Vol. 5 of 5

EP-457/2013/D

Central Kowloon Route

Kai Tak East

Contract No. HY/2018/02

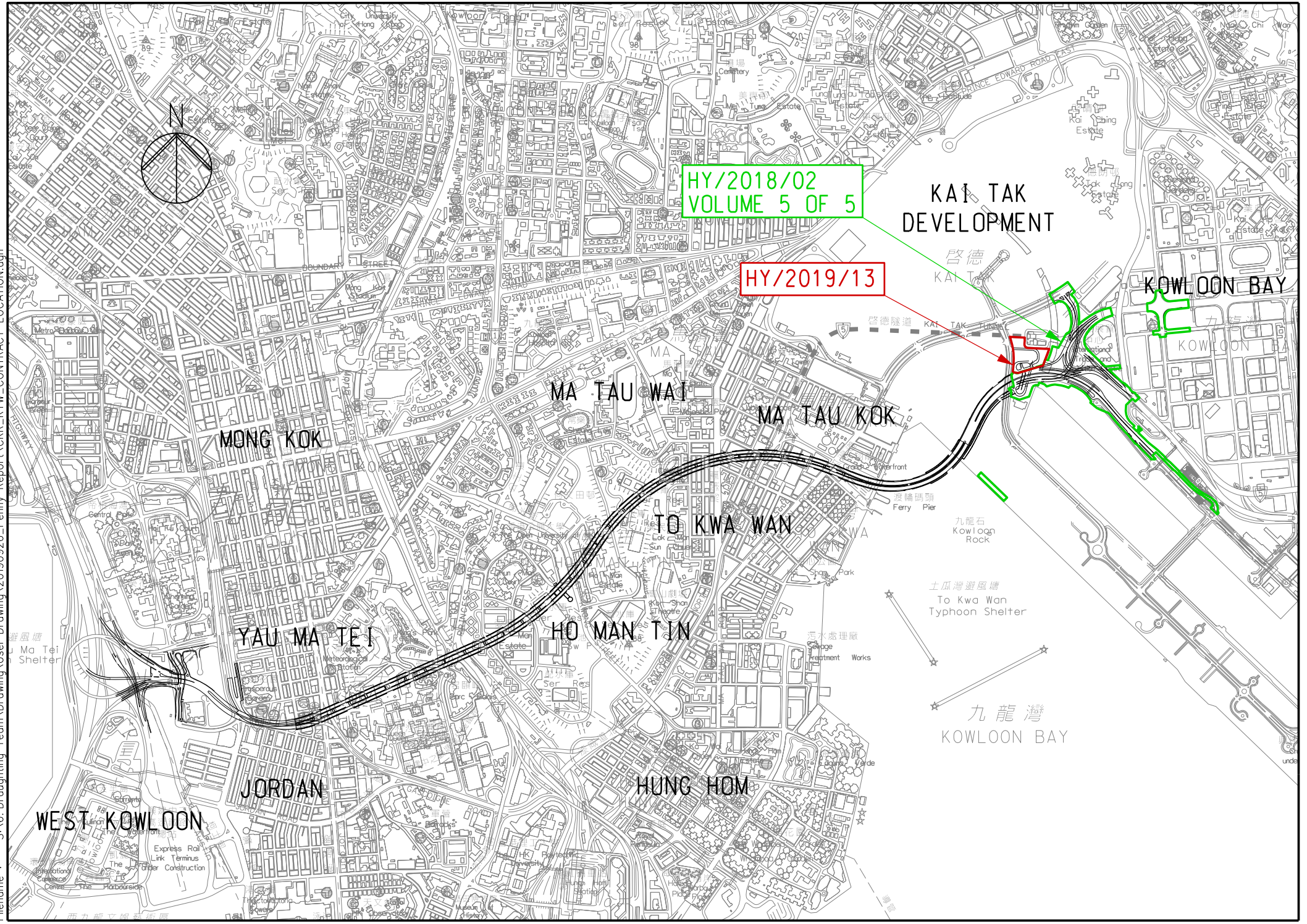
&

Buildings, Electrical and Mechanical Works

Contract No. HY/2019/13

(Kai Tak East Area)

February 2022



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Central Kowloon Route

Kai Tak East

Contract No. HY/2018/02

路政署
HIGHWAYS DEPARTMENT
主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

ERM

Environmental Permit No. EP-457/2013/D

Central Kowloon Route

Independent Environmental Checker Verification

Works Contract:	**Kai Tak East (HY/2018/02)**

Reference Document/Plan

Document/~~Plan~~ to be ~~Certified~~/ Verified:	Monthly EM&A Report No.30 (February 2022)
Date of Report:	10 March 2022 (Rev. 1)
Date received by IEC:	10 March 2022

Reference EP Condition

Environmental Permit Condition: 3.4

Submission of Monthly EM&A Report of the Project

3.4 Four hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of each reporting month throughout the entire construction period. The EM&A Reports shall include a summary of all non-compliance. The submissions shall be certified by the ET Leader and verified by the IEC as complying with the requirements as set out in the EM&A Manual before submission to the Director. Additional copies of the submission shall be provided to the Director upon request by the Director.

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-457/2013/D.

Ms Mandy To Date: 10 March 2022

Independent Environmental Checker

Our ref: 0436942_IEC Verification Cert_KTE_Monthly EM&A Rpt No.30.docx

ACUITY
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Alchmex – Paul Y Joint Venture

Central Kowloon Route Contract HY/2018/02

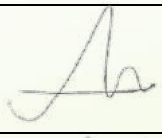
Section of Kai Tak East

Monthly EM&A Report No. 30

(Period from 1 to 28 February 2022)

Rev. 1

(10 March 2022)

	Name	**Signature**
Prepared by	Andres T. T. Lo (Assistant Environmental Consultant)	
Checked & Reviewed by	Y.H.Law (Senior Environmental Consultant)	
Approved & Certified by	Kevin W. M. Li (Environmental Team Leader)	

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LIST OF APPENDICES

EXECUTIVE SUMMARY

A.1 Alchmex – Paul Y Joint Venture ("Contractor") commenced the construction works of Highway Department (HyD) Central Kowloon Route Contract No. HY/2018/02 – Section of Kai Tak East ("The Project") on 9 September 2019. This is the 30th monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 February 2022 to 28 February 2022.

A.2 A summary of major Construction activities by Contractor for the Project during the reporting month is listed below.

Construction Activities undertaken

- Bored Pile at Temporary Platform & Kai Cheung U Turn.
- Pile Cap Construction at Portion 1A, Kai Cheung Loop Road & Portion 2B.
- RC structure for Adit at Area Part 1B.
- RC structure for Underpass S3 & S21 at Portion 3B.
- Construction of Temporary Platform at Kai Tak Nallah.
- Retaining Wall Construction at U-Turn & Portion 2B.
- Sheet piling Work at U-Turn.
- Central Divider Removal at Kai Fuk Road.

A.3 A summary of regular construction dust monitoring activities in this reporting period is listed below:

Construction dust (24-hour TSP) monitoring	
E-A1	5 times
Construction dust (1-hour TSP) monitoring	
E-A1	15 times

A.4 Joint weekly site inspections were conducted by representatives of Environmental team (ET), Contractor and Engineer on 9, 16 and 23 February 2022. Also, a joint site inspection with Independent Environmental Checker (IEC) was undertaken on 9 February 2022. Details of the audit findings and implementation status are presented in Section 5.

A.5 Bi-weekly inspection of the implementation of landscape and visual mitigation measures by ET was conducted on 9 and 23 February 2022. Details of the audit findings and implementation status are presented in Section 5. *Law: please confirm it is fact.*

A.6 Details of waste management are presented in Section 3.

A.7 No exceedance of the Action and Limit Levels of 24-hour TSP and 1-hour TSP monitoring were recorded during the reporting month.

A.8 No complaint or non-compliance was received in the reporting month.

A.9 No notification of summons and prosecution was received in the reporting period.

A.10 A summary of Construction Activities provided by Contractor in next reporting month is listed below:

Construction Activities to be undertaken
• Pile Cap Construction at Portion 1A, Portion 3B & Portion 2B.
• RC structure for Adit at Area Part 1B.
• RC structure for Underpass S3 at Portion 3B.
• Construction of Temporary Platform at Kai Tak Nallah.
• Retaining Wall Construction at U-Turn & Portion 2B.
• Sheetpiling Work at U-Turn.
• Central Divider Removal at Kai Fuk Road.

BASIC PROJECT INFORMATION

1.1. Central Kowloon Route (CKR) is a 4.7 km long dual 3-lane trunk road in Central Kowloon linking Yau Ma Tei Interchange in West Kowloon with the road network on Kai Tak Development and Kowloon Bay in East Kowloon.

1.2. The Central Kowloon Route – Design and Construction Environmental Impact Assessment Report (Register No.: AEIAR-171/2013) was approved with conditions by the Environmental Protection Department (EPD) on 11 July 2013. An Environmental Permit (EP 457/2013) was issued on 9 August 2013. Variations of EP (VEP) was subsequently applied for and the latest EP (EP-457/2013/D) was issued by EPD on 15 June 2021.

1.3. The construction of the CKR had been divided into different sections. This Contract No. HY/2018/02 – Section of Kai Tak East (KTE) covers part of the construction activities located at Kai Tak under the EP which includes:

- Section of Kai Tak East

i. construction of an approximately 700m long dual 2-lane Central Kowloon Route mainline at Kai Tak, including at-grade roads and bridges;

ii. construction of Kai Tak Interchange, including bridges, underpass, and associated at-grade slip roads, connecting the Central Kowloon Route with the existing road network;

iii. construction of a footbridge, and demolition/backfill of an existing subway across Kai Fuk Road;

iv. realignment of existing Kai Fuk Road, Kai Cheung Road and Kai Cheung Road/Kai Fuk Road loop road;

v. reconstruction of an approximately 30m long existing multi-cell box culvert;

vi. construction of an approximately 130m long underground ventilation and E&M audit;

vii. construction of Ring Road Underpass, connecting Central Kowloon Route mainline and Central Kowloon Route Administration Building;

viii. junction improvement works at existing Wang Kwong Road/Kai Cheung Road and Wang Kwong Road/Lam Hing Street junctions;

ix. arrangement and implementation of cross boundary disposal of construction and demolition materials; and

x. associated roadworks, drainage, waterworks, landscaping works, geotechnical works, and electrical and mechanical works.

The alignment and works area for the Contract No. HY/2018/02 - are shown in Appendix A.

1.4. A summary of major construction activities provided by the Contractor in this reporting period is shown in Table 1.1. The construction programme is presented in Appendix B.

Table 1.1 Summary of Construction Activities provided by Contractor during this Reporting Month.

Construction Activities undertaken
• Bored Pile at Temporary Platform & Kai Cheung U Turn.
• Pile Cap Construction at Portion 1A, Kai Cheung Loop Road & Portion 2B.
• RC structure for Adit at Area Part 1B.
• RC structure for Underpass S3 & S21 at Portion 3B.
• Construction of Temporary Platform at Kai Tak Nallah.
• Retaining Wall Construction at U-Turn & Portion 2B.
• Sheet piling Work at U-Turn.
• Central Divider Removal at Kai Fuk Road.

1.5. The project organisational chart specifying management structure and contact details are shown in Appendix C.

1.6. A summary of the valid permits, licences, and /or notifications on environmental protection for this Project is presented in Table 1.2

Table 1.2 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations

Permit/ Licences/ Notification /Reference No.	Valid Period		Status	Remark
	From	To		
Environmental Permit				
EP-457/2013/D	15 Jun 2021	End of Project	Valid	-
Wastewater Discharge License				
WT00035029-2019	17 Dec 2019	31 Dec 2024	Valid	-
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation				
445001	Apr 2019	Dec 2023	Notified	-
Chemical Waste Producer Registration				
WPN5113-247-A2940-01	17 May 2019	End of Project	Valid	-
Billing Account for Disposal of Construction Waste				
7034073	15 Jun 2019	End of Project	Valid	-
Construction Noise Permit				
GW-RE0910-21	30-Sep-21	28-Mar-22	Valid	General Work for Area A
GW-RE0920-21	24-Sep-21	22-Mar-22	Valid	General Work for Area B and Site Office
GE-RE0696-21	4-Aug-21	2-Feb-22	Superseded by GW-RE0069-22	Kai Cheung U Turns
GW-RE0069-22	3-Feb-22	25-July-22	Valid	
GW-RE0857-21	13-Sep-21	12-Mar-22	Valid	Portion 2B
GW-RE1306-21	18-Jan-22	11-Mar-22	Valid	Central Divider Removal at Kai Fuk Road
GW-RE1104-21	25-Nov-21	24-Feb-22	Valid	Existing Gantry Removal at Kai Fuk Road
GW-RE0074-22	13-Feb-22	16-Mar-22	Valid	Road Paving Work at Kai Cheung Loop Road
GW-RE0079-22	13-Feb-22	31-May-22	Valid	Road Diversion at Kai Fuk Rd

2. ENVIRONMENTAL STATUS

2.1. Environmental permit (EP) conditions under the EIAO, submission status under the EP and implementation status of mitigation measures had been reviewed and implemented on schedule. The status of required submissions under the EP (EP-457/2013/D) as of the reporting period for the Project are summarised in Table 2.1

Table 2.1 Summary of Status of Required Submission for EP-457/2013/D for the Project

EP Condition (EP-457/2013/D)	Submission	Submission date
Condition 3.4	Monthly EM&A Report (January 2022)	14 February 2022

2.2. The drawing showing the the project layout and the location of the monitoring station and environmental sensitive receivers are attached in Appendix A and Appendix J. Co-ordinates of the monitoring location is shown in below:

Table 2.2 Summary for the location of monitoring station

Monitoring Location	Location ID	Latitude	Longitude
Hong Kong International Trade and Exhibition Centre	E-A1	22.323912	114.203512

3. MONITORING RESULTS

3.1. Monitoring Parameters

Air Quality

3.1.1 The impact monitoring had been carried out in accordance with section 5.8 of the approved EM&A Manual to determine the 1-hour and 24-hour total suspended particulates (TSP) levels at the monitoring locations in the reporting month.

3.1.2 The sampling frequency of at least once in every 6 days, shall be strictly observed at the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least 3 times in every 6 days should be undertaken when the highest dust impact occurs.

3.1.3 General meteorological conditions (wind speed, direction and precipitation) and notes regarding any significant adjacent dust producing sources had also been recorded throughout the impact monitoring period.

3.2. Monitoring Equipment

Air Quality

3.2.1 1-hour TSP levels and 24-hour TSP had been measured with direct reading dust meter and High Volume Samplers respectively. It has been demonstrated its capability in achieving comparable results with high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50).

3.2.2 The 1-hour TSP meter was calibrated by the manufacturer prior to purchasing. Zero response of the instrument was checked before and after each monitoring event. Operation of the 1-hour TSP meter followed manufacturer's Operation and Service Manual. The 24-hour TSP meter was calibrated against firmware 80570-8100-V1.0.4, annually. Operation of the 24-hour TSP meter followed manufacturer's Operation and Service Manual. Valid calibration certificate of dust monitoring equipment is attached in Appendix H.

3.2.3 A summary of the equipment that was deployed for the 24- hour averaged monitoring is shown in Table 3.1. The TSP monitoring was conducted as per the schedule presented in Appendix G.

3.2.4 The equipment used for 1-hour TSP and 24-hour TSP measurement and calibration are summarised in Table 3.1

Table 3.1 Construction Dust Monitoring Equipment

Monitoring Parameter	Monitoring Equipment	Serial Number	Date of Calibration
1-hour TSP	LD-5R Digital Dust Indicator	761173	1 Jul 2021
24-hour TSP	TE-5170X High Volume Sampler	1049	4 and 22 Feb 2022
	TE-5028A Calibration Kit	3702	3 Aug 2021

3.3. Monitoring Methodology and QA/QC results

Air Quality

3.3.1 The 1-hour TSP monitor, portable dust meters (Sibata Digital Dust Indicator Model LD-5R) was used for the impact monitoring. The 1-hour TSP meters provides a real time 1-hour TSP measurement based on 90^{o} light scattering. Three 1-hour TSP level were logged per every six days.

3.3.2 The 24-hour TSP monitor, High Volume Samplers (Tisch TE-5170x High Volume Air Sampler) were used for the impact monitoring. The 24-hour TSP monitoring consists of the following:

- The HVS was set at the monitoring location, with electricity supply connected and secured;
- HVS was calibrated before commencing the 1st measurement;
- The filter paper was weight and provided by HOKLAS lab (Acumen Laboratory and Testing Limited and ALS Technichem (HK) Pty Ltd) before and after the sampling. Certificate of HOKLAS accredited laboratory can be referred to Appendix I;
- The airflow over time during sampling process was recorded by the HVS.

3.3.3 HVSs were free-standing with no obstruction. The following criteria were considered in the installation of the HVS:

- Appropriate support to secure the samples against gusty wind needed to be provided the monitoring station;
- A minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- No furnace or incinerator flues was nearby;
- Airflow around the sampler was unrestricted; and
- Permission could be obtained to set up the samplers and gain access to the monitoring station.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring
- A secured supply of electricity is needed to operate the samplers.

3.3.4 Preparation of Filter Papers

- Glass fiber filters were labelled and sufficient filters that were clean and without pinholes were selected;
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25℃ and not varied by more than ±3℃; the relative humidity (RH)was 40%; and

- Acumen Laboratory and Testing Limited and ALS Technichem (HK) Pty Limited, as HOKLAS accredited laboratory, implemented comprehensive quality assurance and quality control programmes on the filters.

3.3.5 Field Monitoring

- The power supply was checked to ensure that the HVS was working properly;
- The filter holder and area surrounding the filter were cleaned;
- The filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- The shelter lid was closed and secured with an aluminum strip;
- The HVS was warmed- up for about 5 minutes to establish run- temperature conditions;
- A new flow rate record sheet was inserted into the flow recorder;
- The flow rates of the HVS was checked and adjusted to between 1.13-1.19 m^3min^{-1}, which was within the range specified in the EM&A Manual (i.e. 0.6- 1.7 m^3min^{-1});
- The programmable timer was set for a sampling period of 24 hours ±hour, and the starting time, weather condition and filter number were recorded;
- The initial elapsed time was recorded;
- At the end of sampling, the sampled filter was removed carefully and folded in half so that only surfaces with collected particulate matter were in contact;
- The filter paper was placed in a clean plastic envelope and sealed; all monitoring information was recorded on a standard data sheet and
- The filters were sent to (Acumen Laboratory and Testing Ltd and ALS Technichem (HK) Pty Ltd) for analysis.

3.3.6 Maintenance and Calibration

- The HVS and their accessories were maintained in a good working condition. For example, motor brushes were replaced routinely and electrical wiring was checked to ensure a continuous power supply; and
- The flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator, Initial calibrations of the dust monitoring equipment were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVS using TE-5025A Calibration Kit and TE-5028A Calibration KIT. HVS is calibrated in fortnightly Intervals. The calibration records for the HVS is given in Appendix H.

3.3.7 Wind Data Monitoring

- The wind speed has been recorded from Hong Kong Observatory- King's Park meteorological station, along with portable wind speed meter stand by as back up if malfunction occurred or data was not recorded from HKO

3.4. Monitoring Locations

Air Quality

3.4.1 During the site visit, air monitoring station Hong Kong International Trade and Exhibition Centre had been recommended in the approved EM&A Manual and approved by IEC. A designated air monitoring location was identified and agreed with IEC and EPD. Detail of the air monitoring station is described in Table 3.2. The location plan of air quality monitoring stations is shown in Appendix J.

Table 3.2 Location of the Dust Monitoring Station

Air Quality Monitoring Station	Dust Monitoring Station
E-A1	Hong Kong International Trade and Exhibition Centre

3.5. Monitoring date, time, frequency and duration

3.5.1 A summary of impact monitoring duration, sampling parameter and frequency is presented in Table 3.3.

Table 3.3: Summary of Impact Monitoring Programme

Impact Monitoring	Duration	Sampling Parameter	Frequency
Dust	1-hour continuous measurement	1-hour TSP	3 times per six days
Dust	24-hour continuous sampling	24-hour TSP	Once per six days

3.6. Result Summary

Air Quality

3.6.1 According to our field observations, the major dust source identified at the designated air quality monitoring station in the reporting month are summarised in Table 3.4

Table 3.4 Observation at Dust Monitoring Station

Monitoring Station	Major Dust Source
E-A1	Nearby traffic

3.6.2 Air quality impact monitoring for the reporting month was carried out on 4, 10, 16, 22 and 28 February 2022 at E-A1.

3.6.3 The results for 1-hour TSP and 24-hour TSP are summarized in Table 3.5 and Table 3.6. The measurement data and details of influencing factors such as weather conditions and site observation are presented in Appendix K.

Table 3.5 Summary of 1-hour TSP Monitoring Results

Monitoring Location	Range(μg/m^3)	Action Level(μg/m^3)	Limit Level(μg/m^3)
E-A1	41 - 69	279	500

Table 3.6 Summary of 24-hour TSP Monitoring Results

Monitoring Location	Range(μg/m^3)	Action Level(μg/m^3)	Limit Level(μg/m^3)
E-A1	8-49	142	260

Waste management

3.6.4 The waste generated from this Project includes inert C&D materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in Table 3.7. Details of cumulative waste management data are presented as a waste flow table in Appendix L.

Table 3.7 Quantities of waste generated from the Project

Reporting period	Quantity					
			Non-inert C&D Materials			
				Recycled materials		
	Inert C&D Materials (in 'tonnes)	Chemical Waste (in'000 Kg)	Others, e.g. General Refuse disposed at Landfill (in 'tonnes)	Paper/card board (in '000 Kg)	Plastics (in '000 Kg)	Metals (in '000 Kg)
February-2022	715.04	0.00	85.53	0.16	0.00	0.00

4. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

4.1 The Environmental Complaint Handling Procedure is shown in below Table 4.1:

Table 4.1 Environmental Complaint Handling Procedure

Complaint Received via Project Hotline	Complaint Received via 1823 or from other government departments
Contractor notify ER, ET and IEC	ER notify Contractor, ET and IEC
Contractor log complaint and date of receipt onto the complaint database. Contractor, ER and ET to conduct investigation of complaint	
If complaint is considered not valid	If complaint is found valid
ET or ER to reply the complainant if necessary	Contractor to identify and implement remedial measures in consultation with the IEC, ET and ER.
	The ER, ET and IEC to review the effectiveness of the Contractor's remedial measures and the updated situation; ET to undertake additional monitoring and audit to verify the situation if necessary, and oversee that circumstances leading to the complaint do not recur. ER to conduct further inspection as necessary.
If the complaint is referred by the EPD, the Contractor to prepare interim report on the status of the complaint investigation and follow-up actions stipulated above, including the details of the remedial measures and additional monitoring identified or already taken, for submission to EPD within the time frame assigned by the EPD	
The ET to record the details of the complaint, results of the investigation, subsequent actions taken to address the complaint and updated situation including the effectiveness of the remedial measures, supported by regular and additional monitoring results in the monthly EM&A reports	

4.2. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan in Appendix D and Appendix E shall be carried out.

4.3. No exceedance of the Action and Limit Levels of 24-hour TSP and 1-hour TSP monitoring was recorded during the reporting month.

4.4. No complaint and non-compliance were received in the reporting month.

4.5. No notification of summons and successful prosecution was received in the reporting period.

4.6. Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix M.

5. EM&A SITE INSPECTION

5.1. Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, 3 site inspections were carried out by the representative of ET, Contractor and Engineer on 9, 16 and 23 February 2022, along with bi-weekly inspection of the implementation of landscape and visual mitigation measures conducted on 9 and 23 February 2022.

5.2. One joint site inspection with IEC also undertaken on 9 February 2022. Minor deficiencies were observed during weekly site inspection. Key observations during the site inspections are summarized in Table 5.1.

Table 5.1 Site Observations

Date	Environmental Observations	Follow-up Status
9 February 2022	NA	NA
16 February 2022	1. Hydraulic Breaker should be placed with cover or canvas to prevent oil leakage at S3.	1. Hydraulic Breaker is removed.
23 February 2022	NA	NA

5.3. The Contractor had rectified all observation identified during environmental site inspection in the reporting period.

5.4. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents had been implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in Appendix F.

6. FUTURE KEY ISSUES

6.1. The construction activities provided by Contractor in the next reporting month are:

- Pile Cap Construction at Portion 1A,Portion 3B & Portion 2B.
- RC structure for Adit at Area Part 1B.
- RC structure for Underpass S3 at Portion 3B.
- Construction of Temporary Platform at Kai Tak Nallah.
- Retaining Wall Construction at U-Turn & Portion 2B.
- Sheetpiling Work at U-Turn.
- Central Divider Removal at Kai Fuk Road.

6.2. Potential environmental impacts arising from the above construction activities are mainly associated with dust and waste management.

6.3. The tentative schedule of 1-hour TSP and 24-hour TSP monitoring in the next reporting period is presented in Appendix N.

6.4. The construction programme for the Project for the next reporting month is presented in Appendix B.

7. CONCLUSION AND RECOMMENDATIONS

7.1. This 30th monthly EM&A Report presents the EM&A works undertaken during the period from 1 February 2022 to 28 February 2022 in accordance with the EM&A Manual and the requirement under EP-457/2013/C and EP-457/2013/D.

7.2. Air quality (including 1-hour TSP and 24-hour TSP) was carried out in the reporting period. No exceedance of the Action and Limit Level was recorded for air quality impact monitoring during the reporting month.

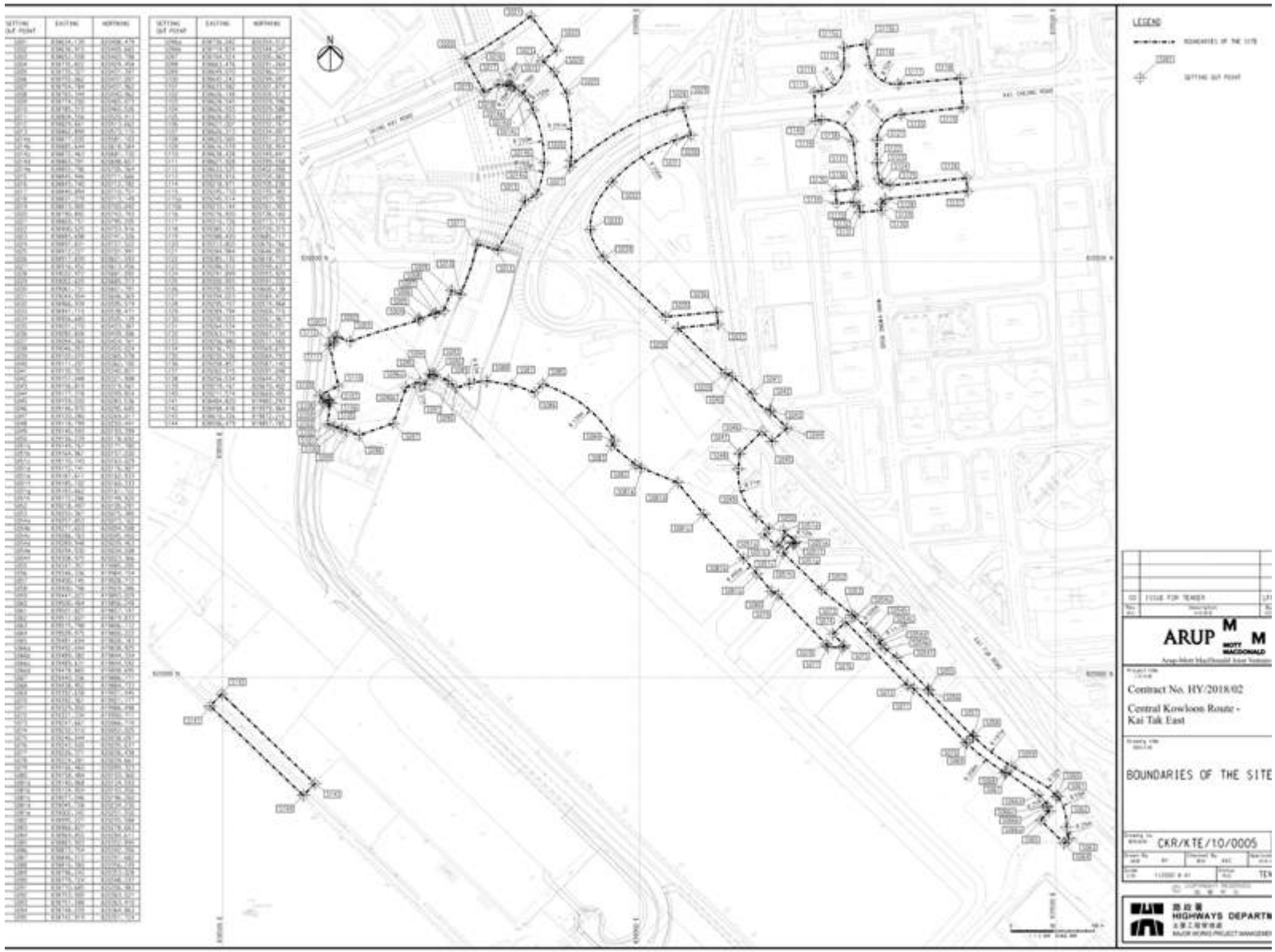
7.3. Weekly environmental site inspections by the representative of ET, Contractor and Engineer were conducted during the reporting period. Joint site inspection with IEC were carried out on 9 February 2022. Minor deficiency was observed during site inspection and was rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

7.4. No complaint and non-compliance situation were received in the reporting month.

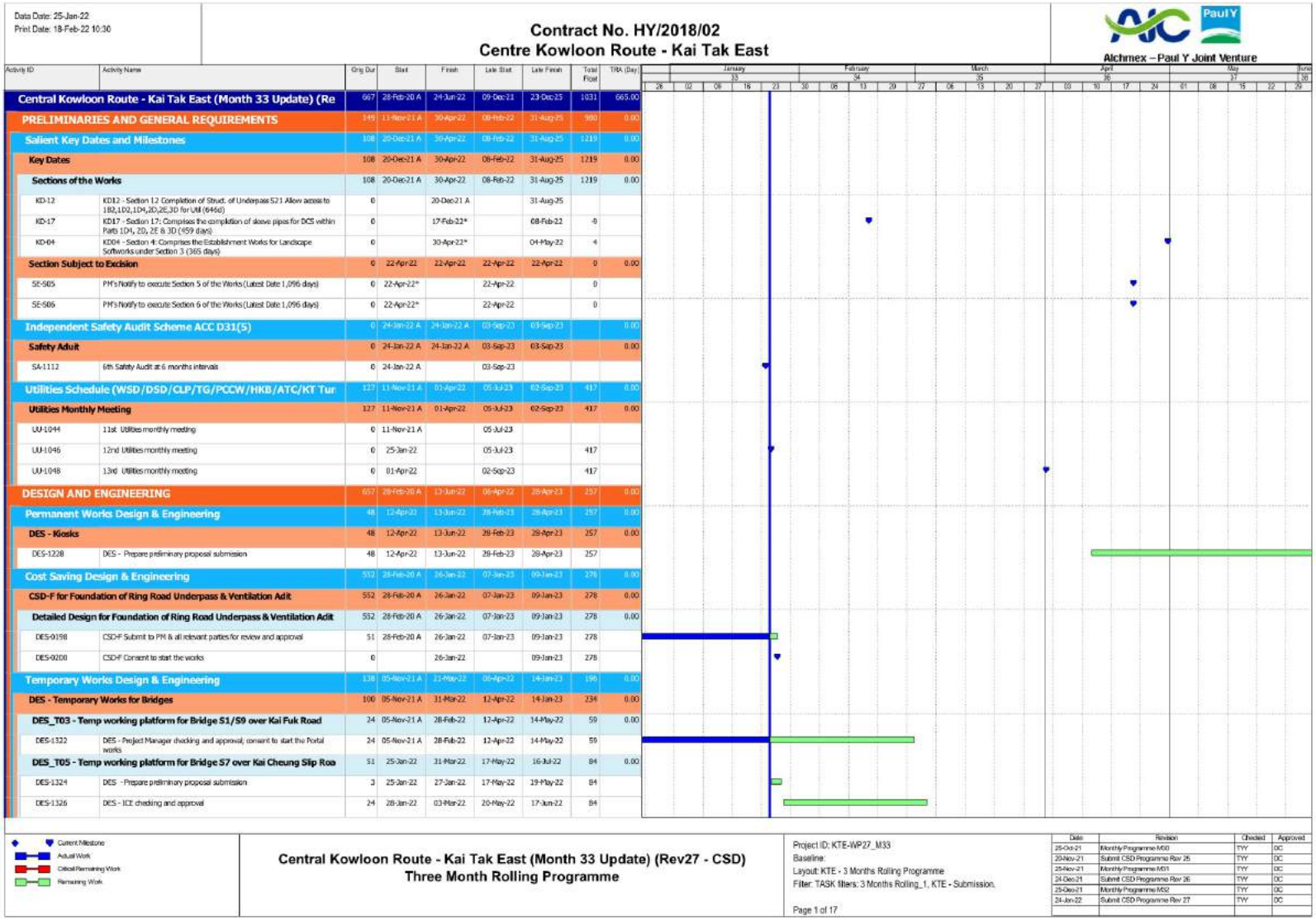
7.5. No notification of summons or prosecution was received since commencement of the Contract.

