190	Submission and Approval for Upgrading Works to Existing SCADA at SW S SW P/S, CKL SW P/S and CSW Office at Common Areas	14	40	08-Aug-18	23-Aug-18	08-Aug-18 A	22-Sep-18	60%
Mechnical Requirement								
A3340	Material Submission of Bolts, Nuts, Washers, Thread Rods and Baskets	14	38	08-Aug-18	23-Aug-18	08-Aug-18 A	20-Sep-18	75%
A3350	Material Submission of Chemical Anchora Bolts	14	40	08-Aug-18	23-Aug-18	08-Aug-18 A	22-Sep-18	60%
Interface with Other Contractors								
AI1050A003	Demolish and Remove KW Batching Plant in Portion B15	30	159	21-Aug-17	23-Sep-17	08-Mar-18 A	18-Sep-18	95%
Construction and Installation								
Underpass Tunnel								
West Portal								
ACU1050A015	B1 - Soil Nail Drilling and Grouting at West Portal (E1 to E12)	14	45	03-Aug-18	16-Aug-18	03-Aug-18 A	16-Sep-18	92.86%
ACU1050A016	B1 - Soil Nail Drilling and Grouting at West Portal (E13 to E24)	14	14	17-Aug-18	30-Aug-18	17-Sep-18	30-Sep-18	0%
ACU1050A017	B1 - Soil Nail Drilling and Grouting at West Portal (D1 to D12)	14	14	31-Aug-18	13-Sep-18	01-Oct-18	14-Oct-18	0%
ACU1050A018	B1 - Soil Nail Drilling and Grouting at West Portal (D13 to D27)	14	14	14-Sep-18	27-Sep-18	15-Oct-18	28-Oct-18	0%
ACU1050A019	B1 - Soil Nail Drilling and Grouting at West Portal (C1 to C15)	14	14	28-Sep-18	11-Oct-18	29-Oct-18	11-Nov-18	0%
ACU1050A020	B1 - Soil Nail Drilling and Grouting at West Portal (C16 to C29)	14	14	12-Oct-18	25-Oct-18	12-Nov-18	25-Nov-18	0%
ACU1050A021	B1 - Soil Nail Drilling and Grouting at West Portal (B1 to B15)	14	14	26-Oct-18	08-Nov-18	26-Nov-18	09-Dec-18	0%
ACU1050A022	B1 - Soil Nail Drilling and Grouting at West Portal (B16 to B33)	14	14	09-Nov-18	22-Nov-18	10-Dec-18	23-Dec-18	0%
ACU1060A002	B1 - Formation from +176mPD to Tunnel Bottom Bench	75	107	02-Aug-18	15-Oct-18	02-Aug-18 A	16-Nov-18	17.33%
ACU1090	B1 - Construct Permanent West Portal Structure	60	60	19-Dec-18	16-Feb-19	13-Nov-18*	11-Jan-19	0%
East Portal								
ACU2040A012a03	D1 - Trial Soil Nail Installation incl. Pull Out Test at Slope A1 East Portal (TN3)	12	223	20-Nov-17	01-Dec-17	14-Apr-18 A	22-Nov-18	50%
ACU2040A012a3	D1 - Works suspended due to Unsolved Issue of Tree Felling at East Portal Area (Tentative Period)	62	62	16-Aug-18	16-Oct-18	16-Sep-18	16-Nov-18	0%
ACU2050A002	D1 - Demolition of Existing No-fine Concrete from +185 to +190mPD	1	1	18-Oct-18	18-Oct-18	17-Nov-18*	17-Nov-18	0%
ACU2050A006a02	D1 - Soil Nail Drilling and Grouting at East Portal (H1 to H11) at Slope A1	12	12	18-Oct-18	31-Oct-18	17-Nov-18	30-Nov-18	0%
ACU2050A014	D1 - Stage 2 - Forming Temporary Haul Road +185mPD to +181mPD	6	6	17-Oct-18	22-Oct-18	17-Nov-18*	22-Nov-18	0%
ACU2050A017	D1 - Stage 3 - Froming Temporary Haul Road +183mPD to +176mPD (RWA1c)	24	24	17-Oct-18	09-Nov-18	17-Nov-18*	10-Dec-18	0%
ACU2050A019	D1 - Stage 4 - Froming Temporary Haul Road +183mPD to +176mPD (RWA1c)	14	14	10-Nov-18	23-Nov-18	11-Dec-18	24-Dec-18	0%
Underpass Tunnel								
Tunnel Construction								
Tunnel Construction from West Portal								
CH2430 to CH2435 (Support Type B: 5m) 1m/ cycle for Pilot								
ACU3010A284	B - (CH2430) - Drilling and Installation of 6m Long Spiles at every 3m Overlapping	1	5	19-Jun-18	19-Jun-18	25-Aug-18 A	29-Aug-18 A	100%

Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACU3010A285	B - (CH2430 to CH2431) - Pilot Excavation	1	2	20-Jun-18	20-Jun-18	30-Aug-18 A	31-Aug-18 A	100%
ACU3010A286	B - (CH2430 to CH2431 - Shotcrete and Mesh Installation	2	2	16-Jul-18	17-Jul-18	01-Sep-18 A	02-Sep-18 A	100%
ACU3010A287	B - (CH2430 to CH2431) - Lattice Girder Installation and Shotcrete	1	1	18-Jul-18	18-Jul-18	03-Sep-18 A	03-Sep-18 A	100%
ACU3010A288	B - (CH2430 to CH2431) - Shotcrete and Mesh Installation	1	1	19-Jul-18	19-Jul-18	04-Sep-18 A	04-Sep-18 A	100%
ACU3010A289	B - (CH2431 to CH2432) - Pilot Excavation	1	1	20-Jul-18	20-Jul-18	05-Sep-18 A	05-Sep-18 A	100%
ACU3010A290	B - (CH2431 to CH2432) - Shotcrete and Mesh Installation	2	1	21-Jul-18	22-Jul-18	06-Sep-18 A	06-Sep-18 A	100%
ACU3010A291	B - (CH2431 to CH2432) - Lattice Girder Installation and Shotcrete	1	1	23-Jul-18	23-Jul-18	07-Sep-18 A	07-Sep-18 A	100%
ACU3010A292	B - (CH2431 to CH2432) - Shotcrete and Mesh Installation	1	1	24-Jul-18	24-Jul-18	08-Sep-18 A	08-Sep-18 A	100%
ACU3010A293	B - (CH2432 to CH2433) - Pilot Excavation	1	1	25-Jul-18	25-Jul-18	09-Sep-18 A	09-Sep-18 A	100%
ACU3010A294	B - (CH2432 to CH2433) - Shotcrete and Mesh Installation	1	1	26-Jul-18	26-Jul-18	10-Sep-18 A	10-Sep-18 A	100%
ACU3010A295	B - (CH2432 to CH2433) - Lattice Girder Installation and Shotcrete	1	1	27-Jul-18	27-Jul-18	11-Sep-18 A	11-Sep-18 A	100%
ACU3010A296	B - (CH2432 to CH2433) - Shotcrete and Mesh Installation	1	1	28-Jul-18	28-Jul-18	12-Sep-18 A	12-Sep-18 A	100%
ACU3010A297	B - (CH2433) - Drilling and Installation of 6m Spiles at every 3m Overlapping	3	3	29-Jul-18	31-Jul-18	13-Sep-18 A	15-Sep-18 A	100%
ACU3010A298	B - (CH2433 to CH2434) - Pilot Excavation	1	1	01-Aug-18	01-Aug-18	16-Sep-18	16-Sep-18	0%
ACU3010A299	B - (CH2433 to CH2434) - Shotcrete and Mesh Installation	1	1	02-Aug-18	02-Aug-18	17-Sep-18	17-Sep-18	0%
ACU3010A300	B - (CH2433 to CH2434) - Lattice Girder Installation and Shotcrete	1	1	16-Jul-18	16-Jul-18	18-Sep-18	18-Sep-18	0%
ACU3010A301	B - (CH2433 to CH2434) - Shotcrete and Mesh Installation	1	1	05-Jul-18	05-Jul-18	19-Sep-18	19-Sep-18	0%
ACU3010A302	B - (CH2434 to CH2435) - Pilot Excavation	1	1	18-Jul-18	18-Jul-18	20-Sep-18	20-Sep-18	0%
ACU3010A303	B - (CH2434 to CH2435) - Shotcrete and Mesh Installation	2	2	19-Jul-18	20-Jul-18	21-Sep-18	22-Sep-18	0%
ACU3010A304	B - (CH2434 to CH2435) - Lattice Girder Installation and Shotcrete	1	1	21-Jul-18	21-Jul-18	23-Sep-18	23-Sep-18	0%
ACU3010A305	B - (CH2434 to CH2435) - Shotcrete and Mesh Installation	1	1	22-Jul-18	22-Jul-18	24-Sep-18	24-Sep-18	0%
	CH2435 to CH2499 (Support Type C: 64m) 1m/ cycle for Pilot							
ACU3010A306	C - (CH2435 to CH2436) - Pilot Excavation	1	1	18-Jul-18	18-Jul-18	25-Sep-18*	25-Sep-18	0%
ACU3010A307	C - (CH2435 to CH2436) - Shotcrete and Mesh Installation	1	1	19-Jul-18	19-Jul-18	26-Sep-18	26-Sep-18	0%
ACU3010A308	C - (CH2435 to CH2436) - Lattice Girder Installation and Shotcrete	1	1	20-Jul-18	20-Jul-18	27-Sep-18	27-Sep-18	0%
ACU3010A309	C - (CH2436) - Drilling and Installation of 12m GFRP at every 3m Overlapping	2	2	21-Jul-18	22-Jul-18	28-Sep-18	29-Sep-18	0%
ACU3010A310	C - (CH2436 to CH2437) - Pilot Excavation	1	1	23-Jul-18	23-Jul-18	30-Sep-18	30-Sep-18	0%
ACU3010A311	C - (CH2436 to CH2437) - Shotcrete and Mesh Installation	1	1	24-Jul-18	24-Jul-18	01-Oct-18	01-Oct-18	0%
ACU3010A312	C - (CH2436 to CH2437) - Lattice Girder Installation and Shotcrete	1	1	25-Jul-18	25-Jul-18	02-Oct-18	02-Oct-18	0%
ACU3010A313	C - (CH2437 to CH2438) - Pilot Excavation	1	1	26-Jul-18	26-Jul-18	03-Oct-18	03-Oct-18	0%
ACU3010A314	C - (CH2437.5) - Drilling and Installation of 12m Spiles at every 4.5m Overlapping	2	2	27-Jul-18	28-Jul-18	04-Oct-18	05-Oct-18	0%
ACU3010A316	C - (CH2437 to CH2438) - Shotcrete and Mesh Installation	1	1	29-Jul-18	29-Jul-18	06-Oct-18	06-Oct-18	0%
ACU3010A317	C - (CH2437 to CH2438) - Lattice Girder Installation and Shotcrete	1	1	30-Jul-18	30-Jul-18	07-Oct-18	07-Oct-18	0%
ACU3010A321	C - (CH2438 to CH2439) - Pilot Excavation	1	1	31-Jul-18	31-Jul-18	08-Oct-18	08-Oct-18	0%
ACU3010A322	C - (CH2438 to CH2439) - Shotcrete and Mesh Installation	1	1	01-Aug-18	01-Aug-18	09-Oct-18	09-Oct-18	0%
ACU3010A323	C - (CH2438 to CH2439) - Lattice Girder Installation and Shotcrete	1	1	02-Aug-18	02-Aug-18	10-Oct-18	10-Oct-18	0%
ACU3010A325	C - (CH2439) - Drilling and Installation of 12m GFRP at every 3m Overlapping	2	2	03-Aug-18	04-Aug-18	11-Oct-18	12-Oct-18	0%
ACU3010A326	C - (CH2448 to CH2449) - Pilot Excavation	1	1	05-Aug-18	05-Aug-18	13-Oct-18	13-Oct-18	0%
ACU3010A327	C - (CH2448 to CH2449) - Shotcrete and Mesh Installation	1	1	06-Aug-18	06-Aug-18	14-Oct-18	14-Oct-18	0%
ACU3010A328	C - (CH2448 to CH2449) - Lattice Girder Installation and Shotcrete	1	1	07-Aug-18	07-Aug-18	15-Oct-18	15-Oct-18	0%
ACU3010A330	C - (CH2449 to CH2450) - Pilot Excavation	1	1	08-Aug-18	08-Aug-18	16-Oct-18	16-Oct-18	0%
ACU3010A331	C - (CH2449 to CH2450) - Shotcrete and Mesh Installation	1	1	09-Aug-18	09-Aug-18	17-Oct-18	17-Oct-18	0%
ACU3010A332	C - (CH2449 to CH2450) - Lattice Girder Installation and Shotcrete	1	1	10-Aug-18	10-Aug-18	18-Oct-18	18-Oct-18	0%

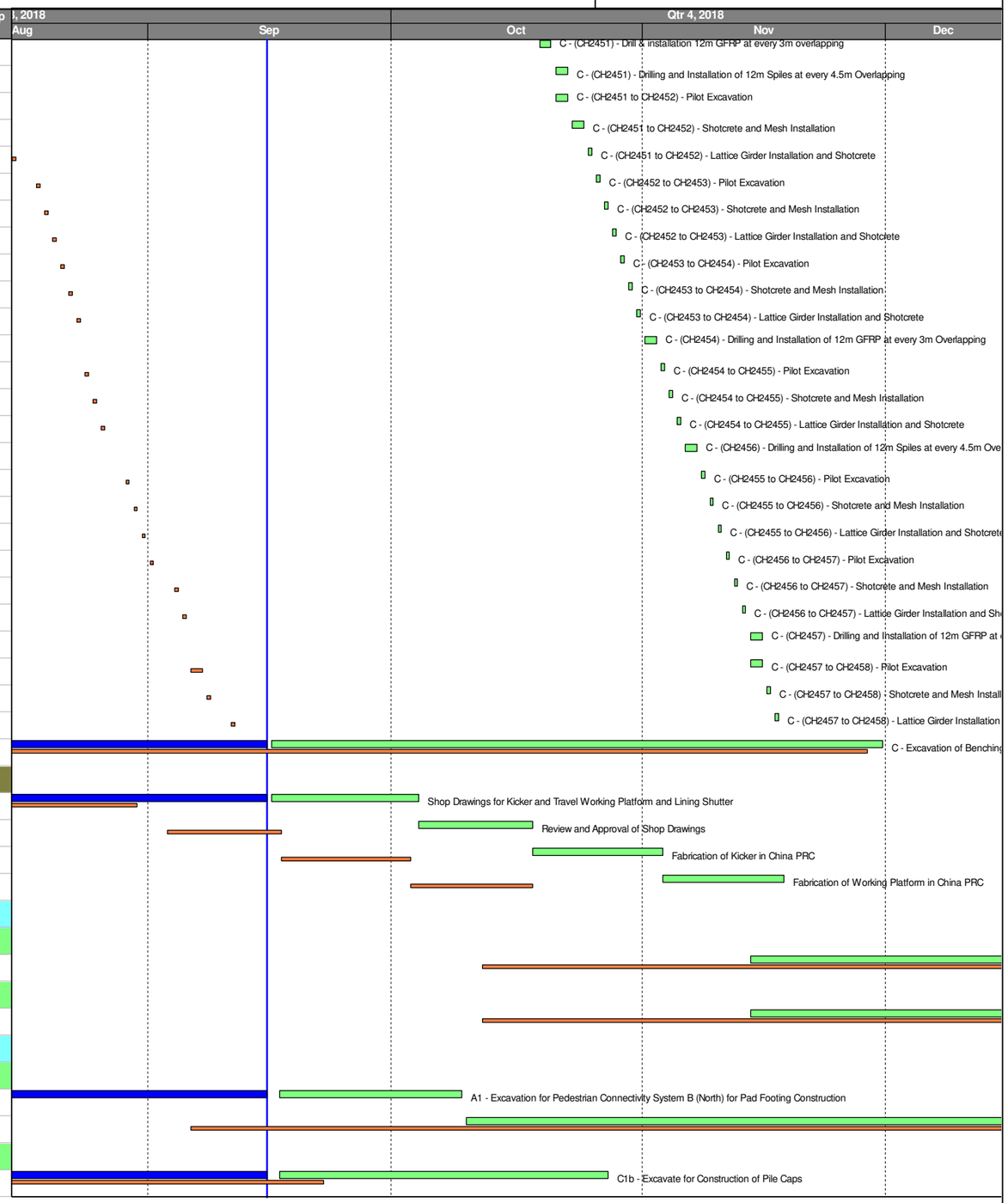
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACU3010A3321	C - (CH2451) - Drill & installation 12m GFRP at every 3m overlapping	0	2			19-Oct-18	20-Oct-18	0%
ACU3010A334	C - (CH2451) - Drilling and Installation of 12m Spiles at every 4.5m Overlapping	2	2	12-Aug-18	13-Aug-18	21-Oct-18	22-Oct-18	0%
ACU3010A3341	C - (CH2451 to CH2452) - Pilot Excavation	0	2			21-Oct-18	22-Oct-18	0%
ACU3010A335	C - (CH2451 to CH2452) - Shotcrete and Mesh Installation	1	2	14-Aug-18	14-Aug-18	23-Oct-18	24-Oct-18	0%
ACU3010A336	C - (CH2451 to CH2452) - Lattice Girder Installation and Shotcrete	1	1	15-Aug-18	15-Aug-18	25-Oct-18	25-Oct-18	0%
ACU3010A348	C - (CH2452 to CH2453) - Pilot Excavation	1	1	18-Aug-18	18-Aug-18	26-Oct-18	26-Oct-18	0%
ACU3010A358	C - (CH2452 to CH2453) - Shotcrete and Mesh Installation	1	1	19-Aug-18	19-Aug-18	27-Oct-18	27-Oct-18	0%
ACU3010A368	C - (CH2452 to CH2453) - Lattice Girder Installation and Shotcrete	1	1	20-Aug-18	20-Aug-18	28-Oct-18	28-Oct-18	0%
ACU3010A388	C - (CH2453 to CH2454) - Pilot Excavation	1	1	21-Aug-18	21-Aug-18	29-Oct-18	29-Oct-18	0%
ACU3010A398	C - (CH2453 to CH2454) - Shotcrete and Mesh Installation	1	1	22-Aug-18	22-Aug-18	30-Oct-18	30-Oct-18	0%
ACU3010A408	C - (CH2453 to CH2454) - Lattice Girder Installation and Shotcrete	1	1	23-Aug-18	23-Aug-18	31-Oct-18	31-Oct-18	0%
ACU3010A4081	C - (CH2454) - Drilling and Installation of 12m GFRP at every 3m Overlapping	0	2			01-Nov-18	02-Nov-18	0%
ACU3010A428	C - (CH2454 to CH2455) - Pilot Excavation	1	1	24-Aug-18	24-Aug-18	03-Nov-18	03-Nov-18	0%
ACU3010A438	C - (CH2454 to CH2455) - Shotcrete and Mesh Installation	1	1	25-Aug-18	25-Aug-18	04-Nov-18	04-Nov-18	0%
ACU3010A448	C - (CH2454 to CH2455) - Lattice Girder Installation and Shotcrete	1	1	26-Aug-18	26-Aug-18	05-Nov-18	05-Nov-18	0%
ACU3010A4481	C - (CH2456) - Drilling and Installation of 12m Spiles at every 4.5m Overlapping	0	2			06-Nov-18	07-Nov-18	0%
ACU3010A478	C - (CH2455 to CH2456) - Pilot Excavation	1	1	29-Aug-18	29-Aug-18	08-Nov-18	08-Nov-18	0%
ACU3010A488	C - (CH2455 to CH2456) - Shotcrete and Mesh Installation	1	1	30-Aug-18	30-Aug-18	09-Nov-18	09-Nov-18	0%
ACU3010A498	C - (CH2455 to CH2456) - Lattice Girder Installation and Shotcrete	1	1	31-Aug-18	31-Aug-18	10-Nov-18	10-Nov-18	0%
ACU3010A518	C - (CH2456 to CH2457) - Pilot Excavation	1	1	01-Sep-18	01-Sep-18	11-Nov-18	11-Nov-18	0%
ACU3010A528	C - (CH2456 to CH2457) - Shotcrete and Mesh Installation	1	1	04-Sep-18	04-Sep-18	12-Nov-18	12-Nov-18	0%
ACU3010A538	C - (CH2456 to CH2457) - Lattice Girder Installation and Shotcrete	1	1	05-Sep-18	05-Sep-18	13-Nov-18	13-Nov-18	0%
ACU3010A5381	C - (CH2457) - Drilling and Installation of 12m GFRP at every 3m Overlapping	0	2			14-Nov-18	15-Nov-18	0%
ACU3010A558	C - (CH2457 to CH2458) - Pilot Excavation	2	2	06-Sep-18	07-Sep-18	14-Nov-18	15-Nov-18	0%
ACU3010A568	C - (CH2457 to CH2458) - Shotcrete and Mesh Installation	1	1	08-Sep-18	08-Sep-18	16-Nov-18	16-Nov-18	0%
ACU3010A578	C - (CH2457 to CH2458) - Lattice Girder Installation and Shotcrete	1	1	11-Sep-18	11-Sep-18	17-Nov-18	17-Nov-18	0%
ACU3010A580	C - Excavation of Benching for CH2394 to CH2520	180	182	02-Jun-18	28-Nov-18	02-Jun-18 A	30-Nov-18	58%
Tunnel Lining								
ACU3140A001	Shop Drawings for Kicker and Travel Working Platform and Lining Shutter	46	80	16-Jul-18	30-Aug-18	16-Jul-18 A	04-Oct-18	60%
ACU3140A002	Review and Approval of Shop Drawings	14	14	03-Sep-18	17-Sep-18	04-Oct-18	18-Oct-18	0%
ACU3140A003	Fabrication of Kicker in China PRC	16	16	17-Sep-18	03-Oct-18	18-Oct-18	03-Nov-18	0%
ACU3140A3	Fabrication of Working Platform in China PRC	15	15	03-Oct-18	18-Oct-18	03-Nov-18	18-Nov-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	12-Oct-18	22-Mar-19	14-Nov-18	27-Apr-19	0%
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)	72	72	12-Oct-18	08-Jan-19	14-Nov-18	12-Feb-19	0%
Pedestrian Connectivity System B								
Lift Tower (North) and Subway within Portion A1								
ACS2010A001	A1 - Excavation for Pedestrian Connectivity System B (North) for Pad Footing Construction	45	150	21-Aug-17	13-Oct-17	11-Apr-18 A	09-Oct-18	60%
ACS2030	A1 - Construction of Footings and Wall Structure upwards Level (+176mPD)	120	120	06-Sep-18	30-Jan-19	10-Oct-18	06-Mar-19	0%
Lift Tower (South) and Subway within Portion C1b								
ACS2120B001	C1b - Excavate for Construction of Pile Caps	45	72	02-Aug-18	22-Sep-18	02-Aug-18 A	27-Oct-18	26.67%



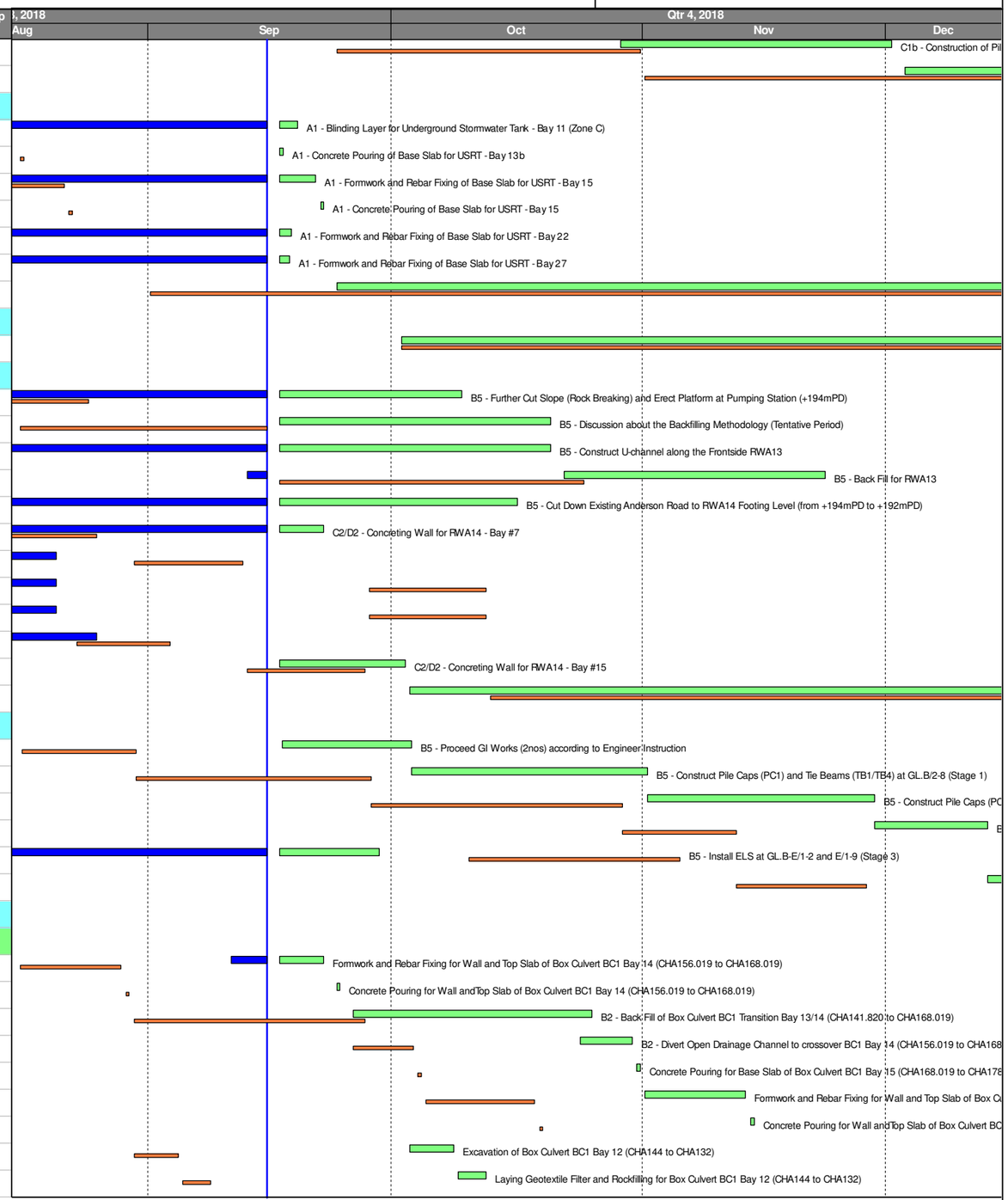
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACS2130	C1b - Construction of Pile Caps and Wall Structure upwards Level (+176mPD)	30	30	24-Sep-18	31-Oct-18	29-Oct-18	01-Dec-18	0%
ACS2140	C1b - Construction of Sub-Structure of Lift Tower and Subway (+176 to +183.2mPD)	90	90	01-Nov-18	20-Feb-19	03-Dec-18	23-Mar-19	0%
Underground Stormwater Retention Tank (Portion A1)								
ACN1010A020	A1 - Blinding Layer for Underground Stormwater Tank - Bay 11 (Zone C)	4	64	16-Jul-18	19-Jul-18	06-Jul-18 A	19-Sep-18	40%
ACN1020A026b	A1 - Concrete Pouring of Base Slab for USRT - Bay 13b	1	1	16-Aug-18	16-Aug-18	17-Sep-18	17-Sep-18	0%
ACN1020A029	A1 - Formwork and Rebar Fixing of Base Slab for USRT - Bay 15	10	37	10-Aug-18	21-Aug-18	10-Aug-18 A	21-Sep-18	50%
ACN1020A030	A1 - Concrete Pouring of Base Slab for USRT - Bay 15	1	1	22-Aug-18	22-Aug-18	22-Sep-18	22-Sep-18	0%
ACN1020A043	A1 - Formwork and Rebar Fixing of Base Slab for USRT - Bay 22	10	96	16-Jun-18	28-Jun-18	28-May-18 A	18-Sep-18	80%
ACN1020A053	A1 - Formwork and Rebar Fixing of Base Slab for USRT - Bay 27	14	187	12-Apr-18	27-Apr-18	30-Jan-18 A	18-Sep-18	90%
ACN1020A055	A1 - Concrete Wall Structure of Sub-structure	120	120	01-Sep-18	25-Jan-19	24-Sep-18*	20-Feb-19	0%
Artificial Flood Attenuation Lake/ Underground Water Tretment Plant (Portion B4)								
ACF1010	B4 - Construct Channels along Slope Toe incl. Manholes, Catchpits and Associated Drainage Pipes Connecting to Lake	90	90	02-Oct-18	18-Jan-19	02-Oct-18*	18-Jan-19	0%
Water Pumping Stations (Portion B5)								
ACW1050	B5 - Further Cut Slope (Rock Breaking) and Erect Platform at Pumping Station (+194mPD)	180	343	15-Jan-18	24-Aug-18	14-Aug-17 A	09-Oct-18	90%
ACW1080A18	B5 - Discussion about the Backfilling Methodology (Tentative Period)	27	27	16-Aug-18	15-Sep-18	17-Sep-18	20-Oct-18	0%
ACW1080A19	B5 - Construct U-channel along the Frontside RWA13	24	81	16-Jul-18	11-Aug-18	16-Jul-18 A	20-Oct-18	0%
ACW1090	B5 - Back Fill for RWA13	30	59	17-Sep-18	24-Oct-18	13-Sep-18 A	23-Nov-18	5%
ACW1110	B5 - Cut Down Existing Anderson Road to RWA14 Footing Level (from +194mPD to +192mPD)	30	232	13-Feb-18	22-Mar-18	04-Jan-18 A	16-Oct-18	21%
ACW1120A021	C2/D2 - Concreting Wall for RWA14 - Bay #7	12	66	13-Aug-18	25-Aug-18	09-Jul-18 A	22-Sep-18	50%
ACW1120A030	C2/D2 - Concreting Wall for RWA14 - Bay #10	12	12	30-Aug-18	12-Sep-18	07-Aug-18 A	20-Aug-18 A	100%
ACW1120A036	C2/D2 - Concreting Wall for RWA14 - Bay #12	12	12	28-Sep-18	12-Oct-18	07-Aug-18 A	20-Aug-18 A	100%
ACW1120A042	C2/D2 - Concreting Wall for RWA14 - Bay #14	12	12	28-Sep-18	12-Oct-18	07-Aug-18 A	20-Aug-18 A	100%
ACW1120A044	C2/D2 - Concreting Base Slab for RWA14 - Bay #15	10	10	23-Aug-18	03-Sep-18	15-Aug-18 A	25-Aug-18 A	100%
ACW1120A045	C2/D2 - Concreting Wall for RWA14 - Bay #15	12	12	13-Sep-18	27-Sep-18	17-Sep-18	02-Oct-18	0%
ACW1150	C2/D2 - Back Fill for RWA14	90	90	13-Oct-18	30-Jan-19	03-Oct-18	19-Jan-19	0%
Public Transportation Terminus (Portion B5)								
ACP1040A004	B5 - Proceed GI Works (2nos) according to Engineer Instruction	12	12	16-Aug-18	30-Aug-18	17-Sep-18	03-Oct-18	0%
ACP1045A002	B5 - Construct Pile Caps (PC1) and Tie Beams (TB1/TB4) at GL.B/2-8 (Stage 1)	24	24	30-Aug-18	28-Sep-18	03-Oct-18	01-Nov-18	0%
ACP1046A002	B5 - Construct Pile Caps (PC1) and Tie Beams (TB1/TB4) at GL.C/2-8 (Stage 2)	24	24	28-Sep-18	29-Oct-18	01-Nov-18	29-Nov-18	0%
ACP1046A003	B5 - Backfill Pile Caps (PC1) and Tie Beams at GL.B/2-8 & GL.C/2-8 (Stage 1 & 2)	12	12	29-Oct-18	12-Nov-18	29-Nov-18	13-Dec-18	0%
ACP1047A001	B5 - Install ELS at GL.B-E/1-2 and E/1-9 (Stage 3)	21	82	10-Oct-18	05-Nov-18	25-Jun-18 A	29-Sep-18	50%
ACP1047A002	B5 - Excavation for Construciton of Pile Caps (PC2/PC3) and Tie Beams at GL.B-E/1-2 and E/1-9 (Stage 3)	14	14	12-Nov-18	28-Nov-18	13-Dec-18	02-Jan-19	0%
Internal Road Construction								
Single Cell Box Culvert BC1 incl. Transition Section CH141.820 to CH168.019								
ACL10050A015	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 14 (CHA156.019 to CHA168.019)	11	11	16-Aug-18	28-Aug-18	11-Sep-18 A	22-Sep-18	45.45%
ACL10050A017	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 14 (CHA156.019 to CHA168.019)	1	1	29-Aug-18	29-Aug-18	24-Sep-18	24-Sep-18	0%
ACL10050A018	B2 - Back Fill of Box Culvert BC1 Transition Bay 13/14 (CHA141.820 to CHA168.019)	24	24	30-Aug-18	27-Sep-18	26-Sep-18	25-Oct-18	0%
ACL10050A019	B2 - Divert Open Drainage Channel to crossover BC1 Bay 14 (CHA156.019 to CHA168.019)	6	6	26-Sep-18	03-Oct-18	24-Oct-18	30-Oct-18	0%
ACL10050A024	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 15 (CHA168.019 to CHA178.392)	1	1	04-Oct-18	04-Oct-18	31-Oct-18	31-Oct-18	0%
ACL10050A025	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 15 (CHA168.019 to CHA178.392)	11	11	05-Oct-18	18-Oct-18	01-Nov-18	13-Nov-18	0%
ACL10050A026	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 15 (CHA168.019 to CHA178.392)	1	1	19-Oct-18	19-Oct-18	14-Nov-18	14-Nov-18	0%
ACL10050A151	Excavation of Box Culvert BC1 Bay 12 (CHA144 to CHA132)	5	5	30-Aug-18	04-Sep-18	03-Oct-18	08-Oct-18	0%
ACL10050A152	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 12 (CHA144 to CHA132)	4	4	05-Sep-18	08-Sep-18	09-Oct-18*	12-Oct-18	0%



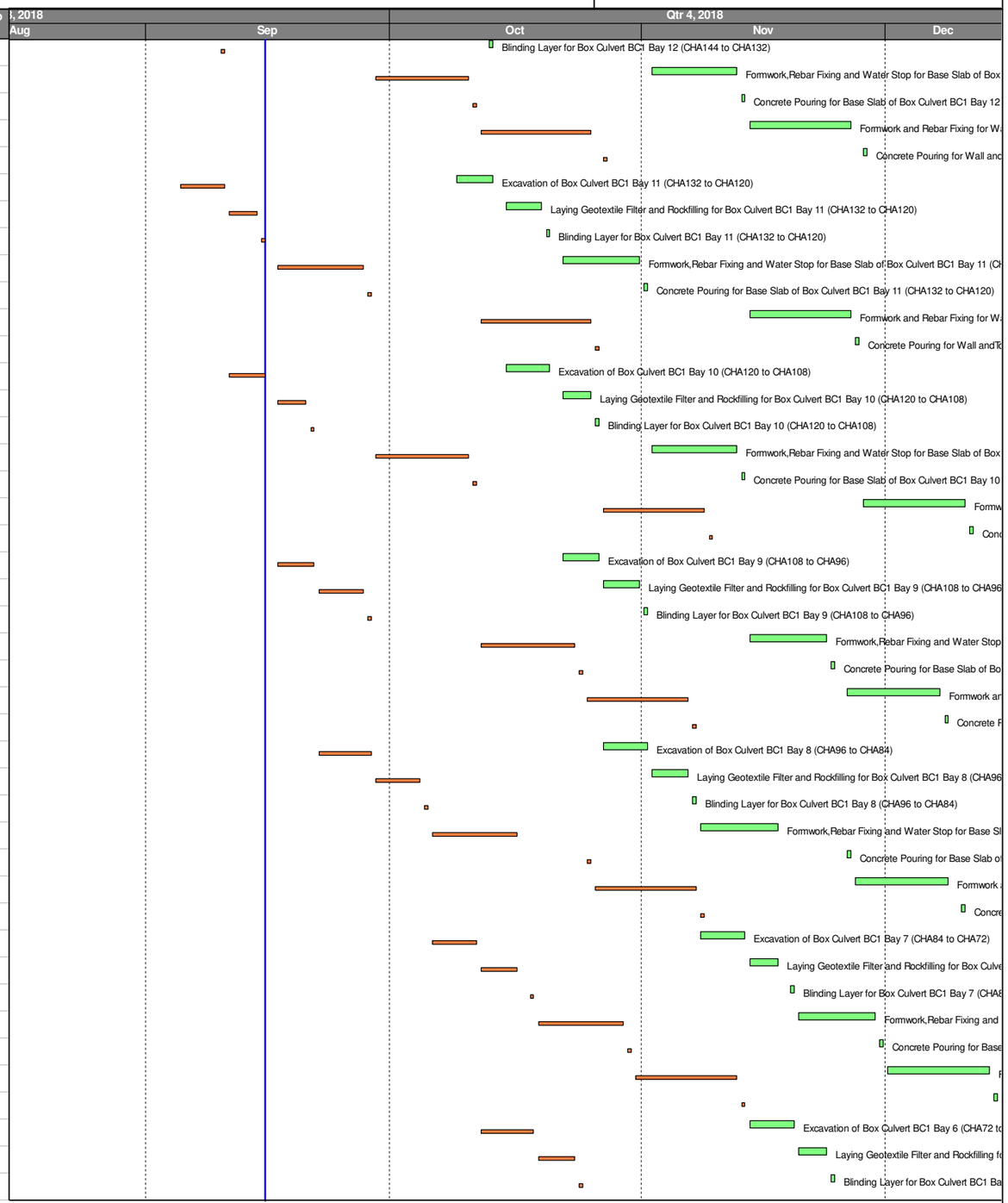
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

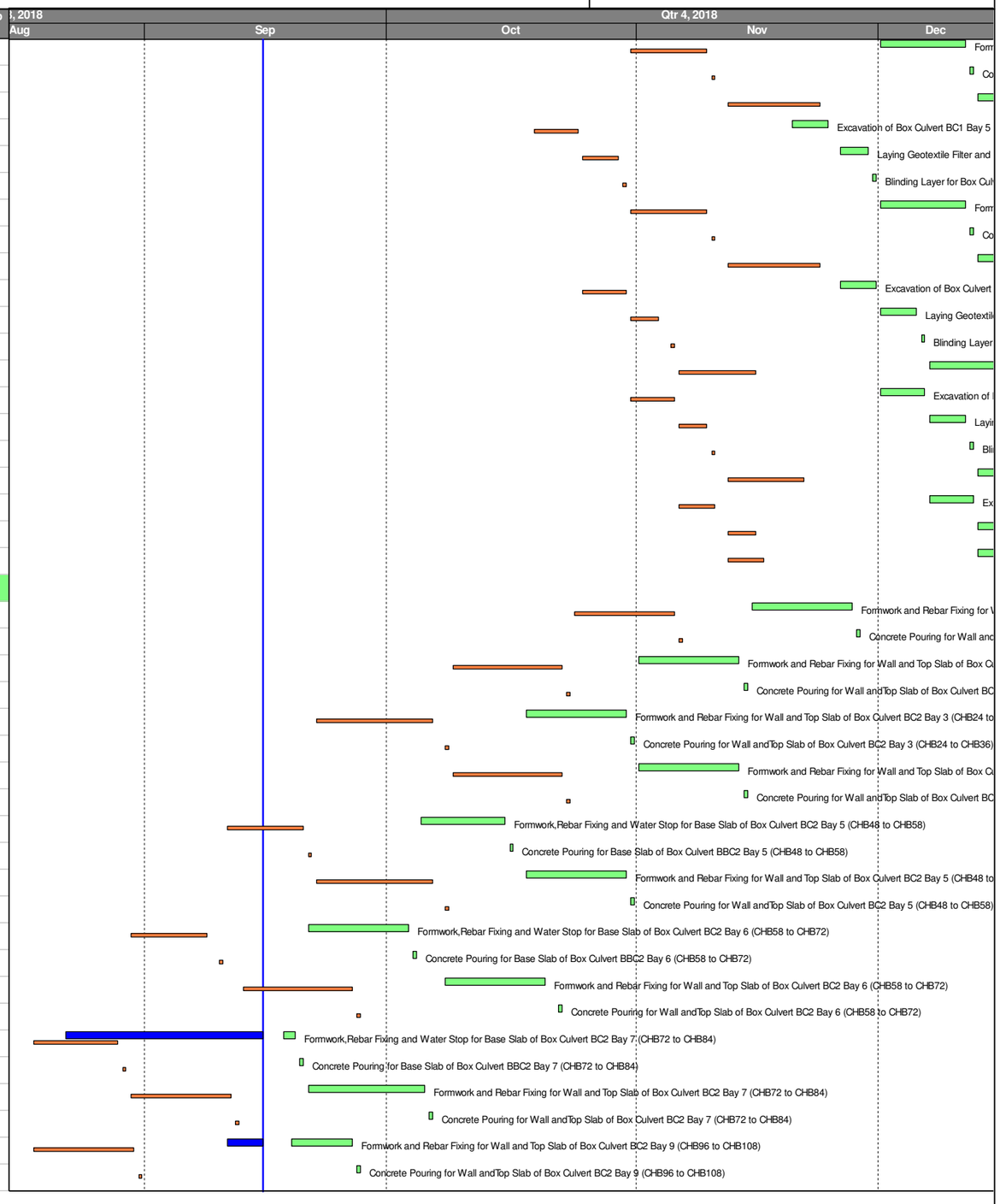
ARQ - Programme Logics based on WP Rev.1 dated 25 Aug 2017

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

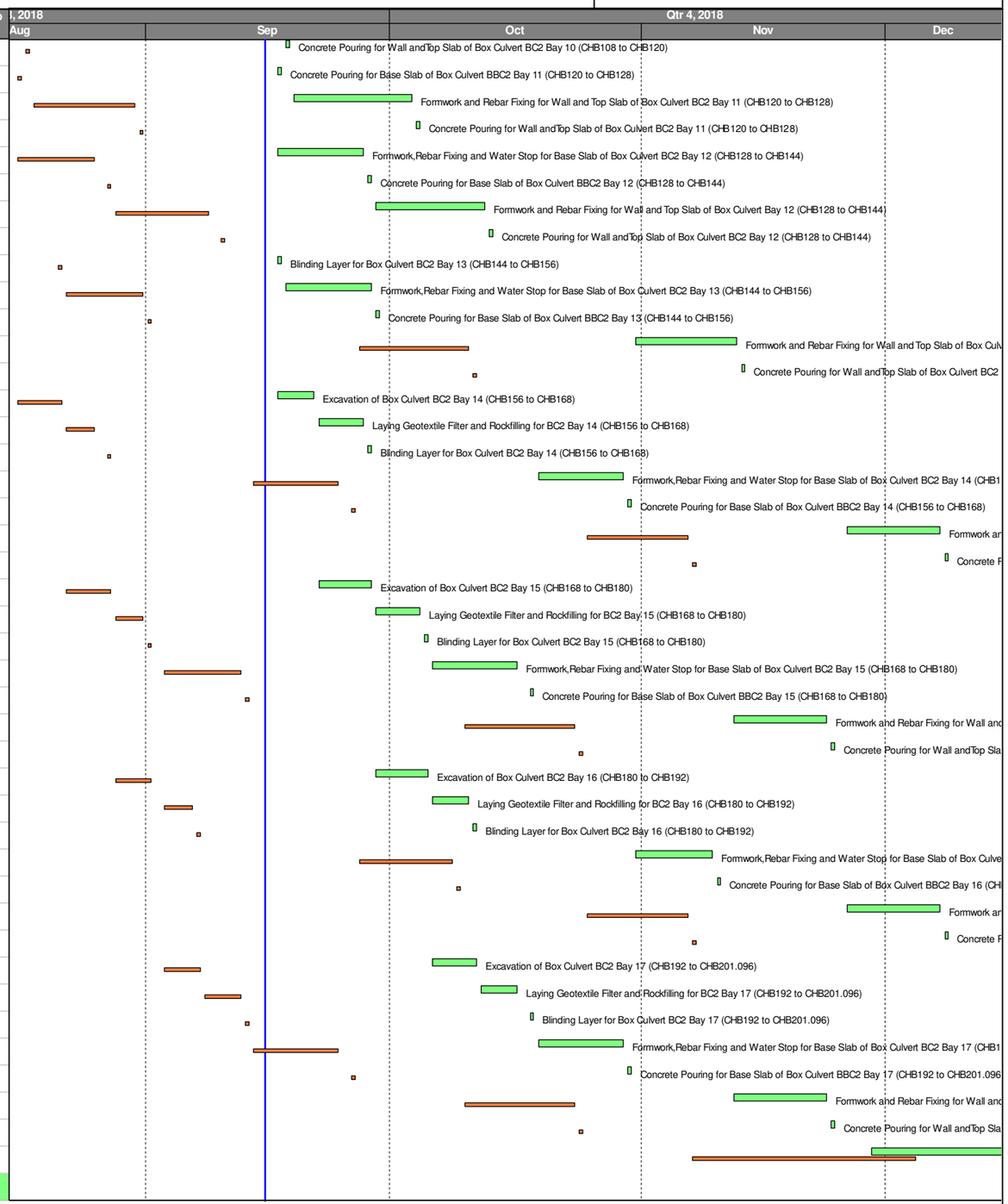
Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL10050A153	Blinding Layer for Box Culvert BC1 Bay 12 (CHA144 to CHA132)	1	1	10-Sep-18	10-Sep-18	13-Oct-18	13-Oct-18	0%
ACL10050A154	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 12 (CHA144 to CHA132)	9	9	29-Sep-18	10-Oct-18	02-Nov-18	12-Nov-18	0%
ACL10050A155	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 12 (CHA144 to CHA132)	1	1	11-Oct-18	11-Oct-18	13-Nov-18	13-Nov-18	0%
ACL10050A156	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 12 (CHA144 to CHA132)	11	11	12-Oct-18	25-Oct-18	14-Nov-18	26-Nov-18	0%
ACL10050A157	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 12 (CHA144 to CHA132)	1	1	27-Oct-18	27-Oct-18	28-Nov-18	28-Nov-18	0%
ACL10050A158	Excavation of Box Culvert BC1 Bay 11 (CHA132 to CHA120)	5	5	05-Sep-18	10-Sep-18	09-Oct-18	13-Oct-18	0%
ACL10050A159	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 11 (CHA132 to CHA120)	4	4	11-Sep-18	14-Sep-18	15-Oct-18*	19-Oct-18	0%
ACL10050A160	Blinding Layer for Box Culvert BC1 Bay 11 (CHA132 to CHA120)	1	1	15-Sep-18	15-Sep-18	20-Oct-18	20-Oct-18	0%
ACL10050A161	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 11 (CHA132 to CHA120)	9	9	17-Sep-18	27-Sep-18	22-Oct-18	31-Oct-18	0%
ACL10050A162	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 11 (CHA132 to CHA120)	1	1	28-Sep-18	28-Sep-18	01-Nov-18	01-Nov-18	0%
ACL10050A163	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 11 (CHA132 to CHA120)	11	11	12-Oct-18	25-Oct-18	14-Nov-18	26-Nov-18	0%
ACL10050A164	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 11 (CHA132 to CHA120)	1	1	26-Oct-18	26-Oct-18	27-Nov-18	27-Nov-18	0%
ACL10050A165	Excavation of Box Culvert BC1 Bay 10 (CHA120 to CHA108)	5	5	11-Sep-18	15-Sep-18	15-Oct-18	20-Oct-18	0%
ACL10050A166	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 10 (CHA120 to CHA108)	4	4	17-Sep-18	20-Sep-18	22-Oct-18*	25-Oct-18	0%
ACL10050A167	Blinding Layer for Box Culvert BC1 Bay 10 (CHA120 to CHA108)	1	1	21-Sep-18	21-Sep-18	26-Oct-18	26-Oct-18	0%
ACL10050A168	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 10 (CHA120 to CHA108)	9	9	29-Sep-18	10-Oct-18	02-Nov-18	12-Nov-18	0%
ACL10050A169	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 10 (CHA120 to CHA108)	1	1	11-Oct-18	11-Oct-18	13-Nov-18	13-Nov-18	0%
ACL10050A170	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 10 (CHA120 to CHA108)	11	11	27-Oct-18	08-Nov-18	28-Nov-18	10-Dec-18	0%
ACL10050A171	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 10 (CHA120 to CHA108)	1	1	09-Nov-18	09-Nov-18	11-Dec-18	11-Dec-18	0%
ACL10050A172	Excavation of Box Culvert BC1 Bay 9 (CHA108 to CHA96)	5	5	17-Sep-18	21-Sep-18	22-Oct-18	26-Oct-18	0%
ACL10050A173	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 9 (CHA108 to CHA96)	4	4	22-Sep-18	27-Sep-18	27-Oct-18*	31-Oct-18	0%
ACL10050A174	Blinding Layer for Box Culvert BC1 Bay 9 (CHA108 to CHA96)	1	1	28-Sep-18	28-Sep-18	01-Nov-18	01-Nov-18	0%
ACL10050A175	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 9 (CHA108 to CHA96)	9	9	12-Oct-18	23-Oct-18	14-Nov-18	23-Nov-18	0%
ACL10050A176	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 9 (CHA108 to CHA96)	1	1	24-Oct-18	24-Oct-18	24-Nov-18	24-Nov-18	0%
ACL10050A177	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 9 (CHA108 to CHA96)	11	11	25-Oct-18	06-Nov-18	26-Nov-18	07-Dec-18	0%
ACL10050A178	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 9 (CHA108 to CHA96)	1	1	07-Nov-18	07-Nov-18	08-Dec-18	08-Dec-18	0%
ACL10050A179	Excavation of Box Culvert BC1 Bay 8 (CHA96 to CHA84)	5	5	22-Sep-18	28-Sep-18	27-Oct-18	01-Nov-18	0%
ACL10050A180	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 8 (CHA96 to CHA84)	4	4	29-Sep-18	04-Oct-18	02-Nov-18*	06-Nov-18	0%
ACL10050A181	Blinding Layer for Box Culvert BC1 Bay 8 (CHA96 to CHA84)	1	1	05-Oct-18	05-Oct-18	07-Nov-18	07-Nov-18	0%
ACL10050A182	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 8 (CHA96 to CHA84)	9	9	06-Oct-18	16-Oct-18	08-Nov-18	17-Nov-18	0%
ACL10050A183	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 8 (CHA96 to CHA84)	1	1	25-Oct-18	25-Oct-18	26-Nov-18	26-Nov-18	0%
ACL10050A184	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 8 (CHA96 to CHA84)	11	11	26-Oct-18	07-Nov-18	27-Nov-18	08-Dec-18	0%
ACL10050A185	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 8 (CHA96 to CHA84)	1	1	08-Nov-18	08-Nov-18	10-Dec-18	10-Dec-18	0%
ACL10050A186	Excavation of Box Culvert BC1 Bay 7 (CHA84 to CHA72)	5	5	06-Oct-18	11-Oct-18	08-Nov-18	13-Nov-18	0%
ACL10050A187	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 7 (CHA84 to CHA72)	4	4	12-Oct-18	16-Oct-18	14-Nov-18*	17-Nov-18	0%
ACL10050A188	Blinding Layer for Box Culvert BC1 Bay 7 (CHA84 to CHA72)	1	1	18-Oct-18	18-Oct-18	19-Nov-18	19-Nov-18	0%
ACL10050A189	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 7 (CHA84 to CHA72)	9	9	19-Oct-18	29-Oct-18	20-Nov-18	29-Nov-18	0%
ACL10050A190	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 7 (CHA84 to CHA72)	1	1	30-Oct-18	30-Oct-18	30-Nov-18	30-Nov-18	0%
ACL10050A191	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 7 (CHA84 to CHA72)	11	11	31-Oct-18	12-Nov-18	01-Dec-18	13-Dec-18	0%
ACL10050A192	Concrete Pouring for Wall andTop Slab of Box Culvert BC1 Bay 7 (CHA84 to CHA72)	1	1	13-Nov-18	13-Nov-18	14-Dec-18	14-Dec-18	0%
ACL10050A193	Excavation of Box Culvert BC1 Bay 6 (CHA72 to CHA60)	5	5	12-Oct-18	18-Oct-18	14-Nov-18	19-Nov-18	0%
ACL10050A194	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 6 (CHA72 to CHA60)	4	4	19-Oct-18	23-Oct-18	20-Nov-18*	23-Nov-18	0%
ACL10050A195	Blinding Layer for Box Culvert BC1 Bay 6 (CHA72 to CHA60)	1	1	24-Oct-18	24-Oct-18	24-Nov-18	24-Nov-18	0%



Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL10050A196	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 6 (CHA72 to CHA60)	9	9	31-Oct-18	09-Nov-18	01-Dec-18	11-Dec-18	0%
ACL10050A197	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 6 (CHA72 to CHA60)	1	1	10-Nov-18	10-Nov-18	12-Dec-18	12-Dec-18	0%
ACL10050A198	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 6 (CHA72 to CHA60)	11	11	12-Nov-18	23-Nov-18	13-Dec-18	27-Dec-18	0%
ACL10050A200	Excavation of Box Culvert BC1 Bay 5 (CHA60 to CHA48)	5	5	19-Oct-18	24-Oct-18	20-Nov-18	24-Nov-18	0%
ACL10050A201	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 5 (CHA60 to CHA48)	4	4	25-Oct-18	29-Oct-18	26-Nov-18*	29-Nov-18	0%
ACL10050A202	Blinding Layer for Box Culvert BC1 Bay 5 (CHA60 to CHA48)	1	1	30-Oct-18	30-Oct-18	30-Nov-18	30-Nov-18	0%
ACL10050A203	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 5 (CHA60 to CHA48)	9	9	31-Oct-18	09-Nov-18	01-Dec-18	11-Dec-18	0%
ACL10050A204	Concrete Pouring for Base Slab of Box Culvert BC1 Bay 5 (CHA60 to CHA48)	1	1	10-Nov-18	10-Nov-18	12-Dec-18	12-Dec-18	0%
ACL10050A205	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC1 Bay 5 (CHA60 to CHA48)	11	11	12-Nov-18	23-Nov-18	13-Dec-18	27-Dec-18	0%
ACL10050A207	Excavation of Box Culvert BC1 Bay 4 (CHA48 to CHA36)	5	5	25-Oct-18	30-Oct-18	26-Nov-18	30-Nov-18	0%
ACL10050A208	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 4 (CHA48 to CHA36)	4	4	31-Oct-18	03-Nov-18	01-Dec-18*	05-Dec-18	0%
ACL10050A209	Blinding Layer for Box Culvert BC1 Bay 4 (CHA48 to CHA36)	1	1	05-Nov-18	05-Nov-18	06-Dec-18	06-Dec-18	0%
ACL10050A210	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 4 (CHA48 to CHA36)	9	9	06-Nov-18	15-Nov-18	07-Dec-18	17-Dec-18	0%
ACL10050A214	Excavation of Box Culvert BC1 Bay 3 (CHA36 to CHA24)	5	5	31-Oct-18	05-Nov-18	01-Dec-18	06-Dec-18	0%
ACL10050A215	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 3 (CHA36 to CHA24)	4	4	06-Nov-18	09-Nov-18	07-Dec-18*	11-Dec-18	0%
ACL10050A216	Blinding Layer for Box Culvert BC1 Bay 3 (CHA36 to CHA24)	1	1	10-Nov-18	10-Nov-18	12-Dec-18	12-Dec-18	0%
ACL10050A217	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC1 Bay 3 (CHA36 to CHA24)	9	9	12-Nov-18	21-Nov-18	13-Dec-18	22-Dec-18	0%
ACL10050A221	Excavation of Box Culvert BC1 Bay 2 (CHA24 to CHA12)	5	5	06-Nov-18	10-Nov-18	07-Dec-18	12-Dec-18	0%
ACL10050A222	Laying Geotextile Filter and Rockfilling for Box Culvert BC1 Bay 2 (CHA24 to CHA12)	4	4	12-Nov-18	15-Nov-18	13-Dec-18*	17-Dec-18	0%
ACL10050A228	Excavation of Box Culvert BC1 Bay 1 (CHA12 to CHA0)	5	5	12-Nov-18	16-Nov-18	13-Dec-18	18-Dec-18	0%
Twin Cell Box Culvert BC2								
ACL10050A035	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 1 (CHB0 to CHB12)	11	11	24-Oct-18	05-Nov-18	15-Nov-18	27-Nov-18	0%
ACL10050A036	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 1 (CHB0 to CHB12)	1	1	06-Nov-18	06-Nov-18	28-Nov-18	28-Nov-18	0%
ACL10050A042	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 2 (CHB12 to CHB24)	11	11	09-Oct-18	22-Oct-18	01-Nov-18	13-Nov-18	0%
ACL10050A043	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 2 (CHB12 to CHB24)	1	1	23-Oct-18	23-Oct-18	14-Nov-18	14-Nov-18	0%
ACL10050A049	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 3 (CHB24 to CHB36)	11	11	22-Sep-18	06-Oct-18	18-Oct-18	30-Oct-18	0%
ACL10050A050	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 3 (CHB24 to CHB36)	1	1	08-Oct-18	08-Oct-18	31-Oct-18	31-Oct-18	0%
ACL10050A056	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 4 (CHB36 to CHB48)	11	11	09-Oct-18	22-Oct-18	01-Nov-18	13-Nov-18	0%
ACL10050A057	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 4 (CHB36 to CHB48)	1	1	23-Oct-18	23-Oct-18	14-Nov-18	14-Nov-18	0%
ACL10050A061	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 5 (CHB48 to CHB58)	9	9	11-Sep-18	20-Sep-18	05-Oct-18	15-Oct-18	0%
ACL10050A062	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 5 (CHB48 to CHB58)	1	1	21-Sep-18	21-Sep-18	16-Oct-18	16-Oct-18	0%
ACL10050A063	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 5 (CHB48 to CHB58)	11	11	22-Sep-18	06-Oct-18	18-Oct-18	30-Oct-18	0%
ACL10050A064	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 5 (CHB48 to CHB58)	1	1	08-Oct-18	08-Oct-18	31-Oct-18	31-Oct-18	0%
ACL10050A068	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 6 (CHB58 to CHB72)	9	9	30-Aug-18	08-Sep-18	21-Sep-18	03-Oct-18	0%
ACL10050A069	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 6 (CHB58 to CHB72)	1	1	10-Sep-18	10-Sep-18	04-Oct-18	04-Oct-18	0%
ACL10050A070	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 6 (CHB58 to CHB72)	11	11	13-Sep-18	26-Sep-18	08-Oct-18	20-Oct-18	0%
ACL10050A071	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 6 (CHB58 to CHB72)	1	1	27-Sep-18	27-Sep-18	22-Oct-18	22-Oct-18	0%
ACL10050A075	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 7 (CHB72 to CHB84)	9	25	18-Aug-18	28-Aug-18	22-Aug-18 A	19-Sep-18	77.78%
ACL10050A076	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 7 (CHB72 to CHB84)	1	1	29-Aug-18	29-Aug-18	20-Sep-18	20-Sep-18	0%
ACL10050A077	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 7 (CHB72 to CHB84)	11	11	30-Aug-18	11-Sep-18	21-Sep-18	05-Oct-18	0%
ACL10050A078	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 7 (CHB72 to CHB84)	1	1	12-Sep-18	12-Sep-18	06-Oct-18	06-Oct-18	0%
ACL10050A091	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 9 (CHB96 to CHB108)	11	13	18-Aug-18	30-Aug-18	11-Sep-18 A	26-Sep-18	45.45%
ACL10050A092	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 9 (CHB96 to CHB108)	1	1	31-Aug-18	31-Aug-18	27-Sep-18	27-Sep-18	0%



Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL10050A099	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 10 (CHB108 to CHB120)	1	1	17-Aug-18	17-Aug-18	18-Sep-18	18-Sep-18	0%
ACL10050A104	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 11 (CHB120 to CHB128)	1	1	16-Aug-18	16-Aug-18	17-Sep-18	17-Sep-18	0%
ACL10050A105	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 11 (CHB120 to CHB128)	11	11	18-Aug-18	30-Aug-18	19-Sep-18	03-Oct-18	0%
ACL10050A106	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 11 (CHB120 to CHB128)	1	1	31-Aug-18	31-Aug-18	04-Oct-18	04-Oct-18	0%
ACL10050A110	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 12 (CHB128 to CHB144)	9	9	16-Aug-18	25-Aug-18	17-Sep-18	27-Sep-18	0%
ACL10050A111	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 12 (CHB128 to CHB144)	1	1	27-Aug-18	27-Aug-18	28-Sep-18	28-Sep-18	0%
ACL10050A112	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert Bay 12 (CHB128 to CHB144)	11	11	28-Aug-18	08-Sep-18	29-Sep-18	12-Oct-18	0%
ACL10050A113	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 12 (CHB128 to CHB144)	1	1	10-Sep-18	10-Sep-18	13-Oct-18	13-Oct-18	0%
ACL10050A116	Blinding Layer for Box Culvert BC2 Bay 13 (CHB144 to CHB156)	1	1	21-Aug-18	21-Aug-18	17-Sep-18	17-Sep-18	0%
ACL10050A117	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 13 (CHB144 to CHB156)	9	9	22-Aug-18	31-Aug-18	18-Sep-18	28-Sep-18	0%
ACL10050A118	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 13 (CHB144 to CHB156)	1	1	01-Sep-18	01-Sep-18	29-Sep-18	29-Sep-18	0%
ACL10050A119	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 13 (CHB144 to CHB156)	11	11	27-Sep-18	10-Oct-18	31-Oct-18	12-Nov-18	0%
ACL10050A120	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 13 (CHB144 to CHB156)	1	1	11-Oct-18	11-Oct-18	13-Nov-18	13-Nov-18	0%
ACL10050A121	Excavation of Box Culvert BC2 Bay 14 (CHB156 to CHB168)	5	5	16-Aug-18	21-Aug-18	17-Sep-18	21-Sep-18	0%
ACL10050A122	Laying Geotextile Filter and Rockfilling for BC2 Bay 14 (CHB156 to CHB168)	4	4	22-Aug-18	25-Aug-18	22-Sep-18*	27-Sep-18	0%
ACL10050A123	Blinding Layer for Box Culvert BC2 Bay 14 (CHB156 to CHB168)	1	1	27-Aug-18	27-Aug-18	28-Sep-18	28-Sep-18	0%
ACL10050A124	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 14 (CHB156 to CHB168)	9	9	14-Sep-18	24-Sep-18	19-Oct-18	29-Oct-18	0%
ACL10050A125	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 14 (CHB156 to CHB168)	1	1	26-Sep-18	26-Sep-18	30-Oct-18	30-Oct-18	0%
ACL10050A126	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert Bay 14 (CHB156 to CHB168)	11	11	25-Oct-18	06-Nov-18	26-Nov-18	07-Dec-18	0%
ACL10050A127	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 14 (CHB156 to CHB168)	1	1	07-Nov-18	07-Nov-18	08-Dec-18	08-Dec-18	0%
ACL10050A128	Excavation of Box Culvert BC2 Bay 15 (CHB168 to CHB180)	5	5	22-Aug-18	27-Aug-18	22-Sep-18	28-Sep-18	0%
ACL10050A129	Laying Geotextile Filter and Rockfilling for BC2 Bay 15 (CHB168 to CHB180)	4	4	28-Aug-18	31-Aug-18	29-Sep-18*	04-Oct-18	0%
ACL10050A130	Blinding Layer for Box Culvert BC2 Bay 15 (CHB168 to CHB180)	1	1	01-Sep-18	01-Sep-18	05-Oct-18	05-Oct-18	0%
ACL10050A131	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 15 (CHB168 to CHB180)	9	9	03-Sep-18	12-Sep-18	06-Oct-18	16-Oct-18	0%
ACL10050A132	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 15 (CHB168 to CHB180)	1	1	13-Sep-18	13-Sep-18	18-Oct-18	18-Oct-18	0%
ACL10050A133	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert BC2 Bay 15 (CHB168 to CHB180)	11	11	10-Oct-18	23-Oct-18	12-Nov-18	23-Nov-18	0%
ACL10050A134	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 15 (CHB168 to CHB180)	1	1	24-Oct-18	24-Oct-18	24-Nov-18	24-Nov-18	0%
ACL10050A135	Excavation of Box Culvert BC2 Bay 16 (CHB180 to CHB192)	5	5	28-Aug-18	01-Sep-18	29-Sep-18	05-Oct-18	0%
ACL10050A136	Laying Geotextile Filter and Rockfilling for BC2 Bay 16 (CHB180 to CHB192)	4	4	03-Sep-18	06-Sep-18	06-Oct-18*	10-Oct-18	0%
ACL10050A137	Blinding Layer for Box Culvert BC2 Bay 16 (CHB180 to CHB192)	1	1	07-Sep-18	07-Sep-18	11-Oct-18	11-Oct-18	0%
ACL10050A138	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 16 (CHB180 to CHB192)	9	9	27-Sep-18	08-Oct-18	31-Oct-18	09-Nov-18	0%
ACL10050A139	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 16 (CHB180 to CHB192)	1	1	09-Oct-18	09-Oct-18	10-Nov-18	10-Nov-18	0%
ACL10050A140	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert Bay 16 (CHB180 to CHB192)	11	11	25-Oct-18	06-Nov-18	26-Nov-18	07-Dec-18	0%
ACL10050A141	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 16 (CHB180 to CHB192)	1	1	07-Nov-18	07-Nov-18	08-Dec-18	08-Dec-18	0%
ACL10050A142	Excavation of Box Culvert BC2 Bay 17 (CHB192 to CHB201.096)	5	5	03-Sep-18	07-Sep-18	06-Oct-18	11-Oct-18	0%
ACL10050A143	Laying Geotextile Filter and Rockfilling for BC2 Bay 17 (CHB192 to CHB201.096)	4	4	08-Sep-18	12-Sep-18	12-Oct-18*	16-Oct-18	0%
ACL10050A144	Blinding Layer for Box Culvert BC2 Bay 17 (CHB192 to CHB201.096)	1	1	13-Sep-18	13-Sep-18	18-Oct-18	18-Oct-18	0%
ACL10050A145	Formwork,Rebar Fixing and Water Stop for Base Slab of Box Culvert BC2 Bay 17 (CHB192 to CHB201.096)	9	9	14-Sep-18	24-Sep-18	19-Oct-18	29-Oct-18	0%
ACL10050A146	Concrete Pouring for Base Slab of Box Culvert BBC2 Bay 17 (CHB192 to CHB201.096)	1	1	26-Sep-18	26-Sep-18	30-Oct-18	30-Oct-18	0%
ACL10050A147	Formwork and Rebar Fixing for Wall and Top Slab of Box Culvert Bay 17 (CHB192 to CHB201.096)	11	11	10-Oct-18	23-Oct-18	12-Nov-18	23-Nov-18	0%
ACL10050A148	Concrete Pouring for Wall andTop Slab of Box Culvert BC2 Bay 17 (CHB192 to CHB201.096)	1	1	24-Oct-18	24-Oct-18	24-Nov-18	24-Nov-18	0%
ACL10050A150	A1 - Backfilling to Bottom Level of Retaining Wall RWA9 (BC2 Bay #1 to 6)	24	24	07-Nov-18	04-Dec-18	29-Nov-18*	28-Dec-18	0%
At-grade Internal Road L1								



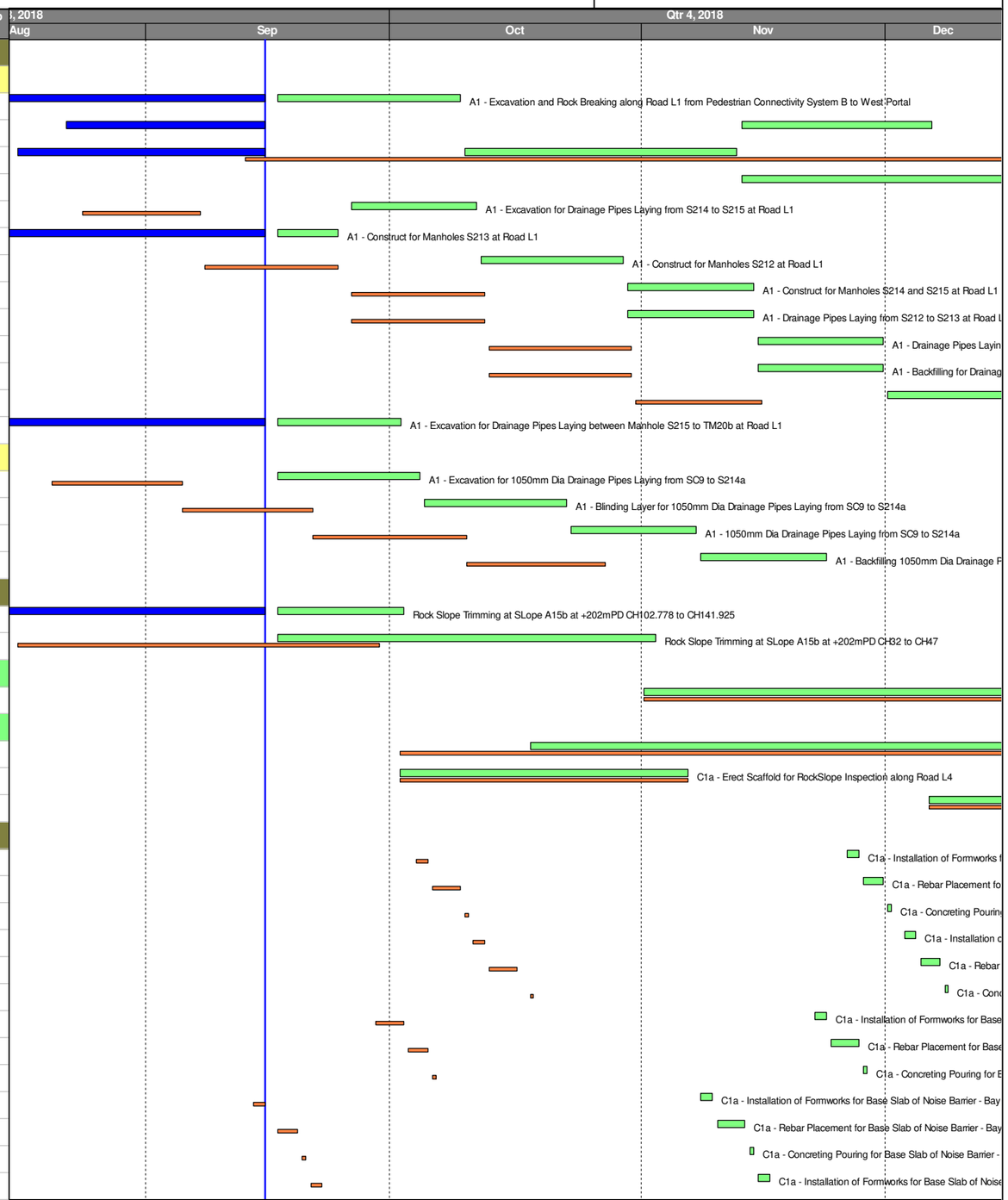
Planned Bar (WP) ◆ Milestone
Actual Bar
Forecast Bar
◇ Planned Milestone (WP)

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
Road L1 and L5 (Portion A1)								
Road L1 (Portion A1)								
ACL10100A001	A1 - Excavation and Rock Breaking along Road L1 from Pedestrian Connectivity System B to West Portal	120	325	16-Nov-17	16-Apr-18	04-Sep-17 A	09-Oct-18	85%
ACL10100A002	A1 - Excavation and Rock Breaking along Road L1 from Junction Road L1/L3 to Pedestrian Connectivity System B	60	89	19-Dec-18	05-Mar-19	22-Aug-18 A	06-Dec-18	65%
ACL10110	A1 - Install Road Drainage, Water Mains, Ducts and Utilities along Road L1 from System B to West Portal	80	73	13-Sep-18	18-Dec-18	16-Aug-18 A	12-Nov-18	65%
ACL10115	A1 - Backfilling Road L1 from System B to West Portal for Temporary Haul Road	30	30	19-Dec-18	25-Jan-19	13-Nov-18	17-Dec-18	0%
ACL10121A002	A1 - Excavation for Drainage Pipes Laying from S214 to S215 at Road L1	13	13	24-Aug-18	07-Sep-18	26-Sep-18	11-Oct-18	0%
ACL10121A003a	A1 - Construct for Manholes S213 at Road L1	14	101	04-Jul-18	19-Jul-18	28-May-18 A	24-Sep-18	50%
ACL10121A003a	A1 - Construct for Manholes S212 at Road L1	14	14	08-Sep-18	24-Sep-18	12-Oct-18	29-Oct-18	0%
ACL10121A004a	A1 - Construct for Manholes S214 and S215 at Road L1	14	14	26-Sep-18	12-Oct-18	30-Oct-18	14-Nov-18	0%
ACL10121A005	A1 - Drainage Pipes Laying from S212 to S213 at Road L1	14	14	26-Sep-18	12-Oct-18	30-Oct-18	14-Nov-18	0%
ACL10121A007	A1 - Drainage Pipes Laying from S214 to S215 at Road L1	14	14	13-Oct-18	30-Oct-18	15-Nov-18	30-Nov-18	0%
ACL10121A008	A1 - Backfilling for Drainage Pipes Laying from S212 to 214 at Road L1	14	14	13-Oct-18	30-Oct-18	15-Nov-18	30-Nov-18	0%
ACL10121A009	A1 - Backfilling for Drainage Pipes Laying from S214 to 215 at Road L1	14	14	31-Oct-18	15-Nov-18	01-Dec-18	17-Dec-18	0%
ACL10121A010	A1 - Excavation for Drainage Pipes Laying between Manhole S215 to TM20b at Road L1	14	99	04-Jun-18	20-Jun-18	04-Jun-18 A	02-Oct-18	20%
Road L5 (Portion A1)								
ACL10120A10	A1 - Excavation for 1050mm Dia Drainage Pipes Laying from SC9 to S214a	14	14	20-Aug-18	05-Sep-18	17-Sep-18*	04-Oct-18	0%
ACL10120A11	A1 - Blinding Layer for 1050mm Dia Drainage Pipes Laying from SC9 to S214a	14	14	05-Sep-18	21-Sep-18	05-Oct-18	22-Oct-18	0%
ACL10120A12	A1 - 1050mm Dia Drainage Pipes Laying from SC9 to S214a	14	14	21-Sep-18	10-Oct-18	23-Oct-18	07-Nov-18	0%
ACL10120A13	A1 - Backfilling 1050mm Dia Drainage Pipes Laying from SC9 to S214a	14	14	10-Oct-18	27-Oct-18	08-Nov-18	23-Nov-18	0%
Road L1 (Portion B2)								
ACL10039A003	Rock Slope Trimming at SLope A15b at +202mPD CH102.778 to CH141.925	30	124	16-May-18	21-Jun-18	05-May-18 A	02-Oct-18	60%
ACL10039A004	Rock Slope Trimming at SLope A15b at +202mPD CH32 to CH47	38	38	16-Aug-18	29-Sep-18	17-Sep-18*	02-Nov-18	0%
At-grade Internal Road L2 (Portion B2/B11/B12)								
ACL20030	B2/B11/B12 - Rock Breaking in Portion B11	300	300	01-Nov-18	04-Nov-19	01-Nov-18*	04-Nov-19	0%
At-grade Internal Road L4 (Portion C1a)								
ACL41240	C1a - Road Improvement at Junction between Road L4 and On Sau Road	90	90	02-Oct-18	18-Jan-19	18-Oct-18*	02-Feb-19	0%
ACL41250	C1a - Erect Scaffold for RockSlope Inspection along Road L4	30	30	02-Oct-18	06-Nov-18	02-Oct-18*	06-Nov-18	0%
ACL41270	C1a - Submit Details of RockSlope Inspection to AECOM for Road L4	30	30	06-Dec-18	12-Jan-19	06-Dec-18	12-Jan-19	0%
Noise Barrier								
ACL401354	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #1 (1st Stage)	2	2	04-Oct-18	05-Oct-18	26-Nov-18	27-Nov-18	0%
ACL401355	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #1 (1st Stage)	3	3	06-Oct-18	09-Oct-18	28-Nov-18	30-Nov-18	0%
ACL401356	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #1 (1st Stage)	1	1	10-Oct-18	10-Oct-18	01-Dec-18	01-Dec-18	0%
ACL401363	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #2 (1st Stage)	2	2	11-Oct-18	12-Oct-18	03-Dec-18	04-Dec-18	0%
ACL401364	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #2 (1st Stage)	3	3	13-Oct-18	16-Oct-18	05-Dec-18	07-Dec-18	0%
ACL401365	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #2 (1st Stage)	1	1	18-Oct-18	18-Oct-18	08-Dec-18	08-Dec-18	0%
ACL401372	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #3 (1st Stage)	2	2	29-Sep-18	02-Oct-18	22-Nov-18	23-Nov-18	0%
ACL401373	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #3 (1st Stage)	3	3	03-Oct-18	05-Oct-18	24-Nov-18	27-Nov-18	0%
ACL401374	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #3 (1st Stage)	1	1	06-Oct-18	06-Oct-18	28-Nov-18	28-Nov-18	0%
ACL401381	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #4 (1st Stage)	2	2	14-Sep-18	15-Sep-18	08-Nov-18	09-Nov-18	0%
ACL401382	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #4 (1st Stage)	3	3	17-Sep-18	19-Sep-18	10-Nov-18	13-Nov-18	0%
ACL401383	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #4 (1st Stage)	1	1	20-Sep-18	20-Sep-18	14-Nov-18	14-Nov-18	0%
ACL401390	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #5 (1st Stage)	2	2	21-Sep-18	22-Sep-18	15-Nov-18	16-Nov-18	0%



Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

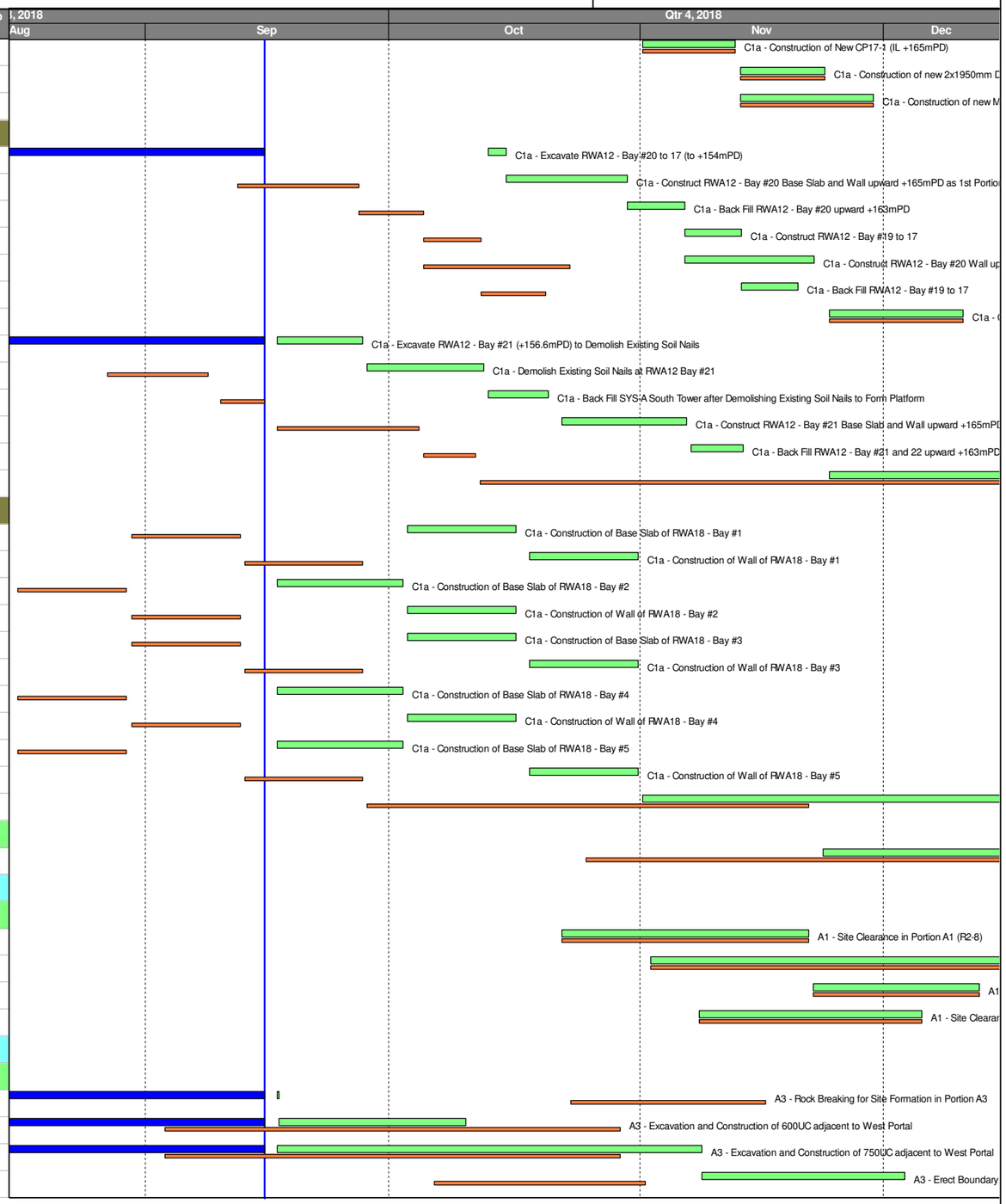
3-MONTH ROLLING PROGRAMME
(In comparison with WP Rev.1 dated 25 Aug 2017)

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

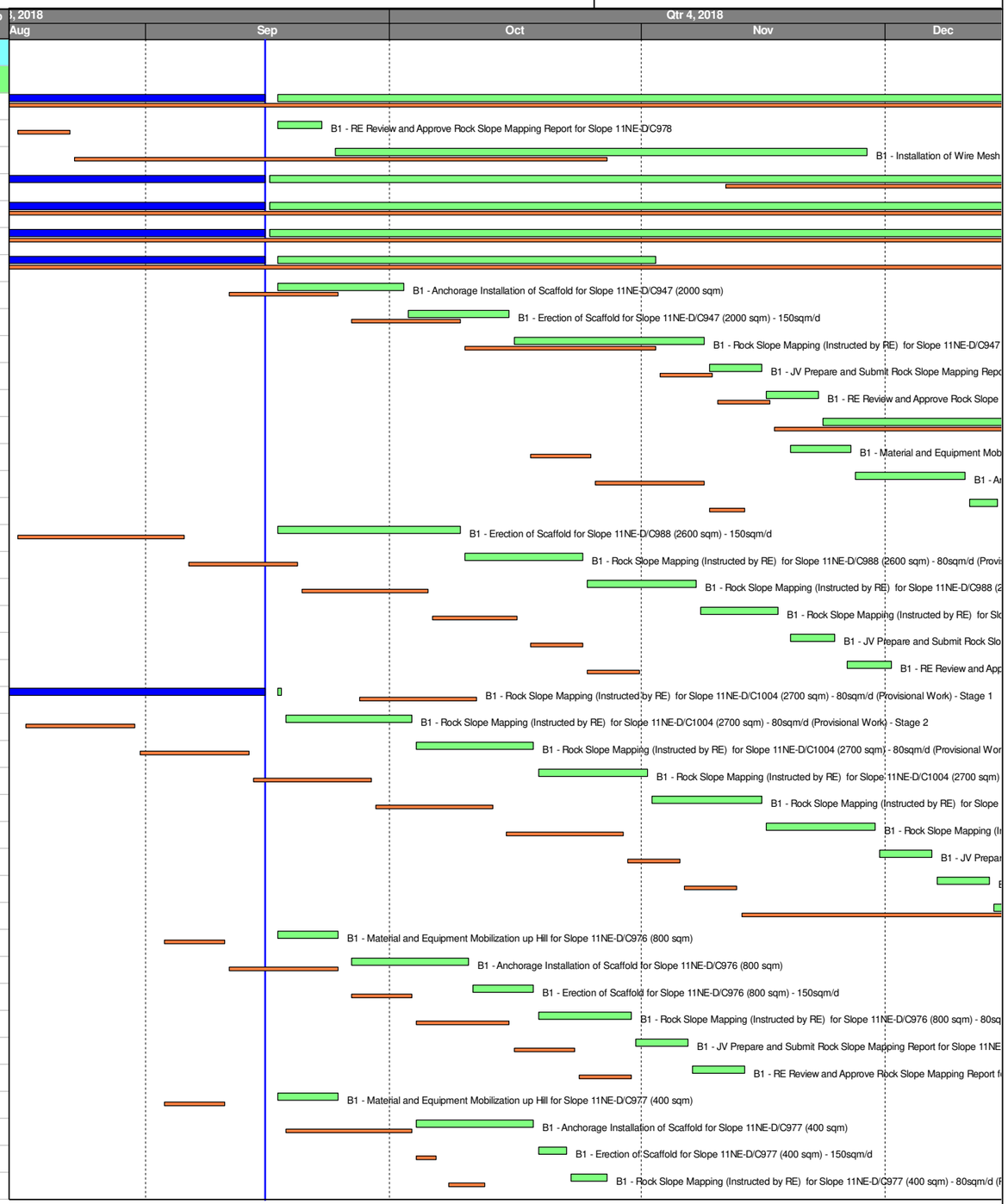
Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL401391	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #5 (1st Stage)	3	3	24-Sep-18	27-Sep-18	17-Nov-18	20-Nov-18	0%
ACL401392	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #5 (1st Stage)	1	1	28-Sep-18	28-Sep-18	21-Nov-18	21-Nov-18	0%
ACL401399	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #6 (1st Stage)	2	2	11-Sep-18	12-Sep-18	05-Nov-18	06-Nov-18	0%
ACL401400	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #6 (1st Stage)	3	3	13-Sep-18	15-Sep-18	07-Nov-18	09-Nov-18	0%
ACL401401	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #6 (1st Stage)	1	1	17-Sep-18	17-Sep-18	10-Nov-18	10-Nov-18	0%
ACL401408	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #7 (1st Stage)	2	2	18-Sep-18	19-Sep-18	12-Nov-18	13-Nov-18	0%
ACL401409	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #7 (1st Stage)	3	3	20-Sep-18	22-Sep-18	14-Nov-18	16-Nov-18	0%
ACL401410	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #7 (1st Stage)	1	1	24-Sep-18	24-Sep-18	17-Nov-18	17-Nov-18	0%
ACL401417	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #8 (1st Stage)	2	2	28-Aug-18	29-Aug-18	17-Sep-18	18-Sep-18	0%
ACL401418	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #8 (1st Stage)	3	3	30-Aug-18	01-Sep-18	19-Sep-18	21-Sep-18	0%
ACL401419	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #8 (1st Stage)	1	1	03-Sep-18	03-Sep-18	01-Nov-18*	01-Nov-18	0%
ACL401426	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #9 (1st Stage)	2	2	04-Sep-18	05-Sep-18	24-Sep-18	26-Sep-18	0%
ACL401427	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #9 (1st Stage)	3	3	06-Sep-18	08-Sep-18	27-Sep-18	29-Sep-18	0%
ACL401428	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #9 (1st Stage)	1	1	10-Sep-18	10-Sep-18	03-Nov-18	03-Nov-18	0%
ACL401435	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #10 (1st Stage)	2	2	24-Aug-18	25-Aug-18	01-Sep-18 A	03-Sep-18 A	100%
ACL401436	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #10 (1st Stage)	3	3	27-Aug-18	29-Aug-18	05-Sep-18 A	07-Sep-18 A	100%
ACL401437	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #10 (1st Stage)	1	1	30-Aug-18	30-Aug-18	24-Sep-18	24-Sep-18	0%
ACL401444	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #11 (1st Stage)	2	2	31-Aug-18	01-Sep-18	20-Sep-18	21-Sep-18	0%
ACL401445	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #11 (1st Stage)	3	3	03-Sep-18	05-Sep-18	22-Sep-18	26-Sep-18	0%
ACL401446	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #11 (1st Stage)	1	1	06-Sep-18	06-Sep-18	02-Nov-18	02-Nov-18	0%
ACL401454	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #12 (1st Stage)	3	3	16-Aug-18	18-Aug-18	16-Aug-18 A	18-Aug-18 A	100%
ACL401455	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #12 (1st Stage)	1	1	20-Aug-18	20-Aug-18	17-Sep-18	17-Sep-18	0%
ACL401462	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #13 (1st Stage)	2	2	16-Aug-18	17-Aug-18	17-Sep-18	18-Sep-18	0%
ACL401463	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #13 (1st Stage)	3	3	18-Aug-18	21-Aug-18	19-Sep-18	21-Sep-18	0%
ACL401464	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #13 (1st Stage)	1	1	23-Aug-18	23-Aug-18	22-Sep-18	22-Sep-18	0%
ACL401480	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #15 (1st Stage)	2	2	16-Aug-18	17-Aug-18	20-Aug-18 A	21-Aug-18 A	100%
ACL401481	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #15 (1st Stage)	3	3	18-Aug-18	21-Aug-18	22-Aug-18 A	24-Aug-18 A	100%
ACL401482	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #15 (1st Stage)	1	1	22-Aug-18	22-Aug-18	31-Aug-18 A	31-Aug-18 A	100%
ACL401498	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #17 (1st Stage)	2	2	18-Aug-18	20-Aug-18	25-Aug-18 A	27-Aug-18 A	100%
ACL401499	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #17 (1st Stage)	3	3	21-Aug-18	23-Aug-18	28-Aug-18 A	30-Aug-18 A	100%
ACL401500	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #17 (1st Stage)	1	1	24-Aug-18	24-Aug-18	04-Sep-18 A	04-Sep-18 A	100%
ACL401552	C1a - Installation of Formworks for Base Slab of Noise Barrier - Bay #23 (1st Stage)	2	2	25-Aug-18	27-Aug-18	17-Sep-18*	18-Sep-18	0%
ACL401553	C1a - Rebar Placement for Base Slab of Noise Barrier - Bay #23 (1st Stage)	3	3	28-Aug-18	30-Aug-18	19-Sep-18	21-Sep-18	0%
ACL401554	C1a - Concreting Pouring for Base Slab of Noise Barrier - Bay #23 (1st Stage)	1	1	31-Aug-18	31-Aug-18	22-Sep-18	22-Sep-18	0%
ACL401564	C1a - Rebar Placement for 3600mm HT Wall of Noise Barrier - Bay #24 (2nd Stage)	2	2	20-Oct-18	22-Oct-18	11-Dec-18	12-Dec-18	0%
ACL401565	C1a - Installation of Temporary Platform and Formworks for 3600mm HT Wall of Noise Barrier - Bay #24 (2nd Stage)	2	2	23-Oct-18	24-Oct-18	13-Dec-18	14-Dec-18	0%
ACL401582	C1a - Rebar Placement for 3600mm HT Wall of Noise Barrier - Bay #26 (2nd Stage)	2	2	19-Oct-18	20-Oct-18	10-Dec-18	11-Dec-18	0%
ACL401583	C1a - Installation of Temporary Platform and Formworks for 3600mm HT Wall of Noise Barrier - Bay #26 (2nd Stage)	2	2	22-Oct-18	23-Oct-18	12-Dec-18	13-Dec-18	0%
ACL401584	C1a - Concreting Pouring for 3600mm HT Wall of Noise Barrier - Bay #26 (2nd Stage)	1	1	24-Oct-18	24-Oct-18	14-Dec-18	14-Dec-18	0%
ACL401600	C1a - Rebar Placement for 3600mm HT Wall of Noise Barrier - Bay #28 (2nd Stage)	2	2	22-Oct-18	23-Oct-18	12-Dec-18	13-Dec-18	0%
ACL401601	C1a - Installation of Temporary Platform and Formworks for 3600mm HT Wall of Noise Barrier - Bay #28 (2nd Stage)	2	2	24-Oct-18	25-Oct-18	14-Dec-18	15-Dec-18	0%
Twin 1950 Dia. Downpipe and Cascade								
ACL40020A001B2	C1a - Construct Temporary Haul Road at Road L4 Connecting at Retaining Wall RWA12	60	125	02-Mar-18	17-May-18	08-May-18 A	05-Oct-18	75%

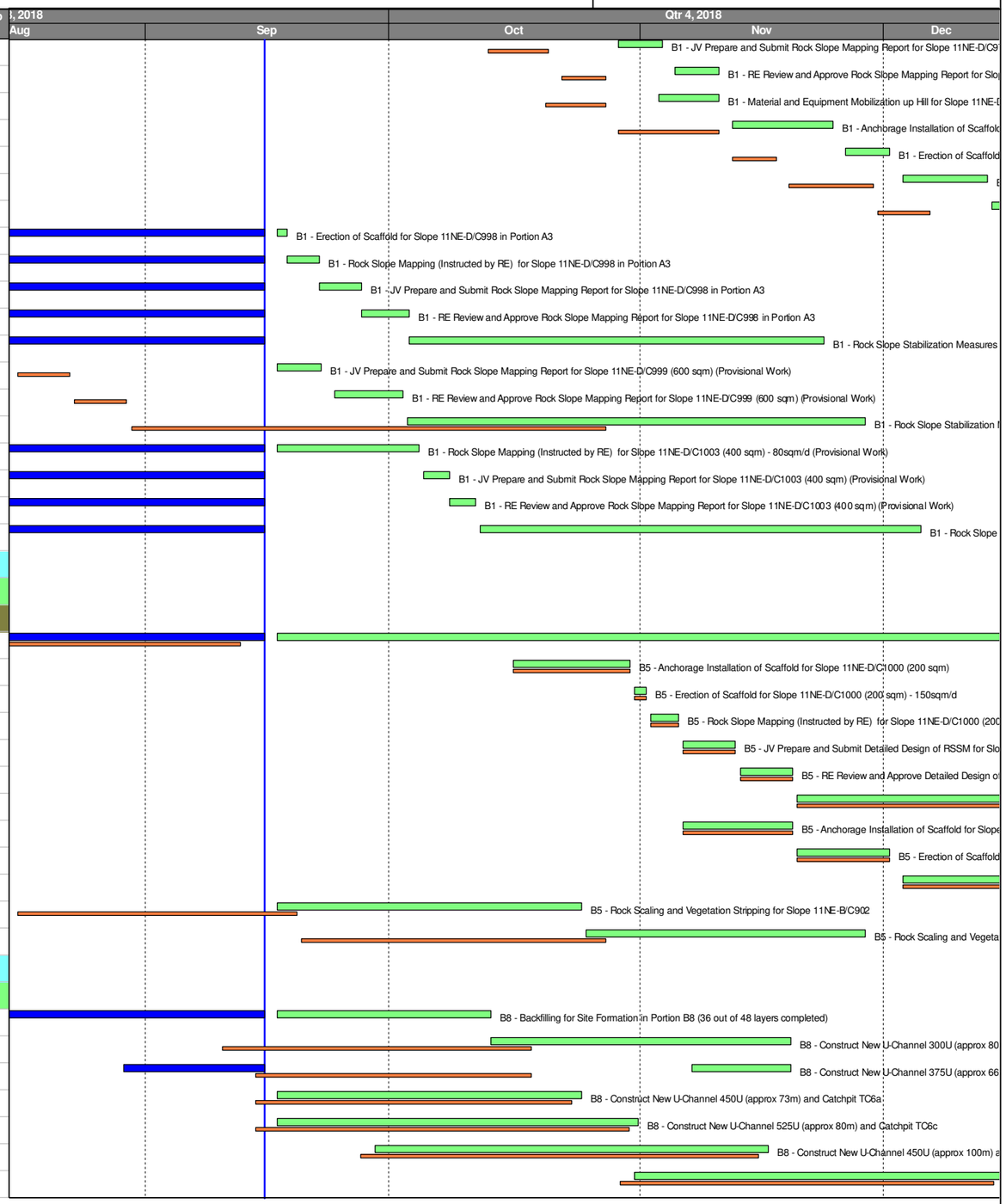
Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACL40050A002	C1a - Construction of New CP17-1 (IL +165mPD)	10	10	01-Nov-18	12-Nov-18	01-Nov-18*	12-Nov-18	0%
ACL40060	C1a - Construction of new 2x1950mm Dia Drainage Pipe (IL +165.6mPD)	10	10	13-Nov-18	23-Nov-18	13-Nov-18	23-Nov-18	0%
ACL40070	C1a - Construction of new Manhole Q2 (IL +165.8mPD)	15	15	13-Nov-18	29-Nov-18	13-Nov-18	29-Nov-18	0%
Retaining Wall RWA12								
ACL40020A002	C1a - Excavate RWA12 - Bay #20 to 17 (to +154mPD)	14	353	21-Nov-17	06-Dec-17	07-Aug-17 A	15-Oct-18	90%
ACL40020A003	C1a - Construct RWA12 - Bay #20 Base Slab and Wall upward +165mPD as 1st Portion	12	12	12-Sep-18	27-Sep-18	15-Oct-18	30-Oct-18	0%
ACL40020A004	C1a - Back Fill RWA12 - Bay #20 upward +163mPD	6	6	27-Sep-18	05-Oct-18	30-Oct-18	06-Nov-18	0%
ACL40020A005	C1a - Construct RWA12 - Bay #19 to 17	6	6	05-Oct-18	12-Oct-18	06-Nov-18	13-Nov-18	0%
ACL40020A006	C1a - Construct RWA12 - Bay #20 Wall upward +175mPD as 2nd Portion	14	14	05-Oct-18	23-Oct-18	06-Nov-18	22-Nov-18	0%
ACL40020A007	C1a - Back Fill RWA12 - Bay #19 to 17	6	6	12-Oct-18	20-Oct-18	13-Nov-18	20-Nov-18	0%
ACL40040A002	C1a - Construction of RWA12 - Bay #22 Wall upward +175mPD as 2nd Portion	14	14	24-Nov-18	10-Dec-18	24-Nov-18	10-Dec-18	0%
ACL40110A001	C1a - Excavate RWA12 - Bay #21 (+156.6mPD) to Demolish Existing Soil Nails	18	124	16-May-18	06-Jun-18	02-May-18 A	27-Sep-18	50%
ACL40110A002	C1a - Demolish Existing Soil Nails at RWA12 Bay #21	12	12	27-Aug-18	08-Sep-18	28-Sep-18	12-Oct-18	0%
ACL40115A001	C1a - Back Fill SYS-A South Tower after Demolishing Existing Soil Nails to Form Platform	6	6	10-Sep-18	15-Sep-18	13-Oct-18	20-Oct-18	0%
ACL40120A001	C1a - Construct RWA12 - Bay #21 Base Slab and Wall upward +165mPD as 1st Portion	14	14	17-Sep-18	04-Oct-18	22-Oct-18	06-Nov-18	0%
ACL40120A002	C1a - Back Fill RWA12 - Bay #21 and 22 upward +163mPD (15 layers @ 4 layers/day)	6	6	05-Oct-18	11-Oct-18	07-Nov-18	13-Nov-18	0%
ACL40955	C1a - Excavate RWA12 - Bay #1 to 8	60	60	12-Oct-18	21-Dec-18	24-Nov-18	08-Feb-19	0%
Retaining Wall RWA18								
ACL40180	C1a - Construction of Base Slab of RWA18 - Bay #1	12	12	30-Aug-18	12-Sep-18	03-Oct-18	16-Oct-18	0%
ACL40190	C1a - Construction of Wall of RWA18 - Bay #1	12	12	13-Sep-18	27-Sep-18	18-Oct-18	31-Oct-18	0%
ACL40200	C1a - Construction of Base Slab of RWA18 - Bay #2	12	12	16-Aug-18	29-Aug-18	17-Sep-18*	02-Oct-18	0%
ACL40210	C1a - Construction of Wall of RWA18 - Bay #2	12	12	30-Aug-18	12-Sep-18	03-Oct-18	16-Oct-18	0%
ACL40220	C1a - Construction of Base Slab of RWA18 - Bay #3	12	12	30-Aug-18	12-Sep-18	03-Oct-18	16-Oct-18	0%
ACL40230	C1a - Construction of Wall of RWA18 - Bay #3	12	12	13-Sep-18	27-Sep-18	18-Oct-18	31-Oct-18	0%
ACL40240	C1a - Construction of Base Slab of RWA18 - Bay #4	12	12	16-Aug-18	29-Aug-18	17-Sep-18*	02-Oct-18	0%
ACL40250	C1a - Construction of Wall of RWA18 - Bay #4	12	12	30-Aug-18	12-Sep-18	03-Oct-18	16-Oct-18	0%
ACL40260	C1a - Construction of Base Slab of RWA18 - Bay #5	12	12	16-Aug-18	29-Aug-18	17-Sep-18*	02-Oct-18	0%
ACL40270	C1a - Construction of Wall of RWA18 - Bay #5	12	12	13-Sep-18	27-Sep-18	18-Oct-18	31-Oct-18	0%
ACL40275	C1a - Back Filling Retaining Wall RWA18 (5 bays)	45	45	28-Sep-18	21-Nov-18	01-Nov-18	22-Dec-18	0%
WSD Access Road (Portion B5)								
ACL60010	B5 - Site Clearance and Tree Felling	46	46	25-Oct-18	17-Dec-18	23-Nov-18	19-Jan-19	0%
Portion A1								
Site Formation								
ACA10075	A1 - Site Clearance in Portion A1 (R2-8)	27	27	22-Oct-18	21-Nov-18	22-Oct-18*	21-Nov-18	0%
ACA10080	A1 - Site Clearance in Portion A1 (OU, G/I C-1 and RS-1)	45	45	02-Nov-18	24-Dec-18	02-Nov-18*	24-Dec-18	0%
ACA10090	A1 - Site Clearance in Portion A1 (G-3 and G-4)	18	18	22-Nov-18	12-Dec-18	22-Nov-18	12-Dec-18	0%
ACA10100	A1 - Site Clearance in Portion A1 (E-2)	24	24	08-Nov-18	05-Dec-18	08-Nov-18*	05-Dec-18	0%
Portion A3								
Site Formation								
ACA30030	A3 - Rock Breaking for Site Formation in Portion A3	21	265	23-Oct-18	16-Nov-18	25-Oct-17 A	17-Sep-18	98%
ACA30040A001	A3 - Excavation and Construction of 600UC adjacent to West Portal	45	107	03-Sep-18	29-Oct-18	02-Jun-18 A	10-Oct-18	60%
ACA30040A002	A3 - Excavation and Construction of 750UC adjacent to West Portal	45	119	03-Sep-18	29-Oct-18	19-Jun-18 A	08-Nov-18	5%
ACA30050	A3 - Erect Boundary Chainlink Fence (141m) and Gates in Portion A3	21	21	06-Oct-18	01-Nov-18	08-Nov-18	03-Dec-18	0%



Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
Portion B1								
Site Formation								
ACB100036A001	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C998 in Portion A2	400	503	16-May-18	17-Sep-19	26-Aug-17 A	10-May-19	52.75%
ACB100037A001	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C978	6	6	16-Aug-18	22-Aug-18	17-Sep-18*	22-Sep-18	0%
ACB100037A002	B1 - Installation of Wire Mesh for Slope 11NE-D/C978	54	54	23-Aug-18	27-Oct-18	24-Sep-18	28-Nov-18	0%
ACB10010	B1 - 9 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	270	614	11-Nov-18	07-Aug-19	15-Sep-17 A	22-May-19	8%
ACB10020	B1 - 17 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	510	835	16-Oct-17	09-Mar-19	15-Sep-17 A	29-Dec-19	8%
ACB10030	B1 - 30 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	900	1051	20-Aug-17	05-Feb-20	19-Feb-17 A	05-Jan-20	47%
ACB10090A004	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope A16 and 11NE-D/C998 in Portion A4	222	324	21-Apr-18	17-Jan-19	27-Sep-17 A	02-Nov-18	82.88%
ACB10100	B1 - Anchorage Installation of Scaffold for Slope 11NE-D/C947 (2000 sqm)	12	12	11-Sep-18	24-Sep-18	17-Sep-18*	02-Oct-18	0%
ACB10110	B1 - Erection of Scaffold for Slope 11NE-D/C947 (2000 sqm) - 150sqm/d	11	11	26-Sep-18	09-Oct-18	03-Oct-18	15-Oct-18	0%
ACB10120	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C947 (2000 sqm) - 80sqm/d (Provisional Work)	20	20	10-Oct-18	02-Nov-18	16-Oct-18	08-Nov-18	0%
ACB10130	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C947 (2000 sqm) (Provisional Work)	6	6	03-Nov-18	09-Nov-18	09-Nov-18	15-Nov-18	0%
ACB10140	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C947 (2000 sqm) (Provisional Work)	6	6	10-Nov-18	16-Nov-18	16-Nov-18	22-Nov-18	0%
ACB10150	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C947 (2000 sqm)	48	48	17-Nov-18	15-Jan-19	23-Nov-18	21-Jan-19	0%
ACB10230	B1 - Material and Equipment Mobilization up Hill for Slope 11NE-D/C981 (500 sqm)	7	7	18-Oct-18	25-Oct-18	19-Nov-18*	26-Nov-18	0%
ACB10240	B1 - Anchorage Installation of Scaffold for Slope 11NE-D/C 981 (500 sqm)	12	12	26-Oct-18	08-Nov-18	27-Nov-18	10-Dec-18	0%
ACB10250	B1 - Erection of Scaffold for Slope 11NE-D/C981 (500 sqm) - 150sqm/d	4	4	09-Nov-18	13-Nov-18	11-Dec-18	14-Dec-18	0%
ACB10310	B1 - Erection of Scaffold for Slope 11NE-D/C988 (2600 sqm) - 150sqm/d	18	18	16-Aug-18	05-Sep-18	17-Sep-18*	09-Oct-18	0%
ACB103210	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C988 (2600 sqm) - 80sqm/d (Provisional Work) - Stage 1	12	12	06-Sep-18	19-Sep-18	10-Oct-18	24-Oct-18	0%
ACB103220	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C988 (2600 sqm) - 80sqm/d (Provisional Work) - Stage 2	12	12	20-Sep-18	05-Oct-18	25-Oct-18	07-Nov-18	0%
ACB103230	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C988 (2600 sqm) - 80sqm/d (Provisional Work) - Stage 3	9	9	06-Oct-18	16-Oct-18	08-Nov-18	17-Nov-18	0%
ACB10330	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C988 (2600 sqm) (Provisional Work)	6	6	18-Oct-18	24-Oct-18	19-Nov-18	24-Nov-18	0%
ACB10340	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C988 (2600 sqm) (Provisional Work)	6	6	25-Oct-18	31-Oct-18	26-Nov-18	01-Dec-18	0%
ACB103910	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work) - Stage 1	12	66	27-Sep-18	11-Oct-18	02-Jul-18 A	17-Sep-18	91.67%
ACB103920	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work) - Stage 2	12	12	17-Aug-18	30-Aug-18	18-Sep-18	03-Oct-18	0%
ACB103930	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work) - Stage 3	12	12	31-Aug-18	13-Sep-18	04-Oct-18	18-Oct-18	0%
ACB103940	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work) - Stage 4	12	12	14-Sep-18	28-Sep-18	19-Oct-18	01-Nov-18	0%
ACB103950	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work) - Stage 5	12	12	29-Sep-18	13-Oct-18	02-Nov-18	15-Nov-18	0%
ACB103960	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) - 80sqm/d (Provisional Work) - Stage 6	12	12	15-Oct-18	29-Oct-18	16-Nov-18	29-Nov-18	0%
ACB10400	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C1004 (2700 sqm) (Provisional Work)	6	6	30-Oct-18	05-Nov-18	30-Nov-18	06-Dec-18	0%
ACB10410	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 111NE-D/C1004 (2700 sqm) (Provisional Work)	6	6	06-Nov-18	12-Nov-18	07-Dec-18	13-Dec-18	0%
ACB10420	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C1004 (2700 sqm) (Provisional Work)	48	48	13-Nov-18	10-Jan-19	14-Dec-18	14-Feb-19	0%
ACB10430	B1 - Material and Equipment Mobilization up Hill for Slope 11NE-D/C976 (800 sqm)	7	7	03-Sep-18	10-Sep-18	17-Sep-18*	24-Sep-18	0%
ACB10440	B1 - Anchorage Installation of Scaffold for Slope 11NE-D/C976 (800 sqm)	12	12	11-Sep-18	24-Sep-18	26-Sep-18	10-Oct-18	0%
ACB10450	B1 - Erection of Scaffold for Slope 11NE-D/C976 (800 sqm) - 150sqm/d	6	6	26-Sep-18	03-Oct-18	11-Oct-18	18-Oct-18	0%
ACB10460	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C976 (800 sqm) - 80sqm/d (Provisional Work)	10	10	04-Oct-18	15-Oct-18	19-Oct-18	30-Oct-18	0%
ACB10470	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C976 (800 sqm) (Provisional Work)	6	6	16-Oct-18	23-Oct-18	31-Oct-18	06-Nov-18	0%
ACB10480	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C976 (800 sqm) (Provisional Work)	6	6	24-Oct-18	30-Oct-18	07-Nov-18	13-Nov-18	0%
ACB10500	B1 - Material and Equipment Mobilization up Hill for Slope 11NE-D/C977 (400 sqm)	7	7	03-Sep-18	10-Sep-18	17-Sep-18*	24-Sep-18	0%
ACB10510	B1 - Anchorage Installation of Scaffold for Slope 11NE-D/C977 (400 sqm)	12	12	18-Sep-18	03-Oct-18	04-Oct-18	18-Oct-18	0%
ACB10520	B1 - Erection of Scaffold for Slope 11NE-D/C977 (400 sqm) - 150sqm/d	3	3	04-Oct-18	06-Oct-18	19-Oct-18	22-Oct-18	0%
ACB10530	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C977 (400 sqm) - 80sqm/d (Provisional Work)	5	5	08-Oct-18	12-Oct-18	23-Oct-18	27-Oct-18	0%



Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACB10540	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C977 (400 sqm) (Provisional Work)	6	6	13-Oct-18	20-Oct-18	29-Oct-18	03-Nov-18	0%
ACB10550	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 111NE-D/C977 (400 sqm) (Provisional Work)	6	6	22-Oct-18	27-Oct-18	05-Nov-18	10-Nov-18	0%
ACB10570	B1 - Material and Equipment Mobilization up Hill for Slope 11NE-D/C986 (800 sqm)	7	7	20-Oct-18	27-Oct-18	03-Nov-18	10-Nov-18	0%
ACB10580	B1 - Anchorage Installation of Scaffold for Slope 11NE-D/C986 (800 sqm)	12	12	29-Oct-18	10-Nov-18	12-Nov-18	24-Nov-18	0%
ACB10590	B1 - Erection of Scaffold for Slope 11NE-D/C986 (800 sqm) - 150sqm/d	6	6	12-Nov-18	17-Nov-18	26-Nov-18	01-Dec-18	0%
ACB10600	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C986 (800 sqm) - 80sqm/d (Provisional Work)	10	10	19-Nov-18	29-Nov-18	03-Dec-18	13-Dec-18	0%
ACB10610	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C986 (800 sqm) (Provisional Work)	6	6	30-Nov-18	06-Dec-18	14-Dec-18	20-Dec-18	0%
ACB10650A001	B1 - Erection of Scaffold for Slope 11NE-D/C998 in Portion A3	7	304	18-Sep-17	25-Sep-17	10-Jul-17 A	18-Sep-18	80%
ACB10660A001	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C998 in Portion A3	13	336	04-Sep-17	18-Sep-17	07-Aug-17 A	22-Sep-18	70%
ACB10670A001	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C998 in Portion A3	6	330	21-Aug-17	26-Aug-17	18-Aug-17 A	27-Sep-18	40%
ACB10680A001	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C998 in Portion A3	6	333	22-Aug-17	29-Aug-17	19-Aug-17 A	03-Oct-18	40%
ACB10690A001	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C998 in Portion A3	48	310	08-Dec-17	06-Feb-18	08-Nov-17 A	23-Nov-18	10%
ACB10730	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C999 (600 sqm) (Provisional Work)	6	6	16-Aug-18	22-Aug-18	17-Sep-18	22-Sep-18	0%
ACB10740	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C999 (600 sqm) (Provisional Work)	6	6	23-Aug-18	29-Aug-18	24-Sep-18	02-Oct-18	0%
ACB10750	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C999 (600 sqm)	48	48	30-Aug-18	27-Oct-18	03-Oct-18	28-Nov-18	0%
ACB10780	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1003 (400 sqm) - 80sqm/d (Provisional Work)	5	293	16-Apr-18	20-Apr-18	09-Oct-17 A	04-Oct-18	0%
ACB10790	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C1003 (400 sqm) (Provisional Work)	6	248	21-Apr-18	27-Apr-18	04-Dec-17 A	08-Oct-18	60%
ACB10800	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C1003 (400 sqm) (Provisional Work)	6	250	28-Apr-18	05-May-18	06-Dec-17 A	11-Oct-18	40%
ACB10810	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C1003 (400 sqm) (Provisional Work)	48	194	10-May-18	07-Jul-18	16-Apr-18 A	05-Dec-18	5%
Portion B5								
Portion B5 North & East Side adjacent to Portion B2 and Pumping Station and Reservoirs								
Site Formation								
ACB50060	B5 - 9 Months Establishment Works for Landscape Softworks (Dwg.No.60328348/SF&I/1051&1052)	270	554	16-Oct-17	12-Sep-18	15-Sep-17 A	31-Jul-19	5%
ACB50140	B5 - Anchorage Installation of Scaffold for Slope 11NE-D/C1000 (200 sqm)	12	12	16-Oct-18	30-Oct-18	16-Oct-18*	30-Oct-18	0%
ACB50150	B5 - Erection of Scaffold for Slope 11NE-D/C1000 (200 sqm) - 150sqm/d	2	2	31-Oct-18	01-Nov-18	31-Oct-18	01-Nov-18	0%
ACB50160	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C1000 (200 sqm) - 80sqm/d (Provisional Work)	3	3	02-Nov-18	05-Nov-18	02-Nov-18	05-Nov-18	0%
ACB50170	B5 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-D/C1000 (200 sqm) (Provisional Work)	6	6	06-Nov-18	12-Nov-18	06-Nov-18	12-Nov-18	0%
ACB50180	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C1000 (200 sqm) (Provisional Work)	6	6	13-Nov-18	19-Nov-18	13-Nov-18	19-Nov-18	0%
ACB50190	B5 - Rock Slope Stabilization Measures for Slope 11NE-D/C1000 (200 sqm) (Provisional Work)	48	48	20-Nov-18	17-Jan-19	20-Nov-18	17-Jan-19	0%
ACB50200	B5 - Anchorage Installation of Scaffold for Slope 11NE-D/C982 (1600 sqm)	12	12	06-Nov-18	19-Nov-18	06-Nov-18	19-Nov-18	0%
ACB50210	B5 - Erection of Scaffold for Slope 11NE-D/C982 (1600 sqm) - 150sqm/d	11	11	20-Nov-18	01-Dec-18	20-Nov-18	01-Dec-18	0%
ACB50220	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C982 (1600 sqm) - 80sqm/d (Provisional Work)	20	20	03-Dec-18	27-Dec-18	03-Dec-18	27-Dec-18	0%
ACB50380A001	B5 - Rock Scaling and Vegetation Stripping for Slope 11NE-B/C902	30	30	16-Aug-18	19-Sep-18	17-Sep-18	24-Oct-18	0%
ACB50470A001	B5 - Rock Scaling and Vegetation Stripping for Slope 11NE-D/C989	30	30	20-Sep-18	27-Oct-18	25-Oct-18	28-Nov-18	0%
Portion B8								
Site Formation								
ACB80020	B8 - Backfilling for Site Formation in Portion B8 (36 out of 48 layers completed)	60	331	18-Sep-17	29-Nov-17	01-Sep-17 A	13-Oct-18	64%
ACB80030	B8 - Construct New U-Channel 300U (approx 80m) and Catchpit TC6c	30	30	10-Sep-18	18-Oct-18	13-Oct-18	19-Nov-18	0%
ACB80040	B8 - Construct New U-Channel 375U (approx 66m) and Catchpit TC6d	26	68	14-Sep-18	18-Oct-18	29-Aug-18 A	19-Nov-18	60%
ACB80050	B8 - Construct New U-Channel 450U (approx 73m) and Catchpit TC6a	30	30	14-Sep-18	23-Oct-18	17-Sep-18	24-Oct-18	0%
ACB80060	B8 - Construct New U-Channel 525U (approx 80m) and Catchpit TC6c	36	36	14-Sep-18	30-Oct-18	17-Sep-18	31-Oct-18	0%
ACB80070	B8 - Construct New U-Channel 450U (approx 100m) and Catchpit TC6	40	40	27-Sep-18	15-Nov-18	29-Sep-18	16-Nov-18	0%
ACB80080	B8 - Construct New U-Channel 525U (approx 77m) and Catchpit TC6b	40	40	29-Oct-18	14-Dec-18	31-Oct-18	15-Dec-18	0%



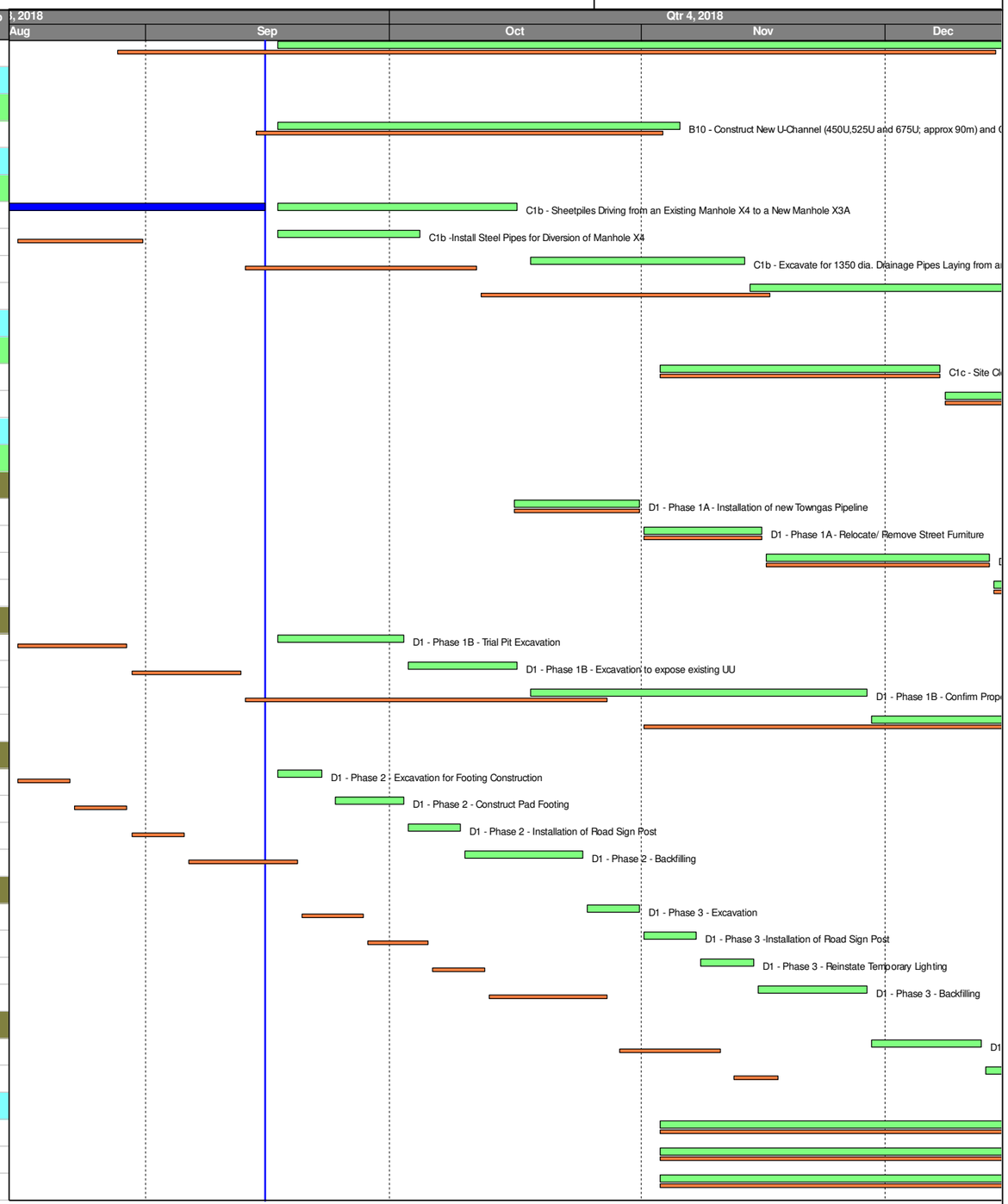
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACB80090	B8 - Erect Boundary Chainlink Fence (appox 600m) and Gates in Portion B8	90	90	28-Aug-18	14-Dec-18	17-Sep-18	05-Jan-19	0%
Portion B10								
Site Formation								
ACB100030	B10 - Construct New U-Channel (450U,525U and 675U; approx 90m) and Catchpits (3nos)	40	40	14-Sep-18	03-Nov-18	17-Sep-18*	05-Nov-18	0%
Portion C1b								
Site Formation								
ACC10009A002	C1b - Sheetpiles Driving from an Existing Manhole X4 to a New Manhole X3A	21	84	16-Jul-18	08-Aug-18	09-Jul-18 A	16-Oct-18	0%
ACC10009A003	C1b -Install Steel Pipes for Diversion of Manhole X4	14	14	16-Aug-18	31-Aug-18	17-Sep-18*	04-Oct-18	0%
ACC10009A004	C1b - Excavate for 1350 dia. Drainage Pipes Laying from an existing manhole X4 to a new manhole X3A	23	23	13-Sep-18	11-Oct-18	18-Oct-18	13-Nov-18	0%
ACC10009A4	C1b - 1350 dia. Drainage Pipes Laying from an existing manhole X4 to a new manhole X3A	30	30	12-Oct-18	16-Nov-18	14-Nov-18	18-Dec-18	0%
Portion C1c								
Site Formation								
ACC20010	C1c - Site Clearance in Portion C1c (Tentatively dependent on XP approval)	30	30	03-Nov-18	07-Dec-18	03-Nov-18*	07-Dec-18	0%
ACC20020	C1c - Excavation of Supports of 400 dia. Exposed Pipeline and Cocnreting for Supports in Portion C1c	30	30	08-Dec-18	15-Jan-19	08-Dec-18	15-Jan-19	0%
Portion D1								
Road Improvement at Po Lam Road								
Phase 1 Road Improvement Works (Location A)								
ACD10100	D1 - Phase 1A - Installation of new Towngas Pipeline	13	13	16-Oct-18	31-Oct-18	16-Oct-18*	31-Oct-18	0%
ACD10110A001	D1 - Phase 1A - Relocate/ Remove Street Furniture	13	13	01-Nov-18	15-Nov-18	01-Nov-18	15-Nov-18	0%
ACD10110A002	D1 - Phase 1A - Construct Pad Footing and Install Traffic Sign ADS03	24	24	16-Nov-18	13-Dec-18	16-Nov-18	13-Dec-18	0%
ACD10110A003	D1 - Phase 1A - Dismantle and Construct U-channel	24	24	14-Dec-18	14-Jan-19	14-Dec-18	14-Jan-19	0%
Phase 1 Road Improvement Works (Location B)								
ACD10130A001	D1 - Phase 1B - Trial Pit Excavation	12	12	16-Aug-18	29-Aug-18	17-Sep-18*	02-Oct-18	0%
ACD10140A001	D1 - Phase 1B - Excavation to expose existing UU	12	12	30-Aug-18	12-Sep-18	03-Oct-18	16-Oct-18	0%
ACD10150A001	D1 - Phase 1B - Confirm Proposed Location of Drawpits (Earth/E&M/ATC) and Light Signal Head	36	36	13-Sep-18	27-Oct-18	18-Oct-18	28-Nov-18	0%
ACD10160A001	D1 - Phase 1B - Construct Proposed Drawpits	66	66	01-Nov-18	19-Jan-19	29-Nov-18*	20-Feb-19	0%
Phase 2 Road Improvement Works								
ACD10180A001	D1 - Phase 2 - Excavation for Footing Construction	6	6	16-Aug-18	22-Aug-18	17-Sep-18*	22-Sep-18	0%
ACD10190A001	D1 - Phase 2 - Construct Pad Footing	6	6	23-Aug-18	29-Aug-18	24-Sep-18	02-Oct-18	0%
ACD10200A001	D1 - Phase 2 - Installation of Road Sign Post	6	6	30-Aug-18	05-Sep-18	03-Oct-18	09-Oct-18	0%
ACD10210A001	D1 - Phase 2 - Backfilling	12	12	06-Sep-18	19-Sep-18	10-Oct-18	24-Oct-18	0%
Phase 3 Road Improvement Works								
ACD10230A001	D1 - Phase 3 - Excavation	6	6	20-Sep-18	27-Sep-18	25-Oct-18	31-Oct-18	0%
ACD10240A001	D1 - Phase 3 -Installation of Road Sign Post	6	6	28-Sep-18	05-Oct-18	01-Nov-18	07-Nov-18	0%
ACD10250A001	D1 - Phase 3 - Reinstate Temporary Lighting	6	6	06-Oct-18	12-Oct-18	08-Nov-18	14-Nov-18	0%
ACD10250A002	D1 - Phase 3 - Backfilling	12	12	13-Oct-18	27-Oct-18	15-Nov-18	28-Nov-18	0%
Phase 4 Road Improvement Works								
ACD10220A001	D1 - Phase 4 - Excavation	12	12	29-Oct-18	10-Nov-18	29-Nov-18	12-Dec-18	0%
ACD10260A001	D1 - Phase 4 - Remove Road Lighting Cable Ducts	6	6	12-Nov-18	17-Nov-18	13-Dec-18	19-Dec-18	0%
Shui Chuen O & Kau To (Portion E2) - Subject to Excision								
ACO10290	Establishment Works for Slope 7SE-C/CR309 (Shui Chuen O)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10291	Establishment Works for Slope 7SE-C/C673 (Shui Chuen O)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10300	Establishment Works for Slope 7SE-C/C240 (Shui Chuen O)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%



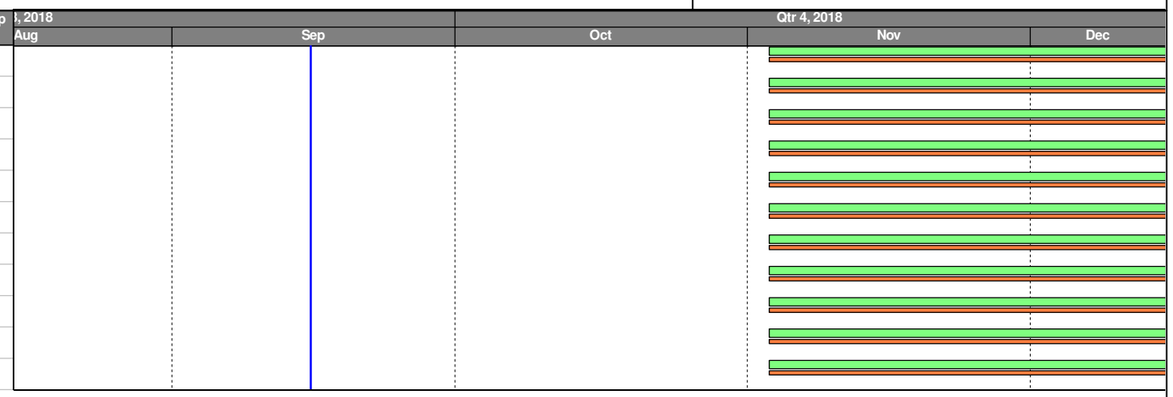
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

Activity ID	Activity Name	BL Project Duration	At Completion Duration	BL Project Start	BL Project Finish	Start	Finish	% Comp
ACO10310	Establishment Works for Slope 7SE-A/C604 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10311	Establishment Works for Slope 7SE-A/C605 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10315	Establishment Works for Slope 7NE-C/C464 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10330	Establishment Works for Slope 7NE-C/C207 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10340	Establishment Works for Slope 7NE-C/C482 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10341	Establishment Works for Slope 7NE-C/C471 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10350	Establishment Works for Slope 7NE-C/FR264 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10360	Establishment Works for Slope 7NE-C/CR78 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10361	Establishment Works for Slope 7NE-C/C217 (Kau To)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10370	Establishment Works for Slope 7SE-C/F238 (Shui Chuen O)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%
ACO10371	Establishment Works for Slope 7NE-C/C672 (Shui Chuen O)	45	45	03-Nov-18	17-Dec-18	03-Nov-18*	17-Dec-18	0%



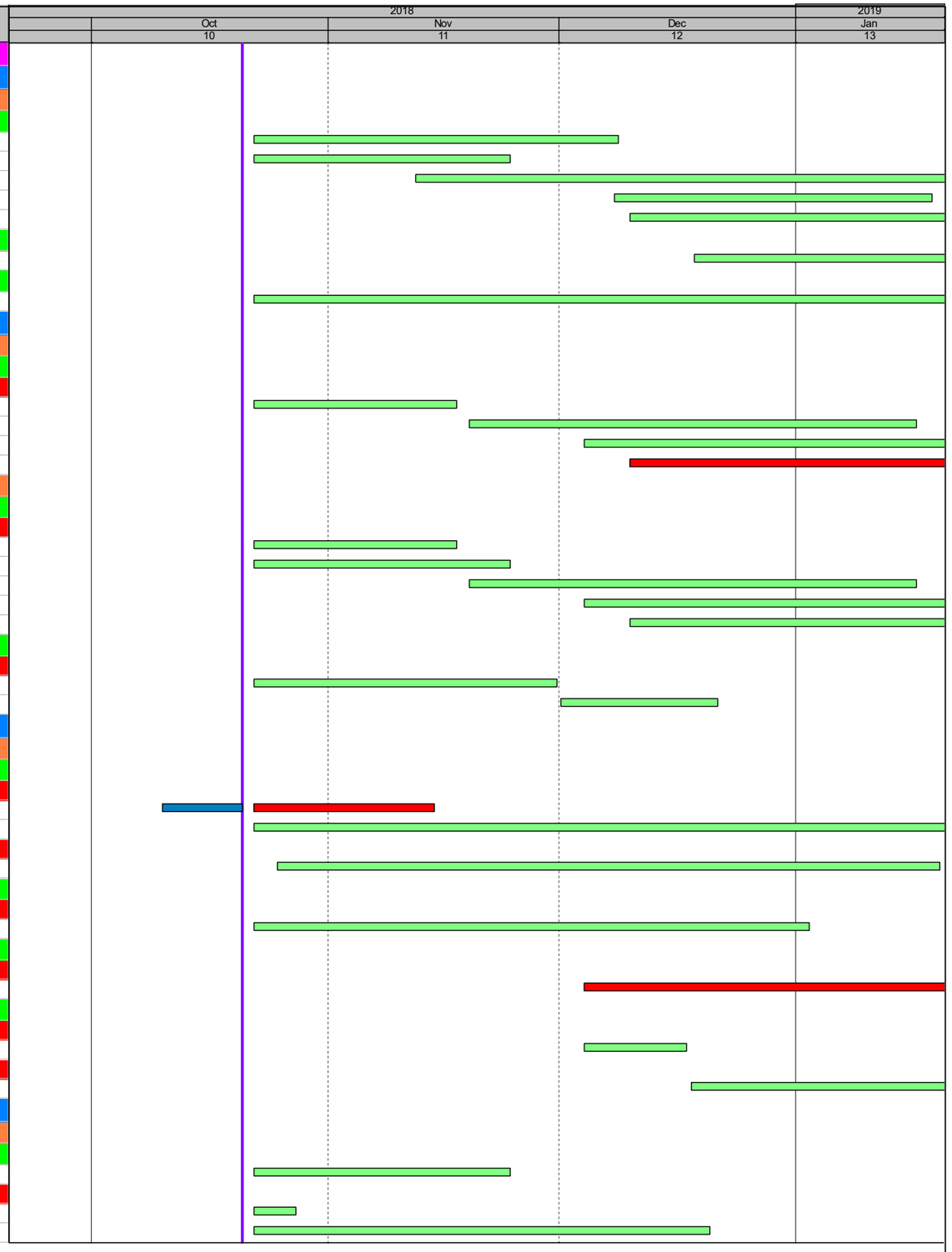
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

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

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

Date	Revision	Checked	Approved
15-Sept-18	3MRP (Cut Off on 15 Sept 18)		

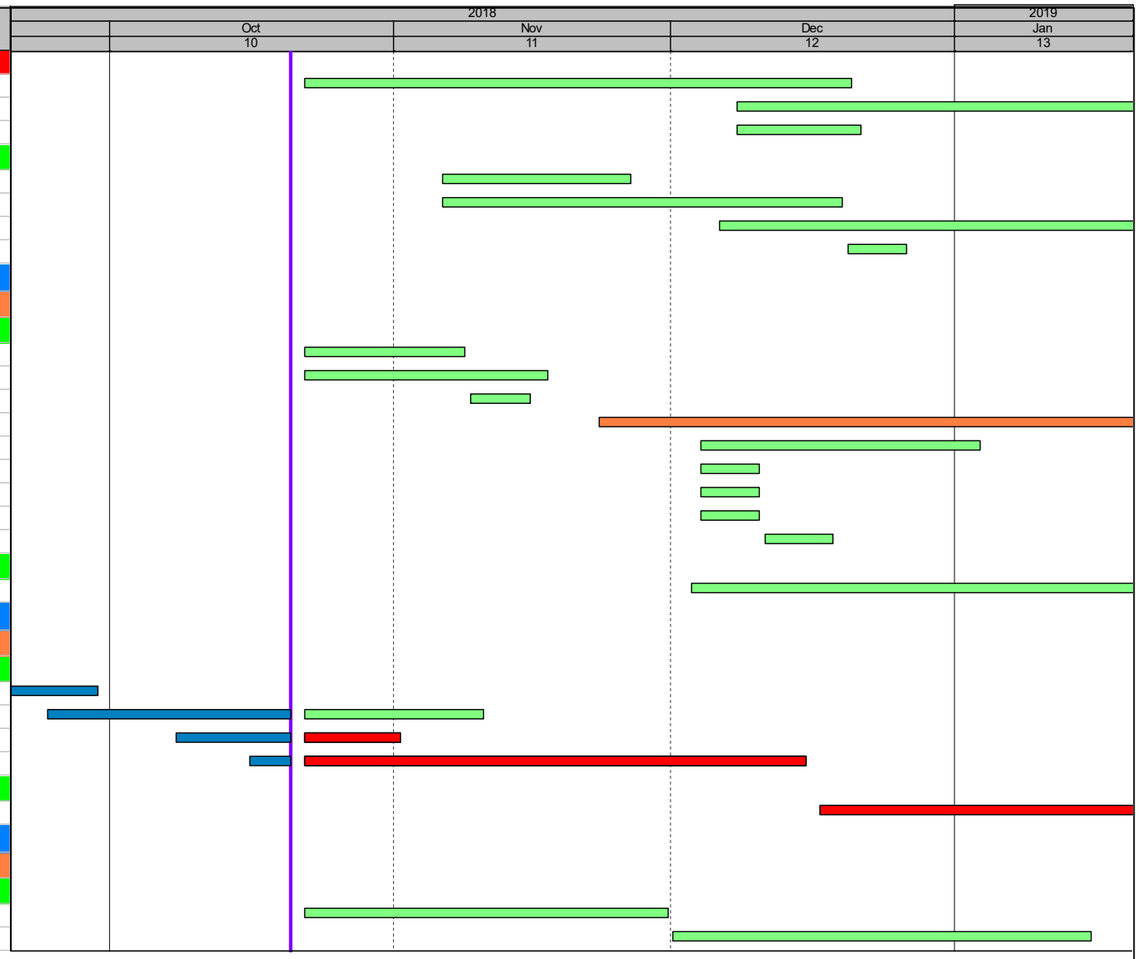
Activity ID	Activity Name	Duration	Start	Finish
NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (201810)-0		1153	17-Sep-18 A	27-Nov-21
Road Improvement Works Location 1 (RIW1)		170	22-Oct-18	21-May-19
Construction Works		170	22-Oct-18	21-May-19
Preliminary Works		107	22-Oct-18	01-Mar-19
CON10030	Trees survey at portion A	42	22-Oct-18	08-Dec-18
CON11060	Pre-condition survey (RIW1)	30	22-Oct-18	24-Nov-18
CON10040	Trees protection for trees transplant at portion A	89	12-Nov-18	01-Mar-19
CON10010	Install monitoring & instrumentation at portion A	33	08-Dec-18	18-Jan-19
CON10110	Trees protection / trees felling works at portion A	60	10-Dec-18	23-Feb-19
Works in Subway KS27		120	18-Dec-18	21-May-19
CON11130	Predrill works (RIW1)	120	18-Dec-18	21-May-19
Portion AIII Boulder Treatment Works		101	22-Oct-18	22-Feb-19
CON10020	Boulder Treatment Works (Portion AIII)	101	22-Oct-18	22-Feb-19
Road Improvement Works Location 2 (RIW2)		90	22-Oct-18	09-Feb-19
Construction Works in Slope C3 (Portion B)		90	22-Oct-18	09-Feb-19
Preliminary Works		90	22-Oct-18	09-Feb-19
Site Set-up Works		90	22-Oct-18	09-Feb-19
CON20010	Trees survey at portion B	24	22-Oct-18	17-Nov-18
CON20040	Trees protection / trees felling works at portion B	48	19-Nov-18	16-Jan-19
CON20080	Install monitoring & instrumentation at portion B	48	04-Dec-18	31-Jan-19
CON20060	Erect hoarding at portion B	48	10-Dec-18	09-Feb-19
Construction Noise Semi-Enclosure SE2 (Portion C)		90	22-Oct-18	09-Feb-19
Preliminary Works		90	22-Oct-18	09-Feb-19
Site Set-up Works		90	22-Oct-18	09-Feb-19
CON20020	Trees survey at portion C	24	22-Oct-18	17-Nov-18
CON21020	Pre-condition survey (RIW2, portion C)	30	22-Oct-18	24-Nov-18
CON20050	Trees protection / trees felling works at portion C	48	19-Nov-18	16-Jan-19
CON20090	Install monitoring & instrumentation at portion C	48	04-Dec-18	31-Jan-19
CON20070	Erect hoarding at portion C	48	10-Dec-18	09-Feb-19
Construction Works		53	22-Oct-18	21-Dec-18
Road Works		53	22-Oct-18	21-Dec-18
CON20030	Notification of district welcome sign board relocation	35	22-Oct-18	30-Nov-18
CON20100	Relocation of district welcome sign board	18	01-Dec-18	21-Dec-18
Road Improvement Works Location 3 (RIW3)		120	10-Oct-18 A	16-Mar-19
Construction Works		120	10-Oct-18 A	16-Mar-19
Works in Slope D1		120	10-Oct-18 A	16-Mar-19
Preparation Works		120	10-Oct-18 A	16-Mar-19
CON30860	Pre-condition survey (RIW3)	30	10-Oct-18 A	14-Nov-18
CON30010	Trees felling	120	22-Oct-18	16-Mar-19
Road Works (Slope D1)		72	25-Oct-18	19-Jan-19
CON30890	Utilities mapping at Section 3	72	25-Oct-18	19-Jan-19
Works in Slope D2		60	22-Oct-18	02-Jan-19
Construction of Retaining Wall RWD2		60	22-Oct-18	02-Jan-19
CON30020	Trees felling	60	22-Oct-18	02-Jan-19
Works in Slope D3		77	04-Dec-18	09-Mar-19
Slope Works (Slope D3)		77	04-Dec-18	09-Mar-19
CON30030	Install safety fencing, from haul road & hoarding	77	04-Dec-18	09-Mar-19
Noise Barrier Works		54	04-Dec-18	11-Feb-19
Site Set-up Works		12	04-Dec-18	17-Dec-18
CON30040	Traffic diversion	12	04-Dec-18	17-Dec-18
Noise Barrier Works alnong Lin Tak Road toward Lam Tin		42	18-Dec-18	11-Feb-19
CON30050	Install sheet pile (L=1300m, 7.5m/d, 4 teams)	42	18-Dec-18	11-Feb-19
Pedestrian Connectivity Facility (PC-E8)		113	22-Oct-18	11-Feb-19
Construction Works		113	22-Oct-18	11-Feb-19
Preparation Works		89	22-Oct-18	08-Feb-19
CON41170	Pre-condition survey (PC-E8)	30	22-Oct-18	24-Nov-18
Trees Works		52	22-Oct-18	20-Dec-18
CON40060	Trees survey to Portion G	6	22-Oct-18	27-Oct-18
CON40080	Trees felling works & trees protection works	52	22-Oct-18	20-Dec-18



Summary
Actual Work
Remaining Work
Critical Remainin...
Milestone

NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction
Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A
3-Month Rolling Programme

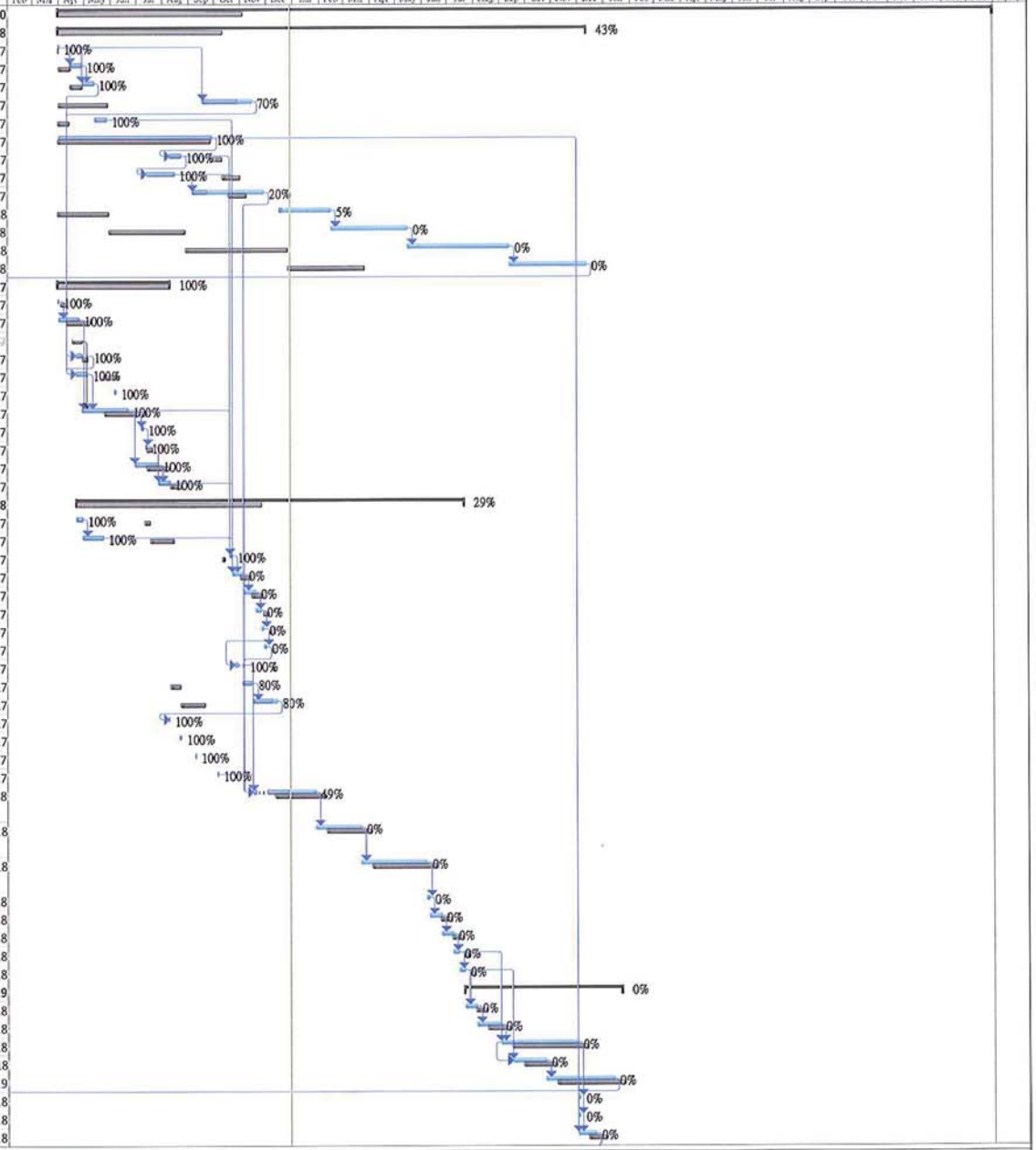
Activity ID	Activity Name	Duration	Start	Finish
Hoarding Works & Site Set-up		89	22-Oct-18	08-Feb-19
CON40020	Announcement to public works to be commenced	52	22-Oct-18	20-Dec-18
CON40090	Erect temporary staircase along E8-ABT & diversion	48	08-Dec-18	08-Feb-19
CON40070	Erect hoarding (along Hiu Ming Street)	12	08-Dec-18	21-Dec-18
Earth Works		98	06-Nov-18	11-Feb-19
CON40040	Install monitoring & instrumentation	18	06-Nov-18	26-Nov-18
CON40050	Intital reading for monitoring & instrumentation point	38	06-Nov-18	19-Dec-18
CON40140	Construct soldier pile wall to E8-ABT	52	06-Dec-18	11-Feb-19
CON40110	Prepare & submit Intital reading for monitoring & instrumentation point	7	20-Dec-18	26-Dec-18
Pedestrian Connectivity Facility (PC-E11)		921	22-Oct-18	27-Nov-21
Construction Works		921	22-Oct-18	27-Nov-21
Preliminary Works		921	22-Oct-18	27-Nov-21
CON40650	Trees survey	16	22-Oct-18	08-Nov-18
CON41180	Pre-condition survey (PC-E11)	24	22-Oct-18	17-Nov-18
CON40720	Prepare & submit trees survey report	6	09-Nov-18	15-Nov-18
CON40731	Trees preservation duration works period at portion E	893	23-Nov-18	27-Nov-21
CON40660	Install ground settlement marker at Portion E	24	04-Dec-18	03-Jan-19
CON40670	Install tiltmeter marker at Portion E	6	04-Dec-18	10-Dec-18
CON40680	Install building settlement marker at Portion E	6	04-Dec-18	10-Dec-18
CON40690	Initial reading taking	6	04-Dec-18	10-Dec-18
CON40700	Prepare & submit initial reading for monitoring & instrumentation	7	11-Dec-18	18-Dec-18
Sub-structure Works		96	03-Dec-18	30-Mar-19
CON40760	Construct U/G utilities	96	03-Dec-18	30-Mar-19
Pedestrian Connectivity Facility System A (SYA)		94	17-Sep-18 A	23-Jan-19
Construction Works		94	17-Sep-18 A	23-Jan-19
Preliminary Works		68	17-Sep-18 A	15-Dec-18
CON50010	UU detection	8	17-Sep-18 A	29-Sep-18 A
CON50160	Pre-condition survey (SYA)	30	24-Sep-18 A	10-Nov-18
CON50020	Excavation for trial pit	42	08-Oct-18 A	01-Nov-18
CON50030	Erect hoarding	52	16-Oct-18 A	15-Dec-18
Sub-structure Works		30	17-Dec-18	23-Jan-19
CON500410	Install sheet pile at SYA-F1 (62m L, 2m/d, 1 team)	30	17-Dec-18	23-Jan-19
Pedestrian Connectivity Facility System B (SYB)		71	22-Oct-18	15-Jan-19
Construction Works		71	22-Oct-18	15-Jan-19
Preliminary Works		71	22-Oct-18	15-Jan-19
CON50170	Pre-condition survey (SYB)	35	22-Oct-18	30-Nov-18
CON50180	UU detection	36	01-Dec-18	15-Jan-19



Summary
Actual Work
Remaining Work
Critical Remainin...
Milestone

Revised programme for Section A-E1_Dec 17

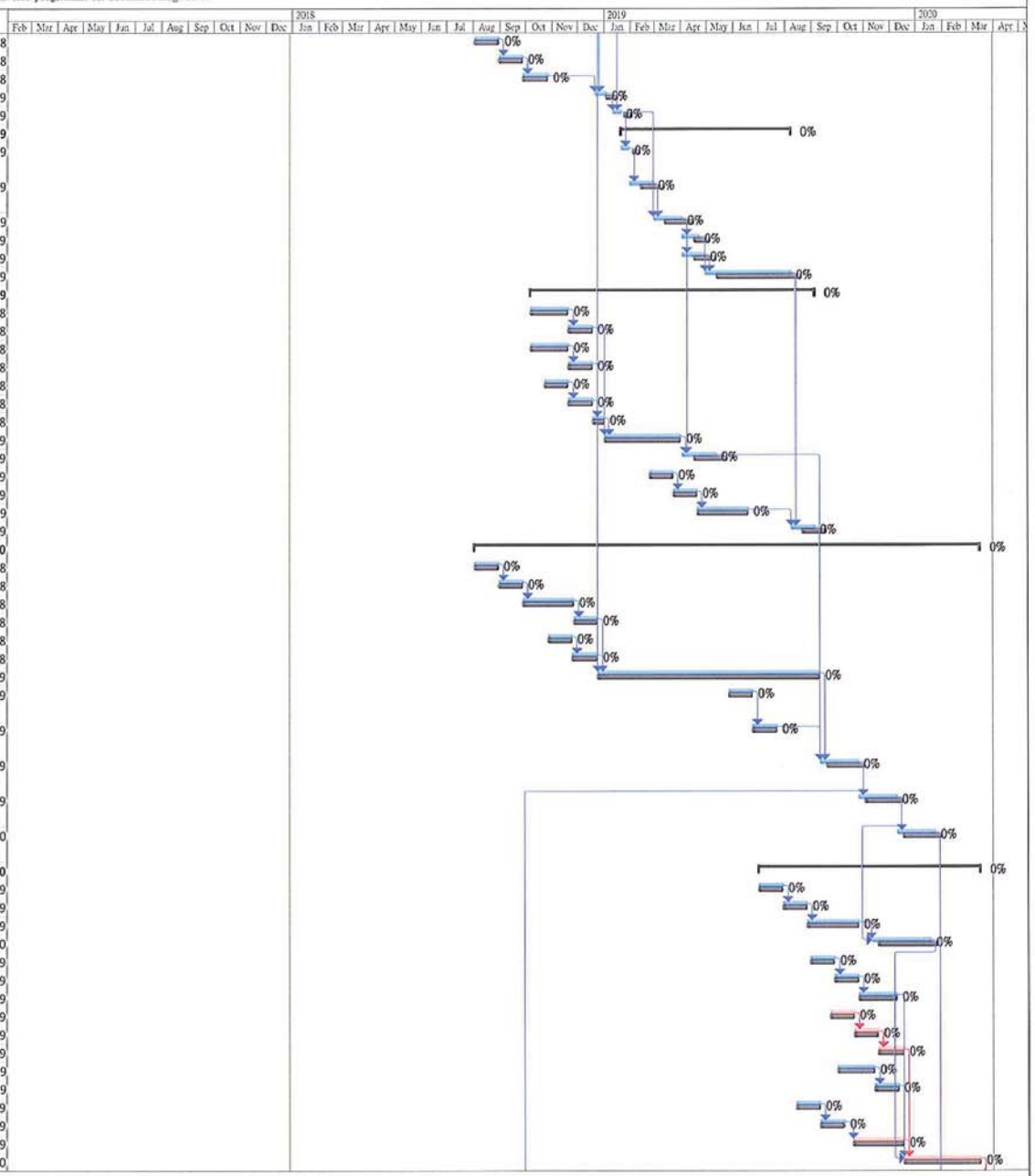
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
1	A.1.1	**Section A, Portion 1 - Escalator (E1)**	**1096 days**	**986.55 days**	**Fri 31/3/17**	**Mon 30/3/20**
2	A.1.1.1	**Pre Construction Works**	**620 days**	**354.65 days**	**Fri 31/3/17**	**Mon 10/12/18**
3	A.1.1.1.1	Access Date for Portion 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, 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

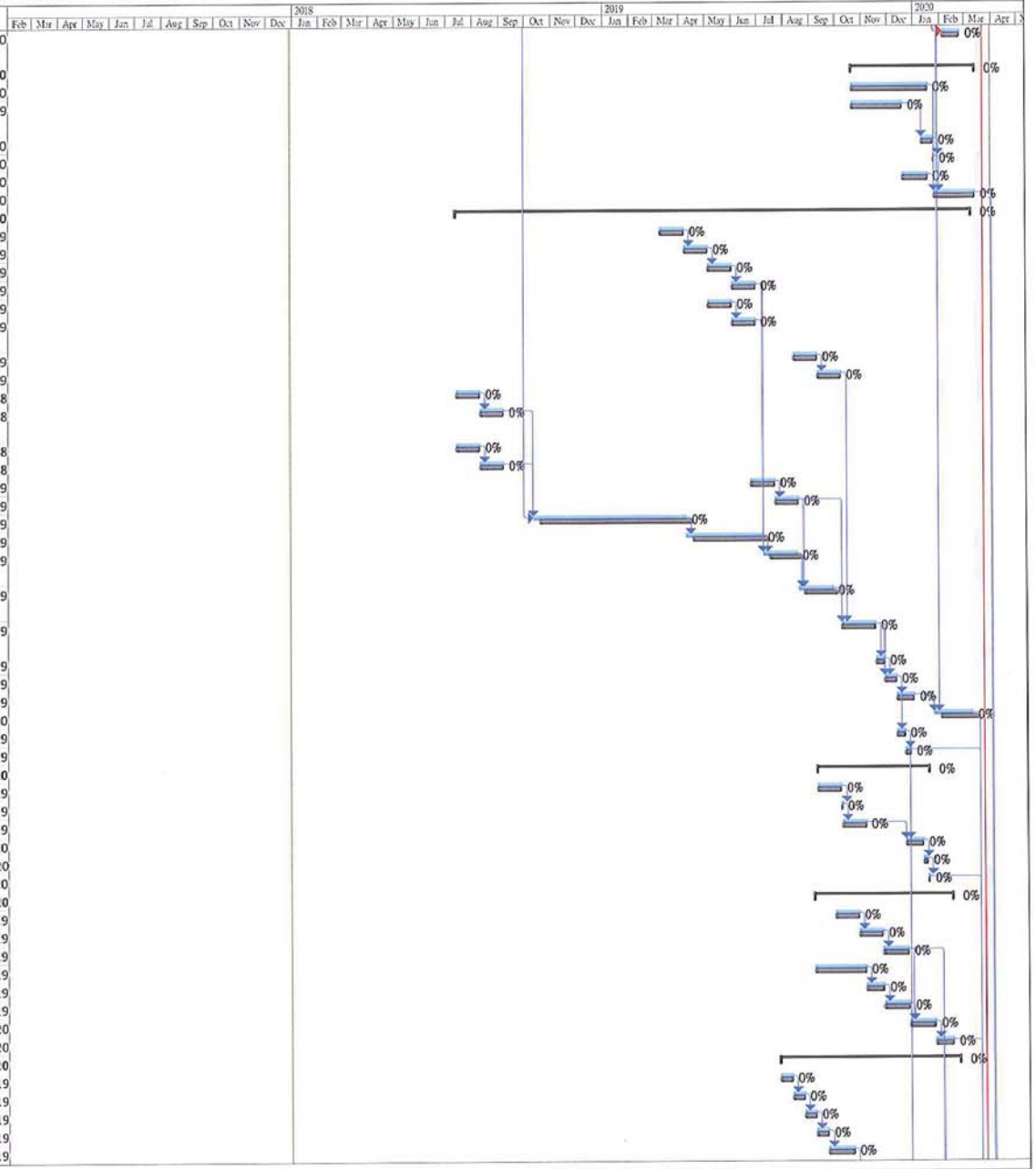
Revised programme for Section A-E1_Dec 17

ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
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 arrrest 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 system	44 days	44 days	Mon 30/9/19	Tue 12/11/19
112	A.1.1.7.25	Approval of design submission of roof system	28 days	28 days	Wed 13/11/19	Tue 10/12/19
113	A.1.1.7.26	Proposal of off site fabrication of steelworks	28 days	28 days	Tue 13/8/19	Mon 9/9/19
114	A.1.1.7.27	Approval of off site fabrication of steelworks	28 days	28 days	Tue 10/9/19	Mon 7/10/19
115	A.1.1.7.28	Fabrication of steelworks	60 days	60 days	Fri 18/10/19	Mon 16/12/19
116	A.1.1.7.29	Erect Canopy and roofing system	90 days	90 days	Tue 17/12/19	Sun 15/3/20



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

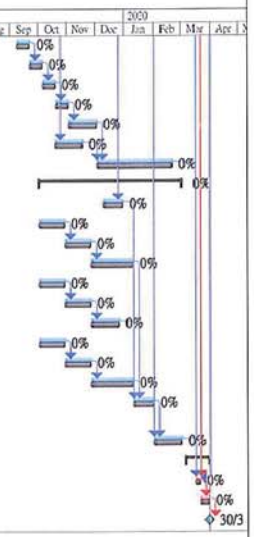
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
117	A.1.1.7.30	Decking construction connecting to existing footpath	20 days	20 days	Tue 4/2/20	Sun 23/2/20
118	**A.1.1.8**	**Drainage works construction**	**145 days**	**145 days**	**Sun 20/10/19**	**Thu 12/3/20**
119	A.1.1.8.1	Application of XP for carriageway of Hiu Ming Street	90 days	90 days	Sun 20/10/19	Fri 17/1/20
120	A.1.1.8.2	TTA application for drainage works at carriageway of Hiu Ming Street	60 days	60 days	Sun 20/10/19	Wed 18/12/19
121	A.1.1.8.3	Road works advice	14 days	14 days	Fri 10/1/20	Thu 23/1/20
122	A.1.1.8.4	Implementation of TTA	1 day	1 day	Fri 24/1/20	Fri 24/1/20
123	A.1.1.8.5	Procurement to delivery of material of drainage	30 days	30 days	Thu 19/12/19	Fri 17/1/20
124	A.1.1.8.6	Construction of drainage	48 days	48 days	Sat 25/1/20	Thu 12/3/20
125	**A.1.1.9**	**E & M Works**	**605 days**	**605 days**	**Thu 12/7/18**	**Sat 7/3/20**
126	A.1.1.9.1	Proposal of Specialist for E&M works	28 days	28 days	Sat 9/3/19	Fri 5/4/19
127	A.1.1.9.2	Approval of Specialist for E&M works	28 days	28 days	Sat 6/4/19	Fri 3/5/19
128	A.1.1.9.3	Material submission of cable tray	28 days	28 days	Sat 4/5/19	Fri 31/5/19
129	A.1.1.9.4	Approval of material submission of cable tray	28 days	28 days	Sat 1/6/19	Fri 28/6/19
130	A.1.1.9.5	Material submission of cables,conduits, fittings	28 days	28 days	Sat 4/5/19	Fri 31/5/19
131	A.1.1.9.6	Approval of material submission of cables, conduits, fittings	28 days	28 days	Sat 1/6/19	Fri 28/6/19
132	A.1.1.9.7	Material submission of lightings	28 days	28 days	Mon 12/8/19	Sun 8/9/19
133	A.1.1.9.8	Approval of material submission of lightings	28 days	28 days	Mon 9/9/19	Sun 6/10/19
134	A.1.1.9.9	Material submission of pillar box c/w accessories	28 days	28 days	Thu 12/7/18	Wed 8/8/18
135	A.1.1.9.10	Approval of material submission of pillar box c/w accessories	28 days	28 days	Thu 9/8/18	Wed 5/9/18
136	A.1.1.9.11	Material submission of MCB distribution board	28 days	28 days	Thu 12/7/18	Wed 8/8/18
137	A.1.1.9.12	Approval of MCB distribution board	28 days	28 days	Thu 9/8/18	Wed 5/9/18
138	A.1.1.9.13	Material submission of communication cables	28 days	28 days	Sun 23/6/19	Sat 20/7/19
139	A.1.1.9.14	Approval of communication cables	28 days	28 days	Sun 21/7/19	Sat 17/8/19
140	A.1.1.9.15	Positioning,/Construction/Installation of Pillar Box	180 days	180 days	Wed 10/10/18	Sun 7/4/19
141	A.1.1.9.16	Application of Power Supply	90 days	90 days	Mon 8/4/19	Sat 6/7/19
142	A.1.1.9.17	Trenching works and laying of ducting and power cables	40 days	40 days	Sun 7/7/19	Thu 15/8/19
143	A.1.1.9.18	Trenching works and laying of telecommunication cables	40 days	40 days	Sun 18/8/19	Thu 26/9/19
144	A.1.1.9.19	Trenching works and laying of lighting/communication cables	40 days	40 days	Mon 7/10/19	Fri 15/11/19
145	A.1.1.9.20	Connection of Telecommunication cables	10 days	10 days	Sat 16/11/19	Mon 25/11/19
146	A.1.1.9.21	Lighting/Communication connections	14 days	14 days	Tue 26/11/19	Mon 9/12/19
147	A.1.1.9.22	Finishing Works	21 days	21 days	Tue 10/12/19	Mon 30/12/19
148	A.1.1.9.23	T&C of Escalator and Submission of Form LE5 to EMSD	45 days	45 days	Thu 23/1/20	Sat 7/3/20
149	A.1.1.9.24	Reinstatement of footpath/stair	10 days	10 days	Tue 10/12/19	Thu 19/12/19
150	A.1.1.9.25	Demobilization and Clean up the Site	7 days	7 days	Fri 20/12/19	Thu 26/12/19
151	**A.1.1.10**	**Landscaping Works**	**131 days**	**131 days**	**Sun 8/9/19**	**Thu 16/1/20**
152	A.1.1.10.1	Submission of proposal of Landscape specialist	28 days	28 days	Sun 8/9/19	Sat 5/10/19
153	A.1.1.10.2	Nursery Inspection	1 day	1 day	Sun 6/10/19	Sun 6/10/19
154	A.1.1.10.3	Approval of proposal of Landscape specialist	28 days	28 days	Mon 7/10/19	Sun 3/11/19
155	A.1.1.10.4	Construction of hard and soft Landscape works	21 days	21 days	Fri 20/12/19	Thu 9/1/20
156	A.1.1.10.5	Rectification of detects	5 days	5 days	Fri 10/1/20	Tue 14/1/20
157	A.1.1.10.6	General tidy up	2 days	2 days	Wed 15/1/20	Thu 16/1/20
158	**A.1.1.11**	**Road and Pavings / traffic Signs**	**162 days**	**162 days**	**Wed 4/9/19**	**Wed 12/2/20**
159	A.1.1.11.1	Material submission of road pavers	28 days	28 days	Sat 28/9/19	Fri 25/10/19
160	A.1.1.11.2	Approval of material submission of road pavers	28 days	28 days	Sat 26/10/19	Fri 22/11/19
161	A.1.1.11.3	Procurement to delivery of road pavers	30 days	30 days	Sat 23/11/19	Sun 22/12/19
162	A.1.1.11.4	Ordering to delivery of concrete kerbs from CSD	60 days	60 days	Wed 4/9/19	Sat 2/11/19
163	A.1.1.11.5	Construction of kerbs	21 days	21 days	Sun 3/11/19	Sat 23/11/19
164	A.1.1.11.6	Construction of footpath	30 days	30 days	Sun 24/11/19	Mon 23/12/19
165	A.1.1.11.7	Construction of paved area	30 days	30 days	Tue 24/12/19	Wed 22/1/20
166	A.1.1.11.8	Installation of traffic/Directional Signs	21 days	21 days	Thu 23/1/20	Wed 12/2/20
167	**A.1.1.12**	**External Finishes**	**211 days**	**211 days**	**Thu 25/7/19**	**Thu 20/2/20**
168	A.1.1.12.1	Material submission of tiles	14 days	14 days	Thu 25/7/19	Wed 7/8/19
169	A.1.1.12.2	Comment of material submission of tiles	14 days	14 days	Thu 8/8/19	Wed 21/8/19
170	A.1.1.12.3	2nd submission of material of tiles	14 days	14 days	Thu 22/8/19	Wed 4/9/19
171	A.1.1.12.4	Approval of material of tiles	14 days	14 days	Thu 5/9/19	Wed 18/9/19
172	A.1.1.12.5	Procurement to delivery of tiles	30 days	30 days	Thu 19/9/19	Fri 18/10/19



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

Revised programme for Section A-E1_Dec 17

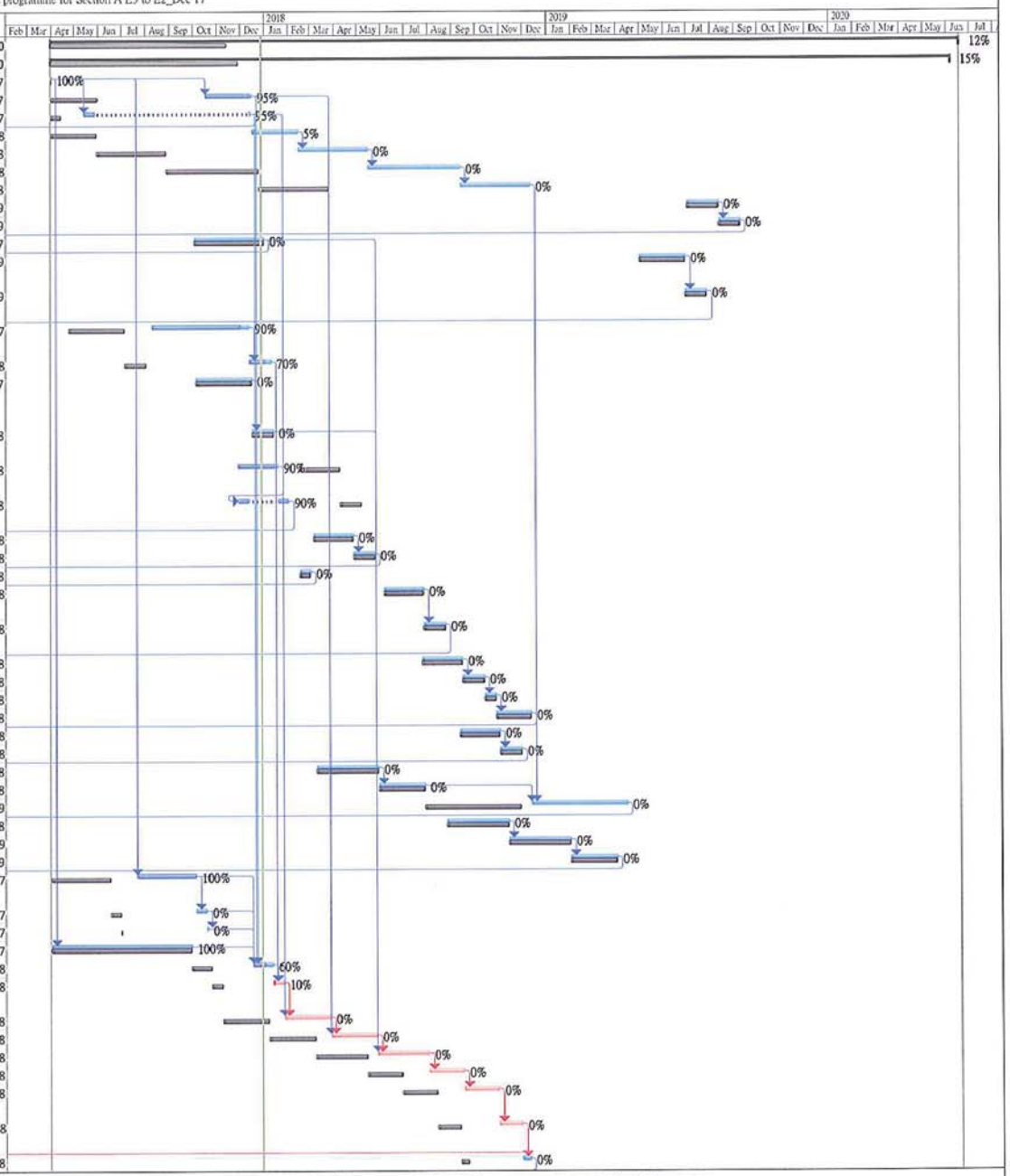
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
173	A.1.1.12.6	Material submission of paint	14 days	14 days	Sun 8/9/19	Sat 21/9/19
174	A.1.1.12.7	Comment of matreial submission of paint	14 days	14 days	Sun 22/9/19	Sat 5/10/19
175	A.1.1.12.8	2nd submission of paints	14 days	14 days	Sun 6/10/19	Sat 19/10/19
176	A.1.1.12.9	Approval of material submission of paints	14 days	14 days	Sun 20/10/19	Sat 2/11/19
177	A.1.1.12.10	Procurement to delivery of paints	30 days	30 days	Sun 3/11/19	Mon 2/12/19
178	A.1.1.12.11	Construction of Tactile/Cermaric/Concrete Tiles	30 days	30 days	Sat 19/10/19	Sun 17/11/19
179	A.1.1.12.12	Texture Spray/Fungus Resistant Paint	80 days	80 days	Tue 3/12/19	Thu 20/2/20
180	**A.1.1.13**	**Construction of Sau Mau Ping Memorial Park**	**152 days**	**152 days**	**Wed 2/10/19**	**Sun 1/3/20**
181	A.1.1.13.1	Slope improvement work (11NE-D/CR222)	21 days	21 days	Tue 10/12/19	Mon 30/12/19
182	A.1.1.13.2	Material submission of Pavillion	28 days	28 days	Wed 2/10/19	Tue 29/10/19
183	A.1.1.13.3	Approval ot material submission of Pavillion	28 days	28 days	Wed 30/10/19	Tue 26/11/19
184	A.1.1.13.4	Procurement to delivery of Pavillion	45 days	45 days	Wed 27/11/19	Fri 10/1/20
185	A.1.1.13.5	Material submission of Bench	28 days	28 days	Wed 2/10/19	Tue 29/10/19
186	A.1.1.13.6	Approval to material submission of Bench	28 days	28 days	Wed 30/10/19	Tue 26/11/19
187	A.1.1.13.7	Procument to delivery of Bench	30 days	30 days	Wed 27/11/19	Thu 26/12/19
188	A.1.1.13.8	Material submission of Pole Light	28 days	28 days	Wed 2/10/19	Tue 29/10/19
189	A.1.1.13.9	Approval of material submission of Pole Light	28 days	28 days	Wed 30/10/19	Tue 26/11/19
190	A.1.1.13.10	Procurement to delivery of Pole light	45 days	45 days	Wed 27/11/19	Fri 10/1/20
191	A.1.1.13.11	Construction of Pavillon/Bench/Pole Light with ducting	21 days	21 days	Sat 11/1/20	Fri 31/1/20
192	A.1.1.13.12	Construction of Pavers	30 days	30 days	Sat 1/2/20	Sun 1/3/20
193	**A.1.1.14**	**General Inspection and Tidy up of Portion 1**	**25 days**	**25 days**	**Fri 6/3/20**	**Mon 30/3/20**
194	A.1.1.14.1	General Inspection and tidy up of Portion 1	5 days	5 days	Mon 16/3/20	Fri 20/3/20
195	A.1.1.14.2	Allowabale Terminal Float	10 days	10 days	Sat 21/3/20	Mon 30/3/20
196	A.1.1.14.3	Completion of works	0 days	0 days	Mon 30/3/20	Mon 30/3/20



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

Revised programme for Section A E3 to E2_Dec 17

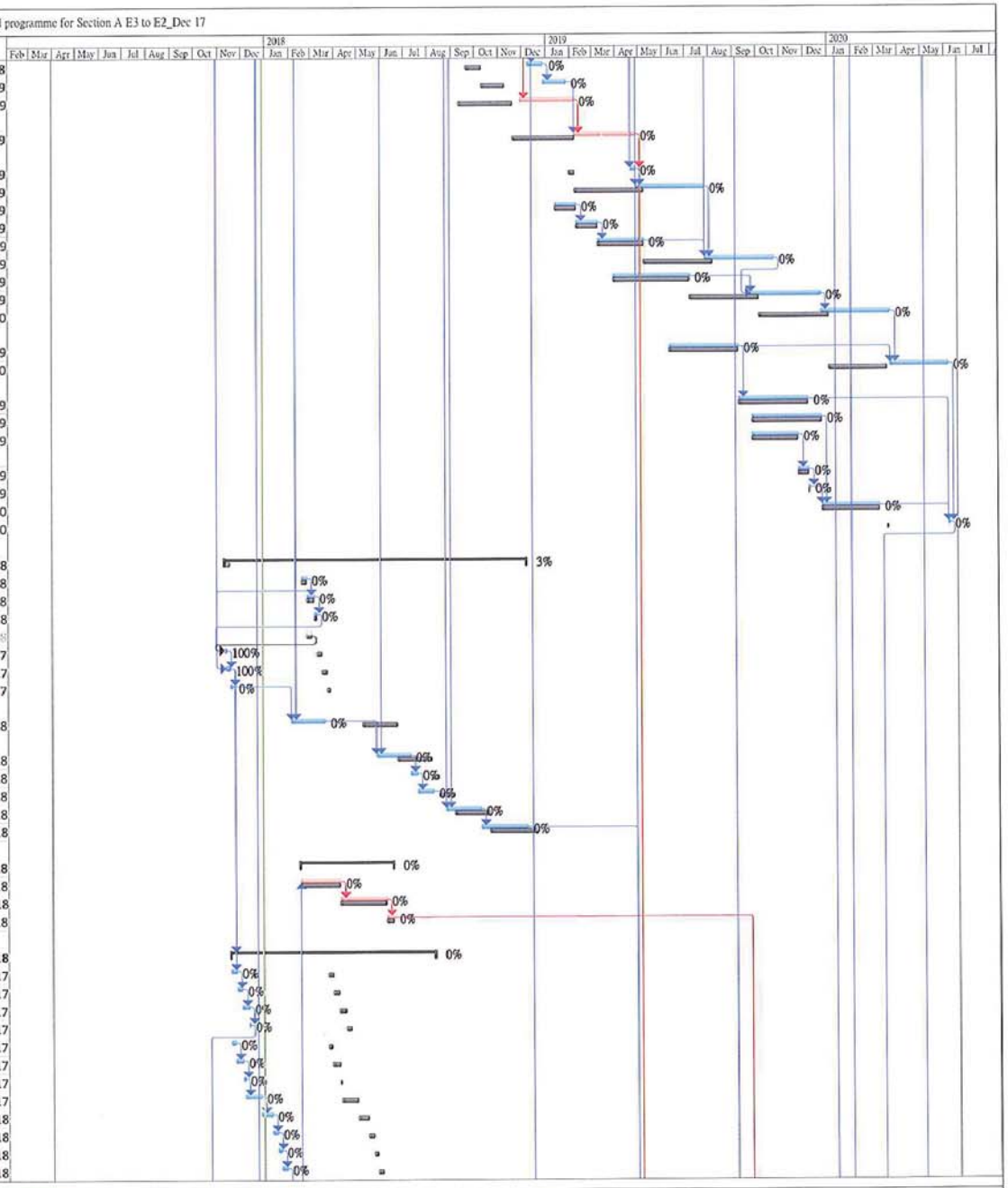
ID	Task Name	Duration	Remaining Duration	Start	Finish
A.2.1	Section A	1175 days	1039.17 days	Fri 31/3/17	Wed 17/6/20
A.2.1.1	E3 and E2 Footbridge and lift Tower	1164 days	994.66 days	Fri 31/3/17	Sat 6/6/20
A.2.1.1.1	Access Date of Portion 2	1 day	0 days	Fri 31/3/17	Fri 31/3/17
A.2.1.1.2	Initial Site 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

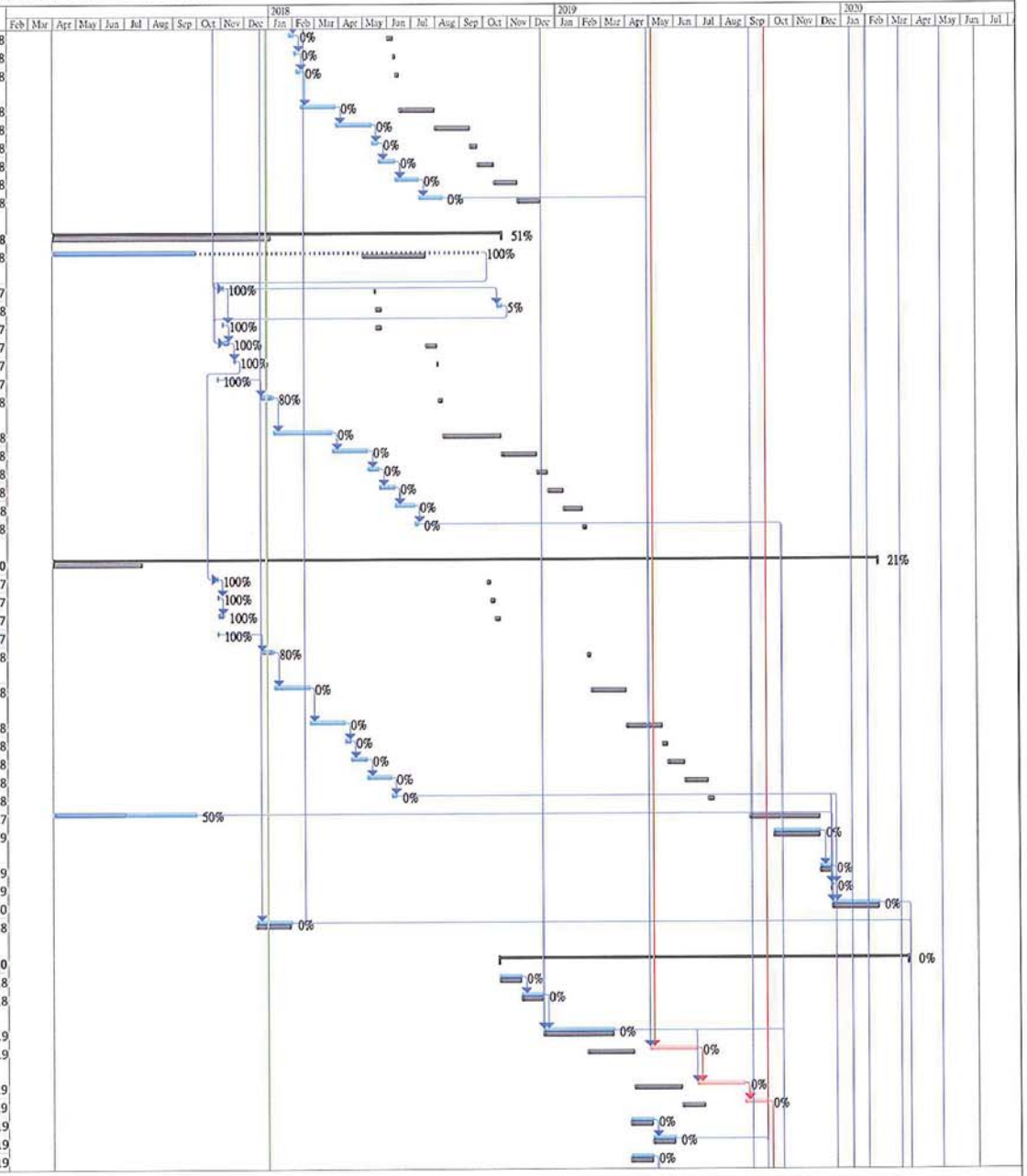
Revised programme for Section A E3 to E2_Dec 17

ID	Task Name	Duration	Remaining Duration	Start	Finish
A.2.1.1.48	Rock slope survey	20 days	20 days	Sat 8/12/18	Thu 27/12/18
A.2.1.1.49	Rock slope stabilization works to be instructed	30 days	30 days	Fri 28/12/18	Sat 26/1/19
A.2.1.1.50	Construction of E3 Superstructure E3-ST1 from 43.6mPD to 59.7mPD	70 days	70 days	Wed 28/11/18	Tue 5/2/19
A.2.1.1.51	Construction of E3 Superstructure E3-ST1 from 59.7mPD to 71.2mPD	80 days	80 days	Wed 6/2/19	Fri 26/4/19
A.2.1.1.52	Installation of bridge bearing	7 days	7 days	Sat 20/4/19	Fri 26/4/19
A.2.1.1.53	Installation of lift (3nrs)	90 days	90 days	Sat 27/4/19	Thu 25/7/19
A.2.1.1.54	Design of glazing and louver	28 days	28 days	Sat 12/1/19	Fri 8/2/19
A.2.1.1.55	Approval of design for glazing and louver	28 days	28 days	Sat 9/2/19	Fri 8/3/19
A.2.1.1.56	Procurement to delivery of glazing and louver	60 days	60 days	Sat 9/3/19	Tue 7/5/19
A.2.1.1.57	Installation of glazing and louver	90 days	90 days	Fri 26/7/19	Wed 23/10/19
A.2.1.1.58	Application of telecommunication lines	100 days	100 days	Fri 29/3/19	Sat 6/7/19
A.2.1.1.59	Installation of E&M for the lift towers	90 days	90 days	Tue 24/9/19	Sun 22/12/19
A.2.1.1.60	Positioning, Construction, installation and connection of pillar box	90 days	90 days	Mon 23/12/19	Sat 21/3/20
A.2.1.1.61	Application and connection of power supply	90 days	90 days	Mon 10/6/19	Sat 7/9/19
A.2.1.1.62	Testing and comminissioning of lifts and submission of form LE5 to EMSD	75 days	75 days	Sun 22/3/20	Thu 4/6/20
A.2.1.1.63	Decoration and Finishings works for E3-ST1	90 days	90 days	Sun 8/9/19	Fri 6/12/19
A.2.1.1.64	Application of XP for Drainage works at Hiu Ming Street	90 days	90 days	Wed 25/9/19	Mon 23/12/19
A.2.1.1.65	Approval of TTA for construction of Drainage works at Hiu Ming Street	60 days	60 days	Wed 25/9/19	Sat 23/11/19
A.2.1.1.66	Road Works Advice	14 days	14 days	Sun 24/11/19	Sat 7/12/19
A.2.1.1.67	Implementation of TTA	1 day	1 day	Sun 8/12/19	Sun 8/12/19
A.2.1.1.68	Drainage works at Hiu Ming Street	75 days	75 days	Tue 24/12/19	Sat 7/3/20
A.2.1.1.69	General tidy up	2 days	2 days	Fri 5/6/20	Sat 6/6/20
A.2.1.2	**Pile Cap E3-PC3 and E3 Abutment**	**392 days**	**379.8 days**	**Thu 9/11/17**	**Wed 5/12/18**
A.2.1.2.1	Set up tubular platform for removal of soil nails at Slope E3b	7 days	7 days	Fri 16/2/18	Thu 22/2/18
A.2.1.2.2	Removal of soil nails (19nrs) at slope E3b	10 days	10 days	Fri 23/2/18	Sun 4/3/18
A.2.1.2.3	Removal of tubular platform	3 days	3 days	Mon 5/3/18	Wed 7/3/18
~~A.2.1.2.4~~	~~Mobilization of plants for predrilling for pile cap E3-PC-3~~	~~2 days~~	~~2 days~~	~~Fri 23/2/18~~	~~Thu 1/3/18~~
A.2.1.2.5	Setting up of plants for predrill for pile cap E3-PC3	2 days	0 days	Thu 9/11/17	Fri 10/11/17
A.2.1.2.6	Predrill for pile cap E3-PC3	6 days	0 days	Fri 10/11/17	Wed 15/11/17
A.2.1.2.7	Mobilization of plants for drilling for installation of pre-bored socket H piles (9 nrs) for pile cap E3-PC3	4 days	4 days	Thu 16/11/17	Sun 19/11/17
A.2.1.2.8	Drilling and installation of pre-bored socket H piles (9 nrs)for pile cap E3-PC3	45 days	45 days	Fri 2/2/18	Sun 18/3/18
A.2.1.2.9	Testing of piles	45 days	45 days	Thu 24/5/18	Sat 7/7/18
A.2.1.2.10	Proof Drilling	9 days	9 days	Sun 8/7/18	Mon 16/7/18
A.2.1.2.11	Excavation with temporary shoring for pile cap E3-PC3	21 days	21 days	Tue 17/7/18	Mon 6/8/18
A.2.1.2.12	Construction of Pile caps E3-PC3	45 days	45 days	Thu 23/8/18	Sat 6/10/18
A.2.1.2.13	Construction of E3 Abutment	60 days	60 days	Sun 7/10/18	Wed 5/12/18
A.2.1.3	**Substructure of Covered Walkway**	**122 days**	**122 days**	**Wed 14/2/18**	**Fri 15/6/18**
A.2.1.3.1	Excavation of footing of covered walkway footing	52 days	52 days	Wed 14/2/18	Fri 6/4/18
A.2.1.3.2	Construction of footing of covered walkway footing	60 days	60 days	Sat 7/4/18	Tue 5/6/18
A.2.1.3.3	Backfill the footing of the covered walkway	10 days	10 days	Wed 6/6/18	Fri 15/6/18
A.2.1.4	**Pile Cap E3-PC2 and column**	**266 days**	**266 days**	**Thu 16/11/17**	**Wed 8/8/18**
A.2.1.4.1	Mobilization of plants for predrilling for pile cap E3-PC 2	7 days	7 days	Thu 16/11/17	Wed 22/11/17
A.2.1.4.2	Setting up of plants for predrill for pile cap E3-PC2	7 days	7 days	Thu 23/11/17	Wed 29/11/17
A.2.1.4.3	Predrill for pile cap E3-PC2	9 days	9 days	Thu 30/11/17	Fri 8/12/17
A.2.1.4.4	Demobilization of predrill rig	1 day	1 day	Sat 9/12/17	Sat 9/12/17
A.2.1.4.5	Site clearance for soil nails for zone 1	5 days	5 days	Thu 16/11/17	Mon 20/11/17
A.2.1.4.6	Erection of tubular scaffold platform for soil nails for zone 1	10 days	10 days	Tue 21/11/17	Thu 30/11/17
A.2.1.4.7	Setting out of soil nails	2 days	2 days	Fri 1/12/17	Sat 2/12/17
A.2.1.4.8	Construction of soil nails (29nrs)	21 days	21 days	Sun 3/12/17	Sat 23/12/17
A.2.1.4.9	Construction of soil nails heads (29nrs)	14 days	14 days	Sun 24/12/17	Sat 6/1/18
A.2.1.4.10	Removal of tubular scaffold platform	7 days	7 days	Sun 7/1/18	Sat 13/1/18
A.2.1.4.11	Site clearance for soil nails for zone 2	5 days	5 days	Sun 14/1/18	Thu 18/1/18
A.2.1.4.12	Erection of tubular scaffold platform for soil nails for zone 2	7 days	7 days	Fri 19/1/18	Thu 25/1/18



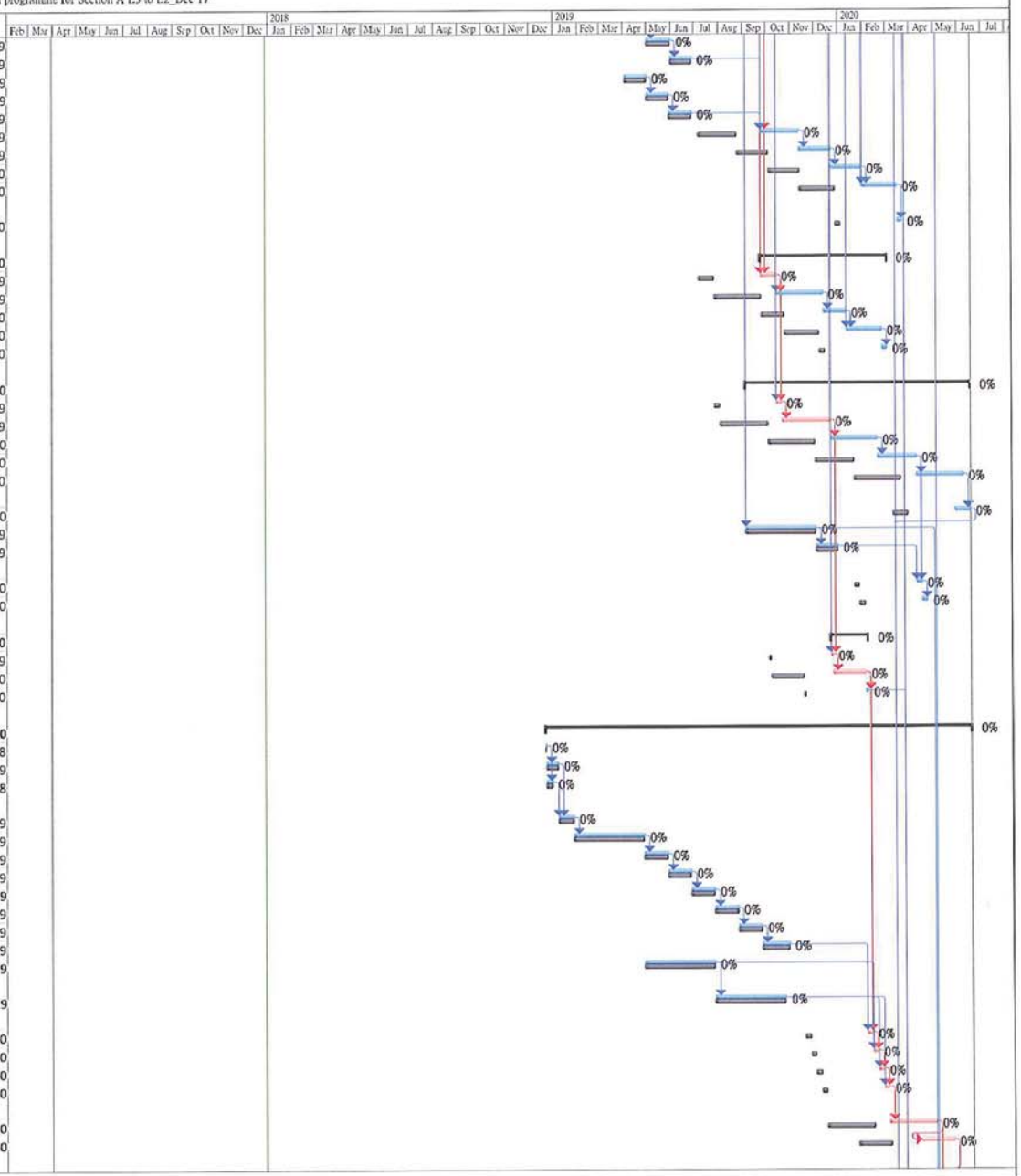
Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive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

ID	Task Name	Duration	Remaining Duration	Start	Finish
A.2.1.4.13	Removal of soil nails (7nrs)	7 days	7 days	Fri 26/1/18	Thu 1/2/18
A.2.1.4.14	Removal of tubular scaffold platform from zone 2	3 days	3 days	Fri 2/2/18	Sun 4/2/18
A.2.1.4.15	Mobilization of plant for drilling and installation of pre-bored socket H piles	5 days	5 days	Mon 5/2/18	Fri 9/2/18
A.2.1.4.16	Drilling and construction of pre-bored socket H piles (9nrs)	45 days	45 days	Sat 10/2/18	Mon 26/3/18
A.2.1.4.17	Testing of piles	45 days	45 days	Tue 27/3/18	Thu 10/5/18
A.2.1.4.18	Proof Drilling	9 days	9 days	Fri 11/5/18	Sat 19/5/18
A.2.1.4.19	Excavation with shoring for construction of pile cap E3-PC2	21 days	21 days	Sun 20/5/18	Sat 9/6/18
A.2.1.4.20	Construction of pile cap E3-PC2	30 days	30 days	Sun 10/6/18	Mon 9/7/18
A.2.1.4.21	Construction of Column E3-P1	30 days	30 days	Tue 10/7/18	Wed 8/8/18
A.2.1.5	**Pile Cap E2-PC1**	**571 days**	**278.11 days**	**Sat 1/4/17**	**Tue 23/10/18**
A.2.1.5.1	Application of Excavation permit for area occupied by pile cap E2-PC1	180 days	0 days	Sat 1/4/17	Thu 27/9/18
A.2.1.5.2	Mobilization of plant for predrill for pile cap E2-PC1	1 day	0 days	Thu 2/11/17	Thu 2/11/17
A.2.1.5.3	Initial site survey	7 days	6.65 days	Wed 17/10/18	Tue 23/10/18
A.2.1.5.4	Setting up plant for predrill for pile cap E2-PC1	1 day	0 days	Thu 2/11/17	Fri 3/11/17
A.2.1.5.5	Predrill for pile cap E2-PC1	7 days	0 days	Fri 3/11/17	Thu 9/11/17
A.2.1.5.6	Demobilization of predrill rig	1 day	0 days	Fri 17/11/17	Fri 17/11/17
A.2.1.5.6a	Pile Sleeve Not Required for E2-PC1 & PC2 (PMI 20)	1 day	0 days	Thu 26/10/17	Thu 26/10/17
A.2.1.5.7	Mobilization of plant for drilling and installation of pre-bored socket H piles	16 days	3.2 days	Thu 21/12/17	Fri 5/1/18
A.2.1.5.8	Drilling and construction for pre-bored socket H piles(35nrs)	75 days	75 days	Sat 6/1/18	Wed 21/3/18
A.2.1.5.9	Testing of piles	45 days	45 days	Thu 22/3/18	Sat 5/5/18
A.2.1.5.10	Proof Drilling	14 days	14 days	Sun 6/5/18	Sat 19/5/18
A.2.1.5.11	Excavation with temporary shoring for pile cap E2-PC1	20 days	20 days	Sun 20/5/18	Fri 8/6/18
A.2.1.5.12	Construction of pile cap E2-PC1	25 days	25 days	Sat 9/6/18	Tue 3/7/18
A.2.1.5.13	Backfill the pile cap E2-PC1	5 days	5 days	Wed 4/7/18	Sun 8/7/18
A.2.1.6	**Substructure E2-PC2**	**1049 days**	**831.43 days**	**Sat 1/4/17**	**Thu 13/2/20**
A.2.1.6.1	Mobilization of plants for predrilling for pile cap E2-PC 2	1 day	0 days	Wed 25/10/17	Wed 25/10/17
A.2.1.6.2	Setting up plant for predrill for pile pile cap E2-PC2	1 day	0 days	Thu 26/10/17	Thu 26/10/17
A.2.1.6.3	Predrill for pile cap E2-PC2	7 days	0 days	Fri 27/10/17	Thu 2/11/17
A2.1.6.3a	Pile Sleeve Not Required for E2-PC1 & PC2 (PMI 20)	1 day	0 days	Thu 26/10/17	Thu 26/10/17
A.2.1.6.4	Mobilization of plants for drilling and installation of pre-bored socket H Ples for pile cap E2-PC2	15 days	3 days	Fri 22/12/17	Fri 5/1/18
A.2.1.6.5	Drilling and installation of pre-bored socket H piles for pile cap E2-PC2	45 days	45 days	Sat 6/1/18	Mon 19/2/18
A.2.1.6.6	Testing of piles	45 days	45 days	Tue 20/2/18	Thu 5/4/18
A.2.1.6.7	Proof Drilling	7 days	7 days	Fri 6/4/18	Thu 12/4/18
A.2.1.6.8	Excavation with shoring for pile cap E2-PC2	21 days	21 days	Fri 13/4/18	Thu 3/5/18
A.2.1.6.9	Construction of pile cap E2-PC2	30 days	30 days	Fri 4/5/18	Sat 2/6/18
A.2.1.6.10	Backfill the pile cap E2-PC2	7 days	7 days	Sun 3/6/18	Sat 9/6/18
A.2.1.6.11	Application of XP for Drainage works at Hiu Kwong Street	180 days	90 days	Sat 1/4/17	Wed 27/9/17
A.2.1.6.12	Approval of TTA for construction of Drainage works at Hiu Kwong Street	60 days	60 days	Wed 2/10/19	Sat 30/11/19
A.2.1.6.13	Road Works Advice	14 days	14 days	Sun 1/12/19	Sat 14/12/19
A.2.1.6.14	Implementation of TTA	1 day	1 day	Sun 15/12/19	Sun 15/12/19
A.2.1.6.15	Construction of Drainage works at Hiu Kwong Street	60 days	60 days	Mon 16/12/19	Thu 13/2/20
A.2.1.6.16	Trees felling works between E3-ST1 and E3 abutment	45 days	45 days	Thu 14/12/17	Sat 27/1/18
A.2.1.7	**Steel Bridge between E3-ST1 and E3 Abutment**	**522 days**	**522 days**	**Thu 18/10/18**	**Sun 22/3/20**
A.2.1.7.1	Proposal of off site fabrication of steelworks for E2 and E3	28 days	28 days	Thu 18/10/18	Wed 14/11/18
A.2.1.7.2	Approval of off site fabrication of steelworks for bridge E2 and E3	28 days	28 days	Thu 15/11/18	Wed 12/12/18
A.2.1.7.3	Fabbrication and Delivery of fabricated steelworks	90 days	90 days	Thu 13/12/18	Tue 12/3/19
A.2.1.7.4	Construction of launching platform for steel bridge between E3-ST1 and E3 abutment	60 days	60 days	Sat 27/4/19	Tue 25/6/19
A.2.1.7.5	Assembly of steel truss between E3 tower and E3 abutment	60 days	60 days	Wed 26/6/19	Sat 24/8/19
A.2.1.7.6	Bridge launching between E3-ST1 and E3 Abutment	29 days	29 days	Sun 25/8/19	Sun 22/9/19
A.2.1.7.7	Design submission of roof system	28 days	28 days	Wed 3/4/19	Tue 30/4/19
A.2.1.7.8	Approval of design of roof system	28 days	28 days	Wed 1/5/19	Tue 28/5/19
A.2.1.7.9	Material submission of corrugated steel roof	28 days	28 days	Wed 3/4/19	Tue 30/4/19



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

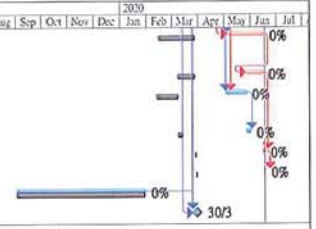
ID	Task Name	Duration	Remaining Duration	Start	Finish
A.2.1.7.10	Approval of corrugated steel roof	30 days	30 days	Wed 1/5/19	Thu 30/5/19
A.2.1.7.11	Procurement to delivery of corrugated steel roof	28 days	28 days	Fri 31/5/19	Thu 27/6/19
A.2.1.7.12	Material submission of fall arrest system	28 days	28 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 comminissioning 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



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

Revised programme for Section A E3 to E2_Dec 17

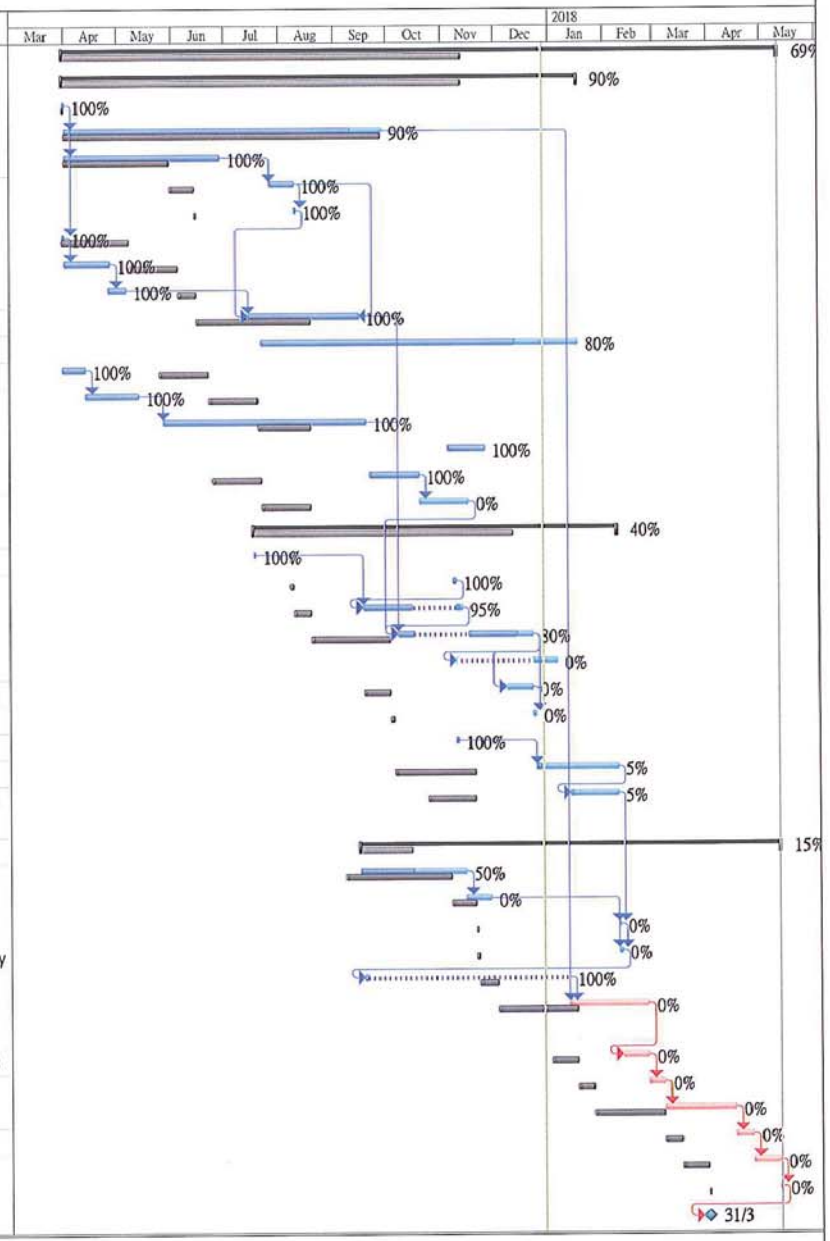
ID	Task Name	Duration	Remaining Duration	Start	Finish
A.3.1.11.20	Electrical installation and lighting works for bridge from E2-LT1 to E2-P3	42 days	42 days	Mon 4/5/20	Sun 14/6/20
A.3.1.11.21	Tubular handrail and planter on bridge from E2-LT1 to E2-P3	20 days	20 days	Tue 26/5/20	Sun 14/6/20
A.3.1.11.22	Trenching works for connection of existing water connection point	25 days	25 days	Sat 2/5/20	Tue 26/5/20
A.3.1.11.23	Water meter box and water point construction	5 days	5 days	Wed 27/5/20	Sun 31/5/20
A.3.1.11.24	Planting works on bridge	2 days	2 days	Mon 15/6/20	Tue 16/6/20
A.3.1.11.25	General tidy up for Portion 3	1 day	1 day	Wed 17/6/20	Wed 17/6/20
A.3.1.11.26	Overall landscape works	150 days	150 days	Mon 2/9/19	Wed 29/1/20
A.3.1.11.27	Completion of works	0 days	0 days	Mon 30/3/20	Mon 30/3/20



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

Revised programme for Section B_Dec 17

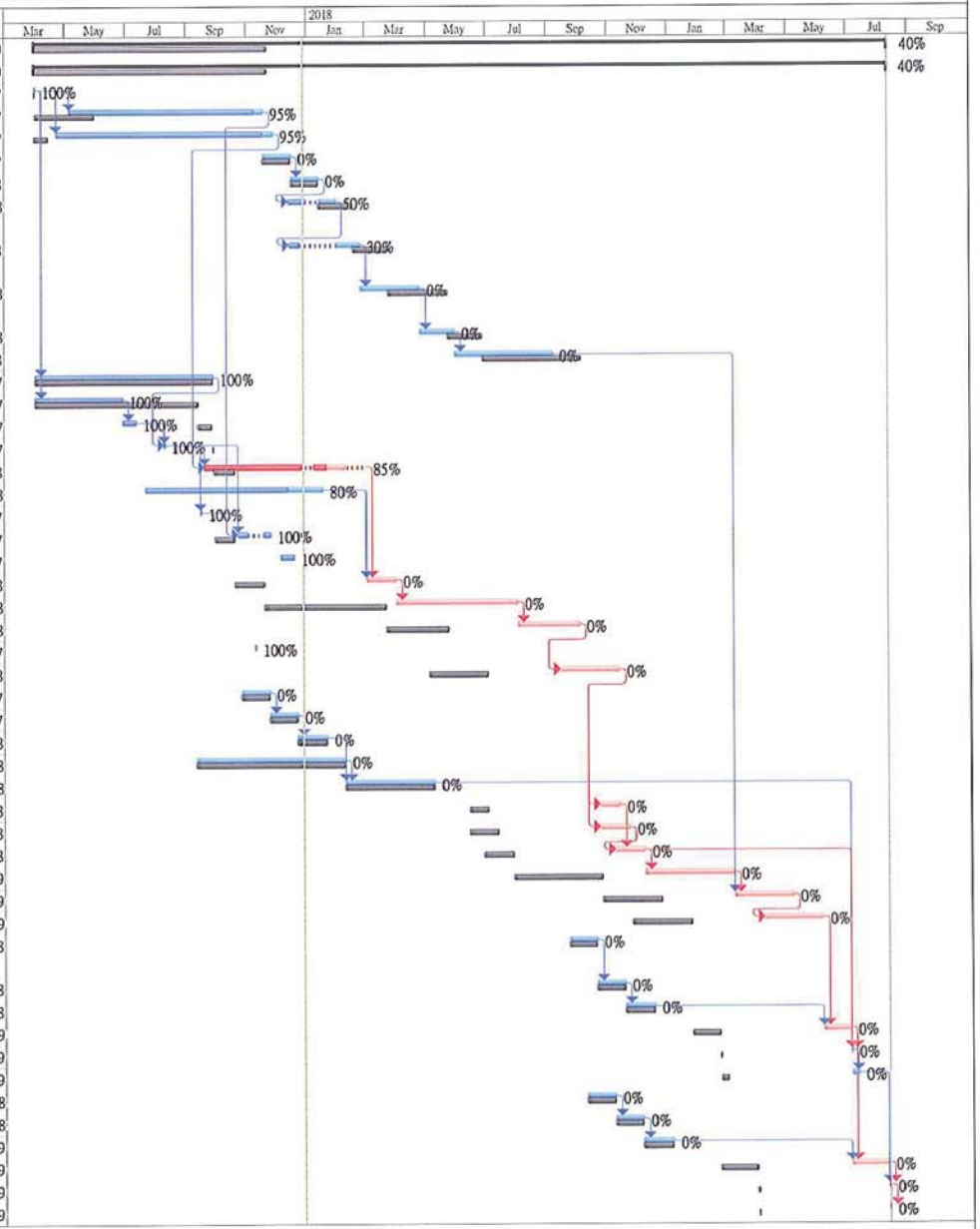
ID	Task Name	Duration	Remaining Duration	Start	Finish	Predecessors
B.4.1	**SECTION B - CONSTRUCTION OF SLIP ROAD**	**406 days**	**127.14 days**	**Fri 31/3/17**	**Thu 10/5/18**	
B.4.1.1	**PRE CONSTRUCTION WORKS**	**292 days**	**29.97 days**	**Fri 31/3/17**	**Tue 16/1/18**	
B.4.1.1.1	Access Date of Portion 4	1 day	0 days	Fri 31/3/17	Fri 31/3/17	
B.4.1.1.2	Application of Excavation Permit	180 days	18 days	Sat 1/4/17	Wed 27/9/17	3
B.4.1.1.3	Application of TTA and approval	88 days	0 days	Sat 1/4/17	Tue 27/6/17	3
B.4.1.1.4	Road works advice	14 days	0 days	Wed 26/7/17	Tue 8/8/17	5
B.4.1.1.5	Implementation of TTA for ingress and egress	1 day	0 days	Wed 9/8/17	Wed 9/8/17	6
B.4.1.1.6	Proposal of landscape specialist	1 day	0 days	Fri 31/3/17	Fri 31/3/17	3FS-1 day
B.4.1.1.7	Approval to proposal of landscape specialist	26 days	0 days	Sat 1/4/17	Wed 26/4/17	8
B.4.1.1.10	Tree survey	10 days	0 days	Wed 26/4/17	Fri 5/5/17	9
B.4.1.1.11	Trees Transplant	63 days	0 days	Fri 14/7/17	Thu 14/9/17	10,6FF,7
B.4.1.1.11a	Landscaping Works (PMI 9)	180 days	36 days	Fri 21/7/17	Tue 16/1/18	
B.4.1.1.12	Submission of material for drainage works	13 days	0 days	Fri 31/3/17	Wed 12/4/17	
B.4.1.1.13	Approval of submission for drainage works	30 days	0 days	Thu 13/4/17	Fri 12/5/17	13
B.4.1.1.16	Procurement and delivery of drainage pipes and material	115 days	0 days	Sat 27/5/17	Mon 18/9/17	14
1.1.14	Material Test for Drainage Pipe (PMI 21)	21 days	0 days	Sat 4/11/17	Fri 24/11/17	
B.4.1.1.17	Submission of method statement for Drainage works	28 days	0 days	Thu 21/9/17	Wed 18/10/17	
B.4.1.1.18	Approval of method statement for drainage works	28 days	28 days	Thu 19/10/17	Wed 15/11/17	17
B.4.1.2	**First Stage Works**	**206 days**	**124.1 days**	**Mon 17/7/17**	**Wed 7/2/18**	
B.4.1.2.1	Utilities Detection	1 day	0 days	Mon 17/7/17	Mon 17/7/17	
B.4.1.2.2	Survey of existing drainage	2 days	0 days	Tue 7/11/17	Wed 8/11/17	
B.4.1.2.3	Initial site survey	31 days	1.55 days	Sun 17/9/17	Sun 12/11/17	21,20
B.4.1.2.4	Drainage works at first stage	45 days	9 days	Sat 7/10/17	Thu 21/12/17	11,15,22,18
B.4.1.2.4a	Revised Drainage Works (PMI 26)	14 days	13.95 days	Thu 9/11/17	Thu 4/1/18	23
B.4.1.2.5	Draw pits construction	15 days	15 days	Thu 7/12/17	Thu 21/12/17	23FS-15 days
B.4.1.2.6	Laying street lighting cables	2 days	2 days	Fri 22/12/17	Sat 23/12/17	23,25
B.4.1.2.6a	Revised Setting Out amd Vertical Road Profile (PMI 25)	1 day	0 days	Thu 9/11/17	Thu 9/11/17	
B.4.1.2.7	Road works	46 days	43.7 days	Sun 24/12/17	Wed 7/2/18	27
B.4.1.2.8	Construct Temporary road before implementation of road closure	27 days	25.65 days	Fri 12/1/18	Wed 7/2/18	28FS-27 days
B.4.1.3	**Second Stage Works**	**238 days**	**202.41 days**	**Fri 15/9/17**	**Thu 10/5/18**	
B.4.1.3.1	Application of TTA to divert traffic of existing slip road	60 days	30 days	Fri 15/9/17	Mon 13/11/17	
B.4.1.3.2	Road Works advice	14 days	14 days	Tue 14/11/17	Mon 27/11/17	31
B.4.1.3.3	Implementation of TTA to divert traffic to Temp slip road	1 day	1 day	Thu 8/2/18	Thu 8/2/18	32,29
B.4.1.3.4	Utilities detection and Suirvey of existing drainage	2 days	2 days	Thu 8/2/18	Fri 9/2/18	32,33FS-1 day
B.4.1.3.5	Initial site survey	2 days	0 days	Sun 17/9/17	Wed 10/1/18	34
B.4.1.3.6	Drainage works at entrance of existing slip road (D101+ others)	45 days	45 days	Thu 11/1/18	Sat 24/2/18	35,4
B.4.1.3.7	Draw pits construction	15 days	15 days	Sat 10/2/18	Sat 24/2/18	36FS-15 days
B.4.1.3.8	Laying street lighting cables	9 days	9 days	Sun 25/2/18	Mon 5/3/18	37
B.4.1.3.9	Road works	40 days	40 days	Tue 6/3/18	Sat 14/4/18	38
B.4.1.3.10	Remaining clash barriers and road markings	10 days	10 days	Sun 15/4/18	Tue 24/4/18	39
B.4.1.3.11	Reinstate works area	15 days	15 days	Wed 25/4/18	Wed 9/5/18	40
B.4.1.3.12	General tidy up	1 day	1 day	Thu 10/5/18	Thu 10/5/18	41
B.4.1.3.13	Completion of works	0 days	0 days	Sat 31/3/18	Sat 31/3/18	42