7.6. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A
Alignment and Works Area for the Contract No. HY/2018/02


LEGEND
BOUNDARIES OF THE SITE
SETTING OUT POINT
ARUP
MOTT MACDONALD
Contract No. HY/2018/02
Central Kowloon Route -
Kai Tak East
BOUNDARIES OF THE SITE
CKR/KTE/10/0005
HIGHWAYS DEPARTMENT

Appendix B
Construction Programme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Contract No. HY/2018/02
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Alchmex – Paul Y Joint Venture
Central Kowloon Route - Kai Tak East (Month 33 Update) (Rev27 - CSD)
Three Month Rolling Programme
Project ID: KTE-WP27_M33
Baseline:
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Filter: TASK filters: 3 Months Rolling_1, KTE - Submission
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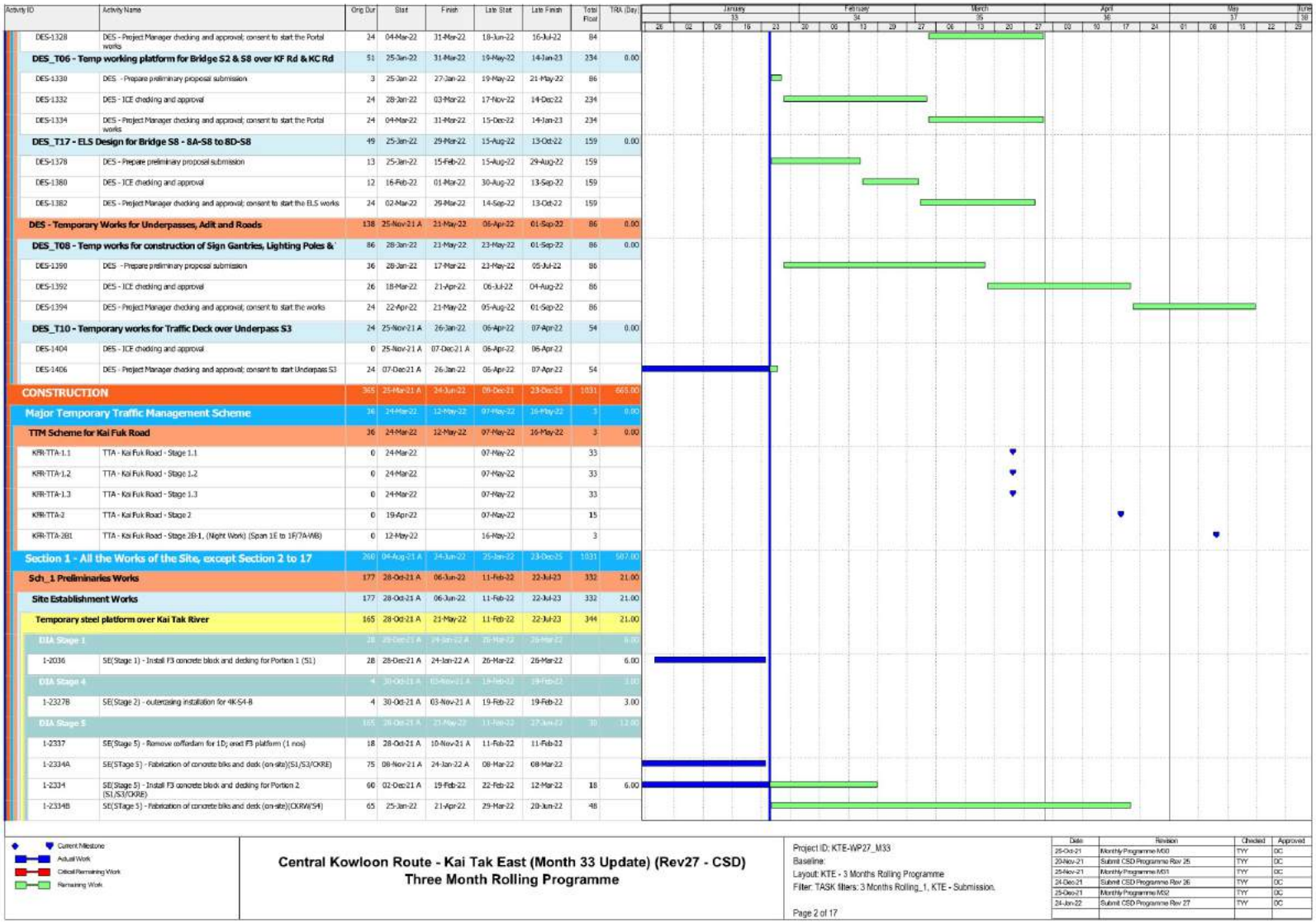

Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day
DES-1328	DES - Project Manager checking and approval; consent to start the Portal works	24	04-Mar-22	31-Mar-22	18-Jun-22	16-Jul-22	84	
DES_T06 - Temp working platform for Bridge S2 & S8 over KF Rd & KC Rd		51	25-Jan-22	31-Mar-22	19-May-22	14-Jan-23	234	0.00
DES-1330	DES - Prepare preliminary proposal submission	3	25-Jan-22	27-Jan-22	19-May-22	21-May-22	86	
DES-1332	DES - ICE checking and approval	24	28-Jan-22	03-Mar-22	17-Nov-22	14-Dec-22	234	
DES-1334	DES - Project Manager checking and approval; consent to start the Portal works	24	04-Mar-22	31-Mar-22	15-Dec-22	14-Jan-23	234	
DES_T17 - ELS Design for Bridge S8 - 8A-S8 to 8D-S8		49	25-Jan-22	29-Mar-22	15-Aug-22	13-Oct-22	159	0.00
DES-1378	DES - Prepare preliminary proposal submission	13	25-Jan-22	15-Feb-22	15-Aug-22	29-Aug-22	159	
DES-1380	DES - ICE checking and approval	12	16-Feb-22	01-Mar-22	30-Aug-22	13-Sep-22	159	
DES-1382	DES - Project Manager checking and approval; consent to start the ELS works	24	02-Mar-22	29-Mar-22	14-Sep-22	13-Oct-22	159	
DES - Temporary Works for Underpasses, Adit and Roads		138	25-Nov-21 A	31-May-22	06-Apr-22	01-Sep-22	86	0.00
DES_T08 - Temp works for construction of Sign Gantries, Lighting Poles &		86	28-Jan-22	31-May-22	23-May-22	01-Sep-22	86	0.00
DES-1390	DES - Prepare preliminary proposal submission	36	28-Jan-22	17-Mar-22	23-May-22	05-Jul-22	86	
DES-1392	DES - ICE checking and approval	26	18-Mar-22	21-Apr-22	06-Jul-22	04-Aug-22	86	
DES-1394	DES - Project Manager checking and approval; consent to start the works	24	22-Apr-22	31-May-22	05-Aug-22	01-Sep-22	86	
DES_T10 - Temporary works for Traffic Deck over Underpass S3		24	25-Nov-21 A	26-Jan-22	06-Apr-22	07-Apr-22	54	0.00
DES-1404	DES - ICE checking and approval	0	25-Nov-21 A	07-Dec-21 A	06-Apr-22	06-Apr-22		
DES-1406	DES - Project Manager checking and approval; consent to start Underpass S3	24	07-Dec-21 A	26-Jan-22	06-Apr-22	07-Apr-22	54	
CONSTRUCTION		365	25-Mar-21 A	24-Jun-22	09-Dec-21	23-Dec-25	1031	665.00
Major Temporary Traffic Management Scheme		36	24-Mar-22	12-May-22	07-May-22	16-May-22	3	0.00
TTM Scheme for Kai Fuk Road		36	24-Mar-22	12-May-22	07-May-22	16-May-22	3	0.00
KFR-TTA-1.1	TTA - Kai Fuk Road - Stage 1.1	0	24-Mar-22		07-May-22		33	
KFR-TTA-1.2	TTA - Kai Fuk Road - Stage 1.2	0	24-Mar-22		07-May-22		33	
KFR-TTA-1.3	TTA - Kai Fuk Road - Stage 1.3	0	24-Mar-22		07-May-22		33	
KFR-TTA-2	TTA - Kai Fuk Road - Stage 2	0	19-Apr-22		07-May-22		15	
KFR-TTA-2B1	TTA - Kai Fuk Road - Stage 2B-1, (Night Work) (Span 1E to 1F/7A-W8)	0	12-May-22		16-May-22		3	
Section 1 - All the Works of the Site, except Section 2 to 17		260	04-Aug-21 A	24-Jun-22	25-Jan-22	23-Dec-25	1031	507.00
Sch_1 Preliminaries Works		177	28-Oct-21 A	06-Jun-22	11-Feb-22	22-Jul-23	332	21.00
Site Establishment Works		177	28-Oct-21 A	06-Jun-22	11-Feb-22	22-Jul-23	332	21.00
Temporary steel platform over Kai Tak River		165	28-Oct-21 A	23-May-22	11-Feb-22	22-Jul-23	344	21.00
DIA Stage 1		28	28-Dec-21 A	24-Jan-22 A	26-Mar-22	26-Mar-22		6.00
1-2036	SE(Stage 1) - Install F3 concrete block and decking for Portion 1 (S1)	28	28-Dec-21 A	24-Jan-22 A	26-Mar-22	26-Mar-22		6.00
DIA Stage 4		4	30-Oct-21 A	03-Nov-21 A	19-Feb-22	19-Feb-22		3.00
1-2327B	SE(Stage 2) - outercasing installation for 4K-S4-B	4	30-Oct-21 A	03-Nov-21 A	19-Feb-22	19-Feb-22		3.00
DIA Stage 5		165	28-Oct-21 A	23-May-22	11-Feb-22	27-Jun-22	30	12.00
1-2337	SE(Stage 5) - Remove cofferdam for 1D; and F3 platform (1 nos)	18	28-Oct-21 A	10-Nov-21 A	11-Feb-22	11-Feb-22		
1-2334A	SE(STage 5) - Fabrication of concrete blks and deck (on-site)(S1,S3/CKRE)	75	08-Nov-21 A	24-Jan-22 A	08-Mar-22	08-Mar-22		
1-2334	SE(Stage 5) - Install F3 concrete block and decking for Portion 2 (S1,S3/CKRE)	60	02-Dec-21 A	19-Feb-22	22-Feb-22	12-Mar-22	18	6.00
1-2334B	SE(STage 5) - Fabrication of concrete blks and deck (on-site)(CKRW/S4)	65	25-Jan-22	21-Apr-22	29-Mar-22	28-Jun-22	48	

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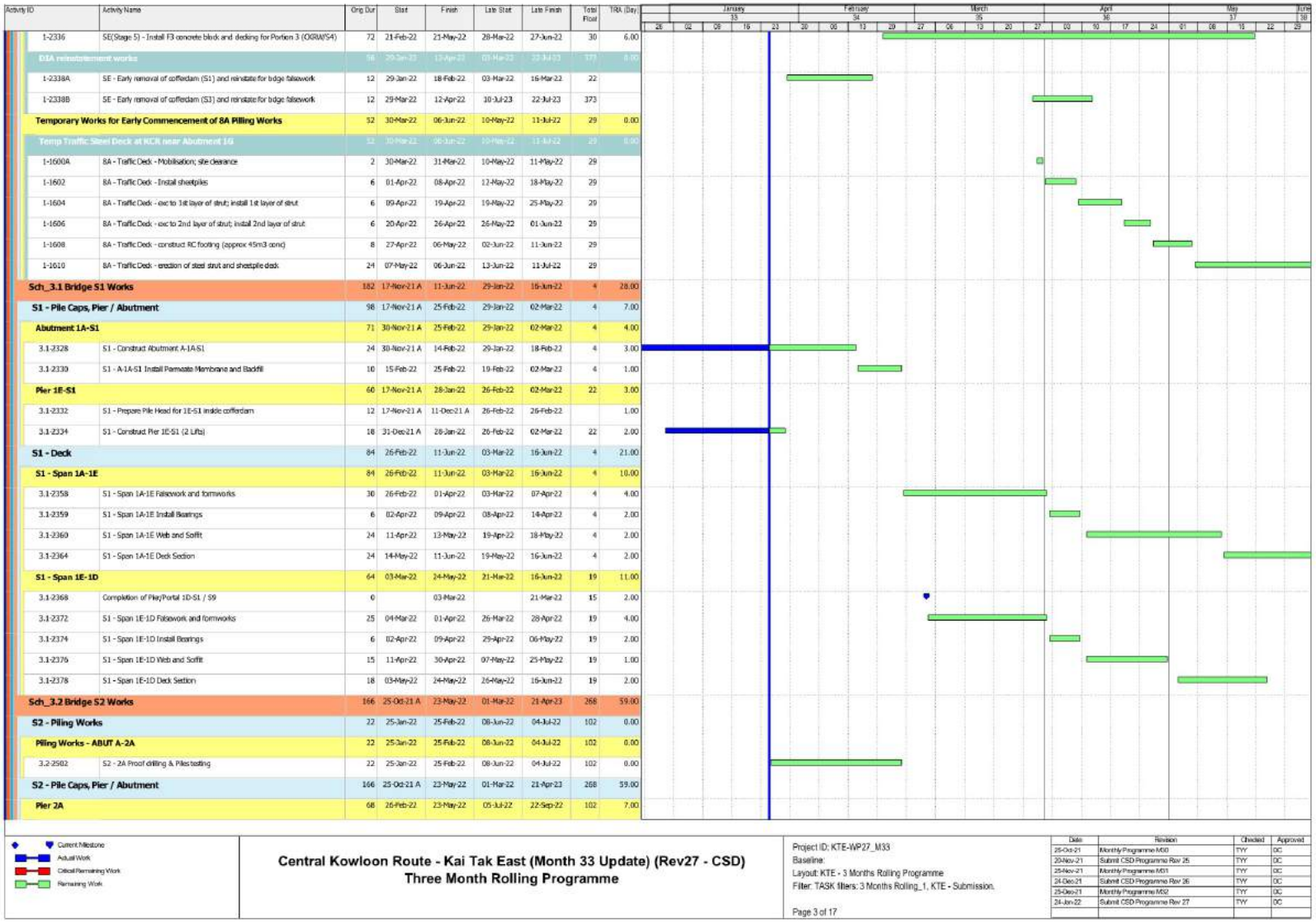
25-Oct-21	Monthly Programme M30	TYY	DC
20-Nov-21	Submit CSD Programme Rev 25	TYY	DC
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day
1-2336	SE(Stage 5) - Install F3 concrete block and decking for Portion 3 (OGRW/S4)	72	21-Feb-22	23-May-22	28-Mar-22	27-Jun-22	30	6.00
EIA reinstatement works		56	29-Jan-22	12-Apr-22	03-Mar-22	22-Jul-23	373	0.00
1-2338A	SE - Early removal of cofferdam (S1) and reinstate for bdge falsework	12	29-Jan-22	18-Feb-22	03-Mar-22	16-Mar-22	22	
1-2338B	SE - Early removal of cofferdam (S3) and reinstate for bdge falsework	12	29-Mar-22	12-Apr-22	10-Jul-23	22-Jul-23	373	
Temporary Works for Early Commencement of 8A Piling Works		52	30-Mar-22	06-Jun-22	10-May-22	11-Jul-22	29	0.00
Temp Traffic Steel Deck at KCR near Abutment 1G		52	30-Mar-22	06-Jun-22	10-May-22	11-Jul-22	29	0.00
1-1600A	8A - Traffic Deck - Mobilisation; site clearance	2	30-Mar-22	31-Mar-22	10-May-22	11-May-22	29	
1-1602	8A - Traffic Deck - Install sheetpiles	6	01-Apr-22	08-Apr-22	12-May-22	18-May-22	29	
1-1604	8A - Traffic Deck - exc to 1st layer of strut; install 1st layer of strut	6	09-Apr-22	19-Apr-22	19-May-22	25-May-22	29	
1-1606	8A - Traffic Deck - exc to 2nd layer of strut; install 2nd layer of strut	6	20-Apr-22	26-Apr-22	26-May-22	01-Jun-22	29	
1-1608	8A - Traffic Deck - construct RC footing (approx 45m3 conc)	8	27-Apr-22	06-May-22	02-Jun-22	11-Jun-22	29	
1-1610	8A - Traffic Deck - erection of steel strut and sheetpile deck	24	07-May-22	06-Jun-22	13-Jun-22	11-Jul-22	29	
Sch_3.1 Bridge S1 Works		182	17-Nov-21 A	11-Jun-22	29-Jan-22	16-Jun-22	4	28.00
S1 - Pile Caps, Pier / Abutment		98	17-Nov-21 A	25-Feb-22	29-Jan-22	02-Mar-22	4	7.00
Abutment 1A-S1		71	30-Nov-21 A	25-Feb-22	29-Jan-22	02-Mar-22	4	4.00
3.1-2328	S1 - Construct Abutment A-1A-S1	24	30-Nov-21 A	14-Feb-22	29-Jan-22	18-Feb-22	4	3.00
3.1-2330	S1 - A-1A-S1 Install Permeate Membrane and Backfill	10	15-Feb-22	25-Feb-22	19-Feb-22	02-Mar-22	4	1.00
Pier 1E-S1		60	17-Nov-21 A	28-Jan-22	26-Feb-22	02-Mar-22	22	3.00
3.1-2332	S1 - Prepare Pile Head for 1E-S1 inside cofferdam	12	17-Nov-21 A	11-Dec-21 A	26-Feb-22	26-Feb-22		1.00
3.1-2334	S1 - Construct Pier 1E-S1 (2 Lifts)	18	31-Dec-21 A	28-Jan-22	26-Feb-22	02-Mar-22	22	2.00
S1 - Deck		84	26-Feb-22	11-Jun-22	03-Mar-22	16-Jun-22	4	21.00
S1 - Span 1A-1E		84	26-Feb-22	11-Jun-22	03-Mar-22	16-Jun-22	4	10.00
3.1-2358	S1 - Span 1A-1E Falsework and formworks	30	26-Feb-22	01-Apr-22	03-Mar-22	07-Apr-22	4	4.00
3.1-2359	S1 - Span 1A-1E Install Bearings	6	02-Apr-22	09-Apr-22	08-Apr-22	14-Apr-22	4	2.00
3.1-2360	S1 - Span 1A-1E Web and Soffit	24	11-Apr-22	13-May-22	19-Apr-22	18-May-22	4	2.00
3.1-2364	S1 - Span 1A-1E Deck Section	24	14-May-22	11-Jun-22	19-May-22	16-Jun-22	4	2.00
S1 - Span 1E-1D		64	03-Mar-22	24-May-22	21-Mar-22	16-Jun-22	19	11.00
3.1-2368	Completion of Pier/Portal 1D-S1 / S9	0		03-Mar-22		21-Mar-22	15	2.00
3.1-2372	S1 - Span 1E-1D Falsework and formworks	25	04-Mar-22	01-Apr-22	26-Mar-22	28-Apr-22	19	4.00
3.1-2374	S1 - Span 1E-1D Install Bearings	6	02-Apr-22	09-Apr-22	29-Apr-22	06-May-22	19	2.00
3.1-2376	S1 - Span 1E-1D Web and Soffit	15	11-Apr-22	30-Apr-22	07-May-22	25-May-22	19	1.00
3.1-2378	S1 - Span 1E-1D Deck Section	18	03-May-22	24-May-22	26-May-22	16-Jun-22	19	2.00
Sch_3.2 Bridge S2 Works		166	25-Oct-21 A	23-May-22	01-Mar-22	21-Apr-23	268	59.00
S2 - Piling Works		22	25-Jan-22	25-Feb-22	08-Jun-22	04-Jul-22	102	0.00
Piling Works - ABUT A-2A		22	25-Jan-22	25-Feb-22	08-Jun-22	04-Jul-22	102	0.00
3.2-2502	S2 - 2A Proof drilling & Pile testing	22	25-Jan-22	25-Feb-22	08-Jun-22	04-Jul-22	102	0.00
S2 - Pile Caps, Pier / Abutment		166	25-Oct-21 A	23-May-22	01-Mar-22	21-Apr-23	268	59.00
Pier 2A		68	26-Feb-22	23-May-22	05-Jul-22	22-Sep-22	102	7.00

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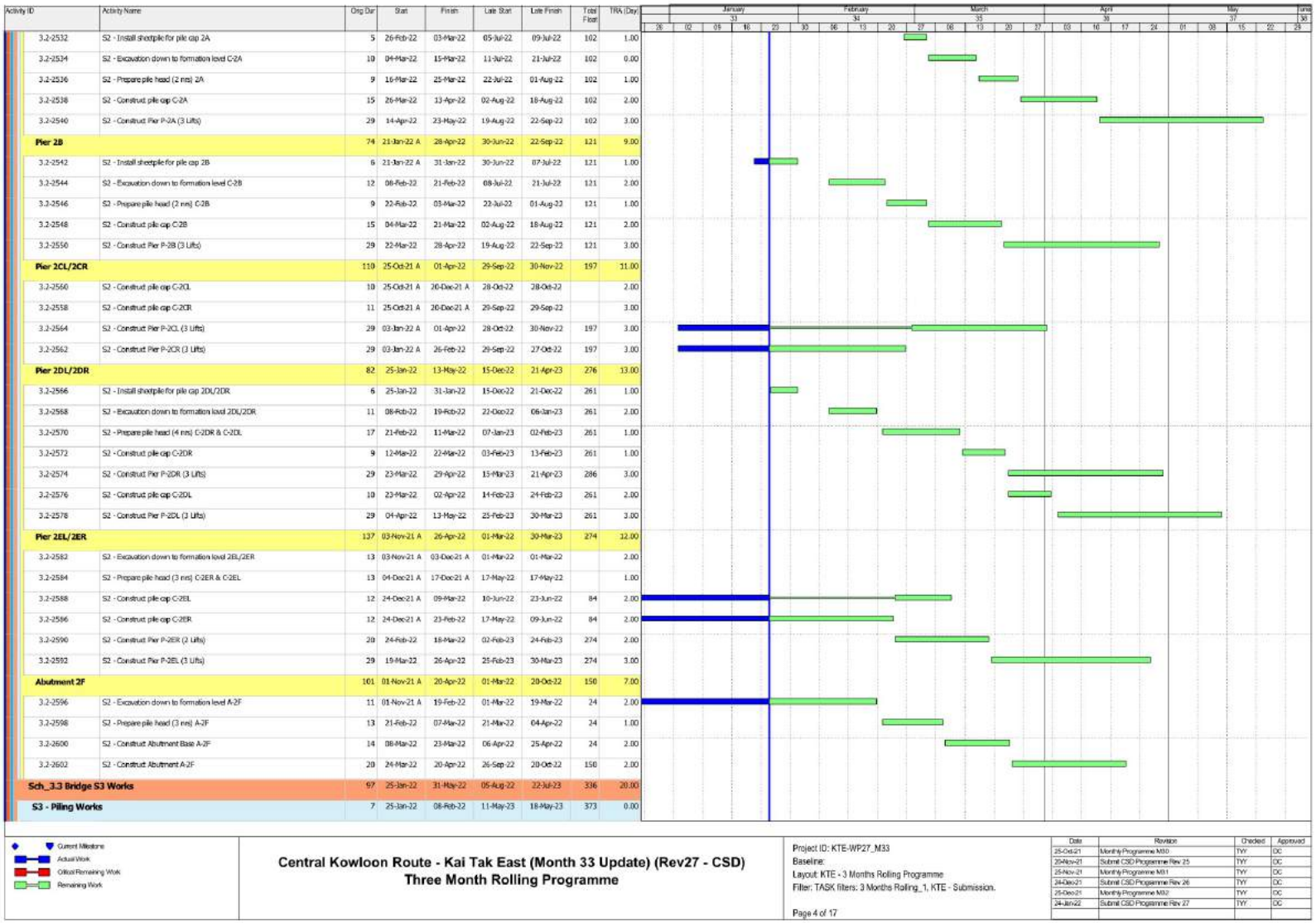
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
3.2-2532	S2 - Install sheetpile for pile cap 2A	5	26-Feb-22	03-Mar-22	05-Jul-22	09-Jul-22	102	1.00
3.2-2534	S2 - Excavation down to formation level C-2A	10	04-Mar-22	15-Mar-22	11-Jul-22	21-Jul-22	102	0.00
3.2-2536	S2 - Prepare pile head (2 nos) 2A	9	16-Mar-22	25-Mar-22	22-Jul-22	01-Aug-22	102	1.00
3.2-2538	S2 - Construct pile cap C-2A	15	26-Mar-22	13-Apr-22	02-Aug-22	18-Aug-22	102	2.00
3.2-2540	S2 - Construct Pier P-2A (3 Lifts)	29	14-Apr-22	23-May-22	19-Aug-22	22-Sep-22	102	3.00
Pier 2B		74	21-Jan-22 A	28-Apr-22	30-Jun-22	22-Sep-22	121	9.00
3.2-2542	S2 - Install sheetpile for pile cap 2B	6	21-Jan-22 A	31-Jan-22	30-Jun-22	07-Jul-22	121	1.00
3.2-2544	S2 - Excavation down to formation level C-2B	12	08-Feb-22	21-Feb-22	08-Jul-22	21-Jul-22	121	2.00
3.2-2546	S2 - Prepare pile head (2 nos) C-2B	9	22-Feb-22	03-Mar-22	22-Jul-22	01-Aug-22	121	1.00
3.2-2548	S2 - Construct pile cap C-2B	15	04-Mar-22	21-Mar-22	02-Aug-22	18-Aug-22	121	2.00
3.2-2550	S2 - Construct Pier P-2B (3 Lifts)	29	22-Mar-22	28-Apr-22	19-Aug-22	22-Sep-22	121	3.00
Pier 2CL/2CR		110	25-Oct-21 A	01-Apr-22	29-Sep-22	30-Nov-22	197	11.00
3.2-2560	S2 - Construct pile cap C-2CL	10	25-Oct-21 A	20-Dec-21 A	28-Oct-22	28-Oct-22		2.00
3.2-2558	S2 - Construct pile cap C-2CR	11	25-Oct-21 A	20-Dec-21 A	29-Sep-22	29-Sep-22		3.00
3.2-2564	S2 - Construct Pier P-2CL (3 Lifts)	29	03-Jan-22 A	01-Apr-22	28-Oct-22	30-Nov-22	197	3.00
3.2-2562	S2 - Construct Pier P-2CR (3 Lifts)	29	03-Jan-22 A	26-Feb-22	29-Sep-22	27-Oct-22	197	3.00
Pier 2DL/2DR		82	25-Jan-22	13-May-22	15-Dec-22	21-Apr-23	276	13.00
3.2-2566	S2 - Install sheetpile for pile cap 2DL/2DR	6	25-Jan-22	31-Jan-22	15-Dec-22	21-Dec-22	261	1.00
3.2-2568	S2 - Excavation down to formation level 2DL/2DR	11	08-Feb-22	19-Feb-22	22-Dec-22	06-Jan-23	261	2.00
3.2-2570	S2 - Prepare pile head (4 nos) C-2DR & C-2DL	17	21-Feb-22	11-Mar-22	07-Jan-23	02-Feb-23	261	1.00
3.2-2572	S2 - Construct pile cap C-2DR	9	12-Mar-22	22-Mar-22	03-Feb-23	13-Feb-23	261	1.00
3.2-2574	S2 - Construct Pier P-2DR (3 Lifts)	29	23-Mar-22	29-Apr-22	15-Mar-23	21-Apr-23	286	3.00
3.2-2576	S2 - Construct pile cap C-2DL	10	23-Mar-22	02-Apr-22	14-Feb-23	24-Feb-23	261	2.00
3.2-2578	S2 - Construct Pier P-2DL (3 Lifts)	29	04-Apr-22	13-May-22	25-Feb-23	30-Mar-23	261	3.00
Pier 2EL/2ER		137	03-Nov-21 A	26-Apr-22	01-Mar-22	30-Mar-23	274	12.00
3.2-2582	S2 - Excavation down to formation level 2EL/2ER	13	03-Nov-21 A	03-Dec-21 A	01-Mar-22	01-Mar-22		2.00
3.2-2584	S2 - Prepare pile head (3 nos) C-2ER & C-2EL	13	04-Dec-21 A	17-Dec-21 A	17-May-22	17-May-22		1.00
3.2-2588	S2 - Construct pile cap C-2EL	12	24-Dec-21 A	09-Mar-22	10-Jun-22	23-Jun-22	84	2.00
3.2-2586	S2 - Construct pile cap C-2ER	12	24-Dec-21 A	23-Feb-22	17-May-22	09-Jun-22	84	2.00
3.2-2590	S2 - Construct Pier P-2ER (2 Lifts)	20	24-Feb-22	18-Mar-22	02-Feb-23	24-Feb-23	274	2.00
3.2-2592	S2 - Construct Pier P-2EL (3 Lifts)	29	19-Mar-22	26-Apr-22	25-Feb-23	30-Mar-23	274	3.00
Abutment 2F		101	01-Nov-21 A	20-Apr-22	01-Mar-22	20-Oct-22	150	7.00
3.2-2596	S2 - Excavation down to formation level A-2F	11	01-Nov-21 A	19-Feb-22	01-Mar-22	19-Mar-22	24	2.00
3.2-2598	S2 - Prepare pile head (3 nos) A-2F	13	21-Feb-22	07-Mar-22	21-Mar-22	04-Apr-22	24	1.00
3.2-2600	S2 - Construct Abutment Base A-2F	14	08-Mar-22	23-Mar-22	06-Apr-22	25-Apr-22	24	2.00
3.2-2602	S2 - Construct Abutment A-2F	20	24-Mar-22	20-Apr-22	26-Sep-22	20-Oct-22	150	2.00
Sch_3.3 Bridge S3 Works		97	25-Jan-22	31-May-22	05-Aug-22	22-Jul-23	336	20.00
S3 - Piling Works		7	25-Jan-22	08-Feb-22	11-May-23	18-May-23	373	0.00

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25-Dec-21	Monthly Programme M32	TYY	DC
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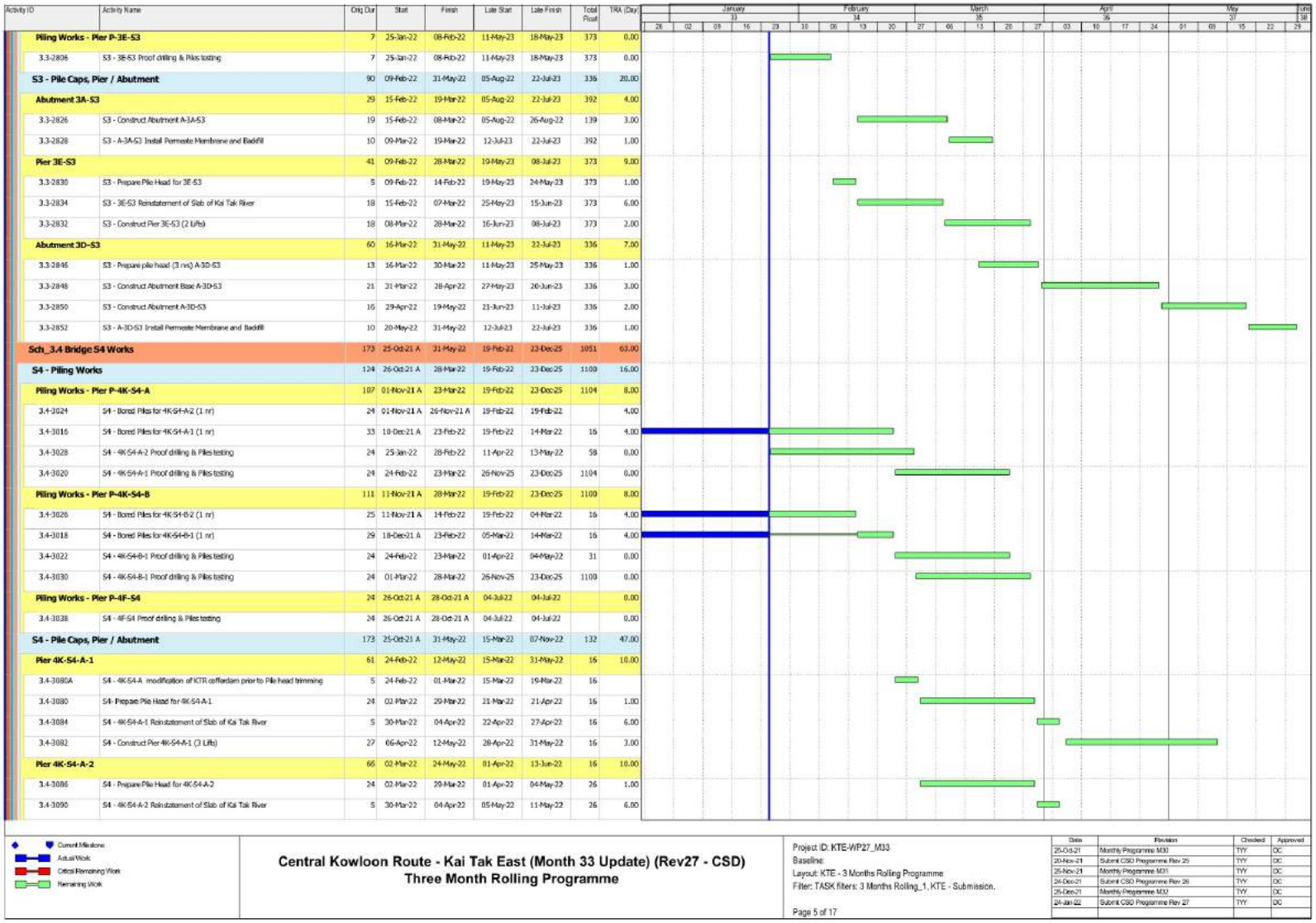

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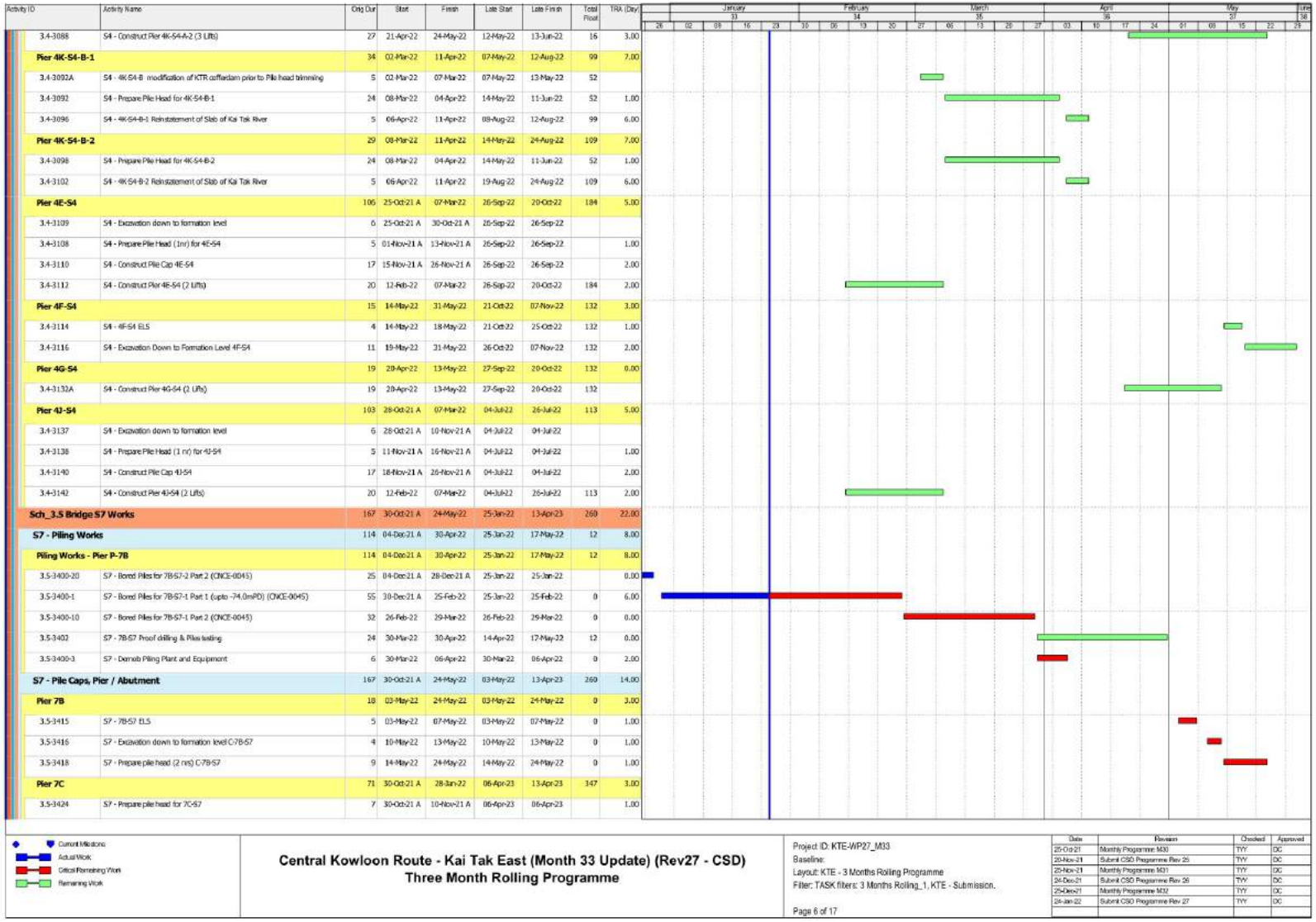
Piling Works - Pier P-3E-S3		7	25-Jan-22	08-Feb-22	11-May-23	18-May-23	373	0.00
3.3-2806	S3 - 3E-S3 Proof drilling & Piles testing	7	25-Jan-22	08-Feb-22	11-May-23	18-May-23	373	0.00
S3 - Pile Caps, Pier / Abutment		90	09-Feb-22	31-May-22	05-Aug-22	22-Jul-23	336	20.00
Abutment 3A-S3		29	15-Feb-22	19-Mar-22	05-Aug-22	22-Jul-23	392	4.00
3.3-2826	S3 - Construct Abutment A-3A-S3	19	15-Feb-22	08-Mar-22	05-Aug-22	26-Aug-22	139	3.00
3.3-2828	S3 - A-3A-S3 Install Permeate Membrane and Backfill	10	09-Mar-22	19-Mar-22	12-Jul-23	22-Jul-23	392	1.00
Pier 3E-S3		41	09-Feb-22	28-Mar-22	19-May-23	08-Jul-23	373	9.00
3.3-2830	S3 - Prepare Pile Head for 3E-S3	5	09-Feb-22	14-Feb-22	19-May-23	24-May-23	373	1.00
3.3-2834	S3 - 3E-S3 Reinstatement of Slab of Kai Tak River	18	15-Feb-22	07-Mar-22	25-May-23	15-Jun-23	373	6.00
3.3-2832	S3 - Construct Pier 3E-S3 (2 Lifts)	18	08-Mar-22	28-Mar-22	16-Jun-23	08-Jul-23	373	2.00
Abutment 3D-S3		60	16-Mar-22	31-May-22	11-May-23	22-Jul-23	336	7.00
3.3-2846	S3 - Prepare pile head (3 nos) A-3D-S3	13	16-Mar-22	30-Mar-22	11-May-23	25-May-23	336	1.00
3.3-2848	S3 - Construct Abutment Base A-3D-S3	21	31-Mar-22	28-Apr-22	27-May-23	26-Jun-23	336	3.00
3.3-2850	S3 - Construct Abutment A-3D-S3	16	29-Apr-22	19-May-22	21-Jun-23	11-Jul-23	336	2.00
3.3-2852	S3 - A-3D-S3 Install Permeate Membrane and Backfill	10	20-May-22	31-May-22	12-Jul-23	22-Jul-23	336	1.00
Sch_3.4 Bridge S4 Works		173	25-Oct-21 A	31-May-22	19-Feb-22	23-Dec-25	1051	63.00
S4 - Piling Works		124	26-Oct-21 A	28-Mar-22	19-Feb-22	23-Dec-25	1100	16.00
Piling Works - Pier P-4K-S4-A		107	01-Nov-21 A	23-Mar-22	19-Feb-22	23-Dec-25	1104	8.00
3.4-3024	S4 - Bored Piles for 4K-S4-A-2 (1 nr)	24	01-Nov-21 A	26-Nov-21 A	19-Feb-22	19-Feb-22		4.00
3.4-3016	S4 - Bored Piles for 4K-S4-A-1 (1 nr)	33	10-Dec-21 A	23-Feb-22	19-Feb-22	14-Mar-22	16	4.00
3.4-3028	S4 - 4K-S4-A-2 Proof drilling & Piles testing	24	25-Jan-22	28-Feb-22	11-Apr-22	13-May-22	58	0.00
3.4-3020	S4 - 4K-S4-A-1 Proof drilling & Piles testing	24	24-Feb-22	23-Mar-22	26-Nov-25	23-Dec-25	1104	0.00
Piling Works - Pier P-4K-S4-B		111	11-Nov-21 A	28-Mar-22	19-Feb-22	23-Dec-25	1100	8.00
3.4-3026	S4 - Bored Piles for 4K-S4-B-2 (1 nr)	25	11-Nov-21 A	14-Feb-22	19-Feb-22	04-Mar-22	16	4.00
3.4-3018	S4 - Bored Piles for 4K-S4-B-1 (1 nr)	29	18-Dec-21 A	23-Feb-22	05-Mar-22	14-Mar-22	16	4.00
3.4-3022	S4 - 4K-S4-B-1 Proof drilling & Piles testing	24	24-Feb-22	23-Mar-22	01-Apr-22	04-May-22	31	0.00
3.4-3030	S4 - 4K-S4-B-1 Proof drilling & Piles testing	24	01-Mar-22	28-Mar-22	26-Nov-25	23-Dec-25	1100	0.00
Piling Works - Pier P-4F-S4		24	26-Oct-21 A	28-Oct-21 A	04-Jul-22	04-Jul-22		0.00
3.4-3038	S4 - 4F-S4 Proof drilling & Piles testing	24	26-Oct-21 A	28-Oct-21 A	04-Jul-22	04-Jul-22		0.00
S4 - Pile Caps, Pier / Abutment		173	25-Oct-21 A	31-May-22	15-Mar-22	07-Nov-22	132	47.00
Pier 4K-S4-A-1		61	24-Feb-22	12-May-22	15-Mar-22	31-May-22	16	10.00
3.4-3080A	S4 - 4K-S4-A modification of KTR cofferdam prior to Pile head trimming	5	24-Feb-22	01-Mar-22	15-Mar-22	19-Mar-22	16	
3.4-3080	S4- Prepare Pile Head for 4K-S4-A-1	24	02-Mar-22	29-Mar-22	21-Mar-22	21-Apr-22	16	1.00
3.4-3084	S4 - 4K-S4-A-1 Reinstatement of Slab of Kai Tak River	5	30-Mar-22	04-Apr-22	22-Apr-22	27-Apr-22	16	6.00
3.4-3082	S4 - Construct Pier 4K-S4-A-1 (3 Lifts)	27	06-Apr-22	12-May-22	28-Apr-22	31-May-22	16	3.00
Pier 4K-S4-A-2		66	02-Mar-22	24-May-22	01-Apr-22	13-Jun-22	16	10.00
3.4-3086	S4 - Prepare Pile Head for 4K-S4-A-2	24	02-Mar-22	29-Mar-22	01-Apr-22	04-May-22	26	1.00
3.4-3090	S4 - 4K-S4-A-2 Reinstatement of Slab of Kai Tak River	5	30-Mar-22	04-Apr-22	05-May-22	11-May-22	26	6.00