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

Revised programme for Section C_Dec 17

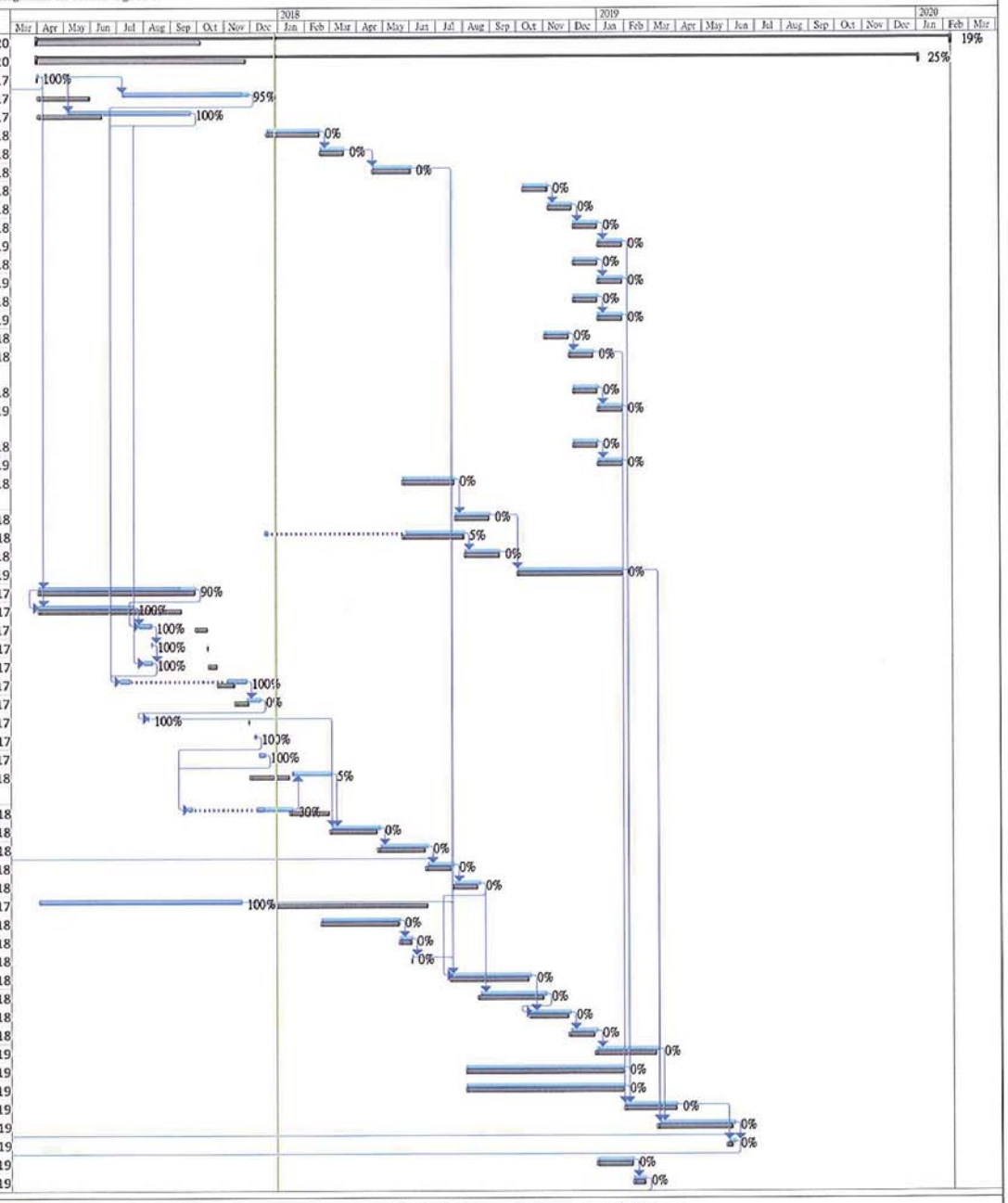
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
1	C.5.1	**SECTION C - CONSTRUCTION OF BUS BUS INTERCHANGE**	**863.75 days**	**520.28 days**	**Fri 31/3/17**	**Sun 11/8/19**
2	C.5.1.1	**Works not within TKOT carriageway**	**863.75 days**	**520.28 days**	**Fri 31/3/17**	**Sun 11/8/19**
3	C.5.1.1.1	Access Date of Portion 5	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	C.5.1.1.2	Initial Site Survey	197 days	9.85 days	Fri 5/5/17	Fri 17/11/17
5	C.5.1.1.3	Tree survey	220 days	11 days	Sat 22/4/17	Mon 27/11/17
6	C.5.1.1.4	Proposal of strucutral steel erectors	28 days	28 days	Sat 18/11/17	Fri 15/12/17
7	C.5.1.1.5	Approval of structural steel erectors	28 days	28 days	Sat 16/12/17	Fri 12/1/18
8	C.5.1.1.6	Submission of method statement of construction of covered walkway	35 days	17.5 days	Wed 13/12/17	Tue 30/1/18
9	C.5.1.1.7	Approval of method statement of construction of covered walkway	35 days	24.5 days	Thu 14/12/17	Fri 23/2/18
10	C.5.1.1.8	Submission of offsite fabrication of steel for covered walkway	60 days	60 days	Sat 24/2/18	Tue 24/4/18
11	C.5.1.1.9	Approval of proposal offsite fabrication of covered walkway	35 days	35 days	Wed 25/4/18	Tue 29/5/18
12	C.5.1.1.10	Fabrication of covered walkway	100 days	100 days	Wed 30/5/18	Thu 6/9/18
13	C.5.1.1.11	Application of XP	180 days	0 days	Sat 1/4/17	Wed 27/9/17
14	C.5.1.1.12	Application of TTA for loading and unloading area	88 days	0 days	Sat 1/4/17	Tue 27/6/17
15	C.5.1.1.13	Road works advice	14 days	0 days	Wed 28/6/17	Tue 11/7/17
16	C.5.1.1.14	Implementation of TTA	1 day	0 days	Wed 9/8/17	Wed 9/8/17
17	C.5.1.1.15	Tree Fellings	131 days	19.65 days	Tue 19/9/17	Thu 1/3/18
18	C.5.1.1.15a	Landscaping Works (PMI 9)	180 days	36 days	Fri 21/7/17	Tue 16/1/18
19	C.5.1.1.16	Utilities detection	1 day	0 days	Fri 15/9/17	Fri 15/9/17
20	C.5.1.1.17	Excavation of inpsection pit for locating existing utilities	17 days	0 days	Mon 23/10/17	Fri 24/11/17
21	C.5.1.1.17a	Excavation of inpsection pit for locating existing TCS (PMI 32)	14 days	0 days	Tue 5/12/17	Mon 18/12/17
22	C.5.1.1.18	Arrangement with UU companies for diversion of UU	30 days	30 days	Thu 1/3/18	Sat 31/3/18
23	C.5.1.1.19	Diversion of utilities	123 days	123 days	Sat 31/3/18	Wed 1/8/18
24	C.5.1.1.20	Construction of footing of covered walkway	63 days	63 days	Wed 1/8/18	Wed 3/10/18
25	C.5.1.1.20a	Revised Drainage Works at Portion 4 & 5 (PMI 26)	1 day	0 days	Thu 9/11/17	Thu 9/11/17
26	C.5.1.1.21	Drainage works D201 to D207 above the footing	60 days	60 days	Thu 13/9/18	Mon 12/11/18
27	C.5.1.1.22	Material submission of Pillar box c.w accessories	28 days	28 days	Fri 27/10/17	Thu 23/11/17
28	C.5.1.1.23	Approval of material submission of Pillar box c/w accessories	28 days	28 days	Fri 24/11/17	Thu 21/12/17
29	C.5.1.1.24	Procurement to delivery of pillar box and accessories	30 days	30 days	Fri 22/12/17	Sat 20/1/18
30	C.5.1.1.25	Positioning and construction of pillar box	150 days	150 days	Mon 11/9/17	Wed 7/2/18
31	C.5.1.1.26	Application of Power Supply	90 days	90 days	Thu 8/2/18	Tue 8/5/18
32	C.5.1.1.27	Construct draw pits	20 days	20 days	Tue 23/10/18	Mon 12/11/18
33	C.5.1.1.28	Laying of TCS cables by others	30 days	30 days	Tue 23/10/18	Thu 22/11/18
34	C.5.1.1.29	Laying of cables for lighting	30 days	30 days	Wed 7/11/18	Fri 7/12/18
35	C.5.1.1.30	Construction of new high mast lighting and other lightings	90 days	90 days	Fri 7/12/18	Thu 7/3/19
36	C.5.1.1.31	Installation of posts and beams for covered walkway	60 days	60 days	Thu 7/3/19	Mon 6/5/19
37	C.5.1.1.32	Installation of glass cover for covered walkway	60 days	60 days	Sat 6/4/19	Wed 5/6/19
38	C.5.1.1.33	Material submission of fittings and lighting for covered walkway	28 days	28 days	Sat 22/9/18	Fri 19/10/18
39	C.5.1.1.34	Approval of fitting and lightings for covered walkway	28 days	28 days	Sat 20/10/18	Fri 16/11/18
40	C.5.1.1.35	Procurement to delivery of lightings	30 days	30 days	Sat 17/11/18	Sun 16/12/18
41	C.5.1.1.36	Installation of lighting of covered walkway	28 days	28 days	Wed 5/6/19	Wed 3/7/19
42	C.5.1.1.37	Connection of power supply to lightings	1 day	1 day	Wed 3/7/19	Thu 4/7/19
43	C.5.1.1.38	Testing and commissioning of electrical works	7 days	7 days	Thu 4/7/19	Thu 11/7/19
44	C.5.1.1.39	Material submission of paver blocks	28 days	28 days	Wed 10/10/18	Tue 6/11/18
45	C.5.1.1.40	Approval to submission of paver blocks	28 days	28 days	Wed 7/11/18	Tue 4/12/18
46	C.5.1.1.41	Procurement to delivery of paver blocks	30 days	30 days	Wed 5/12/18	Thu 3/1/19
47	C.5.1.1.42	Construction of paving blocks for covered walkway	37 days	37 days	Wed 3/7/19	Fri 9/8/19
48	C.5.1.1.43	General tidy up	2 days	2 days	Fri 9/8/19	Sun 11/8/19
49	C.5.1.1.44	Completion of Works	1 day	1 day	Sat 10/8/19	Sun 11/8/19



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

Revised programme for Section D_Dec 17

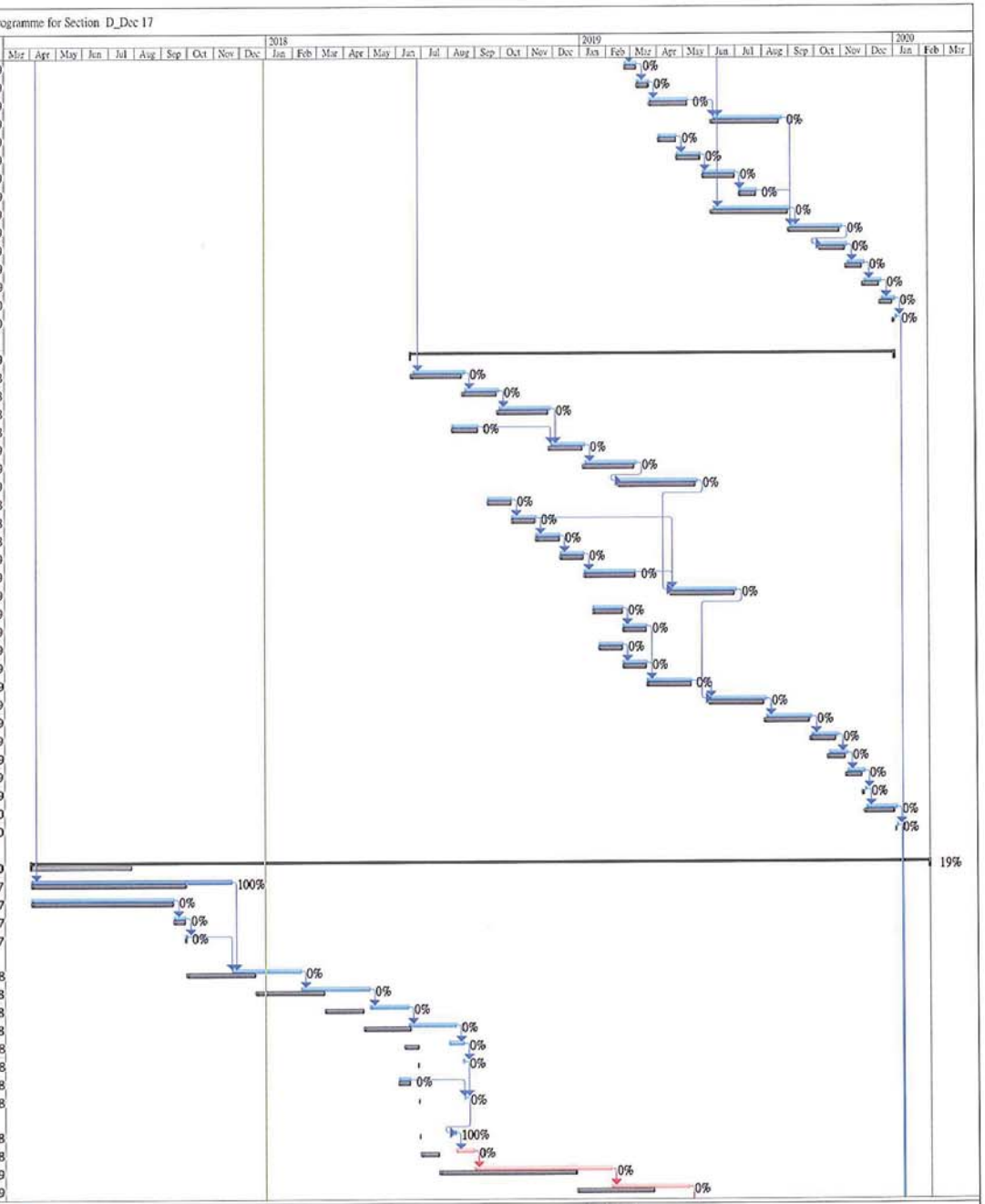
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
1	D.6.1	**Section D**	**1045 days**	**851.52 days**	**Fri 31/3/17**	**Sat 8/2/20**
2	D.6.1.1	**Construction E12 Footbridge and Lift Tower**	**1008.5 days**	**756.87 days**	**Fri 31/3/17**	**Fri 3/1/20**
3	D.6.1.1.1	Access Date for Portion 6	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	D.6.1.1.2	Initial Site Survey	145 days	7.25 days	Thu 6/7/17	Mon 27/11/17
5	D.6.1.1.3	Tree survey	141 days	0 days	Fri 5/5/17	Fri 22/9/17
6	D.6.1.1.4	Submission of material for water mains	60 days	60 days	Tue 19/12/17	Fri 16/2/18
7	D.6.1.1.5	Approval to submission of water mains	28 days	28 days	Sat 17/2/18	Fri 16/3/18
8	D.6.1.1.6	Procurement to Delivery of water mains material	45 days	45 days	Wed 18/4/18	Fri 1/6/18
9	D.6.1.1.7	Proposal of E&M Specialist	28 days	28 days	Mon 8/10/18	Sun 4/11/18
10	D.6.1.1.8	Approval of E&M Specialist	28 days	28 days	Mon 5/11/18	Sun 2/12/18
11	D.6.1.1.9	Material submission of cable tray	28 days	28 days	Tue 4/12/18	Mon 31/12/18
12	D.6.1.1.10	Approval of material submission of cable tray	28 days	28 days	Tue 1/1/19	Mon 28/1/19
13	D.6.1.1.11	Material submission of cables, conduit, fittings	28 days	28 days	Tue 4/12/18	Mon 31/12/18
14	D.6.1.1.12	Approval of material submission of cables conduit, fittings	28 days	28 days	Tue 1/1/19	Mon 28/1/19
15	D.6.1.1.13	Material submission of proposed lightings	28 days	28 days	Tue 4/12/18	Mon 31/12/18
16	D.6.1.1.14	Approval of proposed lighting	28 days	28 days	Tue 1/1/19	Mon 28/1/19
17	D.6.1.1.15	Material submission of pillar box c/w accessories	28 days	28 days	Thu 1/11/18	Wed 28/11/18
18	D.6.1.1.16	Approval of material submission of pillar box c/w accessories	28 days	28 days	Thu 29/11/18	Wed 26/12/18
19	D.6.1.1.17	Material submission of MCB distribution board	28 days	28 days	Tue 4/12/18	Mon 31/12/18
20	D.6.1.1.18	Approval of material submission of MCB distribution board	28 days	28 days	Tue 1/1/19	Mon 28/1/19
21	D.6.1.1.15	Material submission of communication cables	28 days	28 days	Tue 4/12/18	Mon 31/12/18
22	D.6.1.1.14	Approval of submission of communication cables	28 days	28 days	Tue 1/1/19	Mon 28/1/19
23	D.6.1.1.15	Submission of Lift Structural E&M (SEM), layout and installation drawings	60 days	60 days	Tue 22/5/18	Fri 20/7/18
24	D.6.1.1.14	Approval of Lift's SEM, layout and installation drawings	40 days	40 days	Sat 21/7/18	Wed 29/8/18
25	D.6.1.1.15	Material submission of proposed lifts	71 days	67.45 days	Sat 16/12/17	Tue 31/7/18
26	D.6.1.1.14	Approval of submission of proposed lift	41 days	41 days	Wed 1/8/18	Mon 10/9/18
27	D.6.1.1.12	Procurement to delivery of lift	120 days	120 days	Mon 1/10/18	Mon 28/1/19
28	D.6.1.1.13	Excavation Permit	180 days	18 days	Sat 1/4/17	Wed 27/9/17
29	D.6.1.1.14	Application of TTA for loading and unloading area	109 days	0 days	Sat 1/4/17	Tue 18/7/17
30	D.6.1.1.15	Road Works advice	14 days	0 days	Tue 25/7/17	Mon 7/8/17
31	D.6.1.1.16	Implementation of TTA	1 day	0 days	Tue 8/8/17	Tue 8/8/17
32	D.6.1.1.17	Erection of hoarding	10 days	0 days	Sun 30/7/17	Tue 8/8/17
33	D.6.1.1.18	Site Clearance and Tree felling	34 days	0 days	Mon 3/7/17	Fri 24/11/17
34	D.6.1.1.19	Construct temporary drainage systems	16 days	16 days	Sat 25/11/17	Sun 10/12/17
35	D.6.1.1.20	Utilities Detection	1 day	0 days	Fri 4/8/17	Fri 4/8/17
36	D.6.1.1.20a	CCTV Inspection on uncharted Leachate pipes (PMI 27)	2 days	0 days	Mon 4/12/17	Tue 5/12/17
37	D.6.1.1.20b	Revised RWE12 level (PMI 34)	7 days	0 days	Sat 9/12/17	Fri 15/12/17
38	D.6.1.1.21	Predrill for Excavation of rocks from retaining wall CH97.5 to CH45	45 days	42.75 days	Mon 15/1/18	Thu 1/3/18
39	D.6.1.1.22	Predrill for Excavation of rocks from retaining wall CH45 to CH0	45 days	31.5 days	Tue 19/9/17	Tue 16/1/18
40	D.6.1.1.23	Excavation of rock from retaining wall chainage CH97.5 to CH45	55 days	55 days	Thu 1/3/18	Wed 25/4/18
41	D.6.1.1.22	Excavation of rock from retaining wall chainage CH45 to CH0	55 days	55 days	Wed 25/4/18	Tue 19/6/18
42	D.6.1.1.23	Construction of Retaining walls chainage CH97.5 to CH 45	30 days	30 days	Tue 19/6/18	Thu 19/7/18
43	D.6.1.1.24	Construction of Retaining walls chainage CH45 to CH 0	30 days	30 days	Thu 19/7/18	Sat 18/8/18
44	D.6.1.1.25	XP application for works in TKOT carriageway	232 days	0 days	Sat 1/4/17	Sat 18/11/17
45	D.6.1.1.26	Application of TTA for diversion of water mains	90 days	90 days	Sat 17/2/18	Thu 17/5/18
46	D.6.1.1.27	Road works advice	14 days	14 days	Fri 18/5/18	Thu 31/5/18
47	D.6.1.1.28	Implementation of TTA for water mains diversion	1 day	1 day	Fri 1/6/18	Fri 1/6/18
48	D.6.1.1.29	Diversion of water mains	90 days	90 days	Tue 17/7/18	Mon 15/10/18
49	D.6.1.1.30	Rock slope treatment	75 days	75 days	Sat 18/8/18	Thu 1/11/18
50	D.6.1.1.31	Construction of substructure of lift tower	45 days	45 days	Mon 15/10/18	Thu 29/11/18
51	D.6.1.1.32	Construction E12-P1, E12, P2	30 days	30 days	Thu 29/11/18	Sat 29/12/18
52	D.6.1.1.33	Construction of lift tower superstructures	70 days	70 days	Sat 29/12/18	Sat 9/3/19
53	D.6.1.1.34	Application of Power Supply	180 days	180 days	Thu 2/8/18	Mon 28/1/19
54	D.6.1.1.35	Positioning/Construction/installation of Pillar Box	180 days	180 days	Thu 2/8/18	Mon 28/1/19
55	D.6.1.1.36	Trenching works for laying cables and communication cables	60 days	60 days	Tue 29/1/19	Fri 29/3/19
56	D.6.1.1.37	Lift car installations	87 days	87 days	Sat 9/3/19	Tue 4/6/19
57	D.6.1.1.38	Connection of cables and communication cables to lift car	7 days	7 days	Tue 28/5/19	Tue 4/6/19
58	D.6.1.1.39	Submission of material for glazing and louver	41 days	41 days	Sat 29/12/18	Thu 7/2/19
59	D.6.1.1.40	Comment of submission for glazing and louver	14 days	14 days	Fri 8/2/19	Thu 21/2/19



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

Revised programme for Section D_Dec 17

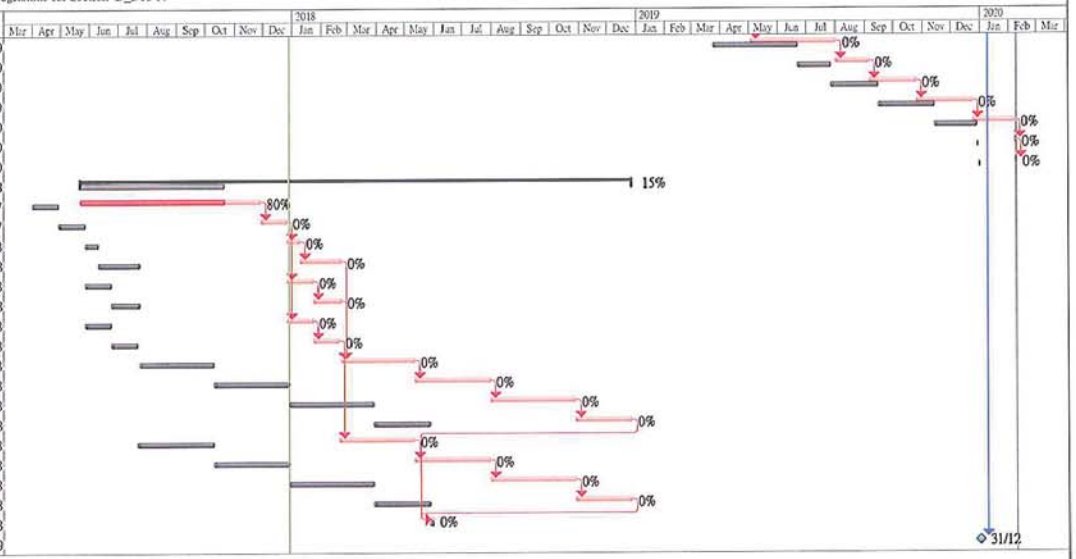
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
60	D.6.1.1.41	Second submission of proposal of glazing and louver	14 days	14 days	Fri 22/2/19	Thu 7/3/19
61	D.6.1.1.42	Approval of glazing and louver	14 days	14 days	Fri 8/3/19	Thu 21/3/19
62	D.6.1.1.43	Procurement to delivery of glazing and louver	45 days	45 days	Fri 22/3/19	Sun 5/5/19
63	D.6.1.1.44	Glazing and louvers installation	80 days	80 days	Tue 4/6/19	Fri 23/8/19
64	D.6.1.1.45	Submission of sump pump system	21 days	21 days	Tue 2/4/19	Mon 22/4/19
65	D.6.1.1.46	Approval to submission of sump pump system	28 days	28 days	Tue 23/4/19	Mon 20/5/19
66	D.6.1.1.47	Procurement to delivery of sump pump	38 days	38 days	Thu 23/5/19	Sat 29/6/19
67	D.6.1.1.48	Installation of sump pump system	20 days	20 days	Fri 5/7/19	Wed 24/7/19
68	D.6.1.1.49	Installation of E&M works	90 days	90 days	Tue 4/6/19	Mon 2/9/19
69	D.6.1.1.50	T&C for lift and submission of form LE5 to EMSD	60 days	60 days	Mon 2/9/19	Fri 1/11/19
70	D.6.1.1.51	Construction of staircase footing	30 days	30 days	Tue 8/10/19	Thu 7/11/19
71	D.6.1.1.52	Construction of staircase	20 days	20 days	Thu 7/11/19	Wed 27/11/19
72	D.6.1.1.53	construction of cover for staircase	20 days	20 days	Wed 27/11/19	Tue 17/12/19
73	D.6.1.1.54	Installation of lighting to staircase	15 days	15 days	Tue 17/12/19	Wed 1/1/20
74	D.6.1.1.55	General tidy up	2 days	2 days	Wed 1/1/20	Fri 3/1/20
75						
76	**D.6.1.2**	**Covered Walkway**	**563 days**	**563 days**	**Sun 17/6/18**	**Tue 31/12/19**
77	D.6.1.2.1	Construction of footing BB1-SB-F4	60 days	60 days	Tue 19/6/18	Sat 18/8/18
78	D.6.1.2.2	Construction of footing BB1-SB-F3	40 days	40 days	Sat 18/8/18	Thu 27/9/18
79	D.6.1.2.3	Construction of tooting BB1-SB-F2, BB1-SB-F1	60 days	60 days	Thu 27/9/18	Mon 26/11/18
80	D.6.1.2.4	Procurement to delivery of drainage material	30 days	30 days	Sat 4/8/18	Sun 2/9/18
81	D.6.1.2.5	Construct the drainage from Manhole D701 to D702	40 days	40 days	Mon 26/11/18	Sat 5/1/19
82	D.6.1.2.6	Construct the drainage from Manhole D702 to D803	60 days	60 days	Sat 5/1/19	Wed 6/3/19
83	D.6.1.2.7	Relocation of street lighting cables and lighting	90 days	90 days	Fri 15/2/19	Thu 16/5/19
84	D.6.1.2.8	Proposal of steel works specialist	28 days	28 days	Fri 14/9/18	Thu 11/10/18
85	D.6.1.2.9	Approval of steelworks specialist	28 days	28 days	Fri 12/10/18	Thu 8/11/18
86	D.6.1.2.10	Submission of off site fabrication of steelworks	28 days	28 days	Fri 9/11/18	Thu 6/12/18
87	D.6.1.2.11	Approval of off site fabrication of steel works	28 days	28 days	Fri 7/12/18	Thu 3/1/19
88	D.6.1.2.12	Off site fabrication of steelworks	60 days	60 days	Fri 4/1/19	Mon 4/3/19
89	D.6.1.2.13	construction of columns for covered walkway	75 days	75 days	Tue 16/4/19	Sun 30/6/19
90	D.6.1.2.14	Design submission of roof structure	35 days	35 days	Mon 14/1/19	Sun 17/2/19
91	D.6.1.2.15	Approval to design of roof structure	28 days	28 days	Mon 18/2/19	Sun 17/3/19
92	D.6.1.2.16	Material submission of roof panels	28 days	28 days	Mon 21/1/19	Sun 17/2/19
93	D.6.1.2.17	Approval of material submission of roof panels	28 days	28 days	Mon 18/2/19	Sun 17/3/19
94	D.6.1.2.18	Procurement to delivery of roof panels	51 days	51 days	Mon 18/3/19	Tue 7/5/19
95	D.6.1.2.19	construction of roof structures of covered walkway	64 days	64 days	Fri 31/5/19	Sat 3/8/19
96	D.6.1.2.20	construction of paving blocks to covered walkway	53 days	53 days	Sat 3/8/19	Wed 25/9/19
97	D.6.1.2.21	Installation of lighting to covered walkway and bridges	30 days	30 days	Wed 25/9/19	Fri 25/10/19
98	D.6.1.2.22	Connection of bridge drainage to manholes	21 days	21 days	Tue 15/10/19	Tue 5/11/19
99	D.6.1.2.23	Construction of water points	20 days	20 days	Tue 5/11/19	Mon 25/11/19
100	D.6.1.2.24	Connection of water to irrigation pipes	2 days	2 days	Mon 25/11/19	Wed 27/11/19
101	D.6.1.2.25	Construction of Paving blocks to other area	35 days	35 days	Wed 27/11/19	Wed 1/1/20
102	D.6.1.2.26	General tidy up	1 day	1 day	Wed 1/1/20	Thu 2/1/20
103						
104	**D.6.1.3**	**Works in TKOT Carriageway**	**1044 days**	**850.79 days**	**Sat 1/4/17**	**Sat 8/2/20**
105	D.6.1.3.1	Excavation Permit for drainage works in TKOT carriageway	232 days	0 days	Sat 1/4/17	Sat 18/11/17
106	D.6.1.3.2	Application of TTA for drainage works in TKOT carriageway	165 days	165 days	Sat 1/4/17	Tue 12/9/17
107	D.6.1.3.3	Road works advice	14 days	14 days	Wed 13/9/17	Tue 26/9/17
108	D.6.1.3.4	Implementation of TTA for drainage works in Southbound carriageway	1 day	1 day	Wed 27/9/17	Wed 27/9/17
109	D.6.1.3.5	Drainage from Manhole D601 to D607	80 days	80 days	Sun 19/11/17	Tue 6/2/18
110	D.6.1.3.6	Drainage works from Manhole D607 to D803	80 days	80 days	Wed 7/2/18	Fri 27/4/18
111	D.6.1.3.7	Construction of bus bay island	45 days	45 days	Sat 28/4/18	Mon 11/6/18
112	D.6.1.3.8	Reconstruction of Concrete Pavement	55 days	55 days	Tue 12/6/18	Sun 5/8/18
113	D.6.1.3.9	Road Marking	17 days	17 days	Sun 29/7/18	Tue 14/8/18
114	D.6.1.3.10	completion of works in TKOT Southbound carriageway	1 day	1 day	Tue 14/8/18	Tue 14/8/18
115	D.6.1.311	Road Works Advice for TTA in Northbound carriageway	14 days	14 days	Thu 31/5/18	Wed 13/6/18
116	D.6.1.3.12	Implementation of TTA for drainage works in Northbound carriageway	1 day	1 day	Wed 15/8/18	Wed 15/8/18
117	D.6.1.3.13	Utilitiies Detection	1 day	0 days	Sat 4/8/18	Sat 4/8/18
118	D.6.1.3.14	Inspection Pit to locate existing utilities	21 days	21 days	Sun 5/8/18	Sat 25/8/18
119	D.6.1.3.15	Diversion of utilities	160 days	160 days	Sun 26/8/18	Fri 1/2/19
120	D.6.1.3.16	Drainage works D401 to D410	90 days	90 days	Sat 2/2/19	Thu 2/5/19



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

Revised programme for Section D_Dec 17

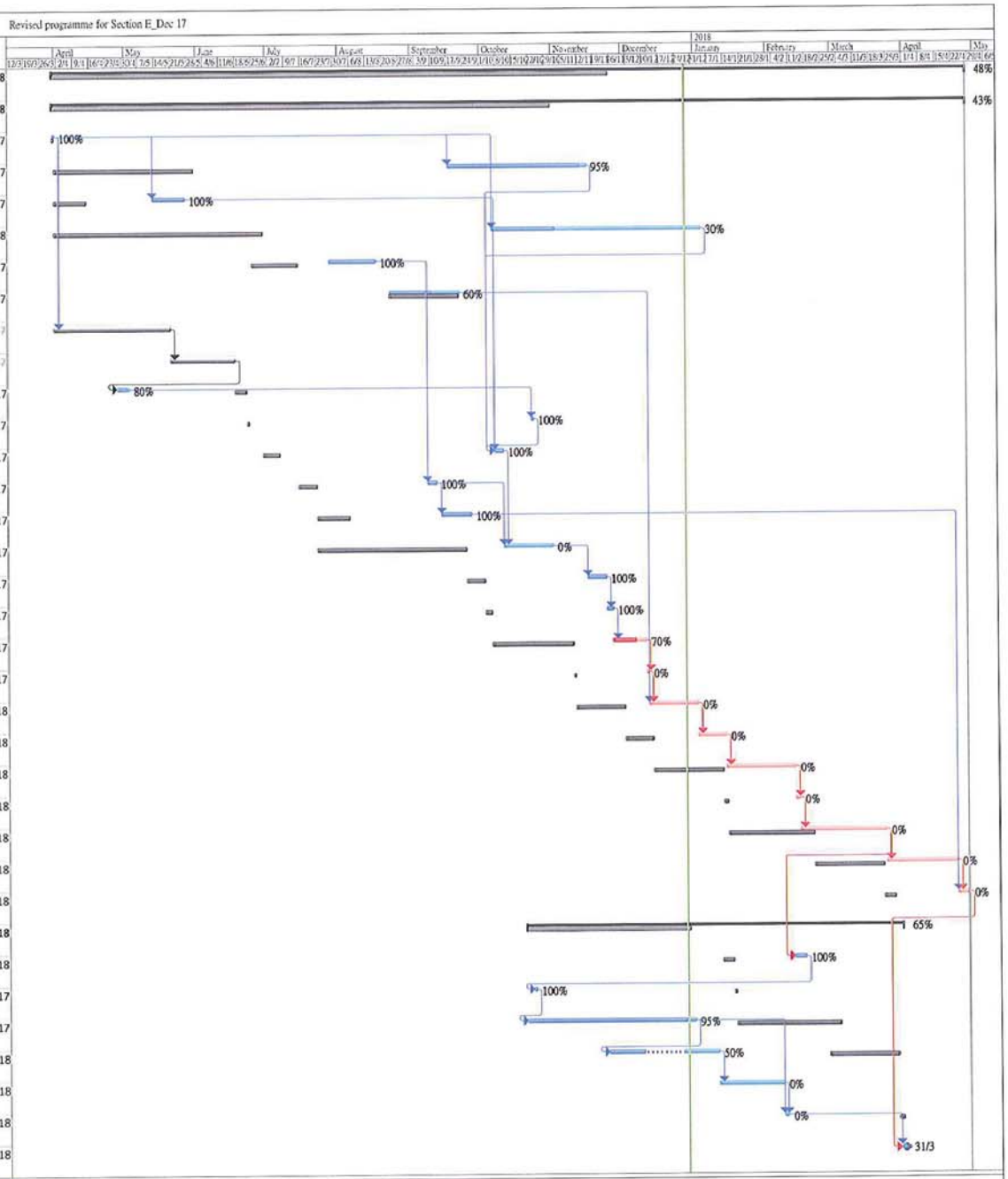
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
121	D.6.1.3.17	Drainage works D410 to D419	90 days	90 days	Fri 3/5/19	Wed 31/7/19
122	D.6.1.3.18	Drainage works D301	35 days	35 days	Thu 1/8/19	Wed 4/9/19
123	D.6.1.3.19	Construction of kerb for Bus Bay kerb island	50 days	50 days	Thu 5/9/19	Thu 24/10/19
124	D.6.1.3.20	Laying of Subbase and pavement for Bus Bay	60 days	60 days	Fri 25/10/19	Mon 23/12/19
125	D.6.1.3.21	Remaining Road Marking and signage	45 days	45 days	Tue 24/12/19	Thu 6/2/20
126	D.6.1.3.22	General tidy up	1 day	1 day	Fri 7/2/20	Fri 7/2/20
127	D.6.1.3.23	Completion of Works	1 day	1 day	Sat 8/2/20	Sat 8/2/20
128	**D.6.1.4**	**AUTOTOLL**	**584 days**	**496.2 days**	**Mon 22/5/17**	**Wed 26/12/18**
129	D.6.1.4.1	Proposal of Specialist for MTC and ETC system	190 days	38 days	Mon 22/5/17	Mon 27/11/17
130	D.6.1.4.2	Approval of Specialist for MTC and ETC system	28 days	28 days	Tue 28/11/17	Mon 25/12/17
131	D.6.1.4.3	Material submission of Autotoll System	14 days	14 days	Tue 26/12/17	Mon 8/1/18
132	D.6.1.4.4	Approval of material submission of autotoll system	44 days	44 days	Tue 9/1/18	Wed 21/2/18
133	D.6.1.4.5	Statuory submission of Auto Toll system	28 days	28 days	Tue 26/12/17	Mon 22/1/18
134	D.6.1.4.6	Approval of Auto Toll System	30 days	30 days	Tue 23/1/18	Wed 21/2/18
135	D.6.1.4.7	Method statement submission of Swapping of autotoll system	28 days	28 days	Tue 26/12/17	Mon 22/1/18
136	D.6.1.4.8	Approval of method statement of swapping of autotoll system	28 days	28 days	Tue 23/1/18	Mon 19/2/18
137	D.6.1.4.9	Activation of manual toll system of Lane 2	78 days	78 days	Thu 22/2/18	Thu 10/5/18
138	D.6.1.4.10	Deactivation of autotoll system in Lane 2	80 days	80 days	Fri 11/5/18	Sun 29/7/18
139	D.6.1.4.11	Inatallation and activation of autotoll system in Lane 1	90 days	90 days	Mon 30/7/18	Sat 27/10/18
140	D.6.1.4.12	Testing and commissioning of autotoll and manual toll system	60 days	60 days	Sun 28/10/18	Wed 26/12/18
141	D.6.1.4.13	Activation of manual toll system of Lane 11	80 days	80 days	Tue 20/2/18	Thu 10/5/18
142	D.6.1.4.14	Deactivation of autotoll system in Lane 11	80 days	80 days	Fri 11/5/18	Sun 29/7/18
143	D.6.1.4.15	Inatallation and activation of autotoll system in Lane 1	90 days	90 days	Mon 30/7/18	Sat 27/10/18
144	D.6.1.4.16	Testing and commissioning of autotoll and manual toll system	60 days	60 days	Sun 28/10/18	Wed 26/12/18
145	D.6.1.4.17	General tidy up	3 days	3 days	Mon 28/5/18	Wed 30/5/18
146	D.6.1.4.18	Completion of works	0 days	0 days	Tue 31/12/19	Tue 31/12/19



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

Revised programme for Section E_Dec 17

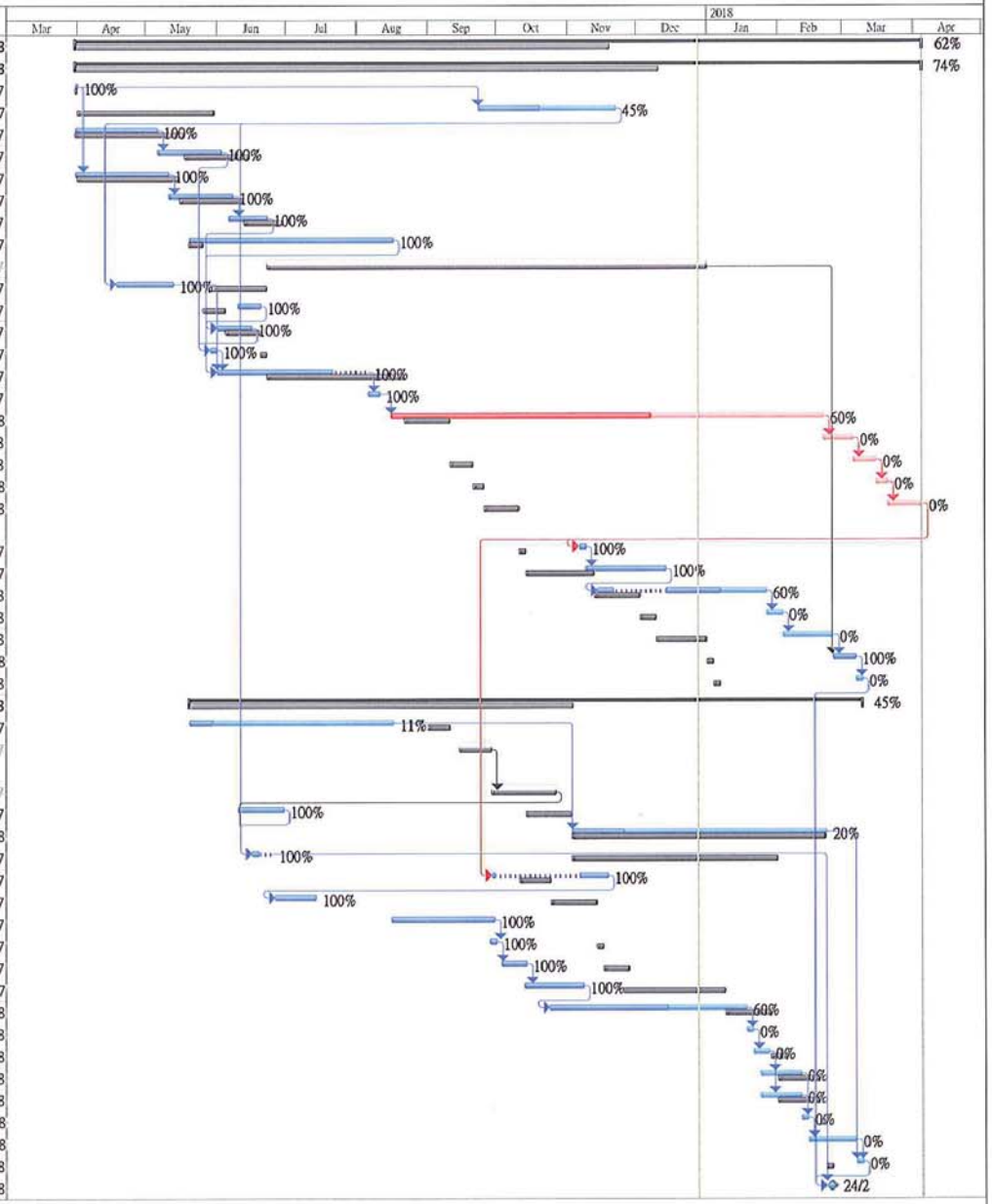
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
1	E.7.1	**SECTION E - HIKING TRAILS (JORDAN SECTION & CHOI WAN SECTION)**	**393 days**	**202.63 days**	**Fri 31/3/17**	**Fri 27/4/18**
2	E.7.1.1	**CONSTRUCTION OF HIKING TRAIL (Jordan section)**	**393 days**	**223.44 days**	**Fri 31/3/17**	**Fri 27/4/18**
3	E.7.1.1.1	Access Date of Portion 7	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	E.7.1.1.2	Initial Survey of Site (Jordan and Choi Wan Section)	60 days	3 days	Sun 17/9/17	Wed 15/11/17
5	E.7.1.1.3	Tree survey and submission (Jordan and Choi Wan Section)	14 days	0 days	Sat 13/5/17	Fri 26/5/17
6	E.7.1.1.4	Mobilization of plant, access , equipment, material	90 days	63 days	Fri 6/10/17	Wed 3/1/18
7	E.7.1.1.5	Submission of construction impact assessment	20 days	0 days	Fri 28/7/17	Wed 16/8/17
8	E.7.1.1.6	Procurement to delivery of soil nails	30 days	12 days	Wed 23/8/17	Thu 21/9/17
9	E.7.1.1.7	Submission of method statement of excavation of slope	50 days	50 days	Sat 1/4/17	Sat 20/5/17
10	E.7.1.1.8	Approval of Method Statement of excavation of slope	28 days	28 days	Sun 21/5/17	Sat 17/6/17
11	E.7.1.1.9	Construction of Hoarding	5 days	1 day	Fri 28/4/17	Tue 2/5/17
12	E.7.1.1.10	Utilities detection	1 day	0 days	Mon 23/10/17	Mon 23/10/17
13	E.7.1.1.11	Construction of confirmation Trial Pit TP1	4 days	0 days	Sat 7/10/17	Tue 10/10/17
14	E.7.1.1.12	Construction of confirmation borehole J1-BH1	4 days	0 days	Fri 8/9/17	Mon 11/9/17
15	E.7.1.1.13	Construct borehole J1-BH2 and test samples	13 days	0 days	Thu 14/9/17	Tue 26/9/17
16	E.7.1.1.14	Excavation of slope and drainage construction	21 days	21 days	Wed 11/10/17	Tue 31/10/17
17	E.7.1.1.15	Erection of tubular platform for soil nails	8 days	0 days	Thu 16/11/17	Thu 23/11/17
18	E.7.1.1.16	Setting out of soil nails	3 days	0 days	Fri 24/11/17	Sun 26/11/17
19	E.7.1.1.17	Construction of Test nails TN1 and TN2	14 days	4.2 days	Mon 27/11/17	Sun 10/12/17
20	E.7.1.1.18	Pull out tests for TN1 and TN2	1 day	1 day	Mon 11/12/17	Mon 11/12/17
21	E.7.1.1.19	Construction of soil nails (45nrs)	21 days	21 days	Tue 12/12/17	Mon 1/1/18
22	E.7.1.1.20	Construction of soil nail heads	12 days	12 days	Tue 2/1/18	Sat 13/1/18
23	E.7.1.1.21	Construction of staircase	30 days	30 days	Sun 14/1/18	Mon 12/2/18
24	E.7.1.1.22	Hydroseeding of slope	2 days	2 days	Tue 13/2/18	Wed 14/2/18
25	E.7.1.1.23	Construction of hiking trail	37 days	37 days	Thu 15/2/18	Fri 23/3/18
26	E.7.1.1.24	Construction of Planter walls with planting	30 days	30 days	Sat 24/3/18	Sun 22/4/18
27	E.7.1.1.25	General tidy up	5 days	5 days	Mon 23/4/18	Fri 27/4/18
28	E.7.1.2	**CONSTRUCTION OF HIKING TRAIL (Choi Wan section)**	**162 days**	**57.05 days**	**Fri 20/10/17**	**Sat 31/3/18**
29	E.7.1.2.1	Erection of hoarding	5 days	0 days	Mon 12/2/18	Fri 16/2/18
30	E.7.1.2.2	Utilities detection	1 day	0 days	Mon 23/10/17	Mon 23/10/17
31	E.7.1.2.3	Construction of hiking trail	72 days	3.6 days	Fri 20/10/17	Sat 30/12/17
32	E.7.1.2.4	Construction of planter walls with planting	30 days	15 days	Fri 24/11/17	Tue 9/1/18
33	E.7.1.2.4a	Landscaping Works (PMI 33)	28 days	28 days	Wed 10/1/18	Tue 6/2/18
34	E.7.1.2.5	General tidy up	2 days	2 days	Wed 7/2/18	Thu 8/2/18
35	E.7.1.2.6	Completion of Works	0 days	0 days	Sat 31/3/18	Sat 31/3/18



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

Revised programme for Section F_Dec 17

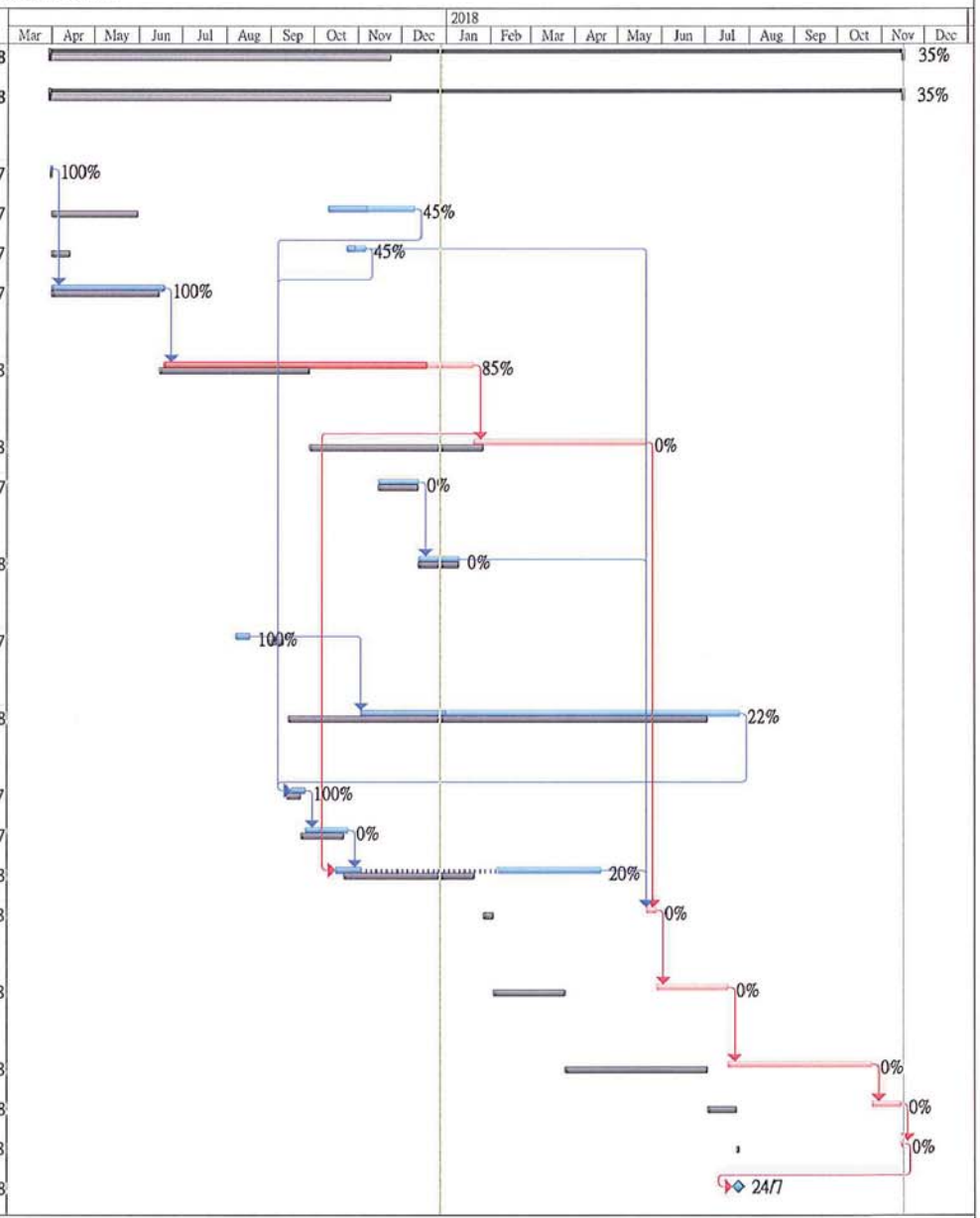
ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
1	F.8.1	**SECTION F - ENTRUSTED SLOPES (SITE A & SITE B)**	**370 days**	**139.57 days**	**Fri 31/3/17**	**Wed 4/4/18**
2	F.8.1.1	**CONSTRUCTION OF SOIL NAILS IN SITE B**	**370 days**	**97.85 days**	**Fri 31/3/17**	**Wed 4/4/18**
3	F.8.1.1.1	Access Date of Portion 8	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	F.8.1.1.2	Initial Site Survey for site A and Site B	60 days	33 days	Sat 23/9/17	Tue 21/11/17
5	F.8.1.1.3	Submission of method statement of soil nailing works	36 days	0 days	Fri 31/3/17	Fri 5/5/17
6	F.8.1.1.4	Approval of method statement of soil nailing works	28 days	0 days	Sat 6/5/17	Fri 2/6/17
7	F.8.1.1.5	Material submission of soil nailing system	41 days	0 days	Fri 31/3/17	Wed 10/5/17
8	F.8.1.1.6	Approval of material for soil nailing system	28 days	0 days	Thu 11/5/17	Wed 7/6/17
9	F.8.1.1.7	Procurement to delivery of soil nails system	17 days	0 days	Tue 6/6/17	Thu 22/6/17
10	F.8.1.1.8	Submission of Construction Impact Assessment	89 days	0 days	Sat 20/5/17	Wed 16/8/17
~~11~~	~~F.8.1.1.9~~	~~Monitoring of ground movement and ground water~~	~~192 days~~	~~192 days~~	~~Fri 23/6/17~~	~~Sun 31/12/17~~
12	F.8.1.1.10	General site clrearance	25 days	0 days	Tue 18/4/17	Fri 12/5/17
13	F.8.1.1.11	Tree Survey for slope features 11NE-D/C709, C714, C711	10 days	0 days	Sat 10/6/17	Mon 19/6/17
14	F.8.1.1.12	Erection of tubular Scaffold for slope 11NE-D/C709, C714	15 days	0 days	Thu 1/6/17	Thu 15/6/17
15	F.8.1.1.13	Setting out of soil nails	3 days	0 days	Mon 29/5/17	Wed 31/5/17
16	F.8.1.1.14	Construction of soil nail (198nrs)	50.4 days	0 days	Thu 1/6/17	Sat 5/8/17
17	F.8.1.1.14a	Additional soil nail (13nrs) (PMI 22)	5 days	0 days	Sun 6/8/17	Thu 10/8/17
18	F.8.1.1.15	Construction of soil nail heads	189 days	75.6 days	Wed 16/8/17	Tue 20/2/18
19	F.8.1.1.15a	Additional soil nail heads (13nrs) (PMI 22)	13 days	13 days	Wed 21/2/18	Mon 5/3/18
20	F.8.1.1.16	Construction of sprayed concrete	10 days	10 days	Tue 6/3/18	Thu 15/3/18
21	F.8.1.1.17	Removal of tubular scaffold and tidy up	5 days	5 days	Fri 16/3/18	Tue 20/3/18
22	F.8.1.1.18	Erection of tubular scaffold for slope feature 11NE-D/C711	15 days	15 days	Wed 21/3/18	Wed 4/4/18
23	F.8.1.1.19	Setting out of soil nails	3 days	0 days	Mon 6/11/17	Wed 8/11/17
24	F.8.1.1.20	Construction of soil nails (82nrs)	35 days	0 days	Thu 9/11/17	Wed 13/12/17
25	F.8.1.1.21	Construction of soil nails heads	51 days	20.4 days	Tue 14/11/17	Fri 26/1/18
26	F.8.1.1.22	Removal of tubular scaffold and tidy up	7 days	7 days	Sat 27/1/18	Fri 2/2/18
27	F.8.1.1.23	Laying of non-biodegradable control mat	22 days	22 days	Sat 3/2/18	Sat 24/2/18
28	F.8.1.1.24	hydroseeding of slope	10 days	0 days	Sun 25/2/18	Tue 6/3/18
29	F.8.1.1.25	General tidy up site	3 days	3 days	Wed 7/3/18	Fri 9/3/18
30	F.8.1.2	**CONSTRUCTION OF SOIL NAILS IN SITE A**	**294 days**	**162.14 days**	**Sat 20/5/17**	**Fri 9/3/18**
31	F.8.1.2.1	Submission of Construction Impact Assessment	89 days	79 days	Sat 20/5/17	Wed 16/8/17
~~32~~	~~F.8.1.2.2~~	~~Submission of method statement of demolition of terrace~~	~~14 days~~	~~14 days~~	~~Fri 15/9/17~~	~~Thu 28/9/17~~
~~33~~	~~F.8.1.2.3~~	~~Approval to method statement of demolition of terrace~~	~~28 days~~	~~28 days~~	~~Fri 29/9/17~~	~~Thu 26/10/17~~
34	F.8.1.2.4	Tree Survey	20 days	0 days	Sat 10/6/17	Thu 29/6/17
35	F.8.1.2.5	Monitoring of ground movement and ground water	111 days	88.8 days	Fri 3/11/17	Wed 21/2/18
36	F.8.1.2.6	Demolition of existing terrace structure	3 days	0 days	Fri 16/6/17	Sat 24/6/17
37	F.8.1.2.7	Erection of Tubular Platform	14 days	0 days	Fri 29/9/17	Sat 18/11/17
38	F.8.1.2.8	Stripping of 500mm thick top soil	18 days	0 days	Mon 26/6/17	Thu 13/7/17
39	F.8.1.2.8a	Verification Inspection Pits (PMI 14)	45 days	0 days	Wed 16/8/17	Fri 29/9/17
40	F.8.1.2.9	Setting out of soil nails	3 days	0 days	Thu 28/9/17	Sat 30/9/17
41	F.8.1.2.10	Pull Out Test (4 nrs)	11 days	0 days	Tue 3/10/17	Fri 13/10/17
42	F.8.1.2.11	Construction of soil nail (162nrs)	26 days	0 days	Fri 13/10/17	Tue 7/11/17
43	F.8.1.2.12	Construction of soil nail heads	86 days	34.4 days	Tue 24/10/17	Wed 17/1/18
44	F.8.1.2.12a	Remove of Dead Tree Stump (PMI 28)	3 days	3 days	Thu 18/1/18	Sat 20/1/18
45	F.8.1.2.13	Removal of tubular scaffold and tidy up	7 days	7 days	Sun 21/1/18	Sat 27/1/18
46	F.8.1.2.14	Laying of biodegradable control mat	18 days	18 days	Wed 24/1/18	Sat 10/2/18
47	F.8.1.2.15	Construction of granite stone wall	18 days	18 days	Wed 24/1/18	Sat 10/2/18
48	F.8.1.2.16	Hydroseeding of slope	3 days	3 days	Sun 11/2/18	Tue 13/2/18
49	F.8.1.2.16a	Erection of Chain Fence	21 days	21 days	Wed 14/2/18	Tue 6/3/18
50	F.8.1.2.17	General tidy up site	3 days	3 days	Wed 7/3/18	Fri 9/3/18
51	F.8.1.2.18	Completion of Works	0 days	0 days	Sat 24/2/18	Sat 24/2/18



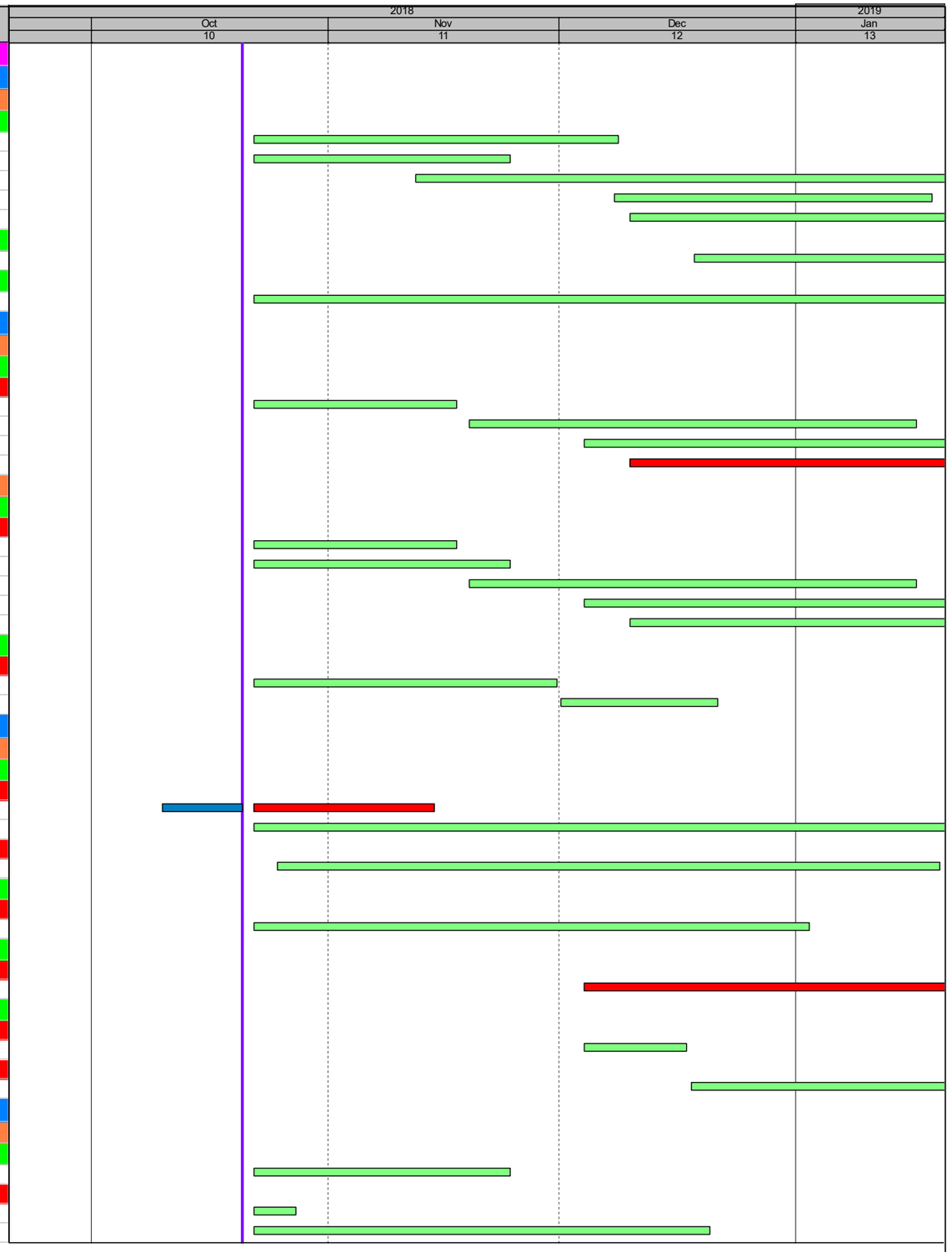
Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary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

Revised programme for Section F1_Dec 17

ITEM	ID	Task Name	Duration	Remaining Duration	Start	Finish
1	F1.9.1	**SECTION F1 - FLEXIBLE BARRIER**	**595 days**	**388.28 days**	**Fri 31/3/17**	**Thu 15/11/18**
2	F1.9.1.1	**CONSTRUCTION OF Flexible barriers near Tiu King Leng**	**595 days**	**388.28 days**	**Fri 31/3/17**	**Thu 15/11/18**
3	F1.9.1.1.1	Access Date for Portion 9	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	F1.9.1.1.2	Initial Site Survey	60 days	33 days	Wed 11/10/17	Sat 9/12/17
5	F1.9.1.1.3	Initial Tree Survey	13 days	7.15 days	Tue 24/10/17	Sun 5/11/17
6	F1.9.1.1.4	Material and design submission for flexible barrier systems	78 days	0 days	Sat 1/4/17	Sat 17/6/17
7	F1.9.1.1.5	Approval to material and design submission for flexible barrier system	216 days	32.4 days	Sun 18/6/17	Fri 19/1/18
8	F1.9.1.1.6	Procurement of flexible barriers	121 days	121 days	Sat 20/1/18	Sun 20/5/18
9	F1.9.1.1.7	Submission of method statement for Flexible barrier construction	28 days	28 days	Wed 15/11/17	Tue 12/12/17
10	F1.9.1.1.8	Approval of method statement for flexible barrier construction	28 days	28 days	Wed 13/12/17	Tue 9/1/18
11	F1.9.1.1.9	Submission of construction impact assessment	10 days	0 days	Mon 7/8/17	Wed 16/8/17
12	F1.9.1.1.10	Monitoring of vibration and ground water level	264 days	205.4 days	Fri 3/11/17	Tue 24/7/18
13	F1.9.1.1.11	Construction of piezometers (2nr) (PMI 4)	10 days	0 days	Fri 15/9/17	Sun 24/9/17
14	F1.9.1.1.12	Ground Investigation works	30 days	30 days	Mon 25/9/17	Tue 24/10/17
15	F1.9.1.1.13	Construction of Baffles	91 days	72.8 days	Mon 16/10/17	Wed 18/4/18
16	F1.9.1.1.14	General site clearance for Flexible barriers	7 days	7 days	Mon 21/5/18	Sun 27/5/18
17	F1.9.1.1.15	Erection of tubular platform for flexible barrier construction	50 days	50 days	Mon 28/5/18	Mon 16/7/18
18	F1.9.1.1.16	Erection of flexible barriers	100 days	100 days	Tue 17/7/18	Wed 24/10/18
19	F1.9.1.1.17	Removal of platform	20 days	20 days	Thu 25/10/18	Tue 13/11/18
20	F1.9.1.1.18	General tidy up	2 days	2 days	Wed 14/11/18	Thu 15/11/18
21	F1.9.1.1.19	Completion of works	0 days	0 days	Tue 24/7/18	Tue 24/7/18



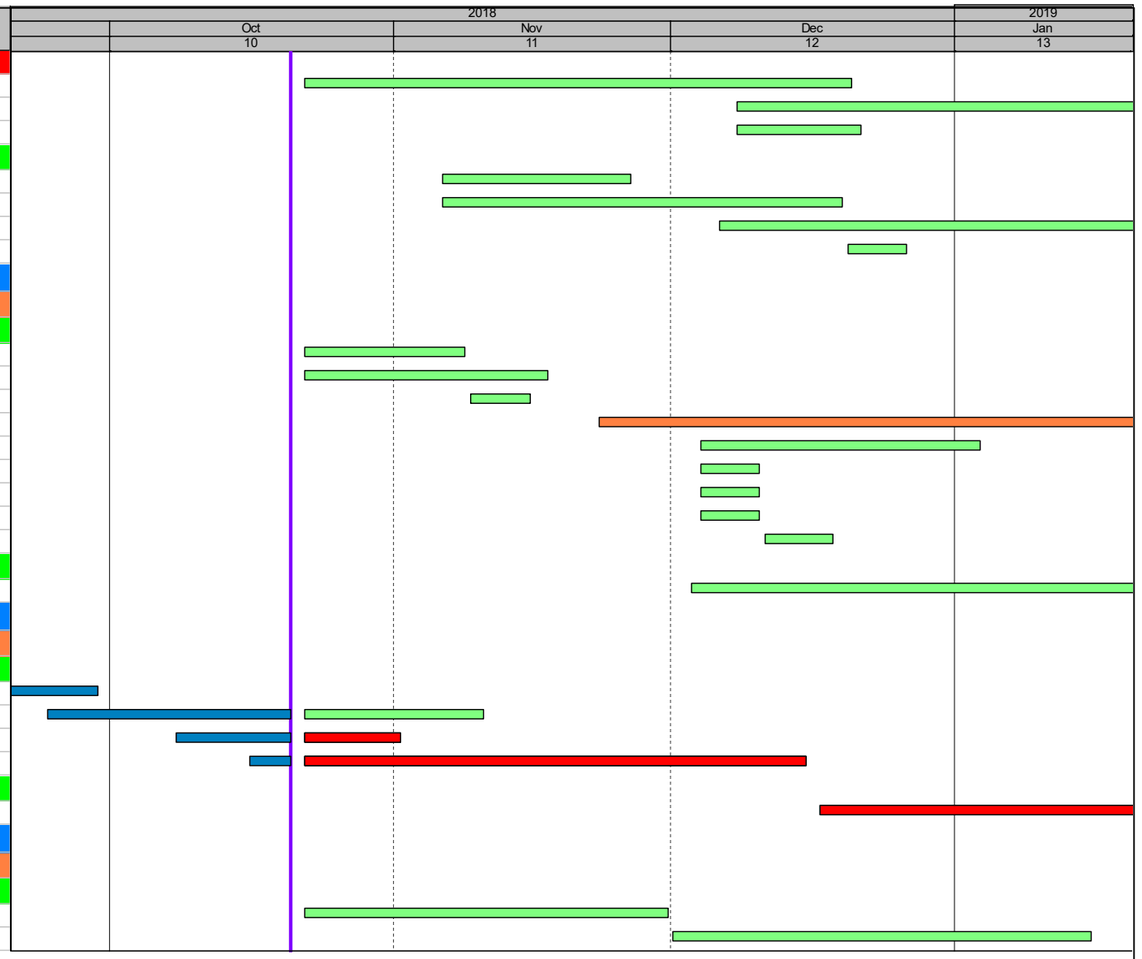
Activity ID	Activity Name	Duration	Start	Finish
NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (201810)-0		1153	17-Sep-18 A	27-Nov-21
Road Improvement Works Location 1 (RIW1)		170	22-Oct-18	21-May-19
Construction Works		170	22-Oct-18	21-May-19
Preliminary Works		107	22-Oct-18	01-Mar-19
CON10030	Trees survey at portion A	42	22-Oct-18	08-Dec-18
CON11060	Pre-condition survey (RIW1)	30	22-Oct-18	24-Nov-18
CON10040	Trees protection for trees transplant at portion A	89	12-Nov-18	01-Mar-19
CON10010	Install monitoring & instrumentation at portion A	33	08-Dec-18	18-Jan-19
CON10110	Trees protection / trees felling works at portion A	60	10-Dec-18	23-Feb-19
Works in Subway KS27		120	18-Dec-18	21-May-19
CON11130	Predrill works (RIW1)	120	18-Dec-18	21-May-19
Portion AIII Boulder Treatment Works		101	22-Oct-18	22-Feb-19
CON10020	Boulder Treatment Works (Portion AIII)	101	22-Oct-18	22-Feb-19
Road Improvement Works Location 2 (RIW2)		90	22-Oct-18	09-Feb-19
Construction Works in Slope C3 (Portion B)		90	22-Oct-18	09-Feb-19
Preliminary Works		90	22-Oct-18	09-Feb-19
Site Set-up Works		90	22-Oct-18	09-Feb-19
CON20010	Trees survey at portion B	24	22-Oct-18	17-Nov-18
CON20040	Trees protection / trees felling works at portion B	48	19-Nov-18	16-Jan-19
CON20080	Install monitoring & instrumentation at portion B	48	04-Dec-18	31-Jan-19
CON20060	Erect hoarding at portion B	48	10-Dec-18	09-Feb-19
Construction Noise Semi-Enclosure SE2 (Portion C)		90	22-Oct-18	09-Feb-19
Preliminary Works		90	22-Oct-18	09-Feb-19
Site Set-up Works		90	22-Oct-18	09-Feb-19
CON20020	Trees survey at portion C	24	22-Oct-18	17-Nov-18
CON21020	Pre-condition survey (RIW2, portion C)	30	22-Oct-18	24-Nov-18
CON20050	Trees protection / trees felling works at portion C	48	19-Nov-18	16-Jan-19
CON20090	Install monitoring & instrumentation at portion C	48	04-Dec-18	31-Jan-19
CON20070	Erect hoarding at portion C	48	10-Dec-18	09-Feb-19
Construction Works		53	22-Oct-18	21-Dec-18
Road Works		53	22-Oct-18	21-Dec-18
CON20030	Notification of district welcome sign board relocation	35	22-Oct-18	30-Nov-18
CON20100	Relocation of district welcome sign board	18	01-Dec-18	21-Dec-18
Road Improvement Works Location 3 (RIW3)		120	10-Oct-18 A	16-Mar-19
Construction Works		120	10-Oct-18 A	16-Mar-19
Works in Slope D1		120	10-Oct-18 A	16-Mar-19
Preparation Works		120	10-Oct-18 A	16-Mar-19
CON30860	Pre-condition survey (RIW3)	30	10-Oct-18 A	14-Nov-18
CON30010	Trees felling	120	22-Oct-18	16-Mar-19
Road Works (Slope D1)		72	25-Oct-18	19-Jan-19
CON30890	Utilities mapping at Section 3	72	25-Oct-18	19-Jan-19
Works in Slope D2		60	22-Oct-18	02-Jan-19
Construction of Retaining Wall RWD2		60	22-Oct-18	02-Jan-19
CON30020	Trees felling	60	22-Oct-18	02-Jan-19
Works in Slope D3		77	04-Dec-18	09-Mar-19
Slope Works (Slope D3)		77	04-Dec-18	09-Mar-19
CON30030	Install safety fencing, from haul road & hoarding	77	04-Dec-18	09-Mar-19
Noise Barrier Works		54	04-Dec-18	11-Feb-19
Site Set-up Works		12	04-Dec-18	17-Dec-18
CON30040	Traffic diversion	12	04-Dec-18	17-Dec-18
Noise Barrier Works alnong Lin Tak Road toward Lam Tin		42	18-Dec-18	11-Feb-19
CON30050	Install sheet pile (L=1300m, 7.5m/d, 4 teams)	42	18-Dec-18	11-Feb-19
Pedestrian Connectivity Facility (PC-E8)		113	22-Oct-18	11-Feb-19
Construction Works		113	22-Oct-18	11-Feb-19
Preparation Works		89	22-Oct-18	08-Feb-19
CON41170	Pre-condition survey (PC-E8)	30	22-Oct-18	24-Nov-18
Trees Works		52	22-Oct-18	20-Dec-18
CON40060	Trees survey to Portion G	6	22-Oct-18	27-Oct-18
CON40080	Trees felling works & trees protection works	52	22-Oct-18	20-Dec-18



Summary
Actual Work
Remaining Work
Critical Remainin...
Milestone

NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction
Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A
3-Month Rolling Programme

Activity ID	Activity Name	Duration	Start	Finish
Hoarding Works & Site Set-up		89	22-Oct-18	08-Feb-19
CON40020	Announcement to public works to be commenced	52	22-Oct-18	20-Dec-18
CON40090	Erect temporary staircase along E8-ABT & diversion	48	08-Dec-18	08-Feb-19
CON40070	Erect hoarding (along Hiu Ming Street)	12	08-Dec-18	21-Dec-18
Earth Works		98	06-Nov-18	11-Feb-19
CON40040	Install monitoring & instrumentation	18	06-Nov-18	26-Nov-18
CON40050	Intital reading for monitoring & instrumentation point	38	06-Nov-18	19-Dec-18
CON40140	Construct soldier pile wall to E8-ABT	52	06-Dec-18	11-Feb-19
CON40110	Prepare & submit Intital reading for monitoring & instrumentation point	7	20-Dec-18	26-Dec-18
Pedestrian Connectivity Facility (PC-E11)		921	22-Oct-18	27-Nov-21
Construction Works		921	22-Oct-18	27-Nov-21
Preliminary Works		921	22-Oct-18	27-Nov-21
CON40650	Trees survey	16	22-Oct-18	08-Nov-18
CON41180	Pre-condition survey (PC-E11)	24	22-Oct-18	17-Nov-18
CON40720	Prepare & submit trees survey report	6	09-Nov-18	15-Nov-18
CON40731	Trees preservation duration works period at portion E	893	23-Nov-18	27-Nov-21
CON40660	Install ground settlement marker at Portion E	24	04-Dec-18	03-Jan-19
CON40670	Install tiltmeter marker at Portion E	6	04-Dec-18	10-Dec-18
CON40680	Install building settlement marker at Portion E	6	04-Dec-18	10-Dec-18
CON40690	Initial reading taking	6	04-Dec-18	10-Dec-18
CON40700	Prepare & submit initial reading for monitoring & instrumentation	7	11-Dec-18	18-Dec-18
Sub-structure Works		96	03-Dec-18	30-Mar-19
CON40760	Construct U/G utilities	96	03-Dec-18	30-Mar-19
Pedestrian Connectivity Facility System A (SYA)		94	17-Sep-18 A	23-Jan-19
Construction Works		94	17-Sep-18 A	23-Jan-19
Preliminary Works		68	17-Sep-18 A	15-Dec-18
CON50010	UU detection	8	17-Sep-18 A	29-Sep-18 A
CON50160	Pre-condition survey (SYA)	30	24-Sep-18 A	10-Nov-18
CON50020	Excavation for trial pit	42	08-Oct-18 A	01-Nov-18
CON50030	Erect hoarding	52	16-Oct-18 A	15-Dec-18
Sub-structure Works		30	17-Dec-18	23-Jan-19
CON500410	Install sheet pile at SYA-F1 (62m L, 2m/d, 1 team)	30	17-Dec-18	23-Jan-19
Pedestrian Connectivity Facility System B (SYB)		71	22-Oct-18	15-Jan-19
Construction Works		71	22-Oct-18	15-Jan-19
Preliminary Works		71	22-Oct-18	15-Jan-19
CON50170	Pre-condition survey (SYB)	35	22-Oct-18	30-Nov-18
CON50180	UU detection	36	01-Dec-18	15-Jan-19



Summary
Actual Work
Remaining Work
Critical Remainin...
Milestone

Appendix D

Monitoring Locations for Impact Monitoring

HVS in AMS-1 for 24-Hour TSP

AMS-1

AMS-2

AMS-3

N

Legend

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

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of
Anderson Road Quarry -
Investigation

Drawing title

Locations of Construction
Dust Monitoring
(Sheet 1 of 3)

Drawing no.	Rev.
227724/E/1045	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale 1:5000 @A3

Status PRELIMINARY

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

0 25 50 75 100 125
METRES
1 : 5000

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

AMS-3

AMS-4

AMS-5

AMS-6

HVS in AMS-5 for 24-Hour TSP

HVS in AMS-6 for 24-Hour TSP

Legend

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

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 2 of 3)

Drawing no.	Rev.
227724/E/1046	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

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

0 25 50 75 100 125
METRES
1 : 5000

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

Legend

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

AMS-5

AMS-6

AMS-7

HVS in AMS-7 for 24-Hour TSP

0 20 40 60 80 100
METRES
1 : 5000

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 3 of 3)

Drawing no.	Rev.
227724/E/1047	B

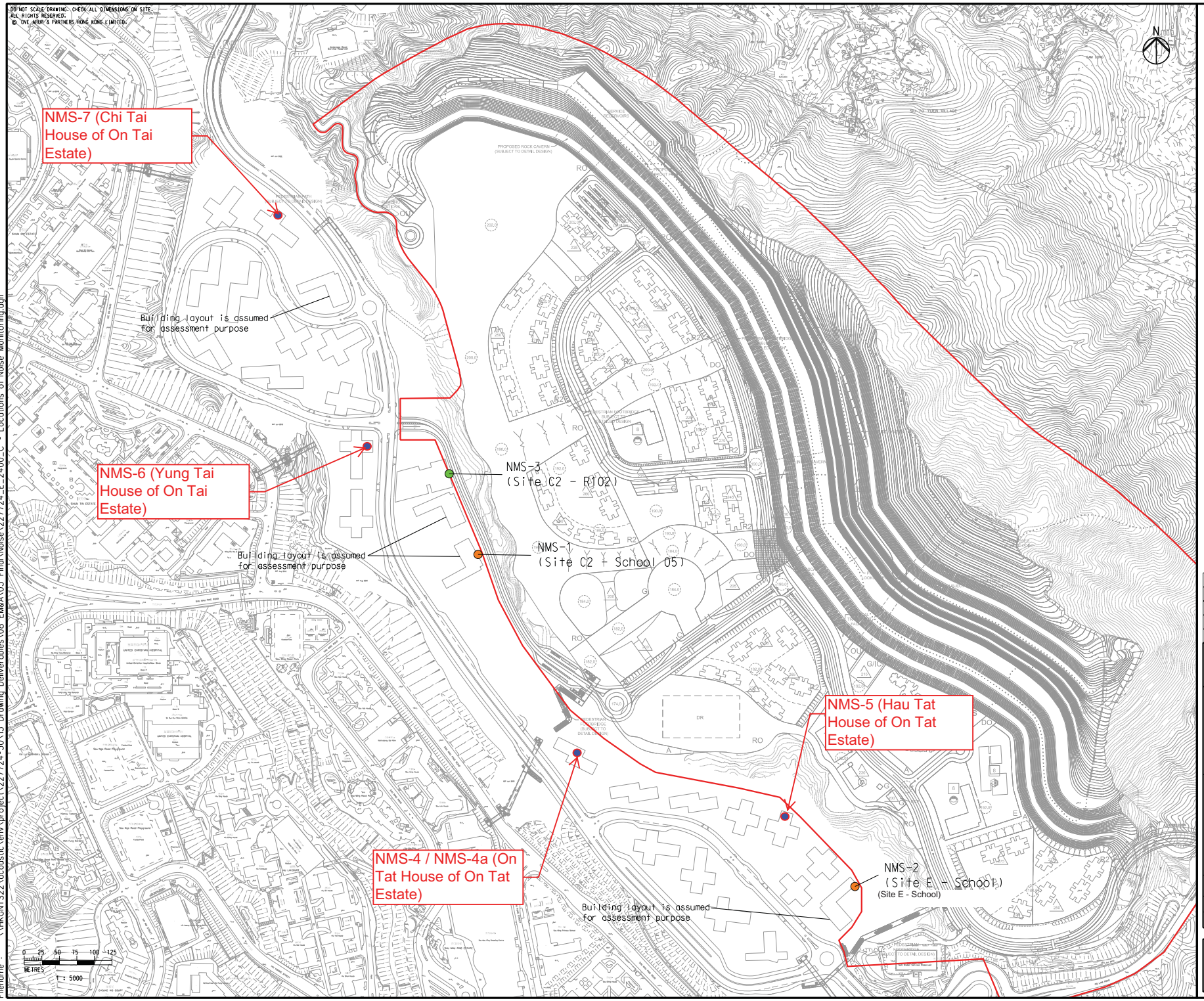
Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

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

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



Legend

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

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Noise Monitoring

Drawing no.	Rev.
227724/E/2400	C

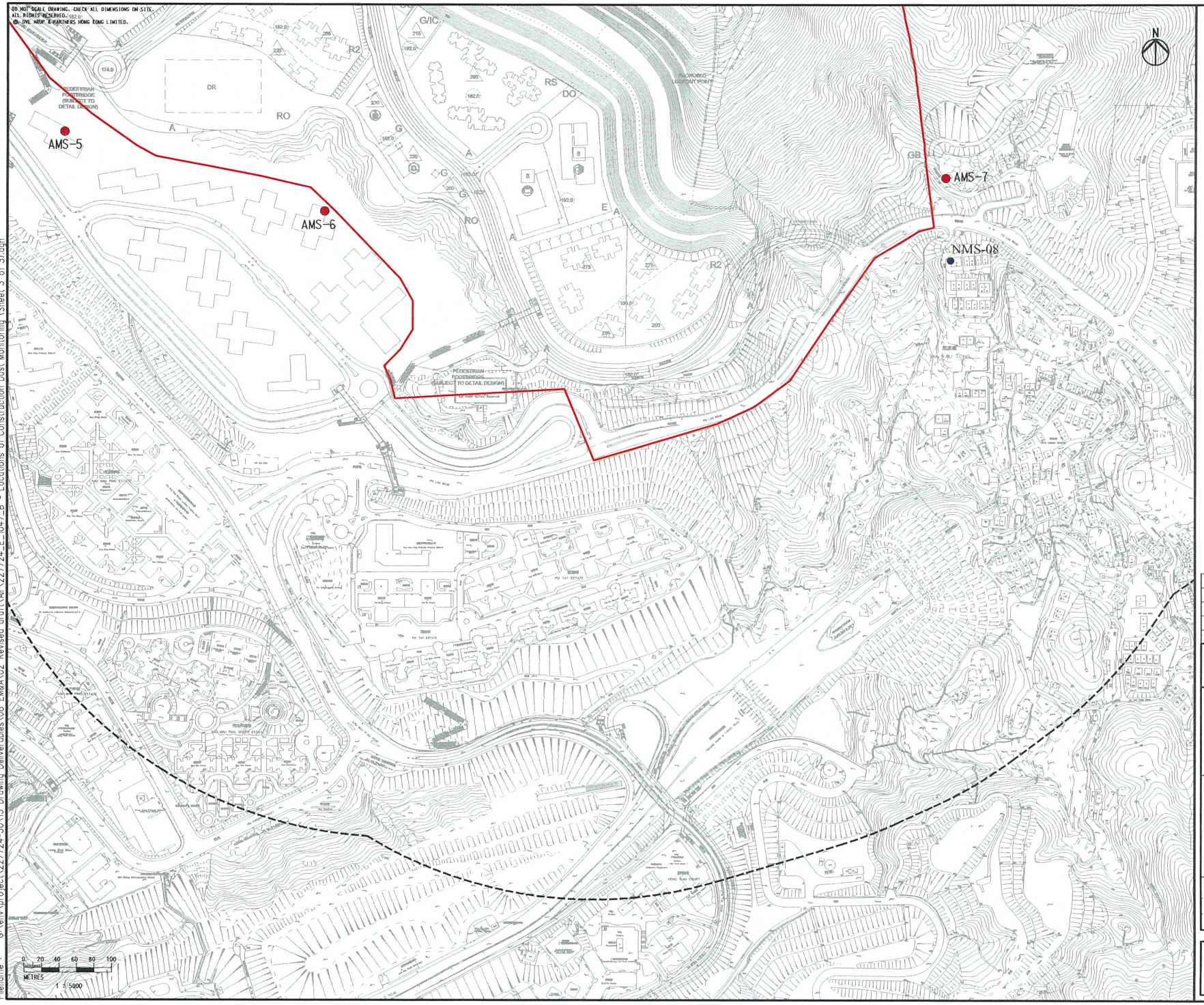
Drawn	Date	Checked	Approved
GL	05/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

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

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



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

Consultant

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust and Noise Monitoring

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

Appendix E

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

Date of Calibration: 24-Sep-18
Next Calibration Date: 24-Nov-18
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1011.1	Corrected Pressure (mm Hg)	758.325
Temperature (°C)	27.0	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.5	6.5	13	1.795	55	54.76	Slope = 33.3655
13	5.3	5.1	10.4	1.608	49	48.78	Intercept = -5.5465
10	3.9	3.9	7.8	1.395	40	39.82	Corr. coeff. = 0.9977
7	2.4	2.3	4.7	1.087	30	29.87	
5	1.2	1.1	2.3	0.766	21	20.91	

Calculations :

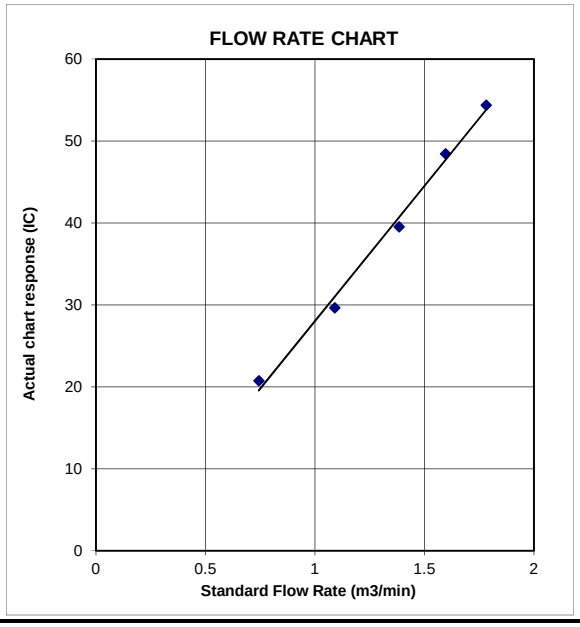
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Oi Tat House	Date of Calibration: 24-Sep-18
Location ID : AMS 5	Next Calibration Date: 24-Nov-18
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1011.1	Corrected Pressure (mm Hg)	758.325
Temperature (ºC)	27.0	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.5	12.6	1.768	55	54.76	Slope = 33.8828
13	4.8	4.6	9.4	1.529	48	47.79	Intercept = -4.4919
10	3.7	3.5	7.2	1.341	42	41.81	Corr. coeff. = 0.9986
7	2.5	2.5	5	1.120	33	32.85	
5	1.2	1.2	2.4	0.782	22	21.90	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

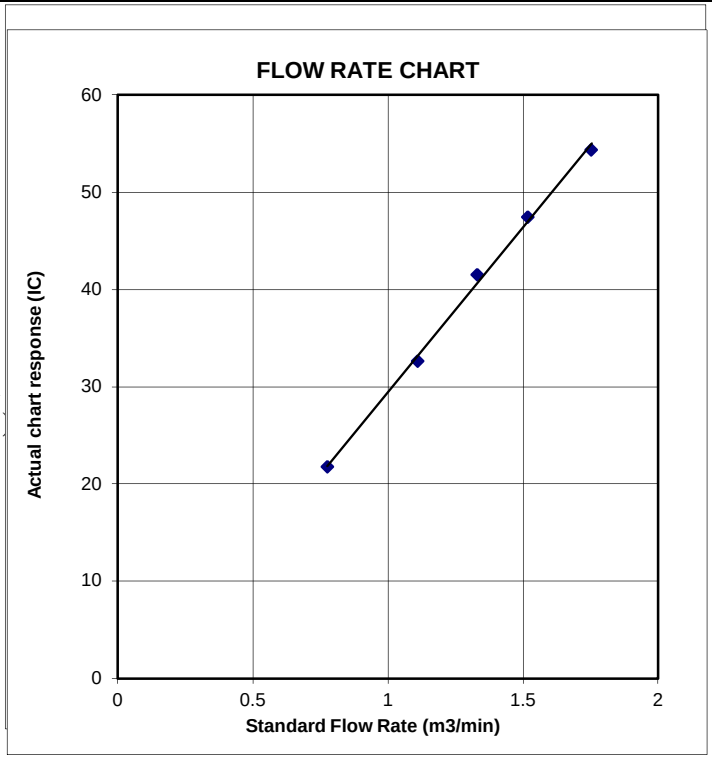
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hau Tat House	Date of Calibration: 24-Sep-18
Location ID : AMS 6	Next Calibration Date: 24-Nov-18
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1011.1	Corrected Pressure (mm Hg)	758.325
Temperature (ºC)	27.0	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.3	6	12.3	1.747	54	53.76	Slope = 30.1302
13	4.7	4.5	9.2	1.513	48	47.79	Intercept = 1.2189
10	3.7	3.5	7.2	1.341	41	40.82	Corr. coeff. = 0.9977
7	2.2	2.1	4.3	1.040	32	31.86	
5	1.1	1.2	2.3	0.766	25	24.89	

Calculations :

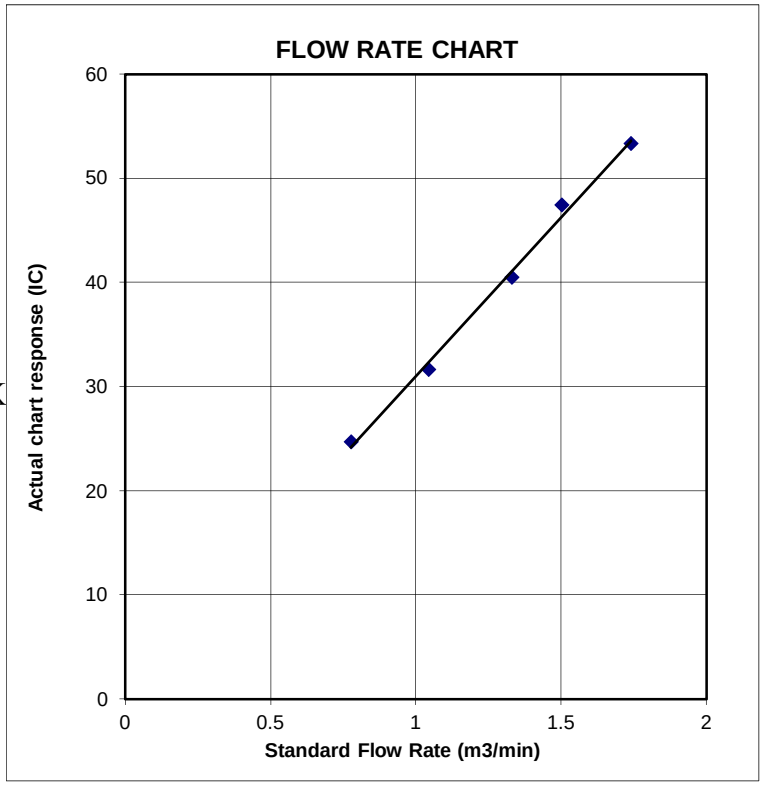
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ma Yau Tong Village	Date of Calibration: 24-Sep-18
Location ID : AMS 7	Next Calibration Date: 24-Nov-18
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1011.1	Corrected Pressure (mm Hg)	758.325
Temperature (°C)	27.0	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.3	6.1	12.4	1.754	46	45.80	Slope = 26.6787
13	5.4	4.9	10.3	1.600	41	40.82	Intercept = -1.5908
10	3.7	3.7	7.4	1.359	34	33.85	Corr. coeff. = 0.9986
7	2.2	2.2	4.4	1.052	27	26.88	
5	1.2	1.1	2.3	0.766	19	18.92	

Calculations :

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

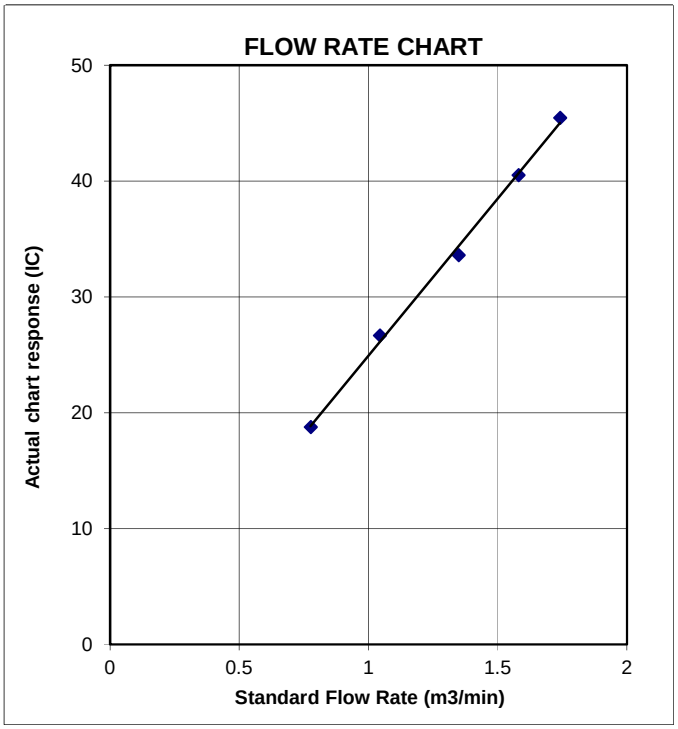
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hau Tat House	Date of Calibration: 26-Nov-18
Location ID : AMS 6	Next Calibration Date: 26-Jan-19
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1018.9	Corrected Pressure (mm Hg)	764.175
Temperature (ºC)	19.0	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.784	55	55.71	Slope = 31.7141
13	4.7	4.6	9.3	1.547	48	48.62	Intercept = -0.9661
10	3.6	3.5	7.1	1.354	41	41.53	Corr. coeff. = 0.9989
7	2.2	2	4.2	1.046	31	31.40	
5	1.1	1.0	2.1	0.745	23	23.30	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K

Pstd = actual pressure during calibration (mm Hg

For subsequent calculation of sampler flow:

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

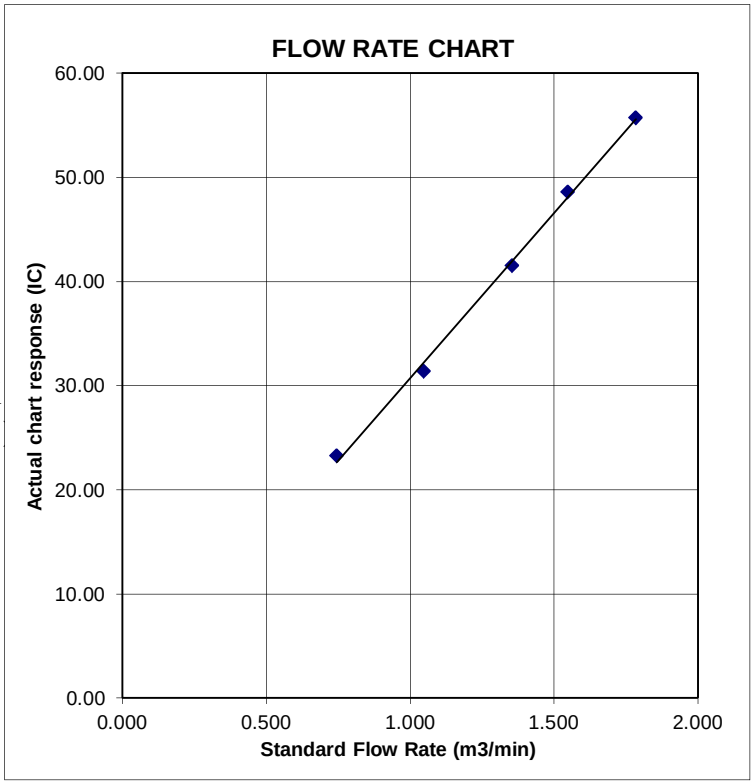
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Oi Tat House	Date of Calibration: 26-Nov-18
Location ID : AMS 5	Next Calibration Date: 26-Jan-19
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1018.9	Corrected Pressure (mm Hg)	764.175
Temperature (ºC)	19.0	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.3	12.5	1.791	56	56.73	Slope = 34.4170
13	4.8	4.7	9.5	1.564	47	47.61	Intercept = -5.4625
10	3.6	3.5	7.1	1.354	41	41.53	Corr. coeff. = 0.9990
7	2.4	2.4	4.8	1.117	32	32.42	
5	1.2	1.2	2.4	0.795	22	22.29	

Calculations :

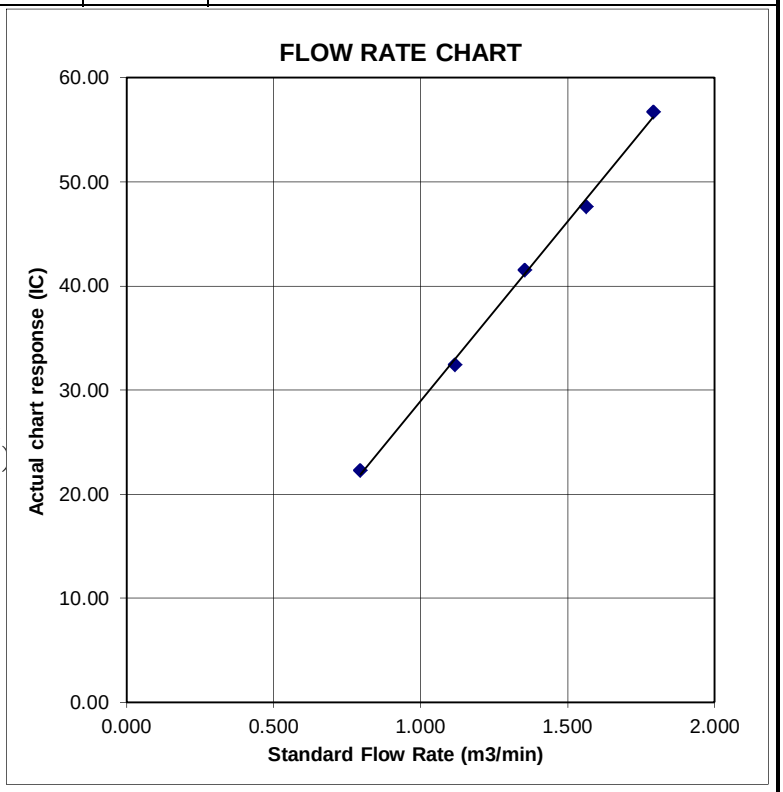
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She	Date of Calibration: 26-Nov-18
Location ID : AMS1	Next Calibration Date: 26-Jan-19
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1018.9	Corrected Pressure (mm Hg)	764.175
Temperature (ºC)	19.0	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.5	6.5	13	1.826	54	54.70	Slope = 34.2664
13	5.3	5.3	10.6	1.651	49	49.64	Intercept = -7.7232
10	3.8	3.8	7.6	1.401	39	39.51	Corr. coeff. = 0.9992
7	2.4	2.4	4.8	1.117	30	30.39	
5	1.2	1.1	2.3	0.779	19	19.25	

Calculations :

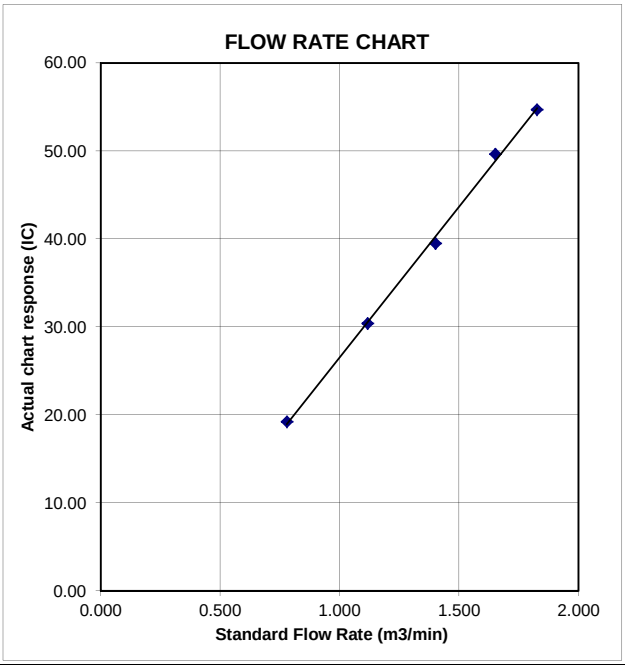
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

Date of Calibration: 26-Nov-18
Next Calibration Date: 26-Jan-19
Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1018.9	Corrected Pressure (mm Hg)	764.175
Temperature (°C)	19.0	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	TE-5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.1	12.3	1.777	45	45.58	Slope = 27.4270
13	5.4	4.9	10.3	1.628	40	40.52	Intercept = -3.4455
10	3.7	3.7	7.4	1.382	34	34.44	Corr. coeff. = 0.9978
7	2.0	2.2	4.2	1.046	26	26.34	
5	1.2	1.1	2.3	0.779	17	17.22	

Calculations :

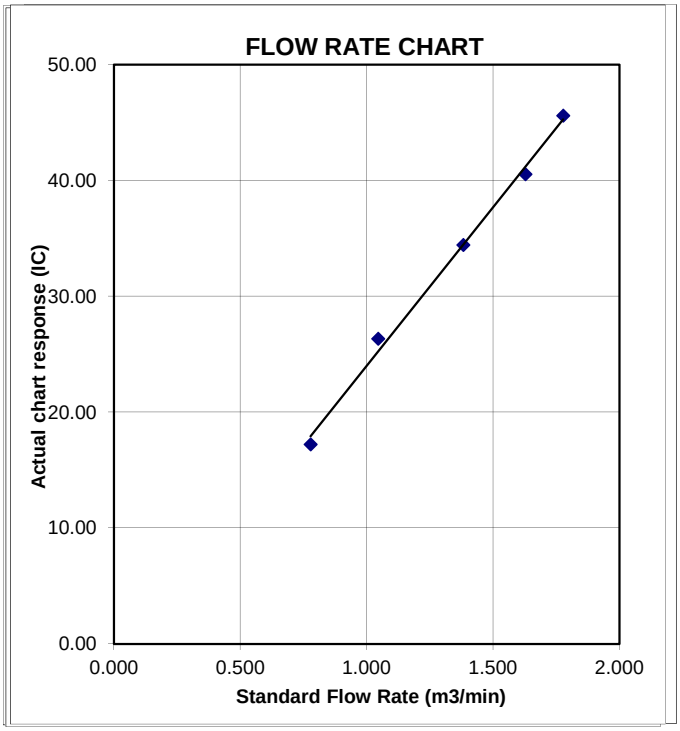
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TISCH Environmental

RECALIBRATION DUE DATE:
February 13, 2019

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	February 13, 2018	**Rootsmeter S/N:** 438320	**Ta:** 293	°K
Operator:	Jim Tisch		**Pa:** 763.3	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **1612**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3970	3.2	2.00
2	3	4	1	1.0000	6.3	4.00
3	5	6	1	0.8900	7.9	5.00
4	7	8	1	0.8440	8.7	5.50
5	9	10	1	0.7010	12.6	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0172	0.7281	1.4293	0.9958	0.7128	0.8762
1.0130	1.0130	2.0213	0.9917	0.9917	1.2392
1.0109	1.1358	2.2599	0.9896	1.1120	1.3854
1.0098	1.1964	2.3702	0.9886	1.1713	1.4530
1.0046	1.4331	2.8586	0.9835	1.4030	1.7524
QSTD	**m=**	**2.02017**	**QA**	**m=**	**1.26500**
	b=	**-0.03691**		**b=**	**-0.02263**
	r=	**0.99988**		**r=**	**0.99988**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

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

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.cor
TOLL FREE: (877)263-761(
FAX: (513)467-900

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

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/m³ (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)

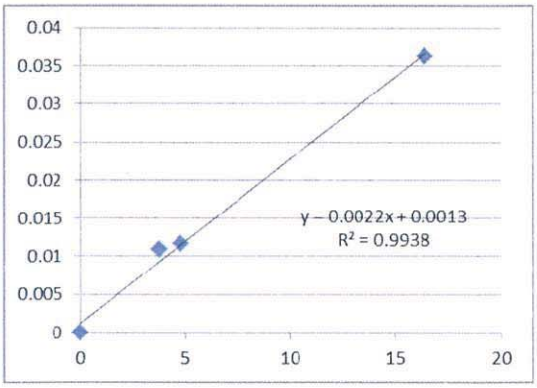
Sensitivity Adjustment Scale Setting (After Calibration) 521 (CPM)

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.	H20 (L) (in)	H2O (R) (in)	H20 (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[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

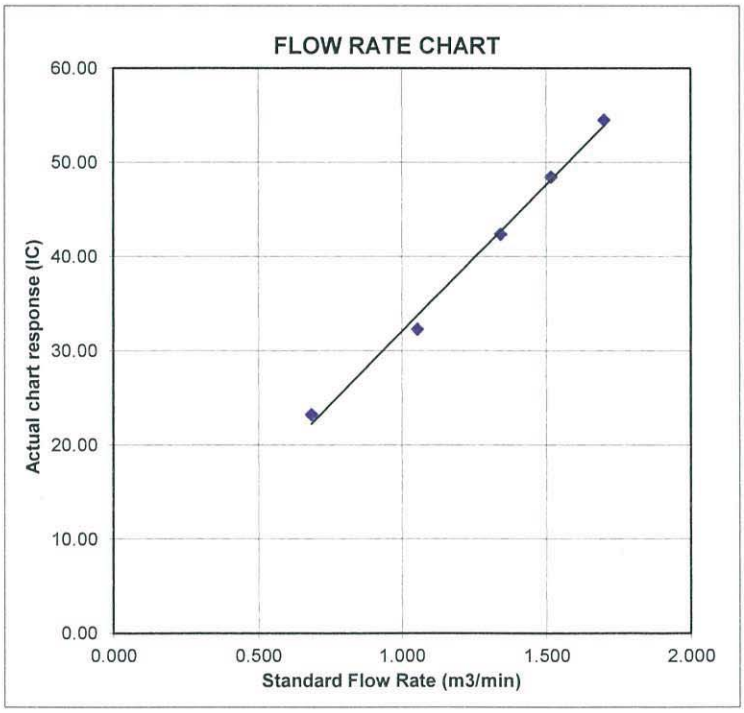
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1815073**
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	: HK1815073
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.
HK1815073-001	S/N: 2X6145	AIR	05-Jan-2018	S/N: 2X6145

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	2X6145
Equipment Ref:	EQ105
Job Order	HK1815073

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	511	4.0
2hr01min	12:38 ~ 14:39	19.3	1015.3	0.012	598	4.9
2hr08min	14:42 ~ 16:50	19.3	1015.3	0.036	2111	16.5

Sensitivity Adjustment Scale Setting (Before Calibration) 583 (CPM)

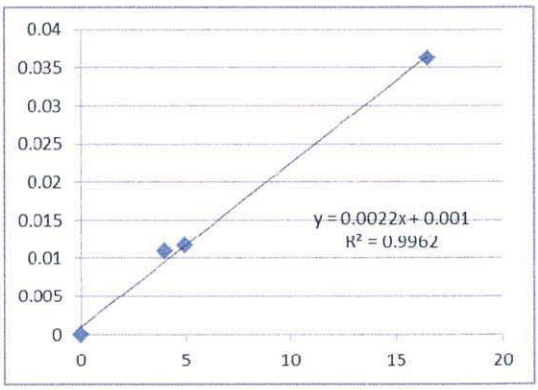
Sensitivity Adjustment Scale Setting (After Calibration) 583 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9981

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.	H20 (L) (in)	H2O (R) (in)	H20 (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[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

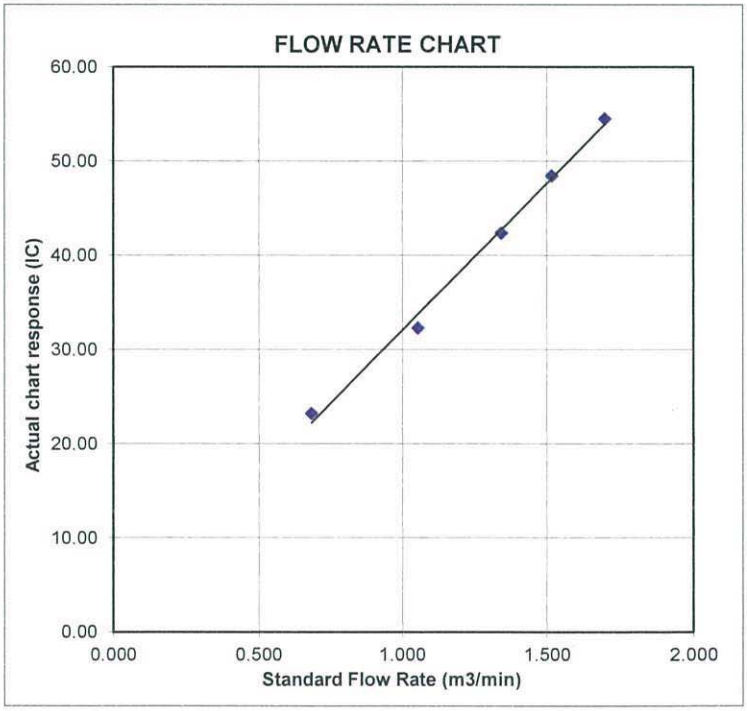
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1815077**
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	: HK1815077
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.
HK1815077-001	S/N: 3Y6503	AIR	05-Jan-2018	S/N: 3Y6503