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
3.4-3088	S4 - Construct Pier 4K-S4-A-2 (3 Lifts)	27	21-Apr-22	24-May-22	12-May-22	13-Jun-22	16	3.00
Pier 4K-S4-B-1		34	02-Mar-22	11-Apr-22	07-May-22	12-Aug-22	99	7.00
3.4-3092A	S4 - 4K-S4-B modification of KTR cofferdam prior to Pile head trimming	5	02-Mar-22	07-Mar-22	07-May-22	13-May-22	52	
3.4-3092	S4 - Prepare Pile Head for 4K-S4-B-1	24	08-Mar-22	04-Apr-22	14-May-22	11-Jun-22	52	1.00
3.4-3096	S4 - 4K-S4-B-1 Reinstatement of Slab of Kai Tak River	5	06-Apr-22	11-Apr-22	08-Aug-22	12-Aug-22	99	6.00
Pier 4K-S4-B-2		29	08-Mar-22	11-Apr-22	14-May-22	24-Aug-22	109	7.00
3.4-3098	S4 - Prepare Pile Head for 4K-S4-B-2	24	08-Mar-22	04-Apr-22	14-May-22	11-Jun-22	52	1.00
3.4-3102	S4 - 4K-S4-B-2 Reinstatement of Slab of Kai Tak River	5	06-Apr-22	11-Apr-22	19-Aug-22	24-Aug-22	109	6.00
Pier 4E-S4		106	25-Oct-21 A	07-Mar-22	26-Sep-22	20-Oct-22	184	5.00
3.4-3109	S4 - Excavation down to formation level	6	25-Oct-21 A	30-Oct-21 A	26-Sep-22	26-Sep-22		
3.4-3108	S4 - Prepare Pile Head (1nr) for 4E-S4	5	01-Nov-21 A	13-Nov-21 A	26-Sep-22	26-Sep-22		1.00
3.4-3110	S4 - Construct Pile Cap 4E-S4	17	15-Nov-21 A	26-Nov-21 A	26-Sep-22	26-Sep-22		2.00
3.4-3112	S4 - Construct Pier 4E-S4 (2 Lifts)	20	12-Feb-22	07-Mar-22	26-Sep-22	20-Oct-22	184	2.00
Pier 4F-S4		15	14-May-22	31-May-22	21-Oct-22	07-Nov-22	132	3.00
3.4-3114	S4 - 4F-S4 ELS	4	14-May-22	18-May-22	21-Oct-22	25-Oct-22	132	1.00
3.4-3116	S4 - Excavation Down to Formation Level 4F-S4	11	19-May-22	31-May-22	26-Oct-22	07-Nov-22	132	2.00
Pier 4G-S4		19	20-Apr-22	13-May-22	27-Sep-22	20-Oct-22	132	0.00
3.4-3132A	S4 - Construct Pier 4G-S4 (2 Lifts)	19	20-Apr-22	13-May-22	27-Sep-22	20-Oct-22	132	
Pier 4J-S4		103	28-Oct-21 A	07-Mar-22	04-Jul-22	26-Jul-22	113	5.00
3.4-3137	S4 - Excavation down to formation level	6	28-Oct-21 A	10-Nov-21 A	04-Jul-22	04-Jul-22		
3.4-3138	S4 - Prepare Pile Head (1 nr) for 4J-S4	5	11-Nov-21 A	16-Nov-21 A	04-Jul-22	04-Jul-22		1.00
3.4-3140	S4 - Construct Pile Cap 4J-S4	17	18-Nov-21 A	26-Nov-21 A	04-Jul-22	04-Jul-22		2.00
3.4-3142	S4 - Construct Pier 4J-S4 (2 Lifts)	20	12-Feb-22	07-Mar-22	04-Jul-22	26-Jul-22	113	2.00
Sch_3.5 Bridge S7 Works		167	30-Oct-21 A	24-May-22	25-Jan-22	13-Apr-23	260	22.00
S7 - Piling Works		114	04-Dec-21 A	30-Apr-22	25-Jan-22	17-May-22	12	8.00
Piling Works - Pier P-7B		114	04-Dec-21 A	30-Apr-22	25-Jan-22	17-May-22	12	8.00
3.5-3400-20	S7 - Bored Piles for 7B-S7-2 Part 2 (CNCE-0045)	25	04-Dec-21 A	28-Dec-21 A	25-Jan-22	25-Jan-22		0.00
3.5-3400-1	S7 - Bored Piles for 7B-S7-1 Part 1 (upto -74.0mPD) (CNCE-0045)	55	30-Dec-21 A	25-Feb-22	25-Jan-22	25-Feb-22	0	6.00
3.5-3400-10	S7 - Bored Piles for 7B-S7-1 Part 2 (CNCE-0045)	32	26-Feb-22	29-Mar-22	26-Feb-22	29-Mar-22	0	0.00
3.5-3402	S7 - 7B-S7 Proof drilling & Piles testing	24	30-Mar-22	30-Apr-22	14-Apr-22	17-May-22	12	0.00
3.5-3400-3	S7 - Demob Piling Plant and Equipment	6	30-Mar-22	06-Apr-22	30-Mar-22	06-Apr-22	0	2.00
S7 - Pile Caps, Pier / Abutment		167	30-Oct-21 A	24-May-22	03-May-22	13-Apr-23	260	14.00
Pier 7B		18	03-May-22	24-May-22	03-May-22	24-May-22	0	3.00
3.5-3415	S7 - 7B-S7 ELS	5	03-May-22	07-May-22	03-May-22	07-May-22	0	1.00
3.5-3416	S7 - Excavation down to formation level C-7B-S7	4	10-May-22	13-May-22	10-May-22	13-May-22	0	1.00
3.5-3418	S7 - Prepare pile head (2 nrs) C-7B-S7	9	14-May-22	24-May-22	14-May-22	24-May-22	0	1.00
Pier 7C		71	30-Oct-21 A	28-Jun-22	06-Apr-23	13-Apr-23	347	3.00
3.5-3424	S7 - Prepare pile head for 7C-S7	7	30-Oct-21 A	10-Nov-21 A	06-Apr-23	06-Apr-23		1.00

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Central Kowloon Route - Kai Tak East (Month 33 Update) (Rev27 - CSD)
Three Month Rolling Programme

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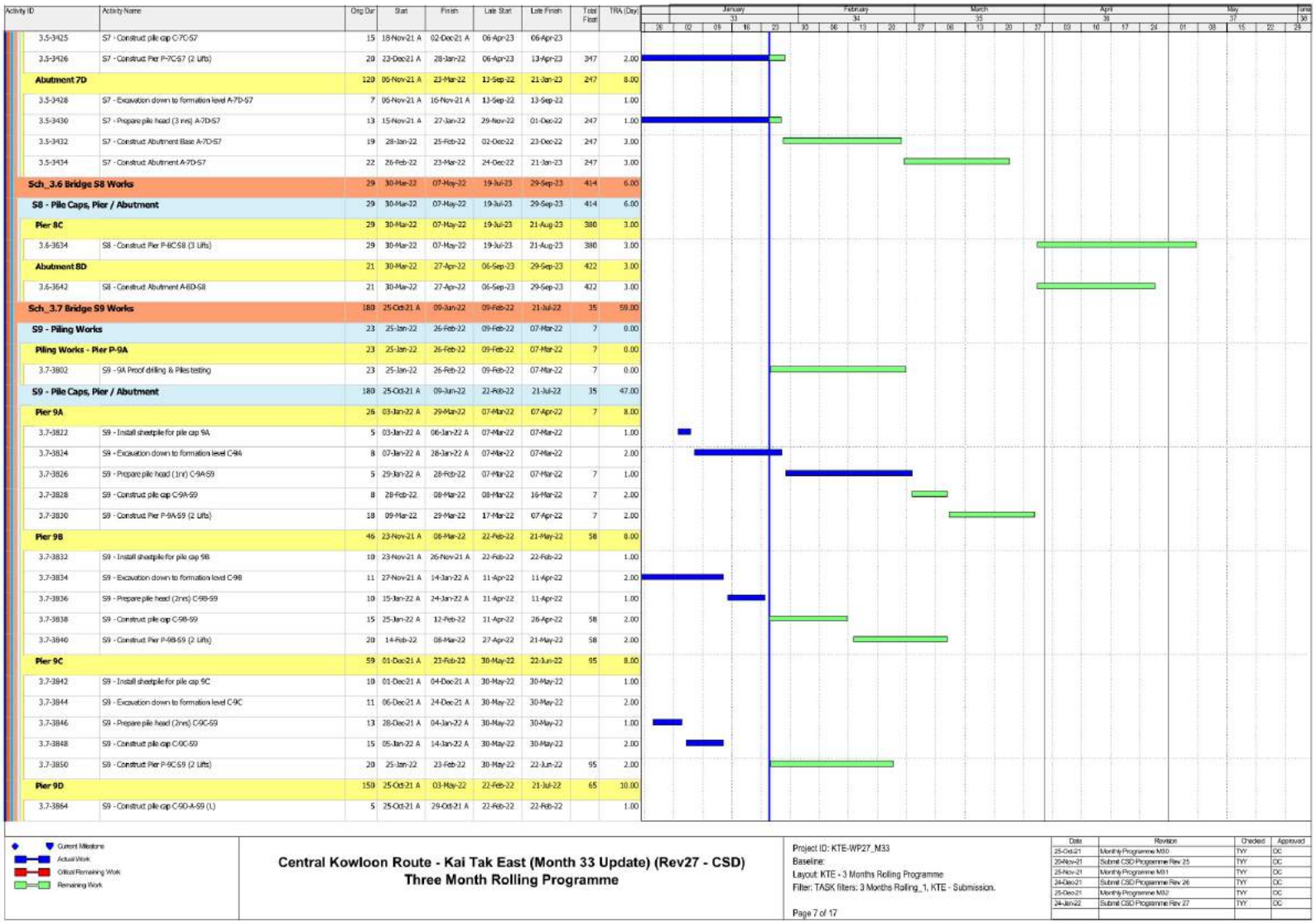
25-Oct-21	Monthly Programme M30	TYY	DC
20-Nov-21	Submit CSD Programme Rev 25	TYY	DC
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
3.5-3425	S7 - Construct pile cap C-7C-S7	15	18-Nov-21 A	02-Dec-21 A	06-Apr-23	06-Apr-23		
3.5-3426	S7 - Construct Pier P-7C-S7 (2 Lifts)	20	23-Dec-21 A	28-Jan-22	06-Apr-23	13-Apr-23	347	2.00
Abutment 7D		120	06-Nov-21 A	23-Mar-22	13-Sep-22	21-Jan-23	247	8.00
3.5-3428	S7 - Excavation down to formation level A-7D-S7	7	06-Nov-21 A	16-Nov-21 A	13-Sep-22	13-Sep-22		1.00
3.5-3430	S7 - Prepare pile head (3 nos) A-7D-S7	13	15-Nov-21 A	27-Jan-22	29-Nov-22	01-Dec-22	247	1.00
3.5-3432	S7 - Construct Abutment Base A-7D-S7	19	28-Jan-22	25-Feb-22	02-Dec-22	23-Dec-22	247	3.00
3.5-3434	S7 - Construct Abutment A-7D-S7	22	26-Feb-22	23-Mar-22	24-Dec-22	21-Jan-23	247	3.00
Sch_3.6 Bridge S8 Works		29	30-Mar-22	07-May-22	19-Jul-23	29-Sep-23	414	6.00
S8 - Pile Caps, Pier / Abutment		29	30-Mar-22	07-May-22	19-Jul-23	29-Sep-23	414	6.00
Pier 8C		29	30-Mar-22	07-May-22	19-Jul-23	21-Aug-23	380	3.00
3.6-3634	S8 - Construct Pier P-8C-S8 (3 Lifts)	29	30-Mar-22	07-May-22	19-Jul-23	21-Aug-23	380	3.00
Abutment 8D		21	30-Mar-22	27-Apr-22	06-Sep-23	29-Sep-23	422	3.00
3.6-3642	S8 - Construct Abutment A-8D-S8	21	30-Mar-22	27-Apr-22	06-Sep-23	29-Sep-23	422	3.00
Sch_3.7 Bridge S9 Works		180	25-Oct-21 A	09-Jun-22	09-Feb-22	21-Jul-22	35	59.00
S9 - Piling Works		23	25-Jan-22	26-Feb-22	09-Feb-22	07-Mar-22	7	0.00
Piling Works - Pier P-9A		23	25-Jan-22	26-Feb-22	09-Feb-22	07-Mar-22	7	0.00
3.7-3802	S9 - 9A Proof drilling & Piles testing	23	25-Jan-22	26-Feb-22	09-Feb-22	07-Mar-22	7	0.00
S9 - Pile Caps, Pier / Abutment		180	25-Oct-21 A	09-Jun-22	22-Feb-22	21-Jul-22	35	47.00
Pier 9A		26	03-Jan-22 A	29-Mar-22	07-Mar-22	07-Apr-22	7	8.00
3.7-3822	S9 - Install sheetpile for pile cap 9A	5	03-Jan-22 A	06-Jan-22 A	07-Mar-22	07-Mar-22		1.00
3.7-3824	S9 - Excavation down to formation level C-9A	8	07-Jan-22 A	28-Jan-22 A	07-Mar-22	07-Mar-22		2.00
3.7-3826	S9 - Prepare pile head (1nr) C-9A-S9	5	29-Jan-22 A	28-Feb-22	07-Mar-22	07-Mar-22	7	1.00
3.7-3828	S9 - Construct pile cap C-9A-S9	8	28-Feb-22	08-Mar-22	08-Mar-22	16-Mar-22	7	2.00
3.7-3830	S9 - Construct Pier P-9A-S9 (2 Lifts)	18	09-Mar-22	29-Mar-22	17-Mar-22	07-Apr-22	7	2.00
Pier 9B		46	23-Nov-21 A	08-Mar-22	22-Feb-22	21-May-22	58	8.00
3.7-3832	S9 - Install sheetpile for pile cap 9B	10	23-Nov-21 A	26-Nov-21 A	22-Feb-22	22-Feb-22		1.00
3.7-3834	S9 - Excavation down to formation level C-9B	11	27-Nov-21 A	14-Jan-22 A	11-Apr-22	11-Apr-22		2.00
3.7-3836	S9 - Prepare pile head (2nrs) C-9B-S9	10	15-Jan-22 A	24-Jan-22 A	11-Apr-22	11-Apr-22		1.00
3.7-3838	S9 - Construct pile cap C-9B-S9	15	25-Jan-22 A	12-Feb-22	11-Apr-22	26-Apr-22	58	2.00
3.7-3840	S9 - Construct Pier P-9B-S9 (2 Lifts)	20	14-Feb-22	08-Mar-22	27-Apr-22	21-May-22	58	2.00
Pier 9C		59	01-Dec-21 A	23-Feb-22	30-May-22	22-Jun-22	95	8.00
3.7-3842	S9 - Install sheetpile for pile cap 9C	10	01-Dec-21 A	04-Dec-21 A	30-May-22	30-May-22		1.00
3.7-3844	S9 - Excavation down to formation level C-9C	11	06-Dec-21 A	24-Dec-21 A	30-May-22	30-May-22		2.00
3.7-3846	S9 - Prepare pile head (2nrs) C-9C-S9	13	28-Dec-21 A	04-Jan-22 A	30-May-22	30-May-22		1.00
3.7-3848	S9 - Construct pile cap C-9C-S9	15	05-Jan-22 A	14-Jan-22 A	30-May-22	30-May-22		2.00
3.7-3850	S9 - Construct Pier P-9C-S9 (2 Lifts)	20	25-Jan-22	23-Feb-22	30-May-22	22-Jun-22	95	2.00
Pier 9D		150	25-Oct-21 A	03-May-22	22-Feb-22	21-Jul-22	65	10.00
3.7-3864	S9 - Construct pile cap C-9D-A-S9 (L)	5	25-Oct-21 A	29-Oct-21 A	22-Feb-22	22-Feb-22		1.00

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25-Oct-21	Monthly Programme M30	TYY	DC
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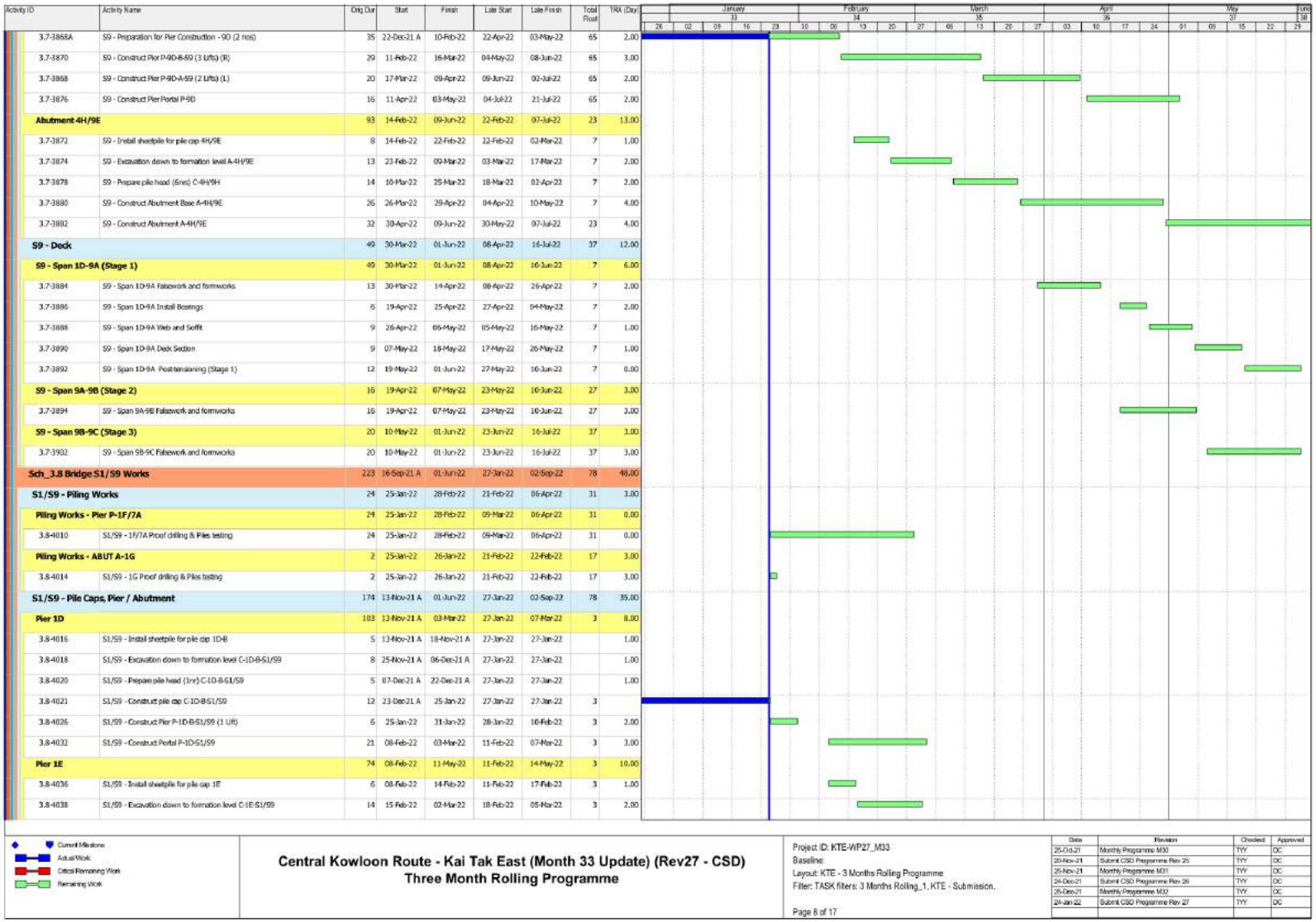
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
3.7-3868A	S9 - Preparation for Pier Construction - 9D (2 nos)	35	22-Dec-21 A	10-Feb-22	22-Apr-22	03-May-22	65	2.00
3.7-3870	S9 - Construct Pier P-9D-B-S9 (3 Lifts) (R)	29	11-Feb-22	16-Mar-22	04-May-22	08-Jun-22	65	3.00
3.7-3868	S9 - Construct Pier P-9D-A-S9 (2 Lifts) (L)	20	17-Mar-22	09-Apr-22	09-Jun-22	02-Jul-22	65	2.00
3.7-3876	S9 - Construct Pier Portal P-9D	16	11-Apr-22	03-May-22	04-Jul-22	21-Jul-22	65	2.00
Abutment 4H/9E		93	14-Feb-22	09-Jun-22	22-Feb-22	07-Jul-22	23	13.00
3.7-3872	S9 - Install sheetpile for pile cap 4H/9E	8	14-Feb-22	22-Feb-22	22-Feb-22	02-Mar-22	7	1.00
3.7-3874	S9 - Excavation down to formation level A-4H/9E	13	23-Feb-22	09-Mar-22	03-Mar-22	17-Mar-22	7	2.00
3.7-3878	S9 - Prepare pile head (6nos) C-4H/9H	14	10-Mar-22	25-Mar-22	18-Mar-22	02-Apr-22	7	2.00
3.7-3880	S9 - Construct Abutment Base A-4H/9E	26	26-Mar-22	29-Apr-22	04-Apr-22	10-May-22	7	4.00
3.7-3882	S9 - Construct Abutment A-4H/9E	32	30-Apr-22	09-Jun-22	30-May-22	07-Jul-22	23	4.00
S9 - Deck		49	30-Mar-22	01-Jun-22	08-Apr-22	16-Jul-22	37	12.00
S9 - Span 1D-9A (Stage 1)		49	30-Mar-22	01-Jun-22	08-Apr-22	16-Jun-22	7	6.00
3.7-3884	S9 - Span 1D-9A Falsework and formworks	13	30-Mar-22	14-Apr-22	08-Apr-22	26-Apr-22	7	2.00
3.7-3886	S9 - Span 1D-9A Install Bearings	6	19-Apr-22	25-Apr-22	27-Apr-22	04-May-22	7	2.00
3.7-3888	S9 - Span 1D-9A Web and Soffit	9	26-Apr-22	06-May-22	05-May-22	16-May-22	7	1.00
3.7-3890	S9 - Span 1D-9A Deck Section	9	07-May-22	18-May-22	17-May-22	26-May-22	7	1.00
3.7-3892	S9 - Span 1D-9A Post-tensioning (Stage 1)	12	19-May-22	01-Jun-22	27-May-22	10-Jun-22	7	0.00
S9 - Span 9A-9B (Stage 2)		16	19-Apr-22	07-May-22	23-May-22	10-Jun-22	27	3.00
3.7-3894	S9 - Span 9A-9B Falsework and formworks	16	19-Apr-22	07-May-22	23-May-22	10-Jun-22	27	3.00
S9 - Span 9B-9C (Stage 3)		20	10-May-22	01-Jun-22	23-Jun-22	16-Jul-22	37	3.00
3.7-3902	S9 - Span 9B-9C Falsework and formworks	20	10-May-22	01-Jun-22	23-Jun-22	16-Jul-22	37	3.00
Sch_3.8 Bridge S1/S9 Works		223	16-Sep-21 A	01-Jun-22	27-Jan-22	02-Sep-22	78	48.00
S1/S9 - Piling Works		24	25-Jan-22	28-Feb-22	21-Feb-22	06-Apr-22	31	3.00
Piling Works - Pier P-1F/7A		24	25-Jan-22	28-Feb-22	09-Mar-22	06-Apr-22	31	0.00
3.8-4010	S1/S9 - 1F/7A Proof drilling & Piles testing	24	25-Jan-22	28-Feb-22	09-Mar-22	06-Apr-22	31	0.00
Piling Works - ABUT A-1G		2	25-Jan-22	26-Jan-22	21-Feb-22	22-Feb-22	17	3.00
3.8-4014	S1/S9 - 1G Proof drilling & Piles testing	2	25-Jan-22	26-Jan-22	21-Feb-22	22-Feb-22	17	3.00
S1/S9 - Pile Caps, Pier / Abutment		174	13-Nov-21 A	01-Jun-22	27-Jan-22	02-Sep-22	78	35.00
Pier 1D		103	13-Nov-21 A	03-Mar-22	27-Jan-22	07-Mar-22	3	8.00
3.8-4016	S1/S9 - Install sheetpile for pile cap 1D-B	5	13-Nov-21 A	18-Nov-21 A	27-Jan-22	27-Jan-22		1.00
3.8-4018	S1/S9 - Excavation down to formation level C-1D-B-S1/S9	8	25-Nov-21 A	06-Dec-21 A	27-Jan-22	27-Jan-22		1.00
3.8-4020	S1/S9 - Prepare pile head (1nr) C-1D-B-S1/S9	5	07-Dec-21 A	22-Dec-21 A	27-Jan-22	27-Jan-22		1.00
3.8-4021	S1/S9 - Construct pile cap C-1D-B-S1/S9	12	23-Dec-21 A	25-Jan-22	27-Jan-22	27-Jan-22	3	
3.8-4026	S1/S9 - Construct Pier P-1D-B-S1/S9 (1 Lift)	6	25-Jan-22	31-Jan-22	28-Jan-22	16-Feb-22	3	2.00
3.8-4032	S1/S9 - Construct Portal P-1D-S1/S9	21	08-Feb-22	03-Mar-22	11-Feb-22	07-Mar-22	3	3.00
Pier 1E		74	08-Feb-22	11-May-22	11-Feb-22	14-May-22	3	10.00
3.8-4036	S1/S9 - Install sheetpile for pile cap 1E	6	08-Feb-22	14-Feb-22	11-Feb-22	17-Feb-22	3	1.00
3.8-4038	S1/S9 - Excavation down to formation level C-1E-S1/S9	14	15-Feb-22	02-Mar-22	18-Feb-22	05-Mar-22	3	2.00

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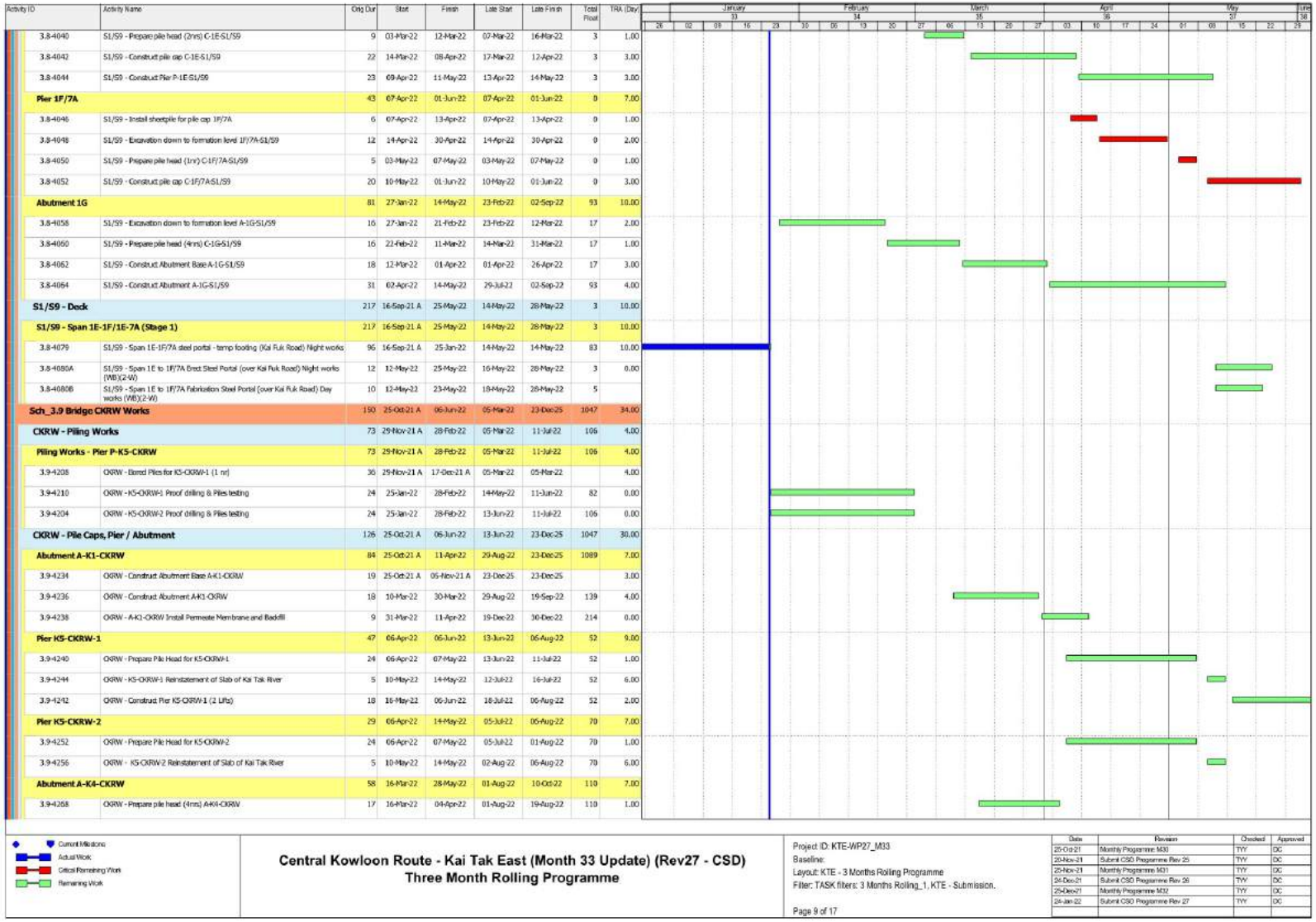
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
3.8-4040	S1/S9 - Prepare pile head (2nrs) C-1E-S1/S9	9	03-Mar-22	12-Mar-22	07-Mar-22	16-Mar-22	3	1.00
3.8-4042	S1/S9 - Construct pile cap C-1E-S1/S9	22	14-Mar-22	08-Apr-22	17-Mar-22	12-Apr-22	3	3.00
3.8-4044	S1/S9 - Construct Pier P-1E-S1/S9	23	09-Apr-22	11-May-22	13-Apr-22	14-May-22	3	3.00
Pier 1F/7A		43	07-Apr-22	01-Jun-22	07-Apr-22	01-Jun-22	0	7.00
3.8-4046	S1/S9 - Install sheetpile for pile cap 1F/7A	6	07-Apr-22	13-Apr-22	07-Apr-22	13-Apr-22	0	1.00
3.8-4048	S1/S9 - Excavation down to formation level 1F/7A-S1/S9	12	14-Apr-22	30-Apr-22	14-Apr-22	30-Apr-22	0	2.00
3.8-4050	S1/S9 - Prepare pile head (1nr) C-1F/7A-S1/S9	5	03-May-22	07-May-22	03-May-22	07-May-22	0	1.00
3.8-4052	S1/S9 - Construct pile cap C-1F/7A-S1/S9	20	10-May-22	01-Jun-22	10-May-22	01-Jun-22	0	3.00
Abutment 1G		81	27-Jan-22	14-May-22	23-Feb-22	02-Sep-22	93	10.00
3.8-4058	S1/S9 - Excavation down to formation level A-1G-S1/S9	16	27-Jan-22	21-Feb-22	23-Feb-22	12-Mar-22	17	2.00
3.8-4060	S1/S9 - Prepare pile head (4nrs) C-1G-S1/S9	16	22-Feb-22	11-Mar-22	14-Mar-22	31-Mar-22	17	1.00
3.8-4062	S1/S9 - Construct Abutment Base A-1G-S1/S9	18	12-Mar-22	01-Apr-22	01-Apr-22	26-Apr-22	17	3.00
3.8-4064	S1/S9 - Construct Abutment A-1G-S1/S9	31	02-Apr-22	14-May-22	29-Jul-22	02-Sep-22	93	4.00
S1/S9 - Deck		217	16-Sep-21 A	25-May-22	14-May-22	28-May-22	3	10.00
S1/S9 - Span 1E-1F/1E-7A (Stage 1)		217	16-Sep-21 A	25-May-22	14-May-22	28-May-22	3	10.00
3.8-4079	S1/S9 - Span 1E-1F/7A steel portal - temp footing (Kai Fuk Road) Night works	96	16-Sep-21 A	25-Jan-22	14-May-22	14-May-22	83	10.00
3.8-4080A	S1/S9 - Span 1E to 1F/7A Erect Steel Portal (over Kai Fuk Road) Night works (WB)(2-W)	12	12-May-22	25-May-22	16-May-22	28-May-22	3	0.00
3.8-4080B	S1/S9 - Span 1E to 1F/7A Fabrication Steel Portal (over Kai Fuk Road) Day works (WB)(2-W)	10	12-May-22	23-May-22	18-May-22	28-May-22	5	
Sch_3.9 Bridge CKRW Works		150	25-Oct-21 A	06-Jun-22	05-Mar-22	23-Dec-25	1047	34.00
CKRW - Piling Works		73	29-Nov-21 A	28-Feb-22	05-Mar-22	11-Jul-22	106	4.00
Piling Works - Pier P-K5-CKRW		73	29-Nov-21 A	28-Feb-22	05-Mar-22	11-Jul-22	106	4.00
3.9-4208	CKRW - Bored Piles for K5-CKRW-1 (1 nr)	36	29-Nov-21 A	17-Dec-21 A	05-Mar-22	05-Mar-22		4.00
3.9-4210	CKRW - K5-CKRW-1 Proof drilling & Piles testing	24	25-Jan-22	28-Feb-22	14-May-22	11-Jun-22	82	0.00
3.9-4204	CKRW - K5-CKRW-2 Proof drilling & Piles testing	24	25-Jan-22	28-Feb-22	13-Jun-22	11-Jul-22	106	0.00
CKRW - Pile Caps, Pier / Abutment		126	25-Oct-21 A	06-Jun-22	13-Jun-22	23-Dec-25	1047	30.00
Abutment A-K1-CKRW		84	25-Oct-21 A	11-Apr-22	29-Aug-22	23-Dec-25	1089	7.00
3.9-4234	CKRW - Construct Abutment Base A-K1-CKRW	19	25-Oct-21 A	05-Nov-21 A	23-Dec-25	23-Dec-25		3.00
3.9-4236	CKRW - Construct Abutment A-K1-CKRW	18	10-Mar-22	30-Mar-22	29-Aug-22	19-Sep-22	139	4.00
3.9-4238	CKRW - A-K1-CKRW Install Permeate Membrane and Backfill	9	31-Mar-22	11-Apr-22	19-Dec-22	30-Dec-22	214	0.00
Pier K5-CKRW-1		47	06-Apr-22	06-Jun-22	13-Jun-22	06-Aug-22	52	9.00
3.9-4240	CKRW - Prepare Pile Head for K5-CKRW-1	24	06-Apr-22	07-May-22	13-Jun-22	11-Jul-22	52	1.00
3.9-4244	CKRW - K5-CKRW-1 Reinstatement of Slab of Kai Tak River	5	10-May-22	14-May-22	12-Jul-22	16-Jul-22	52	6.00
3.9-4242	CKRW - Construct Pier K5-CKRW-1 (2 Lifts)	18	16-May-22	06-Jun-22	18-Jul-22	06-Aug-22	52	2.00
Pier K5-CKRW-2		29	06-Apr-22	14-May-22	05-Jul-22	06-Aug-22	70	7.00
3.9-4252	CKRW - Prepare Pile Head for K5-CKRW-2	24	06-Apr-22	07-May-22	05-Jul-22	01-Aug-22	70	1.00
3.9-4256	CKRW - K5-CKRW-2 Reinstatement of Slab of Kai Tak River	5	10-May-22	14-May-22	02-Aug-22	06-Aug-22	70	6.00
Abutment A-K4-CKRW		58	16-Mar-22	28-May-22	01-Aug-22	10-Oct-22	110	7.00
3.9-4268	CKRW - Prepare pile head (4nrs) A-K4-CKRW	17	16-Mar-22	04-Apr-22	01-Aug-22	19-Aug-22	110	1.00

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25-Nov-21	Monthly Programme M31	TYY	DC
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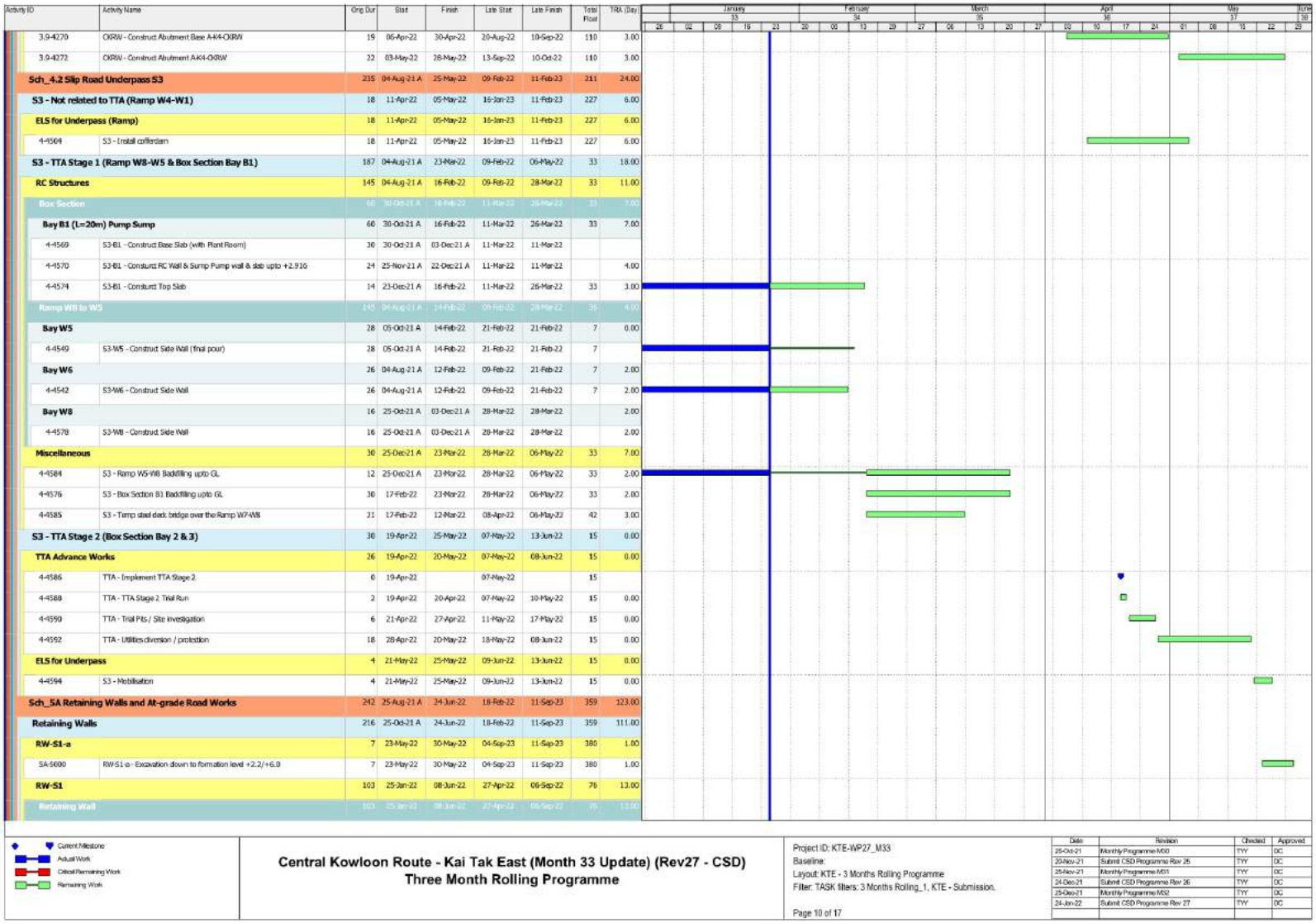
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC



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3.9-4270	CKRW - Construct Abutment Base A-K4-CKRW	19	06-Apr-22	30-Apr-22	20-Aug-22	10-Sep-22	110	3.00
3.9-4272	CKRW - Construct Abutment A-K4-CKRW	22	03-May-22	28-May-22	13-Sep-22	10-Oct-22	110	3.00
Sch_4.2 Slip Road Underpass S3		235	04-Aug-21 A	25-May-22	09-Feb-22	11-Feb-23	211	24.00
S3 - Not related to TTA (Ramp W4-W1)		18	11-Apr-22	05-May-22	16-Jan-23	11-Feb-23	227	6.00
ELS for Underpass (Ramp)		18	11-Apr-22	05-May-22	16-Jan-23	11-Feb-23	227	6.00
4-4564	S3 - Install cofferdam	18	11-Apr-22	05-May-22	16-Jan-23	11-Feb-23	227	6.00
S3 - TTA Stage 1 (Ramp W8-W5 & Box Section Bay B1)		187	04-Aug-21 A	23-Mar-22	09-Feb-22	06-May-22	33	18.00
RC Structures		145	04-Aug-21 A	16-Feb-22	09-Feb-22	28-Mar-22	33	11.00
Box Section		60	30-Oct-21 A	16-Feb-22	11-Mar-22	28-Mar-22	33	7.00
Bay B1 (L=20m) Pump Sump		60	30-Oct-21 A	16-Feb-22	11-Mar-22	28-Mar-22	33	7.00
4-4569	S3-B1 - Construct Base Slab (with Plant Room)	30	30-Oct-21 A	03-Dec-21 A	11-Mar-22	11-Mar-22		
4-4570	S3-B1 - Construct RC Wall & Sump Pump wall & slab upto +2.916	24	25-Nov-21 A	22-Dec-21 A	11-Mar-22	11-Mar-22		4.00
4-4574	S3-B1 - Construct Top Slab	14	23-Dec-21 A	16-Feb-22	11-Mar-22	28-Mar-22	33	3.00
Ramp W8 to W5		145	04-Aug-21 A	14-Feb-22	09-Feb-22	28-Mar-22	36	4.00
Bay W5		28	05-Oct-21 A	14-Feb-22	21-Feb-22	21-Feb-22	7	0.00
4-4549	S3-W5 - Construct Side Wall (final pour)	28	05-Oct-21 A	14-Feb-22	21-Feb-22	21-Feb-22	7	
Bay W6		26	04-Aug-21 A	12-Feb-22	09-Feb-22	21-Feb-22	7	2.00
4-4542	S3-W6 - Construct Side Wall	26	04-Aug-21 A	12-Feb-22	09-Feb-22	21-Feb-22	7	2.00
Bay W8		16	25-Oct-21 A	03-Dec-21 A	28-Mar-22	28-Mar-22		2.00
4-4578	S3-W8 - Construct Side Wall	16	25-Oct-21 A	03-Dec-21 A	28-Mar-22	28-Mar-22		2.00
Miscellaneous		30	25-Dec-21 A	23-Mar-22	28-Mar-22	06-May-22	33	7.00
4-4584	S3 - Ramp W5-W8 Backfilling upto GL	12	25-Dec-21 A	23-Mar-22	28-Mar-22	06-May-22	33	2.00
4-4576	S3 - Box Section B1 Backfilling upto GL	30	17-Feb-22	23-Mar-22	28-Mar-22	06-May-22	33	2.00
4-4585	S3 - Temp steel deck bridge over the Ramp W7-W8	21	17-Feb-22	12-Mar-22	08-Apr-22	06-May-22	42	3.00
S3 - TTA Stage 2 (Box Section Bay 2 & 3)		30	19-Apr-22	25-May-22	07-May-22	13-Jun-22	15	0.00
TTA Advance Works		26	19-Apr-22	20-May-22	07-May-22	08-Jun-22	15	0.00
4-4586	TTA - Implement TTA Stage 2	0	19-Apr-22		07-May-22		15	
4-4588	TTA - TTA Stage 2 Trial Run	2	19-Apr-22	20-Apr-22	07-May-22	10-May-22	15	0.00
4-4590	TTA - Trial Pits / Site Investigation	6	21-Apr-22	27-Apr-22	11-May-22	17-May-22	15	0.00
4-4592	TTA - Utilities diversion / protection	18	28-Apr-22	20-May-22	18-May-22	08-Jun-22	15	0.00
ELS for Underpass		4	21-May-22	25-May-22	09-Jun-22	13-Jun-22	15	0.00
4-4594	S3 - Mobilisation	4	21-May-22	25-May-22	09-Jun-22	13-Jun-22	15	0.00
Sch_5A Retaining Walls and At-grade Road Works		242	25-Aug-21 A	24-Jun-22	18-Feb-22	11-Sep-23	359	123.00
Retaining Walls		216	25-Oct-21 A	24-Jun-22	18-Feb-22	11-Sep-23	359	111.00
RW-S1-a		7	23-May-22	30-May-22	04-Sep-23	11-Sep-23	380	1.00
5A-5600	RW-S1-a - Excavation down to formation level +2.2/+6.0	7	23-May-22	30-May-22	04-Sep-23	11-Sep-23	380	1.00
RW-S1		103	25-Jan-22	08-Jun-22	27-Apr-22	06-Sep-22	76	13.00
Retaining Wall		103	25-Jan-22	08-Jun-22	27-Apr-22	06-Sep-22	76	13.00

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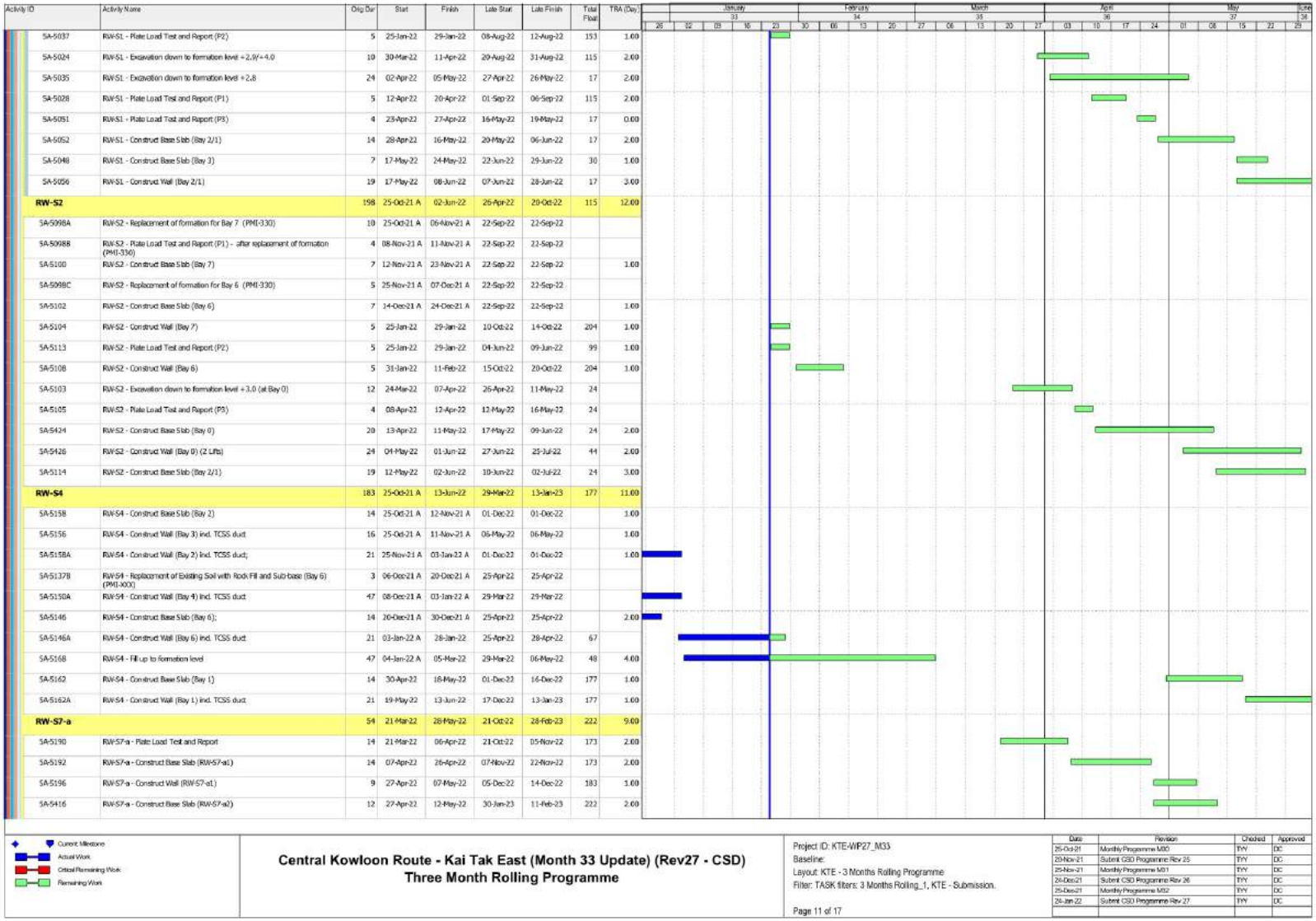

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SA-5037	RW-S1 - Plate Load Test and Report (P2)	5	25-Jan-22	29-Jan-22	08-Aug-22	12-Aug-22	153	1.00
SA-5024	RW-S1 - Excavation down to formation level +2.9/+4.0	10	30-Mar-22	11-Apr-22	29-Aug-22	31-Aug-22	115	2.00
SA-5035	RW-S1 - Excavation down to formation level +2.8	24	02-Apr-22	05-May-22	27-Apr-22	26-May-22	17	2.00
SA-5028	RW-S1 - Plate Load Test and Report (P1)	5	12-Apr-22	20-Apr-22	01-Sep-22	06-Sep-22	115	2.00
SA-5051	RW-S1 - Plate Load Test and Report (P3)	4	23-Apr-22	27-Apr-22	16-May-22	19-May-22	17	0.00
SA-5052	RW-S1 - Construct Base Slab (Bay 2/1)	14	28-Apr-22	16-May-22	20-May-22	06-Jun-22	17	2.00
SA-5048	RW-S1 - Construct Base Slab (Bay 3)	7	17-May-22	24-May-22	22-Jun-22	29-Jun-22	30	1.00
SA-5056	RW-S1 - Construct Wall (Bay 2/1)	19	17-May-22	08-Jun-22	07-Jun-22	28-Jun-22	17	3.00
RW-S2		198	25-Oct-21 A	02-Jun-22	26-Apr-22	20-Oct-22	115	12.00
SA-5098A	RW-S2 - Replacement of formation for Bay 7 (PMI-330)	10	25-Oct-21 A	06-Nov-21 A	22-Sep-22	22-Sep-22		
SA-5098B	RW-S2 - Plate Load Test and Report (P1) - after replacement of formation (PMI-330)	4	08-Nov-21 A	11-Nov-21 A	22-Sep-22	22-Sep-22		
SA-5100	RW-S2 - Construct Base Slab (Bay 7)	7	12-Nov-21 A	23-Nov-21 A	22-Sep-22	22-Sep-22		1.00
SA-5098C	RW-S2 - Replacement of formation for Bay 6 (PMI-330)	5	25-Nov-21 A	07-Dec-21 A	22-Sep-22	22-Sep-22		
SA-5102	RW-S2 - Construct Base Slab (Bay 6)	7	14-Dec-21 A	24-Dec-21 A	22-Sep-22	22-Sep-22		1.00
SA-5104	RW-S2 - Construct Wall (Bay 7)	5	25-Jan-22	29-Jan-22	10-Oct-22	14-Oct-22	204	1.00
SA-5113	RW-S2 - Plate Load Test and Report (P2)	5	25-Jan-22	29-Jan-22	04-Jun-22	09-Jun-22	99	1.00
SA-5108	RW-S2 - Construct Wall (Bay 6)	5	31-Jan-22	11-Feb-22	15-Oct-22	20-Oct-22	204	1.00
SA-5103	RW-S2 - Excavation down to formation level +3.0 (at Bay 0)	12	24-Mar-22	07-Apr-22	26-Apr-22	11-May-22	24	
SA-5105	RW-S2 - Plate Load Test and Report (P3)	4	08-Apr-22	12-Apr-22	12-May-22	16-May-22	24	
SA-5424	RW-S2 - Construct Base Slab (Bay 0)	20	13-Apr-22	11-May-22	17-May-22	09-Jun-22	24	2.00
SA-5426	RW-S2 - Construct Wall (Bay 0) (2 Lifts)	24	04-May-22	01-Jun-22	27-Jun-22	25-Jul-22	44	2.00
SA-5114	RW-S2 - Construct Base Slab (Bay 2/1)	19	12-May-22	02-Jun-22	10-Jun-22	02-Jul-22	24	3.00
RW-S4		183	25-Oct-21 A	13-Jun-22	29-Mar-22	13-Jan-23	177	11.00
SA-5158	RW-S4 - Construct Base Slab (Bay 2)	14	25-Oct-21 A	12-Nov-21 A	01-Dec-22	01-Dec-22		1.00
SA-5156	RW-S4 - Construct Wall (Bay 3) incl. TCSS duct	16	25-Oct-21 A	11-Nov-21 A	06-May-22	06-May-22		1.00
SA-5158A	RW-S4 - Construct Wall (Bay 2) incl. TCSS duct;	21	25-Nov-21 A	03-Jan-22 A	01-Dec-22	01-Dec-22		1.00
SA-5137B	RW-S4 - Replacement of Existing Soil with Rock Fill and Sub-base (Bay 6) (PMI-XXX)	3	06-Dec-21 A	20-Dec-21 A	25-Apr-22	25-Apr-22		
SA-5150A	RW-S4 - Construct Wall (Bay 4) incl. TCSS duct	47	08-Dec-21 A	03-Jan-22 A	29-Mar-22	29-Mar-22		
SA-5146	RW-S4 - Construct Base Slab (Bay 6);	14	20-Dec-21 A	30-Dec-21 A	25-Apr-22	25-Apr-22		2.00
SA-5146A	RW-S4 - Construct Wall (Bay 6) incl. TCSS duct	21	03-Jan-22 A	28-Jan-22	25-Apr-22	28-Apr-22	67	
SA-5168	RW-S4 - Fill up to formation level	47	04-Jan-22 A	05-Mar-22	29-Mar-22	06-May-22	48	4.00
SA-5162	RW-S4 - Construct Base Slab (Bay 1)	14	30-Apr-22	18-May-22	01-Dec-22	16-Dec-22	177	1.00
SA-5162A	RW-S4 - Construct Wall (Bay 1) incl. TCSS duct	21	19-May-22	13-Jun-22	17-Dec-22	13-Jan-23	177	1.00
RW-S7-a		54	21-Mar-22	28-May-22	21-Oct-22	28-Feb-23	222	9.00
SA-5190	RW-S7-a - Plate Load Test and Report	14	21-Mar-22	06-Apr-22	21-Oct-22	05-Nov-22	173	2.00
SA-5192	RW-S7-a - Construct Base Slab (RW-S7-a1)	14	07-Apr-22	26-Apr-22	07-Nov-22	22-Nov-22	173	2.00
SA-5196	RW-S7-a - Construct Wall (RW-S7-a1)	9	27-Apr-22	07-May-22	05-Dec-22	14-Dec-22	183	1.00
SA-5416	RW-S7-a - Construct Base Slab (RW-S7-a2)	12	27-Apr-22	12-May-22	30-Jan-23	11-Feb-23	222	2.00

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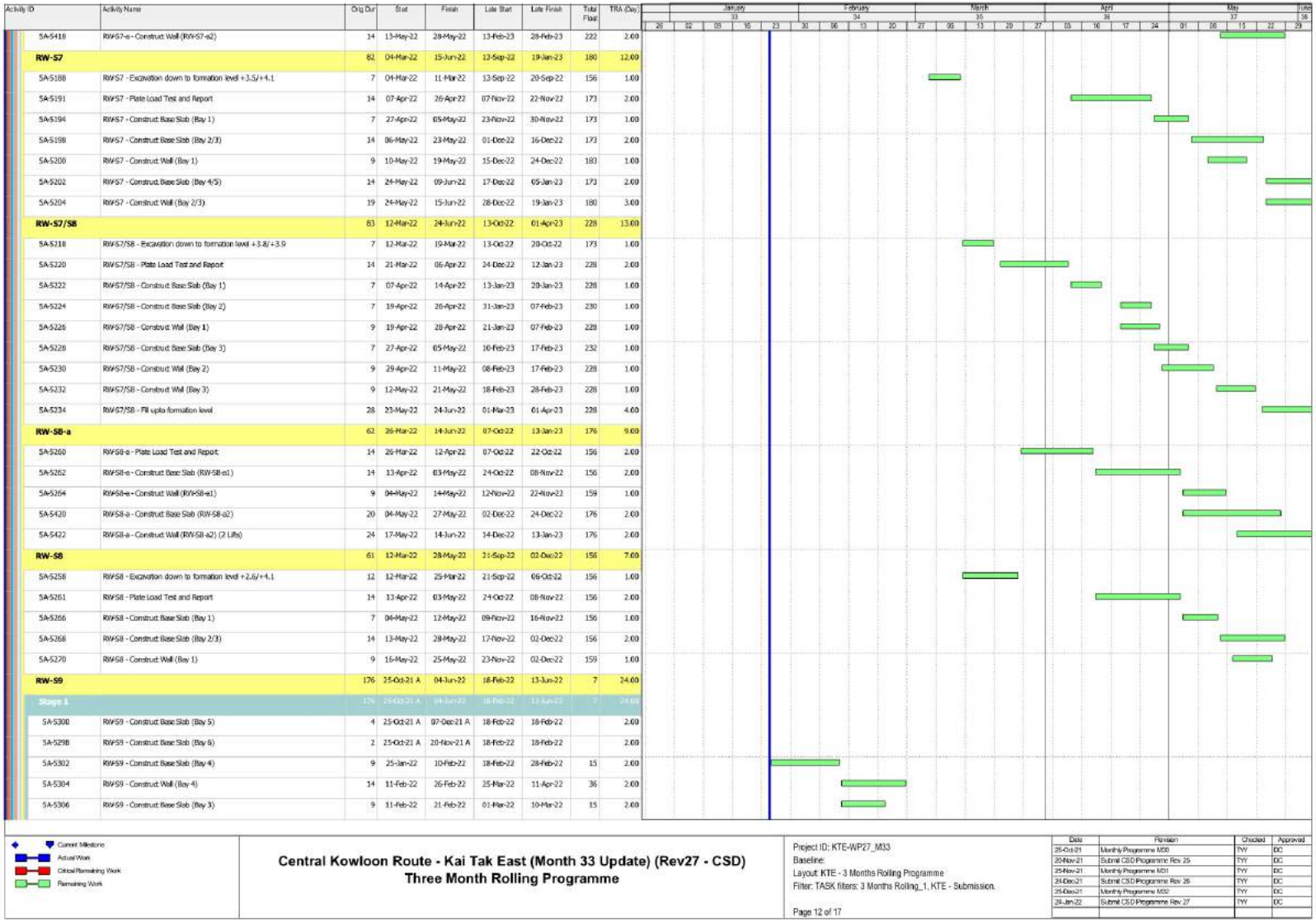

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SA-5418	RW-S7-e - Construct Wall (RW-S7-e2)	14	13-May-22	28-May-22	13-Feb-23	28-Feb-23	222	2.00
RW-S7		82	04-Mar-22	15-Jun-22	13-Sep-22	19-Jan-23	180	12.00
SA-5188	RW-S7 - Excavation down to formation level +3.5/+4.1	7	04-Mar-22	11-Mar-22	13-Sep-22	20-Sep-22	156	1.00
SA-5191	RW-S7 - Plate Load Test and Report	14	07-Apr-22	26-Apr-22	07-Nov-22	22-Nov-22	173	2.00
SA-5194	RW-S7 - Construct Base Slab (Bay 1)	7	27-Apr-22	05-May-22	23-Nov-22	30-Nov-22	173	1.00
SA-5198	RW-S7 - Construct Base Slab (Bay 2/3)	14	06-May-22	23-May-22	01-Dec-22	16-Dec-22	173	2.00
SA-5200	RW-S7 - Construct Wall (Bay 1)	9	10-May-22	19-May-22	15-Dec-22	24-Dec-22	183	1.00
SA-5202	RW-S7 - Construct Base Slab (Bay 4/5)	14	24-May-22	09-Jun-22	17-Dec-22	05-Jan-23	173	2.00
SA-5204	RW-S7 - Construct Wall (Bay 2/3)	19	24-May-22	15-Jun-22	28-Dec-22	19-Jan-23	180	3.00
RW-S7/S8		83	12-Mar-22	24-Jun-22	13-Oct-22	01-Apr-23	228	13.00
SA-5218	RW-S7/S8 - Excavation down to formation level +3.8/+3.9	7	12-Mar-22	19-Mar-22	13-Oct-22	20-Oct-22	173	1.00
SA-5220	RW-S7/S8 - Plate Load Test and Report	14	21-Mar-22	06-Apr-22	24-Dec-22	12-Jan-23	228	2.00
SA-5222	RW-S7/S8 - Construct Base Slab (Bay 1)	7	07-Apr-22	14-Apr-22	13-Jan-23	20-Jan-23	228	1.00
SA-5224	RW-S7/S8 - Construct Base Slab (Bay 2)	7	19-Apr-22	26-Apr-22	31-Jan-23	07-Feb-23	230	1.00
SA-5226	RW-S7/S8 - Construct Wall (Bay 1)	9	19-Apr-22	28-Apr-22	21-Jan-23	07-Feb-23	228	1.00
SA-5228	RW-S7/S8 - Construct Base Slab (Bay 3)	7	27-Apr-22	05-May-22	10-Feb-23	17-Feb-23	232	1.00
SA-5230	RW-S7/S8 - Construct Wall (Bay 2)	9	29-Apr-22	11-May-22	08-Feb-23	17-Feb-23	228	1.00
SA-5232	RW-S7/S8 - Construct Wall (Bay 3)	9	12-May-22	21-May-22	18-Feb-23	28-Feb-23	228	1.00
SA-5234	RW-S7/S8 - Fill upto formation level	28	23-May-22	24-Jun-22	01-Mar-23	01-Apr-23	228	4.00
RW-S8-a		62	26-Mar-22	14-Jun-22	07-Oct-22	13-Jan-23	176	9.00
SA-5260	RW-S8-a - Plate Load Test and Report	14	26-Mar-22	12-Apr-22	07-Oct-22	22-Oct-22	156	2.00
SA-5262	RW-S8-a - Construct Base Slab (RW-S8-a1)	14	13-Apr-22	03-May-22	24-Oct-22	08-Nov-22	156	2.00
SA-5264	RW-S8-a - Construct Wall (RW-S8-a1)	9	04-May-22	14-May-22	12-Nov-22	22-Nov-22	159	1.00
SA-5420	RW-S8-a - Construct Base Slab (RW-S8-a2)	20	04-May-22	27-May-22	02-Dec-22	24-Dec-22	176	2.00
SA-5422	RW-S8-a - Construct Wall (RW-S8-a2) (2 Lifts)	24	17-May-22	14-Jun-22	14-Dec-22	13-Jan-23	176	2.00
RW-S8		61	12-Mar-22	28-May-22	21-Sep-22	02-Dec-22	156	7.00
SA-5258	RW-S8 - Excavation down to formation level +2.6/+4.1	12	12-Mar-22	25-Mar-22	21-Sep-22	06-Oct-22	156	1.00
SA-5261	RW-S8 - Plate Load Test and Report	14	13-Apr-22	03-May-22	24-Oct-22	08-Nov-22	156	2.00
SA-5266	RW-S8 - Construct Base Slab (Bay 1)	7	04-May-22	12-May-22	09-Nov-22	16-Nov-22	156	1.00
SA-5268	RW-S8 - Construct Base Slab (Bay 2/3)	14	13-May-22	28-May-22	17-Nov-22	02-Dec-22	156	2.00
SA-5270	RW-S8 - Construct Wall (Bay 1)	9	16-May-22	25-May-22	23-Nov-22	02-Dec-22	159	1.00
RW-S9		176	25-Oct-21 A	04-Jun-22	18-Feb-22	13-Jun-22	7	24.00
Stage 1		176	25-Oct-21 A	04-Jun-22	18-Feb-22	13-Jun-22	7	24.00
SA-5300	RW-S9 - Construct Base Slab (Bay 5)	4	25-Oct-21 A	07-Dec-21 A	18-Feb-22	18-Feb-22		2.00
SA-5298	RW-S9 - Construct Base Slab (Bay 6)	2	25-Oct-21 A	20-Nov-21 A	18-Feb-22	18-Feb-22		2.00
SA-5302	RW-S9 - Construct Base Slab (Bay 4)	9	25-Jan-22	10-Feb-22	18-Feb-22	28-Feb-22	15	2.00
SA-5304	RW-S9 - Construct Wall (Bay 4)	14	11-Feb-22	26-Feb-22	25-Mar-22	11-Apr-22	36	2.00
SA-5306	RW-S9 - Construct Base Slab (Bay 3)	9	11-Feb-22	21-Feb-22	01-Mar-22	10-Mar-22	15	2.00

Current Milestone
Actual Work
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Remaining Work

Central Kowloon Route - Kai Tak East (Month 33 Update) (Rev27 - CSD)
Three Month Rolling Programme

Project ID: KTE-WP27_M33
Baseline:
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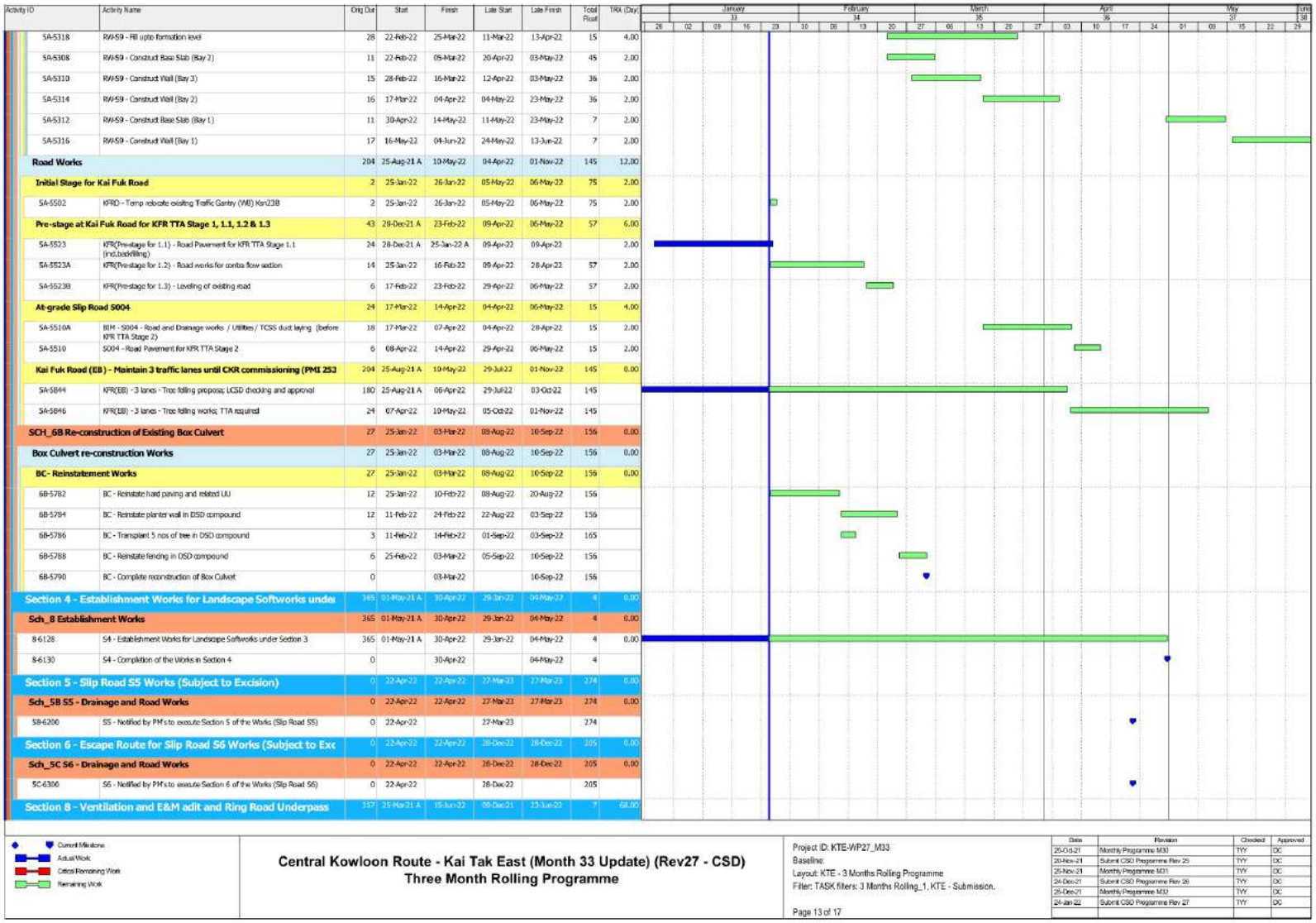
Date	Revision	Checked	Approved
25-Oct-21	Monthly Programme M30	TYY	DC
20-Nov-21	Submit CSD Programme Rev. 25	TYY	DC
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev. 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev. 27	TYY	DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
SA-5318	RW-S9 - Fill upto formation level	28	22-Feb-22	25-Mar-22	11-Mar-22	13-Apr-22	15	4.00
SA-5308	RW-S9 - Construct Base Slab (Bay 2)	11	22-Feb-22	05-Mar-22	20-Apr-22	03-May-22	45	2.00
SA-5310	RW-S9 - Construct Wall (Bay 3)	15	28-Feb-22	16-Mar-22	12-Apr-22	03-May-22	36	2.00
SA-5314	RW-S9 - Construct Wall (Bay 2)	16	17-Mar-22	04-Apr-22	04-May-22	23-May-22	36	2.00
SA-5312	RW-S9 - Construct Base Slab (Bay 1)	11	30-Apr-22	14-May-22	11-May-22	23-May-22	7	2.00
SA-5316	RW-S9 - Construct Wall (Bay 1)	17	16-May-22	04-Jun-22	24-May-22	13-Jun-22	7	2.00
Road Works		204	25-Aug-21 A	10-May-22	04-Apr-22	01-Nov-22	145	12.00
Initial Stage for Kai Fuk Road		2	25-Jan-22	26-Jan-22	05-May-22	06-May-22	75	2.00
SA-5502	KFRD - Temp relocate existing Traffic Gantry (MB) Km23B	2	25-Jan-22	26-Jan-22	05-May-22	06-May-22	75	2.00
Pre-stage at Kai Fuk Road for KFR TTA Stage 1, 1.1, 1.2 & 1.3		43	28-Dec-21 A	23-Feb-22	09-Apr-22	06-May-22	57	6.00
SA-5523	KFR(Pre-stage for 1.1) - Road Pavement for KFR TTA Stage 1.1 (incl.backfilling)	24	28-Dec-21 A	25-Jan-22 A	09-Apr-22	09-Apr-22		2.00
SA-5523A	KFR(Pre-stage for 1.2) - Road works for contra flow section	14	25-Jan-22	16-Feb-22	09-Apr-22	28-Apr-22	57	2.00
SA-5523B	KFR(Pre-stage for 1.3) - Leveling of existing road	6	17-Feb-22	23-Feb-22	29-Apr-22	06-May-22	57	2.00
At-grade Slip Road S004		24	17-Mar-22	14-Apr-22	04-Apr-22	06-May-22	15	4.00
SA-5510A	BIM - S004 - Road and Drainage works / Utilities / TCSS duct laying (before KFR TTA Stage 2)	18	17-Mar-22	07-Apr-22	04-Apr-22	28-Apr-22	15	2.00
SA-5510	S004 - Road Pavement for KFR TTA Stage 2	6	08-Apr-22	14-Apr-22	29-Apr-22	06-May-22	15	2.00
Kai Fuk Road (EB) - Maintain 3 traffic lanes until CKR commissioning (PMI 253		204	25-Aug-21 A	10-May-22	29-Jul-22	01-Nov-22	145	0.00
SA-5844	KFR(EB) - 3 lanes - Tree felling proposal; UCSD checking and approval	180	25-Aug-21 A	06-Apr-22	29-Jul-22	03-Oct-22	145	
SA-5846	KFR(EB) - 3 lanes - Tree felling works; TTA required	24	07-Apr-22	10-May-22	05-Oct-22	01-Nov-22	145	
SCH_6B Re-construction of Existing Box Culvert		27	25-Jan-22	03-Mar-22	09-Aug-22	10-Sep-22	156	0.00
Box Culvert re-construction Works		27	25-Jan-22	03-Mar-22	09-Aug-22	10-Sep-22	156	0.00
BC- Reinstatement Works		27	25-Jan-22	03-Mar-22	09-Aug-22	10-Sep-22	156	0.00
6B-5782	BC - Reinstate hard paving and related UU	12	25-Jan-22	10-Feb-22	09-Aug-22	20-Aug-22	156	
6B-5784	BC - Reinstate planter wall in DSD compound	12	11-Feb-22	24-Feb-22	22-Aug-22	03-Sep-22	156	
6B-5786	BC - Transplant 5 nos of tree in DSD compound	3	11-Feb-22	14-Feb-22	01-Sep-22	03-Sep-22	165	
6B-5788	BC - Reinstate fencing in DSD compound	6	25-Feb-22	03-Mar-22	05-Sep-22	10-Sep-22	156	
6B-5790	BC - Complete reconstruction of Box Culvert	0		03-Mar-22		10-Sep-22	156	
Section 4 - Establishment Works for Landscape Softworks under		365	01-May-21 A	30-Apr-22	29-Jan-22	04-May-22	4	0.00
Sch_8 Establishment Works		365	01-May-21 A	30-Apr-22	29-Jan-22	04-May-22	4	0.00
8-6128	S4 - Establishment Works for Landscape Softworks under Section 3	365	01-May-21 A	30-Apr-22	29-Jan-22	04-May-22	4	0.00
8-6130	S4 - Completion of the Works in Section 4	0		30-Apr-22		04-May-22	4	
Section 5 - Slip Road S5 Works (Subject to Excision)		0	22-Apr-22	22-Apr-22	27-Mar-23	27-Mar-23	274	0.00
Sch_5B S5 - Drainage and Road Works		0	22-Apr-22	22-Apr-22	27-Mar-23	27-Mar-23	274	0.00
SB-6200	S5 - Notified by PM's to execute Section 5 of the Works (Slip Road S5)	0	22-Apr-22		27-Mar-23		274	
Section 6 - Escape Route for Slip Road S6 Works (Subject to Exc		0	22-Apr-22	22-Apr-22	28-Dec-22	28-Dec-22	205	0.00
Sch_5C S6 - Drainage and Road Works		0	22-Apr-22	22-Apr-22	28-Dec-22	28-Dec-22	205	0.00
SC-6300	S6 - Notified by PM's to execute Section 6 of the Works (Slip Road S6)	0	22-Apr-22		28-Dec-22		205	
Section 8 - Ventilation and E&M adit and Ring Road Underpass		357	25-Mar-21 A	15-Jun-22	09-Dec-21	25-Jun-22	7	-66.00