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	3Y6503
Equipment Ref:	EQ112
Job Order	HK1815077

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/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	10:27 ~ 12:34	19.3	1015.3	0.011	521	4.1
2hr01min	12:38 ~ 14:39	19.3	1015.3	0.012	674	5.6
2hr08min	14:42 ~ 16:50	19.3	1015.3	0.036	2077	16.3

Sensitivity Adjustment Scale Setting (Before Calibration) 661 (CPM)

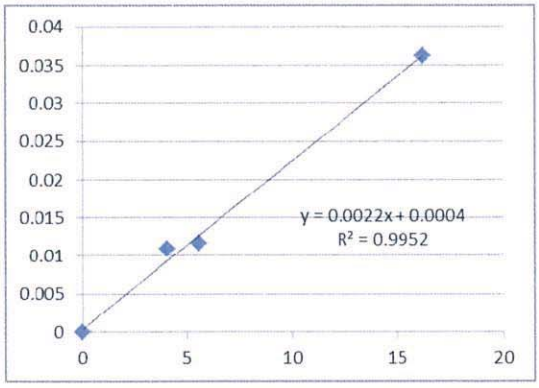
Sensitivity Adjustment Scale Setting (After Calibration) 661 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9976

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.	H20 (L) (in)	H2O (R) (in)	H20 (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[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

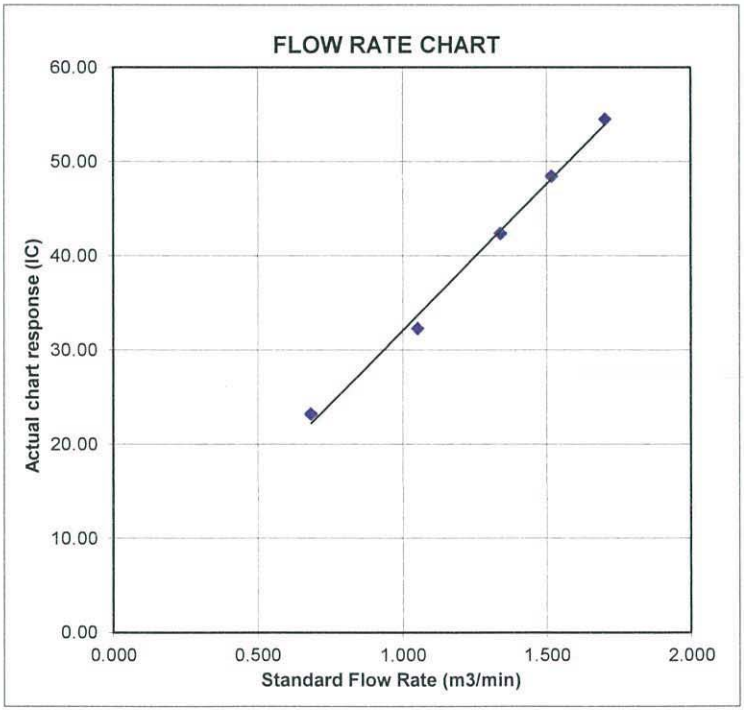
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **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

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	: 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/m³ (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)

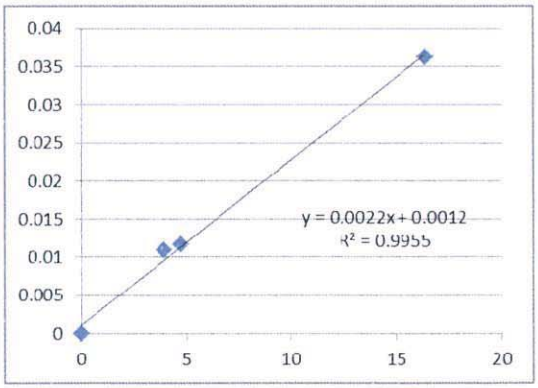
Sensitivity Adjustment Scale Setting (After Calibration) 669 (CPM)

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.	H20 (L) (in)	H2O (R) (in)	H20 (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 :

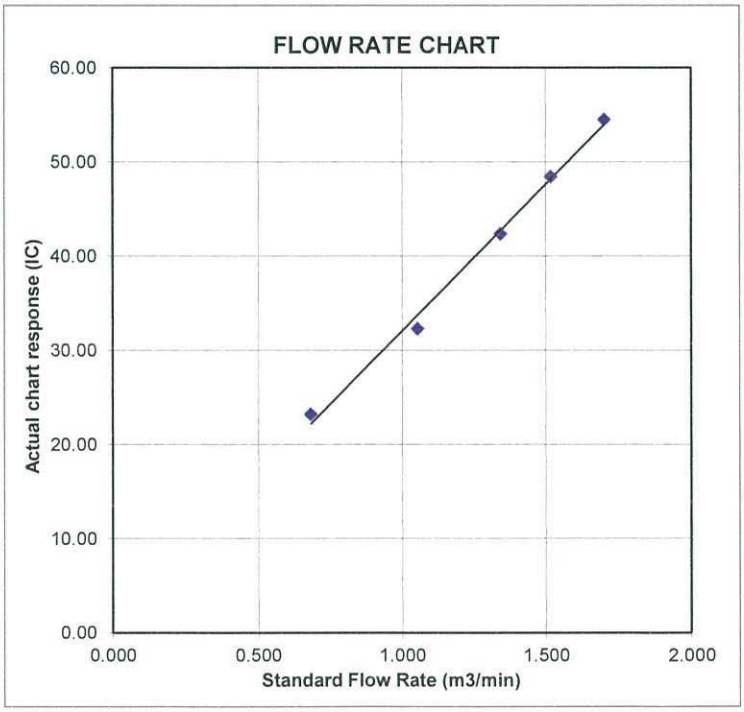
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



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

Certificate of Calibration
校正證書

Certificate No. : C183260
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 12 June 2018

Description / 儀器名稱 : Sound Calibrator (EQ083)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34246492
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 18 June 2018

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 : 20 June 2018

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C183260
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C173864
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C181288

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.3	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.001	1 kHz ± 1 %	± 1

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C183085
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 28 May 2018

Description / 儀器名稱 : Integrating Sound Level Meter (EQ006)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285762
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 10 June 2018

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 : K C Lee
Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 11 June 2018

Certificate of Calibration
校正證書

Certificate No. : C183085
證書編號

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

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
52 - 132	L_{AFP}	A	F	94.00	1	94.1

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
52 - 132	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
52 - 132	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.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C183085
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
52 - 132	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
32 - 112	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	104.9	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
52 - 132	L_{AFP}	A	F	94.00	31.5 Hz	55.0	-39.4 ± 1.5
					63 Hz	67.9	-26.2 ± 1.5
					125 Hz	77.8	-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	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C183085
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
52 - 132	L_{CFP}	C	F	94.00	31.5 Hz	91.4	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
32 - 112	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	89.5	± 0.5
			60 sec.			$1/10^3$		80	79.2	± 1.0
			5 min.			$1/10^4$		70	69.3	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2812706

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

- Uncertainties of Applied Value :

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

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C183441
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 13 June 2018

Description / 儀器名稱 : Integrating Sound Level Meter (EQ008)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285690
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 23 June 2018

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 : K C Lee, Engineer

Certified By 核證 : H C Chan, Engineer

Date of Issue 簽發日期 : 29 June 2018

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C183441
證書編號

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

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.2

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.1	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.0

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C183441
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.1	Ref.
	L_{ASP}		S			94.2	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	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

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.8	-39.4 ± 1.5
					63 Hz	68.0	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.0
					250 Hz	85.4	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	95.3	+1.2 ± 1.0
					4 kHz	95.1	+1.0 ± 1.0
					8 kHz	93.0	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.9	-4.3 (+3.0 ; -6.0)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C183441
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.2	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					250 Hz	94.1	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.3	-0.8 ± 1.0
					8 kHz	91.1	-3.0 (+1.5 ; -3.0)
					12.5 kHz	88.0	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	89.7	± 0.5
			60 sec.			$1/10^3$		80	79.7	± 1.0
			5 min.			$1/10^4$		70	69.7	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2812705

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

- Uncertainties of Applied Value :

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

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com 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

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

L 000552

Appendix F

Event and Action Plan

Event / Action Plan for construction dust

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Notify Contractor.	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Rectify any unacceptable practice and implement remedial measures; and 3. Amend working methods agreed with ER if appropriate.
Action Level exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER and Contractor; 3. Advise the ER and Contractor on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC, ER and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET and ER on the effectiveness of the proposed remedial measures; and 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented.	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.
Limit Level exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor, IEC and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; and 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise the ER and ET on the effectiveness of the proposed remedial measures; 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. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; and 5. Amend proposal if appropriate.
Limit Level exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise and ensure remedial measures properly implemented; and 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Take immediate action to avoid further exceedance; 3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 4. Implement the agreed proposals; 5. Resubmit proposals if problem still not under control; and 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; and 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; and 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; and 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC and ER; and 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; and 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; and 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; and 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. 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; and 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
Thu	1-Nov-18			✓
Fri	2-Nov-18	✓	✓	
Sat	3-Nov-18			
Sun	4-Nov-18			
Mon	5-Nov-18			
Tue	6-Nov-18			
Wed	7-Nov-18			✓
Thu	8-Nov-18	✓	✓	
Fri	9-Nov-18			
Sat	10-Nov-18			
Sun	11-Nov-18			
Mon	12-Nov-18			
Tue	13-Nov-18			✓
Wed	14-Nov-18	✓	✓	
Thu	15-Nov-18			
Fri	16-Nov-18			
Sat	17-Nov-18			
Sun	18-Nov-18			
Mon	19-Nov-18			✓
Tue	20-Nov-18	✓	✓	
Wed	21-Nov-18			
Thu	22-Nov-18			
Fri	23-Nov-18			
Sat	24-Nov-18			✓
Sun	25-Nov-18			
Mon	26-Nov-18	✓	✓	
Tue	27-Nov-18			
Wed	28-Nov-18			
Thu	29-Nov-18			
Fri	30-Nov-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
Sat	1-Dec-18		✓	
Sun	2-Dec-18			
Mon	3-Dec-18			
Tue	4-Dec-18			
Wed	5-Dec-18			
Thu	6-Dec-18			✓
Fri	7-Dec-18	✓	✓	
Sat	8-Dec-18			
Sun	9-Dec-18			
Mon	10-Dec-18			
Tue	11-Dec-18			
Wed	12-Dec-18			✓
Thu	13-Dec-18	✓	✓	
Fri	14-Dec-18			
Sat	15-Dec-18			
Sun	16-Dec-18			
Mon	17-Dec-18			
Tue	18-Dec-18			✓
Wed	19-Dec-18	✓	✓	
Thu	20-Dec-18			
Fri	21-Dec-18			
Sat	22-Dec-18			✓
Sun	23-Dec-18			
Mon	24-Dec-18	✓	✓	
Tue	25-Dec-18			
Wed	26-Dec-18			
Thu	27-Dec-18			
Fri	28-Dec-18			✓
Sat	29-Dec-18		✓	
Sun	30-Dec-18			
Mon	31-Dec-18			

✓	Monitoring Day
	Sunday or Public Holiday

Appendix H

Database of Monitoring Result

24-HOUR TSP MONITORONG RESULT DATABASE

24-hour TSP Monitoring Data for AMS-1

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
1-Nov-18	23252	14854.75	14878.77	1441.2	32	32	32	24.6	1012.5	1.13	1622	2.6625	2.7003	0.0378	23
7-Nov-18															
13-Nov-18	23300	14878.77	14902.37	1416.0	32	34	33	22.2	1017.2	1.16	1645	2.6786	2.713	0.0344	21
19-Nov-18	23352	14902.37	14926.07	1422.0	38	38	38	20.8	1018.6	1.32	1872	2.6593	2.7086	0.0493	26
24-Nov-18	23374	14926.07	14950.02	1437.0	38	39	38.5	21.7	1019.7	1.33	1912	2.692	2.7613	0.0693	36
30-Nov-18	23159	14950.02	14973.52	1410.0	40	40	40	21.5	1017.2	1.40	1977	2.6443	2.7038	0.0595	30

24-hour TSP Monitoring Data for AMS-5

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
1-Nov-18	23279	6705.73	6729.82	1445.40	30	30	30.0	23.4	1017	1.02	1477	2.6853	2.8154	0.1301	88
7-Nov-18	23284	6729.82	6753.82	1440.00	30	31	30.5	23.3	1016.3	1.04	1493	2.6663	2.7170	0.0507	34
13-Nov-18	23289	6753.82	6777.87	1443.00	28	28	28.0	24.3	1014.1	0.96	1386	2.6870	2.7972	0.1102	80
19-Nov-18	23331	6777.87	6801.80	1435.80	30	31	30.5	20.8	1018.6	1.04	1495	2.6640	2.7347	0.0707	47
24-Nov-18	23350	6801.80	6825.97	1450.20	38	38	38.0	21.1	1018.2	1.26	1833	2.6765	2.7521	0.0756	41
30-Nov-18	23405	6825.97	6850.05	1444.80	28	30	29.0	21.5	1017.2	1.01	1456	2.6946	2.7737	0.0791	54

24-hour TSP Monitoring Data for AMS-6

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
1-Nov-18	23280	11928.42	11952.53	1446.60	28	28	28.0	23.4	1017	0.89	1292	2.6812	2.8044	0.1232	95
7-Nov-18	23283	11952.53	11976.62	1445.40	28	28	28.0	23.3	1016.3	0.89	1291	2.6756	2.7084	0.0328	25
13-Nov-18	23288	11976.62	12000.70	1444.80	40	40	40.0	24.3	1014.1	1.29	1863	2.6798	2.8206	0.1408	76
19-Nov-18	23332	12000.70	12024.74	1442.40	33	34	33.5	20.8	1018.6	1.08	1561	2.6687	2.7549	0.0862	55
24-Nov-18	23349	12024.74	12048.79	1443.00	36	36	36.0	21.1	1018.2	1.17	1681	2.6702	2.7689	0.0987	59
30-Nov-18	23406	12048.79	12072.83	1442.40	38	38	38.0	21.5	1017.2	1.24	1786	2.7047	2.8161	0.1114	62

24-hour TSP Monitoring Data for AMS-7

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	(μg/m^3)
1-Nov-18	23265	7293.67	7317.33	1419.60	38	38	38.0	23.4	1017	1.49	2116	2.6742	2.8107	0.1365	65
7-Nov-18	23267	7317.33	7341.33	1440.00	34	35	34.5	23.3	1016.3	1.36	1956	2.6709	2.7393	0.0684	35
13-Nov-18	23290	7341.33	7365.10	1426.20	42	42	42.0	24.3	1014.1	1.64	2334	2.6644	2.7982	0.1338	57
19-Nov-18	23381	7365.10	7389.22	1447.20	38	39	38.5	20.8	1018.6	1.52	2195	2.7063	2.7943	0.0880	40
24-Nov-18	23351	7389.22	7413.02	1428.00	39	40	39.5	21.7	1019.7	1.55	2218	2.6630	2.8314	0.1684	76
30-Nov-18	23373	7413.02	7436.73	1422.60	39	40	39.5	21.5	1017.2	1.58	2244	2.7057	2.8882	0.1825	81

NOISE MONITORONG RESULT 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)	
2-Nov-18	9:27	63	65.1	59.6	63.5	65.6	59.9	60.3	62.4	56	62.6	65.5	56.5	63.3	65.1	60.5	65.8	68.8	60.9	63
8-Nov-18	13:14	64.5	67.4	57.8	66.4	68.2	58.2	64	67.6	58.1	64.2	67.3	58.3	65.5	68.4	57.8	64.3	67.7	57	65
14-Nov-18	13:12	70.2	73.4	64.1	70.3	73.4	64.9	69.8	72.4	65.1	70.6	73.7	64.7	68.6	70.9	65.2	68.5	71.7	63.5	70
20-Nov-18	13:43	65.8	67.1	59.4	65.4	68	59.8	65.6	67.3	59.4	64.2	66.1	58.6	66.1	67.7	58.6	65.1	66	58.5	65
26-Nov-18	10:18	71.5	73.2	69	69.3	72.2	64.9	71	72.6	68	70	73.7	60.1	67.9	70.5	65	71.6	75.4	66.2	70

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)	
2-Nov-18	10:27	58	60	55.6	58.4	60.4	55.7	56.8	59	53.7	59	62.1	54.3	59.3	62.2	55.5	59.4	61	56.2	59
8-Nov-18	14:12	61.8	64.7	59.3	60.5	62.4	56.6	60.3	62.6	55.2	60.7	62.2	55.8	61.2	63.1	56.9	60	62.7	56.4	61
14-Nov-18	13:50	65	66.6	62.5	60.5	62.8	55.5	61.5	63.4	58.6	59.2	61	55.7	61.9	63.8	59.4	61.8	63.6	58.5	62
20-Nov-18	14:28	60.6	62	56.2	61.8	63.3	56.7	62.1	64.8	56.6	61.7	63.5	55.9	60.2	62.6	55.8	62.5	64.2	56.9	62
26-Nov-18	9:36	61.9	64.3	59.9	61.5	63	60.1	62	63.9	60	63.4	64.6	62.1	64	65.6	62.4	64.2	64.9	62.5	63

Noise Measurement Results (dB) of NMS6

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)	
2-Nov-18	13:08	60.1	62.4	56.8	58.9	61	56.1	58.4	60.4	55.9	58.9	61.4	55.1	58.8	60.8	54.8	57.9	60.1	55.3	59
8-Nov-18	15:16	56.9	60.3	51.3	56.7	59.3	51.4	55.4	58.3	51	57.3	59.7	51.5	56.8	58.8	51.7	55.1	58.8	51	56
14-Nov-18	10:41	59.6	61.6	57	59.7	61.7	57.1	58.2	59.9	56.1	59.2	59.4	56.8	58.6	60.4	56.8	60.9	63.3	57.2	59
20-Nov-18	15:23	55.8	58.3	51.4	56.3	59.8	51	55.8	58.1	51.6	56.2	59.8	51	57.1	60.9	52	55.1	59.9	52.8	56
26-Nov-18	13:59	60.3	63.6	56.3	57.9	59.6	55.9	56.7	57.9	55.1	56.8	58	55.5	57.7	59.2	55.9	57.7	59.3	55.8	60

Noise Measurement Results (dB) of NMS7

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)	
2-Nov-18	14:02	62.2	65.3	56.6	61.7	64	57.3	58.2	61.4	52.7	59.3	62.2	55.2	56.4	59.2	52.9	60.9	63.2	57.4	60

8-Nov-18	16:07	63.4	66.5	57.9	61	64.2	53.7	60.4	64	52.9	55.1	57.6	51.2	58.5	61.5	52.4	60	63.5	53.6	60
14-Nov-18	9:52	65.2	68.2	57.6	64.8	67.3	61	60.2	63	55.7	62.4	65	58.2	63.8	66.7	58.1	62.1	65.9	55.6	63
20-Nov-18	16:12	57.9	60.7	52.3	55.2	58.1	52.8	58.4	61.8	52.4	56.5	59.9	52.4	57.6	60.7	53.8	56.2	59.8	53	57
26-Nov-18	14:48	56	58	53.5	61.4	62.9	55.4	63.5	66.4	59.1	64.5	66.6	61	63.5	66	59.1	63.2	65.6	58.9	63

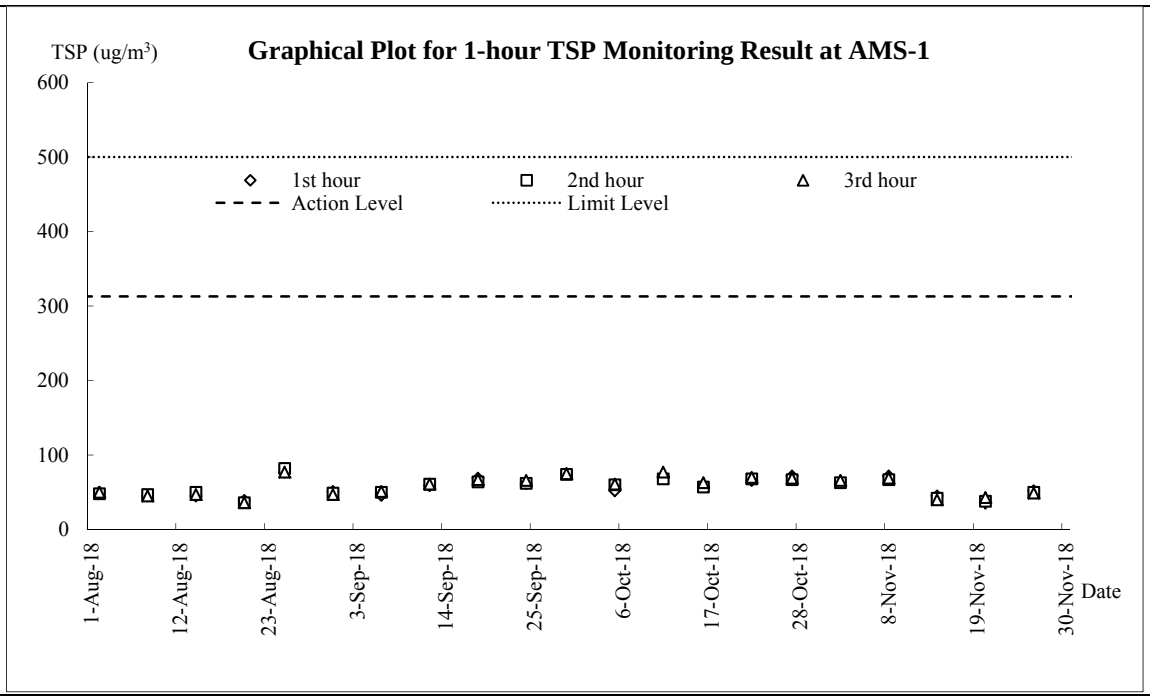
Noise Measurement Results (dB) of NMS8

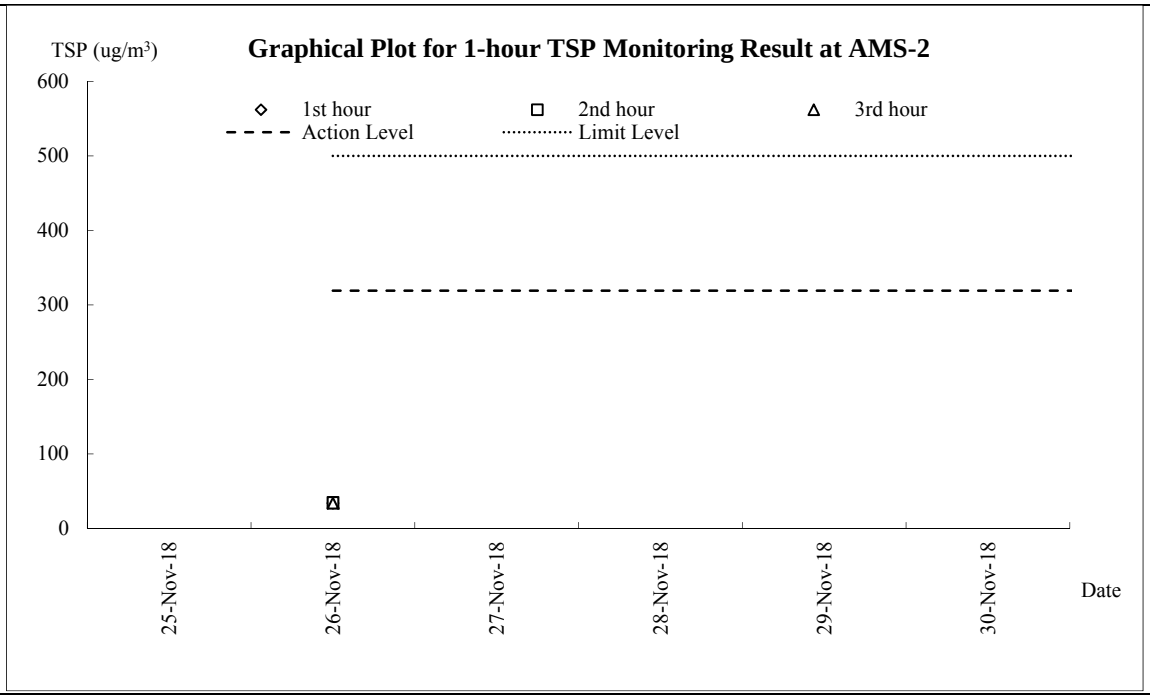
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	
2-Nov-18	13:43	56.8	58.2	53.1	54.9	56.4	51.3	54.7	56.2	50.9	58.2	60.8	55.8	59.5	61.3	57.1	60.2	62.8	57.3	58
8-Nov-18	13:35	55.8	58.9	52.6	56.7	59.3	53.2	54.2	57.3	52.1	58.7	60.5	55.2	53.8	56.4	51.6	56.2	59.1	53.4	56
14-Nov-18	15:43	70.1	73.2	61	69.9	72.7	63.7	68	71	62.6	65.6	70.1	54.8	67.5	71	58.3	68.3	71.8	62.7	68
20-Nov-18	10:21	64.8	69.4	51.5	55.2	57.9	49.3	66.8	70.5	53.5	55.9	58.4	50.1	56.8	60.8	51.3	55.4	59.1	51.4	62
26-Nov-18	9:37	53.5	54.5	52	57.3	59.5	51	57	59	52	62.2	62.5	59.5	63.4	64.5	60	64.2	67	60	61

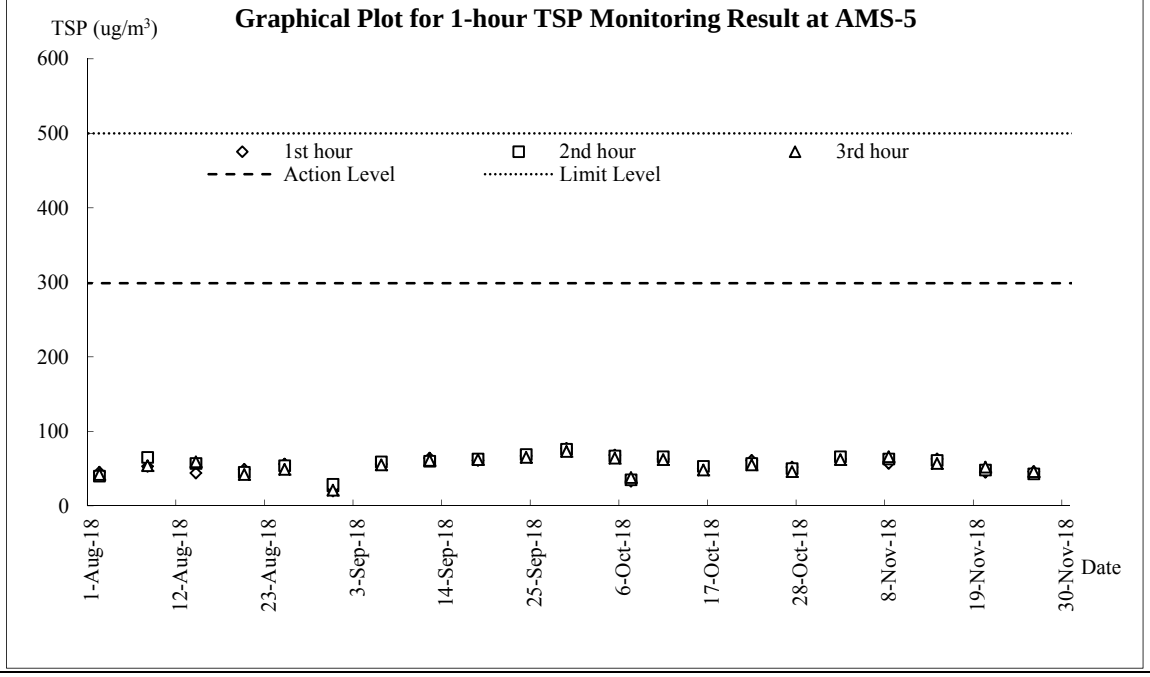
Appendix I

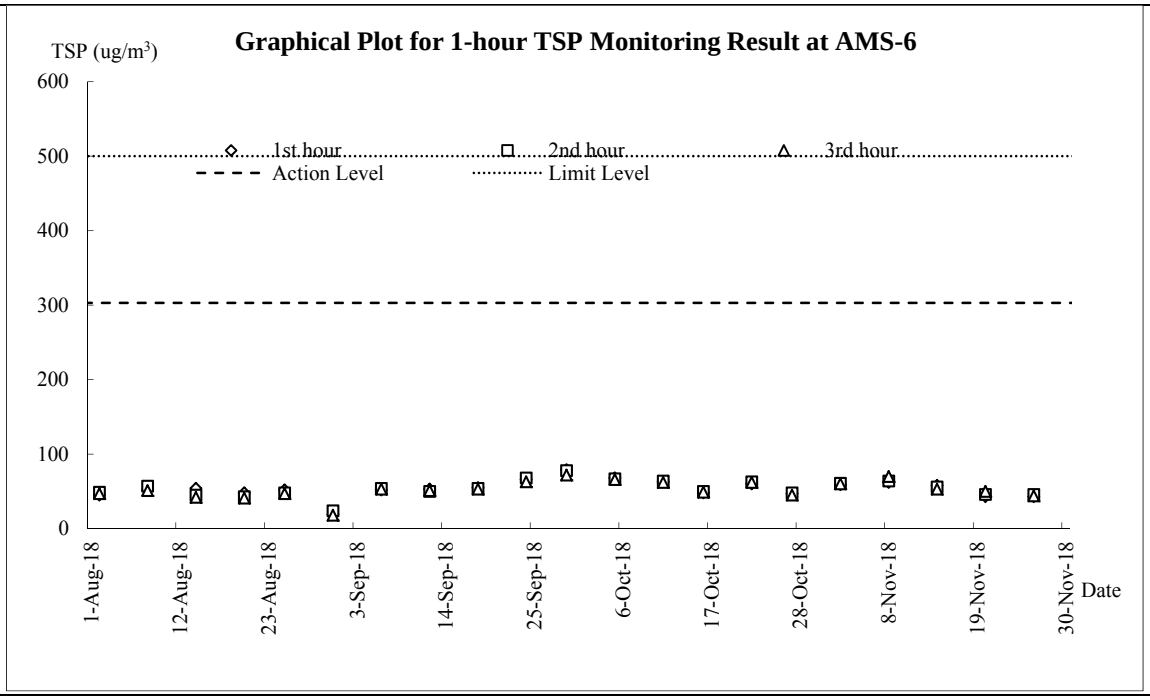
Graphical Plots for Monitoring Result

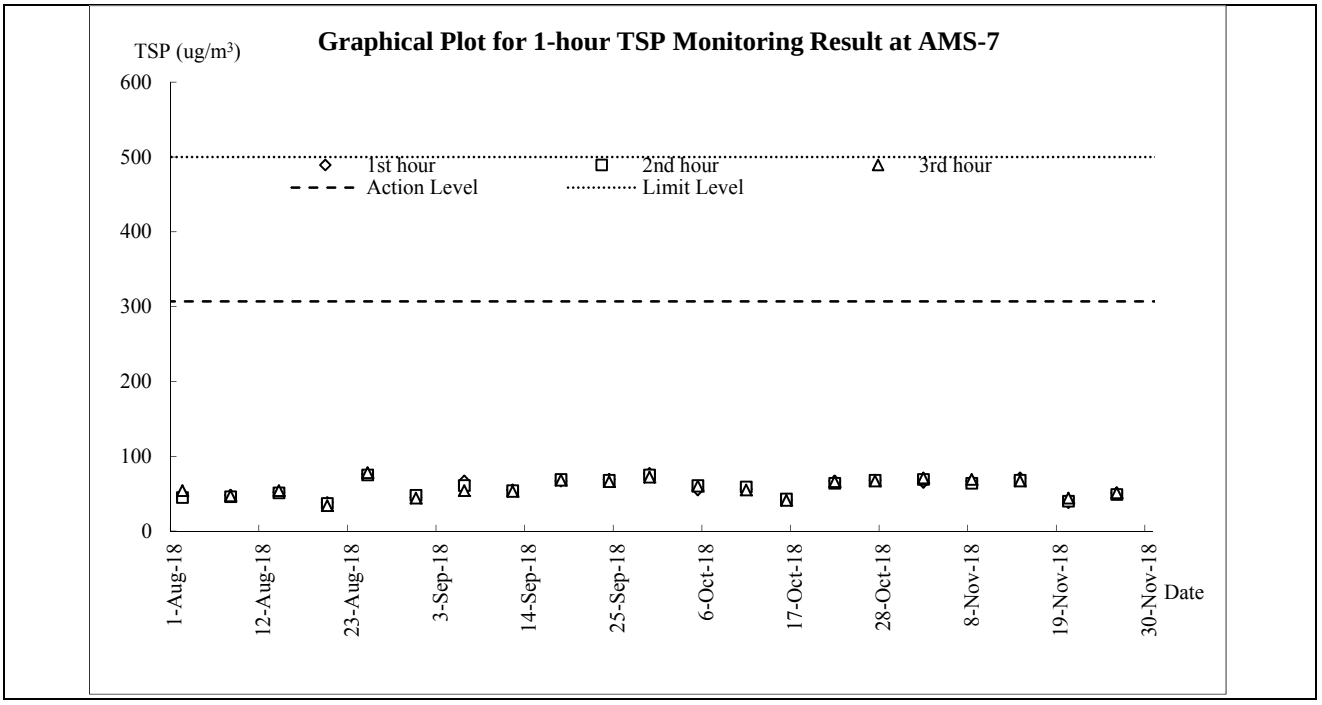
Air Quality – 1-hour TSP



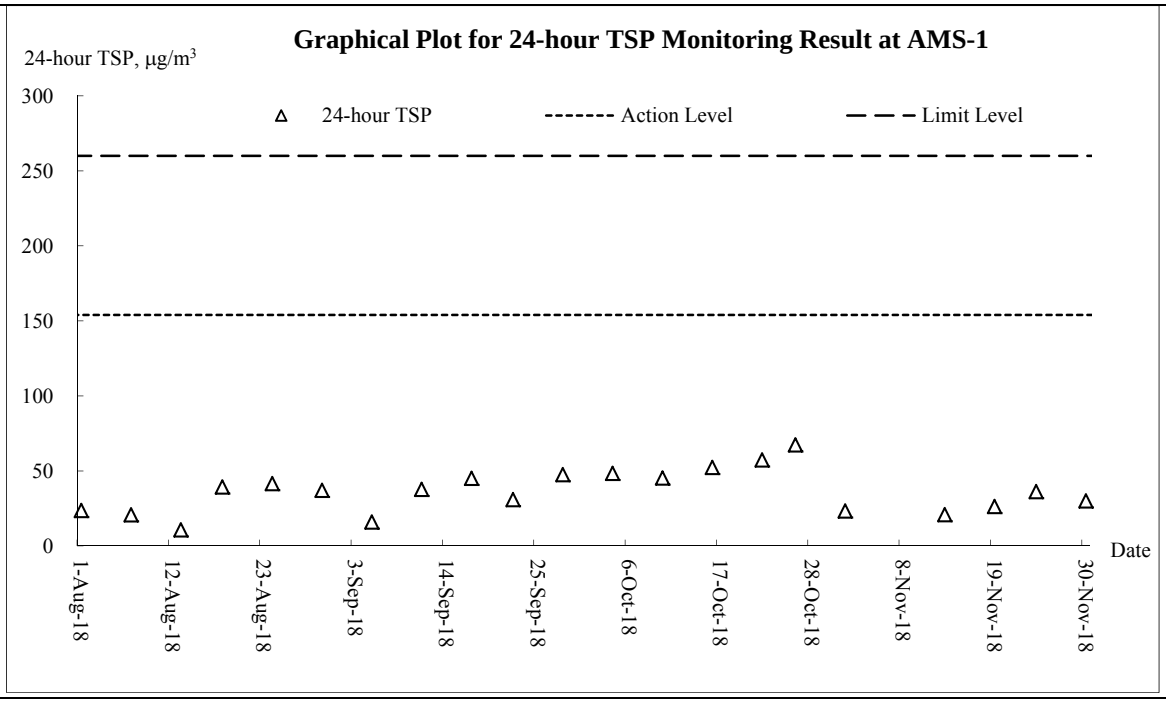


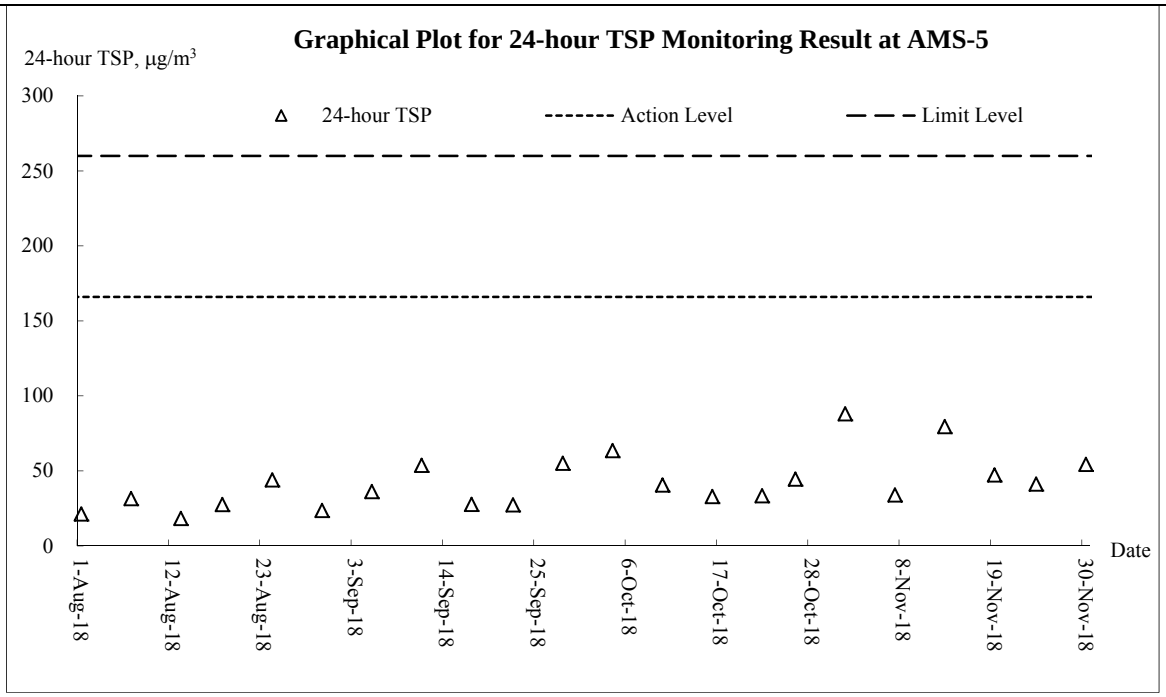

Graphical Plot for 1-hour TSP Monitoring Result at AMS-5
TSP (ug/m3)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18
Date

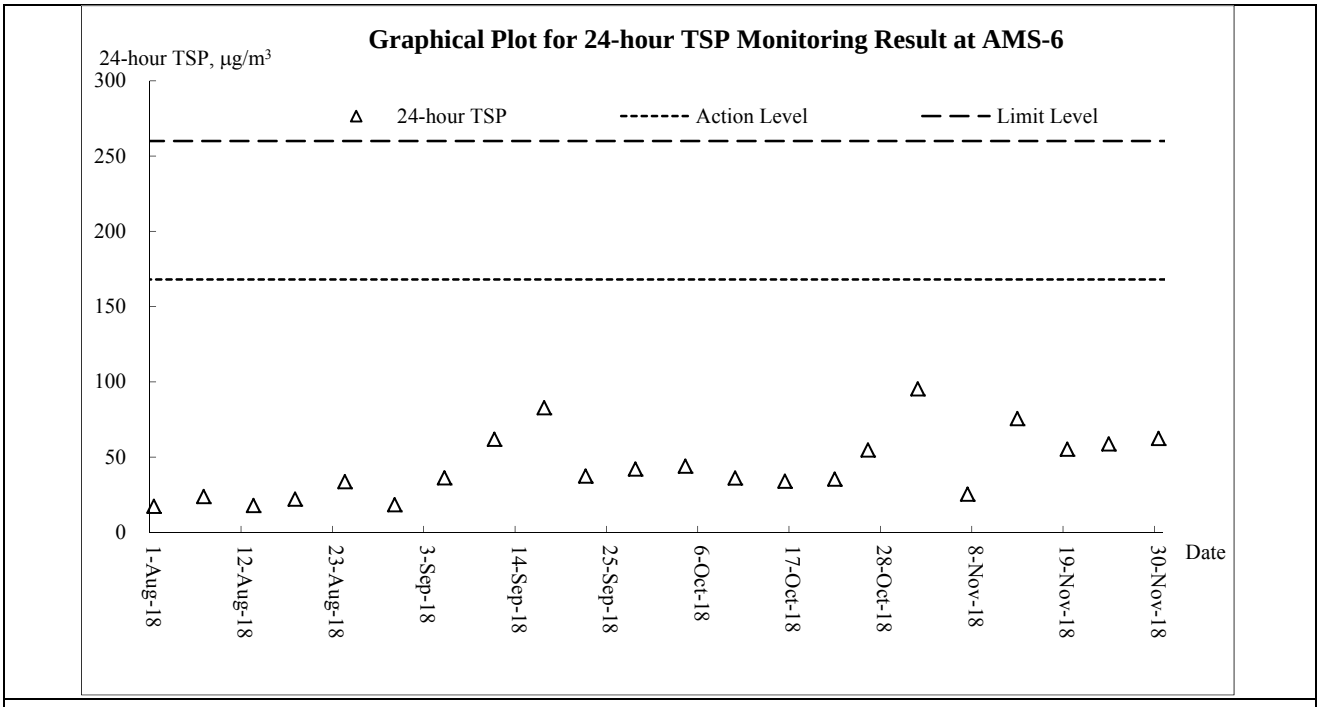

Graphical Plot for 1-hour TSP Monitoring Result at AMS-6
TSP (ug/m3)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18
Date

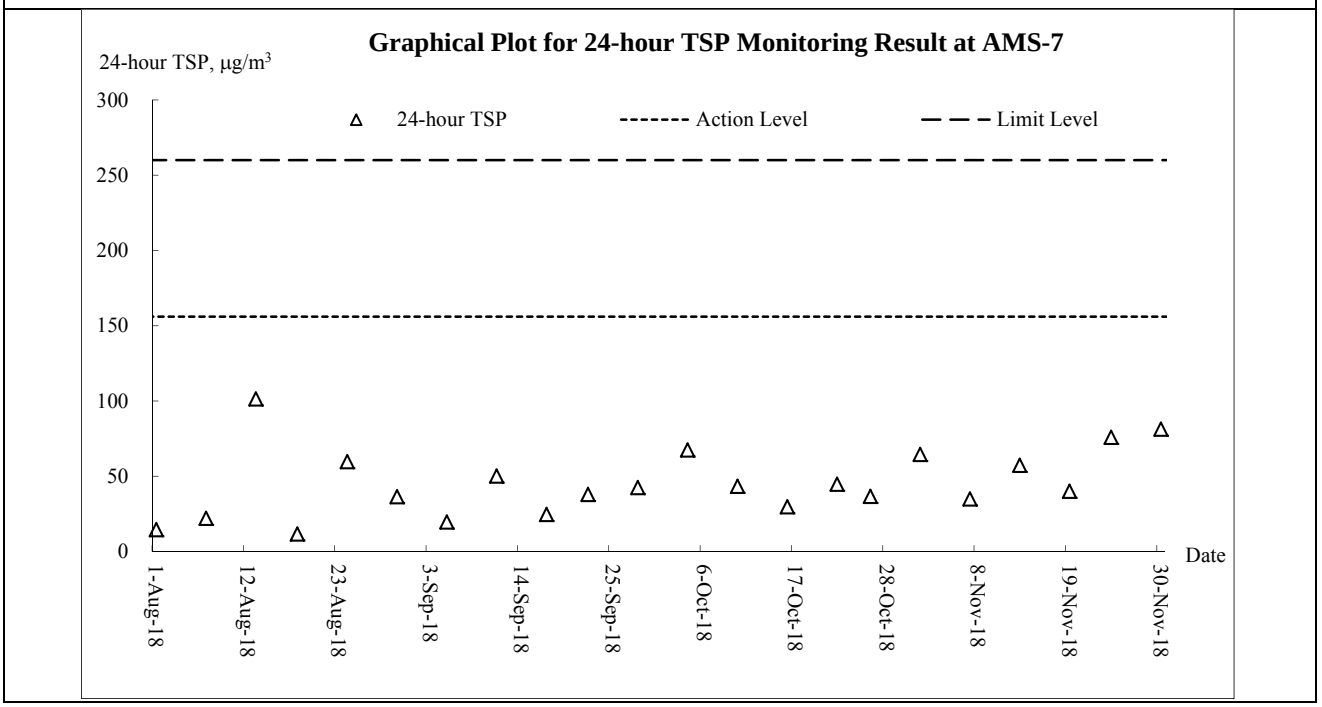

Graphical Plot for 1-hour TSP Monitoring Result at AMS-7
TSP (ug/m³)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18
Date

Air Quality – 24-hour TSP

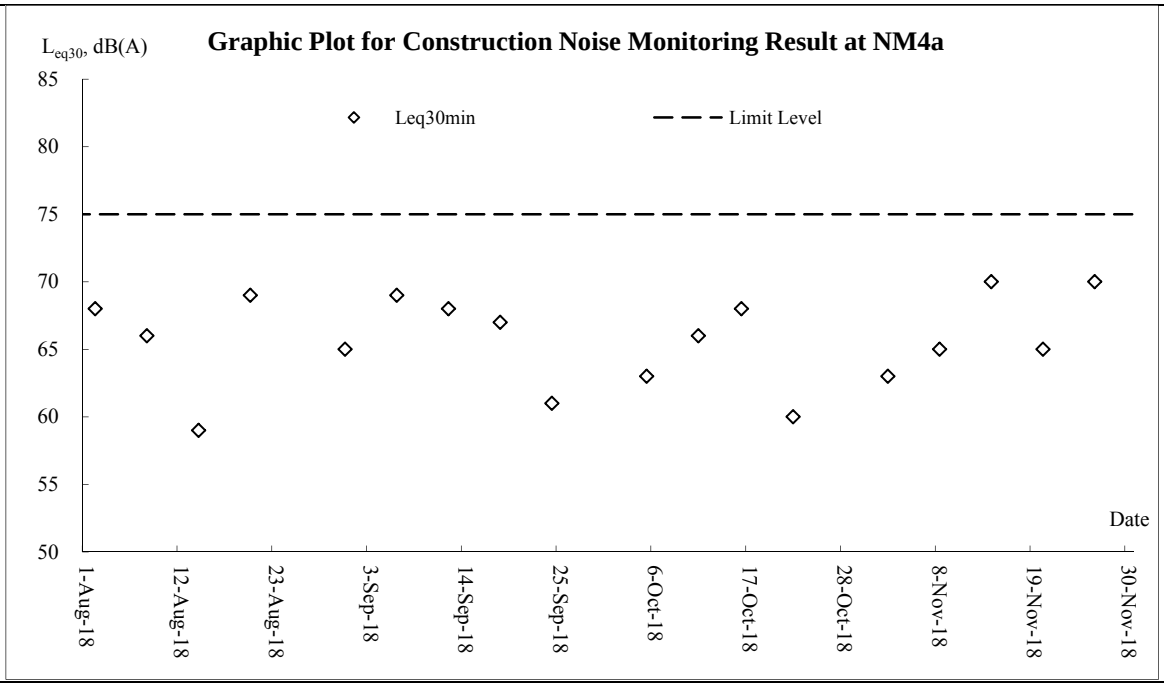


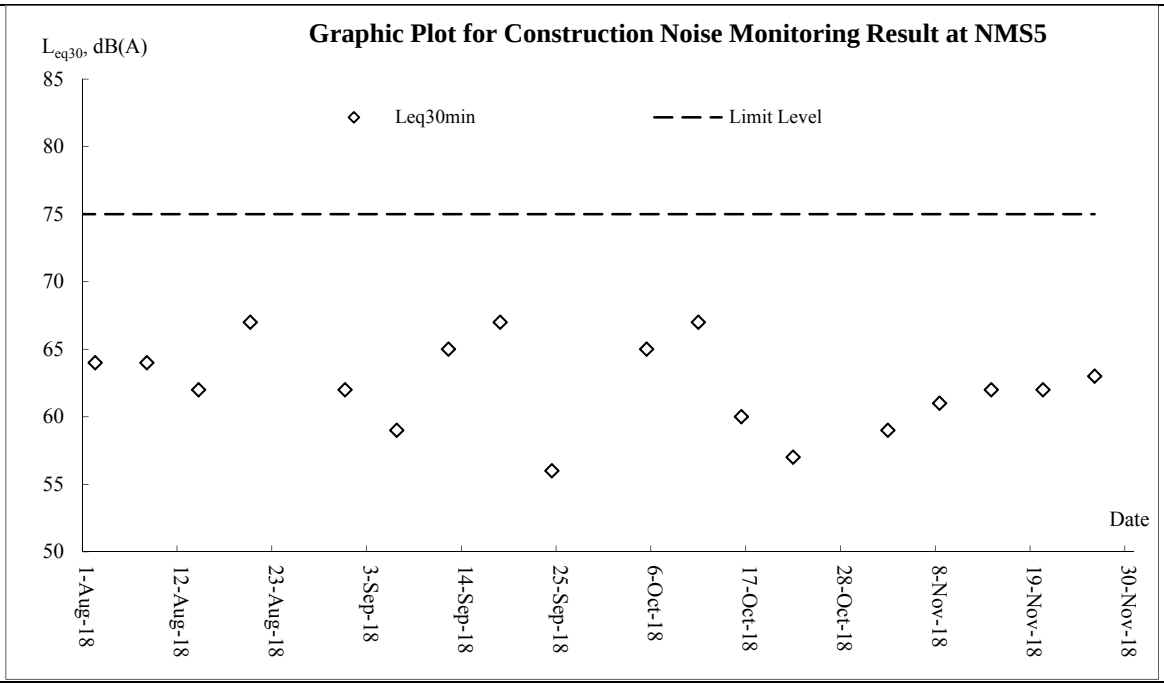


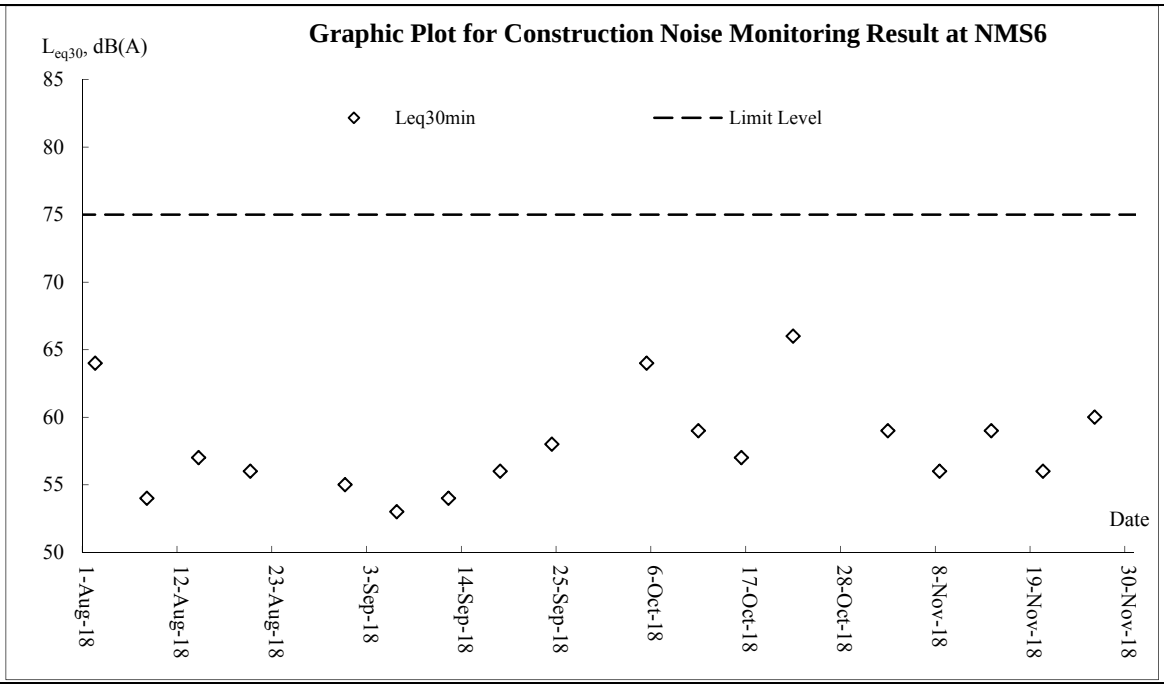

Graphical Plot for 24-hour TSP Monitoring Result at AMS-6
24-hour TSP, µg/m³
300
250
200
150
100
50
0
24-hour TSP
Action Level
Limit Level
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18
Date