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Central Kowloon Route - Kai Tak East (Month 33 Update) (Rev27 - CSD)
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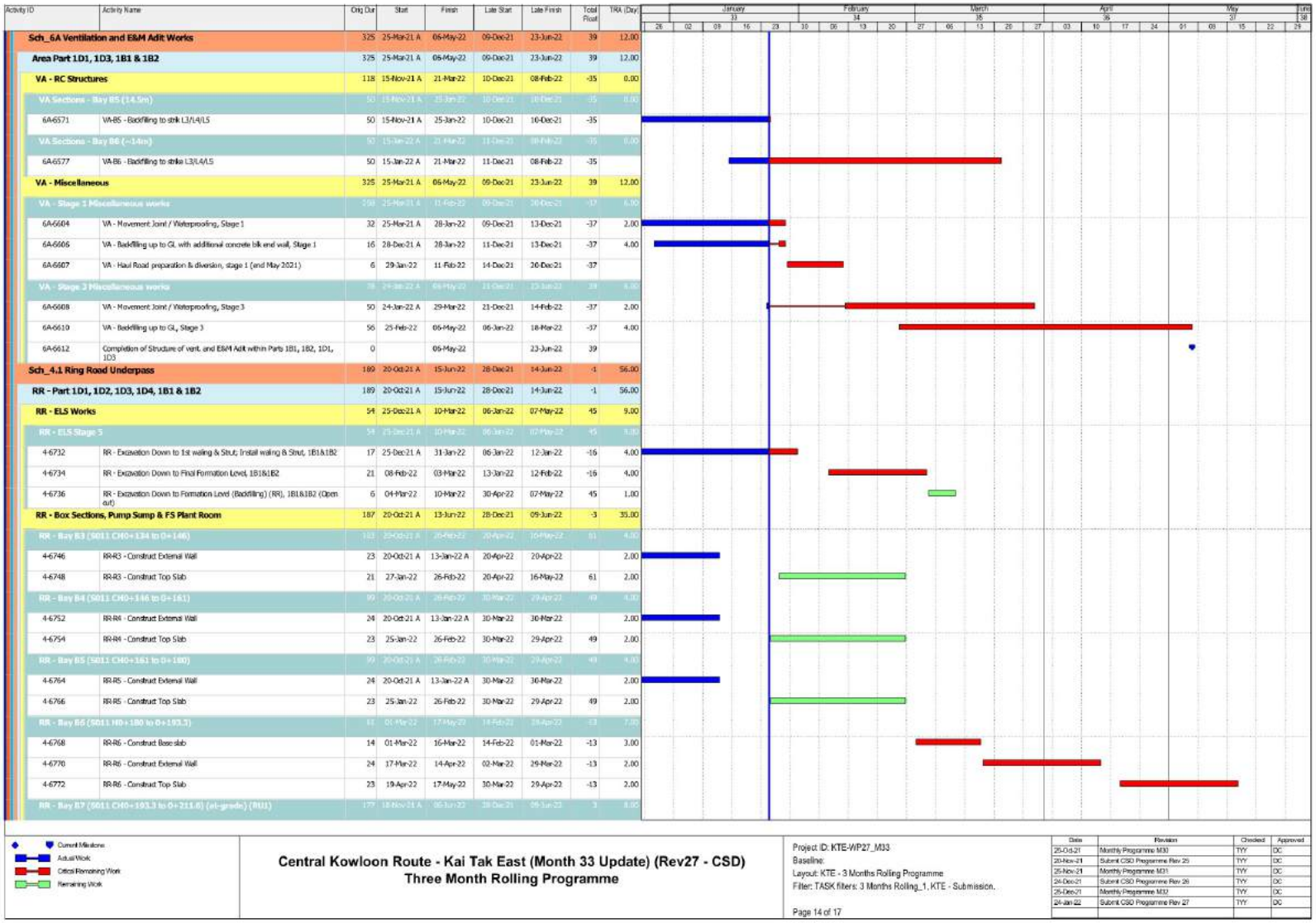
25-Oct-21	Monthly Programme M30	TYY	DC
20-Nov-21	Submit CSD Programme Rev 25	TYY	DC
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC


Activity ID
Activity Name
Orig Dur
Start
Finish
Late Start
Late Finish
Total Float
TRA (Day)
January
February
March
April
May
Sch_6A Ventilation and E&M Adit Works
Area Part 1D1, 1D3, 1B1 & 1B2
VA - RC Structures
VA Sections - Bay B5 (14.5m)
6A-6571 VA-B5 - Backfilling to strik L3/L4/L5
VA Sections - Bay B6 (~14m)
6A-6577 VA-B6 - Backfilling to strike L3/L4/L5
VA - Miscellaneous
VA - Stage 1 Miscellaneous works
6A-6604 VA - Movement Joint / Waterproofing, Stage 1
6A-6606 VA - Backfilling up to GL with additional concrete blk end wall, Stage 1
6A-6607 VA - Haul Road preparation & diversion, stage 1 (end May 2021)
VA - Stage 3 Miscellaneous works
6A-6608 VA - Movement Joint / Waterproofing, Stage 3
6A-6610 VA - Backfilling up to GL, Stage 3
6A-6612 Completion of Structure of vent. and E&M Adit within Parts 1B1, 1B2, 1D1, 1D3
Sch_4.1 Ring Road Underpass
RR - Part 1D1, 1D2, 1D3, 1D4, 1B1 & 1B2
RR - ELS Works
RR - ELS Stage 5
4-6732 RR - Excavation Down to 1st waling & Strut; Install waling & Strut, 1B1&1B2
4-6734 RR - Excavation Down to Final Formation Level, 1B1&1B2
4-6736 RR - Excavation Down to Formation Level (Backfilling) (RR), 1B1&1B2 (Open cut)
RR - Box Sections, Pump Sump & FS Plant Room
RR - Bay B3 (S011 CH0+134 to 0+146)
4-6746 RR-R3 - Construct External Wall
4-6748 RR-R3 - Construct Top Slab
RR - Bay B4 (S011 CH0+146 to 0+161)
4-6752 RR-R4 - Construct External Wall
4-6754 RR-R4 - Construct Top Slab
RR - Bay B5 (S011 CH0+161 to 0+180)
4-6764 RR-R5 - Construct External Wall
4-6766 RR-R5 - Construct Top Slab
RR - Bay B6 (S011 H0+180 to 0+193.3)
4-6768 RR-R6 - Construct Base slab
4-6770 RR-R6 - Construct External Wall
4-6772 RR-R6 - Construct Top Slab
RR - Bay B7 (S011 CH0+193.3 to 0+211.6) (at-grade) (RU1)
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Remaining Work
Central Kowloon Route - Kai Tak East (Month 33 Update) (Rev27 - CSD)
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25-Oct-21 Monthly Programme M30 TYY DC
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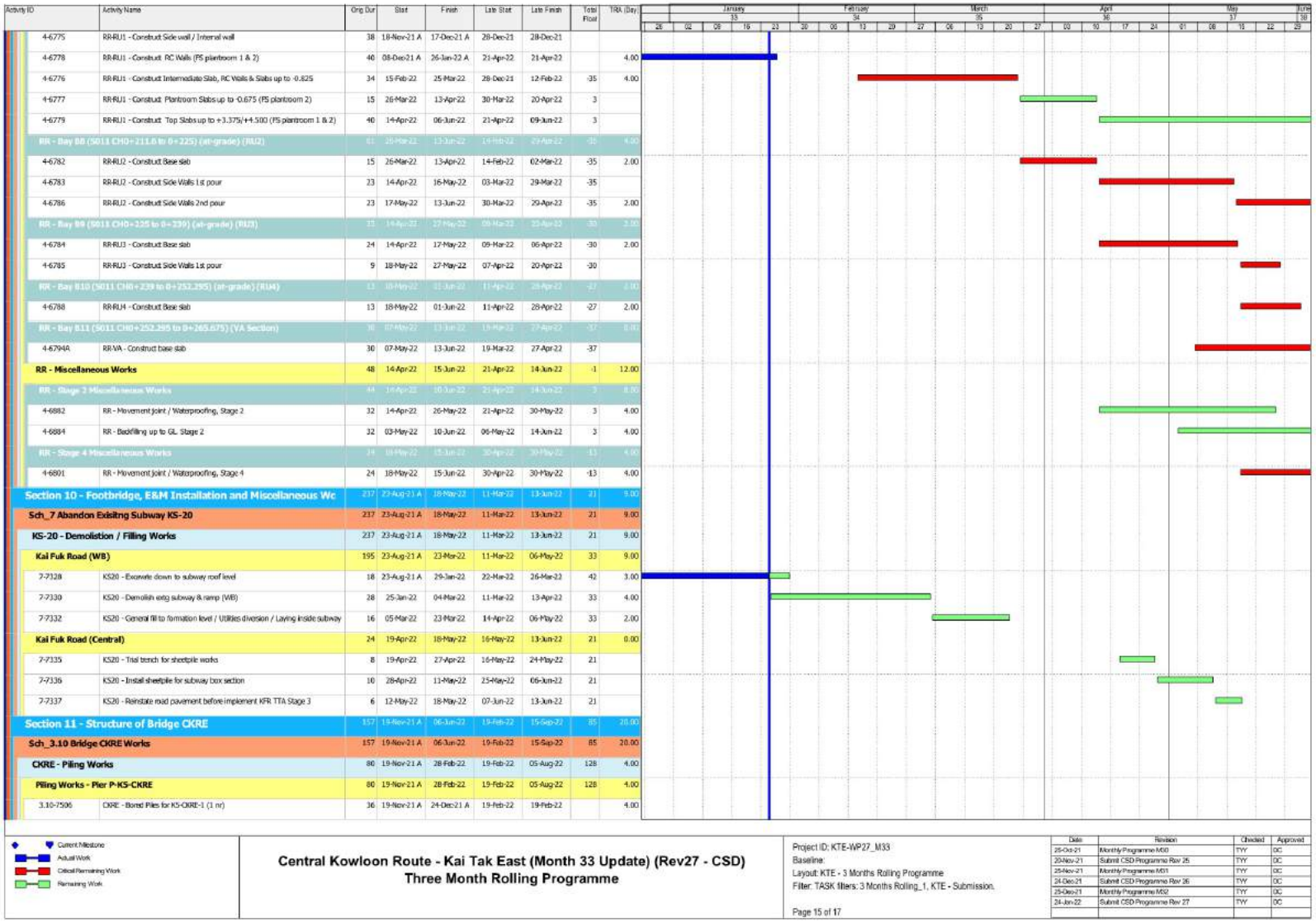
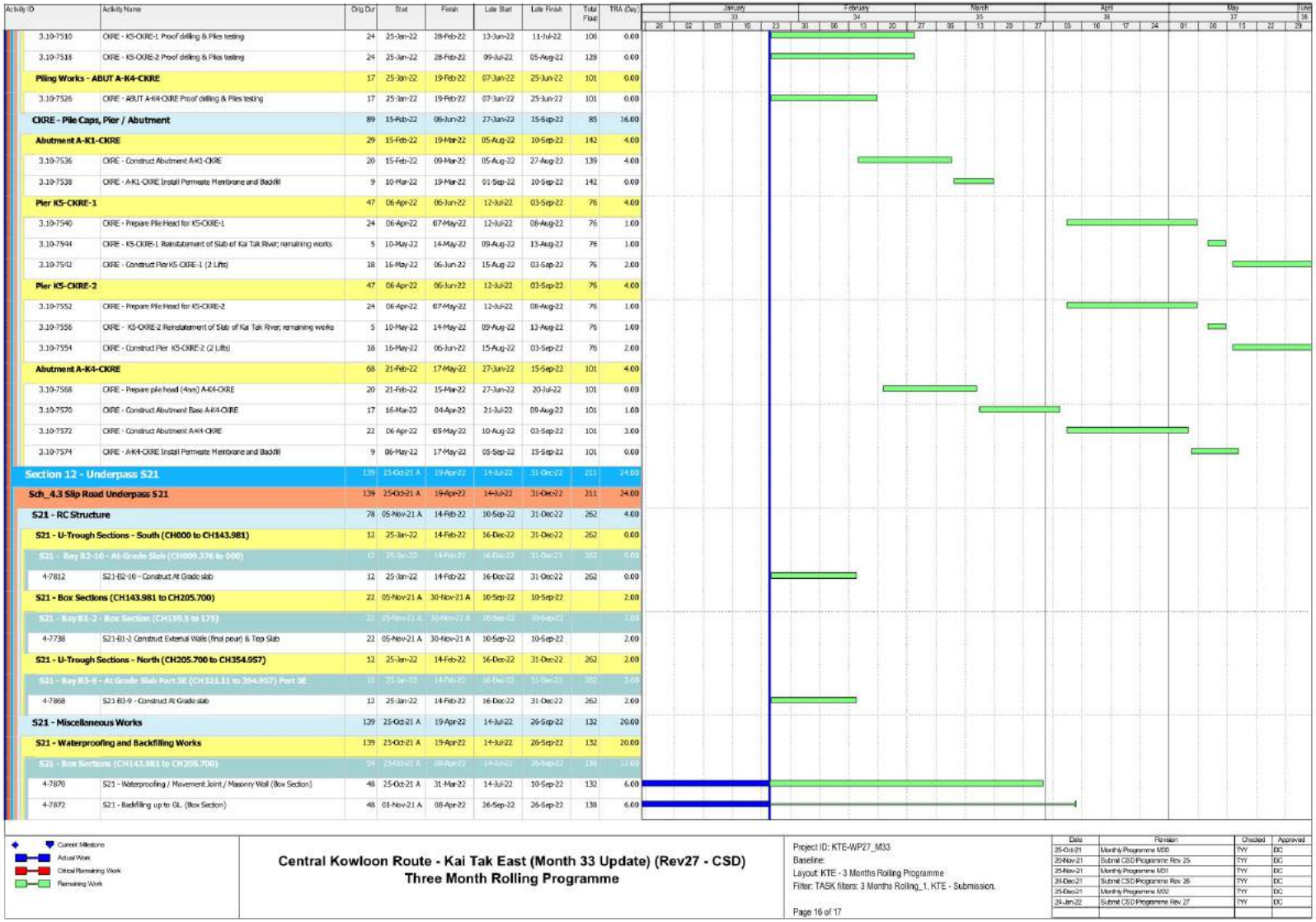
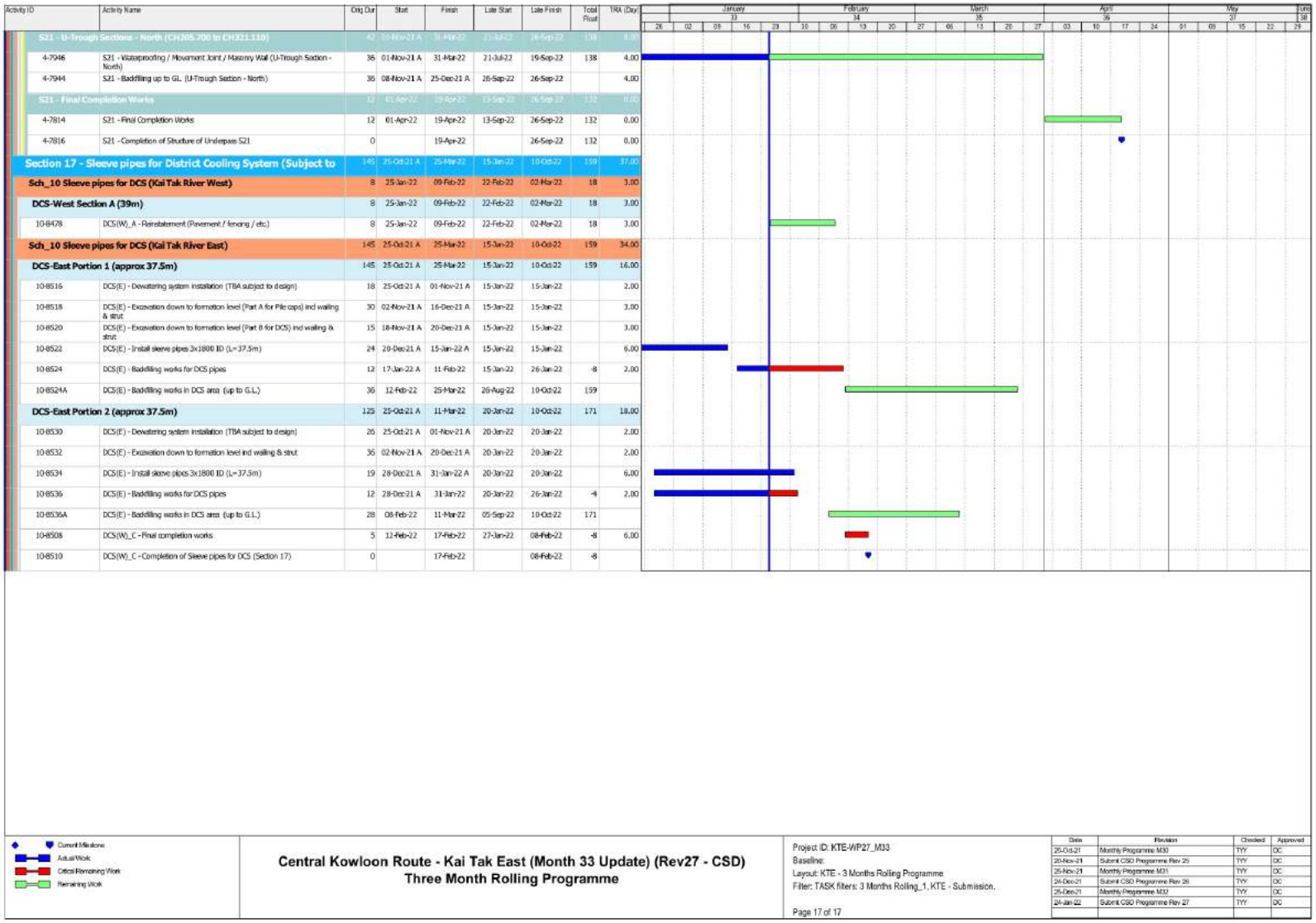
25-Dec-21 Monthly Programme M32 TYY DC
24-Jan-22 Submit CSD Programme Rev 27 TYY DC



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day
4-6775	RR-RU1 - Construct Side wall / Internal wall	38	18-Nov-21 A	17-Dec-21 A	28-Dec-21	28-Dec-21		
4-6778	RR-RU1 - Construct RC Walls (PS plantroom 1 & 2)	40	08-Dec-21 A	26-Jan-22 A	21-Apr-22	21-Apr-22		4.00
4-6776	RR-RU1 - Construct Intermediate Slab, RC Walls & Slabs up to -0.825	34	15-Feb-22	25-Mar-22	28-Dec-21	12-Feb-22	-35	4.00
4-6777	RR-RU1 - Construct Plantroom Slabs up to -0.675 (PS plantroom 2)	15	26-Mar-22	13-Apr-22	30-Mar-22	20-Apr-22	3	
4-6779	RR-RU1 - Construct Top Slabs up to +3.375/+4.500 (PS plantroom 1 & 2)	40	14-Apr-22	06-Jun-22	21-Apr-22	09-Jun-22	3	
RR - Bay B8 (5011 CH0+211.6 to 0+225) (at-grade) (RU2)		61	26-Mar-22	13-Jun-22	14-Feb-22	27-Apr-22	-35	4.00
4-6782	RR-RU2 - Construct Base slab	15	26-Mar-22	13-Apr-22	14-Feb-22	02-Mar-22	-35	2.00
4-6783	RR-RU2 - Construct Side Walls 1st pour	23	14-Apr-22	16-May-22	03-Mar-22	29-Mar-22	-35	
4-6786	RR-RU2 - Construct Side Walls 2nd pour	23	17-May-22	13-Jun-22	30-Mar-22	29-Apr-22	-35	2.00
RR - Bay B9 (5011 CH0+225 to 0+239) (at-grade) (RU3)		33	14-Apr-22	17-May-22	09-Mar-22	22-Apr-22	-33	2.00
4-6784	RR-RU3 - Construct Base slab	24	14-Apr-22	17-May-22	09-Mar-22	06-Apr-22	-30	2.00
4-6785	RR-RU3 - Construct Side Walls 1st pour	9	18-May-22	27-May-22	07-Apr-22	20-Apr-22	-30	
RR - Bay B10 (5011 CH0+239 to 0+252.295) (at-grade) (RU4)		13	18-May-22	01-Jun-22	11-Apr-22	28-Apr-22	-27	2.00
4-6788	RR-RU4 - Construct Base slab	13	18-May-22	01-Jun-22	11-Apr-22	28-Apr-22	-27	2.00
RR - Bay B11 (5011 CH0+252.295 to 0+265.675) (YA Section)		30	07-May-22	13-Jun-22	19-Mar-22	27-Apr-22	-37	8.00
4-6794A	RR-YA - Construct base slab	30	07-May-22	13-Jun-22	19-Mar-22	27-Apr-22	-37	
RR - Miscellaneous Works		48	14-Apr-22	15-Jun-22	21-Apr-22	14-Jun-22	-1	12.00
RR - Stage 2 Miscellaneous Works		44	14-Apr-22	10-Jun-22	21-Apr-22	14-Jun-22	3	8.00
4-6882	RR - Movement joint / Waterproofing, Stage 2	32	14-Apr-22	26-May-22	21-Apr-22	30-May-22	3	4.00
4-6884	RR - Backfilling up to GL Stage 2	32	03-May-22	10-Jun-22	06-May-22	14-Jun-22	3	4.00
RR - Stage 4 Miscellaneous Works		24	18-May-22	15-Jun-22	30-Apr-22	30-May-22	-13	4.00
4-6891	RR - Movement joint / Waterproofing, Stage 4	24	18-May-22	15-Jun-22	30-Apr-22	30-May-22	-13	4.00
Section 10 - Footbridge, E&M Installation and Miscellaneous Wc		237	23-Aug-21 A	18-May-22	11-Mar-22	13-Jun-22	21	9.00
Sch_7 Abandon Exisitng Subway KS-20		237	23-Aug-21 A	18-May-22	11-Mar-22	13-Jun-22	21	9.00
KS-20 - Demolistion / Filling Works		237	23-Aug-21 A	18-May-22	11-Mar-22	13-Jun-22	21	9.00
Kai Fuk Road (WB)		195	23-Aug-21 A	23-Mar-22	11-Mar-22	06-May-22	33	9.00
7-7328	KS20 - Excavate down to subway roof level	18	23-Aug-21 A	29-Jan-22	22-Mar-22	26-Mar-22	42	3.00
7-7330	KS20 - Demolish exig subway & ramp (WB)	28	25-Jan-22	04-Mar-22	11-Mar-22	13-Apr-22	33	4.00
7-7332	KS20 - General fill to formation level / Utilities diversion / Laying inside subway	16	05-Mar-22	23-Mar-22	14-Apr-22	06-May-22	33	2.00
Kai Fuk Road (Central)		24	19-Apr-22	18-May-22	16-May-22	13-Jun-22	21	0.00
7-7335	KS20 - Trial trench for sheetpile works	8	19-Apr-22	27-Apr-22	16-May-22	24-May-22	21	
7-7336	KS20 - Install sheetpile for subway box section	10	28-Apr-22	11-May-22	25-May-22	06-Jun-22	21	
7-7337	KS20 - Reinstate road pavement before implement KFR TTA Stage 3	6	12-May-22	18-May-22	07-Jun-22	13-Jun-22	21	
Section 11 - Structure of Bridge CKRE		157	19-Nov-21 A	06-Jun-22	19-Feb-22	15-Sep-22	85	20.00
Sch_3.10 Bridge CKRE Works		157	19-Nov-21 A	06-Jun-22	19-Feb-22	15-Sep-22	85	20.00
CKRE - Piling Works		80	19-Nov-21 A	28-Feb-22	19-Feb-22	05-Aug-22	128	4.00
Piling Works - Pier P-K5-CKRE		80	19-Nov-21 A	28-Feb-22	19-Feb-22	05-Aug-22	128	4.00
3.10-7506	CKRE - Bored Piles for K5-CKRE-1 (1 nr)	36	19-Nov-21 A	24-Dec-21 A	19-Feb-22	19-Feb-22		4.00



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
3.10-7510	CKRE - K5-CKRE-1 Proof drilling & Piles testing	24	25-Jan-22	28-Feb-22	13-Jun-22	11-Jul-22	106	0.00
3.10-7518	CKRE - K5-CKRE-2 Proof drilling & Piles testing	24	25-Jan-22	28-Feb-22	09-Jul-22	05-Aug-22	128	0.00
Piling Works - ABUT A-K4-CKRE		17	25-Jan-22	19-Feb-22	07-Jun-22	25-Jun-22	101	0.00
3.10-7526	CKRE - ABUT A-K4-CKRE Proof drilling & Piles testing	17	25-Jan-22	19-Feb-22	07-Jun-22	25-Jun-22	101	0.00
CKRE - Pile Caps, Pier / Abutment		89	15-Feb-22	06-Jun-22	27-Jun-22	15-Sep-22	85	16.00
Abutment A-K1-CKRE		29	15-Feb-22	19-Mar-22	05-Aug-22	10-Sep-22	142	4.00
3.10-7536	CKRE - Construct Abutment A-K1-CKRE	20	15-Feb-22	09-Mar-22	05-Aug-22	27-Aug-22	139	4.00
3.10-7538	CKRE - A-K1-CKRE Install Permeate Membrane and Backfill	9	10-Mar-22	19-Mar-22	01-Sep-22	10-Sep-22	142	0.00
Pier K5-CKRE-1		47	06-Apr-22	06-Jun-22	12-Jul-22	03-Sep-22	76	4.00
3.10-7540	CKRE - Prepare Pile Head for K5-CKRE-1	24	06-Apr-22	07-May-22	12-Jul-22	08-Aug-22	76	1.00
3.10-7544	CKRE - K5-CKRE-1 Reinstatement of Slab of Kai Tak River, remaining works	5	10-May-22	14-May-22	09-Aug-22	13-Aug-22	76	1.00
3.10-7542	CKRE - Construct Pier K5-CKRE-1 (2 Lifts)	18	16-May-22	06-Jun-22	15-Aug-22	03-Sep-22	76	2.00
Pier K5-CKRE-2		47	06-Apr-22	06-Jun-22	12-Jul-22	03-Sep-22	76	4.00
3.10-7552	CKRE - Prepare Pile Head for K5-CKRE-2	24	06-Apr-22	07-May-22	12-Jul-22	08-Aug-22	76	1.00
3.10-7556	CKRE - K5-CKRE-2 Reinstatement of Slab of Kai Tak River, remaining works	5	10-May-22	14-May-22	09-Aug-22	13-Aug-22	76	1.00
3.10-7554	CKRE - Construct Pier K5-CKRE-2 (2 Lifts)	18	16-May-22	06-Jun-22	15-Aug-22	03-Sep-22	76	2.00
Abutment A-K4-CKRE		68	21-Feb-22	17-May-22	27-Jun-22	15-Sep-22	101	4.00
3.10-7568	CKRE - Prepare pile head (4no) A-K4-CKRE	20	21-Feb-22	15-Mar-22	27-Jun-22	20-Jul-22	101	0.00
3.10-7570	CKRE - Construct Abutment Base A-K4-CKRE	17	16-Mar-22	04-Apr-22	21-Jul-22	09-Aug-22	101	1.00
3.10-7572	CKRE - Construct Abutment A-K4-CKRE	22	06-Apr-22	05-May-22	10-Aug-22	03-Sep-22	101	3.00
3.10-7574	CKRE - A-K4-CKRE Install Permeate Membrane and Backfill	9	06-May-22	17-May-22	05-Sep-22	15-Sep-22	101	0.00
Section 12 - Underpass S21		139	25-Oct-21 A	19-Apr-22	14-Jul-22	31-Dec-22	211	24.00
Sch_4.3 Slip Road Underpass S21		139	25-Oct-21 A	19-Apr-22	14-Jul-22	31-Dec-22	211	24.00
S21 - RC Structure		78	05-Nov-21 A	14-Feb-22	10-Sep-22	31-Dec-22	262	4.00
S21 - U-Trough Sections - South (CH000 to CH143.981)		12	25-Jan-22	14-Feb-22	16-Dec-22	31-Dec-22	262	0.00
S21 - Bay B2-10 - At-Grade Slab (CH009.376 to 000)		12	25-Jan-22	14-Feb-22	16-Dec-22	31-Dec-22	262	0.00
4-7812	S21-B2-10 - Construct At Grade slab	12	25-Jan-22	14-Feb-22	16-Dec-22	31-Dec-22	262	0.00
S21 - Box Sections (CH143.981 to CH205.700)		22	05-Nov-21 A	30-Nov-21 A	10-Sep-22	10-Sep-22		2.00
S21 - Bay B1-2 - Box Section (CH159.3 to 175)		22	05-Nov-21 A	30-Nov-21 A	10-Sep-22	10-Sep-22		2.00
4-7738	S21-B1-2 Construct External Walls (final pour) & Top Slab	22	05-Nov-21 A	30-Nov-21 A	10-Sep-22	10-Sep-22		2.00
S21 - U-Trough Sections - North (CH205.700 to CH354.957)		12	25-Jan-22	14-Feb-22	16-Dec-22	31-Dec-22	262	2.00
S21 - Bay B3-9 - At Grade Slab Part 3E (CH321.11 to 354.957) Part 3E		12	25-Jan-22	14-Feb-22	16-Dec-22	31-Dec-22	262	2.00
4-7868	S21-B3-9 - Construct At Grade slab	12	25-Jan-22	14-Feb-22	16-Dec-22	31-Dec-22	262	2.00
S21 - Miscellaneous Works		139	25-Oct-21 A	19-Apr-22	14-Jul-22	26-Sep-22	132	20.00
S21 - Waterproofing and Backfilling Works		139	25-Oct-21 A	19-Apr-22	14-Jul-22	26-Sep-22	132	20.00
S21 - Box Sections (CH143.981 to CH205.700)		54	25-Oct-21 A	08-Apr-22	14-Jul-22	26-Sep-22	138	12.00
4-7870	S21 - Waterproofing / Movement Joint / Masonry Wall (Box Section)	48	25-Oct-21 A	31-Mar-22	14-Jul-22	10-Sep-22	132	6.00
4-7872	S21 - Backfilling up to GL (Box Section)	48	01-Nov-21 A	08-Apr-22	26-Sep-22	26-Sep-22	138	6.00



Activity ID	Activity Name	Orig Dur	Start	Finish	Late Start	Late Finish	Total Float	TRA (Day)
S21 - U-Trough Sections - North (CH205.700 to CH321.110)		42	01-Nov-21 A	31-Mar-22	21-Jul-22	26-Sep-22	138	8.00
4-7946	S21 - Waterproofing / Movement Joint / Masonry Wall (U-Trough Section - North)	36	01-Nov-21 A	31-Mar-22	21-Jul-22	19-Sep-22	138	4.00
4-7944	S21 - Backfilling up to GL (U-Trough Section - North)	36	08-Nov-21 A	25-Dec-21 A	26-Sep-22	26-Sep-22		4.00
S21 - Final Completion Works		12	01-Apr-22	19-Apr-22	13-Sep-22	26-Sep-22	132	0.00
4-7814	S21 - Final Completion Works	12	01-Apr-22	19-Apr-22	13-Sep-22	26-Sep-22	132	0.00
4-7816	S21 - Completion of Structure of Underpass S21	0		19-Apr-22		26-Sep-22	132	0.00
Section 17 - Sleeve pipes for District Cooling System (Subject to		145	25-Oct-21 A	25-Mar-22	15-Jan-22	10-Oct-22	159	37.00
Sch_10 Sleeve pipes for DCS (Kai Tak River West)		8	25-Jan-22	09-Feb-22	22-Feb-22	02-Mar-22	18	3.00
DCS-West Section A (39m)		8	25-Jan-22	09-Feb-22	22-Feb-22	02-Mar-22	18	3.00
10-8478	DCS(W)_A - Reinstatement (Pavement / fencing / etc.)	8	25-Jan-22	09-Feb-22	22-Feb-22	02-Mar-22	18	3.00
Sch_10 Sleeve pipes for DCS (Kai Tak River East)		145	25-Oct-21 A	25-Mar-22	15-Jan-22	10-Oct-22	159	34.00
DCS-East Portion 1 (approx 37.5m)		145	25-Oct-21 A	25-Mar-22	15-Jan-22	10-Oct-22	159	16.00
10-8516	DCS(E) - Dewatering system installation (TBA subject to design)	18	25-Oct-21 A	01-Nov-21 A	15-Jan-22	15-Jan-22		2.00
10-8518	DCS(E) - Excavation down to formation level (Part A for Pile caps) incl walling & strut	30	02-Nov-21 A	16-Dec-21 A	15-Jan-22	15-Jan-22		3.00
10-8520	DCS(E) - Excavation down to formation level (Part B for DCS) incl walling & strut	15	18-Nov-21 A	20-Dec-21 A	15-Jan-22	15-Jan-22		3.00
10-8522	DCS(E) - Install sleeve pipes 3x1800 ID (L=37.5m)	24	20-Dec-21 A	15-Jan-22 A	15-Jan-22	15-Jan-22		6.00
10-8524	DCS(E) - Backfilling works for DCS pipes	12	17-Jan-22 A	11-Feb-22	15-Jan-22	26-Jan-22	-8	2.00
10-8524A	DCS(E) - Backfilling works in DCS area (up to G.L.)	36	12-Feb-22	25-Mar-22	26-Aug-22	10-Oct-22	159	
DCS-East Portion 2 (approx 37.5m)		125	25-Oct-21 A	11-Mar-22	20-Jan-22	10-Oct-22	171	18.00
10-8530	DCS(E) - Dewatering system installation (TBA subject to design)	26	25-Oct-21 A	01-Nov-21 A	20-Jan-22	20-Jan-22		2.00
10-8532	DCS(E) - Excavation down to formation level incl walling & strut	36	02-Nov-21 A	20-Dec-21 A	20-Jan-22	20-Jan-22		2.00
10-8534	DCS(E) - Install sleeve pipes 3x1800 ID (L=37.5m)	19	28-Dec-21 A	31-Jan-22 A	20-Jan-22	20-Jan-22		6.00
10-8536	DCS(E) - Backfilling works for DCS pipes	12	28-Dec-21 A	31-Jan-22	20-Jan-22	26-Jan-22	-4	2.00
10-8536A	DCS(E) - Backfilling works in DCS area (up to G.L.)	28	08-Feb-22	11-Mar-22	05-Sep-22	10-Oct-22	171	
10-8508	DCS(W)_C - Final completion works	5	12-Feb-22	17-Feb-22	27-Jan-22	08-Feb-22	-8	6.00
10-8510	DCS(W)_C - Completion of Sleeve pipes for DCS (Section 17)	0		17-Feb-22		08-Feb-22	-8	

Current Milestone
Actual Work
Critical Remaining Work
Remaining Work

Central Kowloon Route - Kai Tak East (Month 33 Update) (Rev27 - CSD)
Three Month Rolling Programme

Project ID: KTE-WP27_M33
Baseline:
Layout: KTE - 3 Months Rolling Programme
Filter: TASK filters: 3 Months Rolling_1, KTE - Submission.

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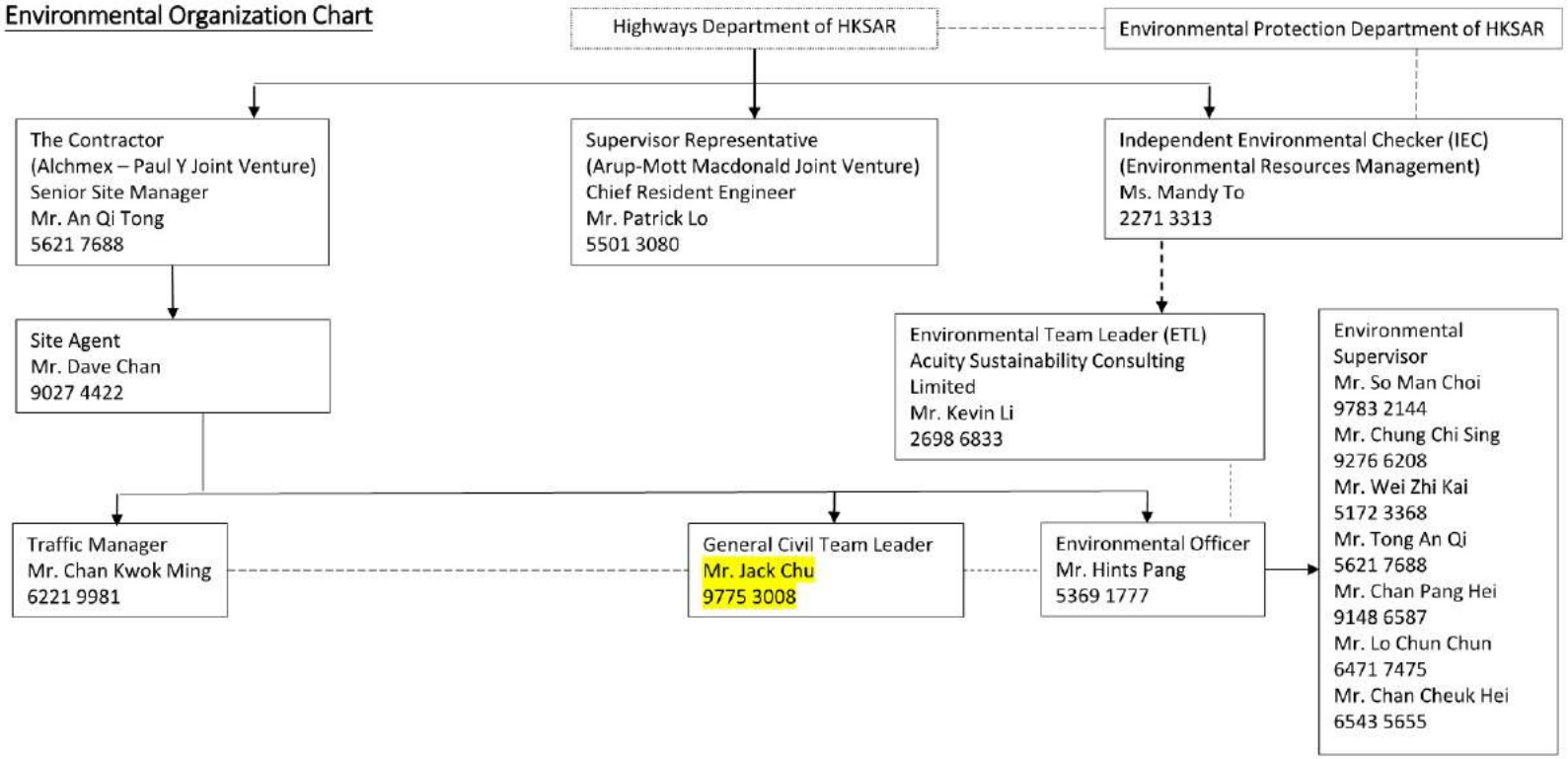
Date	Revision	Checked	Approved
25-Oct-21	Monthly Programme M30	TYY	DC
20-Nov-21	Submit CSD Programme Rev 25	TYY	DC
25-Nov-21	Monthly Programme M31	TYY	DC
24-Dec-21	Submit CSD Programme Rev 26	TYY	DC
25-Dec-21	Monthly Programme M32	TYY	DC
24-Jan-22	Submit CSD Programme Rev 27	TYY	DC

Appendix C
Project Organization Chart

Environmental Organization Chart



愛銘－保華聯營
Alchmex - Paul Y Joint Venture

Appendix D
Dust Event-Action Plan (EAP)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1.Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2.Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 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 on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
LIMIT LEVEL				
1.Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and	1. Check monitoring data submitted by ET; 2. Check Contractor's working method;	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor;	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
	EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	3. Ensure remedial measures properly implemented.	within 3 working days of notification; Implement the agreed proposals; 4. Amend proposal if appropriate.
2.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 and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note:

ET – Environmental Team ER – Engineer's Representative IEC – Independent Environmental Checker

Appendix E
Noise Event-Action Plan (EAP)

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
Action Level	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Notify IEC and Contractor; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1.Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer's Representative

Appendix F
Environmental Mitigation Implementation Schedule (EMIS)

Environmental Mitigation Implementation Schedule – Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
Construction Dust Impact								
S4.3.10	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact To meet HKAQO and TM-EIA criteria	• Implemented
S4.3.10	D2	• 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 should be conducted to achieve dust removal efficiencies 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 1.3 L/m^2 to achieve the dust removal efficiency.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact To meet HKAQO and TM-EIA criteria	• Implemented
S4.3.10	D3	• Proper watering at exposed spoil should be undertaken 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 wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact To meet HKAQO and TM-EIA criteria	• Implemented

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction 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 section 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 and properly maintained 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 period; • The portion of any road leading only to construction 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						

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • 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; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						
S4.3.10	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected rep. dust monitoring station	Construction stage	• TM-EIA	• Implemented
Construction Noise (Airborne)								

Environmental Mitigation Implementation Schedule – Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S5.4.1	N1	Implement the following good site practices: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction 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 direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIAO	• Implemented
S5.4.1	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	• Annex 5, TM-EIAO	• Implemented
S5.4.1	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy	Sreen the noisy plant items to be used at all construction	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIAO	• Implemented

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		plants including air compressors, generators and handheld breakers, etc.	sites					
S5.4.1	N4	Use 'Quiet plant'	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIAO	• Implemented
S5.4.1	N5	Loading/ unloading activities should be carried out inside the full enclosure of mucking out points.	Reduce the noise levels of loading/ unloading activities	Contractor	Mucking out locations	Construction stage	• Annex 5, TM-EIAO	• Implemented
S5.4.1	N6	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Annex 5, TM-EIAO	• Implemented
S5.4.1	N7	Implement a noise monitoring programme under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected rep. noise monitoring station	Construction stage	• TM-EIAO	• Implemented
Water Quality (Construction Phase)								

Environmental Mitigation Implementation Schedule – Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S6.9.1.1	W1	In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: <u>Construction Runoff</u> • 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 and erosion and sedimentation control facilities implemented. 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. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/ sediment trap. The sediment/ silt traps should be incorporated in the permanent drainage channels to enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/ sand traps should be 5 minutes under	To minimize water quality impact from the construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-EIAO • TM-DSS	• Implemented

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m3/s a sedimentation basin of 30 m3 would be required and for a flow rate of 0.5 m3/s the basin would be 150 m3. The detailed design of the sand/ silt traps shall be undertaken by the contractor prior to the commencement of construction; • All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means; • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows; • 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 minimize the ingress						

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and site wheel washing						

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • 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 solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby; • Adopt best management practices; • All earth works should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet						

Environmental Mitigation Implementation Schedule – Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		season (April to September) as far as practicable.						
S6.9.1.2	W2	<u>Tunneling Works and Underground Works</u> • Cut-&-cover tunneling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable. • Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge; • The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater; • Direct discharge of the bentonite slurry (as a result of D-wall) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities area completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-DSS • TM-EIAO	• N/A

Environmental Mitigation Implementation Schedule – Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S6.9.1.3	W3	Sewage Effluent • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS	• Implemented
S6.9.1.5	W4	Groundwater from Potential Contaminated Area: • No direct discharge of groundwater from contaminated areas should be adopted. • A discharge license under the WPCO through the Regional Office of EPD for groundwater discharge should be applied. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed during the process of discharge license application. The compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-DSS) and the existence of prohibited substance should be confirmed. 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 the requirements of the TM-DSS or properly	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found	Construction stage	• Water Pollution Control Ordinance • TM-DSS • TM-EIAO	• Implemented

Environmental Mitigation Implementation Schedule –
Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		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. TPH) to undetectable range. 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 Section 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be						

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		removed as necessary by installing the petrol interceptor.						
S6.9.1.6	W6	<u>Accidental Spillage</u> In order to prevent accidental spillage of chemicals, the following is recommended: • All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains; • The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings. Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste Disposal (Chemical Waste) (General) Regulation.	To minimize water quality impact from accidental spillage	Contractor	All construction site where practicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN 1/94 • TM-EIAO • TM-DSS	• Implemented and rectified after observation
Waste Management (Construction Waste)								
S7.4.1	WM1	<u>On-site sorting of C&D material</u> • Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc.). Volcanic rock and Aplite dyke rock should be separated at the source sites	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	• DEVB (W) No. 6/2010	• N/A

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		as far as practicable and stored at designated stockpile area preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractor for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc. should be explored.						
S7.5.1	WM2	<u>Construction and Demolition Material</u> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'selective demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	• Implemented

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction.	disposal					
S7.5.1	WM3	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimize the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage; • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	• Implemented

Environmental Mitigation Implementation Schedule – Contract No. HY/2018/02 (Kai Tak East)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.						
S7.5.1	WM4	<u>Excavated Contaminated Soils</u> • Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.	The contaminated soil will be excavated for on-site reuse	Contractor	PBH4	Prior to commencement of construction works within the contaminated area	• Practice Guide (PG) for Investigation and Remediation of Contaminated Land • GN/GM for land contamination	• Implemented
S7.5.1	WM5	<u>Land-based Sediment</u> • All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location; • All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; • Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the	To control pollution due to marine sediment	Contractor	Along CKR alignment	Construction stage	• ETWB TCW No. 34/2002	• Implemented

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		approved locations; • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. • The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers; • The Contractors shall comply with the conditions in the dumping licence. • All bottom dumping vessels (Hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material; • The material shall be placed into the disposal pit by bottom dumping; • Contaminated marine mud shall be transported by spit barge of not less than 750m3 capacity and capable of rapid opening and discharge at the disposal site; • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. • For Type 3 special disposal treatment, sealing of						

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		contaminant with geosynthetic containment before dropping designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfilling the requirements for fully confined mud disposal.						
S7.5.1	WM6	<u>Chemical Waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes; • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed, have a capacity of less than 450 L unless the specification has been approved by EPD, and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation; • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste, enclosed on at least 3 sides, have an impermeable floor and bunding of sufficient	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	• Implemented and rectified after observation

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest, have adequate ventilation, covered to prevent rainfall entering, and arranged so that incompatible materials are adequately separated; • Disposal of chemical waste should be via a licensed waste collector, be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers, or be to a reuser of the waste, under approval from EPD.						
S7.5.1	WM7	General Refuse • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes; • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminum cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible; • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	• Implemented

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		collection. Participation in a local collection scheme should be considered by the Contractor.						
Land Contamination								
S8.9 & Appendix 8.4	LC2	<u>Excavation of the Contaminated Soil</u> • Prior to commencement of the excavation works at the contamination zone, the zone should be clearly marked out on site and the surface levels recorded. Excavation of contaminated material should be undertaken using dedicated earth-moving plant. • The excavated contaminated soils would be stockpiled at designated area on site and covered by sheet to prevent dispersion of contamination during stockpiling. • The Contractor should pay attention to the selection of suitable groundwater lowering schemes and discharge points if the groundwater table is higher than the contaminated soils during excavation. The Contractor should also obtain a valid Water Pollution Control Ordinance (WPCO) discharge licence from EPD where applicable.	The contaminated soil will be excavated for on-site reuse	Contractor	PBH4	Prior to commencement of construction works within the contaminated area	• Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Notes for Contaminated Land Assessment and Remediation • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management	• N/A
S8.9 & Appendix 8.4	LC3	• Following completion of the excavation to the specified depth, at least one sample from the base of the excavation and four samples evenly distributed along the boundary of the excavation shall be taken for a closure assessment testing. The acceptance criterion is shown below:						• N/A

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		<table><tr><td>Locations</td><td>Testing requirement</td><td>Acceptance Criteria</td></tr><tr><td>PBH4</td><td>PCBs</td><td>RBRGs (Public Park)</td></tr></table> • If the results of analysis below the RBRGs (Public Park), no further excavation will be required. If the analysis indicates presence of contamination (i.e. noncompliance of the acceptance criteria), further excavation shall be carried out in 0.5m increment vertically and/or horizontally depending on the location(s) of the sample(s) which has exceeded the acceptance criteria. Further sampling shall also be conducted for compliance testing. The process of excavation, sampling and compliance testing should continue until all contaminated materials are removed and should be supervised by a Land Contamination Specialist.						
Appendix 8.4	LC4	A Remediation Report (RR) to demonstrate adequate clean-up shall be prepared and submitted to EPD for endorsement prior to the commencement of any construction/development works within the sites. No construction/development works shall be carried out prior to the endorsement of the RR by EPD.						• N/A
Hazard to Life								

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S9.18	H8	The driver and his assistant should be physically healthy, experienced and have good safe driving records. The driver should hold a proper driving licence for the approved transport truck. Dedicated training programme and regular road safety briefing sessions/ workshops should be provided to enhance their safe driving attitude and practice. Smoking should be strictly prohibited.	To reduce the risk during explosives transport	Contractor	Works areas at which explosives would be used	Construction stage	-	• N/A
S9.18	H9	Emergency response plans in case of road accident should be prepared and implemented. The driver and his assistant should be familiar with the emergency procedures including evacuation, and proper communication/ fire-fighting equipment should be provided to the driver and his assistant.	To reduce the risk during explosives transport	Contractor	Works areas at which explosives would be used	Construction stage	-	• N/A
Landscape & Visual								
S10.10.1 Table 10.11	LV3	<u>Good Site Management</u> • Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. • Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.	Minimize visual impact	Contractor	Within Project site	Construction stage	-	• Implemented
S10.10.1 Table 10.11	LV4	<u>Screen Hoarding</u> • Decorative screen hoarding should be erected to screen the public from the construction area. It should be designed to be compatible with the existing urban context.	Minimize visual impact	Contractor	Within Project site	Construction stage	-	• Implemented

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S10.10.1 Table 10.11	LV5	<u>Lighting Control during Construction</u> • All lighting in the construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residencies and GIC. The Contractor shall consider other security measures, which shall minimize the visual impacts.	Minimize visual impact	Contractor	Within Project site	Construction stage	-	• Implemented
S10.10.1 Table 10.11	LV6	<u>Erosion Control</u> • The potential for soil erosion shall be reduced by minimizing the extent of vegetation disturbance on site and by providing a protective cover over newly exposed soil.	Minimize landscape impact	Contractor	Within Project site	Construction stage	-	• Implemented
S10.10.1 Table 10.11	LV7	<u>Tree Protection & Preservation</u> • Carefully protected during construction. Tree protection measures will be detailed at the Tree Removal Application stage and plans submitted to the relevant Government Department for approval in due course in accordance with ETWB TC no. 3/2006.	Minimize landscape and visual impact	Contractor	Within Project site	Construction stage	• 'Guidelines for Tree Risk Management and Assessment Arrangement on an Area Basis and on a Tree Basis', Greening, Landscape and Tree Management (GLTM) Section, DEVB • Latest recommended horticultural practices from	• Implemented

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
							GLTM Section, DEVB	
S10.10.1 Table 10.11	LV8	Tree Transplantation • For trees unavoidably affected by the Project that have to be removed, where practical transplantation will be chosen as the top priority method of removal. If this is not possible or practical compensatory planting will be provided for trees unavoidably felled (See LV10). For trees unavoidably affected by the Project works that are transplanted, transplantation must be carried out in accordance with ETWB TCW 2/2004 and 3/2006.	Minimize landscape and visual impact	Contractor	Within Project site and designated off-site locations	Prior to Construction stage	• ETWB TCW 3/2006 • Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DEVB • ETWB TCW 2/2004	• N/A
S10.10.1 Table 10.11	LV9	Compensatory Planting • For trees unavoidably affected by the Project that have to be removed, where practical transportation will be chosen as the top priority method of removal but if this is not possible or practical compensatory planting will be provided for trees unavoidably felled. All felled trees shall be compensated for by planting trees to the satisfaction of relevant Government projects. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling	Minimize visual impact and also enhance landscape	Contractor	Within Project site	Construction stage	• ETWB TCW 3/2006 • Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DEVB	• N/A

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EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		Application process under ETWBTC 3/2006. • Compensatory tree planting may be incorporated into public open spaces and along roadside amenity areas affected by the construction works and therefore be part of the bigger wider planting plans. Onsite compensation planting is preferred but if necessary, additional receptor sites outside the Works Area shall be agreed separately with Government during the Tree Felling Application process.					• ETWB TCW 2/2004	
S10.10.1 Table 10.11	LV10	<u>Screen Planting</u> • Tall screen/buffer trees, shrubs and climbers should be planted, in so far as is possible, to soften and screen proposed structures such as roads and central strip, vertical edges and buildings and to enhance streetscape greening effect where appropriate. Indiscriminate use of trees for screening must be avoided and the principle of 'right tree for the right place' must be followed. This detail will be provided at the Detailed Design stage. This measure may additionally form part of the compensatory planting and will improve and create a pleasant pedestrian environment.	Minimize visual impact and also enhance landscape.	Contractor	Within Project Site	Construction Phase	• Guidelines on Greening of Noise Barriers, issued April 2012, GLTMS, DevB • ETWB TCW 2/2004	• N/A
S10.10.1 Table 10.11	LV12	<u>Reinstatement</u> • All works areas, excavated areas and disturbed areas for tunnel construction and temporary road diversion or any other proposed works shall be reinstated to former conditions or better, with reasonable landscape treatment and to the satisfaction of the relevant Government	Minimize landscape impact	Contractor	Within Project Site	Construction Phase	• N/A	• N/A

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		departments. (Specific mitigation for disturbance to public open space is detailed separately under LV14)						
Cultural Heritage Impact (Construction Phase)								
S11.4.4	CH1	The contractor should be alerted during the construction on the possibility of locating archaeological remains and as a precautionary measure, AMO shall be informed immediately in case of discovery of antiquities or supposed antiquities in the subject sites.	To preserve any cultural heritage items which may be removed and damaged by the excavation	Contractor	During construction works for cut and cover tunnels	Construction stage	• AMOs requirements	• Implemented
EM&A Project								
S13.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	Control EM&A Performance	Highways Department	All construction sites	Construction stage	• EIAO Guidance Note No. 4/2010 • TM-EIAO	• Implemented
S13.2-13.4	EM2	• An Environmental Team needs to be employed as per the EM&A Manual; • Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures; • An environmental impact monitoring needs to be implemented by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Highways Department/ Contractor	All construction sites	Construction stage	• EIAO Guidance Note No. 4/2010 • TM-EIAO	• Implemented

Appendix G
Monitoring Schedule of the Reporting Month

February 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4 Impact Dust monitoring (E-A1)	5
6	7	8	9	10 Impact Dust monitoring (E-A1)	11	12
13	14	15	16 Impact Dust monitoring (E-A1)	17	18	19
20	21	22 Impact Dust monitoring (E-A1)	23	24	25	26
27	28 Impact Dust monitoring (E-A1)	1	2	3	4	5

Appendix H
Calibration Certificates
(Air Monitoring)

ACUITY SUSTAINABILITY CONSULTING LIMITED
Website: www.acuityhk.com
Unit C, 8/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon.
Tel.: (852) 2698 6835
Fax.: (852) 2698 9585

Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

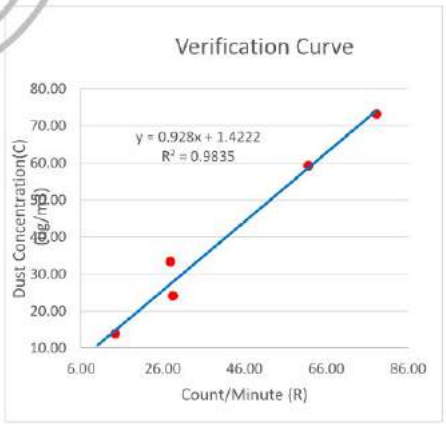
Verification Test Date: 27-Jun-21 to 1-Jul-21
Next Verification Test Date: 1-Jul-22
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 761173
Our Report Refrence No. RPT-21-HVS-0003

Standard Equipment Information		
Verification Equipment Type	Tisch's TSP HVS	Tish HVS Calibrator
Standard Equipment Model No.	TE-5170 X	TE-5028
Equipment serial no.	MFC 1049	1050
Last Calibration Date	17-Jun-21	24-Sep-20
Next Calibration Date	17-Aug-21	24-Sep-21

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	27/6/2021	1254.37	1257.37	180.00	0.00119	27.90	2652	R210872/1	33.33
2	27/6/2021	1258.44	1261.44	180.00	0.00090	61.70	1539	R210872/2	59.26
3	27/6/2021	1262.31	1265.31	180.00	0.00097	10.00	1983	R210872/3	9.72
4	1/7/2021	1265.84	1268.84	180.00	0.00093	78.30	2313	R210887/1	73.15
5	1/7/2021	1269.10	1272.10	180.00	0.00096	14.40	1407	R210887/2	13.89
6	1/7/2021	1272.50	1275.50	180.00	0.00084	28.50	1299	R210887/3	24.07
					0.00098				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.0

By Linear Regression of y on x:
slope, mh= 0.9280
intercept,ch= 1.4222
*Correlation Coefficient R= 0.9917
Verification Test Result: Strong Correlation, Results were accepted.
* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 20-07-2021
Technical Manager

TISCH Environmental

RECALIBRATION DUE DATE:
August 3, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	August 3, 2021	Rootsmeter S/N: 438320	Ta: 295	°K
Operator:	Jim Tisch		Pa: 750.57	mm Hg
Calibration Model #:	TE-5028A	Calibrator S/N: 3702		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3170	4.1	1.50
2	3	4	1	1.0350	6.7	2.50
3	5	6	1	0.9420	8.0	3.00
4	7	8	1	0.8650	9.3	3.50
5	9	10	1	0.6540	16.2	6.00

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)
0.9922	0.7534	1.2233	0.9945	0.7552	0.7678
0.9887	0.9553	1.5793	0.9911	0.9576	0.9913
0.9870	1.0478	1.7300	0.9893	1.0503	1.0859
0.9853	1.1390	1.8686	0.9876	1.1417	1.1729
0.9761	1.4925	2.4466	0.9784	1.4960	1.5356
QSTD	m=	1.64554	QA	m=	1.03041
	b=	-0.00368		b=	-0.00231
	r=	0.99975		r=	0.99975

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.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

InnoTech Instrumentation Co. Ltd.
創 新 科 儀 有 限 公 司

HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

Location:	Emax	Site ID:		Date:	04-Feb-2022
Serial No:	1049	Model:	TE-5170X	Operator:	Kate Wong

Ambient Condition

Corrected Pressure (mm Hg):	766.1	Temperature (deg K):	287.6

Calibration Orifice

Model:	TE-5028A	Slope:	1.64554
Serial No.:	3702	Intercept:	-0.00368
Calibration Due Date:	3-Aug-22	Corr. Coeff:	0.99975

Calibration Data

Plate or Test #	In,H2O (in)	Qa, X-Axis (m3/min)	I, CFM (chart)	IC, Y-Axis (corrected)
1	1.32	0.717	27.8	28.46
2	1.62	0.792	30.2	30.88
3	2.06	0.893	33.3	34.06
4	2.60	1.005	36.2	36.97
5	3.07	1.090	38.5	39.38

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

m= 29.1080 b= 7.7736 Corr. Coeff= 0.9991

Sampler set point(SSP) 42 CFM

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
(1.21*m+b)/[Sqrt(298/Tav)(Pav/760)]

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

Checked by: _____ Date: 4-Feb-22

InnoTech Instrumentation Co. Ltd.
創 新 科 儀 有 限 公 司

HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

Location:	Emax	Site ID:		Date:	22-Feb-2022
Serial No:	1049	Model:	TE-5170X	Operator:	Kate Wong

Ambient Condition

Corrected Pressure (mm Hg):	766.6	Temperature (deg K):	283.9

Calibration Orifice

Model:	TE-5028A	Slope:	1.64554
Serial No.:	3702	Intercept:	-0.00368
Calibration Due Date:	3-Aug-22	Corr. Coeff:	0.99975

Calibration Data

Plate or Test #	In,H2O (in)	Qa, X-Axis (m3/min)	I, CFM (chart)	IC, Y-Axis (corrected)
1	1.34	0.727	25.2	25.98
2	1.54	0.777	27.0	27.81
3	1.77	0.834	29.0	29.80
4	1.94	0.872	30.1	30.97
5	2.20	0.930	31.9	32.80

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

m= 33.5276 b= 1.7125 Corr. Coeff= 0.9994

Sampler set point(SSP) 41 CFM

Calculations

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg
For subsequent calculation of sampler flow:
(1.21*m+b)/[Sqrt(298/Tav)(Pav/760)]

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

Checked by: _____ Date: 22-Feb-22

Appendix I
The Certification of Laboratory with HOKLAS Accredited Analytical Tests

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

ACUMEN LABORATORY AND TESTING LIMITED
浩科檢測中心有限公司

Lot 12, Tam Kon Shan Road, North Tsing Yi, New Territories, Hong Kong
香港新界青衣北担杆山路12路段

is accredited by the Hong Kong Accreditation Service (HKAS) to ISO/IEC 17025:2017
for performing specific laboratory activities as listed in the scope of accreditation within the test category of
獲香港認可處根據ISO/IEC 17025:2017認可
進行載於認可範圍內下述測試類別中的指定實驗所活動

Environmental Testing
環境測試

This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and the implementation of a management system relevant to laboratory operation (see joint IAF-ILAC-ISO Communiqué).
此項 ISO/IEC 17025:2017 的認可資格證明此實驗所具備指定範疇內所須的技術能力並實施一套與實驗所運作相關的管理體系（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 HKAS is affixed hereto by the authority of the HKAS Executive
現經香港認可處執行機關授權在此蓋上香港認可處的印章

SHUM Wai-leung, Executive Administrator
執行幹事 沈偉良
Issue Date : 2 December 2019
簽發日期：二零一九年十二月二日

Registration Number : HOKLAS 241
註冊號碼：

Date of First Registration : 16 July 2014
首次註冊日期：二零一四年七月十六日

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

L001875

Appendix J
Location Plan of Air Quality Monitoring Station

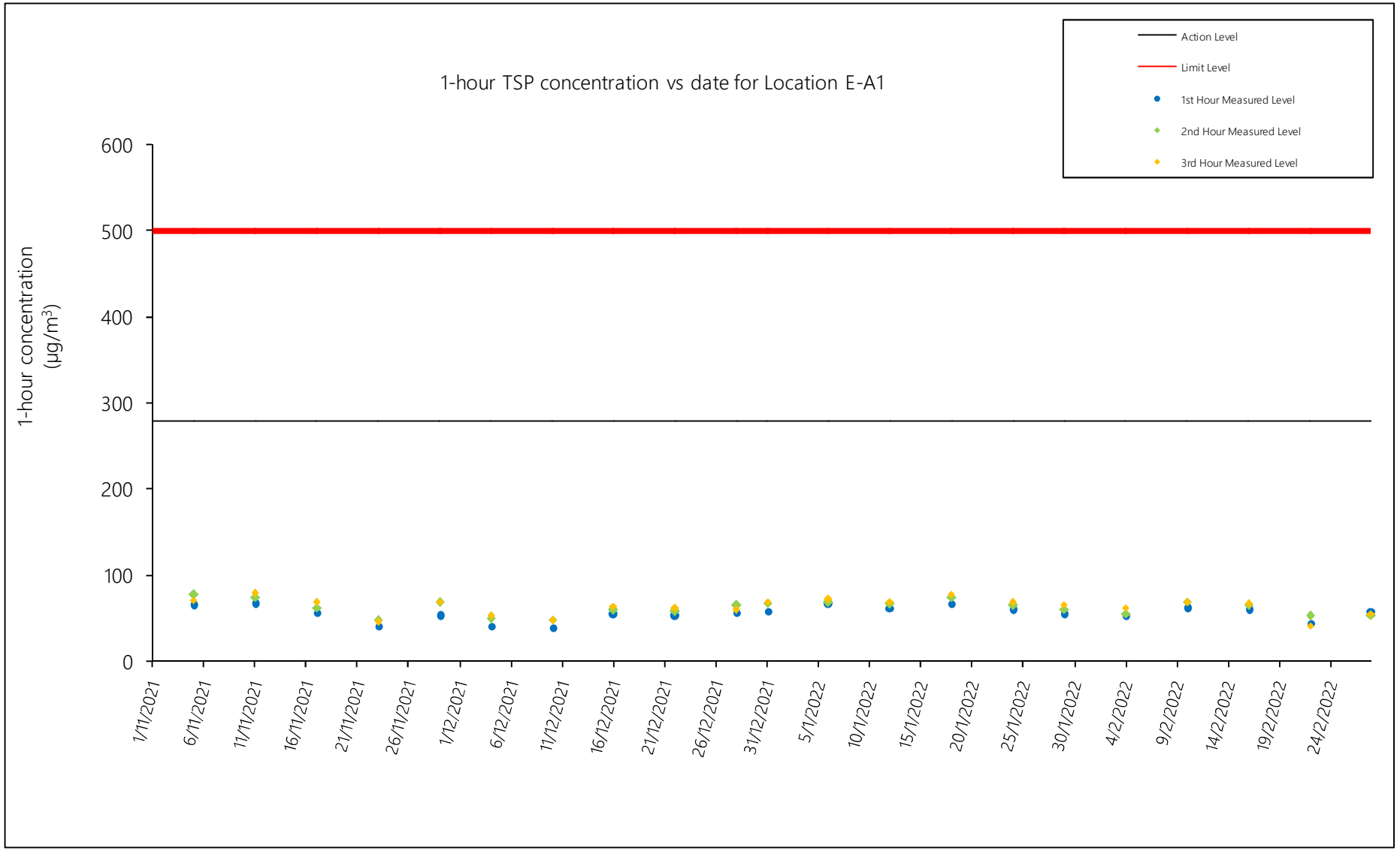

N
E-A1
Date: 19-Aug-2019
Scale 1:4000(A3)

Appendix K
Monitoring Data (Air Monitoring)

Location: Hong Kong International Trade and Exhibition Centre (E-A1)
Monitoring date: 4, 10, 16, 22 and 28 February 2022
Parameter: TSP 1-hour
Other Factors: Nearby traffic

Date	1-hour TSP (µg/m^3)				
	Weather	Start Time	1st Hour (µg/m^3)	2nd Hour (µg/m^3)	3rd Hour (µg/m^3)
04/02/2022	Fine	9:10	53	55	62
10/02/2022	Fine	9:00	61	69	68
16/02/2022	Fine	8:57	59	64	66
22/02/2022	Cloudy	10:29	44	52	41
28/02/2022	Fine	9:20	58	53	55

Figure 1: Graphical Illustration of Measured 1-hour TSP (μg/m^3) Levels at E-A1



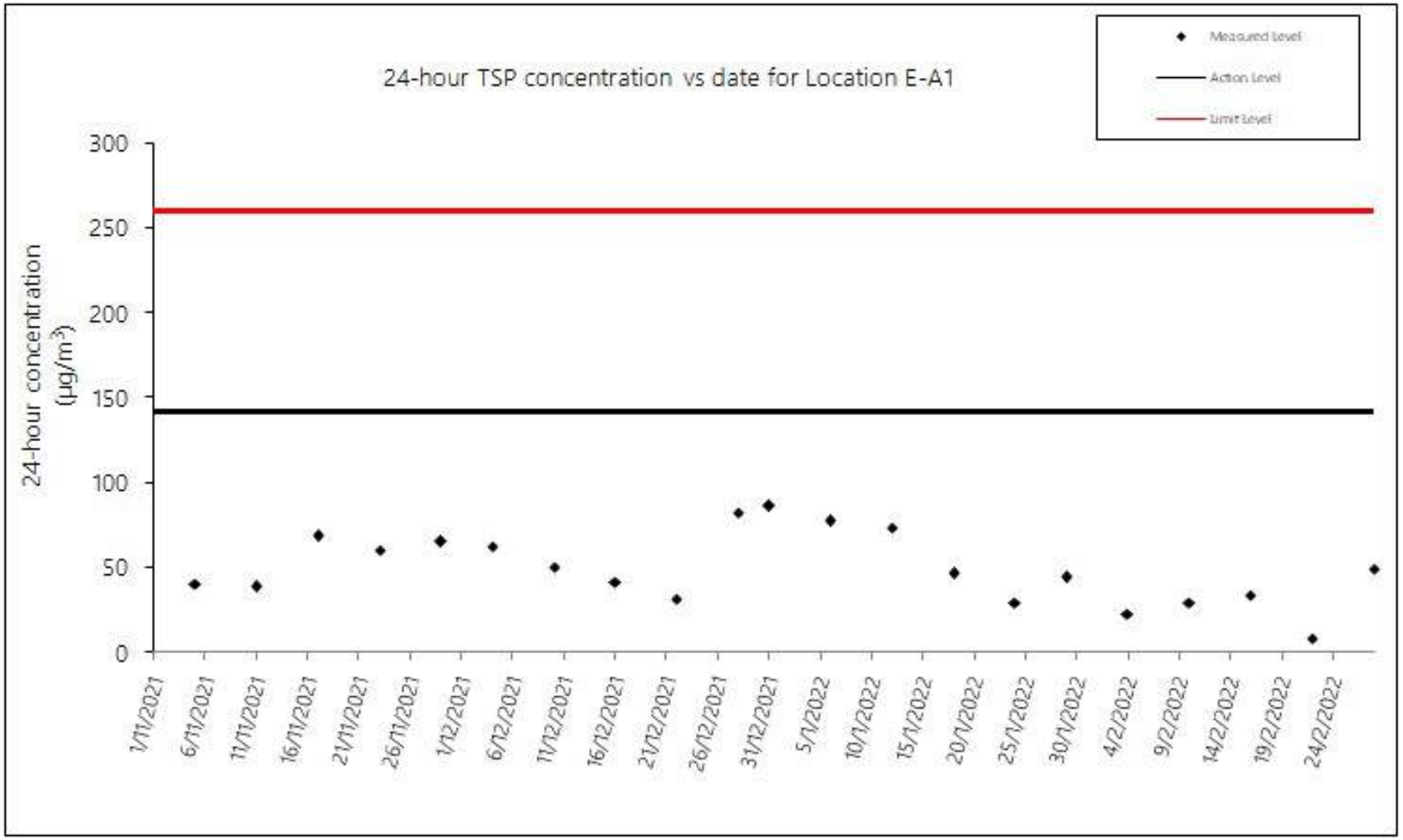
Location: Hong Kong International Trade and Exhibition Centre (E-A1)
Monitoring date: 4, 10, 16, 22 and 28 February 2022
Parameter: TSP 24-hour
Other Factors: Nearby traffic

Date of Calibration:	6-Jan-22	Slope =	29.1080
Calibration due date:	20-Jan-22	Intercept =	7.7736
Date of Calibration:	18-Jan-22	Slope =	33.5276
Calibration due date:	1-Feb-22	Intercept =	1.7125