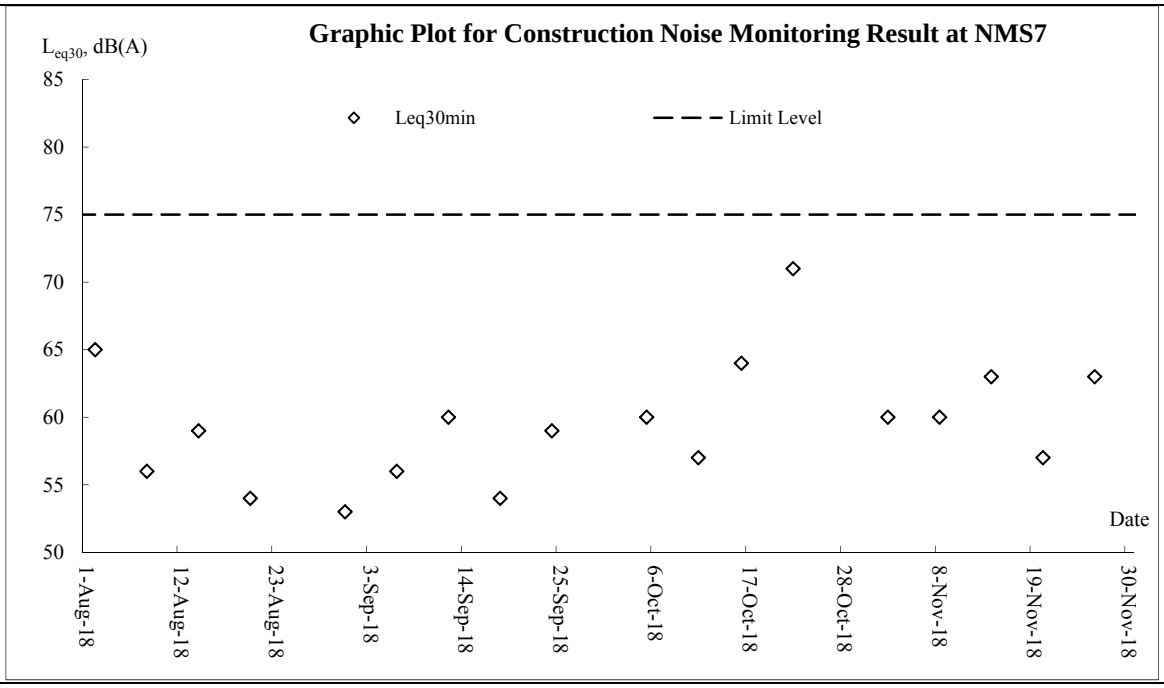

Graphical Plot for 24-hour TSP Monitoring Result at AMS-7
24-hour TSP, µg/m³
300
250
200
150
100
50
0
24-hour TSP
Action Level
Limit Level
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18
Date

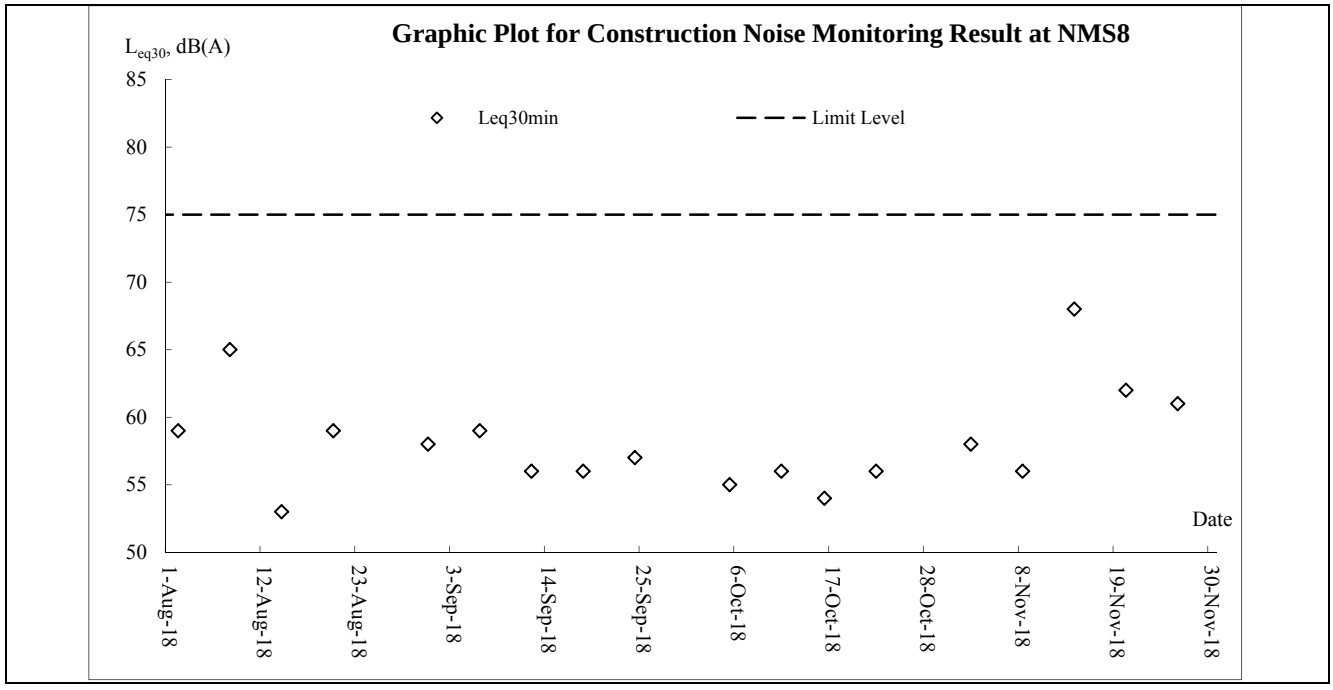
Noise


Graphic Plot for Construction Noise Monitoring Result at NM4a
L_{eq30}, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Graphic Plot for Construction Noise Monitoring Result at NMS5
L_{eq30}, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Graphic Plot for Construction Noise Monitoring Result at NMS6
L_{eq30}, dB(A)
85
80
75
70
65
60
55
50
Leq30min
Limit Level
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Graphic Plot for Construction Noise Monitoring Result at NMS7
L_{eq30}, dB(A)
85
80
75
70
65
60
55
50
Leq30min
Limit Level
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Graphic Plot for Construction Noise Monitoring Result at NMS8
L_{eq30}, dB(A)
85
80
75
70
65
60
55
50
Leq30min
Limit Level
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18

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-Nov-18	Thu	Mainly cloudy. Very dry with sunny intervals at first.	0	24.7	9.8	N/NW	33.5
2-Nov-18	Fri	Mainly cloudy with one or two showers and bright periods.	0.1	22.1	13.9	N/NW	66.2
3-Nov-18	Sat	Sunny periods. Moderate easterly winds, occasionally fresh offshore.	8.3	21.1	17.3	N	86.0
4-Nov-18	Sun	Moderate easterly winds, occasionally fresh offshore.	Trace	22.8	12.7	E/SE	78.7
5-Nov-18	Mon	Mainly fine. Moderate east to northeasterly winds.	Trace	24.3	16.4	E/SE	73.5
6-Nov-18	Tue	Moderate east to northeasterly winds	0	24.2	19	E	73.5
7-Nov-18	Wed	Mainly fine. Moderate east to northeasterly winds.	0	24.9	12	E/SE	73.5
8-Nov-18	Thu	Mainly fine and dry.Moderate north to northeasterly winds.	Trace	25.8	6.7	S/SE	71.2
9-Nov-18	Fri	Sunny periods. Moderate northeasterly winds	0	24.9	12.7	E/SE	66
10-Nov-18	Sat	Mainly cloudy with sunny periods. Moderate east to northeasterly winds.	Trace	23.5	45.2	NE	78.0
11-Nov-18	Sun	Mainly cloudy. Moderate to fresh easterly winds	0	23.7	12.6	E/SE	75
12-Nov-18	Mon	Moderate to fresh easterly winds	Trace	25.4	9.1	SE	73
13-Nov-18	Tue	Moderate to fresh easterly winds	Trace	24	10.6	E	72.5
14-Nov-18	Wed	Moderate to fresh easterly winds, occasionally strong offshore at first.	Trace	23.1	14.8	E	71
15-Nov-18	Thu	Cloudy with a few rain patches.	Trace	22.6	18.6	E	80.5
16-Nov-18	Fri	Mainly cloudy with a few rain patches.	1.1	23.7	13.7	E	83
17-Nov-18	Sat	Sunny intervals. Moderate north to northeasterly winds	0.5	22.9	35.3	NE	87.0
18-Nov-18	Sun	Mainly cloudy. Bright periods in the afternoon	0	23.4	11.1	E/SE	81.5
19-Nov-18	Mon	Moderate east to northeasterly winds, occasionally fresh.	0	24.5	10.5	E/SE	73
20-Nov-18	Tue	Sunny periods and relatively low visibility in the afternoon.	0.1	22.4	16.7	E	77
21-Nov-18	Wed	Moderate easterly winds. Becoming fresh northerlies with a few rain patches later.	2.4	24.9	11.5	E/SE	76.7
22-Nov-18	Thu	Dry and appreciably cooler. Sunny periods.	0.2	19.7	13.5	NW	64.5
23-Nov-18	Fri	Mainly fine. Moderate northerly winds	Trace	21	7.8	SE	57.7
24-Nov-18	Sat	Mainly fine. Moderate northerly winds	Trace	21.4	11.7	E	68.5
25-Nov-18	Sun	Cloudy with a few rain patches.	21	18.8	6.5	E/SE	79
26-Nov-18	Mon	Cloudy with a few rain patches.Moderate northeasterly winds.	15.7	18.5	7	E/NE	84.7
27-Nov-18	Tue	Cloudy with a few rain patches. Slightly cooler tonight.	16.3	20.2	10.5	N/NE	79.5
28-Nov-18	Wed	Mainly fine.Moderate easterly winds, occasionally fresh.	7.7	Maintenance	9.1	E/SE	86
29-Nov-18	Thu	Mainly fine.Moderate easterly winds, occasionally fresh.	Trace	2.1	11.3	E/SE	70.5
30-Nov-18	Fri	Mainly fine. Dry in the afternoon. Moderate easterly winds	0	21.5	17.9	E/SE	65.5

Remark: (#) Under Maintenance;

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	30.706	19.998	10.550	0.000	0.158	1.191	132.060	0.000	0.000	0.000	0.013
Feb	23.014	12.020	10.887	0.000	0.107	1.569	0.000	0.000	0.000	0.000	0.008
Mar	18.783	10.024	8.660	0.000	0.099	0.736	471.850	0.326	0.000	0.000	0.011
Apr	26.557	15.018	11.460	0.007	0.072	0.627	183.610	0.000	0.000	0.000	0.009
May	16.277	9.356	6.921	0.000	0.000	0.449	142.570	0.304	0.000	0.000	0.012
Jun	18.780	12.146	6.611	0.000	0.023	0.040	21.450	0.000	0.000	0.000	0.015
Sub-total	134.117	78.562	55.089	0.007	0.459	4.612	951.540	0.630	0.000	0.000	0.069
Jul	7.051	6.851	0.200	0.000	0.000	0.296	0.000	0.378	0.000	0.000	0.021
Aug	11.422	2.567	7.151	1.234	0.469	0.064	0.000	0.000	0.000	0.000	0.015
Sep	11.077	2.486	6.309	2.282	0.000	0.000	4.907	0.000	0.000	0.000	0.023
Oct	19.075	1.896	12.086	5.093	0.000	0.215	130.333	0.000	1.353	0.000	0.015
Nov	64.439	5.464	52.255	6.720	0.000	0.134	0.000	0.384	1.202	0.000	0.060
Dec											
Total	247.181	97.826	133.091	15.336	0.928	5.321	1086.780	1.392	2.555	0.000	0.203

Notes:

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

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

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

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

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

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

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

Name of Department : CEDD Contract 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	0.089	0.00	0.001	0.00	0.088	0.00	0.00	0.00	0.00	0.00	0.0028
Mar	0.130	0.00	0.001	0.00	0.129	0.00	0.00	0.00	0.00	0.00	0.0004
Apr	1.296	0.00	0.001	0.00	1.295	0.00	0.00	0.00	0.00	0.00	0.071
May	0.455	0.00	0.024	0.00	0.431	0.00	0.00	0.00	0.00	0.00	0.040
June	0.323	0.00	0.033	0.00	0.290	0.00	0.00	0.00	0.00	0.00	0.023
Sub-total	2.472	0.00	0.061	0.00	2.278	0.00	0.00	0.00	0.00	0.00	0.1378
July	1.361	0.00	0.052	0.00	1.309	0.00	0.00	0.00	0.00	0.00	0.009
Aug	2.003	0.00	0.089	0.00	1.914	0.00	0.00	0.00	0.00	0.00	0.002
Sept	0.471	0.00	0.025	0.00	0.446	0.00	0.00	0.00	0.00	0.00	0.086
Oct	1.132	0.00	0.081	0.00	1.084	0.00	0.00	0.00	0.00	0.00	0.048
Nov	1.996	0.00	0.065	0.00	1.931	0.00	0.00	0.00	0.00	0.00	0.011
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 m^3.

Contract No.: NE/2017/03

Development of Anderson Road Quarry Site – Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A

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	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^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	--	--	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--	--	--
Apr	--	--	--	--	--	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--	--	--
Jun	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub-total	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.006	0.004	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.081	0.003	0.000	0.000
Nov	0.003	0.000	0.000	0.003	0.000	0.000	0.004	0.088	0.0025	0.000	0.000
Dec											
Total	0.003	0.000	0.000	0.003	0.000	0.000	0.012	0.175	0.032	0.000	0.000

Contract No.: NE/2017/03

Development of Anderson Road Quarry Site – Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m^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)
7.000	0	0	0	7.000	0	100.000	2.000	0.300	1.000	3.500

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 and waste will be collected by recycler for recycling

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

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

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	Contract 3
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 (Construction ion Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V	V
S4.7.6	Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wet ted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction 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 construction ion period. • The port ion of any road leading only to construction ion site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately	Minimize dust impact at the nearby sensitive receivers	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	Contract 3
	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 construction activity on the construction site or part of the construction site where the exposed earth lies.						
S4.7.7	Implement regular dust monitoring under EM&A programme during the Construction phase.	Control construction airborne noise	Selected Representati ve dust monitoring station	All construction sites where practicable	V	N/A	N/A
Noise Impact (Contraction Phase)							
S5.6.9	Implement the following good site management practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction ion programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direct ion, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction ion equipment should be properly fit ted and maintained during the construction ion works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction ion airborne noise	Contractor	All construction sites where practicable	V	V	V
S5.6.11 to	Use of " Quiet " Plant and Working Methods.	Reduce the noise	Contractor	All	V	N/A	N/A

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	Contract 3
S5.6.13		levels of plant items		construction sites where practicable			
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 ion noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	V	V	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 ion sites where practicable	V	@	N/A
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 ion sites where practicable	V	V	N/A
S5.6.34	Implement temporary noise barrier along Road L4.	Further reduce the construction ion airborne noise	Contractor	Road L4 of ARQ	N/A	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	N/A
Water Quality Impact (Contraction Phase)							
S6.6.3	Construction Runoff In accordance with the Practice Note for Professional Persons on Construction ion Site Drainage, Environmental Protect ion Department , 1994 (ProPECC PN 1/94), best management practices should be implemented as far as practicable as below: • At the start of site establishment , perimeter cut -off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or	Control construction runoff	Contractor	All construction sites	@	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	minimize polluted runoff. Sediment at ion tanks with sufficient capacity, constructed from preformed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for set t ling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protect ion should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt /sediment t rap. The silt /sediment t raps should be incorporated in the permanent drainage channels to enhance deposit ion rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction ion. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sect ions wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction ion materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction ion materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction ion materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, act ions to be taken when a rainstorm is imminent or forecasted, and act ions to						

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	Contract 3
	be taken during or after rainstorms are summarized in Appendix A2 of ***ProPECC PN 1/94***. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction ion site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction ion site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The sect ion of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient back all toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and rains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction ion solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bun ds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Not ices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the rivers.						
S6.6.6 and 6.6.7	<u>Sewage from Workforce</u> • Portable chemical toilets should be provided for handling the construction sewage generated by the workforce. Assume that the capacity of the chemical toilets would be 0.4m3 and suck up twice a day under normal practices, around 45 chemical toilets would be required for the whole site at peak hour. And it should be noted that under normal construction periods, less chemical toilets would be needed. In addition, the total number of the chemical toilets would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices. Nevertheless, a licensed contractor should be employed to provide appropriate and adequate portable toilets to cater around 37.5 m3/day sewage and be responsible for appropriate disposal and maintenance. Since portable chemical toilets will be provided, no adverse water quality impact from the workforce sewage is anticipated.	Handling of site sewage	Contractor	All construction sites	V	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	Contract 3
	• 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 ion phase of the Project . Regular environmental audit on the construction ion site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measure						
S6.6.8 and 6.6.9	<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 ion activities. Storage of chemical waste arising from the construction ion activities should be well managed with suitable labels an d warnings while disposal of those chemical wastes should be comply with the requirement states in Waste Disposal Ordinance (Cap 354) as well as Waste Disposal (Chemical Waste) (General) Regulations.	Prevention of accidental spillage	Contractor	All construction sites	@	@	V
S6.6.11-S6.6.14	<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. If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. Petroleum Carbon Ranges (PCRs)). All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be discharged into the foul sewers. If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Sect ion 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the select	Minimize contaminated groundwater impacts	Contractor	All construction sites	NA	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	Contract 3
	ion of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement . Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as PCRs should be removed as necessary by installing the petrol interceptor.						
Waste Management (Contraction Phase)							
S8.5.2	Good Site Practice The following good site practices are recommended throughout the construction ion activities: ● nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collect ion and effective disposal to an appropriate facility, of all wastes generated at the site; ● training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; ● provision of sufficient waste disposal points and regular collect ion for disposal; ● appropriate measures to minimize windblown litter and dust during transportation of waste by either covering 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	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 ion phase. The EMP should be submit ted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted.	Minimize waste generation during construction	Contractor	All construction sites	V	V	V
S8.5.3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: ● segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling o materials and their proper disposal; ● proper storage and site practices to minimize the potential for damage and contamination of construction ion materials; ● plan and stock construction ion materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; ● sort out demolition debris and excavated materials from demolition works to	Reduce waste generation	Contractor	All construction sites where practicable	V	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	Contract 3
	recover reusable/recyclable port ions (i.e. soil, broken concrete, metal etc.); • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.						
S8.5.5	Storage of Waste The following recommendation should be implemented to minimize the impacts: • 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	V
S8.5.6	Collection and Transportation of Waste The following recommendation should be implemented to minimize the impacts: • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste • transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities.	Minimize waste impacts from storage	Contractor	All construction sites	V	V	V
S8.5.8	Excavated and C&D Material 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: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • implement a recording system for the amount of waste generated, recycled and disposed of for checking; The recommended C&D materials handling should include: • On-site sorting of C&D materials • Reuse of C&D materials • Use of Standard Formwork and Planning of Construction Materials purchasing • Provision of wheel wash facilities	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	V	@	V
S8.5.15	Contaminated Soil 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	Remediate contaminated soil	Contractor	All construction sites where applicable	V	V	N/A

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	Contract 3
	the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.						
S8.5.17	Chemical Waste • If chemical wastes are produced at the construction ion site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Cent re, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	V	V	V
S8.5.18	General Waste • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collect ion and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	@	@	V
S8.5.19	Sewage • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. • Regularly collect ion by licensed collectors should be arranged to minimize potential environmental impacts.	Minimize production of sewage impacts	Contractor	All construction sites	V	V	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	N/A	N/A
.10.7.10	Construction phase in situ mitigation measures to minimize impacts on	Minimize impacts on	Contractor	All	V	N/A	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	Contract 3
	hydrological condition and water quality of hillside watercourses include: • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby watercourses; • Proper locations well away from nearby watercourses will be used for temporary storage of materials (i.e. equipment , fill materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby watercourses, work sites close to nearby watercourses will be isolated, using such items as sandbags or silt curtains with lead edge at bot tom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the works site; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby watercourses; • 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 format ion works, followed, where appropriate, by covering with biodegradable geotextile blanket for erosion control purposes; • Where appropriate, earth-bunding will be carried out of areas where soils have been disturbed or where vegetation has been cleared, to ensure that surface runoff will not move soils off-site; • Construction ion effluent, site run-off and sewage will be probably collected and/or treated. Wastewater from any construction ion site will be minimised via the following in descending order: reuse, recycling and treatment ; • Proper locations for discharge out lets of wastewater treatment facilities well away from sensitive receivers will be identified and used; • Silt traps will be installed at points where drainage from the site enters local watercourses; • Appropriate sanitary facilities for on-site workers will be provided; • The site boundary will be clearly marked and any works beyond the boundary strictly prohibited, and • Regular water monitoring and site audit will be carried out at suitable points. If the monitoring and audit results show that pollution occurs, adequate measures including temporary cessation of works will be considered.	Hydrological condition and water quality of hillside watercourses.		construction sites			
S.10.7.11	Implement an emergency contingency plan during the construction phase and the plan will include, but not be limited to, the following: • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location);	Minimize impacts on Hydrological condition and water quality of hillside	Contractor	All construction sites	N/A	N/A	N/A

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	Contract 3
	• Emergency response team; • Emergency response procedures; • List of emergency telephone hot lines; • Locations and types of emergency response equipment , and • Training plan and testing for effectiveness.	watercourses.					
Landscape and visual (Contraction Phase)							
S11.14.23 , Table 11.9, CM1 [4]	All existing trees to be retained shall be carefully protected during construction.	Avoid disturbance and protection of the existing trees	Detailed Design Consultant /	The whole project area where applicable	V	@	V
S11.14.23 , Table 11.9, CM2 [3]	Tree Transplantation - Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled. Detailed transplanting proposal will be submit ted to relevant government departments for approval in accordance with **LAO GN No. 7/2007**, ***ETWB TCW No. 29/2004*** and ***10/2013***. Final locations of transplanted trees shall be agreed prior to commencement of the work.	Minimize landscape impact and retention of landscape resources	Detailed Design Consultant /	Onsite where possible. Otherwise consider offsite locations	*	N/A	V
S11.14.23 , 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	V	V	V
S11.14.23 , Table 11.9, CM [4]	Erection of decorative screen hoarding.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	N/A	N/A	N/A
S11.14.23 , Table 11.9, CM5 [2]	Minimise disturbance and limitation of run-off – temporary structures and construction works should be planned with care to minimize disturbance to adjacent landscape, vegetation, natural stream habitats.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	V	V	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
February 2018	**4**	0
March 2018	0	0
April 2018	**1**	0
May 2018	**1**	0
June 2018	**1**	0
July 2018	**0**	0
August 2018	**1**	0
September 2018	**1**	0
October 2018	**1**	0
November 2018	**3**	0
Overall Total	**35**	**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	Anderson Road Quarry site	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	Anderson Road Quarry site	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	Anderson Road Quarry site	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	Anderson Road Quarry site	Resident of Po Tat Estate	Construction noise	EPD	EPD (ref.N08/RE/00019373-17)	day time construction 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	Anderson Road Quarry site	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	Anderson Road Quarry site	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 Quarry site	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	Anderson Road Quarry site	Resident of On Tat Estate	Construction noise	EPD	EPD (ref.N08/RE/00024557-17)	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	Anderson Road Quarry site	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	Anderson Road Quarry site	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	Anderson Road Quarry site	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	Anderson Road Quarry site	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	Anderson Road Quarry site	Resident of Po Tat Estate	Dust	EPD	NA	投訴安達臣道地盤的泥車落泥，令他達貴樓的住所受到大塵影響，要求跟進及回覆	Investigation revealed that CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. Nevertheless, based on the observation during site inspection on 31 October 2017, CWSTVJV was advised to enhance the dust mitigation measures particularly during dry season.	no comment by IEC on 15 Nov 2017	TCS00864/16/300/F0100

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.
14	6-Nov-17	7-Nov-17	Anderson Road Quarry site	Resident of On Tat Estate	Noise	EPD	NA	安達邨俊達樓居民投訴石礦場地盤又再於早上 07:45 開始傳出機器不停 掾 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	Anderson Road Quarry site	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	Anderson Road Quarry site	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掾鐵噪音。	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	Anderson Road Quarry site	Resident of Sau Mau Ping Estate	Construction Noise	EPD	EPD (ref.N08/RE/00027738-17)	Night time construction noise of hammering (around 12AM)	It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project.	no comment by IEC on 14 Dec 2017	TCS00864/16/300/F0114
18	12-Sep-17	26-Oct-17	Anderson Road Quarry site	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	Anderson Road Quarry site	Resident of Sau Mau Ping Estate	Construction Noise	EPD	NA	Resident of Sau Yee House complained suspected construction noise from Anderson Construction Site at restricted hour (7pm to 7am).	It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project.	no comment by IEC on 10 Jan 2018	TCS00864/16/300/F0118
20	20-Dec-17	21-Dec-17	Anderson Road Quarry site	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	Anderson Road Quarry site	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	no comment by IEC on 8 Feb 2018	TCS00864/16/300/F0129

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.
									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.		
22	15-Jan-18	15-Jan-18	Anderson Road Quarry site	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
23	1-Feb-18	2-Feb-18	Anderson Road Quarry site	Resident of On Tai Estate (referred by Mr. Lam Wai)	Construction Noise	SPRO hotline	NA	"智泰對出，白天噪音過大，可否加裝隔音板?高層受影響"	The Environmental Team has conducted an ad-hoc noise measurement for Leq(30min) at the corridor of 22/F of Chi Tai House on 2 February 2018 facing the construction site. The measurement noise result was 65dB(A) which below the Limit Level under the EM&A Programme. 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.	no comment by IEC on 22 Feb 2018	TCS00864/16/300/F0137
24	1-Feb-18	2-Feb-18	Anderson Road Quarry site	Resident of Shing Tat House (referred by Mr. Hsu Yau Wai)	Construction Noise	SPRO hotline	NA	Mr. Hsu reported that some disturbing noise was heard after 6:00 pm from the site near Shing Tat House of On Tat Estate.	AECOM has liaised with Mr. Hsu on 2 February 2018 for the complaint matter and he reported to AECOM that the noise was generated until 7:00 pm on 1 February 2018. 3. As advised by Contractor of Contract 1, breaking works at USRT area which opposite to Shing Tat House was only carried out from 8:00 to 18:00. However, rock breaking at System A was extended to 19:00 on 1 February 2018. As noise mitigation measures, noise barriers were erected for the works area. Further to the complaint case, CWSTVJV would seek for other quiet work method such as using drilling machine to reduce noise level and speed up the rock breaking process, so that to reduce the noise intensity level and the duration of exposure.	no comment by IEC on 28 Feb 2018	TCS00864/16/300/F0140
25	28-Feb-18	28-Feb-18	Anderson Road Quarry site	Resident of Shing Tat House	Construction Noise	EPD	NA	安達邨誠達樓居民, 投訴人是返夜班, 一年半以來長期受對出地盤日間掻石仔噪音滋擾, 由於單位與地盤太近, 堅持環保署跟進及回覆如何處理及減低噪音, 他亦要求知道何日完工.	Breaking works at Underground Stormwater Retention Tank area which opposite to Shing Tat House was carried out from 8:00 to 18:00. The Contractor has implemented noise mitigation measures to reduce the noise impact to the nearby resident. It was advised that the rock breaking works shall tentatively be completed by end of April and it is believe that the noise impact should be minimized. Since the works were carried out within the non-restricted hours and noise monitoring noise were within acceptable level, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 19 Mar 2018	TCS00864/16/300/F0143

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.
26	11-Apr-18	12-Apr-18	Anderson Road Quarry site	Resident of HimTat House	Construction Noise	SPRO Hotline	NA	Mr. Hui Yau Wai reported that the noise irritation was becoming more severe recently and asked about the completion date of the works close to Him Tat House. The resident suspected that the noise comes from piling works nearby.	In our investigation, since construction noise was generating from other construction site next to Him Tat House, it is considered that the complaint is due to cumulative noise generated by both construction sites. However, CWSTVJV should properly provide the noise mitigation measures at works area in System B to minimize the noise impact to the resident nearby. As advised by CWSTVJV on 20 April 2018, noise barrier was being erected at works area in System B as noise mitigation measures. According to the site photo, it is considered that the coverage of noise barrier is not sufficient and CWSTVJV should enhance the measure as far as practicable. The implementation of noise mitigation measures will be kept in view in subsequent site inspection.	no comment by IEC on 7 May 2018	TCS00864/16/300/F0160b
27	25-Apr-18	7-May-18	Junction of Hiu Kwong Street and Hiu Ming Street	A school but name of school not disclosed	Construction Noise	EPD	NA	This case is considered as an enquiry and no investigation is required under the EM&A Programme.		NA	NA
28	18-May-18	24-May-18	Anderson Road Quarry Site	Undisclosed	Construction Noise	EPD	NA	投訴人指安達臣道石礦場地盤(NE/2016/01)在入夜 19:00 後仍見到有長臂喉工程車在運作, 及持續產生大噪音及閃燈, 非常擾民。	As advised by CWSTVJV and confirmed by RE/AECOM, there were no construction activities carried out after 19:00 and concreting was completed before 19:00. It is concluded that the retracting process is not a general construction work using Powered Mechanical Equipment and complaint was an isolated case due to misunderstanding of the site operation. To prevent similar incidents in future, CWSTVJV has recommended several mitigation measures.	no comment by IEC on 30 July 2018	TCS00864/16/300/F0174b
29	25-Jun-18	19-Jul-18	Pedestrian Connectively E8 under Contract 3	Kwun Tong DC member Ms. So Lai-chun	Waste Management	CEDD	NA	A public complaint was referred from CEDD on 4 July 2018 regarding accumulation of dead leaves and branches found at slope (GLA-TNK 2458) near Hiu Yuk Path on 25 June 2018. The complainant requested the relevant department to clear the leaves and branch asap	CW-CMGC-JV has immediately clear the dead leaves and maintain the site cleanliness. Since the construction work has not yet commenced and the dead leaves and overgrown branches were not related project works, it is considered that the complaint is not valid the project.	no comment by IEC on 24 Sep 2018	TCS00864/16/300/F0189b
30	22-Aug-18	29-Aug-18	Hong Wah Court	Resident of Hong Wah Court	Construction Noise	1823 Hotline	NA	投訴人指馬游塘區堆填區往將軍澳方向行車入口因配合項目需要而進行移除山坡工程，但其鑽地鑿石的噪音嚴重影響藍田康雅苑*居民，要求有關部門跟進。 *註:投訴人於 2018 年 8 月 27 日更正指受影響屋苑應為藍田康華苑。	to reduce the inconvenience caused to the nearby resident, Kwan On should properly maintain the noise mitigation measures as appropriate, such as maintain good site practice including intermittent use of machine and plant and Sequencing operation of construction plant equipment. 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 7 Sep 2018	TCS00864/16/300/F0196a

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.
31	26-Feb-18	31-Jul-18	Anderson Road Quarry Site	Undisclosed	Construction Noise	EPD	NA	安達邨誠達樓後面地盤，2 月 26 日晚，晚上 7 時後，還在落石屎，相片拍攝時間大概晚上 9 時半，一直至晚上十一時五十分還有工程車在地盤行駛。影響居民休息。	According to the site diary which countersigned by RE, there was no concreting work carried out after 18:00 and the construction activities conducted during restricted hours with valid CNP were completed at 23:00. It is considered that the complaint was not valid to the Project. Nevertheless, CWSTVJV was reminded that in case of any work activities need to be carried out during restricted hours, CWSTVJV should strictly follow the requirements specified in the valid CNP.	no comment by IEC on 10 Oct 2018	TCS00864/16/300/F0197a
32	6-Sep-18	7-Sep-18	Tsui Yeung House	Resident of Tsui Yeung House	Construction Noise	Verbal	NA	Mr. CHENG Keung-fung complained that the contractor has conducted the noisy works such as rock excavation beyond the normal hours.	Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. As advised by Kwan On, the rock breaking works shall tentatively be completed by end of December 2018 and the mitigation measures will implemented continuously during slope construction work and the slope construction will be carried out within the working hours at Portion 2. 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 22 Oct 2018	TCS00864/16/300/F0201
33	24-Oct-18	25-Oct-18	E3	Kwun Tong DC member Ms. So Lai-chun	Construction Noise	Whatsapp Message	NA	KTDC member, Ms. Ann So, complaining the noise of the breaker at E3	As advised by the Contractor, the acoustic material wrapped on the breaker was worn-out on 24 October 2018 and replacement of new acoustic materials has been installed on the breaker immediately on 25 October 2018. The rock breaking works shall tentatively be completed to the road level in the middle of November 2018 and the mitigation measures will implemented continuously during slope construction work and the slope construction will be carried out within the working hours at Portion 2. It is considered the complaint was an isolate case.	no comment by IEC on 23 Nov 2018	TCS00864/16/300/F0209a
34	12-Nov-18	13-Nov-18	Anderson Road Quarry Site	Resident of ChingTat House(referredby Mr. Hui Yau Wai)	Construction Noise	SPRO Hotline	NA	Mr. Hui reported that he received complaint from a resident living in Ching Tat House about noise nuisance recently. Mr. Hui asked if project team can arrange some noise monitoring to check the noise level at the concerned flat or the same level at Ching Tat House.	The SPRO contacted Mr. Hiu and explained to him about the purpose and benefits of the tunnel to the residents nearby and the expected date of completion of the tunnel will be earlier than 2020. Moreover, the noise mitigation measures had implemented to reduce the noise level effectively and the work progress will be closely updated to nearby stakeholders to enhance communication. Mr. Hiu satisfied with the reply from SPRO and he agreed that the proposed noise monitoring in Ching Tat House was not needed. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no breaches of legislative requirement.	no comment by IEC on 12 Dec 2018	TCS00864/16/300/F0222a
35	14-Nov-18	14-Nov-18	Anderson Road Quarry Site	Undisclosed	Light and Noise	EPD	NA	凌晨 1 時，地盤仍有大光燈正射民居和機器移動聲音，影響附近居民睡眠及違反環保條例。	The IR is under review by IEC		
36	13-Nov-18	14-Nov-18	Anderson Road Quarry Site	Undisclosed	Noise and dust	1823	NA	Complainant requested to postpone the starting time of construction work at project site and also to solve the problem of construction noise and dust.	Underway by ET.		

AUES

Fax Cover Sheet

To	**Mr. Dennis Leung**	**Fax No**	**By e-mail**
Company	**AECOM**		
cc			
From	**Nicola Hon**	**Date**	**15 November 2018**
Our Ref	TCS00864/16/300/**F0209a**	**No of Pages**	6 **(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 Breaking work at E3

Dear Sir,

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

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

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

Nicola Hon
Environmental Consultant

Encl.

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

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

Investigation Report on Environmental Complaint / Enquires

Complaint Log No.	NTE/07/2016 – 33
Received Date by ET	25 October 2018
Related Contracts	Contract 2 (NE/2016/05)
Complaint Details	Complaining the noise of the breaker at E3
Complaint Location	Work Area E3 (slope of Hiu Ming Street between Tsui Yeung House and Hiu Wah Building)
Date of Complaint	24 October 2018
Environmental Aspect	Noise
Complainant	KTDC Member Ms. Ann So
Complaint Route	Whatsapp Message complaint
Investigation Result	1. A complaint raised by KTDC Member Ms. Ann So was received by CEDD on 24 October 2018 regarding the noise generated by the breaking work at E3. She added that the breaker mounted on the excavator was not wrapped by acoustic materials. (***Photo 1***) The site layout and complaint location are shown in ***Figure 1***. 2. As advised by the Contractor of Contract 2 - NE/2016/05 (Kwan On), the concerned breaking work at Portion 2 which near Hiu Wah Building was only carried out from 8:00 to 18:00. Noise barriers were in place and maintained for mitigation of noise generated from site plants to the residents of Tsui Yeung House and Hiu Ming Building. ***(Photo 2)*** To reduce the sound intensity of rock breaking works affecting the nearby residents of Tsui Yeung House and Hiu Ming Building, only one excavator mounted breaker was deployed for the breaking works as good site practice. 3. Joint site inspection among the RE, Kwan On and Ms. Ann So was conducted on 26 October 2018 and the status of implemented mitigation measures provided by Kwan On was inspected. It was observed that noise mitigation measures including temporary noise barrier with completed acoustic mat and breaker wrapped by acoustic materials have been implemented on site. Besides, trial noise measurement was also carried out on the top of slope of E3 near Hiu Wah Building and the measurement result revealed no breaches of EM&A requirement (< 75dBA). ***(Photos 3 to 5)*** Ms. Ann So was satisfied with the site situation and the mitigation provided by Kwan On during the joint site inspection. 4. As advised by Kwan On, the acoustic material wrapped on the breaker was worn-out on 24 October 2018 and replacement of new acoustic materials has been installed on the breaker immediately on 25 October 2018. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. As advised by Kwan On, the rock breaking works shall tentatively be completed to the road level in the middle of November 2018 and the mitigation measures will implemented continuously during slope construction work and the slope construction will be carried out within the working hours at

	Portion 2. 5. In order to reduce the inconvenience caused to the nearby resident, Kwan On should properly maintain the noise mitigation measures as appropriate, such as maintain good site practice including intermittent use of machine and plant and Sequencing operation of construction plant equipment. 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. 6. Nevertheless, in view of the subject site of the project is close to the residential area, Kwan On was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme.

Prepared By : Nicola Hon

Designation : Environmental Consultant

Signature : 

Date : 15 November 2018

Photo Record

Photo 1

A complaint raised by KTDC Member Ms. Ann So was received by CEDD on 24 October 2018 regarding the noise generated by the breaking work at E3. She added that the breaker mounted on the excavator was not wrapped by acoustic materials.

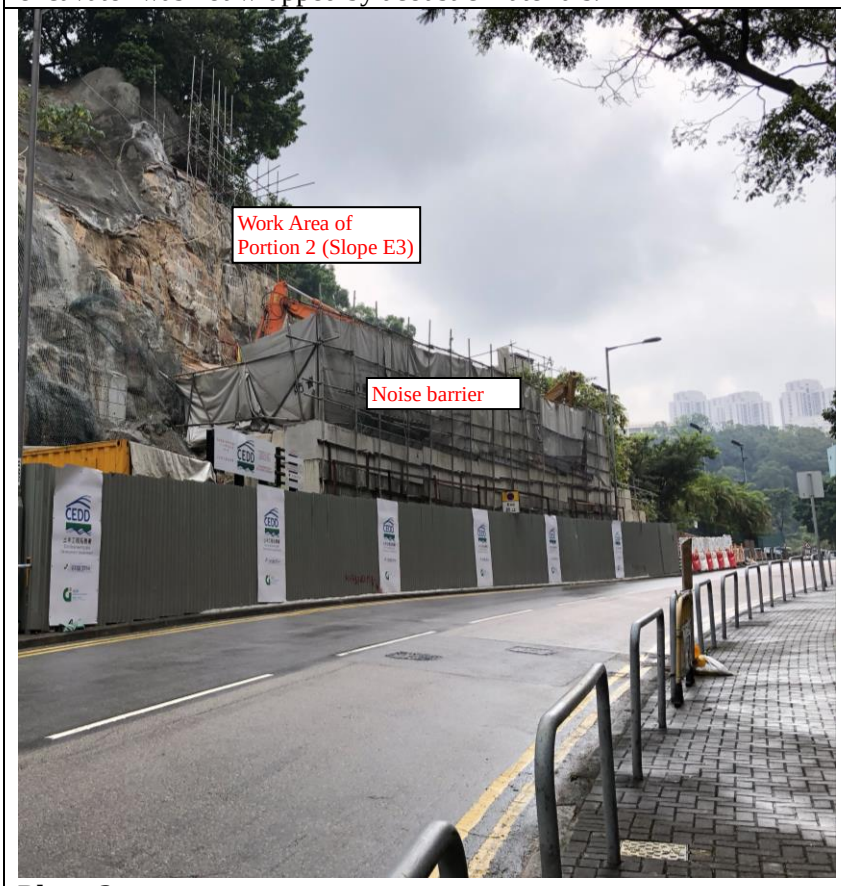


Photo 2

Noise barriers were in place and maintained for mitigation of noise generated from site plants to the nearby residents.

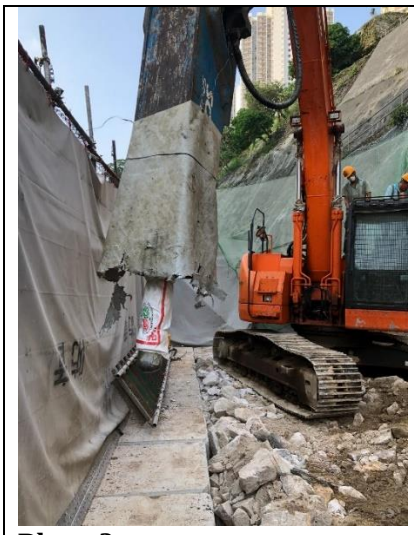


Photo 3
Only one excavator mounted breaker was deployed for the breaking works as good site practice and the breaker of excavator was wrapped with acoustic materials to alleviate the noise level generated from the breaking work.

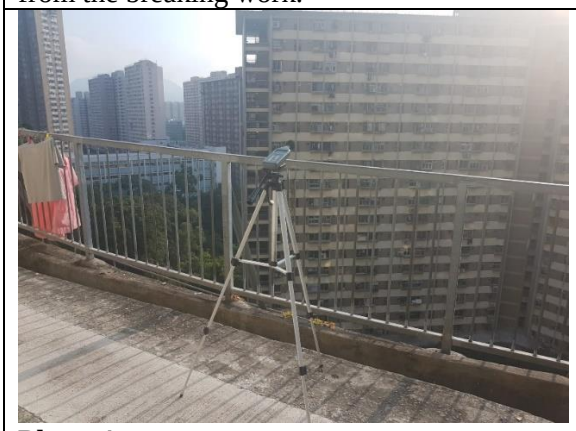


Photo 4
Trial noise measurement was also carried out on the top of slope of E3 near Hiu Wah Building on 26 October 2018.

Photo 5
The measurement result revealed no breaches of EM&A requirement (< 75dBA).

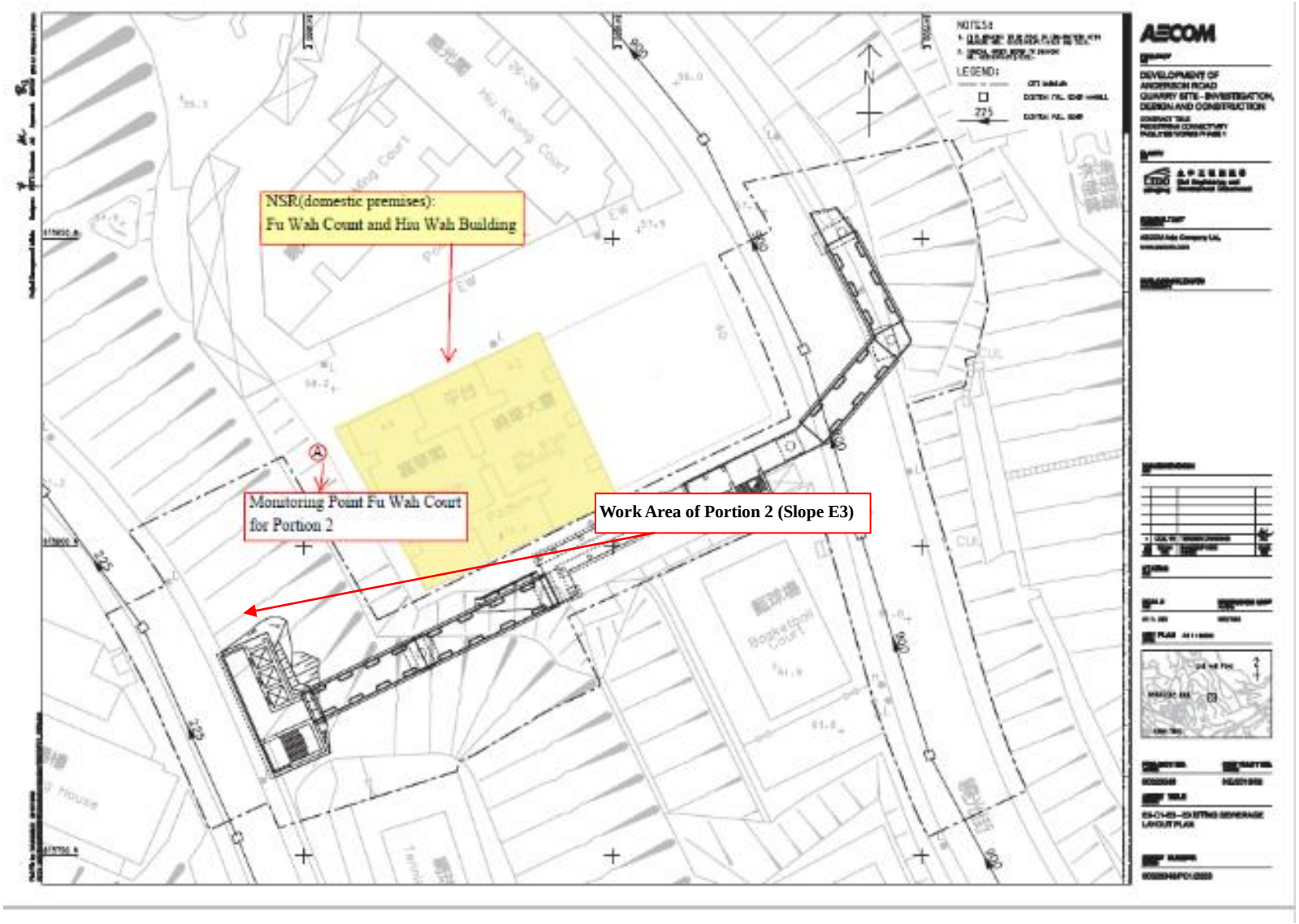


Figure 1 The Layout of Portion 2(Slope E3) of NE/2016/05 and the Complaint Location

AUES

Fax Cover Sheet

To	**Mr. Dennis Leung**	**Fax No**	**By e-mail**
Company	**AECOM**		
cc			
From	**Nicola Hon**	**Date**	**30 November 2018**
Our Ref	TCS00864/16/300/**F0222a**	**No of Pages**	5 **(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 Ching Tat House of On Tat Estate

Dear Sir,

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

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

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

Nicola Hon
Environmental Consultant

Encl.

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

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

Investigation Report on Environmental Complaint / Enquires

Complaint Log No.	NTE/07/2016 – 34
Received Date by ET	13 November 2018
Related Contracts	Contract 1 (NE/2016/01)
Complaint Details	Mr. Hui has contacted SPRO on 12 November 2018 and reported that he received complaint from a resident living in Ching Tat House (正達樓) about noise nuisance recently. Mr. Hui asked if project team can arrange some noise monitoring to check the noise level at the concerned flat or the same level at Ching Tat House.
Complaint Location	Anderson Road Quarry Site
Date of Complaint	12 November 2018
Environmental Aspect	Noise
Complainant	Resident of Ching Tat House (referred by Mr. Hui Yau Wai)
Complaint Route	Received by SPRO Hotline
Investigation Result	1. Mr. Hui Yau Wai has contacted SPRO on 12 November 2018 and reported that he received complaint from a resident living in Ching Tat House (正達樓) about noise nuisance recently. Mr. Hui asked if project team can arrange some noise monitoring to check the noise level at the concerned flat or the same level at Ching Tat House. The site layout and complaint location are shown in ***Figure 1***. 2. The SPRO immediately contacted Mr. Hiu and explained to him about the purpose and benefits of the tunnel to the residents nearby and the expected date of completion of the tunnel will be earlier than 2020. Moreover, the noise mitigation measures had implemented to reduce the noise level effectively and the work progress will be closely updated to nearby stakeholders to enhance communication. Mr. Hiu satisfied with the reply from SPRO and he agreed that the proposed noise monitoring in Ching Tat House was not needed. 3. Joint site inspection among the RE, Contractor of Contract 1 - NE/2016/01 (CWSTVJV) and ET was carried out on 13 November 2018 for the complaint investigation. It was observed that construction of blinding layer was carried out at Underground Stormwater Retention Tank (USRT) which opposite to On Tat Estate. ***(Photo 1)*** It noted that noisy activities such as excavation and breaking were completed, with the implementation of temporary noise barrier erected at perimeter of works area, the noise impact to the public was minimized. ***(Photo 2)*** Moreover, it was observed that a generator of Quality Powered Mechanical Equipment (QPME) which accepted by EPD as operating conditions and excellent environmental performance was adopted on site as good practice. ***(Photo 3)*** 4. According to the impact noise monitoring result obtained at Hau Tat House refuge floor (next to Him Tat House) in November

	2018, there were no breaches of EM&A requirement which revealed that the construction noise received at representative NSR is within acceptable level. Moreover, the construction works was carried out during non-restricted hours and there should be no breaches Noise Control Ordinance. 5. In our investigation, CWSTVJV had properly provided the noise mitigation measures to minimize the noise impact to the resident nearby. The impact noise monitoring result obtained at On Tat Estate revealed that the construction noise received at representative NSR is within acceptable level. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no breaches of legislative requirement. 6. To further reduce the inconvenience caused to the nearby resident, CWSTVJV should also properly maintain good site practice including intermittent use of machine and plant and Sequencing operation of construction plant equipment, as appropriate.

Prepared By : Nicola Hon

Designation : Environmental Consultant

Signature : 

Date : 30 November 2018

Photo Record

Photo 1

During joint site inspection on 13 November 2018, it was observed that construction of blinding layer was carried out at Underground Stormwater Retention Tank (USRT) which opposite to On Tat Estate.

Photo 2

It noted that noisy activities such as excavation and breaking were completed, with the implementation of temporary noise barrier erected at perimeter of works area, the noise impact to the public was minimized.

Photo 3

It was observed that a generator of Quality Powered Mechanical Equipment (QPME) which accepted by EPD as operating conditions and excellent environmental performance was adopted on site as good practice.

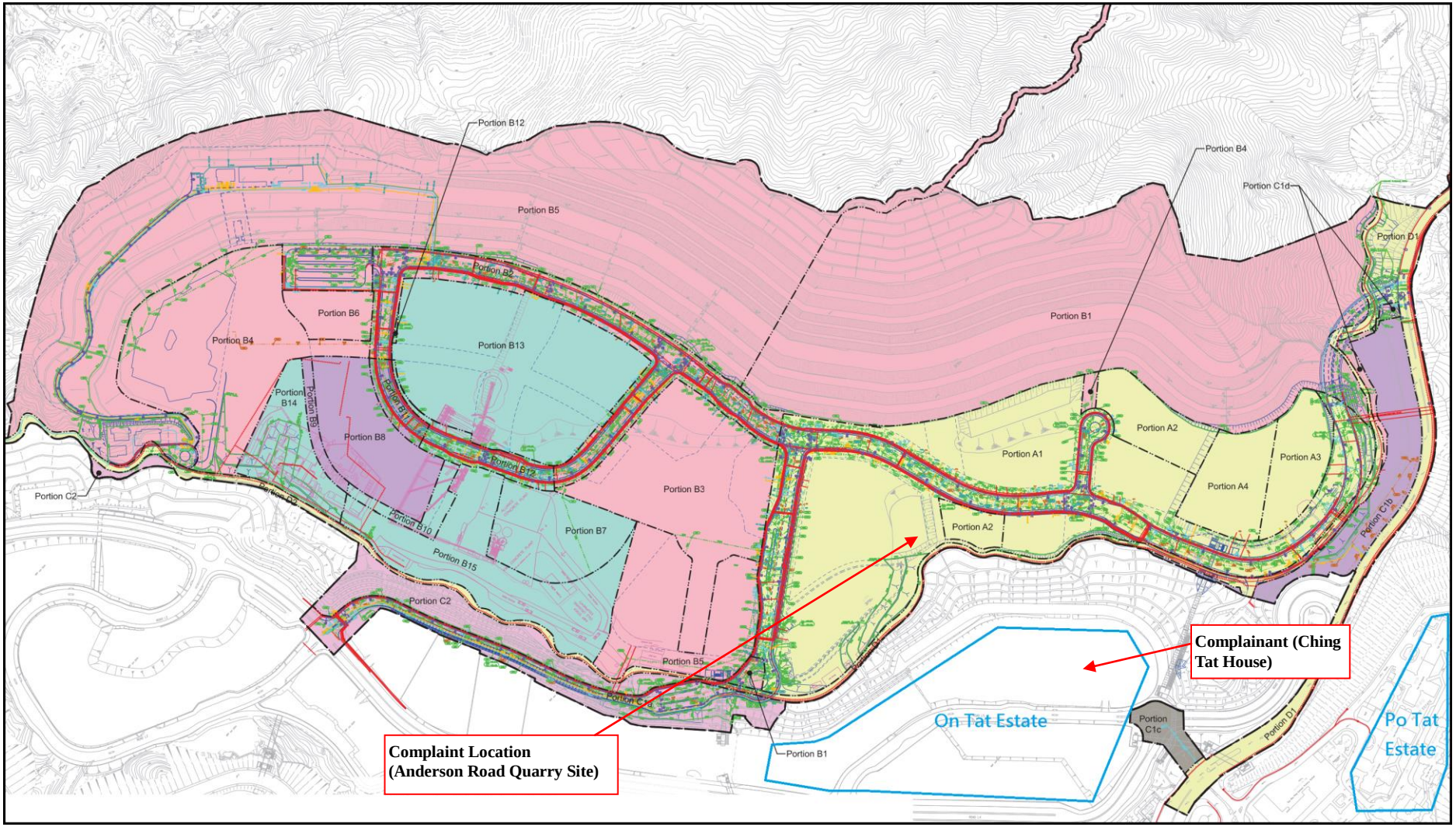


Figure 1 The Layout of NE/2016/01 and the Complaint Location