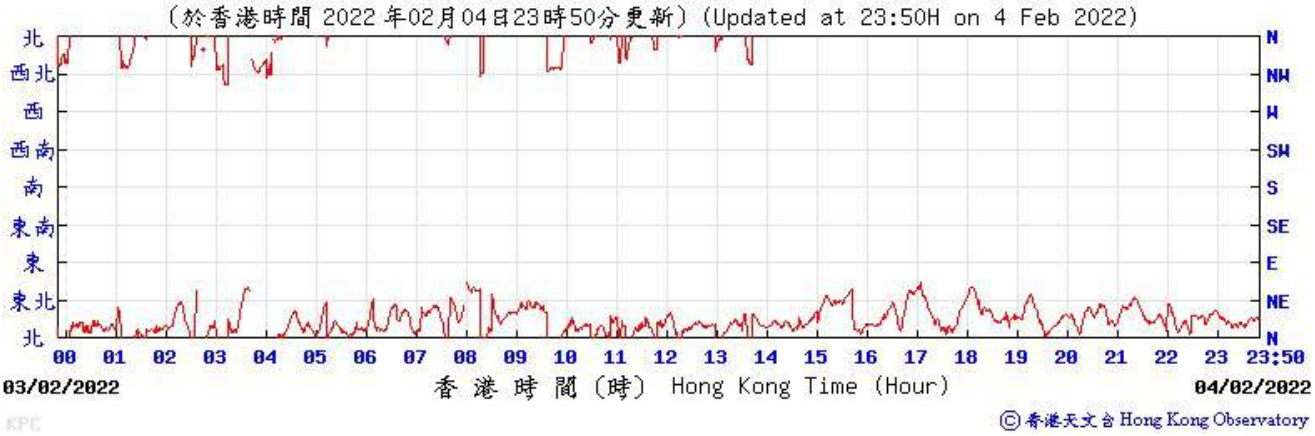
Start Date	Weather Condition	Elapse Time			Chart Reading			Avg Air Temp	Avg Atmospheric Pressure	Flow Rate	Standard Air Volume	Filter Weight (g)		Particulate weight	Conc.
		Initial	Final	Actual (min)	Min	Max	Avg	(^{o}C)	(mm hPa)	(m^3/min)	(m^3)	Initial	Final	(g)	($\mu g/m^3$)
4/2/2022	Fine	3382.68	3406.68	1440.00	40	42	41.0	14.4	1021.4	1.18	1696	2.7746	2.8115	0.0369	22
10/2/2022	Fine	3406.68	3430.68	1440.00	39	41	40.0	17.0	1017.7	1.13	1629	2.7437	2.7915	0.0478	29
16/2/2022	Fine	3430.68	3454.68	1440.00	39	40	39.5	16.9	1016.0	1.11	1601	2.7681	2.8210	0.0529	33
22/2/2022	Cloudy	3454.68	3478.68	1440.00	39	41	40.0	10.7	1022.0	1.2	1701	2.7757	2.7896	0.0139	8
28/2/2022	Fine	3478.68	3502.68	1440.00	38	41	39.5	18.9	1018.6	1.1	1648	2.7432	2.8244	0.0812	49

min	8
max	49

Figure 2: Graphical Illustration of Measured 24-hour TSP (μg/m^3) Levels at E-A1



WIND DIRECTION DATA FOR 4,5,10,11,16,17,22,23,28 February 2022 and 1 March 2022

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香 港 時 間 (時) Hong Kong Time (Hour)
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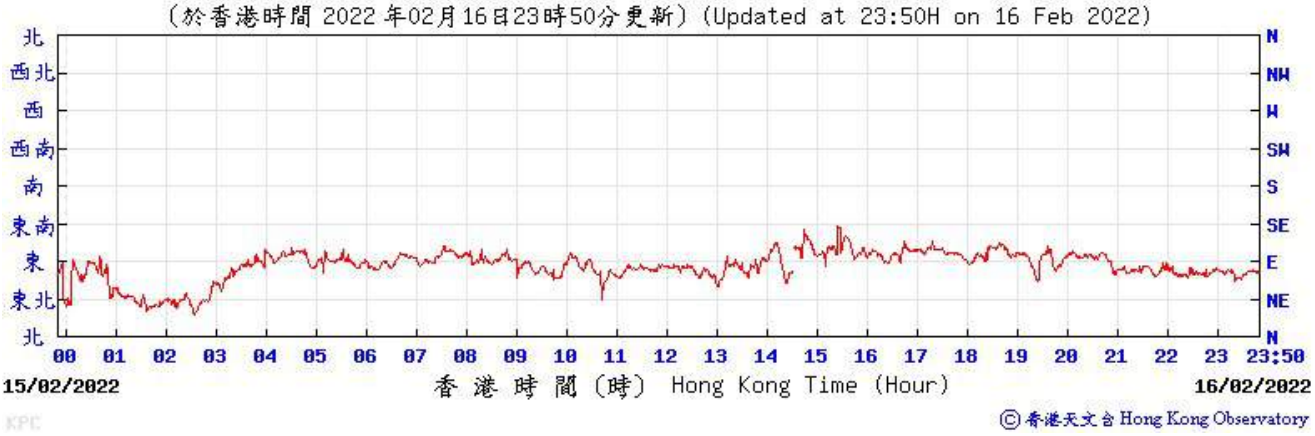
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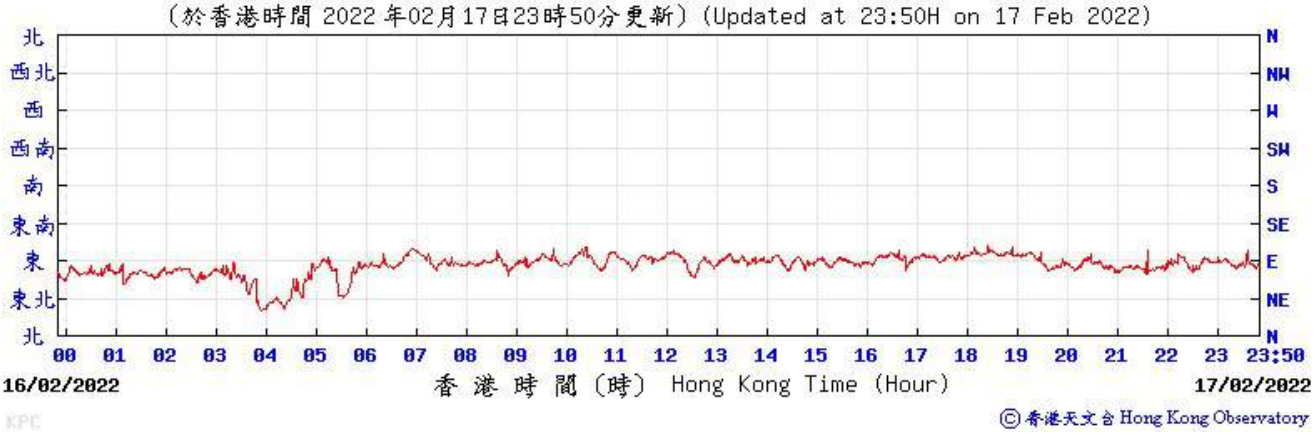
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香 港 時 間 (時) Hong Kong Time (Hour)
17/02/2022
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(於香港時間 2022 年02月22日23時50分更新) (Updated at 23:50H on 22 Feb 2022)
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22/02/2022
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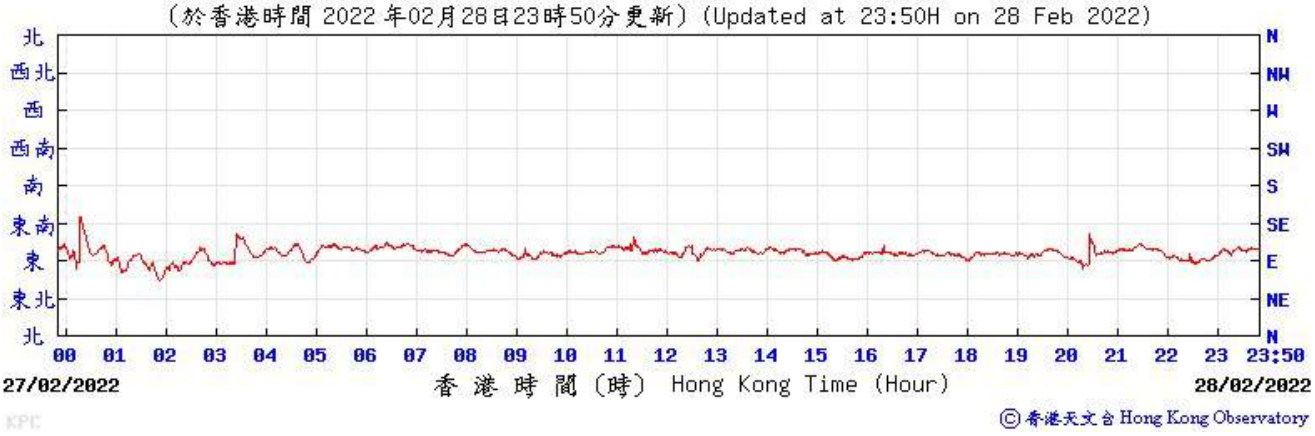
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香 港 時 間 (時) Hong Kong Time (Hour)
28/02/2022
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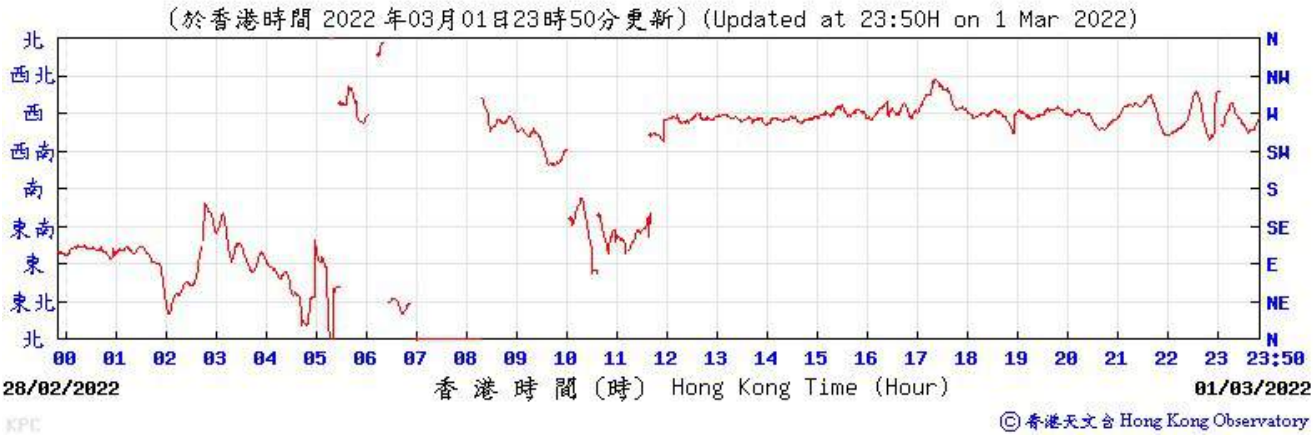
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香 港 時 間 (時) Hong Kong Time (Hour)
01/03/2022
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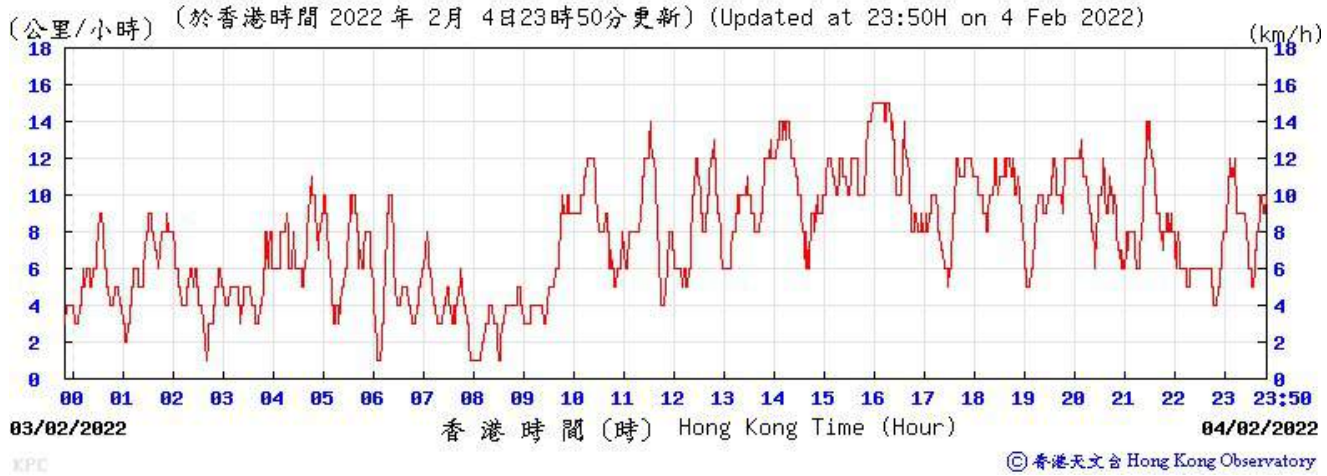
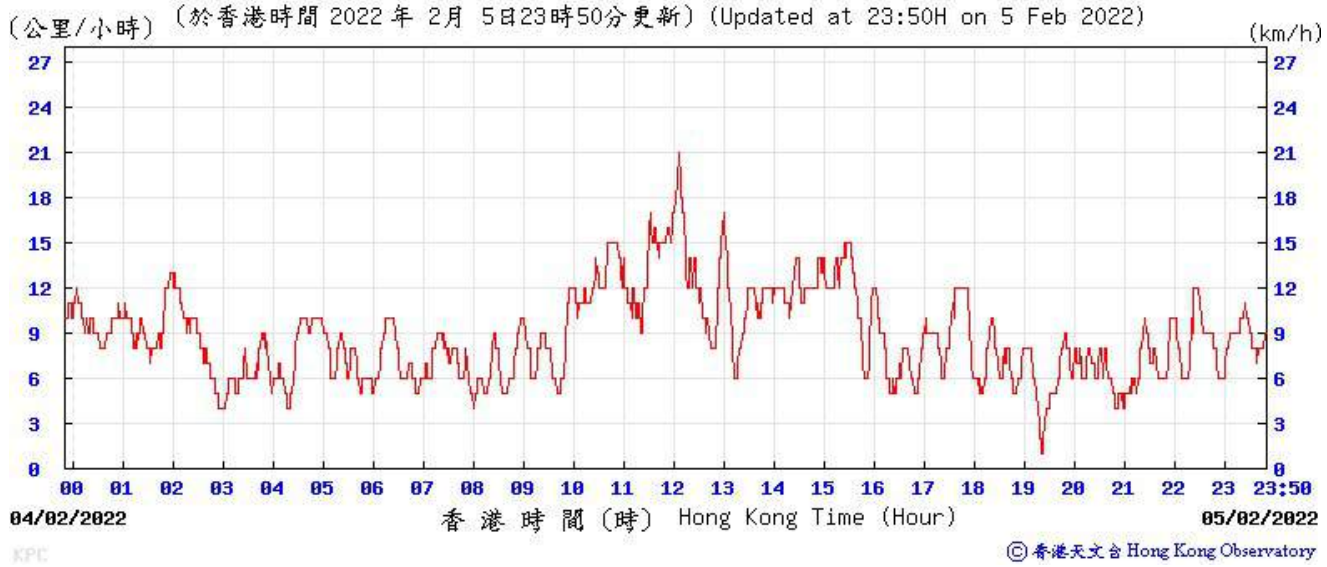
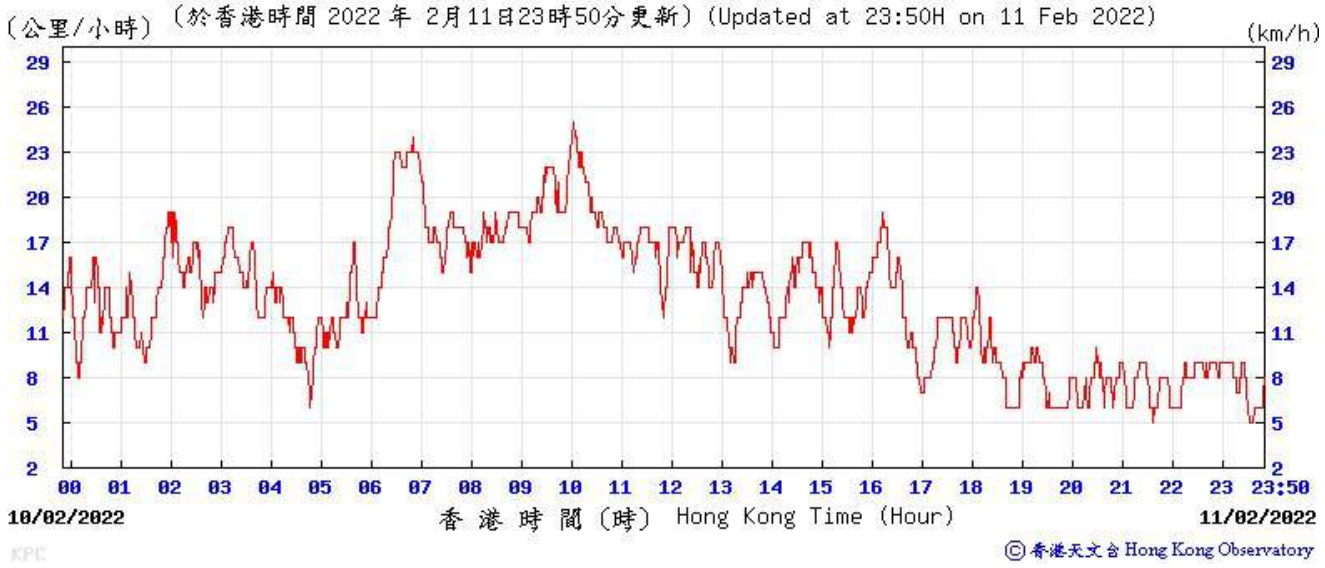
WIND SPEED DATA FOR FOR 4,5,10,11,16,17,22,23,28 February 2022 and 1 March 2022



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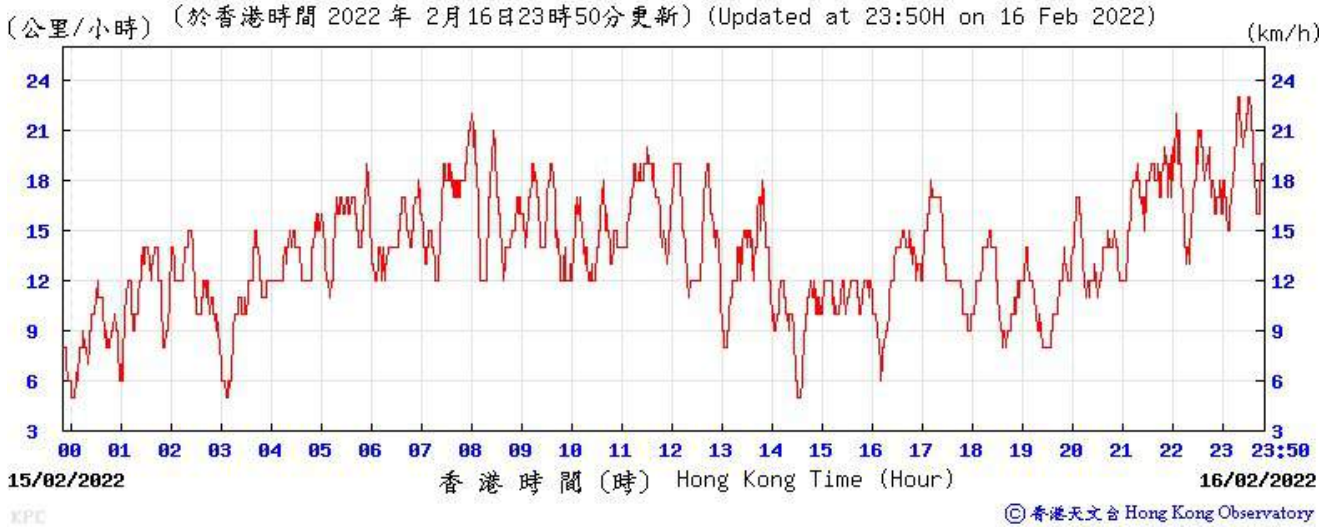
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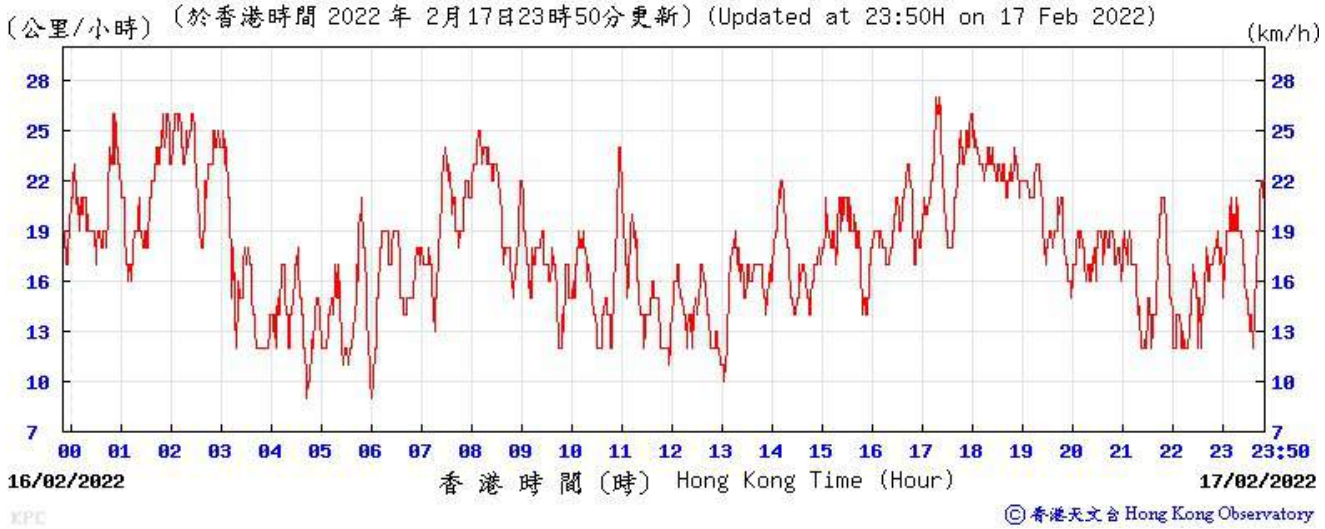
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17/02/2022
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22/02/2022
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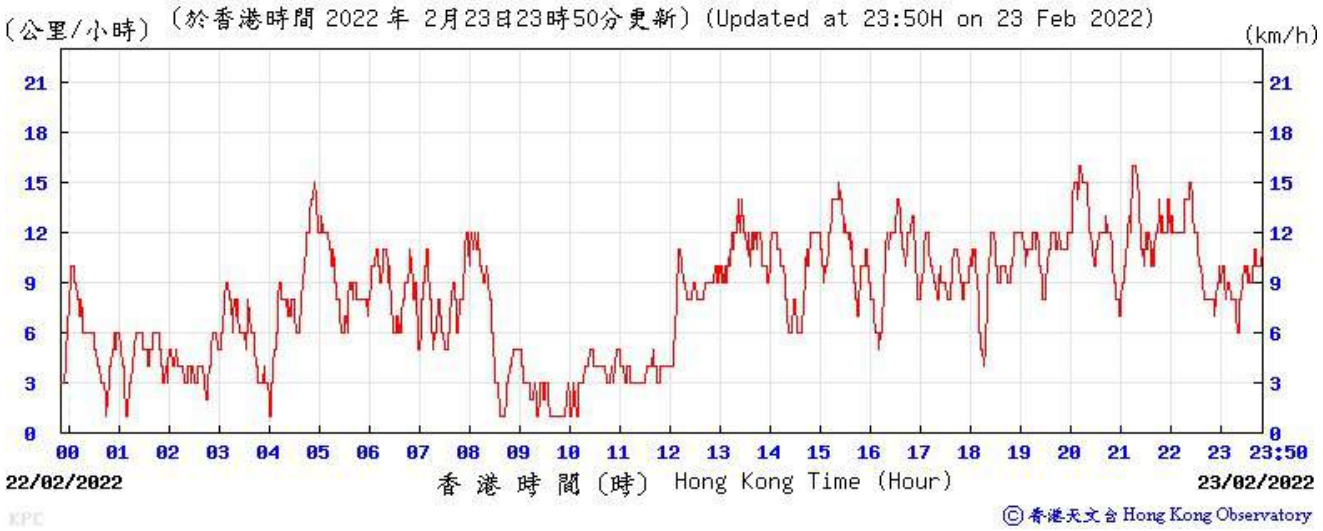
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香 港 時 間 (時) Hong Kong Time (Hour)
23/02/2022
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(公里/小時) (於香港時間 2022 年 2月28日23時50分更新) (Updated at 23:50H on 28 Feb 2022) (km/h)
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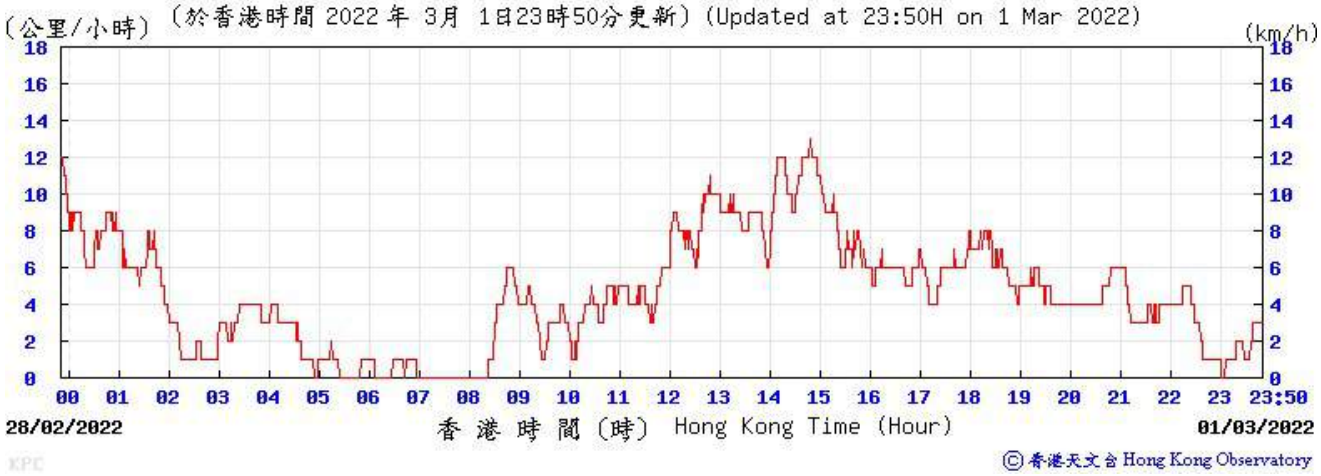
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Appendix L
Waste Flow Table

Monthly Summary Waste Flow Table

Name of Department: Highways Department **Contract No. / Works Order No.:** HY/2018/02

Monthly Summary Waste Flow Table for February 2022

[to be submitted not later than the 15th day of each month following reporting month] (All quantities shall be rounded off to 2 decimal places.)

Month		Actual Quantities of Inert Construction Waste Generated Monthly				
	(a)=(b)+(c)+(d)+(e)+ (f)+ (g)+ (h)+ (i)+ (j)+ (k) Total Quantity Generated	(b) Hard Rock and Large Broken Concrete	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed of as Public Fill	(f) Imported Fill
	(in 'tonnes)	(in 'tonnes)	(in 'tonnes)	(in 'tonnes)	(in 'tonnes)	(in 'tonnes)
Jan-22	1,776.24	0	0	0	1,687.11	0
Feb-22	800.73	0	0	0	715.04	0
Mar-22	-	-	-	-	-	-
Apr-22	-	-	-	-	-	-
May-22	-	-	-	-	-	-
Jun-22	-	-	-	-	-	-
Jul-22	-	-	-	-	-	-
Aug-22	-	-	-	-	-	-
Sep-22	-	-	-	-	-	-
Oct-22	-	-	-	-	-	-
Nov-22	-	-	-	-	-	-
Dec-22	-	-	-	-	-	-
Total	2,576.97	0	0	0	2,402.15	0
2019	7,646.10	340.00	140.00	0.00	6,643.48	0.00
2020	142,655.94	0.00	140.00	34,998.72	105,790.14	1,109.00
2021	100,327.04	0.00	100.00	40,313.27	57,782.06	0.00
Accumulated Total	253,206.05	340.00	380.00	75,311.99	172,617.83	1,109.00

Month	Actual Quantities of Non-inert Construction Waste Generated Monthly								
	(g) Metals		(h) Paper/ cardboard packaging		(i) Plastics		(j) Chemical Waste		(k) Others, e.g. General Refuse disposed at Landfill
	(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in 'tonnes)
	generated	recycled	generated	recycled	generated	recycled	generated	recycled	generated
Jan-22	0	0	0.15	0.15	0	0	0	0	88.98
Feb-22	0	0	0.16	0.16	0	0	0	0	85.53
Mar-22	-	-	-	-	-	-	-	-	-
Apr-22	-	-	-	-	-	-	-	-	-
May-22	-	-	-	-	-	-	-	-	-
Jun-22	-	-	-	-	-	-	-	-	-
Jul-22	-	-	-	-	-	-	-	-	-
Aug-22	-	-	-	-	-	-	-	-	-
Sep-22	-	-	-	-	-	-	-	-	-
Oct-22	-	-	-	-	-	-	-	-	-
Nov-22	-	-	-	-	-	-	-	-	-
Dec-22	-	-	-	-	-	-	-	-	-
Total	0	0	0.31	0.31	0	0	0	0	174.51
2019	22.57	22.57	0.05	0.05	0.00	0.00	0.00	0.00	500.00
2020	207.47	207.47	1.28	1.28	0.00	0.00	0.00	0.00	409.33
2021	1,028.67	1,028.67	0.53	0.53	0.00	0.00	0.00	0.00	1,102.52
Accumulated Total	1,258.71	1,258.71	2.17	2.17	-	-	-	-	2,186.36

Appendix M
Statistics on Complaint, Notifications of Summons and Successful Prosecutions

Statistical Summary of Exceedances

Air Quality			
Location	**Action Level**	**Limit Level**	**Total**
E-A1	0	0	0

Statistical Summary of Environmental Complaints

Reporting Period	**Environmental Complaint Statistics**		
	Frequency	**Cumulative**	**Complaint Nature**
1February 2022– 28 February 2022	0	2	N/A

Statistical Summary of Environmental Non-compliance

Reporting Period	**Environmental Non-compliance Statistics**		
	Frequency	**Cumulative**	**Details**
1February 2022– 28 February 2022	0	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	**Environmental Summons Statistics**		
	Frequency	**Cumulative**	**Details**
1February 2022– 28 February 2022	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	**Environmental Prosecution Statistics**		
	Frequency	**Cumulative**	**Details**
1February 2022– 28 February 2022	0	0	N/A

Appendix N
Monitoring Schedule of the Coming Month

March 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	1	2	3	4 Impact Dust monitoring (E-A1)	5
6	7	8	9	10 Impact Dust monitoring (E-A1)	11	12
13	14	15	16 Impact Dust monitoring (E-A1)	17	18	19
20	21	22 Impact Dust monitoring (E-A1)	23	24	25	26
27	28 Impact Dust monitoring (E-A1)	29	30	31	1	2

Central Kowloon Route

Buildings, Electrical and Mechanical Works

Contract No. HY/2019/13

(Kai Tak East Area)

Gammon Construction Limited

Contract No. HY/2019/13
Central Kowloon Route – Buildings, Electrical and Mechanical Works

Monthly EM&A Report No. 17
(February 2022)

Version 1

Date of Report: 9 March 2022

Certified By	
	(Environmental Team Leader: Ms. Betty Choi)

REMARKS:

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

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

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路政署
HIGHWAYS DEPARTMENT
主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

ERM

Environmental Permit No. EP-457/2013/D

Central Kowloon Route

Independent Environmental Checker Verification

Works Contract:	**Buildings, Electrical and Mechanical Works (HY/2019/13)**

Reference Document/Plan

~~Document~~/Plan to be ~~Certified~~/ Verified:	Monthly EM&A Report No.17
Date of Report:	9 March 2022 (Version 1)
Date received by IEC:	9 March 2022

Reference EP Condition

Environmental Permit Condition: 3.4

Submission of Monthly EM&A Report of the Project

3.4 Four hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of each reporting month throughout the entire construction period. The EM&A Reports shall include a summary of all non-compliance. The submissions shall be certified by the ET Leader and verified by the IEC as complying with the requirements as set out in the EM&A Manual before submission to the Director. Additional copies of the submission shall be provided to the Director upon request by the Director.

IEC Verification

I hereby verify that the above referenced ~~document~~/plan complies with the above referenced condition of EP-457/2013/D.

Ms Mandy To Date: 9 March 2022

Independent Environmental Checker

Our ref: 0436942_IEC Verification Cert_BEM_Monthly EM&A Rpt No.17_20220309.docx

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EXECUTIVE SUMMARY

Introduction

1. This is the 17th Monthly Environmental Monitoring and Audit (EM&A) Report prepared by the Environmental Team (ET), Cinotech Consultants Ltd., for Contract No. HY/2019/13 "Central Kowloon Route – Buildings, Electrical and Mechanical Works". This report summarized the monitoring results and audit findings of the EM&A programme under the issued EP No. EP-457/2013/D, and in accordance with the EM&A programme in Kai Tak East Area during the reporting period from 1st February 2022 – 28th February 2022.

2. The major site activities undertaken in Kai Tak East Area in the reporting month included:
   - Piling works (pipe piles and sheet piles)

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Joint weekly site inspections with the representative of ET, Engineer Representative and the Contractor were conducted on 8, 15 & 22 February 2022, whereas joint site inspection with the representative of IEC was conducted on 15 February 2022. The implementation of the environmental mitigation measures, Event and Action Plans and environmental complaint handling procedures were also checked.

4. A summary of the non-compliance (exceedance) during the reporting month (February 2022) and the investigation results and/or follow-up actions is provided below:

   Air Quality Monitoring
   - No Action/Limit Level exceedance for 1-hour TSP was recorded.
   - No Action/Limit Level exceedance for 24-hour TSP was recorded.

   Landscape and Visual Monitoring
   - No non-conformity for landscape and visual was recorded.

Complaint Handling, Prosecution and Public Engagement

5. Summary of complaint/summons/prosecution in the reporting month is tabulated in **Table I**.

Table I Summary of Complaint/Summons/Prosecution in the Reporting Month

Event	Event Details		Follow-up/ Remedial Actions	Status/ Remarks
	Number	Brief Description		
Complaints Received	0	-	-	-
Notification of Summons and Prosecutions Received	0	-	-	-

Reporting Changes

6. There were no reporting changes during the reporting month.

Future Key Issues

7. The key works or activities will be anticipated in the coming two months are as follows:
   - Piling works (pipe piles and sheet piles).

1 INTRODUCTION

Background

1.1 Central Kowloon Route (CKR) is a 4.7km long dual 3-lane trunk road across Central Kowloon linking Yau Ma Tei Interchange in West Kowloon and the road network at Kai Tak Development and Kowloon Bay in East Kowloon. The underground tunnel section will be about 3.9km long. In particular, an underground tunnel of about 370m long in Kowloon Bay to the north of To Kwa Wan Typhoon Shelter will be constructed.

1.2 The Environmental Impact Assessment Report for Central Kowloon Route – Design and Construction (Register No.: AEIAR-171/2013) was approved under the Environmental Impact Assessment Ordinance (EIAO) on 11 July 2013. An Environmental Permit (EP No.: EP-457/2013) was issued on 9 August 2013. Variations of Environmental Permit (VEP) was subsequently applied and an EP (EP No. EP-457/2013/C) was issued on 16 January 2017. The latest EP (EP No. EP-457/2013/D) was issued by Environmental Protection Department (EPD) on 15 June 2021.

1.3 The construction of the CKR had been divided into different sections. This Contract No. HY/2019/13 – Central Kowloon Route – Buildings, Electrical and Mechanical Works ("The Project") will include the architectural, civil and structural construction works of Yau Ma Tei Ventilation Building (YVB), Ho Man Tin Ventilation Building (HVB), Kai Tak Ventilation Building (KVB) and Central Kowloon Route Administration Building (ADB) for the CKR. The landscaping and electrical and mechanical (E&M) works within the building sites will be involved as well.

1.4 Cinotech Consultants Limited was assigned as the Environmental Team (ET) to undertake the EM&A works for the Project. The construction of this Contract was commenced on 12th December 2020.

Purpose of the Report

1.5 This is the 17th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme in Kai Tak East Area during the reporting period from 1st February 2022 – 28th February 2022. The Kai Tak East Area site layout plan for the Project is shown in **Figure 1.1**.

Project Organizations

1.6 Different Parties with different levels of involvement in the project organization include:

- Project Proponent – Highways Department (HyD)
- Engineer Representative (ER) – Arup – Mott MacDonald Joint Venture (AMMJV)
- Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
- Independent Environmental Checker (IEC) – Environmental Resources Management - Hong Kong Limited (ERM)
- Contractor – Gammon Construction Limited (GCL)

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

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Phone No.
AMMJV	Engineer Representative	Mr. Dennis Yu	3695 0419
Cinotech	Environmental Team	Ms. Betty Choi	2151 2072
ERM	Independent Environmental Checker	Ms. Mandy To	2271 3313
GCL	Contractor	Mr. Harry Lam	9353 6141

1.8 The Organizational Structure for Environmental Management is shown in **Figure 1.2**.

Construction Activities undertaken during the Reporting Month

1.9 The construction programme is presented in **Appendix A**.

1.10 The major site activities undertaken in the reporting month included:

- Piling works (pipe piles and sheet piles).

Summary of EM&A Requirements

1.11 The EM&A programme requires air quality monitoring, landscape and visual monitoring and environmental site audit. The EM&A requirements for each parameter are described in the following sections, including:

- Environmental requirements and mitigation measures, as recommended in the EM&A Manual under the EP.

1.12 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 6 of this report.

Statues of Environmental Licensing and Permitting

1.13 All permits/licenses obtained for the Project are summarized in **Table 1.2**.

Table 1.2 Summary of Environmental Licensing and Permit Status

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-457/2013/D	15 Jun 2021	N/A	Valid
Notification of Construction Works under Air Pollution Control Ordinance (APCO)			
457346	18 Jun 2020	End of Project	Valid
Billing Account for Construction Waste Disposal			
7037679	26 Jun 2020	N/A	Valid
Registration of Chemical Waste Producer – Kai Tak			
5211-286-G2347-54	13 Jul 2020	N/A	Valid
Wastewater Discharge Licence - Kai Tak			
WT00037178-2020	18 Dec 2020	31 Dec 2025	Valid
Construction Noise Permit - Kai Tak Site (General Works [grouting, piling])			
GW-RE0944-21	24 Sep 2021	23 Mar 2022	Valid

2 AIR QUALITY

Monitoring Requirements

2.1 As all of the air quality (1-hour TSP and 24-hour TSP) monitoring works in Kai Tak East Area are currently covered under the Contract No. HY/2018/02 (Central Kowloon Route - Kai Tak East), the corresponding monitoring parameters, equipment, methodology, results and established Action and Limit Levels could be referred to Section 3 of the EM&A report for Contract No. HY/2018/02 during this reporting month.

Observations

2.2 No Action/Limit Level exceedance was recorded for all 1-hour TSP and 24-hour TSP monitoring in the reporting month.

2.3 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of air quality mitigation measures within the site boundaries of this Project. The summary of site audits are shown in **Table 6.1** of this report**.**

3 NOISE

Monitoring Requirements

3.1 As no Noise Sensitive Receiver (NSR) is located within 300m from the boundary of Kai Tak East Area, no construction noise monitoring is required in Kai Tak East Area for this Project.

Observations

3.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of construction noise mitigation measures within the site boundaries of this Project. The summary of site audits are shown in **Table 6.1** of this report**.**

4 WASTE MANAGEMENT

Monitoring Requirements

4.1 Waste generated from this Project includes inert construction and demolition (C&D) materials and non-inert C&D materials. Inert C&D waste includes soil, broken rock, broken concrete and building debris, while non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites.

Results and Observations

4.2 The quantities of different types of waste generated in the reporting month are summarised in Table 4.1. Details of the amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix B**.

Table 4.1 Quantities of Waste Generated from the Project

Quantity							
	Inert C&D Materials		Non-inert C&D Materials				
Reporting Period	Total Quantity Generated (in '000m^3)	Disposed as Public Fill (in '000m^3)	Others, e.g. general refuse (in '000m^3)	Metals (in '000kg)	Paper/cardboard Packaging (in '000kg)	Plastics (in '000kg)	Chemical waste (in '000kg)
February 2022	1.121	1.121	0.029	0	0	0	0

4.3 Site audits were carried out on a weekly basis to monitor and audit to ensure that proper storage, transportation and disposal practices of waste materials generated during construction activities, such as construction and demolition (C&D) materials and general refuse are being implemented. The summary of site audits are shown in **Table 6.1** of this report**.** The implementation status of the waste/chemical management measures in the reporting period are summarized in **Appendix C**.

5 LANDSCAPE AND VISUAL

Monitoring Requirements

5.1 According to the EM&A Manual, site audits would be undertaken during the construction phase of the Project to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives. Site inspections of the implementation of landscape and visual mitigation measures would be undertaken at least once every two weeks during the construction period.

Results and Observations

5.2 Bi-weekly inspection of the implementation of landscape and visual mitigation measures within the site boundaries of this Project was conducted on 15 February 2022. The implementation status of the landscape and visual mitigation measures in the reporting period are summarized in **Appendix C**. The summary of observations and recommendations made for landscape and visual mitigation measures during site audits are shown in **Table 6.1** of this report**.**

5.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

6 ENVIRONMENTAL AUDIT

Site Audits

6.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

6.2 Site audits were conducted on 8, 15 & 22 February 2022 in the reporting month. Joint site inspection with the representative of IEC was conducted on 15 February 2022. No non-compliance was observed during the site audit.

Implementation Status of Environmental Mitigation Measures

6.3 According to Environmental Permit, the approved EIA Report (Register No.: AEIAR-171/2013), and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix C**.

6.4 The ET weekly site inspections were carried out during the reporting month and the observations and follow-up actions in Kai Tak East Area are summarized in **Table 6.1**.

Table 6.1 Observations and Recommendations of Site Inspections

Parameters	Date	Observations	Follow-up Actions
Water Quality	N/A	No environmental deficiency was identified in the reporting period.	N/A
Air Quality	15 Feb 2022	Cement bags should be covered properly at Kai Tak Ventilation Building Site.	Cement bags had been been covered properly at Kai Tak Ventilation Building Site.
Noise	N/A	No environmental deficiency was identified in the reporting period.	N/A
Waste / Chemical Management	8 Feb 2022	Chemical should be placed on drip tray at Kai Tak Ventilation Building Site.	Chemical had been removed at Kai Tak Ventilation Building Site.
Land Contamination	N/A	No environmental deficiency was identified in the reporting period.	N/A
Landscape and Visual	N/A	No environmental deficiency was identified in the reporting period.	N/A
Permits /Licences	N/A	No environmental deficiency was identified in the reporting period.	N/A

Implementation Status of Event and Action Plans

6.5 The Event and Action Plans for air quality could be referred to Appendix D of the EM&A report in Contract No. HY/2018/02.

Air Quality Monitoring

- No Action/Limit Level exceedance for 1-hour TSP was recorded.
- No Action/Limit Level exceedance for 24-hour TSP was recorded.

Landscape and Visual Monitoring

- No non-conformity for landscape and visual was recorded.

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

6.6 No environmental complaints, warning, notifications of summons and successful prosecutions was received in the reporting month. The summary of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix D**.

Status of Required Submission under Environmental Permit

6.7 Status of required submission under EP-457/2013/D during the reporting period are summarized in **Table 6.2**.

Table 6.2 Status of Required Submission under Environmental Permit

EP Condition (EP-457/2013/D)	Submission	Submission Date
Condition 3.4	Monthly EM&A Report (January 2022)	14 February 2022

7 FUTURE KEY ISSUES

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

- Piling works (pipe piles and sheet piles).

7.2 Key environmental issues in the coming two months include:

- Stockpile accumulation on-site;
- Water spraying for dust generating activities and on haul road;
- Wastewater and runoff discharge from site;
- Coverage of open manholes to avoid dirty runoff to drainage system;
- Noise from operation of the equipment, especially for excavation works and machinery onsite;
- Accumulation of general refuse and construction waste on-site;
- Proper storage of construction materials on-site; and
- Storage of chemicals/fuel and chemical waste/waste oil on-site.

8 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

8.1 This is the 17th Monthly EM&A Report which presents the EM&A works undertaken in Kai Tak East Area during the reporting month from 1st February 2022 – 28th February 2022 in accordance with the EM&A Manual and the requirements under the EP.

Air Quality Monitoring

8.2 No Action/Limit Level exceedance was recorded for all 1-hour and 24-hour TSP monitoring in the reporting month.

Landscape and visual

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

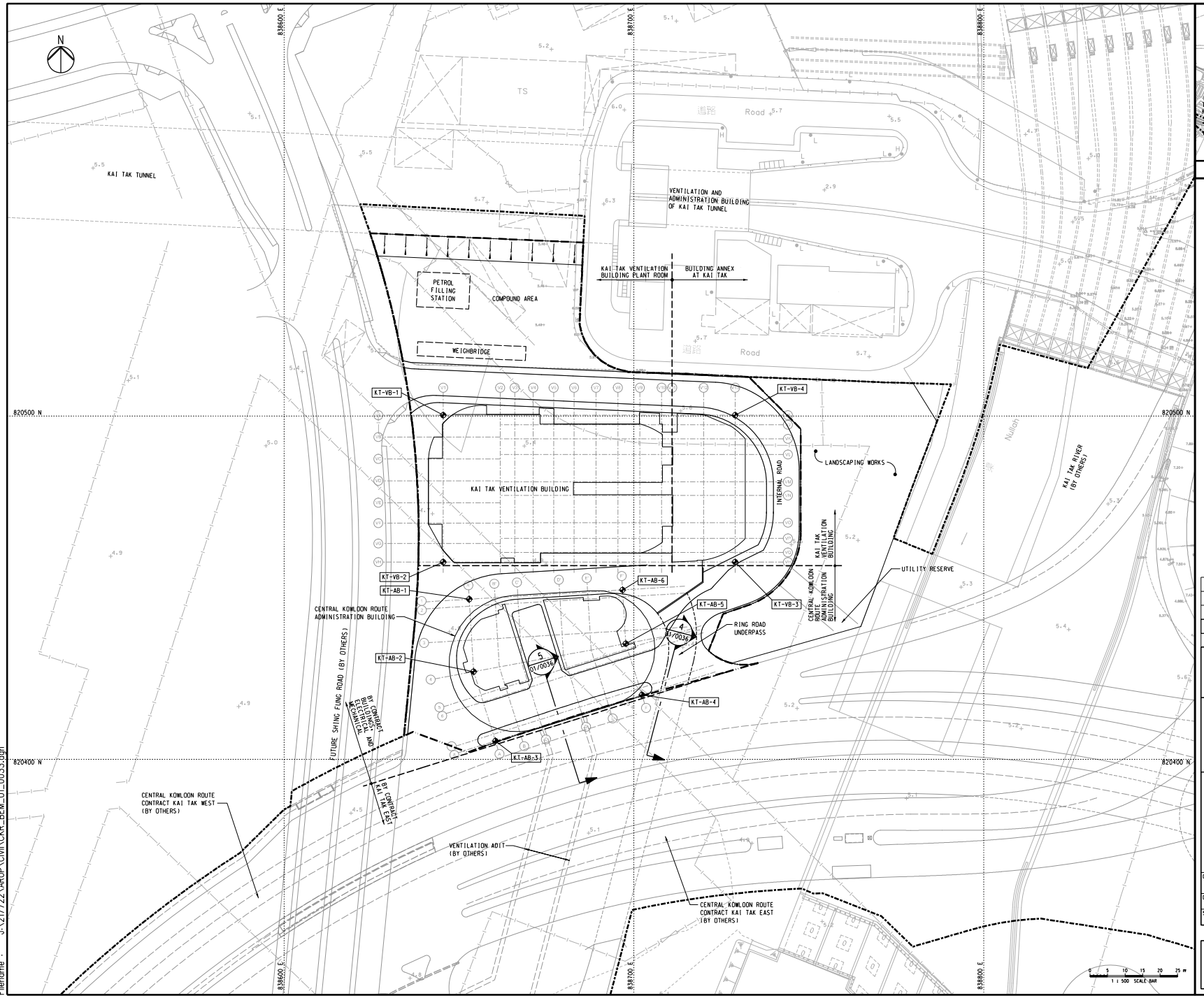
Site Audit

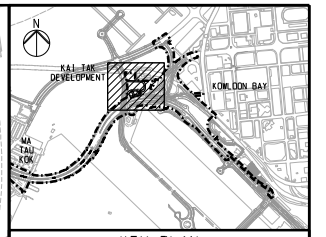
8.4 3 ET joint weekly environmental site inspections were conducted in the reporting month. Joint weekly site inspections with the representative of ET, Engineer Representative and the Contractor were conducted on 8, 15 & 22 February 2022, whereas joint site inspection with the representative of IEC was conducted on 15 February 2022. All environmental deficiencies observed during site inspections were rectified by the Contractor.

Complaint, Notification of Summons and Successful Prosecution

8.5 No environmental complaints, notifications of summons and successful prosecutions were received in the reporting month.

FIGURES





KEY PLAN

NOTES

1. FOR NOTES AND LEGEND, REFER TO DRAWING NO. CKR/BEM/01/0011.

LEGEND

BOUNDARIES OF THE SITE

BUILDING SITE BOUNDARY

SETTING OUT TABLE OF BUILDING GRID LINES

SETTING OUT POINT	CO-ORDINATES	
	EASTING	NORTHING
KT-VB-1	838645.490	820500.230
KT-VB-2	838645.490	820458.230
KT-VB-3	838728.940	820458.230
KT-VB-4	838728.940	820500.230
KT-AB-1	838652.940	820447.607
KT-AB-2	838654.192	820426.883
KT-AB-3	838660.424	820407.065
KT-AB-4	838702.302	820420.233
KT-AB-5	838697.687	820434.911
KT-AB-6	838696.760	820450.255

Rev. 修訂	Description 內容摘要	By 改訂	Date 日期
00	ISSUE FOR TENDER	LFM	09/19

ARUP M MOTT MACDONALD

Arup-Mott MacDonald Joint Venture

Project title 工程名稱

Contract No. HY/2019/13

Central Kowloon Route - Buildings, Electrical and Mechanical

Drawing title 圖紙名稱

GENERAL LAYOUT PLAN
KAI TAK VENTILATION BUILDING AND CENTRAL KOWLOON ROUTE ADMINISTRATION BUILDING

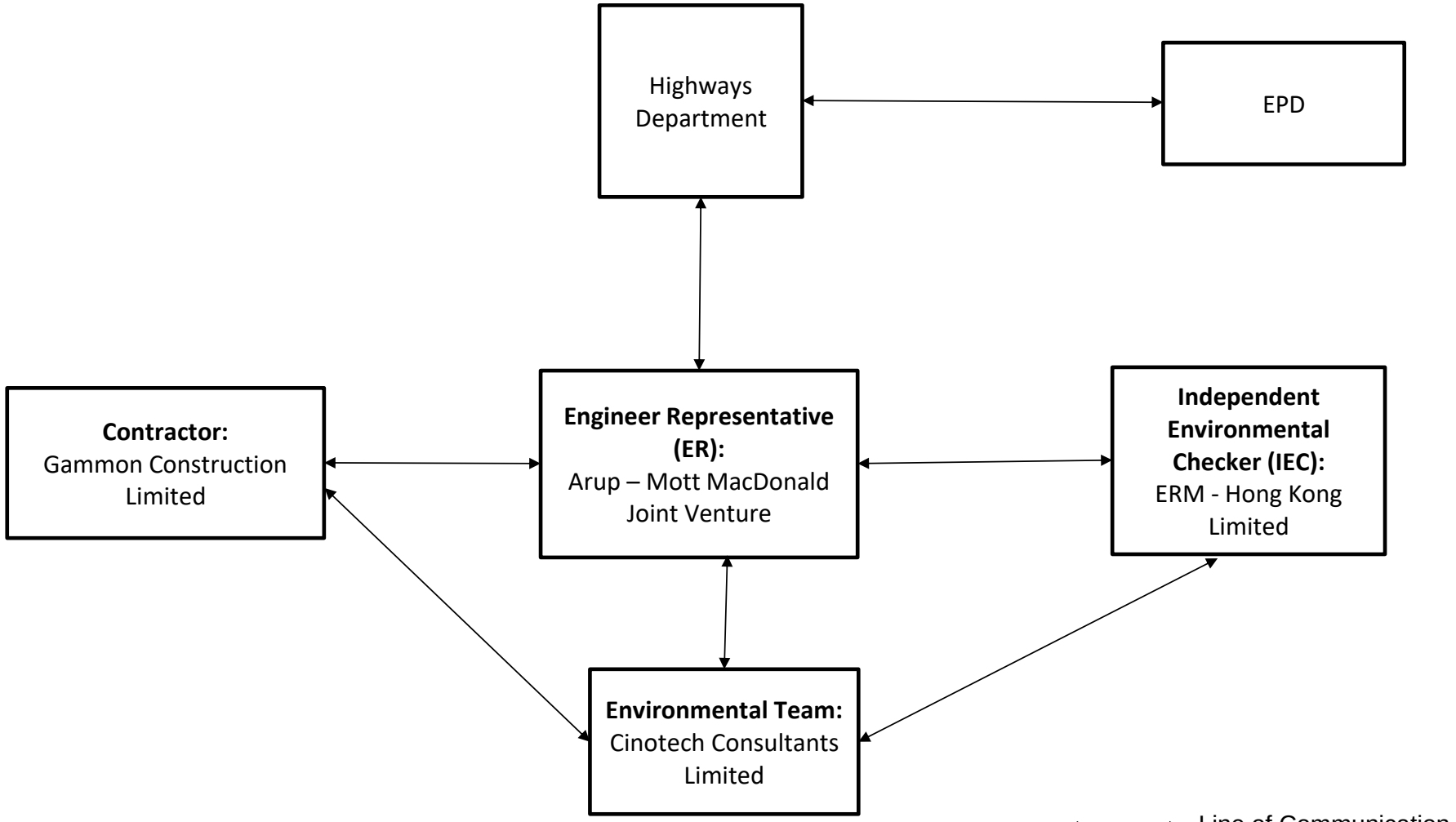
Drawing no. 圖紙編號		Rev. 修訂
	1.1	00

Drawn By 繪圖	Checked By 核對	Approved By 批准人
RY	KKC	EC

Scale 比例	Status 狀況
1:500 @ A1	TENDER

路政署 HIGHWAYS DEPARTMENT
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE

Printed by : 10/2/2019
Filename : J:\217722\ARUP\Civil\CKR_BEM_01_0033.dgn



CINOTECH

Contract No. HY/2019/13
Central Kowloon Route – Buildings, Electrical and Mechanical Works

Project Organisation For Environmental Monitoring and Audit

SCALE	N.T.S.	**DATE**	Nov 2020
CHECK	BC	**DRAWN**	EH
JOB NO.	MA20024	**FIGURE NO.**	1.2

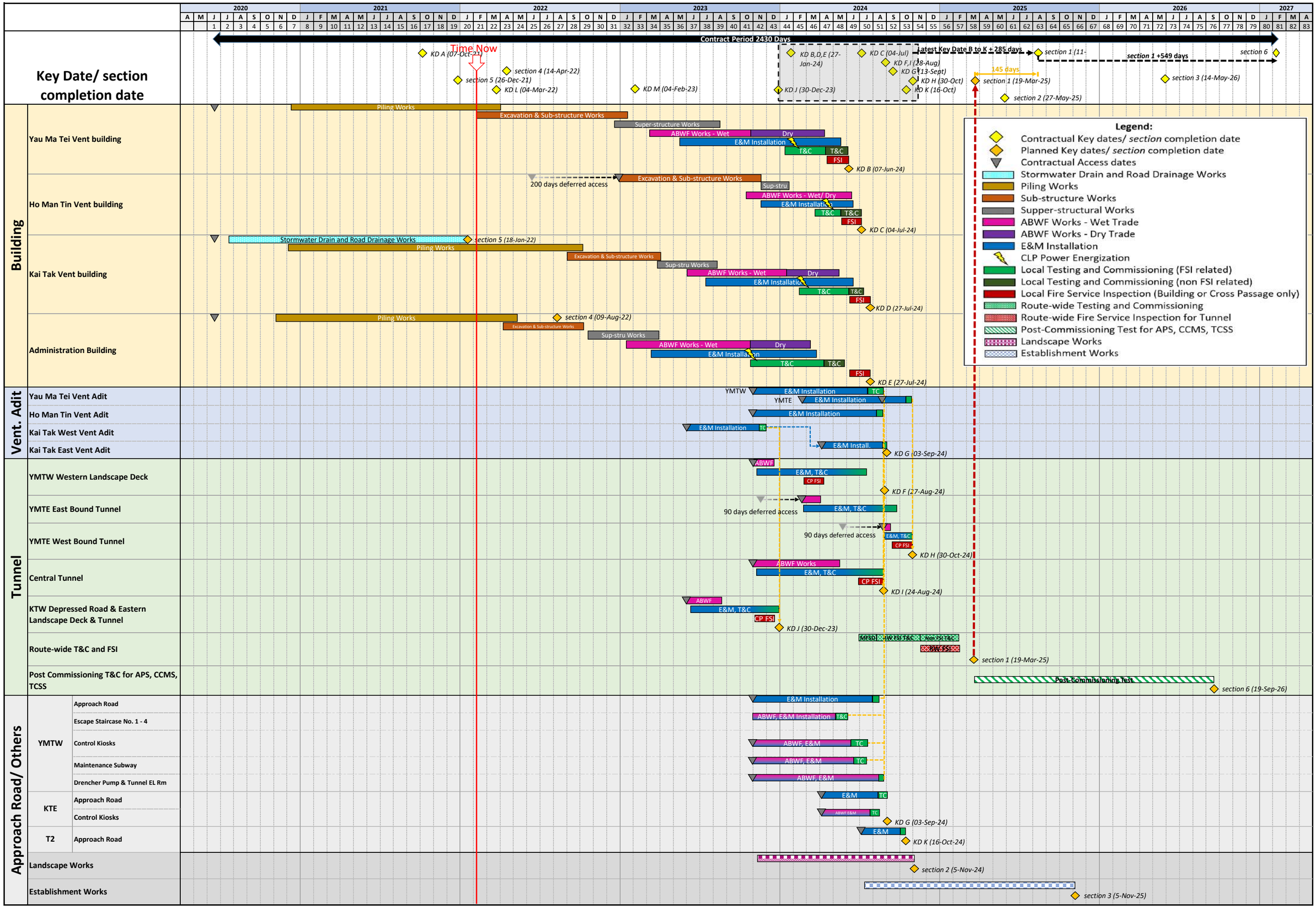
APPENDIX A
CONSTRUCTION PROGRAMME

Gammon

Ref. Detailed Programme (Feb-2022)

Contract No. HY/2019/13
Central Kowloon Route – Buildings, Electrical and Mechanical Works
Summary Programme

HIGHWAYS DEPARTMENT 路政署 土木工程拓展署 MAJOR WORKS PROJECT MANAGEMENT OFFICE



APPENDIX B
SUMMARY OF WASTE GENERATION AND DISPOSAL RECORDS

Monthly Summary Waste Flow Table

Name of Department: HyD

Contract No.: HY/2019/13
Central Kowloon Route - Buildings, Electrical and Mechanical Works
Kai Tak Site Area

Monthly Summary Waste Flow Table for 2022 (year)

	Actual Quantites of Inert C&D Materials Generated Monthly						Actual Quantites of C&D Waste Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 5)	Reused in the Contract (see Note 5)	Reused in other Projects (see Note 5)	Disposed as Public Fill (see Note 5)	Imported Fill (see Note 5)	Metals	Paper / cardboard packaging	Plastics (see Note 3)	Chemical Waste (see Note 5)	Marine Sediment (see Note 7)	Others, e.g. general refuse (see Note 5)
Month	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m3)	(in '000m3)
Jan	1.451	0	0	0	1.451	0	0	0	0	0	0	0.017
Feb	1.121	0	0	0	1.121	0	0	0	0	0	0	0.029
Mar												
Apr												
May												
Jun												
Sub-Total	**2.573**	**0**	**0**	**0**	**2.573**	**0**	**0**	**0**	**0**	**0**	**0**	**0.046**
Jul												
Aug												
Sep												
Oct												
Nov												
Dec												
Total (2022)	**2.573**	**0**	**0**	**0**	**2.573**	**0**	**0**	**0**	**0**	**0**	**0**	**0.046**
Total (whole)	**21.781**	**0**	**0**	**0**	**21.781**	**0**	**0**	**0**	**0**	**1.080**	**0**	**0.314**

Note:

(1) The performance targets are given in PS Clause 25.24

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials, and water barriers

(4)
The summary table shall be submitted to the Project Manager monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.24

(5) Density values and Bulk Factors adopted:

Hard Rock and Large Broken Concrete:	2.4 T/m3 (in-situ)	Bulk Factor:	1.25
Soil / Fill:	2.0 T/m3 (in-situ)	Bulk Factor:	1.1
Marine Sediment:	1.7 T/m3 (in-situ)	Bulk Factor:	1.3
General Refuse:	400 kg/m3		
Chemical Waste (mainly used lubricant):	900 kg/m3		
Tree Trunk / Tree Stump:	850 kg/m3 (in-situ)	Bulk Factor:	1.1

(6) The reported and forecast volume figures are in "bulk" volume, with Bulk Factor applied as per Note (5)

(7) This figure refers to marine sediment disposed via dumping at sea. Treated Sediment for Reuse on-site will be categorized into "Reused in the Contract"

APPENDIX C
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
Construction Dust Impact								
S4.3.10	D1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	- APCO - To control the dust impact to meet HKAQO and TM-EIA criteria	^
S4.3.10	D2	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 should be conducted to achieve dust removal efficiencies 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 1.3 L/m2 to achieve the dust removal efficiency.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	- APCO - To control the dust impact to meet HKAQO and TM-EIA criteria	^
S4.3.10	D3	Proper watering at exposed spoil should be undertaken throughout the construction phase.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	- APCO - To control the dust impact to meet HKAQO and TM-EIA criteria	^
		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 wetted with water and cleared from the surface of roads.						^
		A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones.						^
		The load of dusty materials on a vehicle leaving a construction 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 section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.						^

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided and properly maintained 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 period.						^
		The portion of any road leading only to construction 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 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.						N/A
		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 fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.						N/A
		Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.						N/A

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		Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						N/A
S4.3.10	D6	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected rep. dust monitoring station	Construction stage	- TM-EIA	^
Construction Noise (Airborne)								
S5.4.1	N1	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.	Control construction airborne noise	Contractor	All construction sites	Construction stage	- Annex 5, TM-EIAO	^
		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 direction, where possible, be orientated so that the noise is directed away from nearby NSRs.						^
		Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works.						^
		Mobile plant should be sited as far away from NSRs as possible and practicable.						^
		Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.						N/A
S5.4.1	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	- Annex 5, TM-EIAO	^

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S5.4.1	N3	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressors, generators and handheld breakers, etc.	Sreen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction stage	- Annex 5, TM-EIAO	N/A
S5.4.1	N4	Use 'Quiet plants'	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction stage	- Annex 5, TM-EIAO	^
S5.4.1	N5	Loading/ unloading activities should be carried out inside the full enclosure of mucking out points.	Reduce the noise levels of loading/ unloading activities	Contractor	Mucking out locations	Construction stage	- Annex 5, TM-EIAO	^
S5.4.1	N6	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	- Annex 5, TM-EIAO	^
S5.4.1	N7	Implement a noise monitoring programme under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected rep. noise monitoring station	Construction stage	- TM-EIAO	N/A
Water Quality (Construction Phase)								
S6.9.1.1	W1	Construction Runoff 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 and erosion and sedimentation control facilities implemented. 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. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.	To minimize water quality impact from the construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction stage	- Water Pollution Control Ordinance - ProPECC PN 1/94 - TM-EIAO - TM-DSS	^

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/ sediment trap. The sediment/ silt traps should be incorporated in the permanent drainage channels to enhance deposition rates.						^
		The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/ sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1 m3/s a sedimentation basin of 30 m3 would be required and for a flow rate of 0.5 m3/s the basin would be 150 m3. The detailed design of the sand/ silt traps shall be undertaken by the contractor prior to the commencement of construction.						^
		All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. Exposed slope surfaces should be covered by tarpaulin or other means.						N/A
		The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all traffic areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows.						N/A
		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 minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.						^

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
		Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.						^
		Manholes should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.						^
		Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.						^
		All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and site wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel wash bay to the public road should be paved with sufficient backfall toward the wheel wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.						^
		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 solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.						^

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		All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.						^
		Adopt best management practices.						^
		All earth works should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable.						^
S6.9.1.2	W2	<u>Tunneling Works and Underground Works</u> Cut-&-cover tunneling work should be conducted sequentially to limit the amount of construction runoff generated from exposed areas during the wet season (April to September) as far as practicable.	To minimize construction water quality impact from tunneling works	Contractor	All tunneling portion	Construction stage	- Water Pollution Control Ordinance - ProPECC PN 1/94 - TM-EIAO - TM-DSS	N/A
		Uncontaminated discharge should pass through sedimentation tanks prior to off-site discharge.						N/A
		The wastewater with a high concentration of SS should be treated (e.g. by sedimentation tanks with sufficient retention time) before discharge. Oil interceptors would also be required to remove the oil, lubricants and grease from the wastewater.						N/A
		Direct discharge of the bentonite slurry (as a result of D-wall) is not allowed. It should be reconditioned and reused wherever practicable. Temporary storage locations (typically a properly closed warehouse) should be provided on site for any unused bentonite that needs to be transported away after all the related construction activities area completed. The requirements in ProPECC PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.						N/A
S6.9.1.3	W3	<u>Sewage Effluent</u> Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	To minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction stage	- Water Pollution Control Ordinance - TM-DSS	^

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S6.9.1.5	W4	<u>Groundwater from Potential Contaminated Area:</u> No direct discharge of groundwater from contaminated areas should be adopted.	To minimize groundwater quality impact from contaminated area	Contractor	Excavation areas where contamination is found	Construction stage	- Water Pollution Control Ordinance - TM-EIAO - TM-DSS	^
		A discharge license under the WPCO through the Regional Office of EPD for groundwater discharge should be applied. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed during the process of discharge license application. The compliance to the Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters (TM-DSS) and the existence of prohibited substance should be confirmed. 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 the requirements of the TM-DSS 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. TPH) to undetectable range. 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 Section 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as TPH products should be removed as necessary by installing the petrol interceptor.						N/A

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S6.9.1.6	W6	<u>Accidental Spillage</u> All the tanks, containers, storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and stormwater drains.	To minimize water quality impact from accidental spillage	Contractor	All construction site where practicable	Construction stage	- Water Pollution Control Ordinance - ProPECC PN 1/94 - TM-EIAO - TM-DSS	^
		The Contractor should register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities should be stored with suitable labels and warnings.						^
		Disposal of chemical wastes should be conducted in compliance with the requirements as stated in the Waste Disposal (Chemical Waste) (General) Regulation.						^
Waste Management (Construction Waste)								
S7.4.1	WM1	<u>On-site sorting of C&D material</u> Geological assessment should be carried out by competent persons on site during excavation to identify materials which are not suitable to use as aggregate in structural concrete (e.g. volcanic rock, Aplite dyke rock, etc.). Volcanic rock and Aplite dyke rock should be separated at the source sites as far as practicable and stored at designated stockpile area preventing them from delivering to crushing facilities. The crushing plant operator should also be reminded to set up measures to prevent unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use. Details regarding control measures at source site and crushing facilities should be submitted by the Contractor for the Engineer to review and agree. In addition, site records should also be kept for the types of rock materials excavated and the traceability of delivery will be ensured with the implementation of Trip Ticket System and enforced by site supervisory staff as stipulated under DEVB TC(W) No. 6/2010 for tracking of the correct delivery to the rock crushing facilities for processing into aggregates. Alternative disposal option for the reuse of volcanic rock and Aplite Dyke rock, etc. should be explored.	Separation of unsuitable rock from ending up at concrete batching plants and be turned into concrete for structural use	Contractor	All construction sites	Construction stage	· DEVB (W) No. 6/2010	^

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S7.5.1	WM2	<u>Construction and Demolition Material</u> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	· Land (Miscellaneous Provisions) Ordinance · Waste Disposal Ordinance · ETWB TCW No. 19/2005	^
		Carry out on-site sorting.						^
		Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate						^
		Adopt ‘selective demolition’ technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible.						N/A
		Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.						^
		Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – “Environmental Management on Construction Sites” to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction.						^
S7.5.1	WM3	<u>C&D Waste</u> Standard formwork or pre-fabrication should be used as far as practicable in order to minimize the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	· Land (Miscellaneous Provisions) Ordinance · Waste Disposal Ordinance · ETWB TCW No. 19/2005	^
		The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.						N/A

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S7.5.1	WM4	<u>Excavated Contaminated Soils</u> Details of the mitigation measures on handling of the contaminated soil shall be referred to Section on Land Contamination below.	The contaminated soil will be excavated for on-site reuse	Contractor	PBH4	Prior to commencement of construction works within the contaminated area	· Practice Guide (PG) for Investigation and Remediation of Contaminated Land · GN/GM for land contamination	^
S7.5.1	WM5	<u>Land-based and Marine-based Sediment</u> All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location.	To control pollution due to marine sediment	Contractor	Along CKR alignment	Construction stage	· ETWB TCW No. 34/2002	^
		All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.						N/A
		Before moving the vessels which are used for transporting dredged material, excess material shall be cleaned from the decks and exposed fittings of vessels and the excess materials shall never be dumped into the sea except at the approved locations.						N/A
		Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.						N/A
		The Contractors shall monitor all vessels transporting material to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the engineers.						N/A
		The Contractors shall comply with the conditions in the dumping licence.						^
		All bottom dumping vessels (Hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material.						N/A
		The material shall be placed into the disposal pit by bottom dumping.						N/A

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		Contaminated marine mud shall be transported by spit barge of not less than 750m3 capacity and capable of rapid opening and discharge at the disposal site.						N/A
		Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Material adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site.						N/A
		For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping at the disposal site, thereby fulfilling the requirements for fully confined mud disposal.						N/A
S7.5.1	WM6	Chemical Waste Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	All construction sites	Construction stage	· Waste Disposal (Chemical Waste) (General) Regulation · Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^
		Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed, have a capacity of less than 450 L unless the specification has been approved by EPD, and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.						*
		The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste, enclosed on at least 3 sides, have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest, have adequate ventilation, covered to prevent rainfall entering, and arranged so that incompatible materials are adequately separated.						^

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		Disposal of chemical waste should be via a licensed waste collector, be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers, or be to a reuser of the waste, under approval from EPD.						^
S7.5.1	WM7	General Refuse General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	· Waste Disposal Ordinance	^
		A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.						^
		Aluminum cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.						^
		Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.						^
Land Contamination								
S8.9 & Appendix 8.4	LC2	Excavation of the Contaminated Soil Prior to commencement of the excavation works at the contamination zone, the zone should be clearly marked out on site and the surface levels recorded. Excavation of contaminated material should be undertaken using dedicated earth-moving plant.	The contaminated soil will be excavated for on-site reuse	Contractor	PBH4	Prior to commencement of construction works within the contaminated area	· Practice Guide (PG) for Investigation and Remediation of Contaminated Land - Guidance Notes for Contaminated Land Assessment and Remediation · Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management	N/A
		The excavated contaminated soils would be stockpiled at designated area on site and covered by sheet to prevent dispersion of contamination during stockpiling.						N/A
		The Contractor should pay attention to the selection of suitable groundwater lowering schemes and discharge points if the groundwater table is higher than the contaminated soils during excavation. The Contractor should also obtain a valid Water Pollution Control Ordinance (WPCO) discharge licence from EPD where applicable.						N/A

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Hazard to Life								
S9.18	H8	The driver and his assistant should be physically healthy, experienced and have good safe driving records. The driver should hold a proper driving licence for the approved transport truck. Dedicated training programme and regular road safety briefing sessions/ workshops should be provided to enhance their safe driving attitude and practice. Smoking should be strictly prohibited.	To reduce the risk during explosives transport	Contractor	Works areas at which explosives would be used	Construction stage	/	^
S9.18	H9	Emergency response plans in case of road accident should be prepared and implemented. The driver and his assistant should be familiar with the emergency procedures including evacuation, and proper communication/ fire-fighting equipment should be provided to the driver and his assistant.	To reduce the risk during explosives transport	Contractor	Works areas at which explosives would be used	Construction stage	/	^
Landscape and Visual								
S10.10.1 Table 10.11	LV3	<u>Good Site Management</u> Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance.	Minimize visual impact	Contractor	Within Project site	Construction Phase	/	^
		Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.						^
S10.10.1 Table 10.11	LV4	<u>Screen Hoarding</u> Decorative screen hoarding should be erected to screen the public from the construction area. It should be designed to be compatible with the existing urban context.	Minimize visual impact	Contractor	Within Project site	Construction Phase	/	^
S10.10.1 Table 10.11	LV5	<u>Lighting Control during Construction</u> All lighting in the construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residencies and GIC. The Contractor shall consider other security measures, which shall minimize the visual impacts.	Minimize visual impact	Contractor	Within Project site	Construction Phase	/	^
S10.10.1 Table 10.11	LV6	<u>Erosion Control</u> The potential for soil erosion shall be reduced by minimizing the extent of vegetation disturbance on site and by providing a protective cover over newly exposed soil.	Minimize landscape impact	Contractor	Within Project site	Construction Phase	/	^

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S10.10.1 Table 10.11	LV7	Tree Protection & Preservation Carefully protected during construction. Tree protection measures will be detailed at the Tree Removal Application stage and plans submitted to the relevant Government Department for approval in due course in accordance with ETWB TC no. 3/2006.	Minimize landscape and visual impact	Contractor	Within Project site	Construction Phase	· 'Guidelines for Tree Risk Management and Assessment Arrangement on an Area Basis and on a Tree Basis', Greening, Landscape and Tree Management (GLTM) Section, DEVB · Latest recommended horticultural practices from GLTM Section, DEVB	N/A
S10.10.1 Table 10.11	LV8	Tree Transplantation For trees unavoidably affected by the Project that have to be removed, where practical transplantation will be chosen as the top priority method of removal. If this is not possible or practical compensatory planting will be provided for trees unavoidably felled (See LV10). For trees unavoidably affected by the Project works that are transplanted, transplantation must be carried out in accordance with ETWB TCW 2/2004 and 3/2006.	Minimize landscape and visual impact	Contractor	Within Project site and designated off-site locations	Prior to Construction Phase	· ETWB TCW 3/2006 · Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DEVB · ETWB TCW 2/2004	N/A
S10.10.1 Table 10.11	LV9	Compensatory Planting For trees unavoidably affected by the Project that have to be removed, where practical transportation will be chosen as the top priority method of removal but if this is not possible or practical compensatory planting will be provided for trees unavoidably felled. All felled trees shall be compensated for by planting trees to the satisfaction of relevant Government projects. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.	Minimize visual impact and also enhance landscape	Contractor	Within Project site	Construction Phase	· ETWB TCW 3/2006 · Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DEVB · ETWB TCW 2/2004	N/A

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
S10.10.1 Table 10.11	LV10	Screen Planting Tall screen/buffer trees, shrubs and climbers should be planted, in so far as is possible, to soften and screen proposed structures such as roads and central strip, vertical edges and buildings and to enhance streetscape greening effect where appropriate. Indiscriminate use of trees for screening must be avoided and the principle of 'right tree for the right place' must be followed. This detail will be provided at the Detailed Design stage. This measure may additionally form part of the compensatory planting and will improve and create a pleasant pedestrian environment.	Minimize visual impact and also enhance landscape	Contractor	Within Project site	Construction Phase	· Guidelines on Greening of Noise Barriers, issued April 2012, GLTMS, DevB · ETWB TCW 2/2004	N/A
S10.10.1 Table 10.11	LV11	Green Roof Roof greening will be established on ventilation and administration buildings to reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels.	Minimize landscape and visual impact	Contractor	Within Project site	Construction Phase	/	N/A
S10.10.1 Table 10.11	LV12	Reinstatement All works areas, excavated areas and disturbed areas for tunnel construction and temporary road diversion or any other proposed works shall be reinstated to former conditions or better, with reasonable landscape treatment and to the satisfaction of the relevant Government departments. (Specific mitigation for disturbance to public open space is detailed separately under LV14)	Minimize landscape impact	Contractor	Within Project site	Construction Phase	/	N/A
S10.10.1 Table 10.11	LV13	Reprovising of Public Open Space All areas of public open space affected by the Project will be reprovisioned either at the same location following the completion of temporary works, or at a separate site, as agreed with relevant Government departments. Open space should be re-provisioned in an enhanced manner.	Minimize landscape impact	Contractor	Within Project site	Construction Phase	Open space should be re-provided in an enhanced manner.	N/A
Cultural Heritage Impact (Construction Phase)								
S11.4.4	CH1	The contractor should be alerted during the construction on the possibility of locating archaeological remains and as a precautionary measure, AMO shall be informed immediately in case of discovery of antiquities or supposed antiquities in the subject sites.	To preserve any cultural heritage items which may be removed and damaged by the excavation	Contractor	During construction works for cut and cover tunnels	During the Construction Phase	· AMOs requirements	N/A

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and/ or standards to be achieved	Implementation Status
EM&A Project								
S13.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	Control EM&A Performance	Highways Department	All construction sites	Construction stage	· EIAO Guidance Note No. 4/2010 · TM-EIAO	^
S13.2-13.4	EM2	An Environmental Team needs to be employed as per the EM&A Manual.	Perform environmental monitoring & auditing	Highways Department/ Contractor	All construction sites	Construction stage	· EIAO Guidance Note No. 4/2010 · TM-EIAO	^
		Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures;						^
		An environmental impact monitoring needs to be implemented by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.						^

Remarks: EM&A Programme under EP-457/2013/D	
^	Compliance of mitigation measure;
N/A N/A(1)	Not applicable at this stage; Not observed;
*	Recommendation was made during site audit but improved/retified by the contractor;
#	Recommendation was made during site audit but not yet improved/retified by the contractor;
X	Non-compliance of mitigation measure;
●	Non-compliance but rectified by the contractor.

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

Contract No. HY/2019/13
Central Kowloon Route – Buildings, Electrical and Mechanical Works

Appendix D – Summary of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution

Reporting Month: February 2022

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

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